Final Environmental Impact Statement
Thacker Pass Lithium Mine Project

Appendix R

Comment Responses

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APPENDIX R COMMENT RESPONSES

The Notice of Availability for the Draft Environmental Impact Statement (DEIS) was published in the Federal Register on July 31, 2020, at which time the 45-day comment period commenced. The comment period ended on September 14, 2020. Due to conditions related to the national COVID-19 outbreak, public meetings that would normally be held in Winnemucca and Orovada, Nevada, during the 45-day comment period were held in a virtual online format on August 19 and 20, 2020.

A total of 63 agencies, businesses, organizations, and interested parties provided comments on the DEIS via mail, email, and the BLM ePlanning website. All comments on the DEIS that were received were read and given careful consideration. Each comment was included in a comprehensive database, analyzed for its content, and appropriate responses were prepared. In some cases, the comments provided information or suggested changes that were incorporated into the DEIS. Several comments that focused on similar technical aspects of the water resources analysis were responded to via Common Responses presented in **Table R.1**.

Table R.2 presents all the comments that were received on the DEIS. The table includes the comment letter number, commenter name, each specific comment, and the BLM's response to the comment. Comments were transcribed verbatim in order to retain the originality of the comments received.

In responding to comments, every effort was made to address all questions, concerns, and other points presented by the commenter. The "Response" provided, in many cases, refers to information already contained in the DEIS, and provides an explanation or clarification using this information to respond to the comment. If the comment has resulted in a change in the FEIS narrative, this is indicated in the response. The responses also note where statements are made that are not specific comments on the DEIS.

Table R.1. Common Responses to Selected Comments on Water Resources

Comment Response ID	Common Response
WATER-1	**Topic: Adequacy of Baseline Hydrologic Data** Baseline hydrologic information compiled for the proposed Thacker Pass Project is included in DEIS Appendix P and summarized in DEIS Appendix G.2 and Appendix L.2. Data collection commenced in 2011 and gradually expanded in scope. Efforts were directed at collecting readily available and reasonably obtainable hydrologic data as necessary to characterize baseline conditions associated with the groundwater and surface water systems within and surrounding the proposed Thacker Pass Project. Baseline data includes published information relating to the geology and hydrology of the region, as well as a substantial amount of site-specific baseline information including, but not limited to, exploration drill logs and core, geophysical surveys, water levels, stream baseflows, spring discharge, and water quality analyses. Additional baseline information was derived from aquifer testing, static and kinetic geochemical tests performed on the various rock types associated with the mineral deposit, and on-site meteorological data collection. As is typical with most hydrologic evaluations, these data have limitations. However, the readily available and reasonably obtainable hydrologic information collected for the proposed Thacker Pass Project is considered adequate for understanding the conceptual framework for groundwater and geochemical impact models, and establishing "baseline" conditions against which to compare predictions of the effects of the Proposed Action and reasonable alternatives for the NEPA process.

Comment Response ID	Common Response
	In addition, the text of monitoring and mitigation measure in Section 4.2.3 of the Final EIS would allow for the BLM "*…to require reasonable modifications and adjustments to monitoring locations over the project life to account for the results of monitoring, updated groundwater model predictions, and updated biological surveys and habitat/species monitoring*." Under this measure, the BLM could require the monitoring and mitigation plan be expanded at any time to include additional monitoring sites or increased monitoring frequencies based on the results of the proposed operational and post mine groundwater and surface water monitoring program.
WATER-2	**Topic: Vertical hydraulic gradient in vicinity of the proposed Open Pit; Effects of past exploration activities** Vertical hydraulic gradients exist naturally in areas of groundwater recharge or discharge. Vertical gradients are typically downward in recharge areas and upward discharge areas. The amount of vertical gradient depends largely upon aquifer permeability and whether lower permeability layers or faults exist between aquifers. Vertical gradients are generally lower in areas of high permeability such as within the Quinn River valley-fill alluvial aquifer, and higher within low permeability bedrock units such as the claystone and ash layers at the proposed Thacker Pass Mine. A relatively high downward vertical gradient is known to exist naturally in the vicinity of the proposed Thacker Pass Mine due to the low permeability nature of underlying bedrock units and recharge for the area estimated at 3% of mean annual precipitation. Monitoring wells screened or sand packed across large, saturated thicknesses in areas having relatively high downward vertical gradients will result in an artificially low, or "averaged" water level measurement for the entire completion interval compared to wells completed over a shallower portion of the saturated zone. To further complicate matters, vertical gradients can also be artificially modified in areas where low permeability flow barriers (i.e., faults or clay beds) between two aquifers become breached during exploration drilling or water well installation. Previously authorized exploration activities within and surrounding the proposed Thacker Pass Mine have created a high concentration of drill holes and well installations in the vicinity. These activities are known to have locally breached confining units within and surrounding the proposed Thacker Pass Mine and may have decreased the downward hydraulic gradient and lowered water tables locally near the proposed mine. However, the overall low permeability nature of claystone and ash layers found near the proposed Thacker Pass Mine limit the lateral influence these artificially depressed or "averaged" water table measurements would have to the immediate vicinity of the proposed mine. Hence, the overall low or "averaged" water table measurements applied in developing "baseline" conditions proximal to the proposed mine would not be expected to substantially alter the prediction of effects associated with the Proposed Action and reasonable alternatives completed under the NEPA process.
WATER-3	**Topic: Use of the 10-foot drawdown contour to define the drawdown area; Establishment of the 1-mile buffer** The use of the 10-foot drawdown contour in the analysis is explained in Section 4.3.1 in the Final EIS. For this impact analysis, the area that is predicted to experience a decrease in groundwater elevation of 10 feet or more is defined as the "drawdown area." The 10-foot drawdown contour is used as a frame of reference to identify water dependent water resources within the drawdown area and for comparison of the potential effects between the various pumping scenario alternatives. Considering the regional scale of the model, and unavoidable uncertainty associated with the model predictions, the BLM does not believe that it is reasonable or appropriate to use the regional model to quantify changes in groundwater elevation of less than 10 feet. It is also important to note that BLM has used the 10-foot drawdown contour to define the drawdown area for quantification of impacts associated with open pit mine development in many other EISs in Nevada over the past 20 years. The BLM recognizes that drawdowns of less than 10 feet could reduce flows in perennial water sources that are controlled by discharge from the regional groundwater flow system. The maximum areal extent of the 10-foot drawdown contour was used to identify surface water resources within the drawdown area. The area located outside of, but within 1-mile of, the maximum extent of the 10-foot drawdown contour is used as a "buffer" to identify perennial springs that could be at risk; and should be considered for inclusion in the spring monitoring program that would be conducted during the mining and post-mining period. As stated in Section 4.3.1, under the heading "Surface Water" "The 1-mile buffer was selected based on review of the hydrographs showing the simulated changes in groundwater elevation at spring

Comment Response ID	Common Response
	locations located outside the 10-foot drawdown contour (Appendix E, Piteau 2020a)." Adding the 1-mile buffer (to the maximum extent of the 10-foot drawdown contour under the Proposed Action) was intended to include identified perennial springs and developed springs that were projected to occur at locations with model predicted changes of several feet or greater (but less than 10-feet). The 1-mile buffer was added to the figures showing the maximum extent of the 10-foot drawdown for each alternative (i.e., Figure 4.3-8, Figure 4.3-14, and Figure 4.3-20 for the Proposed Action, Alternative B, and Alternative C, respectively). In addition, the text of monitoring and mitigation measure in Section 4.2.3 of the Final EIS would allow for the BLM *"…to require reasonable modifications and adjustments to monitoring locations over the project life to account for the results of monitoring, updated groundwater model predictions, and updated biological surveys and habitat/species monitoring."* Under this measure, the BLM could expand the monitoring and mitigation plan at any time during the project to include additional spring sites based on the results of the groundwater and surface water monitoring. The identification of the 1-mile buffer zone in combination with the WR1 monitoring mitigation measure provides for reasonable actions to address the uncertainty associated with the groundwater model predictions; and is designed to provide for the early detection and mitigation of any impacts to perennial springs located inside of or outside of the 10-foot drawdown contour.
WATER-4	**Topic: Potential for Groundwater Degradation** The potential for water quality impacts associated with the proposed Thacker Pass Project are discussed in DEIS Chapter 4 and Appendix P and summarized in DEIS Appendix G.2 and Appendix L.2. Mining operations which interact with local and regional groundwater systems have the potential to degrade water quality. In Nevada, waters of the State are regulated by NDEP in accordance with Nevada Administrative Code (NAC) 445A.121 (surface water), 445A.424 (surface waters of higher quality and groundwater), and 445A.429 (pit lakes and associated groundwater). Interactions between the mining environment and the groundwater environment can be complex, both hydrologically and geochemically. Due to the complexity of these interactions, modeling approaches may be applied to assess the potential for groundwater degradation, in accordance with NAC 445A.424, or the potential for adverse health effects from pit lakes pursuant to NAC 445A.429. The predictions or analyses included in these models serve as a tool for creating an understanding of what may occur in the future. Results can then be applied to develop appropriate monitoring and mitigation strategies ahead of time to address potential water quality impacts. Operator committed monitoring and mitigation measures proposed in DEIS Appendix P include the future field data collection at several monitoring sites and would serve as a warning system to trigger one of several proposed mitigation strategies. Additional recommended monitoring and mitigation measures proposed by the BLM would expand the monitoring and mitigation plan to include quarterly monitoring of flow at several spring sites, and groundwater model updates and recalibration at least every 5 years, or sooner if major differences exist between the model simulations and monitoring results.
WATER-5	**Topic: Groundwater model integrity** The regional groundwater model applied to evaluate potential impacts associated with the proposed Thacker Pass Project is discussed in DEIS Chapter 4 and Appendix P and summarized in DEIS Appendix G.2 and Appendix L.2. The model domain is centered over the proposed Thacker Pass Project and spans 37 miles from east to west, from the Quinn River Valley to Kings River Valley, and 14 miles north to south. There are many ways the groundwater flow system could be represented by a numerical model. If 100 groundwater modelers worked with the available data, 100 different models would result. The general regional scale behavior of the system would be similar, but the details of the model construction at individual locations would differ substantially. Consequently, there is no one "correct" representation. In fact, seeking the one "correct" model would render the task impossible leaving society to make decisions without a numerical model. For a regional groundwater flow system this large and complex, all of the models would have inaccurate representations at some locations. However, when used for regional scale assessments and comparison of alternatives, all of the models assuming appropriate inputs and model calibration likely would be sufficient. The groundwater model developed for the proposed Thacker Pass Mine was based on available data including storage and hydraulic conductivity properties. The model was then calibrated by adjusting values to improve the similarity of model results and measured groundwater data. A sensitivity analysis was then performed to evaluate the sensitivity of key model parameters. The sensitivity analysis

Comment Response ID	Common Response
	concluded that although there are other possible parameter combinations that could produce a similarly good fit, it is unlikely results obtained after applying these alternative parameters would vary substantially from those derived using the original calibrated model. The calibrated model was then applied to produce the best estimate of extent and magnitude of drawdown. Accordingly, BLM concluded that the calibrated groundwater model provided a sufficient representation of the flow system for estimating effects to water resources associated with the Proposed Action and reasonable alternatives completed under the NEPA process.
WATER-6	**Topic: Monitoring and Mitigation Measures to address potential reductions in baseflow to surface water sources** Although measurable impacts to baseflow are not predicted under the Proposed Action, the BLM recognizes that there is some uncertainty regarding potential reductions in baseflow and therefore, would require monitoring and mitigation measures to address any unforeseen impacts. The applicant committed and BLM recommended monitoring and mitigation measures for potential measurable reductions in baseflow to perennial surface water sources attributed to the Thacker Project are summarized in Section 4.3.2. As described under Measure WR1 (Section 4.3.2) a draft of the comprehensive water resources monitoring plan would be provided by LNC to the BLM, NDWR, and NDOW for review and approval prior to project initiation. WR-1 provided in the Draft EIS has been revised to include additional details regarding the adaptive management approach the BLM would use to modify and adjust the monitoring program or implementation of any necessary water resource related mitigation measures that may be required to minimize any effects to surface water or groundwater resources attributable to the Thacker Project (if necessary). In the event that flow augmentation is required to sustain a minimum baseflow in a spring or stream that is impacted by drawdown, LNC would be responsible for providing the required flow rate under their existing water rights acquired for the project. Although the current predictions indicate that the proposed project would have minimal impact to baseflow to perennial water in the region, LNC has committed to providing water (e.g., constructing guzzlers, installing groundwater wells under existing water rights), or funding habitat restoration for mitigation (if necessary) for any anticipated or unanticipated effects to baseflow; even if that meant reducing the amount of water delivered to the project. Therefore, there would be sufficient water to address any foreseen, or unforeseen effects to baseflow. The adaptive management approach outlined in WR1 is appropriate for the project in light of the fact that this is a new project and there are acknowledged uncertainties associated with the groundwater model predictions. Monitoring during the early stages of the project would provide opportunities to refine the understanding of the groundwater and surface water system in advance of when the open pit is expected to encounter groundwater (approximately Year 2035). The groundwater monitoring network (that would include monitoring locations between the project and perennial water sources) would provide an early warning system for detecting the propagation of drawdown towards sensitive perennial water sources and allow for the early implementation of appropriate mitigation measures as specified in the LNC Monitoring and Mitigation Plan or as required by the BLM through the adaptive management process. These monitoring and mitigation measures are expected to be effective at detecting and mitigating potential adverse impacts to baseflow.
WATER-7	**Topic: Federal Reserved Water Rights** Potential effects to water rights including those designated with a "Reserve" status with a priority date of 04/17/1926 were addressed in Section 4.3.1. Federal reserved water rights do not convey any additional protections under state water law. This EIS recognizes the existing active water rights identified by the State of Nevada within the region of study; and has described the potential impacts from this project to these water rights. Adjudication and protection of federal reserved water rights that may be identified and recognized by the state in the future is outside the scope of the EIS process. Impacts to all potential water sources – whether or not those sources are the subject of federal reserved water rights, state appropriation-based water rights, or are unappropriated waters – have been summarized, evaluated, and considered in the Draft EIS in Sections 4.3.1. Similarly, project mitigation measures apply to all water sources regardless of water rights status. By analyzing potential impacts to all identified water sources, the EIS analysis thus encompasses potential impacts to any federal reserved water rights that may be identified or adjudicated in the future.

Comment Response ID	Common Response
WATER-8	**Topic: Water Supply / Water Rights Appropriation** Water production for the Thacker Pass project will not appropriate any new water rights, but rather change the point of diversion from existing agricultural water rights to the Quinn Production well (and backup well). This shift in water rights would also change the beneficial use from agricultural to mining and milling. The change in the point of diversion to the Quinn Production well (and backup well) will result in localized drawdown around the production well(s) as described in Section 4.3; and will also result in reductions in localized drawdown associated with groundwater production wells that were previously used for agricultural pumping. The DEIS analyzes impacts associated with both Phase 1 and Phase 2 mining. Phase 2 mining represents a maximum impact scenario with regard to water consumption, mining rates, and disturbed area. If mining continues at Phase 1 rates, the impacts well be less than described. All water appropriations for beneficial use (including the transfer of water rights) must be completed in accordance with the requirements set forth in Chapters 533 and 534 of the Nevada Revised Statutes as administered by the Nevada State Engineer. Issues concerning the appropriation of water, or transfer of water rights, or moving the points of diversion, are decisions that are addressed through the state water rights application process that is the purview of the Nevada State Engineer (and therefore considered to be outside the scope of this EIS).
WATER-9	**Topic: Pole Creek Stream Reach Characterization** Figure 4.3-21 in Appendix A was developed for this EIS analysis by the BLM based on a compilation of the best information available in late spring 2020. The surface water and spring location map, Figure 2.5 (provided as supplemental information in Appendix P, Part 8) is from an earlier report (Piteau 2019a). As explained on page 4-9 in the Draft EIS, the surface water characterization of Pole Creek used for the EIS analysis as illustrated on Figure 4.3-21 (Appendix A) was based on supplemental field observations conducted on February 19, 2020: *"A supplemental field investigation conducted on February 19, 2020, delineated three flowing reaches of Pole Creek (characterized as likely perennial reaches) separated by dry reaches (characterized as ephemeral reaches) (Piteau 2020b).*" LNC has installed piezometers between the project and lower Pole Creek; and plans to install additional piezometers between the project and the upper and middle perennial reaches. As described under Measure WR1 (Section 4.3.2), (2) a draft of the comprehensive water resources monitoring plan would be provided by LNC to the BLM, NDWR, and NDOW for review and approval prior to project initiation; and (2) the BLM would use an adaptive management approach to modify and adjust the monitoring program as necessary. This process is intended to ensure that adequate groundwater and surface water monitoring would be conducted to detect changes in groundwater levels between the project and Pole Creek; and monitor baseflow in Pole Creek through the life of the project and in the post-mining, as necessary.
WATER-10	**Topic: Long-Term Contingency Funding** Financial guarantees, including trust funds, are issues of regulatory compliance (43 CFR 3809.412 and 3909.500 *et seq.*). BLM will establish the financial guarantee amounts and terms for the proposed operations in our authorization decision under the subpart 3809 regulations.

Table R.2. Public Comments and BLM Responses on the Draft Environmental Impact Statement

Comment #	Comment	BLM Response
Comment Letter from Not Provided (ePlanning Letter #5)		
P1	I would like BLM to approve this project. The US needs increased lithium from domestic sources. A foreign dependence is not an optimal situation.	Thank you for your comment.
Comment Letter from Anthony Garcia (ePlanning Letter #12)		
P2	Re: Thacker Pass Lithium Mine EIS 8/23/20 To Mr. Ken Loda Thank You for the opportunity to comment on the Thacker Pass Lithium Mine EIS. These comments are submitted by myself and husband twenty year landowners and current residents in Orovada Nevada. Over the past three years we have seen a significant increase on traffic on Hwy 95 from out of state license plates, they travel at high rates of speed through the town of Orovada. Vehicles pass over the double yellow lines around slower traffic. Residents stopped on the Hwy 95 trying to turn onto Kings River 293, find vehicles passing them from behind on the right because they refuse to yield or stop. Our driveway turns right off the Hwy 95, vehicles run up on us while we are stopped trying to cross south bound Hwy 95 to access our driveway. They pass on the right with no shoulder or on the left while we turning into are drive, we have nearly diverted numerous accidents just trying to get into our driveway. There are no passing lanes after the Hwy 140 going north to the Oregon border, increased vehicle traffic lines up behind semi's and drivers try to pass into on coming traffic. UPS runs triple trailers semi in out of the town of Orovada along with hay hauling semi's, these triple trailer really slow and cause congestion behind them. Just this year alone there has be several fatalities and numerous accidents. Lithium mine employees and mining haul trucks would only add greater number of vehicles to already dangerous Hwy 95, which cannot manage the traffic it currently has safely. It would be wise and prudent, before any mining operations would start, to install stoplights or a frontage business loop road around the town of Orovada, passing lanes along Hwy 95, north of Hwy 140 to the Oregon border and safe access for resident with driveways off the Hwy 95. Extremely concerned with the ground water, plenty is used for farming and from the sound of things Lithium mining will also have their share, the climate is changing, Santa Rosa Range does not see the snow pack from years past anymore, mountain springs have dried up this does effect wildlife and grazing. Mining wells are deep and so are the irrigation wells, but what happens as drought grows longer and water tables continue to drop. Who is going to protect the shallow wells of the resident land owner, who will have to foot the cost of a deeper wells for these residents. Another concern is our local dump, it is a single dumpster off the Kings River 293 paid for from our county property taxes, not sufficient for the current population, it is always over flowing and garbage is dumped on the ground, current resolve is to pay additional out of pocket for private pick-up. Any increase in resident population from employees working at the mine would only add	Nevada Department of Transportation (NDOT) has been in contact with Lithium America regarding the proposed BLM Thacker Pass Lithium Mine Project. All on-site improvements meet NDOT specifications and standard plans. Based on previous discussions with the operator, improvements may include roadway widening, deceleration lanes, acceleration lanes, dedicated turn lanes, roadway lighting, roadway striping, roadway signage and any other improvements deemed necessary. Potential project related off-site road modifications are the jurisdiction of NDOT. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations.

Comment #	Comment	BLM Response
	to the problem. Insure protection of the scenic integrity of the Montana Mountain Range by minimizing the impacts of surface disturbing activities on visual resource by implementing BLM VRM color chart for any structures. Protection of human health and the environment should be the number one concern, please protect our local air and water quality, do not put mining profit before community and environment. Sincerely, Mr. & Mrs. Anthony Gracia Resident Land Owner	
Comment Letter from David (ePlanning Letter #2)		
P3	The lithium mine proposed at Thacker pass should not go forward over concerns for lowering the water table in the valley, and impact on wildlife including nearby sage grouse habitat. Other projects such as Argosy Minerals Tonopah project are better suited for the environment. Thank you.	Thank you for your comment.
Comment Letter from Steven Sullivan (ePlanning Letter #3)		
P4	I think this is fantastic news!!! I'm all for the US supplying its own raw materials and getting off of oil. It will also mean that the US Car makers will have supplies in the US. Jobs, security and all good news!!!	Thank you for your comment.
Comment Letter from Not Provided (ePlanning Letter #4)		
P5	Lithium is one of the most toxic minerals. How are you going to keep the water table in this pristine wilderness area where many hunt and fish from being polluted? I am not for this project. Already the rest of the world acts like northern Nevada is just a dumping site for their crap. Convince me I will never hear of problems from this mine.	The Thacker Pass facility Clay Tailings Filter Stack is designed to store the mechanically placed filtered tailings solids (filter cakes and sulfate salts) generated during lithium production. The CTFS is being designed as a zero-discharge facility as defined under Nevada regulation NAC 445A.385. "Zero discharge" means the standard of performance for the protection of surface waters which requires the containment of all process fluids. Drainage from the CTFS would not discharge to groundwater or surface water. The CTFS will be fully lined with an HDPE geomembrane, underlain with a six-inch liner bedding material. The facility will include an underdrain collection system above the geomembrane to collect drainage from the stack. Drainage from the stack will report to the geomembrane lined reclaim ponds. Water collected in the pond will not be discharged as part of the stormwater management. Water in the reclaim ponds will be pumped to the processing plant to be used as make-up water for processing operations or will evaporate from the reclaim ponds.
Comment Letter from Paul Calamita (ePlanning Letter #13)		
P6	I comment in support of the LAC project. We need to develop sources of lithium in this country to support the massively expanding use of electric batteries for vehicles, lawn and garden equipment, automation, energy storage, and many other products. Moving away from ICE engines is critical for our environment. The benefits from this shift away from fossil fuels will be incredible. Moreover, having lithium batteries for energy storage is a game changer for sustainable energy (such as wind,	Thank you for your comment.

Comment #	Comment	BLM Response
	solar) as it will allow for more efficient storage of excess energy for use during times when wind/solar are unavailable. Such energy storage will also help with peak capacity demand for the electrical grid. It makes no sense to mine lithium in environmentally detrimental fashions in other countries, and then ship that lithium a good way around the world to be made into batteries and then ship those batteries yet again to the US (where they are then trucked to their automobile/device assembly point). We need to source lithium in the US and make batteries here. Not only must we avoid the environmental impacts of shipping lithium and batteries but also we cannot be dependent on other countries for critical raw materials such as lithium, which is increasingly essential to our economy and, increasingly, our national defense. Accordingly, I hope BLM will fairly weigh the overall environmental impacts and benefits of the Thacker Pass project. I believe strongly that such an evaluation can only lead to a decision to approve this exciting and necessary project.	
Comment Letter from Danny Davis (Email #1)		
P7	Thacker Pass Lithium mine would be a huge boom to our Economy, defense of this nation, and aid in less dependency on foreign governments. Lithium will serve this nation by creating a greener society while employing Americans in countless industries. The production of batteries will be key to the future of the clean auto industries, not only is mining key to our economy but the processing procedure is key as well.	Thank you for your comment.
P8	Mining in the US has proven to be safe, especially in Nevada and given the fact that the US controls so much of the land mass in Nevada it's imperative the land be utilized for our country's needs as our forefathers intended. Like Idaho, Nevada has strict environmental laws, mining laws and regulations that far surpass the rest of the world's operations. Wildlife will move on their own and can be restored with restoration. The employment opportunities alone in Nevada and elsewhere throughout the nation make this mine a go in my estimation. Batteries will continue to grow in popularity and power, at some point even planes will fly on batteries. Instead of 2 or 3-hundred-mile vehicles and a 4 to 8-hour charge time, we'll soon see 6 to 8-hundred-mile car range and a 45 minute to an hour charge time! This Technology is about to change the world and Nevada, particularly Thacker Pass, must be part of it! I give this project my complete endorsement!	Thank you for your comment.
Comment Letter from Jeanine Mertens (Email #2)		
P9	We are writing in regards to the Thacker Pass Lithium Mine. We support Alternative D, the no action, no mine alternative.	Thank you for your comment.
P10	We feel that Lithium Nevada's public relations have understated the facts concerning the uses of sulfuric acid to extract their product. They will truck sulfur waste to their site and burn it in order to get the sulfuric acid needed for their extraction process. They will be burning approximately 1900 tons of sulfur per day. Not only are we	Air emissions from operation of the proposed facility, including operation of the sulfuric acid plant, are reported in Table 4.11. Off-site Transport Emissions (tons/year) and ambient air concentrations of sulfur dioxide (SO2) and other air pollutants are reported in Table 4.12 Estimated Maximum Ambient

Comment #	Comment	BLM Response
	worried about the smell this will produce but also the amount of truck traffic through our community carrying dangerous chemicals.	Concentrations for Project Operation. All modeled ambient air pollutant concentrations are within Nevada ambient air quality standards. Approximately 60 to 100 one-way truck trips per day, predominantly between the transloading facilities near Winnemucca and the plant, would be made during Phase 1. During Phase 2, between 120 to 200 one-way truck trips per day would be required to support the Project through reagent and product shipments. Transportation of reagents and products would be conducted in accordance with U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA), NDOT, and Nevada Department of Public Safety standards and permitting requirements for road transport of hazardous materials, including requirements of NAC Chapter 459.975 Transportation of Hazardous Materials on Public Highways. Transportation of molten sulfur and other hazardous materials to and from the proposed LNC facility on public roads would be conducted by licensed transport vendors holding appropriate hazardous materials transportation licensed issued by federal and state agencies. LNC is developing proposed on-site roadway improvements in coordination with NDOT. These improvements are anticipated to include acceleration/deacceleration lanes on SR 293 at the entrance to the proposed mine site. These improvements would reduce traffic impacts and reduce the likelihood of roadway accidents from truck transportation of hazardous materials at the mine site. Off-site road improvements on public roadways are outside of the BLM's regulatory authority and would be determined through consultation between the applicant and NDOT.
P11	We also have concerns about their processing waste. Tailings piles will eventually leach into the water table impacting us our community for generations to come.	The Thacker Pass facility Clay Tailings Filter Stack is designed to store the mechanically placed filtered tailings solids (filter cakes and sulfate salts) generated during lithium production. The CTFS is being designed as a zero-discharge facility as defined under Nevada regulation NAC 445A.385. "Zero discharge" means the standard of performance for the protection of surface waters which requires the containment of all process fluids. Drainage from the CTFS would not discharge to groundwater or surface water. The CTFS would be fully lined with an HDPE geomembrane, underlain with a six-inch liner bedding material. The facility would include an underdrain collection system above the geomembrane to collect drainage from the stack. Drainage from the stack would report to the geomembrane lined reclaim ponds. Water collected in the reclaim ponds would not be discharged as part of the stormwater management system, but would be pumped to the processing plant to be used as make-up water for processing operations or would evaporate from the reclaim ponds.

Comment #	Comment	BLM Response
P12	We are also worried about their water use. Depletion of our water tables will impact vegetation and therefore, the livelihoods of many of our customers and neighbors.	Comment noted. See Common Response WATER-8.
P13	We live and work in this community and are greatly concerned that the impact this mine will have will affect our way of life here forever. We urge you to consider the impacts on our community when making your decisions.	Thank you for your comment. Lithium Nevada has taken measures to limiting adverse impacts in Orovada including bussing employees to/from the site and Winnemucca to decrease car traffic, wear on the roads, and automobile emissions. Lithium Nevada plans to maximize truckloads to minimize traffic and lessen impacts on the roads. The company has also pledge to host quarterly meetings with the community to collect input about their operation and make changes when appropriate. Lithium Nevada has established a community relations team to identify ways in which it can help the community through support for local activities, programs and infrastructure.
Comment Letter From Jean Public (Email #3)		
P14	i am writing to oppose the lithium mining in thacker pass. i see blm killing wild horses all over nevada and they belong on national land , million so of people want them there. i see no reason for blm to continually try to put concrete on every single acre of nevada and kill all the horses. if ind that contemptible. i find that oppressive. i find that destructive. it certainly should not be allowed on any national land, which we need to save for nature. this blm is a contemptible agency which is evil, vicious and moneygrubbing. they will turn every acre of nevada into newark nj. and you dont want that believe me. this cmometn is for the public record.	Thank you for your comment. The proposed Project is not located within a BLM designated Herd Management Area (HMA) nor is there an existing population of wild horses within the Thacker Pass area.
Comment Letter From Larry Shore (Email #4)		
P15	I would suggest that you approve the Lithium Americas project due to the increase in the regional economic situation it would create, provide employment during construction and during operation. With the Tesla battery/auto plant close by, it would be a great local source of the essential lithium battery component.	Thank you for your comment.
P16	By mining and processing in Nevada, it would help create less dependence on other countries exporting their minerals here in addition to a lower delivered price because of proximity to the end users, compared to say, from Argentina.	Thank you for your comment.
P17	I have reviewed Lithium Americas mining plan and it seems that they have covered all the bases while protecting the environment with after-mining reclamation.	Thank you for your comment.
Comment Letter From Terry Scott (Email #5)		
P18	As a Nevadan, property owner, and Sportsman utilizing the Kings River Valley I am very opposed to the possible Lithium mine being proposed for Thacker Pass.	Thank you for your comment.
P19	A mine in this area cannot help but to have a detrimental impact to this scenic and spacious area. Additionally it will bring never before seen numbers of people, dust, noise, heavy equipment, and traffic to an area the is not in position as far as infrastructure to handle the aforementioned.	Thank you for your comment.

Comment #	Comment	BLM Response
P20	The quality of life we enjoy as property owners, the fragile ecosystem, air and water quality will be damaged, and the beauty here will be ruined forever. Please do not allow this to happen.	Thank you for your comment.
Comment Letter From Kenneth Theiss (Email #6)		
P21	I am writing to you in regards to the proposed Lithium Mine at Thacker Pass in Nevada Myself and my family are completely against this. As an avid outdoors person and hunter as well as a very active member of the Humboldt Hunting Club in Kings River, this area has already seen such a huge increase in pressure it has taken a real toll on the entire area around Kings River Valley and Orovada. This is not in the best interest of this community or the people of Nevada.	Thank you for your comment.
P22	This area also has been devastated with fires that the BLM ignored and let burn for days before putting any resources on it and decimated thousands and thousands of acres. Now they want to decimate another huge area that has NOT burned and destroyed vegetation for wildlife habitat? Not to mention the huge amount of traffic that will be put on Highway 95 and Highway 293 that were NOT designed nor safe for this increase in traffic, as well as the increased needs for infrastructure for our state and local agencies who already are struggling to handle what we already have and in no way can handle more no matter what they promise to do for the community!	Thank you for your comment. Potential project related off-site road modifications are the jurisdiction of NDOT. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations.
Comment Letter From William Thomas (Email #7)		
P23	The Montana and Double H mountain ranges in Nevada for decades have provided recreation and an outdoor experience which has become rare in modern America. In their wild beauty they provide habitat for sage grouse and mountain lions. Thousands from Nevada, California, Oregon, and Idaho have treasured this remote mountain habitat. It is my belief that the impact of a lithium mine as described will destroy this rare area.	Thank you for your comment.
Comment Letter From Patrick Gray (Email #8)		
P24	We am writing to express support for Lithium Nevada's Thacker Pass project. The Humboldt Development Authority has been aware of this project for several years and is pleased with the economic diversification and benefits it will provide to Humboldt County.	Thank you for your comment.
P25	Humboldt County is highly reliant on precious metals mining and agriculture to drive its economy. While Lithium Nevada/Thacker Pass is a mining and manufacturing company, its products will sell on a different market than gold and silver and will help balance out the fluctuations in county revenues linked directly to the precious metals markets. Moreover, the Thacker Pass project has the potential of attracting additional economic development to the region. We have already had interest from downstream users of the high quality lithium chemicals that Lithium Nevada will produce. We look forward to more battery-related businesses locating in and around Winnemucca.	Thank you for your comment.

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P26	This project will bring much needed jobs that will provide for high standards of living. During its first phase of operation, Lithium Nevada will employ roughly 300 people at salaries averaging $85,000 per year-nearly twice the state average salary. In addition, the project will create another 175 jobs to provide goods and services to the mine.	Thank you for your comment. For operations, LNC expects to hire approximately 183 employees for Phase 1 and approximately 313 employees for Phase 2. (EIS Section 2.2.2; PoO Section 3.3.5, Table 3-2.) Annual average wages for direct employees are estimated to be over $73,000 as described in Section 4.11 Social and Economic Conditions.
P27	In order to help ensure the workforce Thacker Pass needs will be available when the operation start s, Lithium Nevada has helped found and fund the BuildNV program that we helped initiate through Great Basin College in Winnemucca. This program recently started providing essential construction skills to interested individuals in Winnemucca, McDermitt, Lovelock and other surrounding communities. We are pleased to see Lithium Nevada step up and address this workforce development need.	Thank you for your comment.
P28	Their efforts to assist our community don't stop at training prospective employees. Lithium Nevada has become an active member of our community supporting our local schools, the Food Bank, Winnemucca Domestic Violence Services, the Great Basin Sagebrush Restoration Fund and more. They have also become community supporters of the Fort McDermitt Indian Tribe by purchasing a van for their Head Start program and to provide transportation for tribal members to education opportunities in Winnemucca.	Thank you for your comment.
P29	Lithium Nevada has already proven to be a good addition to Humboldt County and we look forward to the construction and operation of Thacker Pass, which will provide profound benefits for Humboldt County.	Thank you for your comment.
Comment Letter From Edward Bartell (Email #9)		
P30	BLM is rushing the Thacker Pass Lithium EIS under the "Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals"	This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P31	I am providing substantial documentation (attached), derived from Lithium Americas's (Lithium Nevada's parent company) own informational materials; This attached documentation shows this proposed mine is in fact directly contrary to the "Critical Minerals Policy".	Lithium Nevada is a domestic corporation registered in the State of Nevada. This issue is outside the scope of this document and the decision to be made.
P32	Lithium Americas is a Canadian Company. Lithium Americas has a history of entering into "Off-Take" agreements in exchange financing with Ganfeng Lithium (a Chinese Company) and Bangchak (apparently a Thai company) on their other mine in South America. According to these documents, Off-Take agreements obligate certain percentages of the lithium produced to be sold to certain foreign companies. Off-Take agreement have the effect of shutting US lithium battery manufacturers out of needed "critical minerals", and instead obligates lithium to be sold to certain foreign companies (See Attached 2019 Annual Information form dated March 13, 2020)	Lithium Nevada is a domestic corporation registered in the State of Nevada. This issue is outside the scope of this document and the decision to be made.
P33	According to the attached documents from 2018-2020, Lithium Americas has transferred an increasing share of their South American mine to Ganfeng Lithium, currently at 51% (see attached documents), and it is yet to produce lithium.	Lithium Nevada is a domestic corporation registered in the State of Nevada. This issue is outside the scope of this document and the decision to be made.

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	According to these documents, Ganfeng obtains an ever increasing share, in exchange for financing.	
P34	According to Lithium Americas's Informational Circular, Ganfeng owns 15,000,000 shares of Lithium Americas, in addition to the 51% ownership of their joint venture in South America. (See Attached). Ganfeng and Bangchak, also are afforded seats on Lithium Americas board in as a result of their ownership position.	Lithium Nevada is a domestic corporation registered in the State of Nevada. This issue is outside the scope of this document and the decision to be made.
P35	Ganfeng Lithium is a massive company. There is concern China is trying to dominate the lithium markets, at the expense of US lithium battery manufacturers.	This issue is outside the scope of this document and the decision to be made.
P36	As the Executive Order of December 20, 2017 Executive Order (establishing the critical minerals policy) Notes; "This dependency of the United States on foreign sources creates a strategic vulnerability for both its economy and military to adverse foreign government action, natural disaster, and other events that can disrupt supply of these key minerals."	Lithium Nevada is a domestic corporation registered in the State of Nevada. This issue is outside the scope of this document and the decision to be made.
P37	This mine is clearly contrary to the Critical Minerals Policy. BLM should thoroughly consider the impact of this mine on US business, and US citizens such as ourselves, rather than rushing approval to the detriment of US interests.	Lithium Nevada is a domestic corporation registered in the State of Nevada. This issue is outside the scope of this document and the decision to be made.
P38	This mine is will be utilizing a new process to extract lithium out of clay that does not appear to have ever been used before on a commercial scale. Given this is an experimental process BLM has an obligation to extensively analyze impacts.	All of the technology being utilized have established industrial histories. Putting them together to accomplish extraction of lithium from a clay-based ore is the groundbreaking aspect.
P39	Specifically this process will use enormous amount of imported sulfur. According to the Plan of operations, this mine will generate a maximum daily production of 5800 tons of sulfuric acid, in phase 2. The weight of sulfur within sulfuric acid is 32.693% of the total weight. Therefore generating 5800 tons of sulfuric acid would require burning 1896 tons of sulfur a day. Semis can haul about 50,000 pounds (25 ton). Therefore in order to generate this quantity of sulfuric acid will be importing 75 semi loads of sulfur a day, and burning it in a massive incinerator.	The sulfuric acid plant planned for Phase 1 would be capable of producing approximately 2,900 tons per day of sulfuric acid. The Phase 2 sulfuric acid plant would be sized to double LCE production and would be capable of producing an additional 2,900 tons per day of sulfuric acid. EIS Table 4.17. Chemicals and Reagents (Hazardous Materials) on Site indicates a maximum consumption of sulfur for Phase I of 340,247 tons per year for Phase I. Maximum consumption of sulfur for Phase II would be twice that of Phase I, 680,494 tons per year. LNC would be permitted to use this amount of sulfur annually for Phase II as indicated in the Mine Plan of Operations, hazardous waste storage permits, and other permits issued by regulatory agencies for the facility. Transport of sulfur to the Project site under Phase II would involve approximately 75 sulfur trucks per day. Text of the EIS has been edited for clarification.
P40	Burning this quantity of Sulfur and dumping the ultimate residue, from Sulfuric Acid, on public lands is going to have very substantial impacts. This is in addition to the impacts to groundwater and surface water, from the pit, test holes and production well.	The Thacker Pass facility Clay Tailings Filter Stack is designed to store the mechanically placed filtered tailings solids (filter cakes and sulfate salts) generated during lithium production. The CTFS is being designed as a zero-discharge facility as defined under Nevada regulation NAC 445A.385. "Zero discharge" means the standard of performance for the protection of surface waters which requires the containment of all process fluids. Drainage from the CTFS would not discharge to groundwater or surface water. The CTFS would

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		be fully lined with an HDPE geomembrane, underlain with a six-inch liner bedding material. The facility would include an underdrain collection system above the geomembrane to collect drainage from the stack. Drainage from the stack would report to the geomembrane lined reclaim ponds. Water collected in the reclaim ponds would not be discharged as part of the stormwater management system, but would be pumped to the processing plant to be used as make-up water for processing operations or would evaporate from the reclaim ponds.
Comment Letter From Jim Moser (ePlanning Letter #14)		
P41	My concerns about how the Thacker Pass Lithium Mine's Impacts on Our local area are many. #1 – Water Use by the Mine that will take away precious Water Tables from our Aquifer over time. We have seen the effects of mining on our water tables for years from mining. The static levels on my farm were dropped over 40' and as soon as the mine shut down, in three to five years or so, the static levels came back up with slow recharge close to previous levels. Farmers can't acquire more Permits for additional ground irrigation and this Lithium Mine will be worse for over use of our water.	Comment noted. The potential impact to groundwater levels associated with the proposed project was addressed in Section 4.3.1 in the Draft EIS. See Common Response Water-8.
P42	#2 – Air Pollution from Sulfur Products used to extract Lithium from the Ore. Sulfuric Acid, Sulfur Fumes, and other by Products of Chemicals such as the Uranium that is in the Lithium Area and how it will be sorted out and delt with, will pollute the air, possibly making living in the Odors and Radioactive Waste a bad Health Problem for many and a serious concern of mine would be Water Pollution and the impact on Area Wildlife, Fish and Pollinators! We use Sulphur as an Insecticide that kills by fumes. Nevada has more than 7000 species of Pollinating Insects of all types in our area and a lot of them we depend on for pollination our crops and plants. The Pollinating Insects in the proposed Lithium Mine area will be wiped out and never come back. Of the Pollinators in north Humboldt County, nearly 70% are ground dwellers. We have over 6 Species of Bumble Bees, Mason Bees, several types of Leaf Cutter Bees, Ground Bees of all sorts and hundreds of beneficial Insects essential to raising our crops such as Big Eye Bugs, Lacewings, Lady Beetles, Wasps, Hornets and Preying Mantis that live in the Thacker area! They are irreplaceable. Hunting, Trapping and Fishing will be a thing of the past as the mine starts up in Thacker Pass Area!	Airborne sulfur compounds at high concentrations can affect pollinator insects. For example, Ginevan et al. (1980) found that long-term exposure to SO2 at 1400 ppb reduced flight activity in sweat bees. Hillman (1972), as cited in Ginevan et al. 1980, found that exposure of honeybee colonies to SO2 at less than 500 ppb for 14 weeks reduced honeybee foraging activity and total colony weight gain. Project modeling results for long term (e.g., days to annual) average SO2 are not available; however, the results for shorter averaging periods suggest that maximum annual average SO2 concentrations due to the project could be in the 5-15 ppb range. At this level of impact, effects on pollinators from project related SO2 are not expected to be significant.
P43	#3 – Truck Traffic will become exponentially heavier and should be routed to SR-140 Via Coyote Point Rd or a new Road through Hog John and Sod House. We don't want or need it in Orovada. These Trucks will have to go through the slow farm Equipment Traffic and Local Citizens traffic that is always in our area. On top of the heavy Traffic is the danger of Chemical Spills through Accidents or Chemical reactions.	Approximately 60 to 100 one-way truck trips per day, predominantly between the transloading facilities near Winnemucca and the plant, would be made during Phase 1. During Phase 2, between 120 to 200 one-way truck trips per day would be required to support the Project through reagent and product shipments. Transport of hazardous materials is a common and appropriate use of public roadways, and all commercial transportation of hazardous materials on public roadways would be subject to NDOT and USDOT regulations.

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		Transportation of reagents and products would be conducted in accordance with U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA), NDOT, and Nevada Department of Public Safety standards and permitting requirements for road transport of hazardous materials, including requirements of NAC Chapter 459.975 Transportation of Hazardous Materials on Public Highways. Hazardous materials would be transported to and from the site using licensed hazardous materials transport vendors. Transportation of molten sulfur and other hazardous materials to and from the proposed LNC facility on public roads would be conducted by licensed transport vendors holding appropriate hazardous materials transportation licenses. LNC is developing proposed on-site roadway improvements in coordination with NDOT. These improvements are anticipated to include acceleration / deacceleration lanes on SR 293 at the entrance to the proposed mine site. These improvements would reduce traffic impacts and reduce the likelihood of roadway accidents from truck transportation of hazardous materials at the proposed LNC facility. Off-site road improvements on public roadways are outside of the BLM's regulatory authority and would be determined through consultation between the applicant and NDOT. PHMSA reported 366 hazardous materials incidents involving highway transportation of molten sulfur nationwide between January 1, 1990 and September 29, 2020, corresponding to approx. 12 incidents per year. The data provided in the PHMSA incident database are from PHMSA Hazardous Materials Incident Report Form 5800.1. Incidents reported in the PHMSA incident database included accidents occurring on public roadways and incidents related to loading and unloading of highway vehicles and related equipment carrying molten sulfur. PHMSA reported no fatalities involving molten sulfur transportation during this period and reported eleven incidents involving non-fatal injuries, the most recent of which occurred in August 2009. The remaining 10 reported injury incidents involving molten sulfur transportation occurred prior to January 1, 2000. In each reported injury incident, the injured individual(s) were equipment operators and other personnel, not members of the public. Considering the reported incident rate of approx. 12 incidents per year nationwide related to highway transportation of molten sulfur, the likelihood of an incident occurring at any specific location is low. Reference: U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA) Incident Statistics. Accessed September 29, 2020. https://www.phmsa.dot.gov/hazmat-program-management-data-and-statistics/data-operations/incident-statistics

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P44	#4 – Some other concerns of mine are the involvement of China in the Lithium mining and, as of late, there is information of a new "Forever" Glass Battery that will be used in Tesla Cars and all sorts of computer and phone packs in the near future! This may make Lithium Battery's Obsolete! the quantum glass or forever battery, a battery with enduring power can help solve all the issues that hold back the widespread use of electricity-powered devices. I am against this Mine coming into our area!	This issue is outside the scope of this document and the decision to be made.
Comment Letter From Edward Bartell (Email #10)		
P45	I respectfully request 45 days of additional time to comment of the Draft EIS. In support of this request I note that; 1) The online DEIS meetings did not offer technical experts to answer questions. Instead participants were told to ask technical question via email online. I have had trouble getting questions answered in the past. Therefore I only asked two questions within one email, hoping I would get an answer, to these simple, but highly important questions, that are fundamental to the entire process. Given conflicts within the DEIS about conflicting amounts of sulfur that will be imported into our community. I asked clarification on the maximum amount of sulfur that will be used on an annual basis in phase 2. Also I asked whether Lithium Nevada would be limited to that amount of sulfur use, or whether they could use dramatically more sulfur. Three weeks later I have yet to get a response to these critical questions so that I can understand the totality of the project, and knowingly comment on the DEIS (This email is included as attachment 1)	This NEPA process is being executed under the protocol set by Secretarial Order 3355. The sulfuric acid plant planned for Phase 1 would be capable of producing approximately 2,900 tons per day of sulfuric acid. The Phase 2 sulfuric acid plant would be sized to double LCE production and would be capable of producing an additional 2,900 tons per day of sulfuric acid. EIS Table 4.17. Chemicals and Reagents (Hazardous Materials) on Site indicates a maximum consumption of sulfur for Phase I of 340,247 tons per year for Phase I. Maximum consumption of sulfur for Phase II would be twice that of Phase I, 680,494 tons per year. LNC would be permitted to use this amount of sulfur annually for Phase II as indicated in the Mine Plan of Operations, hazardous materials storage permits, and other permits issued by regulatory agencies for the facility. Transport of sulfur to the Project site under Phase II would involve approximately 75 sulfur trucks per day. Text of the EIS has been edited for clarification.
P46	At the scoping meeting in Orovada, BLM assured residents that there would be a clear accounting in the DEIS of where waste products from all this sulfur processing would end up. In order ensure the community got answers to these questions I memorialized these concerns in my scoping comments submitted to the BLM earlier this year, as I noted at that time "BLM should require Lithium Nevada to provide a budget in the EIS showing where each of these chemicals/elements [sulfur and all other reagents] will be at the end of each year, and what form they will be in; Specifically including but not limited to 1) how much will be released into the atmosphere 2) how much will remain in the tailings pile 3) how much will be exported in the form of finished products 4) how much will be exported in the form of waste 5) how much will be remain elsewhere (and if so where). 6) how much will remain outside of containment, where it will have increased impacts on the environment."	Air emissions of SO2 and other air pollutants from facility operations are reported in EIS Table 4.10. Facility-Wide On-Site Operational Emissions and ambient air concentrations of sulfur dioxide (SO2) and other air pollutants are reported in Table 4.12 Estimated Maximum Ambient Concentrations for Project Operation. All modeled ambient air pollutant concentrations are within Nevada ambient air quality standards. The amounts of chemical reagents and fuels and fluids that would be used in production operations are reported in EIS Table 4.17. Chemicals and Reagents (Hazardous Materials) on Site and Table 4.18. Storage and Use of Fuels and Equipment Maintenance Fluids on Site including the annual consumption of chemicals and reagents and fuels and fluids and maximum quantities that would be stored on site at any one time. A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS. A summary table of the projected output and tailings pile constituents has been added to the EIS.
P47	All this imported sulfur (millions of tons over the life of the mine) is going to be transformed into other chemicals generally "sulfate salts". Certain sulfate salts break	Text of the EIS has been edited and Table 4.21 has been added for clarification to identify waste products that would be produced from the lithium sulfide

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	down over time into dangerous quantities of hydrogen sulfide, which stinks, and is deadly in high concentrations. Sulfate salts can also be formed with materials naturally found in the soil like uranium to form uranium sulfate, which is a highly toxic, a water soluble form of uranium. Incredibly at this very late date, I still do not have any answers as to how much of what chemicals are going to be dumped on the tailings pile, so we can analyze the DEIS and knowingly comment on the document. It is impossible to know the impacts of what specific chemicals will be on the environment and the community, when there is no disclosure as to what chemicals will be dumped on the tailings pile and in what quantities.	production process.
P48	Upon reviewing the DEIS, I found many documents that were relied upon to form the basis of conclusions of the DEIS, and to calibrate the model had been omitted from the available documents. As we read through the DEIS we find more and more documents that form the basis of conclusions have been omitted. I thank you for providing many of these documents, but I note that I still have a data requests for a cited documents that is still outstanding. (See attachment 2). Under NEPA I cannot knowing comment on this topic until I have all available documents that form the basis of conclusions and adequate time to review them.	This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P49	4) The most obvious thing that was omitted from available public materials was the model. The model forms the foundation of nearly every decision in the DEIS. Yet incredibly it was not available for public inspection, at the time the DEIS came out. In fact I had to request the model, from the BLM, and as you know; I was unable to receive the model until recently and it is in Groundwater Vistas format instead of the native Modflow USG format. The base model is Modflow USG, which is USGS peer reviewed open source software "freeware". Unfortunately it is saved in editing software Groundwater Vistas format. Groundwater Vitas is proprietary software. You gave me a link to a "free" version of Groundwater Vistas. However, this "free" version will not allow our hydrologist to view critical model details and inputs without buying this proprietary software. Therefore the model is of no value unless we buy the proprietary software, or get somebody to save it in native Modflow USG format. According to the link you provided the software will cost us $1,750 -$4,900 (depending on the version we need) just to get the software open and view what was done in the model. (See Attachment 3) Given that BLM's hydrologist appears to have Groundwaters Vistas, BLM could have saved the software in Native Modflow format for the public to view, instead of forcing the public to spend enormous sums of money just to view model inputs and calibrations. This severely limits the public's ability to knowingly participate in the NEPA process. The modeling is very extensive and complicated. Whereas, we have only recently received the model, mere days prior to the close of the comment period we cannot adequately view model inputs. A 45 day extension is imperative, for us to knowingly comment on the DEIS.	Comment noted.

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P50	5) It is critically important that the modeling be correct, and properly vetted. Groundwater is naturally protected by clay layers, within the proposed pit. The clay layers are going to be removed and naturally contaminated waste rock is going to be placed back in the pit where it will have direct contact with groundwater. Moreover removing this waste rock and putting it back into the pit will crush it, substantially increasing surface area, and increasing the amount of toxins that will leach out. I draw your attention to the following portions of the DEIS: "However geochemical characterization testing indicates that neutral pH drainage from the waste rock and coarse gangue material have the potential to generate leachate with concentrations of arsenic, antimony, fluoride, iron, magnesium, sulfate, and uranium that exceed NDEP Profile I reference values (i.e., based on the Nevada drinking water standards) (SRK 2020a, SRK 2020b)." (DEIS pg. 4-14). (emphasis added) "The concentrations of arsenic and antimony in the pit backfill pore water are predicted to exceed drinking water standards over the entire 300 years post-closure simulation period in each sub-pit area. The source of arsenic and antimony is waste rock (claystone/ash and ash) placed in the backfill (Piteau 2020a)." (DEIS 4-13) (emphasis added) According to the plain language of the DEIS water will be knowingly contaminated in the pit by knowingly and deliberately placing waste rock back in the pit where it is known it will leach toxins into the water. The justification for these extremely troubling actions is that the modeling says groundwater will only flow out of the pit at a rate of 1.1 gpm. "Although outflow from the West Pit Lake would have the potential to degrade groundwater quality, it is unlikely that this small amount of flow (1.1 gpm) would result in measurable degradation (new exceedances of groundwater quality standards) at a compliance point located downgradient of the pit." (DEIS pg. 4-22). This begs the question what if the model is wrong and digging out clay layers exposes old vents, fissures, or lava tubes, that will rapidly transport this toxic brew into the Kings River or Orovada groundwater basins? This would have catastrophic results on our communities. Moreover, if the modeling is wrong elsewhere it will not correctly show impacts to our water rights, and other critical waters on public and private lands. Denying meaningful public review of this model, by not allowing sufficient time to review the model, or providing the model in open source format to the public, is directly contrary to NEPA.	See Common Response WATER-5 (groundwater model integrity; and WATER-4 (groundwater degradation).
P51	6) The DEIS was released in the middle of harvest season, this denies this farming community the ability to meaningfully participate in the process, and thus an extension is warranted.	This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P52	7) The DEIS was released during the Covid-19 pandemic, this severely limited public involvement and denied us the ability to have basic questions answered by qualified BLM personnel as is noted above. And given the voluminous nature of this EIS an extension is warranted.	This NEPA process is being executed under the protocol set by Secretarial Order 3355.

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P53	8) If we are not afforded an extension so we can meaningfully and knowingly participate in the NEPA process, we reserve the right to raise substantial new issues in future proceedings.	This NEPA process is being executed under the protocol set by Secretarial Order 3355.
Comment Letter From Eddie Booth (Email #11)		
P54	Good day to you and thank you for the opportunity to respond to the Environmental Impact Statement for the Thacker Pass Lithium Mine Project (TPLMP). As a lifetime Nevada resident and Humboldt County resident since 1978, I am a retired Humboldt County School District administrator/teacher/coach, and currently a licensed Realtor in our community, I was asked to review the economic impact of the TPLMP EIS as it pertains to our community, especially housing. After review of the written economic advantages of the addition of this mine and processing plant in Humboldt County, it appears that upon a successful completion, as the EIS is very confident with the data provided, there will be significant financial impact on our state, county and federal government(s) as a result of taxation, not to mention the side effects of the personal income and construction activity will have on our local economy.	Thank you for your comment
P55	With this being stated, my biggest concern is the actual housing availability to complete the intentions of the study, where the specific language within the EIS indicates, "will" be done and "will" begin, as if it is a definite fact. This is a vision that is yet to be seen. The interpretation of this language is that there will be "NO PROBLEM". I believe there is a major problem with the perception within this report regarding housing. The EIS true forecast of the future housing issue is unfounded and unpredictable at best. The current housing market is reality, it is "wild", as inventory has decreased and thus the LAW OF SUPPLY AND DEMAND is now in effect. The price of homes are skyrocketing where the price per square foot of stick construction re-sale homes has surpassed the $200/sf valuation, with manufactured homes just a bit lower. This low inventory pricing is eliminating want-to-be homeowners out of the market, not to mention those who do purchase a home, having a low equity investment in their respective homes, if home the market prices were to decrease. There is anticipation of some new builds, primarily manufactured homes, which is not on the approval list for some home lenders. New home construction is needed and welcome, as long as the quality of the infrastructure and local government controlled growth expectations for streets and amenities do not decline to accommodate the housing urgency.	Thank you for your comment. As discussed in Section 4.11.1, Humboldt County's 2016 vacant stock was more than double LNC's highest expected demand shock. Thus, it is expected that Humboldt County would be able to absorb the new population and housing demands. During the construction phase, contractors are anticipated to depend heavily on temporary housing at Winnemucca hotels, the existing man-camp, and RV parks.
P56	In conclusion, I anticipate an increase in home(s) inventory in our county, but not confident it will meet the initial demand, especially with the housing competition the gold mining will have on the overall availability as a result of the price of gold. The number of new build homes is and will be very minimal due to the skilled workforce in our area, even with future placement of manufactured housing, family housing will be hard to find. A roof over someone's head may be the way of the old West, as	Thank you for your comment. As discussed in Section 4.11.1, Humboldt County's 2016 vacant stock was more than double LNC's highest expected demand shock. Thus, it is expected that Humboldt County would be able to absorb the new population and housing demands. During the construction phase, contractors are anticipated to depend heavily on temporary housing at Winnemucca hotels, the existing man-camp, and RV parks.

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	there may be "mine camps" from Winnemucca to Kings River Valley. Whatever way the housing dilemma works out, I have a feeling that the "KIND" personality of our community will remain the same with the Thacker Pass Lithium Mine Project.	
Comment Letter From Anne Macquarie (Email #12)		
P57	On behalf of the Toiyabe Chapter of the Sierra Club and its nearly 7,000 members in Nevada and the Eastern Sierra Nevada, we are submitting these comments to the Bureau of Land Management on the Thacker Pass Lithium Mine DEIS. We have a long record of dedication to protecting our public lands for current and future generations.	Thank you for your comment.
P58	The Sierra Club is also intimately involved with making the transition from fossil fuels as the leading energy source for our nation (and world) to renewables as the energy source in order to reduce GHG emissions. Battery backups for our renewable sources of electrical energy and batteries for the transportation component of our energy usage are crucially important factors in this transition. At present, the most promising and proven batteries use lithium-ion (Li-ion) batteries. Production of these batteries will certainly grow tremendously in the decades ahead and put high demands on lithium mining around the world. In Nevada the one lithium mine of the US has operated in Clayton Valley, Esmeralda County, for decades; and we are not surprised to learn of more proposals for lithium mining to satisfy the growing demand.	Thank you for your comment.
P59	Regardless of the importance of the energy transition and the consequential demand for lithium, the Sierra Club policy on mining this newly important mineral will not exempt those mine facilities from a careful examination. We are glad to be able to provide the following comments on the DEIS for one of Nevada's new lithium mines.	Thank you for your comment.
P60	We found the draft DEIS to be reasonably well composed and to be generally candid and complete in its presentation of the impacts on the environment. The amount of information assembled by the Thacker Pass drafting team is considerable and is reflected in the nearly $8M price tag for this DEIS.	Thank you for your comment.
P61	Process - Given the scope and size of the DEIS, we find that the 45-day comment period is too brief. We are especially disappointed in the scheduling of the two virtual meetings held to present the DEIS: the August 19 and 20 virtual meetings followed the release of the DEIS by nearly three weeks and already near the half-way point of the comment period. Thus, anyone who waited for the virtual presentations would have even less time to prepare meaningful comments on the DEIS. The process taken in this case seems to be a weak implementation of 40 CFR 1503.1 (Inviting comments).	This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P62	Layout of the DEIS - Under new CEQ regulations in 2020, the body of the EIS should be limited to "150 pages" (Final Rule 2020). This DEIS exceeds that by a few pages, but that structure forces much of the details to appear in the numerous appendices.	This NEPA process is being executed under the protocol set by Secretarial Order 3355.

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	Altogether then, the DEIS is really a document of several hundred pages, thus a challenge to making meaningful comment in 45 days. But there is more penalty to following the "150 pages" rule: the information is broken up between the body and the appendices such that all the relevant material is not together for a reviewer to consider. Shifting between the body and appendices is awkward and impedes meaningful comment. For instance, Appendix L contains the assumptions and methods used to assess all 17 categories of impacts in Chapter 4; this information would logically be placed at the start of each of those 17 sections in Chapter 4.	
P63	Piecemeal Approach - It is known that the applicant company has the claims to additional lands to the west and uphill from the present proposal. These claims are in higher quality, more important, wildlife habitat; and there is a concern that, once the project is developed, there will be a decision to develop this area as well. This type of piecemeal mine development has been seen in many previous operations in Nevada. What measures can be put in place to ensure there is not a repeat of that type of permitting? At a minimum, we think that such development should be considered in the "reasonably foreseeable future actions" portion of the cumulative effects analysis.	The scope of this EIS is disclosure and analysis of the effects of the Proposed Action and reasonable alternatives. Other locations owned or under control of the operator are outside the scope of this document.
P64	Scientific Units - Much of the DEIS contains quantitative data, and the use of English units throughout is mostly adhered to. But there are lapses; for instance, Table G.11 ("metric tons") and Appendix K, p. 5 ("metric tons"). Preparers of the final EIS should take care to make sure all quantities are in English units for the US reader.	The values in the EIS are discussed in English units. The values in Appendix G table G.11 have been converted to English from Metric. The tables in Appendix K are provided to the BLM from the operator and the BLM cannot adjust this text.
P65	There are 187 instances of the word "eagle" in the main document, while others are: deer - 4, pronghorn - 7, sheep - 5, GRSG - 61, pygmy rabbit - 15, total other - 92. Surely all other wildlife combined should merit at least as much discussion as the golden eagle. We find this disparity somewhat baffling. Although there may be no quick fix, perhaps the preparers can provide a rationale for this imbalance.	Thank you for your comment. As summarized under Section 1.5.1, this EIS was developed to meet NEPA streamlining requirements under Secretarial Order (SO) 3355 and implementing orders under Executive Order (EO) 13807. Key issues and resources identified for detailed analysis in this EIS were identified through the scoping process, and were discussed in greater detail. This EIS also analyzes the USFWS's decision to issue an incidental take permit for Golden Eagles under the Bald and Golden Eagle Protection Act. For this reason, additional analysis for Golden Eagles was included in the EIS.
P66	We basically support the Proposed Alternative (Alt. A). The reservations and changes stated in our Substantive Comments below, along with those of other commenters, should be addressed to develop the Preferred Alternative for the final EIS. We are somewhat wondering why Alt. B and Alt. C are even proposed. Was it pro forma, in that alternatives should be stated to give a range of possible actions? In this case though, it seems to be a worthless exercise. Alt. C (no backfilling) in particular is unacceptable in an environmental sense, as shown in Table 2.6, mostly because it leaves permanent pits as a scar on the land, with the near certainty of pit lakes developing and all their potential problems. Alt. C can be eliminated from the final EIS with no loss of diligence. Alt. B (partial backfilling) seems to offer an environmental gain in that an ephemeral wetlands is created. But this seems to be only a small offset to the impacts created during the life of the mine and to the	Thank you for your comment. Alternatives B and C were developed in response to comments on water quality received by the BLM during scoping from the public and cooperating agencies.

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	potential long-term impacts after mine closure. We do not regard Alt. B as an acceptable alternative.	
P67	We consider the proposal to construct and operate a battery plant to be speculative and outside the realm of operations to be approved. The viability of solid-state lithium batteries is unproven; especially their commercial production in an economically viable way is not yet known (see, for instance, this 8/14/2020 article). Although this proposed battery plant may not raise any additional environmental impact concerns, it does raise concerns about whether the applicants have a solid business plan. Does a mining company have the technical expertise to do this cutting-edge plant? The battery plant should be handled as an amendment to the Plan of Operations if the applicants do really find that it is viable at some future time.	Your concern has been noted. That facility was proposed in the applicant's Mining Plan of Operations, so it was disclosed and its potential impacts were evaluated in the DEIS. The EIS is not a decision document. The applicant has removed the proposed battery production facility from the Mine Plan of Operations, and this has been revised in Section 1.2, and Section 2.2.5.10. The Record of Decision will transmit the authorized officers determination of what can be implemented.
P68	Appendix. O lists 23 permits, mostly under NDEP. There is none for the sulfuric acid plant, which will reasonably have some air pollutants such as SO2.	Air emissions of SO2 from facility operations are reported in EIS Table 4.10. Facility-Wide On-Site Operational Emissions (tons/year). Major permits that would be required for mine construction, operation, and reclamation are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. Major permits identified in Appendix O include a facility Permit to Construct / Permit to Operate that would be issued by the Nevada Division of Environmental Protection, Bureau of Air Pollution Control (BAPC). The BAPC Permit to Construct / Permit to Operate would include operation of the sulfuric acid plant and other mine and processing operations and emissions of SO2 and other air pollutants from facility operations. Text of the EIS has been edited for clarification.
P69	Preparers should check whether the 2019 GRSG ARMPA is now applicable and revise text if needed.	Thank you for your comment. The 2015 GRSG ARMPA is still currently in effect.
P70	We note that, under the proposed action, dewatering at 50 gallons/minute of the pit would start in approximately 2055. This is equivalent to 81 acre feet per year — not a great amount of water. We further note that, according to Figure 2.3 in App. A, the water table is at about 400' below ground surface, and only a few feet above the deepest part of the pit. Is the economic recovery of removing this last saturated layer great enough to make sense of dewatering this very small volume of the pit. We suggest that the applicants propose instead to stop at the water table, or just above it, and avoid all of the issues entailed by dewatering.	Comment noted. The Proposed Action and Alternatives B and C would require mining below the water table to be economically feasible. The content of the comment is out of scope of the analysis of the Proposed Action and other action alternatives.
P71	The project is expected to be a net exporter of electricity…" This is a welcome result if it becomes true. However, we are more interested in the net energy flow of the operation of the sulfuric acid plant. Please describe any energy inputs (fuel) needed for the operation of the plant and their kWh equivalents so that we can assess whether the plant is a "net exporter of energy" rather than a "net exporter of electricity". Table 2-4 gives some clue as to the required fossil fuel to run the operations, but not explicitly for the sulfuric acid plant.	Off-road diesel fuel would be used intermittently in the package boiler for the sulfuric acid plant. The sulfuric acid plant package boiler would operate approximately four times per year for 72 hours each cycle (see EIS Table 2.4. Proposed Fuel and Chemical Storage footnote 1). Off-road diesel fuel consumption during package boiler runtime would be an estimated 300 gallons per hour. Total consumption of off-road diesel fuel for operation of the sulfuric acid plant package boiler would be approximately 86,400 gallons per year

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		(300 gallons per hour x 72 hours per cycle x 4 cycles per year). The sulfuric acid plant would not continuously consume off-road diesel fuel during operation. Text of the EIS has been edited for clarification.
P72	Consumptive water use is here estimated at 2,600 to 5,200 AF per year. This would be a good place to compare that usage to ~83,000 (2016) acre-feet/year of water use in TMWA service district (https://tmwa.com/wp-content/uploads/docs/your_water/2035WRP/2035_WRP_VolumeI_Abstract_Final.pdf, p. 11), or less than 5% of annual consumption in TMWA's service district. Also compare the mine's proposed consumption to the ~60,000 acre-feet/year of appropriated use in the adjacent Kings River Valley Basin, Rio King Sub-basin (http://water.nv.gov/DisplayHydrographicGeneralReport.aspx?basin=030A).	Comment noted. The paragraph referenced is intended to describe the water supply for the project. Analysis of effects to water quantity is presented in Section 4.3.1.1.1.
P73	The applicant proposes? up to 600 drill holes for the exploratory part of the project. This seems excessive and requires justification. Geologists in the oil and gas industry commonly construct cross-sections from widely spaced drill-hole information (well logs). Using the Exploration Plan area of 7,540 acres gives nearly 12 sq. mi. If 600 drill holes were laid out on a regular square grid of 12 sq. mi., then they would be spaced approximately 0.14 mi apart each direction, or approximately 700 feet. How many drill holes are located within the proposed pit area?	Commenter's calculations result in approximately one hole per 10 acres. To define a hard-rock ore body (very different from oil or gas) with reasonable accuracy typically requires holes spaced about 500 feet apart, or about three holes per 10 acres. Thus, this proposal is not unreasonable.
P74	By proposing only partial pit filling, applicants say that seasonal wetlands would be created. Although environmentally attractive, what geology and hydrology do they reference to support this claim? There being no wetlands now there, what is the reason for offering Alt. B? Restoration efforts should be aimed at simply restoring the land to its pre-disturbance character.	The EIS states that the operator anticipates a small area where intermittent seasonal ponding may occur. Whether or not this area would meet the formal definition of a wetland under the Clean Water Act is unknown at this time.
P75	Please state whether these dollar numbers are annual or for the life of the project.	Text has been revised per comment in Table 2.6.
P76	This discusses the Affected Environment. The document states, "Current land uses in the proposed Project area include livestock grazing, recreational activity, and mineral exploration." This area is also important to local and regional wildlife resources as habitat. Many species spend their entire life spans in the project area and others migrate to and from this area depending on their habitat needs. This is an important land use that was omitted from this discussion.	Text revised per comment in Section 3.3.
P77	under bullets: State the magnitude of the "maximum design earthquake" used in the Newfields (2019) analysis.	Text revised per comment in Section 4.2.
P78	It is stated that a "…groundwater flow model was developed…". Is this the same as the model used to get the results shown in Appendix P, as discussed in following paragraph? If so, that fact should be stated here.	Text revised per comment in Section 4.3.1.
P79	It is important to describe the impacts of these predicted drawdowns in relation to the actual water table depths. Given that the water table is already very deep in this area, the drawdowns at such large depths may not have much impact on surface vegetative	The depth to groundwater is highly variable over the potentially affected area and it is not possible to definitively determine which spring or stream may not be impacted. Therefore, as described in Section 4.3, the analysis

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	communities, springs, or streams. Although this relation is discussed in subsequent paragraphs, it should be stated here to frame the discussion.	conservatively identifies all perennial surface water resources within the projected drawdown area (plus an additional 1-mile buffer area) and has specified monitoring and mitigation measures to protect these resources. The BLM agrees that additional monitoring conducted over the mine life may provide sufficient data to demonstrate that some of these perennial water sources may not be hydraulically connected to the groundwater aquifer that would be affected by mine-induced drawdown.
P80	We ask that the use of any chemical treatment in dust control be justified in the light of this being a remote location with inhabited locations being few and far away from the project area. The tradeoff between somewhat more fugitive dust with water-only treatment against the impacts of including magnesium chloride in the treatment may favor simply water-only treatment.	Dust control is required primarily for two purposes: compliance with air quality permits and workplace safety. In the local climate watering must be almost constant, using substantial amounts of water and producing more greenhouse gases from the application vehicle(s). Chemical treatments often have much longer durability, therefore much longer re-application intervals. Sections 2.2.6 (Haul and access Roads) and 4.3.1.1 (Water Quality) of the Draft EIS discuss water and chemical treatment for dust control. Section 4.6.1.1 (Soils) discusses potential effects of increased dust on vegetation and soil. Section 4.8.1.1 (Rangeland Management) discusses potential effects of dust on livestock. LNC's ability to make a tradeoff between air quality and other impacts is limited because the project is required to control dust emissions to assure that particulate matter concentrations do not exceed the NAAQS.
P81	Recommended Mitigation and Monitoring: The document discusses potential mitigation for impacts to surface waters where flows have been reduced. The document states “Groundwater monitoring would serve as a warning system to trigger potential supplemental water mitigation to affected surface water features.” The document then goes on to add “Provide for flow augmentation if necessary to offset unanticipated effects to perennial surface water features located in the southern portion of the Montana Mountains (north of the pit).” Later in the section, the specific mitigation measure WR1 describes the specifics of the plan to monitor the ground water levels to hopefully predict impacts to surface flows before they commence. This section then states: “The report would describe any deviations from the original predictions, evaluate if changes in flow are attributable to mine-induced drawdown and propose modifications to the monitoring plan, as necessary. LNC would provide a detailed, site-specific plan to mitigate any affected perennial water source.” This mitigation feature provides no specific ideas for what actions would be taken to mitigate impacted perennial sources. How will the effectiveness of this mitigation be evaluated and how is the environmental impact of the loss of perennial addressed in this environmental analysis? As an alternative to supplementing surface flows with pumped water, it would be better to address the condition and resiliency of the existing surface water resources to provide a greater ability of the natural systems to adapt to potential changes. This would provide immediate benefit and	Comment noted.

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	long-term potential benefit to the wildlife resources that depend on these surface water resources.	
P82	The text says "…for a period of time in the post-reclamation period…" This needs to be more specific. Five years, ten years, or what?	The specific period will be determined as part of the Water Pollution Control Permit. Additional text added for clarification.
P83	The document discusses the impacts of habitat fragmentation. The document states "This displacement could result in the indirect effect of increased inter- and intraspecies competition for resources, and increased predation." This statement should also recognize that displacement would also lead to population decline as a result of the competition and increased predation.	Text revised per comment.
P84	This paragraph discusses existing water sources. The document states "All reclaim ponds and emergency ponds would be fenced in accordance with applicable NDOW regulations to restrict access to wildlife." Fencing is only effective for terrestrial wildlife. What is planned to protect volant species (birds and bats) from gaining access to the open solutions when water is present? This is particularly problematic at this site due to limited surface water resources in the vicinity. Any open sources would be very attractive to volant species and if the ponds contain solutions with potentially toxic contaminants, the ponds could be a source of mortality for volant species. This issue is addressed on the subsequent page where the document states "…mitigation measure SSS-2 would require LNC to install additional exclusionary devices, to prevent migratory birds, raptors, and bats and their prey from accessing water management ponds and minimize drowning or exposure to contaminated water sources." What measures are being contemplated? These measures should be included in the description of mitigation measure SSS-2 to provide some understanding of the potential effectiveness of the devices. Past experiences in Nevada has demonstrated many exclusionary devices are not effective at restricting access to ponds at other potentially toxic sites.	Thank you for your comment. All processing water would be contained inside of the mine processing facilities. No process ponds would be located outside. Stormwater management ponds would be located outside and would collect stormwater runoff from the Project area. These ponds would not contain any processing solutions or chemicals that could pose a threat to wildlife. Ponds would typically be kept dry. If an Industrial Artificial Pond Permit (IAPP) is required for this project, LNC would consult with NDOW to determine appropriate exclusionary devises, such as the use of bird balls or a HDPE floating pond cover, and those measures would be addressed in NDOW's IAPP.
P85	The document discusses the potential for direct mortality for birds though ground clearing activities. The document states "Direct mortality through nest destruction would be minimized through implementation of mitigation measure SSS-1, which would require LNC to conduct breeding bird pre-construction surveys for surface-disturbing activities occurring between March 1 and August 31." How would this activity protect the existing nest sites from ground clearing activities? Would ground clearing activities be stopped in the areas where active nests are discovered? How much of a protective buffer would be afforded active nests if the ground clearing was to avoid active nests? Would the buffer be large enough to ensure the active nests are not abandoned by the adults if the noise and disturbance is too severe? Surveys by themselves do not protect nests.	Text in Section 4.5.7 revised for clarity. Please refer to Section 4.5.7 for additional details regarding requirements for nest buffer distances, and protection measures for migratory birds. LNC has also developed a Bird and Bat Conservation Strategy that it would implement for the proposed Thacker Pass Project, which includes nest monitoring and avoidance measures, and additional mitigation measures to reduce impacts on migratory birds from Project related activities.
P86	The document discusses raptor nesting habitat. To protect nesting raptors the document states "To minimize risks of disruption to raptor breeding and nesting	Raptor nesting surveys conducted prior to the initial surface disturbance would allow for the application of temporal and spatial buffers on any nests identified

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	activities, recommended mitigation measure SSS-3 would require LNC to conduct raptor nest surveys prior to any initial surface-disturbing activities." How do the surveys protect nesting raptors? Is there some contemplated change in mine-related activities that would be protective of nesting raptors? If so, this information should be included in the discussion to provide an adequate environmental analysis of the proposed action.	as active at that time. Once nesting activity has been determined to have ceased, the restrictions would no longer be in effect and surface disturbance would be allowed to commence.
P87	The document discusses the potential risk of vehicle collision with raptors foraging for road kill. The document states "To reduce this risk, carcasses the size of a rabbit or larger (unless the carcass is a Bald or Golden Eagle) would be removed and disposed of, when feasible and safe to do so by LNC's trained environmental personnel." This activity may be in violation of state game regulations. The proponent would need to verify their personnel are permitted to be in possession of game animals without the appropriate tags and during the appropriate seasons. This issue should be included in the discussion in this section.	Thank you for your comment. Text has been included to state that "LNC's personnel would obtain all required permits to collect or remove wildlife carcasses from the appropriate agencies." The EIS text at section 4.5.1.1 (under "Raptors") has been updated to reflect that all state permissions and permits shall be obtained.
P88	The document discusses pronghorn impacts. The document states "The construction of Project facilities and the associate [sic] loss of habitat is likely to prohibit or impeded [sic] pronghorn movement between seasonal habitats." Prohibiting or impeding migratory corridors is a very problematic disturbance for big-game species. This seems contrary to the Secretary of Interior ORDER NO. 3362, which was created for "Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors" That documents states "This Order directs appropriate bureaus within the Department of the Interior (Department) to work in close partnership with the states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming to enhance and improve the quality of big-game winter range and migration corridor habitat on Federal lands…" Please discuss avoidance and mitigation actions to protect pronghorn.	LNC has incorporated design features into the Proposed Action to minimize wildlife habitat disturbance and loss to the greatest extent possible. Habitat would be incrementally lost over the life-of-mine, not all at once, and LNC would initiate concurrent reclamation in mine areas no longer active. Once the mine site is reclaimed, habitat would be resorted for big game species. In addition, a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation. The TAG would consist of the applicant, the BLM, the NDOW, the USFWS, and any other agencies or academic institutions as appropriate. Instruction Memorandum (IM) 2019-018 directs the BLM to include compensatory mitigation in all of the action alternatives in a NEPA analysis only when it is required as part of a state plan, program, or authorization. No such requirements for compensatory mitigation currently exist for big game species. GRSG conservation credits purchased by LNC through the SETT could indirectly benefit other sagebrush steppe species, such as pronghorn.
P89	The document discusses pygmy rabbits. The documents states "Suitable habitat does exist within the Project area, and the loss of suitable habitat from surface disturbance or degradation, and the potential for mortality under the Proposed Action could be a significant effect to local populations. Proposed mitigation measure SSS-5 presented in Section 4.5.4 would require LNC to conduct clearance surveys within delineated habitat prior to surface disturbing activities or removal of suitable habitat in order to reduce potential effects to pygmy rabbits from construction activities." Again, how does doing surveys mitigate the significant effects of the proposed action?	Thank you for your comment. Text revised for clarity.
P90	The document discusses "other potential effects" of the proposed action on burrowing owls. The document states "Mitigation measures SSS-6 outlined in	As summarized under Section 4.5.4, SSS-6: During Western Burrowing Owl nesting season (March 1 through August 31), pre-construction clearance

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	Section 4.5.4 would minimize direct mortality to Burrowing Owls and includes limiting disturbance during the breeding season, performing breeding bird surveys prior to ground disturbance, and implementing appropriate nest buffers to avoid breeding and nesting disruption." How large will the buffers be? Will they be adequate to protect the burrowing owl nest sites for the duration of the nesting season?	surveys following the Winnemucca BLM District's survey protocol would be conducted by a qualified biologist within the Project area in areas identified as potential Western Burrowing Owl habitat within the Project area. Survey results would be reported to the BLM. For active nests, an avoidance buffer, no less than 75 meters (250 feet), would be established and the buffer area avoided to prevent destruction or disturbance to nests/burrows until they are no longer active. The site characteristics used to determine the size of the buffer would be: (a) topographic screening; (b) distance from disturbance to nest/burrow; (c) the size and quality of foraging habitat surrounding the nest/burrow; and (d) and the sensitivity of the species to nest disturbances. Additional monitoring shall be conducted to ensure nesting Burrowing Owls have fledged the nest prior to disturbance. If no active nests are present within the area surveyed, implementation of the proposed disturbance would commence within ten days of survey completion. No changes were made to the document.
P91	Under SSS - GRSG the document discusses sage lekking information near the project area. The documents states the Montana 10 lek is active and within 0.96 miles of the project area. The text then goes on to say NDOW has seen lekking activity at a second location only 0.75 miles from the project area. Is the NDOW location not a lekking site? If birds are displaying mating activities, is that not lekking activity? The text then goes on to discuss the visual impacts to the Montana 10 lek but does not address the closer site observed by NDOW at 0.75 miles. Why not?	Thank you for your comment. GIS data from NDOW's most current species occurrence database (2020) was used to determine the location of GRSG leks in relation to the Project area. This GIS data indicated that the Montana 10 lek was located 0.96 miles from the Project area. Lekking activity is often concentrated in a specific area of a lek, however, GRSG may use variable locations within the lekking ground for mating displays. NDOW was a cooperating agency in development of the EIS, and assisted in providing information regarding GRSG use of habitat in the Project area. Although GRSG have been observed within 0.75 miles of the Project area, the lek is officially recognized to be located 0.98 miles from the Project area.
P92	The text discusses the amount of PHMA habitat being disturbed and then goes on to discuss the overall threats to this sage grouse PMU. The document states "This unit has experienced recent population declines due to wildfire and fragmentation of suitable habitat (NDOW 2014)". The documents then goes on to state "…the most significant risk factor to the Lone Willow population is the large acreage of sagebrush habitat lost to wildfire and converted to invasive species such as cheatgrass as well as the immediate threat of loss of the remaining winter habitat for GRSG within the PMU". Nowhere in this analysis is a discussion of the loss of winter range. Please rectify.	Text revised per comment.
P93	The document discusses noise impacts to wildlife. The document states "More mobile wildlife species that inhabit the Project area, including bats, big game, and birds, may be able to vacate the construction areas and use adjacent habitat to avoid disturbance." This discussion does not acknowledge the potential consequences of this action by wildlife. The areas that the more mobile species vacate to will undoubtably already support similar wildlife. This will increase the competition for	Text revised per comment.

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	resources in the new locations, negatively impacting the fitness and survivability of all individuals involved. Not only is the noise impacting the immediate area, it may be adding to impacts in many surrounding wildlife communities. Please include this in the discussion.	
P94	The text says that a Technical Assistance Group would be formed to evaluate the success of mitigation. Group members are drawn from BLM, NDOW, and USFWS. Annual meetings would be held. This sounds like a logistics and personnel challenge for these over-burdened agencies. To give credence to such a group actually functioning, please report on how many such TAGs are actually functioning now in the Winnemucca District of BLM and whether minutes of their meetings are available to the public.	Comment noted. USFWS and NDOW are both cooperating agencies in the development of this EIS have committed to participating on the Project's Technical Advisory Group.
P95	The document discusses mitigation measures. It states "Recommended mitigation measure SSS-3 would require LNC to install exclusionary devices in their water management ponds to prevent raptors and other migratory birds and bats and their prey from accessing ponds and minimize drowning or exposure to contaminated water sources." What type of exclusionary devices would be utilized? Examples and descriptions of these type of tools should be included in the analysis to provide some level of understanding of the effectiveness of the devices chosen.	All processing water would be contained inside of the mine processing facilities. No process ponds would be located outside. Stormwater management ponds would be located outside and would collect stormwater runoff from the Project area. These ponds would not contain any processing solutions or chemicals that could pose a threat to wildlife. Ponds would typically be kept dry. If an Industrial Artificial Pond Permit (IAPP) is required for this project, LNC would consult with NDOW to determine appropriate exclusionary devises, such as the use of bird balls or a HDPE floating pond cover, and those would be addressed in NDOW's IAPP.
P96	The document discusses the residual effects of the proposed action. The document states, "Depending on the success of reclamation, fragmentation and the loss of shrub-dominated communities would represent a long-term change in wildlife habitat composition (i.e., shrub-dominated communities to grass/forb-dominated communities)." The potential to replace the shrub-dominated community with a grass-dominated community is almost assured with the proposed small thickness of growth media to be used in the reclamation of the mine disturbance. If a thicker layer of growth media were to be placed on the recontoured disturbances, there would be a greater potential for successful shrub re-establishment. We strongly suggest the applicant be required to use at least 12 inches of growth medium and, if possible, use up to 18 inches to increase the water holding characteristics of the site, thus providing a greater potential for shrub growth. Otherwise the site will be dominated by grasses and be of lesser value to the local wildlife.	Thank you for your comment. The LNC Growth Media Assessment Addendum_Rv_4-28-20 shows that growth media cover depth is anticipated to be 12 inches over all mining facilities. The total amount of growth media available for closure is approximately 200,000 cubic yards, which would not be sufficient to cover all reclamation areas with growth media to a total depth of 18 inches.
P97	The applicant claims that "…residual effects to wildlife habitat would include the permanent loss of less than 5 acres…". This seems like a very arbitrary statement. What evidence can be shown to back this claim? Is the loss concentrated in one area or just dispersed around? We know that habitat will be impacted, but the quantification is difficult. It may be better to just delete this sentence, or say "small in relation to the overall project area".	Thank you for your comment. The estimate of 5 acres of residual habitat loss was developed based on GIS data delineating permanent access roads and springs/seeps that would be permanently removed during active mining.

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P98	The document discusses soils in the project area. The first two sentences state, "Soils in the study area generally are fair to poor as a source of reclamation material, slightly to moderately susceptible to water erosion, and slightly to highly susceptible to wind erosion (LNC 2019a, Appendix G). Most of the soil at the project site by acreage is poor as a source of reclamation material, moderately susceptible to water erosion, and moderately highly susceptible to wind erosion." These two sentences seemingly say the same thing. Consider rewording them.	Text revised per comment.
P99	This table is misleading and almost certainly underestimates the effects on livestock grazing. The total surface disturbance area is small relative to the allotment area, but surface disturbances have impacts outside their actual area on livestock, much the same as for wildlife. Especially, if water sources for livestock are degraded or eliminated, the impact is substantial. A more nuanced analysis is required here to assess the probable impacts on livestock.	Table 4.7 discloses direct impacts to the number of AUMs that would be removed from surface disturbance. Other indirect effects are difficult to quantify and are therefore qualitatively discussed in the following paragraphs.
P100	This would be an excellent place to say that electric trucks could potentially greatly reduce GHG emissions from the project. The use of electric haul vehicles is already significant in the mining industry (https://www.cnbc.com/2020/07/16/mining-looks-to-electric-autonomous-vehicles-to-improve-efficiency.html). Electrifying its haulage operation would be no more of a stretch than the applicant's plan to have a lithium battery production facility. Table 4-10 indicates that the "Tailpipe" category is the largest source of emissions.	Commercialization of electric technology for heavy haul trucks used in mining is just beginning, and its feasibility must be evaluated on a site-specific basis. The operator has indicated that it will consider the feasibility, costs, and benefits of using electric trucks in support of its publicly stated goal to become a carbon neutral operation. Analysis of future mine truck technology is not within the scope of the EIS analysis.
P101	It is important to point out here that proper mitigation of the large travel distances for workers (for instance, from Winnemucca) is a van service for all desiring it. Not only will this save workers considerable costs related to travel but will also reduce GHG emissions. Van service is mentioned in the first paragraph of p. 4-90 under Noise, but it more logically should be mentioned here.	The operator anticipates providing bus (not van) service to mine staff commuting to the proposed Mine site as discussed on page 4-87 of the DEIS.
P102	Again, this is the opportunity for the applicant to make a statement about using electric haul trucks. This bullet apparently is directed at non-mobile equipment run with fossil-fuel energy.	See comment response P100.
P103	The timeframe for revegetation success is too short. Only under ideal conditions would "success" be obvious after 3 years. We only need to look at the nearby Ruby Pipeline corridor. Seeding started in 2009-2011, and most parts of the corridor through Nevada are still visible from satellite views in 2020. The final pipeline monitoring report, "Post-Restoration Monitoring Summary Report, Year One through Year Seven (2011 to 2018)", shows in Table 3.7 that only one-half the sites in the black sagebrush communities of Nevada had reached 25% of desired cover by the 5th year after seeding. Please provide a realistic estimate of recovery times or provide evidence that the claim made here is reliable.	Text revised for clarity.
P104	We note there is no discussion of KOP 5. Was KOP 5 omitted from the text for a reason?	Discussion of KOP 5 is included on page 4-96 of the DEIS

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P105	We recommend that Table 4.17 include a column indicating toxicity of these reagents and whether they are controlled by Nevada Division of Environmental Protection.	EIS Table 4.17 has been edited to address this comment.
P106	Remove "Mine" in this project name on the first line. This project (http://clearinghouse.nv.gov/public/Notice/2019/E2019-107.pdf) is in the Santa Rosa Range -- outside this Resource CESA and seems barely relevant, so consider deleting it entirely from the table.	Removing "Mine" would be incorrect. That is the name given by that project's proponent, as the exploration is being proposed in the vicinity of the historic National Mine. And the project is within several of the CESAs identified in the DEIS.
P107	The first sentence of this paragraph is awkwardly written. We suggest “impact” rather than “affect”. We suggest that it underscore the cumulative impact when the impacts of the proposed action is combined with the impacts of RFFAs.	Comment noted. BLM has chosen to consistently use the term "effect" throughout the EIS.
P108	The phrase “It is assumed that portions…” is used in the 4th line. This is very vague and should be quantified. Does BLM not know how much of previous mine-related disturbances have been reclaimed in the CESA? This seems like a basic land management requirement. Please get more specific.	Text revised to "Reclamation at past and existing operations within the CESA is ongoing and would continue until deemed satisfactory by the regulating agency."
P109	“…riparian zones have generally improved…” This claim needs to be substantiated. What is the evidence? We would welcome knowing with certainty that BLM management of grazing has had tangible positive effects.	This text has been removed from the document.
P110	The use of the words “anticipated” and “potential” in the first sentence of this paragraph are far too weak in light of strong evidence that nearly all land disturbance leads to the spread of noxious and non-native plant species (e.g., Hobbs and Huenneke 1992). Please reword this to be more factual.	Text revised to "predicted" instead of "anticipated" and "probable" instead of " potential for the".
P111	The source for this table is listed under it as “EPA 2019c”. The link given in the references (App. E) does not seem to directly lead one to data given in this table, and it is not apparent how to find this data. The reference adds that it was accessed in January of 2020. Perhaps EPA has made changes in its web pages since then? The applicant should review this link and change as needed so that the reader can get to the data directly. The bulk of emissions (over one-half of total) is listed as “Miscellaneous” in this table, and this seems suspicious.	"The link leads to the index page for EPA 2017 National Emissions Inventory (NEI) data. Links on that page lead to the individual data files.
P112	In reference to perennial streams in the vicinity of the project area, there seems to be inconsistencies between the maps created by the applicant in the DEIS and the Geotechnical Consultant. In Figure 4.3-21 in Appendix A, the map indicates portions of Pole Creek are perennial. This is not reflected in the Surface Water and Spring Location Map, Figure 2.5, in Appendix P, Part 8, which displays Pole Creek as ephemeral. Why do the figures not agree?	See Common Response WATER-9.
P113	where are the Figures located? There are 19 of them but they were not included in Appendix B. If they are included with the Figures in Appendix A, they should be using consistent figure numbers.	DEIS figures are provided in Appendix A. Appendix B is the operator proposed Mine Plan. Figures for the Mine Plan are available on the BLM Project ePlanning webpage.
P114	Proposed Reclamation Seed Mix: The mix calls for half of the seed mix to be crested wheatgrass seed. This level of seeding of a nonnative grass species is not likely to	The regulatory goal is reclamation, not restoration. The mine project site was, in fact, a crested wheat seeding established in the 1970's (check that date).

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	provide much opportunity for native species to become established at this site. It will simply be another crested wheatgrass seeding designed to support livestock grazing. It would be much better to take greater effort to reestablish a native plant community that will benefit the local wildlife resources. Such effort would satisfy "restoration" requirements while the proposed seed mix would not.	
P115	The document states "Suitable growth media will be placed on the surface to approximately six inches thickness and the area will be revegetated using the seed mix presented in Table 6-2." Six inches of topsoil may not be adequate to support the post-mining vegetative restoration. Depending on the moisture holding characteristics of the waste material underlying the six inches of growth media, there may not be enough moisture in the soil to support many of the species selected for the seed mixture shown in Table 6.2, particularly the deeper rooted shrub species. Again, the applicant is not providing much assurance that the post-mining landscape will be more than a very dry, nonnative, grass community. This is not very desirable for the native wildlife.	The minimum growth media depth is based on existing soil profiles from the site. Reclamation will meet regulatory goals.
P116	spell out "WD" — first time used	Text revised per comment.
P117	spell out "WRSF" — first time used	Text revised per comment.
P118	The phrase "various lithium products" is used. Can the preparers be more specific?	Incorrect page cited, 2-6 is correct. This is a general overview, known products are described in Sections 2.2.5.6, 2.2.5.7, and 2.2.5.8.
P119	Put "190.2 million tons" into units of CY as for the other two volumes of this paragraph.	Text revised per comment.
P120	Capital "F" in NewFields?	That is the proper spelling of their corporate name.
P121	Please describe here what a Population Management Unit is because it is the first time it appears.	The Nevada State greater sage-grouse plan is cited at this location. Readers are referred to that document for a technical definition of PMU.
P122	Break up or rephrase the long chain "applicant committed environmental protection design features".	Text revised per comment.
P123	Please add "Annual" to table caption to be clear.	These are not annual totals in Table 4.16. No change to text.
P124	Use "managed" rather than "operated" in 2nd line of this paragraph. The BLM manages land, not operates it.	Revised to "administered".
P125	The 2nd line of this paragraph has the typo "incudes".	Text revised per comment.
P126	Typo in the number "5.695" — should be 5,695.	Text revised per comment.
P127	The reference "BLM 2012" is listed in App. E as "BLM. 2012a". Delete the "a" in the appendix?	Text revised per comment.
Comment Letter From Wendelyn Muratore (Email #13)		
P128	I am writing to you as a concerned resident of Kings River Valley. As I know you are aware NLC plans to mine the lithium found in the area of Thacker Pass. I have grave concerns about their plans, or lack thereof, for instance: Pages 2-3 and 2-4,	Comments noted. Please refer to Section 4.3 Water Quality and Quantity for a summary of the potential impacts associated with pit dewatering (including the estimated timing when groundwater would be encountered); and water quality

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	Section 2.2.3.1 Pit Dewatering. This section describes that pit dewatering is not anticipated until 2055, and at that point, peak dewatering is anticipated at 50 gallons-per minute. What happens if dewatering must occur before 2055? Will the water coming from the pit be contaminated, with sulfur, arsenic, and uranium? Or is that only in the tailings pile that is only supposed to be toxic for 300 years?	impacts associated with seepage from the backfilled pit.
P129	Section 2.2.5.5 Lithium Processing Plant: Substantial deliveries of raw materials and chemicals to the facility. SR 293 is a two-lane road, hay trucks, and people living in Kings River use this state Route to get out to 95, NLC is talking about 60 to 100 one-way trucks, loaded one way, unloaded going out? Sounds like an accident looking for a lot of places to happen.	Approximately 60 to 100 one-way truck trips per day, predominantly between the transloading facilities near Winnemucca and the plant, would be made during Phase 1. During Phase 2, between 120 to 200 one-way truck trips per day would be required to support the Project through reagent and product shipments. Transport of hazardous materials is a common and appropriate use of public roadways, and all commercial transportation of hazardous materials on public roadways would be subject to NDOT and USDOT regulations. Transportation of reagents and products would be conducted in accordance with U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA), NDOT, and Nevada Department of Public Safety standards and permitting requirements for road transport of hazardous materials, including requirements of NAC Chapter 459.975 Transportation of Hazardous Materials on Public Highways. Hazardous materials would be transported to and from the site using licensed hazardous materials transport vendors. Transportation of molten sulfur and other hazardous materials to and from the proposed LNC facility on public roads would be conducted by licensed transport vendors holding appropriate hazardous materials transportation licenses. LNC is developing proposed on-site roadway improvements in coordination with NDOT. These improvements are anticipated to include acceleration / deacceleration lanes on SR 293 at the entrance to the proposed mine site. These improvements would reduce traffic impacts and reduce the likelihood of roadway accidents from truck transportation of hazardous materials at the proposed LNC facility. Off-site road improvements on public roadways are outside of the BLM's regulatory authority and would be determined through consultation between the applicant and NDOT. PHMSA reported 366 hazardous materials incidents involving highway transportation of molten sulfur nationwide between January 1, 1990 and September 29, 2020, corresponding to approx. 12 incidents per year. The data provided in the PHMSA incident database are from PHMSA Hazardous Materials Incident Report Form 5800.1. Incidents reported in the PHMSA incident database included accidents occurring on public roadways and incidents related to loading and unloading of highway vehicles and related equipment carrying molten sulfur. PHMSA reported no fatalities involving molten sulfur transportation during this period and reported eleven incidents

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		involving non-fatal injuries, the most recent of which occurred in August 2009. The remaining 10 reported injury incidents involving molten sulfur transportation occurred prior to January 1, 2000. In each reported injury incident, the injured individual(s) were equipment operators and other personnel, not members of the public. Considering the reported incident rate of approx. 12 incidents per year nationwide related to highway transportation of molten sulfur, the likelihood of an incident occurring at any specific location is low. Reference: U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA) Incident Statistics. Accessed September 29, 2020. https://www.phmsa.dot.gov/hazmat-program-management-data-and-statistics/data-operations/incident-statistics
P130	These are two examples of our concerns, the list goes on to water and air quality, effects to water rights, effects to Seeps and Springs, Public safety. Oh, and let's not forget NLC's claim that there are no residential areas within 19 miles of the mine, my home is approximately 7 miles from the mine site, and there are homes closer than mine. NLC has categorized our farming and ranching community as industrial, while we do have equipment on our farms and ranches, we also have families, children, and grandchildren we are raising here in the "industrial area",	Comment noted. Text regarding the nearest residences has been revised. The nearest "residential area" of Orovada has been revised.
P131	Kings River Valley isn't just a farming and ranching community, people come here from all over the state to hunt, fish, and recreate, Kings River is a well know spot for hunting big horned sheep, mule deer, and antelope. It's one of the most picturesque places in the state. Kings River will be desecrated by NLC, when all's said and done, they go back to Canada, and Kings River is left in ruins. They won't bring back the springs or pond that are dried up, or the rock formations that will be blasted away, the wildlife that has left the area because of all the activity going on in and around the mine. We won't recognize Thacker Pass when they are done. Our community feels like they don't have a voice in this matter, "its progress and growth, you can't stop it", well maybe so, but I at least am going to go down screaming.	Recreational activities would be directly affected in the Mine plan area as discussed in Section 4.17. The proposed Project would not affect public access to the Montana Mountain and surrounding areas. No direct impacts to Kings River valley is anticipated under the proposed Project.
Comment Letter From Edward Bartell		
P132	Thank you for the opportunity to comment on the Thacker Pass Lithium Mine Project DRAFT EIS. This Project is developed by Lithium Nevada Corporation (referred to as herein as LNC or LN), a wholly owned subsidiary of Lithium Americas (referred to herein as LAC or LA).	Comment noted.
P133	This project will have a substantial impact on our family business and the community, including but not limited to air pollution, groundwater depletion, groundwater pollution, impacts to the wildlife, and impacts to a species that is listed as threatened under the endangered species act. Given the weight of all these negative impacts, the only reasonable alternative to choose is alternative D the "No Action Alternative".	Thank you for your comment.

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P134	The Draft EIS contains very substantial errors of fact, fails to document quantities of waste products produced, fails to analyze or consider numerous impacts, and contains multiple fatal flaws. I pointed out several of these flaws in my written scoping comments, including clear factual errors in the underlying science and data. The draft EIS ignores my scoping comments and moves forward with these same factual errors.	A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS in Section 4.16.
P135	These flaws are so numerous and severe, the Draft EIS must be completely rewritten and re-submitted for public comment. As is noted below, Lithium Nevada Corporation (LNC), and/or their contractors have trespassed on our land and tampered with our equipment. This raises serious concerns relative to the good faith, veracity, ethics and credibility of the company and its contractors. This also calls into question the veracity and legitimacy of all science presented and relied upon for this Draft EIS.	The BLM has no information regarding potential trespass issues with the applicant's consultants and no evidence supporting the idea that hydrological data was collected incorrectly or inconsistent with industry accepted standards or current private property law.
P136	Despite trespassing on our lands to gather data, LNC has refused us access to LNC wells on BLM lands to validate LNC data. As such, BLM must perform independent research and data gathering funded by LNC to validate the conclusions of the Draft EIS.	The BLM has no information regarding potential trespass issues with the applicant's consultants and no evidence supporting the idea that hydrological data was collected incorrectly or inconsistent with industry accepted standards or current private property law.
P137	BLM must also take control of all future monitoring, ensuring all monitoring is conducted by 3rd parties not under the control of Lithium Nevada or Lithium Americas.	The BLM would conduct all necessary monitoring within the scope of its regulatory responsibilities. All applicant/operator conducted monitoring is reviewed and approved by the BLM.
P138	LNC is a wholly owned subsidiary of Lithium Americas, a Canadian Company. Lithium Americas largest share holder is Ganfeng Lithium, a massive Chinese company whom has a representative that sits on Lithium Americas board of directors as a result of its ownership interest. According to Lithium Americas financial reports, Lithium Americas has borrowed substantial amounts of money from Ganfeng Lithium and Bangchak. As security for the facility, "the Company [Lithium Americas] granted to the lenders a first priority security interest in all assets except those that represent its ownership interest in the Cauchari-Olaroz project [their South American Project]." (Lithium Americas Consolidated Interim Financial Statements for the Three Months Ended March 31, 2020 pg. 12) (emphasis added)	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P139	1) According to documents that were on BLM's website this project has been expedited under the critical mineral policy. The critical minerals policy seeks to limit foreign control over the means of production of critical minerals. Given that Lithium Americas is a foreign company with intimate ties with a Chinese company, and certain Chinese companies are trying to dominate the Lithium industry; this project is directly contrary to the critical minerals policy. BLM errored in expediting this project. This project will have major impacts that must be thoroughly considered regardless of how long it takes.	This NEPA process is being executed under the protocol set by Secretarial Order 3355. This issue is outside the scope of this document and the decision to be made.
P140	2) At a large community meeting in Orovada in the Spring of 2019, I raised concerns that this project would impact our stockwater wells. At that meeting a company	See Common Responses WATER-1 and WATER-3.

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	representative ridiculed the idea in front of the whole community, asserting that they had studies showing no impacts. It took me several months to finally obtain documentation from the company. From this documentation I was shocked to learn that LNC had monitored one of our stockwater well the "windmill well" during test pumping of their production well in 2018. When they monitored the windmill well during test pumping LNC documented a drawdown of the windmill well, proving a direct hydrologic connection. When LNC was representing that there were no impacts to the community, LNC was fully aware their own research has proved a direct hydrologic connection to our water supply.	
P141	3) In seeking the above hydrology information I wrote the LNC CEO, requesting that I be provided these studies. The CEO wrote me back informing me "You'll be pleased to know our operations will use very little water—approximately 2,500 acre-feet of well water per year." (See Attachment E) As I reviewed hundreds of pages of documents I subsequently learned that LNC was misrepresenting their project. In fact the 2,500+/- acre feet of water use is for a brief transitional period (Phase 1), for the majority of the project life they will be using roughly 5,200 acre feet of water. The draft EIS points out these facts; "Phase 1 would include construction of the mine facilities and mining and processing for the first 4 years of mine life. Phase 2 would occur from years 5 to 41 of the mine life…"(Draft EIS pg. es-1) "The consumptive water requirement for Project operations is estimated at 2,600 AFA during Phase 1, and 5,200 AFA during Phase 2." (Draft EIS pg. 2-12) (emphasis added)	Comment noted. The Draft EIS discloses the anticipated water use for the proposed Project in Chapter 2 and presents analysis of the potential effects upon water resources in Section 4.3.
P142	4) LNC has used BLM's scoping process to misinform the public. At both scoping meetings in February, LNC presented a power point, showing this same 2,500 acre feet of water use in phase 1 but with the phase 2 jobs. LNC clearly knows that the jobs cannot occur without increased water use, yet BLM allowed this misleading information to be presented. A power point with the same misrepresentation was presented by LNC at the Humboldt County Commissioners meeting on July 6, 2020. Two recent press articles in the Sierra Nevada Ally and the Elko Daily free Press, also quote LNC still using the 2,500 or 2,600 acre foot number.	Comment noted. The Draft EIS discloses the anticipated water use for the proposed Project in Chapter 2 and presents analysis of the potential effects upon water resources in Section 4.3.
P143	5) LNC representatives repeatedly trespassed on our private lands in order to monitor our springs without our knowledge or consent. Moreover, according to their own documentation, they dug holes on our private lands in order to take samples. Given this conduct, BLM must disregard all data gathered by LNC.	Comment noted.
P144	6) The data gathered via trespass on our private lands does not accurately reflect flows. According to the Baseline Data report (DEIS Appendix P part 7 document page 20, PDF pg. 388); The two springs Lithium Nevada monitored on our property had zero flow recorded for every month they monitored them (SP-035 SP-042). I am intimately familiar with these springs and they have standing water in them year around. SP-035 is a large spring complex that naturally irrigates about 15 acres.	See common response WATER-1. The Baseline Hydrologic Data Collection report (Piteau 2019a) identifies three springs in the vicinity of the property referred to by the Commenter, SP-023, SP-035, and SP-042. These springs and associated riparian areas are described in the Piteau Seep and Spring Survey Report Q4 2018 (summarized in Piteau 2019 included in Final EIS Appendix P). No surface flow was observed discharging from these areas at the time of Piteau's survey. There is a broader area of groundwater upwell on the property

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		which discharges as baseflow to Crowley Creek through a broad series of small channels with flow. This area was categorized separately from SP-035 because it visibly discharged into Crowley Creek and is consistent with water rights appropriated in this area. Baseflows from this upwell area and other gaining reaches of Crowley Creek were determined via stream flow monitoring at the Crowley Creek station and included in the baseflow calculations. Determining baseflow at a gaging station is appropriate because: i) baseflows represent the entire hydrologic system, not just the contribution located on the subject property; ii) stream monitoring provides high resolution temporal data for a more accurate calculation, and; iii) baseflows collected during fall and winter reflect true groundwater discharge conditions when the seasonal effects of run-on or evapotranspiration are negligible. Crowley Creek baseflow estimates were 492 gpm, which supports groundwater is gaining along Crowley Creek in the reach between the subject property and the Rock Creek confluence.
P145	Above is a google earth aerial view of SP 35 and SP 42 on our private lands (see letter page 4). Given that SP 35 and 42 upwell over a large area, flow would have to be estimated or measured by via evaporation/evapotranspiration. The purpose of establishing baseline flows is to determine if the project is having an impact on flows. Reporting zero flow on the baseline report grossly understates the flow. If the project reduces flow of SP 35 and/or 42, the baseline report's inaccuracies make it impossible to make this determination. These inaccuracies must be corrected.	This topic is addressed in response to comment P144.
P146	7) LNC could have easily said they "had no access to private lands", and omitted our springs from their report. Instead their representatives elected to trespass and inaccurately documented some springs while completely ignoring other springs. Crowley Creek goes dry on the upper end of our property. However, a series of springs in the Creek between SP-035 and SP-042 provide year around flow in the creek. LNC failed to document this flow even though this flow is directly between the SP-035 and Sp-042. Flow from these springs is not captured in the LNC Crowley Creek gauging stations since the creek goes dry in the summer prior to reaching the gauging station. The inaccurate reporting of SP-035 and Sp-042, and the omission of other flow creates a highly inaccurate and biased view of flow, that must be corrected in the final EIS.	This topic is addressed in response to comment P144.
P147	8) LNC representatives tampered with our equipment. In December of 2019 I advised LNC in writing, that we owned the pump in the windmill well. I have also repeatedly advised LNC that we need to be present when our water rights are monitored. On July 26, 2020 I found a transducer had again been placed in the windmill well, which I subsequently learned had been placed there by LNC representatives.	Comment noted.
P148	The above photograph (see letter page 5) is of LNC installation of the transducer in the well. The lid had been propped open with a large PVC fitting which could allow	Comment noted.

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	the well to be contaminated, by animals entering the well. Additionally, the PVC fitting was just sitting there, such that if it were to be bumped would fall down the well, this would litter the well and alter elevation levels. Given this highly unprofessional installation and improper conduct, LNC data should be disregarded.	
P149	9) In reviewing data we have found that the transducer in LNC's monitoring well PZ17-01 appears to be logging elevation data that is off by several feet. This data appears to have been inaccurate prior to LNC conducting the critically important pump test on the production well in 2018. LNC is calling this a "data slip", but they have not explained how this occurred. Thus we have no basis to know if the data has any validity or if the equipment has malfunctioned, or was improperly installed. LNC does not appear to have disclosed this "data slip" in any of their reports in the Draft EIS either. LNC has a duty to disclose data problems in their reports to the BLM such as "data slips", if this was not disclosed it raises serious questions about all of LNC's data.	The Commenter correctly points out PZ17-01 data required a datum correction. It is not unexpected that a program with over 100 groundwater monitoring locations will require occasional correction. The data was confirmed to be valid. The adjustment did not occur to data collected during the pumping test in October 2018, does not affect drawdown calculations, and the sensor was not malfunctioning. Only the elevation of the sensor placement was adjusted to match field observations. The correction has effectively no bearing on the groundwater impacts predicted in Quinn River.
P150	10) LNC's representatives have repeatedly trespassed on our private lands and had total disregard for our property. Despite this, LNC refuses to grant us access to their equipment on BLM lands to independently verify data. We have requested access PZ17-01 in order to verify why data is inaccurate, this request has been denied by LNC. LNC has refused us all access to their equipment except for a one time access to their production well PW18-01. When we accessed the production well we found it to be contaminated with oil, thus we could not obtain accurate measurements. We went through proper channels to obtain this access, and allowed LNC representatives to observe us. Therefore, they have no legitimate basis to deny us access, they simply don't want review of their data. Hence we have no basis to independently verify data. Given that LNC refuses us access on BLM lands, data cannot be independently verified, and all data must be rejected and independently verified by the BLM.	Comment noted.
P151	11) Upper Pole Creek is considered to be a Lahontan Cutthroat Trout occupied stream. Incredibly despite the sensitive nature of this stream; LNC failed to conduct any long term flow monitoring of Pole Creek. Instead they relied upon 4 one day measurements on two side channel springs and ignored the numerous springs that feed the main channel. LNC relied upon a spring in the upper reaches SP-050 which they recorded an average flow of 3.5 gpm and a spring lower down SP-036 with a recorded flow of 1.15gpm. For reference purposes the above flow amounts are roughly equivalent to the amount of water you would get out of your kitchen faucet. I have visited Upper Pole Creek on numerous occasions including several occasions in 2018. From my personal knowledge I know LNC's flow amounts do not accurately reflect Pole Creek flow. In fact in 2018 flow in the main channel was many fold greater than those LNC recorded. While I had no reason to measure the flow of Pole Creek in 2018, I am familiar with how to measure flow and have measured flow on other occasions. Therefore, I can distinguish the difference between a creek flowing	See Common Response WATER-1 and WATER-9. The DEIS identifies that two reaches in Pole Creek are perennial, but are separated by dry segments of channel (e.g., DEIS Figure 4.3-21). Additional stream surveys of Pole Creek were performed by LNC and Piteau personnel in February, June, and September 2020 (Piteau 2020c). The findings indicate: i) The Upper and Middle reaches of Pole Creek were flowing during each visit. Baseflows in the Upper reach ranges from 25-95 gpm as measured above the dry confluence. Baseflows in the Middle reach were 15 - 55 gpm. ii) A perennially dry segment resided between the Upper and Middle reaches. A second dry segment resides below the mouth of the canyon and springs SP-039. iii) Higher flows were observed in the June visit which ranged between 175 - 412 gpm. This period is a part of spring runoff and not representative of

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	a few hundred gallons a minute, and the tiny amounts of water LNC documented.	baseflow conditions. iv) Baseflows in Pole Creek match flow rates predicted by the numerical groundwater model, which were 65 gpm for the Upper reach and 32 gpm for the Middle reach (Table 3.10 in Water Quantity and Quality Impacts Report included in Final EIS Appendix P). No measurable impacts to groundwater discharge in the Upper and Middle Reaches of Pole Creek were simulated. Thus, the groundwater model and predicted impacts appear to have been verified by continued data collection. The BLM anticipates that additional stream flow data would be collected along Pole Creek as part of the comprehensive monitoring program outlined in WR-1 in Section 4.3.1.
P152	The above figure that I marked up is an excerpt out of the draft EIS Appendix P part 8 Figure 3.13. This marked up figure shows springs LNC presented in their Baseline Report, including Upper Pole Creek (See letter page 6).	Comment noted.
P153	In June of 2009, Nevada Department of Wildlife conducted flow measurements of Upper Pole Creek (the same stretch of stream discussed above). NDOW's 2009 GAWS report documented average flow in 2009.	The NDOW report documents flow in June 2009. These data represents a snapshot in time when the flow conditions were likely influenced by seasonal runoff. This data does not change the interpretation of baseline characterization of stream flow reaches for Pole Creek provided on Figure 4.3-1, in Appendix A that were based on observations during low-flow conditions.
P154	The above figure is an excerpt out of the NDOW 2009 GAWS report showing the various stations on Upper Pole Creek and an average 2 CFS (898 gpm) (See letter page 6). These flows documented by NDOW are over 100 fold greater than the flows recorded by LNC on the same reach. Clearly LNC's flow numbers do not accurately reflect flow on Upper Pole Creek and are in fact off by an order of magnitude. Data that is off by an order of magnitude has no scientific value and must be rejected in its entirety. BLM must address these massive inaccuracies in LNC's data and conduct independent research.	See Common Response WATER-1 and WATER-9. The time of the flow measurement on Upper Pole Creek may not reflect baseflow conditions, which is the groundwater component of flow to the creek, rather than the overall flow in the creek. Baseflow is identified in stream flow hydrographs as the groundwater contribution of flow to the stream. As observed in the streamflow hydrographs for Crowley and Thacker Creeks, stream flows regressed towards a lower baseflow value. See Figure 3.3, 3.6, 3.9 and Section 3.1 of the Baseline Hydrologic Data Collection (Piteau [2019a] included in Final EIS Appendix P). Stream flows measured during spring runoff and storm events are much greater than baseflow conditions. The additional information provided by the Commenter is informative, and in light of concurrent stream surveying of Pole Creek would indicate spring runoff conditions.
P155	13) LNC's consultants have engaged data manipulation, and misreporting of data. On the above mentioned Pole Creek spring SP-036. According to Seeps and Springs reports (Piteau 2018b, Piteau 2018c, Piteau 2018d, and Piteau 2019a). LNC's consultants reported four visits to SP-036 in 2018 the first quarter of the year they measured 4.6 gpm, on the second quarter it was too much water to measure, and quarter three and four it was dry.	During peak flows the baseflow from SP-036 cannot be discerned from surface water flow that is derived further upstream. Thus, the actual contribution from SP-036 is masked during this period. Subsequent visits to SP-036 indicate that the location does generate spring flow when the upstream channel is dry, but baseflow discharge is low and seasonal as characterized in the 2018 Q4 Seep and Springs Survey.
P156	The above figure (See letter page 7) is an excerpt out of Piteau 2018c, documenting the Upper Pole Creek Spring SP-036 in May of 2018. The site description says	This topic is addressed in response to comment P155. As previously mentioned, most of the flow at this time was surface channel flow and not

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	"Flow [significantly] higher than during [previous] visit, unable to [acquire] an accurate [measurement]". Of particular note is the "surveyor" is the senior hydrologist. This same hydrologist is the primary author of both the Baseline Data report, and the Impacts Report that form the central foundation of the entire DEIS. This senior hydrologist would have been capable of measuring large flow amounts, but failed to do so when there was significant flow.	representative of baseflow conditions.
P157	14) Also of particular note flow in the above photograph in the flow in the main channel is quite significant and appears to be in excess of 500 gpm. Ignoring this large flow volume creates a grossly inaccurate picture of total flow in Pole Creek. For reference purposes in May 2020 Dr. Powell measured 1.75 cfs (785 gpm) flowing in the main channel below Sp-036 (Dr. Powell's map point 27). The flows Dr. Powell and NDOW documented are vastly greater than flows reported by LNC. The above photographs shows the senior hydrologist was aware of very significant flows in Pole Creek but simply failed to report them in the data. This is extremely alarming.	Flows collected during April through June represent peak flow rates at most springs and streams in the Montana Mountains. They are not representative of baseflow conditions. However, this information is helpful to capture seasonal variation and interflow in Pole Creek. Please refer to the comment response to P151 for more thorough description of Pole Creek conditions.
P158	15) How did the senior hydrologist account for too much water to obtain an accurate measurement in SP-036 in the second quarter of 2018?	Please refer to the responses to comments P155 and P156.
P159	The above graph (See letter page 8) is included in appendix C of the Thacker Pass Project Baseline Hydrologic Data Collection Report (I obtained Appendix C via a data request to the BLM). The first quarter flow measurements are accurately reflected as 4.6 gpm, on the graph. But incredibly the second quarter data too much water to obtain an accurate measurement is recorded as ZERO GPM! The baseline report also includes the biased average for SP-036 of 1.1 gpm for this spring (See DEIS Appendix P part 7 pdf page 388 numbered page 20). Recording "too much flow to measure" as "zero" flow is highly unprofessional, raises serious credibility issues and highly biases the entire report.	Please refer to the responses to comments P155 and P156. The BLM agrees, the measurement taken in Q2 2018 should be revised to say "no measurement" as opposed to "zero" gpm. However, revising the average baseflow rate at SP-036 by omitting the Q2 2018 monitoring data (when "baseflow" conditions were not discernable from surface flow) produces an average annual flow rate of 1.5 gpm versus 1.1 gpm because SP-036 was documented to be dry during Q3 and Q4 2018.
P160	16) Given this demonstrable misreporting of data the entire report must be rejected and redone by independent 3rd parties hired by BLM and funded by LNC.	See Common Response WATER-1 (data adequacy).
P161	"17) LNC falsely reports SP-055 as ephemeral and provides highly inaccurate flow measurements.	The sample location for SP-055 is disclosed in the Baseline Hydrologic Data Collection report (Piteau [2019a] included in Appendix P) and was seasonally dry. Piteau did not locate overflow pipes or buried pipes and could not monitor discharge pipes buried across a 10-mile reach. Additional monitoring data provided by other sources may always be added to the database and considered. However, additional data at this location is not sufficient to change the impacts associated with mining at Thacker Pass Project because drawdown impacts identified by the 10-ft drawdown isopleth and within the one mile buffer area in the DEIS and Water Quantity and Quality Impacts study (included in Final EIS Appendix P) are several miles away from SP-055.

Comment #	Comment	BLM Response
P162	The dirt stock tank LNC has identified as the spring, is in fact a sink for water flowing out of SP-055 not a spring. When Dr. Powell and I visited the SP-055 in August of 2020 we observed water flowing out of the lower overflow pipe and into the dirt stock tank, yet no water was flowing out of the dirt tank. I visit SP-055 several times a year every year, I have never ever observed any spring upwelling in the dirt stock tank. Early in the season water routinely flows out of the overflow pipelines from SP-055 though the dirt tank and over the mini waterfall, where LNC measured flow. When all overflow pipelines are flowing I have measured flow of 60 gpm at the mini waterfall. In August 2020 Dr. Powell Measured the flow in the overflow pipeline at 3.5 gpm and the delivery pipeline of 12.7 gpm for a total flow of 16.2 gpm out of SP-055.	Please refer to comment response P161.
P163	18) LNC's consultants substantially misrepresent the hydrology of Rock Creek. The surface flow of Rock Creek doesn't originate in the Montana Mountains. The main flow of Rock Creek originates about 2.25 miles above the confluence with Crowley Creek in a series of big springs. The various so-called "headwaters" springs of Rock Creek identified by LNC's consultants, don't have any surface water connection with rock creek. Rock creek is made up of course cobble and surface flow rapidly infiltrates into the groundwater. Rock creek generally doesn't flow out of the mouth of the canyon, but instead flows every year lower on down the channel, via large springs as is noted above.	See Common Response WATER-1. Spring locations were selected from several sources including National Hydrology Dataset (NHD), topographic maps, areal surveys, and previous surveys. Additional springs were added to the dataset when identified, such as SP-057, SP-058, SP-09, SP-060, SP-061. A spring location in Rock Creek is not readily discernable from these data sources. Multiple reaches of Rock Creek were traversed at the beginning of baseline data collection for field verification. At that time there was no flow at or upgradient of the confluence with Crowley Creek or in the "mouth of the canyon."
P164	19) There is also a perennial spring within the Rock Creek channel that was omitted from LNC's study (Dr. Powell's Map point 33). The final EIS must properly document and measure the hydrology of Rock Creek.	See Common Response WATER-1. The groundwater model prepared for the impacts analysis (Appendix P) estimates groundwater discharge in Rock Creek to be 35 gpm. Thus, groundwater discharge is represented in the impacts analysis. However, additional spring information is welcomed and would be valuable for future model calibration efforts associated with monitoring and mitigation provided in the Final EIS.
P165	20) While focusing on the various "headwater springs" of Rock Creek; LNC totally ignored the major springs of Rock Creek which output very large volumes of water. Not one of these springs were identified or measured in any of LNC's reports despite the fact the combined flow of these springs is hundreds of gallons a minute in a typical year. In May of 2020 Dr. Powell estimated the flow of Rock Creek at the Crowley Creek road as .87 CFS (390 GPM). Concurrent with Dr. Powell's May visit I personally verified and observed the source of this Rock Creek flow was originating in a series of springs starting about 2.25 miles above the confluence with Crowley Creek.	Please refer to comment response P163. The location of this spring may be evaluated for inclusion in the spring monitoring that would be included under the proposed monitoring and mitigation measure WR-1 in Section 4.3.2 in the EIS.
P166	21) The above photograph (See letter page 9) was taken where the Crowley Creek Road crosses Rock Creek on 6/20/2020. Flow at this point in time was originating in springs about 100 feet above the road. Even though these springs are merely feet above the main road, LNC's consultants failed to document them.	Please refer to comment response P163. This data is welcomed. Discharge at the Rock Creek confluence is measured by the Crowley Creek gaging station. The flow measurement in May is not representative of baseflow conditions.

Comment #	Comment	BLM Response
P167	22) As one can see from the above photos of Rock Creek, there is established riparian vegetation, widely inconsistent with ephemeral flows. According to LNC's model that they provided us, the above springs within Rock Creek are in the zone of greater than 1 foot of water table drawdown, caused by groundwater pumping (via the LNC model). Given that these springs are fed by raising groundwater, any drawdown of the water table will affect flow. These springs must be documented and measured with a long term gauging station in order to establish flow patterns, document impacts, and properly calibrate the model.	Please refer to comment response P163 and P166.
P168	24) LNC falsely asserts that Pole Creek is ephemeral. In all figures and maps presented in LNC's Baseline Data Report, the entire reach of Pole Creek is labeled as ephemeral. According to the DEIS after the baseline data report was complete "A supplemental field investigation conducted on February 19, 2020, delineated three flowing reaches of Pole Creek (characterized as likely perennial reaches) separated by dry reaches (characterized as ephemeral reaches) (Piteau 2020b)". Nowhere in any of the documentation included with the DEIS is there any long term measurement of the main channel of these 3 flowing reaches. Given that LNC's consultants documented a vastly different view of Pole Creek than they had earlier reported; both LNC and BLM have a duty to conduct vast amounts of additional measurements (including long term gauging stations on Upper Pole Creek), when LNC finally discovered these obvious perennial reaches (that are Lahontan Cutthroat Trout habitat). Instead, BLM proposes to plow ahead with the grossly inaccurate data in the Baseline Data Report.	See Common Response WATER-9 regarding the characterization of Pole Creek.
P169	25) From my personal knowledge, Pole Creek has reaches that never go dry. LNC should have been aware of this fact. NDOW has documented Lahontan Cutthroat trout (LCT) in Pole Creek. The multi-year presence of LCT is obviously widely inconsistent with an ephemeral stream. The fact that Upper Pole Creek was initially labeled as ephemeral raises serious credibility issues about LNC's data and data collection methods.	See Common Response WATER-9 regarding the characterization of Pole Creek.
P170	26) Lower Pole Creek is also currently falsely labeled as ephemeral in the Draft EIS, and all associated documentation. Merriam Webster's dictionary defines an ephemeral stream as "a stream that flows only briefly during and following a period of rainfall in the immediate locality". Ephemeral streams by very definition don't have any meaningful groundwater storage. Excluding periods of extreme drought Lower Pole Creek flows much of the year and several months after major rainfall/snowmelt events. This false labeling of Lower Pole Creek must be corrected in the final EIS.	Please refer to response to comment P151. Lower Pole Creek at SP-039, SP-040, and SP-043 was observed to be dry during site visits in March 2018, August 2018, and October 2018 (Piteau Seeps and Springs Survey Report Q4 2018 summarized in Piteau 2019a in Final EIS Appendix P).
P171	27) On September 2nd of 2020 I observed Lower Pole Creek was still flowing and flowing a substantial distance. I traveled the entire flowing length of Lower Pole Creek on this date. Lower Pole Creek began flowing from the spring system in the vicinity of SP-039 all the way to the confluence with Crowley Creek a distance of 1.75 miles.	Please refer to response to comment P170.

Comment #	Comment	BLM Response
P172	The above photograph (See letter page 11) is where the Pole Creek is flowing across the main Crowley Creek road on Sept 2, 2020. Anybody driving on the Crowley Creek road can observe this late season flow, which is entirely inconsistent with an "ephemeral stream". Clearly both BLM and LNC could have made casual observances driving down the road and should have been aware this is not an ephemeral stream. Despite this, the report contains demonstrably false statements about Pole Creek "Pole Creek seasonally peaks in April and May and is dry by midsummer." (See DEIS Appendix P part 1 Pdf pg. 28 numbered pg. 12)	Please refer to response to comment P170.
P173	28) Likewise the reports contain false statement about the flow of Crowley creek "The stream [Crowley Creek] goes dry south of the confluence with Rock Creek during July to November, indicating there is no baseflow component of streamflow that far south." (See DEIS Appendix P part 1 numbered pg. 8). This statement is also important because LNC's consultants are making a false scientific judgement about baseflow in Crowley Creek. The above photograph (See letter page 11) was taken on September 2nd 2020 showing baseflow low down on Crowley Creek. This photograph was taken a short distance above the large diversion pipes on Crowley Creek, near Sentinel Rock, showing flowing water in Crowley Creek.	See Common Response WATER-1. Crowley Creek below the confluence with Rock Creek is a losing reach as shown by seasonally dry stream conditions. Flow in the channel does not necessarily equate to a gaining stream condition.
P174	"29) This perennial flow of Crowley Creek was not documented in any of Lithium Nevada's reports. In fact the Baseline Report falsely states "Thacker Creek is the only perennial stream near the Thacker Pass Project. All other creeks have ephemeral flow near the Thacker Pass Project, although the upper reaches of Crowley are likely perennial." Draft EIS Appendix P part 7 pg. 69). From my personal knowledge this section of Crowley Creek has year around flow in normal and wet years.	The Baseline Hydrologic Data Collection report (Piteau [2019a] included in Final EIS Appendix P) identifies Crowley Creek as a perennial stream above the Rock Creek confluence in Figure 3.1, and Section 5. The Water Quantity and Quality Impacts report (included in Final EIS Appendix P) reiterates this in Section 2.2.2.
P175	Prior to the drought of 2012 I had never seen these springs dry. When Dr. Powell and I visited this site in August, Pole Creek was combining with the flowing reach of Crowley Creek. By September 2 when I visited this reach again there was a dry gap between the water coming into Crowley Creek from Pole Creek and the baseflow lower down in Crowley Creek, clearly showing this is baseflow in Crowley Creek."	The applicant committed and BLM recommended monitoring for the projects is outlined in WR1, Section 4.3.2. Also, see response to Common Responses WATER-1 and WATER-6.
P176	30) Accurate long term gauging stations must be established on Lower Pole Creek and Crowley Creek near the historic corals (by Sentinel Rock), in order to obtain accurate baseline flow patterns for these reaches. These baselines should be obtained and then input accurate data into the model.	Comment noted.
P177	31) All the flow amounts we documented this year are less than what one would see in a normal year. We are in a drought year. These are abnormally low flows! On the left above (See letter page 12) is the Nevada US drought monitor, showing we are in a "moderate drought". On the right is the NRCS Snowtel and precipitation report for the Northern Great Basin, showing year to date precipitation is at 80% of normal.	The stream gage in Crowley Creek was located on the streambed, and had to be reset due to extremely high flow rates (in excess of 10,000 gpm) during April 2019. This did not affect data collected at that time because the stream was not dry and surface flows between 7,800 and 9,600 gpm continued to be gauged up until the data cutoff for the report on May 3, 2019 (Piteau 2019a Section 3.1.1 included in Final EIS Appendix P). The reset stream gage sits slightly (less than 4-inches or <0.1m) above the streambed owing to channel

Comment #	Comment	BLM Response
		erosion during high flows. A negligible quantity of water is not measured by the stream gage, just prior to the stream going dry. The lowest portions of the rating curve calculate little to no flow (Piteau 2019a Figure 3.4 included in Final EIS Appendix P).
P178	32) LNC's Crowley Creek gauge is not accurately recording flow. Above are photographs (Letter page 13) of the LNC's Crowley Creek gauging station, were taken on July 3rd of 2020. As one can see from the above photographs there is significant flow in Crowley Creek on this date, but this flow is going underneath the gauging station, whereas this gauging has not been installed in the lowest portion of the stream.	Low flows not captured by the stream gage are considered negligible. Flow in Upper Thacker varies diurnally during the summer due to transpiration by vegetation. Only a small quantity of flow (e.g., less than 2 gpm) is not measured by the flow gage during summer afternoons. Flows recover during summer evenings and mornings, and are recorded accurately. Flows are recorded accurately throughout the rest of the year. This does not affect baseflow estimates for Thacker Creek, which were derived when transpiration losses are minimal.
P179	33) LNC's Upper Thacker Creek gauging station is not accurately recording flow. The Upper Crowley Creek gauging station is installed in a poor location consisting of course cobble. This allows water to run underneath the station.	Comment noted. No issues or deficiencies are noted in association with the Lower Thacker Creek gauging station in the Baseline Hydrologic Data Collection report (Piteau [2019a] Section 3.1.3 included in Final EIS Appendix P).
P180	34) On LNC's Lower Thacker Creek gauging station, we have requested and have yet to be provided sufficient data to ascertain whether this station is accurate or not. The DEIS fails to contain such data. This station relies on rocks that were manually placed to increase water levels, if these rock have moved or water has eroded sediments around these rocks, the station is likely inaccurate as well.	See Common Response WATER-1.
P181	35) When gathering data it is critical to gather multiple year types. 2018 was a very dry year. On top of the data gathering inaccuracies noted above data is highly prejudiced by year type, and thus it doesn't accurately reflect flow on a normal year.	See Common Response WATER-1.
P182	37) LNC's consultants failed to document in reports how they arrived a flow amount when they measured flow (i.e. flume, bucket, flow meter, etc.). And there are conflicting flow amounts between various documents for the same measurement point. I have listed the most egregious errors in data that I located above, but there are several additional errors. Given these extensive errors, a complete audit is necessary to determine how LNC's consultants arrived at their data, and see if any data followed adequate protocols.	The Baseline Hydrologic Data Collection report (Piteau 2019a) describes where and how manual flow measurements were collected at each stream gauging site. Manual measurements were obtained by either volumetric measurement (e.g., using a trough or bucket at an upslope dam installed on Upper Thacker Creek) or wading stream channel cross-sections with a mechanical current-meter to develop velocity profiles, and applying these measurements to develop rating curves for each site. Low flows not captured by the stream gage are considered negligible. Flow in Upper Thacker varies diurnally during the summer due to transpiration by vegetation. Only a small quantity of flow (e.g., less than 2 gpm) is not measured by the flow gage during summer afternoons. Flows recover during summer evenings and mornings, and are recorded accurately. Flows are recorded accurately throughout the rest of the year. This does not affect baseflow estimates for Thacker Creek, which were derived when transpiration losses are minimal.
P183	38) These inaccurate flow amounts were also used to calibrate the model. Given that	See Common Response WATER-1 (data adequacy) and WATER-5

Comment #	Comment	BLM Response
	the model has been calibrated to data that is inaccurate by an order of magnitude. The entire project has no scientific basis.	(groundwater model integrity).
P184	39) Given the extensive and egregious errors in data, these errors must be corrected. Given the outrageous and unprofessional conduct noted above; BLM has a duty to conduct research independently of LNC, and to gather nonbiased data, rather than going back to the same well for more inaccurate data.	The points identified by the Commenter have been addressed in responses to comments (P144, P149, P155, P161, P177, P178) and Common Response WATER-1. In these cases, the expressed errors have been shown to: i) not actually be errors; ii) be routine challenges associated with field data collection, or; iii) have been minor errors bearing no meaningful effect to the analysis (e.g., datum correction to PZ17-01). The baseline data collection program included thousands of water level/surface flow data points, hundreds of water quality measurements, and hundreds of spring flow measurements. With such a large monitoring network minor corrections are anticipated, but these minor corrections do not justify invalidating the overall program. In cases where additional data has been collected (such as for Pole Creek or the addition of springs SP-057 to SP-061), this reflects the natural progression of long-term data collection for a project of this size. In no way do the minor corrections made to the baseline dataset substantially affect the outcome of the groundwater model and impacts analysis prepared for the Thacker Pass Project.
P185	40) Given that LNC's baseline data is highly inaccurate both the BLM and ourselves will be powerless to determine if flows are being depleted by the project. BLM has a duty to protect the public resource, and fully consider impacts under NEPA. The lack of accurate data denies the public the ability to knowingly participate in the NEPA process, and denies the decision maker (BLM's) the ability to analyze impacts.	This topic is addressed in response to comment P184 and Common Response WATER-1. The BLM has reviewed the hydrologic baseline studies prepared for the Thacker Pass project and deemed these reports complete for the purposes of describing the affected environment and evaluating impacts in the Final EIS. Additionally, as described under Measure WR-1 (Final EIS Section 4.3.2) BLM may require reasonable modifications and adjustments to include additional monitoring sites or increased monitoring frequencies based on the results of the proponent's proposed operational and post-mine groundwater and surface water monitoring program to ensure water resource impacts are adequately monitored and mitigated as necessary.
P186	41) I have also been told by longtime local residents that historical exploration activities have dried up springs in the Montana Mountains (by drilling unsealed boreholes too close to springs and allowing the water table to drop to a lower aquafer). These concerns are supported by Lithium Nevada's own research. According to Lithium Nevada's Water Quantity and Quality Impacts Assessment Report page 11 (DEIS Appendix P part1): "Likewise, the continuous drainage of WSH-17 [a test well] suggests the borehole intercepted the fault barrier and is slowly re-equilibrating to the downgradient hydrologic block." Current and historical exploration have clearly altered the hydrology as is noted above, the DEIS fails to address historical or future impact to springs by exploration and monitoring activities. The baseline spring data is also inadequate to document impacts from exploration and monitoring activities. This must be corrected in the Final EIS.	See Common Response WATER-1 and WATER-2.

Comment #	Comment	BLM Response
P187	42) According to Appendix P part 7 pg. 29 (pdf pg. 397) WSH-17 was 103.6' below ground surface (bgs), when this well was first drilled but has now dropped to 196' below ground surface. It appears LNC's exploration and monitoring activities have dropped the water table in the location of this well over 90 feet. By monitoring LNC is in fact altering the hydrology. The final EIS must address the current and potential future impacts of exploration activities, and monitoring wells.	See Common Response WATER-1 and WATER-2.
P188	43) According to Appendix P part 7 pg. 32 (pdf pg. 400) Table 3.7, WSH-17 was originally called PH-2, I obtained the well log #116572 for this well on Nevada Division of Water Resources website. According to the well log the static level was actually 73' when the well was drilled, not 103.6' as is indicated above. There is no explanation for this discrepancy.	See Common Response WATER-1 and WATER-2.
P189	44) The Final EIS must address and examine the extent other boreholes may have drained aquafers within the pit area. Exploration has occurred over several years, and it is unclear how well water levels were recorded in early core excavation. If earlier exploration drained the aquifer as has occurred with WSH-17, then when a new test well has been drilled a few years later, test wells will be monitoring hydrology that has been artificially altered. The DEIS clearly shows LNC monitoring activity has altered the hydrology on several wells. "Water levels are slowly equilibrating across blocks, as indicated in the water-level decline within the monitoring well network (WSH-11, WSH-14, and WSH-17). Equilibration has been observed to range from rapid, as in WSH-14 where water is cascading down the borehole, or a slow decline as in WSH17 which is asymptotically reaching equilibrium four months after drilling" (emphasis added) Appendix P part 7 pg. 41 (pdf pg. 409). Given the critical nature of pit lake drainage, BLM must audit existing LNC data and obtain independent research and not rely on Company Data, in the Final EIS.	See Common Response WATER-2.
P190	45) WSH-17 shows the potential to encounter water in much higher zones and much earlier in pit life. In reality the pit is not a monolithic lump of clay, rather the clay, contains sections of basalt and other materials that could transmit large volumes of water. Given the extensive volcanism, and complex geology there is a high probability of isolated small narrow features that will transmit water at higher rates, than the main body of clay. As clay is removed more and more of these features will be exposed. The final EIS must analyze the potential existence of features imbedded within the clay that may be small (and not detected by current exploration) but have the potential to transmit larger volumes of water once the sealing layer of clay is removed; including but not limited to a)ash layers b)narrow gravel layers b)lava tubes c)old buried stream beds, d)fissures e)faults d)steam vents e)lava flows.	Please refer to Common Response WATER-2 which addresses the specific effect at WSH-17. Water levels across the Thacker Pass project have been observed to be relatively steady (Piteau 2019a Section 4.2.1 included in Appendix P), indicating widespread drainage is not occurring. As for the potential to encounter high permeability zones during mining, the open pit setting at the proposed Thacker Pass project is not conducive to encountering high permeability features across large extents. The geologic setting of the pit area indicates low permeability claystone/ash were deposited as moat sediments, or lake sediments, along the margin of a caldera. Subsequent rhyolitic lava flows occurred during and shortly after moat sediment deposition. Lastly, basalt flows were deposited. The open pit would be surrounded by claystone which is not mined and underlain by volcanic tuff (see Figure 5.3 in the Water Quantity and Quality Impacts Report included in Appendix P). These materials, as determined through testing and monitoring, are not transmissive units.

Comment #	Comment	BLM Response
P191	46) LNC proposes to use 2 production wells, one of which has already been drilled. The second one has yet to be drilled. These wells are approximately 8 miles away from the open pit and production facilities. The water will be pumped to the mine site via a pipeline. After Crowley Creek exits the gap by Sentinel Rock, it enters an old alluvial fan. This old alluvial fan is characterized by extensive gravel deposits and contains at least 4 gravel pits. The above aerial photograph (Letter page 15) is from apple maps and was selected because it was taken prior to significant haying and clearly shows wet areas. As Crowley Creek exits the gap by Sentinel Rock, it is diverted into irrigation ditches. On most years the majority of Crowley Creek water is lost to groundwater prior to reaching private lands for irrigation. As water flows sub surface across this old alluvial fan, water reaches the clay barrier west of the Quinn River and is forced to the surface, forming a vast sub-irrigated meadows and wetlands on the lower end of the alluvial fan. LNC Production wells are on the North end of this old alluvial fan. As these wells create a cone of depression water will likely be directed toward the wells and away from the wetlands and sub irrigated meadows, this will cause us massive financial damages.	Recently LNC has implemented additional monitoring in coordination with a local landowner to proactively evaluate the potential to drawdown water levels at the toe of Crowley Creek Fan. Six (6) monitoring locations, including the Quinn River Production well have been instrumented with pressure transducers to monitor water levels (Piteau 2020c, Figure 4). Two (2) of these locations are drive points placed near areas of standing water. Localized infiltration from Crowley Creek is believed to be the source of elevated water levels along the toe of the alluvial fan. Infiltration at the headwaters of the alluvial fan daylights along the alluvial fan's toe. Local ranchers have indicated that the productivity of sub-irrigated land in this area is variable from year-to-year depending on flow in Crowley Creek. Because dewatering or production well pumping associated with the proposed Thacker Pass project is not predicted to affect flows in Crowley Creek, the source of water to this area will remain undisturbed. Locally recharged water levels in the Crowley Creek alluvial fan form a steep hydraulic gradient between the alluvial fan toe and the greater Quinn River alluvium (Piteau 2020c, Figure 4). The hydraulic gradient across the alluvial fan's toe is approximately an order of magnitude steeper than the hydraulic gradient between Home Ranch Stock wells. Steeper water levels across the alluvial fan's toe is indicative of lower permeability materials. Characteristic alluvial fan geomorphology is a "fining upwards" sequence, meaning smaller grain sized materials are deposited in the toe of the fan (i.e. clay, silts, fine sands) and larger grain size clasts are deposited at the head. The observed rapid infiltration of Crowley Creek at the head of the alluvial fan, and the expression of infiltration at the toe of the fan corroborate with the geomorphology. The Quinn River production well is located down-gradient of the Crowley Creek Fan in transmissive alluvial materials, particularly the coarse gravel beds located 60 - 120 ft below ground surface. Water production from the Quinn River well will be from the greater valley fill alluvial system. Drawdown is only predicted to be 6 - 8 ft within the Quinn River alluvium. While water levels in the alluvial fan will continue to be recharged, water levels in the Quinn River alluvium will be drawn down by pumping. This is anticipated to cause the hydraulic gradient to steepen across the toe of alluvial fan (correlated with believed lower permeability zone), because of increased drawdown in the Quinn River alluvium. As a result, a portion of sub-irrigated lands may be affected from Quinn River pumping. Groundwater modeling was designed to be conservative with respect to drawdown across the Quinn River Alluvium. The model does not incorporate alluvial fan hydrogeology nor localized infiltration from Crowley Creek. Continued monitoring, particularly at the margins of sub-irrigated lands as recently implemented by LNC is prudent to evaluate if any changes to water levels in the toe of the alluvial fan are a

Comment #	Comment	BLM Response
		result of pumping, or natural climatic variation. The recent expansion of LNC's monitoring network will be incorporated into the operational monitoring for the proposed Thacker Pass project.
P192	47) LNC has provided us documentation specific to our private lands and BLM well. LNC's own documentation clearly shows that water tables will drop significantly on our private land as well as BLM lands. The above table (Letter page 16) is an excerpt of a Technical Memorandum (FILE: 3898 TM20-01) that LNC prepared that is specific to our ranch (The full report is attached as attachment F). As one can see from the above table, LNC is predicting very significant drawdowns on our private lands the "Burns" field. These are "predicted drawdowns" in our 4 stockwater wells. The "critical drawdown" levels are the levels the well would be going dry. Lithium Nevada is trying to define "impact" as the well going dry, which is absurd. As Dr. Powell notes below, wells may dry up too. Keep in mind these are LNC's own numbers, clearly showing dramatic drops in water tables miles away from the production wells. If water levels in wells drop, so will water levels under the surrounding vegetation.	The BLM proposed monitoring and mitigation measure to address potential adverse effects to water rights is outlined in measure WR-4 in Section 4.3.2 of the Final EIS. Please also refer to Common Response WATER-8 and response to comment P191.
P193	48) The below photographs shows existing conditions in August of this year (Letter page 16). Photo at left is on our 960 acres of private lands, center photo is on our BLM Grazing Permit, photograph at right is nearby BLM uplands outside of the high water table. None of this land was irrigated this year. This is a low precipitation zone. In the drought beginning in 2012, most of the sagebrush died in the uplands here from a lack of water. This is what we have to look forward to when Lithium Nevada devastates our livelihood when they drop our water table. All photographs taken 8/9/2020.	The BLM proposed monitoring and mitigation measure to address potential adverse effects to water rights is outlined in measure WR-4 in Section 4.3.2 of the Final EIS. Please also refer to Common Response WATER-8 and response to comment P191.
P194	49) The green grass in the two photos above on the left are the result of a naturally high water table, The water table is so high on the BLM lands in the center photo there is often visible water on the surface early in the year. On our private land the water table is further down but deep rooted vegetation can reach the wetted zone above the water table. Any dropping of the water table will have impacts on vegetation. Clearly LNC's own research shows that water tables will drop significantly in this area. These impacts must be addressed, and mitigated in the Final EIS.	The BLM proposed monitoring and mitigation measure to address potential adverse effects to water rights is outlined in measure WR-4 in Section 4.3.2 of the Final EIS. Please also refer to Common Response WATER-8 and response to comment P191.
P195	50) The final EIS must include mitigation for damages to vegetation on our property and BLM lands as a result of dropping water tables. Transforming sub-irrigated lands into barren desert will result in hundreds of thousands of dollars of lost property values, and lost grazing value. As I have made it clear to both BLM and LNC these damages are very real and must be mitigated.	The BLM proposed monitoring and mitigation measure to address potential adverse effects to water rights is outlined in measure WR-4 in Section 4.3.2 of the Final EIS. Please also refer to Common Response WATER-8 and response to comment P191.
P196	51) As I have also pointed out to both BLM and LNC in writing, damages related to the production wells can be entirely mitigated by simply leaving the points of diversion where they currently are and piping the water an additional distance to the	The BLM proposed monitoring and mitigation measure to address potential adverse effects to water rights is outlined in measure WR-4 in Section 4.3.2 of the Final EIS. Please also refer to Common Response WATER-8 and response

Comment #	Comment	BLM Response
	mine site. This mitigation must be implemented by BLM if LNC is unwilling to provide other forms of mitigation.	to comment P191.
P197	52) As I also noted in my scoping comments given that the BLM has been made aware of the obvious damages to our property, if BLM authorizes this project without mandating requisite mitigation, BLM will be authorizing a constitutional taking of our property.	The BLM proposed monitoring and mitigation measure to address potential adverse effects to water rights is outlined in measure WR-4 in Section 4.3.2 of the Final EIS. Please also refer to Common Response WATER-8 and response to comment P191.
P198	53) In addition to the project taking our property BLM is unlawfully authorizing the destruction of wetlands, without mitigation. In addition to robust meadow grass, there is obvious wetlands vegetation, this will be impacted by dropping water tables. The above photograph (Letter page 17) was taken on 9/2/2020 showing tules growing within the above mentioned wetlands, this area also contains rushes and sedges that are typical of wetlands.	Please refer to response to comment P191.
P199	54) The EIS must consider impacts on wetlands. Wetlands are highly sensitive to water level drawdowns. While the Draft EIS considered impacts to wetlands that may be dug up by actual mining, the Draft EIS failed to consider the impacts to wetlands by drawing down of the water table. The above photograph (Letter page 18) is wetlands on Lower Pole Creek, these wetlands have lower pole creek flowing through them as well as slight groundwater upwelling. The Draft EIS is projecting water table drawdowns of roughly 4 feet in this area. Clearly these wetlands would be destroyed if these projected impacts come to fruition. (See Draft EIS Appendix P part 5).	Please refer to response to comment P191.
P200	55) In addition to affecting wetlands and sub-irrigated meadows near our private lands (the Burns Field), LNC's own modeling data shows that water levels will drop significantly below springs in Pole Creek. The graph below (Letter page 18) is a spring on Pole Creek that is near the confluence with Crowley Creek. This graph shows there will be a very significant drawdown to this spring SP-043 (See Draft EIS Appendix P part 5). This spring flows down into Crowley Creek providing late season stockwater for us in Crowley Creek. In addition, there are springs in Crowley Creek that are even closer to LNC's production well, LNC failed to identify these Crowley Creek Springs. LNC's own modeling data (noted above) shows very significant drawdowns, which will dry up these springs. These impacts must be mitigated.	The BLM proposed monitoring and mitigation measure to address potential adverse effects to water rights is outlined in measure WR-4 in Section 4.3.2 of the Final EIS. Additionally, baseline data from SP-043, SP-036, SP-039, and SP-040 indicate Lower Pole Creek is seasonally dry. Surface water interflow derived further up-gradient would remain unaffected, as discussed in Section 4.2 of the Final EIS. Monitoring will be located between the proposed Thacker Pass project and Lower Pole Creek during mining and post-closure. Any identified impacts would be subject to monitoring and mitigation measures described under Measure WR-1 (Final EIS Section 4.3.2).
P201	56) Below is another spring on Pole Creek SP-036 (Letter page 19) showing a significant impact from mining activities (See Draft EIS Appendix P part 5). We have a stock watering water gap right below this spring SP-036 that will be impacted when the Thacker Pass Project dries up this spring. In actuality there are additional springs slightly above this area in the main channel that LNC failed to identify, which will likely be impacted as well. These impacts must be mitigated.	See Common Response WATER-6.
P202	57) Intermittent stream reaches that are improperly labeled as ephemeral provide critical water supplies for stockwater, wildlife, and even fish migration. Intermittent stream reaches are often highly reliable (i.e. a reach may always have water in June,	Comment noted. See Common Response WATER-6 monitoring and mitigations to address potential impacts to baseflow and BLM recommended measure WR1 in Section 4.3.2.

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	but not September). Wildlife and Stock use have become adjusted to these seasonal patterns. Dropping of water tables will have devastating impacts on stock and wildlife. With intermittent streams dropping of the water table is what causes them to go dry. Any additional drops caused by the Thacker Pass Project will have devastating impacts that must be mitigated.	
P203	58) LNC's own modeling data shows that there will be a 14 gpm decline in Lower Pole Creek and a 16 gpm decline in Lower Crowley Creek. (DEIS Appendix P pg. 51 pdf (pg. 71) As is noted above, lower Pole Creek flows into Lower Crowley Creek late season and we utilize this flow for stockwater especially in September, October, November and December. The DEIS tries to hide these impacts by falsely asserting that this flow is ephemeral. These declines in flow are not minor and in fact will often equate to 100% of the late season flow. These impacts to Lower Crowley Creek late season flows must be mitigated.	Comment noted. See Common Response WATER-6 monitoring and mitigations to address potential impacts to baseflow and BLM recommended measure WR1 in Section 4.3.2.
P204	59) Putting spigots on LNC's pipeline is not sufficient mitigation, whereas as is noted above in the graph for SP-043 and SP-036, it takes years for SP-043 to recover post mining and Sp-036 never recovers. When the LNC well shut down so will this water supply.	Comment noted. See Common Response WATER-6 monitoring and mitigations to address potential impacts to baseflow and BLM recommended measure WR1 in Section 4.3.2.
P205	60) The Draft EIS omitted most of our water rights. The following water rights should be included in the Final EIS analysis V00707, V01464, V11843, V11844, V11845, V11866, V11867, V11868, V11785, V11786, V11787, V11788, V11789, V11790, V11791, V11792, V11793, V11794, V11795, V11796, V11798, V11799, and V11800.	The water rights inventory used for the EIS analysis was updated to include additional water rights owned by Bartell Ranch, LLC within the portion of the within the Quinn River Valley, Orovada Subarea (Hydrographic Basin 033A) located within the water resources study area. Section 4.3, water resource figures provided in Appendix A was updated as necessary to identify these water rights and evaluate potential impacts for those water rights located within the predicted drawdown area.
P206	61) For each of the above water rights; the Final EIS should provide modeled drawdown levels, so an analysis of impacts can be made.	See response to comment P205.
P207	62) Many of the water rights noted above are springs that should have been included in the baseline seeps and spring report but were not.	The baseline surveys used for the project included both a seep and spring inventory and a water rights inventory. The water rights inventory was based on information contained within the NDWR water rights database. Water rights V11785, V11786, V11787, V11788, V11789, V11790, V11791, V11792, V11793, V11794, V11795, V11796, V11798, V11799, V11800, V11844, V11845, V11866, V11867, V11868 were filed between 9/2019 - 6/2020 after the water resources baseline report (Piteau 2019a) was completed. The water rights inventory was updated in October 2020 to include the recently filed water rights as described in response to comment P205.
P208	63) The DEIS errored in only considering modeled impact to ten foot (the 10 foot isopleths) and greater drawdowns. A one foot drawdown would likely have devastating impacts on wetlands an springs, there is no meaningful basis to limit impacts to 10 foot and greater drawdowns. With respect to the mine there is no	See Common Response WATER-3 regarding the 10-foot drawdown contour and the justification for establishment of the 1-mile buffer.

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	scientific basis of the arbitrary 1 mile buffer. The DEIS must consider impacts for what they actually are project to be; not arbitrary limits.	
P209	64) The below spring is the sole water supply for a stock and a domestic residence (Letter page 20). This landowner has no backup well or other source of water. This spring SP-028 flows about 4 gallons a minute, it is stored in a tank and provides ample water for this home. If water levels are dropped under this spring flowing a tiny amount of water, this is bound to dry up this spring (for graph see Draft EIS Appendix P part 5). The DEIS failed to consider or mitigate impacts to domestic water supplies from surface water.	Comment noted. See Common Response WATER-6 monitoring and mitigations to address potential impacts to baseflow and BLM recommended measure WR1 in Section 4.3.2. LNC intends to monitor groundwater levels between the Project and Lower Pole Creek to evaluate water levels during operation and post-closure. If the water supply is impacted LNC has committed to arrange to make suitable water available to the landowner as part of mitigation.
P210	65) LNC has filed for two production wells that they plan on using to provide water to the mine site; the Quinn River Production well, and the Quinn River backup well. The water rights are filed such that they can use either well, 100% of the time. Given the Quinn River Backup well could and likely will be used, the Final EIS must model and evaluate all potential impacts of this well. The Quinn River backup well is mentioned in the DEIS, but there doesn't appear to be any evaluation of the impacts, given it is a mile away, the impacts will likely be different.	The Proposed Action includes the Quinn Production Well and a backup production well that would be when the main production well is shut down. Both the main production well and the backup well would target the same or similar transmissive production zones. Cumulatively they would pump the same volume of water as that indicated in the DEIS. Drawdown simulated in the DEIS is representative of stressing the Quinn River alluvial aquifer at the proposed rates.
P211	66) According to Lithium Americas own Technical Report and Pre-Feasibility study Chevron performed uranium exploration in the area. The mining claims filed in this area were originally seeking uranium. In fact there was an operating uranium mine (the Moonlight Mine) a few miles to the northwest of the proposed Thacker Pass Project. Below is a map of documented uranium deposits (Letter page 21). Note how extensive the documented uranium deposits are in this area.	"LNC commissioned two additional studies in 2020 of potential impacts from uranium concentrations in waste materials including waste rock, gangue, and clay tailings (Piteau Associates 2020x; SRK Consulting 2020). Exploration at the Thacker Pass Project and surrounding McDermitt Caldera began in the 1980s by Chevron in search of uranium ore. Uranium mineralization found as a result of the Chevron exploration is not associated with lithium mineralization in the Thacker Pass claystone and is only confined to two spatially distinct zones of hydrothermal alteration in the Moonlight and Aurora prospects located ~15 km and ~40 km from the Thacker Pass Project, respectively (Piteau Associates 2020x). The geological processes that formed the lithium and uranium deposits are very different and spatially distinct. Consequently, the two metals do not have overlapping anomalies (SRK Consulting 2020). Radiological hazards associated with operation of the proposed Thacker Pass Project including potential exposure to Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) are assessed in Section 4.16 of the EIS.
P212	The above map (Letter page 21) is a google earth map with uranium deposits overlaid from USGS mineral data system. The USGS mineral data system provides data for known mineral deposits. The USGS also ranks the grade of the deposit, with "A" being the highest. The Moonlight mine is ranked as a grade "A" deposit. The Thacker Pass Prospect, Pole Creek Uranium Occurrence, and the Rock Creek Uranium Occurrence are ranked as grade "B", the second highest grade. The above map documents a very substantial number of uranium deposits throughout the area. It is not a small isolated deposit, but substantial deposits of anomalously high amounts of uranium over a very broad area. The impacts of uranium encountered must be	Comment P212 is a continuation of Comment P211. See response to Comment P212.

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	fully considered in the Final EIS.	
P213	67) It is of particular note that the "Thacker Pass Uranium Prospect" appears to be within the area of the open pit of the Thacker Pass lithium mine. In fact the Draft EIS notes Multi-element analysis found that uranium was enriched above average crustal concentrations in the neutralization solids. Multi-element analysis also found that uranium was elevated in approximately fifty percent of the oxidized ore feed and gangue samples. Similar trends in element enrichment were observed in the unoxidized ore feed and unoxidized gangue samples.(Draft EIS page 4-105)(emphasis added)" The massive amount of sulfuric acid that the Thacker Pass project will use (5800 tons a day) will leach and concentrate this uranium and radium. All the impacts of this concentrated radioactive material must be considered.	LNC commissioned two additional studies in 2020 of potential impacts from uranium concentrations in waste materials including waste rock, gangue, and clay tailings (Piteau Associates 2020x; SRK Consulting 2020). Additional multi-element analysis was performed on samples selected for humidity cell testing (HCT). Comparison between these samples and the average crustal values of elements found on earth indicate that uranium is only slightly enriched in some of the claystone/ash samples and is more often near the crustal averages. Analytical data are shown in Table 1: Geochemical Abundance Index (GAI) enrichment values for HCT samples in Piteau Associates 2020x. The CTFS is being designed as a zero-discharge facility as defined under Nevada regulation NAC 445A.385. "Zero discharge" means the standard of performance for the protection of surface waters which requires the containment of all process fluids.
P214	68) The draft EIS must calculate the total amount of uranium and radium that is expected to be encountered and where that uranium and radium will end up. Specifically the total amounts A) on pit fill where it may have direct contact with groundwater. B) On the tailings pile where it will bombard the liner with radiation, potentially causing leaks, or leaks for other reasons directing concentrated radioactive material toward the groundwater.	Summary Table 4.20 presents the amount of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS in Section 4.16.1.1.
P215	69) Given the extreme risks radioactive materials pose, and the extensive problems with LNC data gathering noted above; all uranium, radium, and radon evaluations must be done by 3rd parties not under the control of Lithium Nevada Corporation (or its parent company Lithium Americas). Additionally, all core samples and sample data must be independently verified to ensure they are correct and accurately reflect the project as a whole.	The Nevada Division of Environmental Protection (NDEP) requires use of approved third-party laboratories for environmental assessment of waste rock, overburden, and ore from mining operations in accordance with the NDEP Bureau of Mining Regulation and Reclamation requirements for Waste Rock, Overburden, and Ore Characterization and Evaluation (22 March 2019). NDEP requires mine operators and permit applicants to representatively evaluate waste rock, overburden, and ore for its potential to release pollutants to the environment and for its acid generation / neutralization potential pursuant to Nevada Administrative Code (NAC) 445A.396 and NAC 445A.414. Mine operations and permit applicants are required to use NDEP Division-Approved and/or Certified laboratories for assessment of waste rock, overburden, and ore. Reference: Nevada Department of Environmental Protection, Bureau of Mining Regulation and Reclamation Waste Rock, Overburden, and Ore Characterization and Evaluation 22 March 2019 https://ndep.nv.gov/uploads/documents/201903_WasteRockOvrbrdnOreChar.pdf
P216	70) Given that radioactive materials are heavy and extensive amounts of ore will be processed on a daily basis; the EIS must evaluate the amounts of radioactive materials that will become trapped and highly concentrated in low spots in processing facilities (i.e. leach tanks or pipes). Impacts of flushing these concentrates	All plant equipment would conform to OSHA regulations and operators would be OSHA-trained before entering work areas and would be aware of workplace hazards, including hazards related to Naturally Occurring Radioactive Material (NORM) and Technologically Enhanced Naturally Occurring Radioactive

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	out on the tailings pile must be analyzed. Specifically there is likely a potential for spots of the tailings pile to containing highly concentrated radioactive waste. Will this waste form dust or other exposure to people, stock and wildlife? The impacts of worker exposure to highly concentrated radioactive waste, and radon must be evaluated as well.	Material (TENORM) contained in mining and process materials. LNC would prepare Occupational Health and Safety Plans for mining and processing operations in accordance with MSHA and OSHA regulations. Process equipment will be operated and maintained to prevent accumulation of process materials in process piping and equipment. Multi-element analysis of material types including waste rock and pit backfill materials, ore feed stockpile, gangue stockpile pit backfill, and tailings impoundment materials (clay tailings, neutralization solids, and sulfate salts) show that, on average, all of the material types exhibit Geochemical Abundance Indices (GAI) values less than three for uranium, indicating although there would be uranium present that exceeds average crustal concentrations in some mining and processing materials, none of the materials that would be mined or produced would be significantly enriched in uranium. The multi-element analysis also considered common daughter products of uranium such as potassium, lead, and thorium. The analysis results show that even if all of these products were to be formed from the uranium, they are present at extremely low concentrations for all material types and would result in negligible release of associated radionuclide particles. The results of the multi-elemental analysis of material types are reported in Table 4-2 of SRK Consulting 2020).
P217	71) As is noted above, during acid leaching, heavy radioactive elements will separate and layer. The final EIS must mandate that these radioactive elements once separated in processing remain separated and properly disposed of. The final EIS should prevent LNC from blending this radioactive waste with tailing and dumping it on the tailings pile, as appears to be the current proposal.	Radiological hazards associated with operation of the project include potential exposure to Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) due to processing of ore containing naturally occurring radionuclides, including naturally-occurring uranium. NDEP regulations for management of waste rock, overburden, and process wastes from mining operations do not require or anticipate separation of naturally-occurring radioactive materials from other wastes prior to on-site disposal. NDEP has established screening levels for monitoring on-site disposal of wastes containing uranium and other radioactive materials, referred to as Profile I-R Reference Values (see EIS Section 4.16 Wastes, Hazardous or Solid). Baseline geochemical characterization indicated that radionuclides are elevated in some samples of materials including tailings and waste rock and ore, and there is the potential for leaching of radionuclides from tailings at concentrations exceeding threshold values. The Clay Tailings Filter Stack would be constructed as a zero-discharge facility to avoid potential impacts to groundwater. LNC commissioned an additional study in 2020 to evaluate concentrations of uranium associated with materials generated from the proposed Project to determine the risk that these materials pose to human health (SRK Consulting 2020). The study compared concentrations of uranium in waste materials to U.S. EPA risk-based Soil Screening Levels (SSLs) for industrial site soil and residential site soil concentrations. None of the waste

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		rock and process materials that would be disposed of on site would exceed the U.S. EPA SSLs for industrial soil (230 mg/kg; EPA, 2020). Uranium concentrations for each type of waste rock material would be below the EPA SSL for uranium for residential soils (16 mg/kg) with the exception of the maximum values.
P218	72) Whereas the extensive acid leaching will concentrate radioactive materials and make them much more dangerous, the final EIS must mandate that LNC extract uranium and radium encountered, processing it into marketable products rather than dumping this hazardous waste on the tailings pile.	Comment noted.
P219	73) If uranium and radium is not extracted prior to dumping on the tailings pile; the tailings pile (CTFS) should be considered a hazardous waste facility.	Tailings impoundments for disposal of mining and processing wastes are subject to regulation and permitting by the Nevada Department of Environmental Protection (NDEP) Bureau of Mining Regulation and Reclamation (BMRR) under Nevada regulations for Mining Facilities (NAC 445A.350-NAC 445A.447). Major permits that would be required for construction and operation of the facility are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. The NDEP BMRR has established requirements for waste rock, overburden, and ore characterization and evaluation and for ecological risk assessment for proposed mining projects, including for disposal of naturally-occurring radioactive material from mining operations. NDEP mining regulations do not require or anticipate separation of naturally-occurring radioactive material prior to disposal of mining and processing wastes. Drainage from the CTFS would not discharge to groundwater or surface water. The Thacker Pass facility Clay Tailings Filter Stack is being designed as a zero-discharge facility as defined under Nevada regulation NAC 445A.385. "Zero discharge" means the standard of performance for the protection of surface waters which requires the containment of all process fluids.
P220	74) The final EIS must analyze the amounts of uranium sulfate that will be formed in all areas of the project (pit backfill, waste rock storage, and the CTFS), and it's potential impact on the environment. Given that there are sulfate naturally present in the soil, an enormous amounts of sulfuric acid will be used in processing, the formation of uranium sulfate is very probable. Uranium Sulfate is highly toxic, and it is water soluble. The water soluble nature of uranium sulfate allows it to contaminate groundwater in a much more efficient manner.	A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS. A simple PHREEQC model was applied to address the potential for uranium sulfate formation within the Thacker Pass tailings impoundment. Source terms were generated for each tailings component (i.e., clay tailings, neutralization solids, and sulfate salts) by averaging the available Meteoric Water Mobility Procedure (MWMP) data for those materials. This included three samples of clay tailings, two samples of neutralization solids and one sample of sulfate salts. The average MWMP leachate chemistry for each of these materials was input into PHREEQC, and the solutions were mixed in the approximate proportions of the planned tailings impoundment (i.e., 64% clay tailings, 17% neutralization solids, 18% sulfate salts). Based on the results of this

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		PHREEQC model, uranium speciation is dominated in solution by a combination of uranyl fluoride and uranyl phosphate species. Only a very small proportion of the total uranium in solution is predicted to form uranium sulfate. Approximately 0.00007% of the total uranium is predicted to form uranium sulfate across all uranium sulfate species. Based on PHREEQC calculations using mass balanced MWMP leachate chemistry for all the tailings components, uranyl (IV) and (VI) sulfate species comprise a minimal portion of total uranium in solution. As such, these sulfate species in the tailings impoundment leachate do not present an environmental risk.
P221	75) The proposed tailings pile (CTFS) liner is woefully inadequate. The only thing standing between the CTFS and groundwater contamination is a geomembrane liner. Moreover haul trucks may be driving on the CTFS increasing the chance of liner failure according to the draft EIS "The dewatered tailings would be transported to the CTFS using either conveyors or haul trucks or a combination of the two." (DEIS pg. 2-9). The final EIS must analyze the consequences of liner failure. The final EIS must mandate design specs for the liner of the CTFS to contain radioactive waste indefinitely. The liner should be multi-layered with a leak detection system between the liners and should also contain a concrete component.	The Thacker Pass facility Clay Tailings Filter Stack is designed to store the mechanically placed filtered tailings solids (filter cakes and sulfate salts) generated during lithium production. The CTFS is being designed as a zero-discharge facility as defined under Nevada regulation NAC 445A.385. "Zero discharge" means the standard of performance for the protection of surface waters which requires the containment of all process fluids. Drainage from the CTFS would not discharge to groundwater or surface water. The CTFS will be fully lined with an HDPE geomembrane, underlain with a six-inch liner bedding material. The facility will include an underdrain collection system above the geomembrane to collect drainage from the stack. Drainage from the stack will report to the geomembrane lined reclaim ponds. Water collected in the pond will not be discharged as part of the stormwater management. Water in the reclaim ponds will be pumped to the processing plant to be used as make-up water for processing operations or will evaporate from the reclaim ponds.
P222	76) The DEIS says that local groundwater will be sampled for evidence of leaks in the liner. This is entirely inadequate. By the time leaks show up in groundwater it is too late, and the area of the leak in the liner will be under millions of tons of tailings making it impossible to repair.	The liner and tailings facility will be constructed to industry standards with monitoring and mitigation requirements as permitted by Nevada Division of Environmental Protection, Bureau of Mining Regulation & Reclamation, NRS 445A.300-NRS 445A.730. Per State of Nevada regulations, the design of the facility must be sufficient to protect the waters of the State from degradation.
P223	77) This project will result in groundwater contamination according to LNC's own research. "However geochemical characterization testing indicates that neutral pH drainage from the waste rock and coarse gangue material have the potential to generate leachate with concentrations of arsenic, antimony, fluoride, iron, magnesium, sulfate, and uranium that exceed NDEP Profile I reference values (i.e., based on the Nevada drinking water standards) (SRK 2020a, SRK 2020b)." (DEIS pg. 4-14). (emphasis added) All of these impacts must be analyzed in detail in the final EIS.	See Common Response WATER-4. Discharge from the Proposed action was analyzed in Section 4.3 of the EIS. Additional details are provided in Sections 5-7 of the Water Quality and Quantity Impacts Report and concluded antimony was the only constituent of concern discharging from the pit. The LNC committed monitoring and mitigation measures to address antimony were summarized in Section 4.3.2 of the EIS.
P224	78) The Company is planning on knowingly contaminating pit groundwater by placing naturally contaminated waste rock in the pit where it will have contact with groundwater. "The modeling results predict that the groundwater quality would be moderately alkaline (pH 7.6-7.8) with concentrations of antimony, arsenic, sulfate, and total dissolved solid (TDS) that would exceed the NDEP Profile I reference	See Common Response WATER-4.

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	values (based on the Nevada Primary and Secondary Drinking Water Standards) in one or more of the sub-pit areas. Sulfate is predicted to exceed the Profile I reference values for approximately 50 years, and TDS for 140 years post-closure (Piteau 2020a) Concentration of both constituents (sulfate, TDS) gradually declines as the backfill is subsequently rinsed by groundwater. The concentrations of arsenic and antimony in the pit backfill pore water are predicted to exceed drinking water standards over the entire 300 years post-closure simulation period in each sub-pit area. The source of arsenic and antimony is waste rock (claystone/ash and ash) placed in the backfill (Piteau 2020a)." (emphasis added) Groundwater is naturally protected by layers of clay. These layers of clay will be removed and naturally contaminated waste rock will be placed back in the pit. The act of extracting waste rock, storing it, then placing it in the pit will crush the waste rock. Waste rock will also be exposed to the atmosphere. This will greatly increase surface area such that toxins will be released when it is placed back in the pit and contacts groundwater.	
P225	"79) Placing this contaminated waste rock back in the pit is unlawful under 43 CFR § 3809.420 (b)	See Common Response WATER-4.
P226	80) While the pit should be backfilled, it must be backfilled with imported soil that is not contaminated with toxins. The DEIS should have considered importing fill dirt.	See Common Response WATER-4.
P227	81) The DEIS and LNC tries to justify placing this contaminated waste rock back in the pit by asserting that "Although outflow from the West Pit Lake would have the potential to degrade groundwater quality, it is unlikely that this small amount of flow (1.1 gpm) would result in measurable degradation (new exceedances of groundwater quality standards) at a compliance point located downgradient of the pit." (DEIS pg. 4-21). Asserting a flow of 1.1 gpm 300' underground is is highly speculative.	See Common Response WATER-4. Detailed analysis of the fate and transport of dissolved constituents in pore water from the proposed Thacker Pass project are analyzed in the Final EIS and described in sections 6 and 7 of the Water Quantity and Quality Impacts report in included in Appendix P of the Final EIS. These analyses incorporated several sensitivities which evaluated a range of hypothetical hydrogeologic parameters. The BLM proposed monitoring and mitigation measure to address potential adverse effects to water quality is outlined in measure WR-3 in Section 4.3.2 of the Final EIS. In the event that constituent concentrations exceed established regulatory thresholds at one or more established compliance monitoring points, and the exceedance is attributable to contamination originating from mine facilities or operations, LNC would provide the BLM and NDEP with a groundwater quality management plan for review and approval. LNC would be responsible for implementation of any approved groundwater quality management plans; and any required supplemental verification monitoring.
P228	82) As is noted above, LNC's consultants have proven themselves utterly incapable of accurately documenting water flowing on the surface, or even conducting basic tasks of distinguishing between perennial streams and ephemeral springs. Yet the DEIS accepts on blind faith that the flow of water is being accurately documented 300' below the surface. In reality, given the geology of this being an extinct volcano there are likely a multitude of cracks, fissures, lava tubes and etc. Water cannot be accurately modeled in the pit. There may be features that are currently packed in clay	This topic is addressed in response to comment P184 and Common Response WATER-1. The BLM has reviewed the hydrologic baseline studies prepared for the Thacker Pass project and deemed these reports complete for the purposes of describing the affected environment and evaluating impacts in the Final EIS. As described under Measure WR-1 (Final EIS Section 4.3.2) BLM may require reasonable modifications and adjustments to include additional monitoring sites or increased monitoring frequencies based on the results of

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	that once exposed could transport substantial amounts of water, both into the mine an out of it. Features such as this would spread groundwater contamination far and wide, this must be considered in the Final EIS	the proponent's proposed operational and post-mine groundwater and surface water monitoring program to ensure water resource impacts are adequately monitored and mitigated as necessary. Additionally, the BLM proposed monitoring and mitigation measure to address potential adverse effects to water quality is outlined in measure WR-3 in Section 4.3.2 of the Final EIS.
P229	83) In fact, such highly permeable features near the pit have been documented in the DEIS "A 300-foot thick sequence of basalt was observed in WSH-3 [an observation well] and at other exploration holes on the eastern fringe of the project area… Hydrologic testing indicates that basalt can be very permeable (30.1 ft/d at WSH3)." See DEIS Appendix P pg. 16. Three large basalt quarries are also shown within the main body of the pit. (See Appendix A figure 2-3). Given this documented basalt in the pit and nearby basalt features, it is unlikely that modeling data is accurate. Furthermore, as Dr. Powell notes below; the model, in fact, has a high degree of uncertainty, and was calibrated to flow data that is known to be inaccurate.	WSH-3 resides well outside the pit extent (see Figure 2.9 in the Water Quantity and Quality Impacts Report included in Final EIS Appendix P). Drillholes within the pit footprint indicate the primary material is claystone/ash, as shown in detail from geologic logs and cross-sections shown in Figures 2.16 to 2.22 of the Baseline Hydrologic Data Collection report (Piteau [2019a] included in Final EIS Appendix P). Basalt would occupy ~ 2.5% of rock exposed in pit walls and is interbedded with claystone such that it is not a pervasive hydrogeologic unit with capacity to convey substantial amounts of water from the pit area.
P230	84) LNC will not allow us to conduct independent measurements of their wells, and we have already found that one of their transducers in one well is not accurately recording elevation data. Given that data cannot be independently verified, and given the critical nature of potential contamination and model inaccuracies, BLM must conduct independent research to verify the data on each and every monitoring well and modeling inputs throughout the project.	This topic is addressed in response to comment P184 and Common Response WATER-1.
P231	85) LNC is proposing to create a massive acid plant producing 5800 tons of acid a day in phase 2. They plan on storing up to 14550 tons of sulfuric acid. (For reference purpose semi can haul about 25 tons) They will be storing the equivalent of 580 semi loads of acid. Making this acid will require burning about 75 semi loads of sulfur a day. By any measure, this is a massive plant that must be thoroughly analyzed.	Potential impacts to water resources were summarized in Section 4.3 of the EIS. The model results predict that measurable impacts to baseflow associated with LCT habitat are not expected to occur. However, monitoring and mitigation are included in Section 4.3.2 to verify the model prediction and address any unforeseen impacts.
P232	86) BLM has no basis to make any decisions on impacts because they have failed to determine the quantities and types of waste products produced. In my scoping comments I noted. "BLM should require Lithium Nevada to provide a budget in the EIS showing where each of these chemicals/elements will be at the end of each year, and what form they will be in, Specifically including but not limited to 1) how much will be released into the atmosphere 2) how much will remain in the tailings pile 3) how much will be exported in the form of finished products 4) how much will be exported in the form of waste 5) how much will be remain elsewhere (and if so where). 6) how much will remain outside of containment, where it will have increased impacts on the environment." Unfortunately my scoping comments were not considered. Thus I make the same comments again.	Air emissions of air pollutants from facility operations are reported in EIS Table 4.10. Facility-Wide On-Site Operational Emissions. The amounts of chemical reagents and fuels and fluids that would be used in production operations are reported in EIS Table 4.17. Chemicals and Reagents (Hazardous Materials) on Site and Table 4.18. Storage and Use of Fuels and Equipment Maintenance Fluids on Site including the annual consumption of chemicals and reagents and fuels and fluids and maximum quantities that would be stored on site at any one time. A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS. A summary table of the projected output and tailings pile constituents has been added to the EIS.
P233	"87) According to the DEIS page 4-100 LNC will be importing the following enormous amounts of chemicals into our community on an annual basis; Limestone	Air emissions of air pollutants from facility operations are reported in EIS Table 4.10. Facility-Wide On-Site Operational Emissions. The amounts of

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	169,036 tons, Quicklime 126,204, tons Soda Ash 86,343, tons Molten Sulfur 340,247 tons	chemical reagents and fuels and fluids that would be used in production operations are reported in EIS Table 4.17. Chemicals and Reagents (Hazardous Materials) on Site and Table 4.18. Storage and Use of Fuels and Equipment Maintenance Fluids on Site including the annual consumption of chemicals and reagents and fuels and fluids and maximum quantities that would be stored on site at any one time. A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS. A summary table of the projected output and tailings pile constituents has been added to the EIS.
P234	89) The EIS must prohibit any additional chemicals or quantities of chemicals on the CTFS except those analyzed.	LNC would be permitted to use the amounts of hazardous materials as indicated in the Mine Plan of Operations and as indicated in hazardous materials storage permits and other permits issued by regulatory agencies for the facility. Major permits that would be required for mine construction, operation, and reclamation are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. Major permits identified in Appendix O include hazardous materials storage permits that would be issued by regulatory agencies for storage and management of hazardous materials. The types and quantities of hazardous materials identified in the EIS, and their impacts, are representative of the types and quantities of hazardous materials that would be stored and managed at the facility.
P235	90) Once amounts of waste products dumped on the CFTS an impacts analysis must be made. This must include a) An evaluation of whether waste in the tailing pile can react together to form other chemicals, and what the impacts may be b) whether waste products can react with products naturally occurring in the tailings to form other chemicals (i.e. Uranium Sulfate or Lead Sulfate), and what the impacts may be. c) whether waste products can be naturally broken down over time by the soil, bacteria, or the elements, to form other chemicals (i.e. hydrogen sulfide), and what the impacts may be.	LNC would be permitted to use the amounts of hazardous materials as indicated in the Mine Plan of Operations and as indicated in hazardous materials storage permits and other permits issued by regulatory agencies for the facility. Major permits that would be required for mine construction, operation, and reclamation are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. Major permits identified in Appendix O include hazardous materials storage permits that would be issued by regulatory agencies for storage and management of hazardous materials. The types and quantities of hazardous materials identified in the EIS, and their impacts, are representative of the types and quantities of hazardous materials that would be stored and managed at the facility.
P236	91) Sulfate salts including gypsum have been shown to break down in landfills, forming dangerous quantities of hydrogen sulfide. The Plan of Operations says gypsum will be a byproduct dumped on the CTFS. Yet the DEIS doesn't even mention gypsum, much less quantify it or analyze the impacts. This must be corrected in the Final EIS.	Unbleached clay solids and the solids generated during acid leaching, primarily gypsum, will be removed by pressure filtration prior to being conveyed to the CTFS for disposal. Methanogenic bacteria can decompose gypsum into hydrogen sulfide under wet anerobic conditions; activity of methanogenic bacterial depends on the presence of a carbon source, e.g., in a municipal solid waste landfill or construction/demolition debris (C&D) landfill.
P237	92) Given that these compounds are made up of imported chemicals and many of them will come out of processing as specific compounds. The Final EIS should	Recycling of tailings and process wastes generated from mining and processing activities is not feasible. Gypsum (calcium sulfate) recycling would

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	mandate that these chemicals be recycled into usable products such as gypsum, sodium sulfate, Epson salt, Potassium Sulfate, rather than dumping them on the tailings pile where they may have adverse impacts.	not be feasible considering that the material, even if processed, would not be usable for manufacturing wallboard or other commercial or residential applications because of the presence of residual concentrations of hazardous materials. Similarly, magnesium sulfate could not feasibly be processed into commercial grade Epsom Salts. Also, recycling of materials would involve transporting the materials off site by truck. The Phase I CTFS storage capacity would be 18 million tons (equivalent to 500 dry tons per hour). Transport of this quantity of materials off site as compared to disposing of the material would increase impacts related to truck traffic on public roads in the vicinity of the project site.
P238	93) BLM failed to analyze the feasibility of recycling sulfate salts rather than using our public lands as a chemical dump.	Management and recycling of materials under the Proposed Action is presented in Section 4.16.1.1 of the EIS. Recycling of tailings and process wastes generated from mining and processing activities is not feasible. Gypsum (calcium sulfate) recycling would not be feasible considering that the material, even if processed, would not be usable for manufacturing wallboard or other commercial or residential applications because of the presence of residual concentrations of hazardous materials. Similarly, magnesium sulfate could not feasibly be processed into commercial grade Epsom Salts. Also, recycling of materials would involve transporting the materials off site by truck. The Phase I CTFS storage capacity would be 18 million tons (equivalent to 500 dry tons per hour). Transport of this quantity of materials off site as compared to disposing of the material would increase impacts related to truck traffic on public roads in the vicinity of the project site.
P239	94) Dumping these sulfide salts resulting from enormous qualities of imported sulfur on the tailings pile that could otherwise be converted into usable products is unlawful under 43 CFR § 3809.420 (b) (2) "All tailings, dumps, deleterious materials or substances, and other waste produced by the operations shall be disposed of so as to prevent unnecessary or undue degradation and in accordance with applicable Federal and state Laws."	Management and recycling of materials under the Proposed Action is presented in Section 4.16.1.1 of the EIS. Recycling of tailings and process wastes generated from mining and processing activities is not feasible. Gypsum (calcium sulfate) recycling would not be feasible considering that the material, even if processed, would not be usable for manufacturing wallboard or other commercial or residential applications because of the presence of residual concentrations of hazardous materials. Similarly, magnesium sulfate could not feasibly be processed into commercial grade Epsom Salts. Also, recycling of materials would involve transporting the materials off site by truck. The Phase I CTFS storage capacity would be 18 million tons (equivalent to 500 dry tons per hour). Transport of this quantity of materials off site as compared to disposing of the material would increase impacts related to truck traffic on public roads in the vicinity of the project site. The NDEP and BMRR are responsible for surface water quality and groundwater protection. Tailings disposal is subject to NDEP-BMRR and federal regulations and requires permits and approvals from the NDEP-BMRR including a water pollution control permit and mine reclamation permit. Major permits that would be

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		required for mine construction, operation, and reclamation are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2.
P240	89) The EIS must prohibit any additional chemicals or quantities of chemicals on the CTFS except those analyzed.	LNC would be permitted to use the amounts of hazardous materials as indicated in the Mine Plan of Operations and as indicated in hazardous materials storage permits and other permits issued by regulatory agencies for the facility. Major permits that would be required for mine construction, operation, and reclamation are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. Major permits identified in Appendix O include hazardous materials storage permits that would be issued by regulatory agencies for storage and management of hazardous materials. The types and quantities of hazardous materials identified in the EIS, and their impacts, are representative of the types and quantities of hazardous materials that would be stored and managed at the facility. Table 4.21 Amounts and Constituents of Mine and Process Wastes to CTFS Phase I and Phase II (TPY) summarizes the types and quantities of mine and process wastes that would be disposed of in the CTFS during Phase I and Phase II operations. These include acid leach filter cake (clay material), neutralization filter cake, magnesium sulfate salts, and potassium and sodium sulfate salts. The amounts and constituents of mine and process wastes to the CTFS would provide the basis for NDEP-BMRR to develop and apply water quality permit conditions for operation of the CTFS.
P241	94) Dumping these sulfide salts resulting from enormous qualities of imported sulfur on the tailings pile that could otherwise be converted into usable products is unlawful under 43 CFR § 3809.420 (b) (2) "All tailings, dumps, deleterious materials or substances, and other waste produced by the operations shall be disposed of so as to prevent unnecessary or undue degradation and in accordance with applicable Federal and state Laws."	The sulfuric acid plant planned for Phase 1 would be capable of producing approximately 2,900 tons per day of sulfuric acid. The Phase 2 sulfuric acid plant would be sized to double LCE production and would be capable of producing an additional 2,900 tons per day of sulfuric acid. EIS Table 4.17. Chemicals and Reagents (Hazardous Materials) on Site indicates a maximum consumption of sulfur for Phase I of 340,247 tons per year for Phase I. Maximum consumption of sulfur for Phase II would be twice that of Phase I, 680,494 tons per year. LNC would be permitted to use this amount of sulfur annually for Phase II as indicated in the Mine Plan of Operations and as indicated in hazardous materials storage permits and other permits issued by regulatory agencies for the facility. Major permits that would be required for mine construction, operation, and reclamation are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. Major permits identified in Appendix O include permits that would be issued for storage and management of hazardous materials. The types and quantities of hazardous materials identified in the EIS, and their impacts, are representative of the types and quantities of hazardous materials that would be stored and managed at the facility.

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P242	"95) BLM must analyze all the impacts of importing, using, processing, storing and disposing of each of the above chemicals.	Impacts of transportation, storage, use, and disposal of hazardous materials are identified and assessed in the EIS, including impacts related to air emissions, surface water, groundwater, biota, land, and other resources. Air emissions from the proposed project operation including emissions from storage and use of hazardous materials are included in EIS Section 4.9, Air Quality and Greenhouse Gas Emissions, Table 4.10. Facility-Wide On-Site Operational Emissions (tons/year). Impacts to groundwater and surface water from disposal of mining and processing wastes generated from the use of hazardous materials at the process plant are included in EIS Section 4.3, Water Quality and Quantity. Quantities of hazardous materials that would be transported, stored and used at the project site and impacts related to transport and storage of hazardous materials are included in EIS Section 4.16.
P243	96) BLM must analyze all the impacts of importing, using, processing, storing and disposing of each of the above chemicals.	LNC would be permitted to use the amounts of hazardous materials as indicated in the Mine Plan of Operations and as indicated in hazardous materials storage permits and other permits issued by regulatory agencies for the facility. The types and quantities of hazardous materials identified in the EIS, and their impacts, are representative of the types and quantities of hazardous materials that would be stored and managed at the facility.
P244	97) The Final EIS must mandate that no additional quantities of chemicals may imported beyond those listed as analyzed.	Hydrogen gas and hydrogen sulfide gas would not be stored on the Project site. Hydrogen gas and hydrogen sulfide gas would be generated within the lithium sulfide production process and consumed within the process equipment in the production of lithium sulfide. The first step in the lithium sulfide production process would require the production of hydrogen gas using a standard water electrolysis cell and purified water. Following production of hydrogen, molten sulfur would react with the hydrogen gas in Step 2 to spontaneously produce high-purity hydrogen sulfide gas. In Step 3, hydrogen sulfide gas would react with lithium carbonate or lithium hydroxide to produce lithium sulfide. Approximately [xx] tons per year of hydrogen and [yy] tons per year of hydrogen sulfide gas would be produced and consumed within the lithium sulfide production process.
P245	99) Neither the DEIS or the POO specify the waste products produced by the Lithium Sulfide plant. These waste products must be specified, quantified, and impacts analyzed.	Text of the EIS has been edited for clarification to identify waste products that would be produced from the lithium sulfide production process.
P246	100) LNC is proposing to store the equivalent of 530 semi loads of molten sulfur (13,454 tons) (DEIS 4-100). Molten sulfur is flammable. According the materials safety data sheet if it is overheated it may explode. Given that molten sulfur is a liquid, it will flow while burning. When molten sulfur burns, it produces toxic gas. The DEIS failed to analyze the plant accident consequences, specifically what the impacts would be to the environment and the community if the entire stored quantity	Molten sulfur would be delivered to the site by truck and would be stored within the Sulfuric Acid Plant and Sulfur/Sulfuric Acid Storage/Loading/Unloading area as shown in EIS Appendix A Figure 2-4 Proposed Plant Site Layout. Storage of molten sulfur and operation of molten sulfur storage tanks would be conducted in accordance with hazardous materials storage permits issued by the Nevada Department of Motor Vehicles and Public Safety, Fire Marshall Division; Fire Protection Licensing Bureau,

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	burned.	HAZMAT Office. Molten sulfur storage tanks would be equipped with heating and ventilation systems and control and monitoring systems to maintain the temperature of the sulfur within safe operating limits. LNC would establish a fire protection plan, including fire protection equipment, for the Project in accordance with State Fire Marshal standards, and pursuant to 30 CFR 56.4330(a), LNC would establish an emergency response plan and emergency firefighting, evacuation, and rescue procedures and coordinate in advance such procedures with available firefighting organizations for emergency response. These equipment, systems, and procedures would minimize the likelihood and potential consequences of fire incidents affecting the storage tanks.
P247	101) LNC is proposing to store the equivalent of 580 semi loads of sulfuric acid (14550 tons). The DEIS failed to analyze the impacts of a major tank failure.	Sulfuric acid storage tanks and loading and unloading areas at the project site would be located in the sulfuric acid plant, an area removed from the project site boundary. Sulfuric acid tanks and loading and unloading areas in the sulfuric acid plant would be equipped with secondary containment systems to contain any releases from the equipment. Any such releases from sulfuric acid storage tanks would be collected and managed as waste and would not be discharged to the environment. Sulfuric acid tanks would be subject to scheduled inspection and maintenance and would be equipped with control and monitoring systems to minimize the likelihood of spills and leaks. LNC would prepare and implement a Spill Prevention, Control, and Countermeasures (SPCC) plan and Stormwater Pollution Prevention Plan (SWPPP) in accordance with Clean Water Act standards, and would maintain spill response systems and equipment to respond to spill incidents. These equipment, systems, and procedures would minimize the likelihood and potential consequences of spill incidents affecting the storage tanks.
P248	102) The Final EIS must analyze the impacts of various disaster scenarios, related to all the chemicals that will be stored on-site. I raised this issue in my scoping comments, which was not addressed in the DEIS. It must be addressed in the final EIS. Merely trying to assure the public disasters major will not occur is insufficient under NEPA.	As discussed in EIS Section 4.16.1.1, the types of incidents that could affect the proposed mine and process plant operations include spill, fire, and explosion incidents affecting hazardous materials storage and processing equipment. Processing and storage equipment include molten sulfur storage equipment and sulfuric acid storage equipment and other equipment containing hazardous materials. Types and quantities of hazardous materials that would be stored on site are identified in EIS Section 4.16, Table 4.17. Chemicals and Reagents (Hazardous Materials) on Site. Hazardous materials storage and processing operations would be located in the process plant area, including the sulfuric acid plant area and bulk solids and liquids loading and unloading area. These areas are removed from the project site boundary and from publicly-accessible areas, which would reduce the potential for off-site consequences of incidents. The likelihood and potential consequences of incidents affecting publicly-accessible areas would be minimized by application of control and monitoring systems for hazardous materials storage

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		and handling equipment and by application of spill control, fire control, and emergency response systems and procedures. Hazardous materials storage and handling areas would be equipped with ventilation systems and would be equipped with spill containment systems that would contain spills and leaks from the equipment. These equipment, systems, and procedures would minimize the likelihood and potential off-site consequences of incidents affecting hazardous materials storage tanks and equipment.
P249	103) With respect to the sulfuric acid Plant, the DEIS contains detailed numbers, leading the reader to infer that some detailed designs have been provided. However, as one digs into the documents, one finds these numbers are pulled out of thin air. According to the DEIS appendix K page 6 "While the exact scrubbing system has not yet been determined, LNC has committed to installing a control that, at the minimum, meets the emission levels used in this analysis." Given that the type of scrubbers have not even been selected much less been designed, the BLM and the public has no basis to evaluate the accuracy of numbers presented, and knowingly comment on the DEIS.	The NEPA Air Quality Impact Analysis was completed based on guidance and specifications from a sulfuric acid plant manufacturer, which included manufacturer guaranteed emission levels for Phase 2. (These guaranteed emission levels were conservatively used for Phase 1 as well) [DEIS Appendix K, Sections 2.3.5 & 2.3.7]. Since completing the NEPA Air Quality Impact Analysis, LNC has concluded that the sulfuric acid plant tail gas scrubber will utilize a sodium sulfate scrubbing solution containing sodium hydroxide. The scrubber pH and sulfate concentration will be maintained to optimize the scrubber control efficiency. The emission limits for the sulfuric acid plant, starting with Phase 1, will be enforced through the Nevada Division of Environmental Protection Air Quality Operating Permit for the Thacker Pass Project. Furthermore, as discussed in the Thacker Pass Project NEPA Air Quality Impact Analysis Report, the sulfuric acid plant emissions must be maintained below the Federal standards in 40 CFR Part 60, Subpart H [DEIS Appendix K, Section 2.3.5].
P250	104) With no scrubbers being specified or design plans include in the documents this makes a mockery of the NEPA process. There is no basis for public or BLM review. Once detailed plans are in place. the EIS should be sent back out for public review.	See comment response P249.
P251	105) If BLM is going to proceed with the EIS under the company's assurance that we should trust them, their scrubbers will limit pollution levels to specific levels. BLM must mandate that all emissions numbers presented in the documents be mandatory, spot checked by BLM on a regular basis, and the entire plant shut down if they are violated.	See comment response P249.
P252	106) If smell was to be emitted from the plant, it will severely devalue property such as ours, the DEIS is not proposing any mitigation for surrounding property owners such as ourselves or mitigation for damage to plants and wildlife emissions may create. Whereas BLM is basing decision making on these numbers, the Final EIS must mandate mitigation in the event smell does in fact extend to private lands.	NDEP regulation NAC 445B.22087, prohibits emissions of substances that may cause odors. If odors occur that NDEP determines violate NAC 445B.22087, LNC will implement appropriate mitigation measures as required under its NDEP-BAPC permit. 43 CFR 3809.420 (a)(6) requires that operations must be conducted in a manner that complies with all pertinent Federal and state laws.
P253	107) The final EIS must include mitigation to private property owners if, in fact, plant odors and noise reaches private property and devalues it.	NDEP regulation NAC 445B.22087, prohibits emissions of substances that may cause odors. If the project produces odors that NDEP determines violate NAC 445B.22087, LNC will implement appropriate mitigation measures as

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		required under its NDEP-BAPC permit. 43 CFR 3809.420 (a)(6) requires that operations must be conducted in a manner that complies with all pertinent Federal and state laws. The technical noise study indicates noise levels are predicted to increase by up to 1.3 decibels in terms of a 24-hour average. An increase over this time scale is not considered to be noticeable (a difference of 5 decibels is considered be a noticeable change). However, noise levels at the nearest residences may be noticeable on an intermittent basis. Best noise control practices identified in the EIS will be implemented where possible to minimize noise level increases outside the mine boundary.
P254	108) The DEIS errors in failing to consider or analyze potential emissions from the tailings pile, as I noted in my scoping comments, sulfate salts, especially gypsum, can break down in landfills into dangerous quantities of hydrogen sulfide gas.	These questions center around the potential for sulfate reduction in the tailings pile. The reduction of sulfate produces hydrogen sulfide gas. Very specific conditions must exist at the subsurface for sulfate to be reduced and none of these conditions exist in the tailings pile. Sulfate reduction in the subsurface is almost exclusively mediated by sulfate reducing bacteria. These bacteria are anaerobes that gain energy for growth from the oxidation of organic material using sulfate as the terminal electron acceptor. This is why hydrogen sulfide gas (rotten egg odor) is sometimes associated with landfills as there is commonly enough organic material to sustain the growth of sulfate reducing bacteria. There simply is no organic matter in the Thacker Pass tailings pile that could sustain growth of sulfate reducing bacteria. If any organic material was present in the ore, it is removed during the acid leaching process and no organic material is added to the tailings during the production process.
P255	109) The Final EIS must mandate sensors around the tailings pile to detect gas being emitted from the tailings pile.	See comment response P254.
P256	110) As is noted above, there is no detailed accounting of what amount of what specific sulfate salts are going to be dumped on the tailings pile and in what quantity, or what other chemicals will be dumped on the tailings pile, thus there is no basis to evaluate the potential for emissions. This denies the public the right to knowingly comment on the DEIS.	See comment response P254.
P257	111) Dangerous dust emissions must be considered as well, whereas acid leaching will concentrate dangerous elements and chemicals such as uranium that are naturally present in elevated levels in the area.	BLM approval would require that with all requirements and conditions of its air quality permits are implemented by the operator. Long-term financial guarantees for reclamation costs are addressed under the regulatory authority of the Nevada Division of Environmental Protection. Tailings impoundments for disposal of mining and processing wastes are subject to regulation and permitting by the Nevada Department of Environmental Protection (NDEP) Bureau of Mining Regulation and Reclamation (BMRR) under Nevada regulations for Mining Facilities (NAC 445A.350-NAC 445A.447). Major permits that would be required for construction and operation of the facility are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. The NDEP BMRR has established

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		requirements for waste rock, overburden, and ore characterization and evaluation and for ecological risk assessment for proposed mining projects, including for disposal of naturally-occurring radioactive material from mining operations. NDEP mining regulations do not require or anticipate separation of naturally-occurring radioactive material prior to disposal of mining and processing wastes. Drainage from the CTFS would not discharge to groundwater or surface water. The Thacker Pass facility Clay Tailings Filter Stack is being designed as a zero-discharge facility as defined under Nevada regulation NAC 445A.385. "Zero discharge" means the standard of performance for the protection of surface waters which requires the containment of all process fluids.
P258	112) Enormous amounts of carbon emissions will be generated as well, 132,588 tons a year in phase 2 at the plant and another 10,325 in transport (DEIS 2-72). This equates to two tons of carbon emissions per every per ton of lithium generated. This doesn't equate to a clean energy future.	As discussed in Appendix K, LNC anticipates that use of the lithium in batteries could contribute to downstream GHG emissions reductions. BLM has reviewed this information and determined that further detailed analysis of downstream GHG emissions from the end uses of lithium-based products would be speculative (see EIS Section 4.9.1.1).
P259	113) Claims of carbon neutral are not supported. The basis of carbon neutral claims are the act of burning sulfur waste from oil refineries. The very reason sulfur was removed in the first place is so we don't burn it in our cars. Burning sulfur creates pollution and removes oxygen from the air. Removing oxygen from the air thins the atmosphere and increases carbon concentrations.	The EIS does not claim that the project would be carbon-neutral. Rather, Appendix K states, "A long-term goal of the Thacker Pass Project is to reduce GHG emissions and reach carbon neutrality." Any GHG reductions associated with the project would not be related to the source of sulfur supplying the sulfuric acid plant. As discussed in Appendix K, the sulfur is burned as part of the process for producing sulfuric acid and the combustion products are used in that process, not emitted to the atmosphere. Some emissions of sulfur compounds would occur and would be controlled by a tail gas scrubber.
P260	114) The DEIS errored in presenting unsupported carbon reductions allegedly produced via steam production. In the DEIS appendix K states "It is estimated that steam generated from the sulfuric acid process reduces approximately 200,000 tpy of CO2e in Phase 1 and 400,000 tpy of CO2e in Phase 2". Yet there is no documentation to evaluate the accuracy of this estimate. Moreover, the offset argument relies on a natural gas plant shutting down to provide the offset. There is no support for any agreement to make this happen. In fact, this plant may compete with renewables such as solar. The Final EIS should not contain unsupported statements.	The source of the CO2 estimate is cited in Appendix K (p.205). The estimated CO2 reduction represents foregone (avoided) emissions compared to the emissions from using natural gas to generate steam. The estimate does not rely on an existing natural gas plant shutting down. Rather, it represents the additional natural gas that would be required to generate steam if the steam produced by the sulfuric acid production were not available.
P261	115) This plant will cause the generation of over 140,000 tons of carbon emissions, and additional emissions from burning hundreds of thousands of tons of sulfur on an annual basis. Bringing this massive amount of pollution to our community will not be eco-friendly or green energy.	As discussed in Appendix K of the Draft EIS, although the project would produce GHG emissions, LNC anticipates that use of the produced lithium in batteries could contribute to downstream GHG emissions reductions. As discussed in Appendix K of the Draft EIS, the sulfur is burned as part of the process for producing sulfuric acid and the combustion products are used in that

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		process, not emitted to the atmosphere. Some emissions of sulfur compounds would occur and would be controlled by a tail gas scrubber. As stated in the EIS, the air quality impacts of the project, including sulfur dioxide concentrations, the Project will comply with the National Ambient Air Quality Standards.
P262	116) The Draft EIS shows Pole Creek as an LCT occupied stream. According to the model, every spring identified on Pole Creek shows that the water level under it will be drawn down. The intermittent portions of Pole Creek are important for spring migration. Drawing down the water level under every spring in Pole Creek is bound to impact LCT. The upper most spring SP-050 has the smallest drawdown. The Graphs below are lower Pole Creek (SP-043), and the low end of Upper Pole creek springs (SP-036). These impacts must be mitigated.	See Common Response WATER-3 and WATER-6.
P263	117) Whereas as is noted above, baseline flow data in Pole Creek is grossly inaccurate, and the model has been calibrated to inaccurate data, therefore the supposed declines in flow are also inaccurate. As is noted above from the Baseline Data Report in Upper Pole Creek the only Spring LNC documented was reported to have an average flow 3.5 gpm. The DEIS appendix P page 51 projects a flow decrease of <1gpm, in upper pole creek. One gpm out of 3.5 gpm is more than 25% of flow. Only one spring was identified in middle Pole Creek of with an average flow of 1.1 gpm so a <1gpm decline is about a 90% decline in flow. 3 springs were identified in Lower Pole Creek, one flowing <1gpm on flowing an average of 16.3 gpm and one flowing an average of 6.8 gpm for an average flow of about 24.1 gpm. The model projects a 14 gpm decline in Lower Pole Creek, this would be a 58% decline (DEIS appendix P part 1 page 51) Obviously a 25% decline in Upper Pole Creek, a 90% decline in middle Pole Creek and a 58% decline in lower Pole Creek would be devastating for LCT. As is noted above the Baseline flow numbers are inaccurate by an order of magnitude, and the model has been calibrated to inaccurate numbers so nothing can be relied upon.	See Common Response WATER-5 and WATER-6.
P284	138) The scoping letter from BLM identified the need to modify the Resource Management Plan (approved May 15, 2015) for Visual Resource Management classification standards. The DEIS clearly states that it is in clear violation of the "Visual Resource Management" (VRM) classification. Rather than amending the plan as was originally proposed, BLM has elected to plow ahead and unlawfully violate the Visual Resource Management Classification designations. BLM must cease this unlawful action and either deny the project, or go through the lawful process to amend the classification.	Comment noted.
P285	139) BLM cannot rely on the "mining is exempt from everything" argument with respect to the VRM classification. Among other reasons; LNC has elected to construct, mills, tailings piles, pipelines, wells, and storage facilities on lode claims that do not appear to be valuable mineral discoveries, thus FLMPA must be applied.	Comment noted.

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P286	140) The DEIS is also in non-conformance with other areas of the resource management plans. For example, it is not compliant with the goals to "Ensure long-term health and diversity of the public lands by minimizing impacts on other resources, returning lands disturbed to productive uses, and preventing unnecessary or undue degradation to public lands." or "Objective MR 9: Manage mineral material operations to provide for the mineral and energy needs of the nation, while assuring compatibility with and protection of other resources." Dumping waste rock that is contaminated with arsenic, antimony and uranium in the pit where it will contaminate groundwater is not in "preventing unnecessary or undue degradation to public lands".	The Record of Decision and Resource Management Plan for the Winnemucca District Planning Area (2015) states on page 2-4, "11. Management of energy and non-energy mineral resources will be consistent with the acts of Congress relating to the Domestic Minerals Program Extension Act of 1953, the Mining and Minerals Policy Act of 1970, the Federal Land Policy and Management Act of 1976, the National Materials and Minerals Policy, Research and Development Act of 1980, and the Energy Policy Act of 2005, and the 43 CFR 3100, 3200, 3500, 3600, 3700, 3800 regulations."
P287	Likewise, using the tailings pile CTFS as a massive waste dump for imported chemicals is not "preventing unnecessary or undue degradation to public lands"."	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P288	141) It appears that the BLM failed to conduct an independent economic analysis of the project and instead relied upon information provided by the Company. As such the DEIS creates an improper and biased view of the project.	Comment noted.
P289	142) The DEIS failed to address whether this is a valid mineral deposit given the grade, marketability, environmental costs, and mitigation measures.	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P290	143) As part of the above analysis, it is important to note that lithium prices have declined about 50% from what they were when the pre-feasibility study was conducted. Moreover, all costs of mitigation and post mine recovery must be included upfront in the economic analysis. Allowing mine recovery costs to be determined at a future date as is currently written in the DEIS is unlawful under NEPA. This prohibits a meaningful economic analysis, whereas mitigation and mine recovery are not truly figured into the economic analysis.	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P291	144) As part of the above economic analysis, the long term viability of the project must be considered as well. Specifically, if EV use increases, cheap waste sulfur at refineries will not exist anymore. If sulfur has to be mined again, the price will be substantially higher. An analysis of long term sulfur prices as well as other regents (that have to be imported in massive quantities), must be performed. The pre-feasibility study noted that cost analysis was tied into reagent prices particularly sulfur. "The analysis demonstrated high sensitivity to lithium carbonate price, overall plant production, initial capital costs, and the cost of sulfur and other reagents." (Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, August 1st, 2018)	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P292	145) While the economic analysis focused heavily on jobs created, it ignored jobs destroyed. The project will use 5,200 acre feet of water. This is enough water to irrigate 1733 acres. Alfalfa farms put up about 6 tons per acre. At an average price of $175 a ton, this equals $1.82 million dollars taken out of the local economy every year by drying up farms. This translates into a lot of local jobs. If this turns out to be	Potential impacts to water resources were summarized in Section 4.3 of the EIS. The model predictions regarding groundwater drawdown are presented there and in Figures 4.3-3 through 4.3-21. None of the predicted groundwater drawdown areas under alternatives A, B, and C would affect lands that are currently in use as alfalfa production. However, monitoring and mitigation are

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	a boom and bust mine, we will not have farming or mining jobs.	included in Section 4.3.2 to verify the model prediction and address any unforeseen impacts.
P293	146) Unfortunately the DEIS is proposing to use monitoring as a substitute for mitigation (or to avoid mitigation). Where company data shows there will be drawdown under LCT habitat, wetlands, springs, or private lands mitigation must be specified in the EIS and implemented prior to the project being started. Allowing for damage to occur, then applying mitigation is inappropriate and unlawful under NEPA. Cattle that are out of water and fish that are out of water cannot stand around for years waiting for mitigation after monitoring has shown an impact. As is noted above mitigation is woefully inadequate.	This topic is addressed in response to comment P184 and Common Response WATER-1.
P294	148) All monitoring must allow water right holders to be involved in the selection of monitoring sites and observe any monitoring.	Comment noted.
P295	149) All monitoring equipment on BLM lands must be available for inspection for accuracy by any qualified professional. If Company officials continue to deny access to equipment, and deny independent verification of data, that data should not be given any weight.	This topic is addressed in response to comment P184 and Common Response WATER-1.
P296	150) Multiple long term flow gauges must be installed on Rock Creek, Pole Creek, and Lower Crowley creek to establish flow patterns. For example, it is critical to know if a stream reach is dry 1 year out of 5 pre-project. If post project it is dry 4 years out of 5 that is a dramatic impact, such an impact would not be captured by measuring a few times in one or two years. Selection of gauging station sites must be made in consultation with water right holders, NDOW, BLM and other affected parties. Gauging stations must not be simply put where ever the company decides to put them.	Comment noted. See Common Response WATER-6 monitoring and mitigations to address potential impacts to baseflow and BLM recommended measure WR1 in Section 4.3.2.
P297	151) Given the massive errors in the baseline data report, multi-year baseline data collection must be redone and accurate baselines must be established.	This topic is addressed in response to comment P184 and Common Response WATER-1.
P298	152) The pit is made up of clay, with basalt and other transmissive features within it. Water may travel down fault lines, fissures, lava flows, old creek beds, and etc. that may have existed in earlier volcanic periods, but are now imbedded in clay. The likelihood of a piezometer hitting a small feature such as this is near zero. It is of particular note that test well WSH 17 had water levels dramatically higher than nearby wells when it was drilled indicating water features and water levels cannot be accurately predicted. Moreover, Wester Lithium/LNC drilled several dry holes indicating in some areas clay or dense rock completely seals the hole. Therefore piezometers should not be relied upon to determine flow movement toward the pit.	See Common Response WATER-2.
P299	153) As is noted above, LNC water monitoring activities have dramatically altered the hydrology around these wells causing the water level to permanently drop around several wells (roughly 100' around WSH 17). Given the dramatic adverse affect of monitoring, no additional monitoring wells or piezometers should be allowed until adverse impacts of existing monitoring and past drilling activities have been	See Common Response WATER-2. Water level data provided in the Baseline Hydrogeologic report demonstrate the contrary, that water levels in surrounding wells have remained steady with WSH-17 being the exception (Figure 4.3 Baseline Hydrogeologic report).

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	thoroughly researched and concrete assurances put in place that additional monitoring will not itself alter the hydrology. BLM must analyze the impacts to the hydrology of existing monitoring, and mitigate damages to the hydrology that has already occurred, as a result of existing test wells and or past bore holes.	
P300	154) BLM's practice of failing to require long term reliable baseline flow data on springs must be corrected. At the scoping meeting in Orovada BLM heard locals noting that past drilling activities had dried up springs. BLM's practice of not requiring reliable long term baseline data allows mining companies to say "the locals are just imagining things" and allow critical springs for stock, fish, and wildlife to be dried up with no mitigation or consequences.	See Common Response WATER-1. Flow data collected for springs is found in Section 3.2 of the Baseline Hydrogeologic Report (Piteau 2019a)
P301	155) This EIS is being rushed, expediting this process, at the expense of a thorough scientific review and setting arbitrary deadlines is directly contrary to NEPA.	This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P302	156) Despite the massive impact to our private lands, and water rights, BLM has failed to engage us in any meaningful discussion of mitigation of damages; despite the fact that I made specific requests in my scoping comments about the need for mitigation and my subsequent letter to the BLM requesting mitigation. I received no response to my scoping comments or my other letter. Failing to mitigate these obvious impacts are directly contrary to NEPA	Thank you for your comment. The BLM has worked with the operator to identify feasible measures to avoid and minimize potential effects to the human and natural environment that are within the regulatory authority of the BLM. Many of these measures have been incorporated into the proposed Mine and Exploration Plans of Operation. Any BLM approval of the proposed Mine and Exploration Plans or alternatives would require that the operator obtain all necessary State and Federal permits and comply with all applicable State and Federal regulatory requirements.
P303	157) As is noted above, the company has engaged in misleading comments whereas phase 2 jobs numbers are cited, and phase 1 water impacts (including at the BLM scoping meeting). This misleads the public about impacts to water, and may dissuade public concern and involvement, contrary to NEPA.	Comment noted. The Draft EIS discloses the anticipated water use for the proposed Project in Chapter 2 and presents analysis of the potential effects upon water resources in Section 4.3. The operator's scoping presentation does state the Phase I water demand, but it is not presented next to the Phase II employment estimates in any manner that could be considered an intentional misrepresentation. The operator's public Draft EIS meeting presentation states correctly that the 2,500-acre foot use in Phase I would double in Phase II.
P304	158) My scoping comments were not meaningfully considered, even though I made substantive comments about massive factual errors in data that was going to be used in the DEIS. These same factual errors remain in the DEIS. Whereas my scoping comments were not considered and the same points remain I am attaching and resubmitting these comments with the DEIS as DEIS comments (see Attachment D).	See Common Response WATER-1 and WATER-5.
P305	159) The online DEIS meetings did not offer technical experts to answer questions. Instead participants were told to ask technical question via email online. I have had trouble getting questions answered in the past. Therefore I only asked two questions within one email, hoping I would get an answer, to these simple, but highly important questions, that are fundamental to the entire process. Given conflicts within the DEIS; about conflicting amounts of sulfur that will be imported into our community. I asked clarification on the maximum amount of sulfur that will be used	The BLM has made good faith efforts to provide all information regarding the Project and its potential effects. Due to State and Local restrictions on public gatherings resulting from the COVID virus, online meetings were conducted for the safety of the community. A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS.

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	on an annual basis in phase 2. Also I asked whether Lithium Nevada would be limited to that amount of sulfur use, or whether they could use dramatically more sulfur. Weeks later I have yet to get a response to these critical questions so that I can understand the totality of the project, and knowingly comment on the DEIS.	
P306	160) At the scoping meeting in Orovada, BLM assured residents that there would be a clear accounting in the DEIS of where waste products from all this sulfur processing would end up. Incredibly, at this very late date, I still do not have any answers as to how much of what chemicals are going to be dumped on the tailings pile, so we can analyze the DEIS and knowingly comment on the document. It is impossible to know the impacts of what specific chemicals will be on the environment and the community, when there is no disclosure as to what chemicals will be dumped on the tailings pile and in what quantities, this denies the pubic the ability to knowingly comment on the DEIS.	Air emissions of air pollutants from facility operations are reported in EIS Table 4.10. Facility-Wide On-Site Operational Emissions. The amounts of chemical reagents and fuels and fluids that would be used in production operations are reported in EIS Table 4.17. Chemicals and Reagents (Hazardous Materials) on Site and Table 4.18. Storage and Use of Fuels and Equipment Maintenance Fluids on Site including the annual consumption of chemicals and reagents and fuels and fluids and maximum quantities that would be stored on site at any one time. A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS. A summary table of the projected output and tailings pile constituents has been added to the EIS.
P307	161) upon reviewing the DEIS, I found many documents that were relied upon to form the basis of conclusions of the DEIS, and to calibrate the model had been omitted from the available documents. As we read through the DEIS we find more and more documents that form the basis of conclusions have been omitted. Two critical documents, that were addendums to the Hydrology Impacts Report that forms the foundation of the DEIS, were withheld until 3 business days prior to the close of the comment period. Under NEPA I cannot knowing comment the DEIS until I have all available relevant documents and adequate time to review them.	See Common Response WATER-1 and WATER-5.
P308	162) The most obvious thing that was omitted from available public materials was the model. The model forms the foundation of nearly every decision in the DEIS. Yet, incredibly it was not available for public inspection at the time the DEIS came out. In fact, I had to request the model, from the BLM, and as you know; I was unable to receive the model until recently and it is in Groundwater Vistas format instead of the native Modflow USG format. The base model is Modflow USG, which is USGS peer reviewed open source software "freeware". Unfortunately it is saved in editing software Groundwater Vistas format. Groundwater Vitas is proprietary software. You gave me a link to a "free" version of Groundwater Vistas. However, this "free" version will not allow our hydrologist to view critical model details and inputs without buying this proprietary software. Therefore the model is of no value unless we buy the proprietary software, or get somebody to save it in native Modflow USG format. According to the link BLM provided the software will cost us $1,750 -$4,900 (depending on the version we need) just to get the software open and view what was done in the model. Given that BLM's hydrologist appears to have Groundwaters Vistas, BLM could have saved the software in Native Modflow format for the public to view, instead of forcing the public to spend enormous sums	Groundwater model files were available for public review and provided in Groundwater Vistas format. A student version of the Groundwater Vistas software is available for free from the developer. The student version can inspect groundwater model inputs, parameters, boundary conditions, grid, and results. The BLM provided the Commenter with all MODFLOW-USG model files, in the original Groundwater Vistas format (.hds, .cbb, .con, .lst) as requested during the public comment period for the DEIS.

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	of money just to view model inputs and calibrations. This severely limits the public's ability to knowingly participate in the NEPA process. The modeling is very extensive and complicated. Whereas, we only recently received the model, mere days prior to the close of the comment period we cannot adequately view model inputs. Therefore we cannot not knowing comment on model changes.	
P309	163) It is critically important that the modeling be correct, and properly vetted. Groundwater is naturally protected by clay layers, within the proposed pit. The clay layers are going to be removed and naturally contaminated waste rock is going to be placed back in the pit where it will have direct contact with groundwater in the pit. Moreover, removing this waste rock and putting it back into the pit will crush it, substantially increasing surface area, and increasing the amount of toxins that will leach out. I draw your attention to the following portions of the DEIS: "However geochemical characterization testing indicates that neutral pH drainage from the waste rock and coarse gangue material have the potential to generate leachate with concentrations of arsenic, antimony, fluoride, iron, magnesium, sulfate, and uranium that exceed NDEP Profile I reference values (i.e., based on the Nevada drinking water standards) (SRK 2020a, SRK 2020b)." (DEIS pg. 4-14). (emphasis added) "The concentrations of arsenic and antimony in the pit backfill pore water are predicted to exceed drinking water standards over the entire 300 years post-closure simulation period in each sub-pit area. The source of arsenic and antimony is waste rock (claystone/ash and ash) placed in the backfill (Piteau 2020a)." (DEIS 4-13) (emphasis added)	See response to comment P227 and Common Response WATER-4 and WATER-5. The groundwater model meets criteria set forth by the BLM (IM No. NV-2008-035). Quantitively the model meets calibration criteria with small values for the scaled root mean squared (RMS) error, scaled mean residual error, and scaled standard deviation. Likewise, transient calibration matches to pumping tests provide 3 dynamic calibration periods. Qualitatively the groundwater model matches expected hydraulic gradients across multiple geologic settings, matches groundwater discharge to streams, and represents regional water balance components. Sensitivity analyses were completed as part of the modeling effort to ensure potential uncertainties in would be addressed for monitoring and mitigation. The sensitivity analysis pertaining to outflow from backfilled pits indicates that water quality impacts would remain within the project boundary (see Section 6 of the Water Quality and Quantity Impacts Report included in Final EIS Appendix P). The BLM proposed monitoring and mitigation measure to address potential adverse effects to water quality is outlined in measure WR-3 in Section 4.3.2 of the Final EIS..
P310	163 Continued) According to the plain language of the DEIS water will be knowingly contaminated in the pit by knowingly and deliberately placing waste rock back in the pit where it is known it will leach toxins into the water. The justification for these extremely troubling actions is that the modeling says groundwater will only flow out of the pit at a rate of 1.1 gpm. "Although outflow from the West Pit Lake would have the potential to degrade groundwater quality, it is unlikely that this small amount of flow (1.1 gpm) would result in measurable degradation (new exceedances of groundwater quality standards) at a compliance point located downgradient of the pit." (DEIS pg. 4-22). This begs the question what if the model is wrong and digging out clay layers exposes highly permeable features, that will rapidly transport this toxic brew into the Kings River or Orovada groundwater basins? This would have catastrophic results on our communities. Moreover as is noted above, if the modeling is wrong elsewhere it will not correctly show impacts to our water rights, and other critical waters on public and private lands (including Lahontan Cutthroat Trout Habitat on Pole Creek). Denying meaningful public review of this model, by not allowing sufficient time to review the model or providing the model in open source format to the public, is directly contrary to NEPA.	See Common Response WATER-4.
P311	164) With respect to environmental and cultural concerns (including but not limited	Comment noted.

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	Sage Grouse, and the VRM classification) the DEIS gave undue deference to mining. I would like to draw the BLM's attention to Appendix D to EPA's Hardrock Mining Framework "There are many statutes and associate regulatory programs that govern federal land management and the disposition of minerals on federal lands. The Bureau of Land Management (BLM) has issued regulations that require operations to be conducted so as to prevent unnecessary or undue degradation of the lands or their resources, including environmental resources and the mineral resources themselves. The regulations specify that operators are to comply with federal and state environmental laws, including the Clean Water Act (CWA)." (emphasis added)	
P312	165) The DEIS did not sufficiently consider the effects of the connected and cumulative actions. The DEIS was released during the Covid-19 pandemic, this severely limited public involvement and denied us the ability to have basic questions answered by qualified BLM personnel as is noted above.	The BLM has made good faith efforts to provide all information regarding the Project and its potential effects. Due to State and Local restrictions on public gatherings resulting from the COVID virus, online meetings were conducted for the safety of the community.
P313	166) Whereas we requested but were denied an extension of time so we could meaningfully and knowingly participate in the NEPA process, we reserve the right to raise substantial new issues in future proceedings.	This NEPA process is being executed under the protocol set by Secretarial Order 3355.
Comment Letter From Dr. Erick Powell		
P314	Bartell Ranch LLC, of which I am part owner, hired Brockway Engineering to conduct research and provide input on this process. Dr. Erick Powell, of Brockway Engineering made two site visits and performed various measurements on our behalf (See Attachment B). Dr. Erick Powell provided the following comments on the DEIS, I include these comments herein, and submit these comments to the BLM.	Thank you for your comment.
P315	The following are bulleted items of concern or question based on the review of the Draft EIS Water Quantity and Quality Impact Assessment Report, dated May 2020 (DEIS Appendix P). The Draft Environmental Impact Study was prepared to evaluate the potential impact of the proposed Lithium Nevada mine. Lithium Nevada Corporation (LN) is a whole owned subsidiary of Lithium Americas (LA).	Comment noted.
P316	1. LN identified and classified numerous springs and streams in the vicinity of the mine site. However, the spring inventory is incomplete and in several cases the classification of springs and streams is incorrect. These errors and omissions are critical in that the failure to include all springs and incorrectly classifying the springs and streams will result in a misrepresentation of the hydrologic system, it also results in a groundwater model that does not accurately represent the system and has limited predictive value.	See Common Response WATER-1 and WATER-5. The groundwater model was developed and calibrated as described in Section 3 of the Water Quality and Quantity Impacts Report included in Final EIS Appendix P. Multiple data inputs were utilized, of which spring flow data was only a component, to calibrate groundwater flow in the model domain (See Table 3.8 in the Water Quality and Quantity Impacts Report included in Final EIS Appendix P). Other data inputs included geologic data, stream flow data, regional flow data, recharge, hydraulic head data, and aquifer testing/response.
P317	1a. The list of springs identified in Section 2.2.1 is incomplete. Our review revealed many other springs that are not included in this inventory. We note that the Draft states that the springs were identified through previous surveys, aerial photography,	See Common Response WATER-1. Spring locations were selected from the sources including National Hydrography Data, topographic maps, aerial surveys, and previous surveys. Additional springs were added to the dataset

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	and topographic maps. However, it is notable that there is no reference that local water users were surveyed. This local knowledge would have been invaluable in providing additional spring information. Further, it appears that several locations with obvious green areas that are visible on aerial photographs were not considered or ignored. Omitting these readily identified springs, seeps, and wetlands misrepresent the hydrologic system and results in a nonrepresentative groundwater model.	when identified, such as SP-057, SP-058, SP-09, SP-060, SP-061. BLM has reviewed submittals and sources, made revisions to the spring inventory where appropriate. Spring data would continue to be updated as necessary through the adaptive management process described WR1 (Section 4.3.2).
P318	1b. In addition to omitting hydrologic features, the inventory also misclassified twenty-three (23) springs as ephemeral. The inventory stated that these sites are dry during Q3 and Q4. The inventory did not follow the standard definition developed by the NRCS where ephemeral flows are defined as flows only in response to precipitation. The more accurate classification of these springs would be “Intermittent flows”, which are flows that occur seasonally or sporadically. Calling springs that flow seasonally as ephemeral springs is incorrect and misleading, and an intermittent classification would be more appropriate for these springs.	The text in Section 4.3 was modified for clarification. The classification of "ephemeral" surface water features is intended to distinguish surface water features characterized by non-perennial or seasonal flow from those with perennial flow in most years. The characterization of surface water features with non-perennial or seasonal flow is substantiated by the data tables provided in Appendix C of the Baseline Hydrogeologic Report. All locations which were indicated as "ephemeral" experienced periods of dryness during monitoring.
P319	1c. I personally visited SP-055 (Calvera Spring) and measured spring discharge in August 2020. During this below average precipitation year, this spring flow was measured at 16.2 gpm during lower summer flow. This spring is clearly mislabeled as ephemeral. The lack of accurate data for Spring SP-055 is important in that it was included in the groundwater model as a calibrated flux target. In calibrating the model, they used a target value of 3 gpm, which does not reflect the annual average flow. This target flux should be adjusted and the model corrected accordingly to reflect annual average flow.	The sample location for SP-055 is disclosed in the Baseline Hydrogeologic report and was clearly seasonally dry. Piteau did not locate overflow pipes or buried pipes and could not monitor discharge pipes buried across a 10-mile reach. Drawdown impacts identified by the 10-ft drawdown isopleth in the DEIS and Water Quantity and Quality Impacts study are several miles away from SP-055.
P320	1d. Similarly, SP-056 is described as being seasonally dry, however the classification distorts the analysis given that a perennial spring, downstream of SP-056 was not included in the spring inventory. Including this excluded spring results a reclassification of Rock Creek as perennial flow in this headwater section of Rock Creek.	SP-056, channel in Rock Creek, was seasonally dry as identified by site visits and photography (Piteau 2019, Seeps and Springs Survey Report Q4 2018).
P321	1e. Water was flowing in Pole Creek at the confluence of Pole Creek and Crowley Creek in August 2020. The source water for the Pole Creek flow was from observed flowing springs. Lower Pole Creek was observed to be a braided channel system with springs providing tributary flow that joins the main channel of Pole Creek. Notwithstanding these flows and springs, Lower Pole Creek was classified as an ephemeral stream. This classification is in error and not consistent with the NRCS standards.	Lower Pole Creek was not observed to perennially flow as identified from photography and site visits to SP-036, SP-039, SP-040, and SP-043 (Piteau 2019, Seeps and Springs Survey Report Q4 2018).
P322	1f. In addition, there are statements in the EIS which mischaracterize the actual hydrologic system. For example, the statement is made that springs locations in the Montana Mountains are generally aligned with faults. While this is a generalized statement, it is not supported by the site-specific data available. There are many	Spring locations in the Montana Mountains generally do align with faults. Seven (7) of the twelve (12) springs located in the Montana Mountains above the proposed Thacker Pass project are aligned with mapped faults (e.g., SP-055, SP-052, SP-053, SP-056, SP-007, SP-004, SP-008). Two others reside in

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	springs listed in the Montana Mountains that are not associated with faults or unmapped faults.	drainages (possibly related to fault activity) or at geologic contacts (also likely related to faulting).
P323	1g. It is difficult to assess the site-specific impacts of the proposed project on the hydrology, given that insufficient explanation is provided on mapped and unmapped geologic structures. No information is provided on how unmapped structures were identified.	Mapped structures are shown in figures 2.8, 2.9, and 4.2 of the Baseline Hydrologic Data Collection report (Piteau 2019a) included in Final EIS Appendix P. Additional mapped structures are shown in figures 2.3, 2.4, and 2.5 of the Water Quality and Quantity Impacts Report included in Final EIS Appendix P. The site-specific impact of structures on hydrology is discussed in Section 2.3.1 and Section 2.4 of the Water Quality and Quantity Impacts Report included in Final EIS Appendix P. How faults were implemented in the model is disclosed in Section 3.1.2 of that report, while Section 4.4 discussed uncertainty surrounding faults. For further discussion on how geologic faults were identified please refer to responses to comments P412 and P424.
P324	1h. For reference, the following table (Letter page 40) is provided on the NRCS stream classification. This Table 1 is taken from the field criteria used for characterizing streamflow conditions taken from the NRCS National Engineering Handbook (Part 654, Chapter 3). In Section 2.2.2 - Streams (Page 8), the DEIS describes and classifies the surface system streams. Thacker Creek is not given any stream classification by flow duration. Thacker Creek is a perennial stream and omitting the classification on this stream presents unclear classification on Thacker Creek.	Thacker Creek is classified as a perennial stream (see Section 4.3 of the EIS and Figure 4.3-8, Appendix A.
P325	1i. Further illustrating the lack of consistency with the scientific classification developed by the LN is the discussion and classification on Pole Creek. The data presented in the DEIS is further confusing in that it is internally inconsistent. For example, the LN classification of Pole Creek is an ephemeral stream, yet later in Draft states that there are sections of the creek that flow perennial in intermittent sections (note all three stream classifications used in describing Pole Creek). I have inspected Pole Creek from SP-050 to the confluence with Crowley Creek (except for approximately 2.75-miles between SP-060 and SP-028, which was dry). The classification of Pole Creek as ephemeral does not correspond to observed flow and NRCS criteria evaluation.	See response to comment P112.
P326	1j. There are spring tributaries to Pole Creek were not included in the LN spring inventory. These springs were observed flowing in August 2020. The failure to account for these springs distorts the groundwater model that involves Pole Creek.	See Common Response WATER-9. A supplemental field investigation conducted on February 19, 2020 delineated three flowing reaches of Pole Creek. These reaches of Upper and Middle Pole Creek are delineated on Figure 4.3-21 of the Final EIS and described in the Water Quality and Quantity Impacts Report included in Final EIS Appendix P. The groundwater model simulated flow in these reaches (see Table 3.10, Water Quantity and Quality Impacts Report included in Final EIS Appendix P).
P327	1k. LN Springs SP-039 and SP-040 were stated to have freshet flow. However, if the intent is to indicate these springs only flow when there is snowmelt or heavy rain, then the statement is misleading. “Freshet flows” are defined as heavy flows	SP-039 and SP-040 flow seasonally in concert with a rise in groundwater levels within the creek channel during spring runoff.

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	resulting from snowmelt or heavy rain. This description does not fit with the actual site conditions for these springs. During my site visit in August 2020, these springs were flowing during a time when there was only limited rainfall over several months. According to the BLM weather station (NWS ID: DBLN2), which is located south of the LN AOI (41°39'09" N, 118°02'39" W), the previous recorded rainfall occurred on June 29 in the amount of 0.01-inch. These springs are incorrectly classified as springs with freshet flow.	
P328	"1l. Another example of a misclassified stream is Rock Creek. When I visited the headwaters of Rock Creek in August 2020, I observed that the creek was flowing downstream of SP-	Rock Creek has been observed to be dry seasonally at SP-056, at the confluence with Crowley Creek, and approximately 1-mile into the canyon. These observations are described in Piteau, 2019 Seeps and Springs survey Q4 2018 and the Baseline Hydrogeologic report.
P329	056. Notwithstanding the flow present during this dry period, the DEIS classified Rock Creek as ephemeral, a classification that does not correspond to observed conditions nor the NRCS criteria evaluation."	Crowley Creek below the Rock Creek confluence is seasonally dry and not perennial (see Baseline Hydrologic Data Collection report (Piteau 2019a) and Water Quantity and Quality Impacts Report included in Final EIS Appendix P). Flow losses indicate that this segment of the creek is a losing reach (see Section 2.2.2 of the Water Quantity and Quality Impacts Report).
P330	1m. A statement is made that Crowley Creek goes dry south of the confluence with Rock Creek during July to November. Without further clarification, that statement is incorrect. In August 2020, I walked along Crowley Creek, starting at the confluence with Pole Creek and walking downstream for over 0.6-miles. There was flowing water along the entire length of Crowley Creek in this stretch. Below this reach that I walked, Crowley Creek did go dry. However, the blanket statement that Crowley Creek is dry south of the confluence with Rock Creek is incorrect.	Comment noted.
P331	1o. The onsite observations in August and the loss calculations indicate that the classification of Crowley Creek as an ephemeral stream south of the confluence with Rock Creek is not correct. The ephemeral classification does not correspond to the observed conditions or the NRCS criteria evaluation.	Crowley Creek below the Rock Creek confluence is seasonally dry and not perennial. Flow losses indicate that this segment of the creek is a losing reach as discussed in section 2.2.2 of the Water Quantity and Quality Impacts Report.
P332	2. Several references were made to mapped and unmapped geologic faults and contacts, which will influence groundwater flow substantially. I presume that the consultant for LN was referencing the work done by Henry et al., 2017 titled "Geology and evolution of the McDermitt caldera, northern Nevada and southeastern Oregon, western USA", however, no citation is provided in the consultant's summary that identifies where the mapped fault lines they reference originated from. Given the complex geologic nature of this area within the McDermitt caldera, I would expect additional detailed research and exploration of unmapped faults which are not readily visible from LiDAR or aerial imagery. Exploration using seismic reflection techniques could provide additional insight, but was not performed (or not referenced).	Comment noted. Henry and others (2017) provides the basis of reference for geologic information including faults in both the Baseline Hydrologic Data Collection report (Piteau 2019a) and Water Quantity and Quality Impacts Report (included in Final EIS Appendix P). Henry and others (2017) is duly cited in both reports, although the reference is inadvertently missing from Chapter 10 (References) of the Water Quantity and Quality Impacts Report. Further descriptions regarding the source of mapped faults are described in response to comments P412 and P424. Henry C.D., Castor, S.B., Starkel, W.A., Ellis, B.S., Wolff, J.A., Laravie, J. Al, McIntosh, W.C., Heizler, M.T. 2017. Geology and evolution of the McDermitt caldera, northern Nevada and southeastern Oregon, western USA. Geosphere; 13 (4): 1066–1112. doi:

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		https://doi.org/10.1130/GES01454.1
P333	3. Runoff recharge is stated to be limited to the ephemeral flows in Pole, Rock, and Crowley Creeks. As noted, previously this statement is misleading given the lack of property classification and the omission of important hydrologic features. Ephemeral flows are limited to stormwater runoff only. Because of the improper classification of these creeks, it appears that the consultant's study did not consider that infiltration from surface stream was occurring during the periods when these streams had intermittent or perennial flow. The failure to consider the perennial and intermittent flow is a substantial error, and will affect the conceptual water balance and modeled water balance. As stated previously, I measured a seepage loss in Crowley Creek, after the Home Ranch diversion, of 0.52 cfs/1000-ft. During a single 24-hour period, that loss rate equates to 1.03-acft/1000-ft/day.	Runoff recharge is described in the conceptual model in Section 4.4 of the Baseline Hydrologic Data Collection report (Piteau 2019a) included in Final EIS Appendix P and is inclusive of the entire conceptual model domain. Recharge estimates for runoff recharge and deep bedrock recharge were derived from Huxel (1966) and Malmberg (1966) for both Quinn and Kings River basins. The conceptual model routes additional recharge across the alluvial piedmont as described in Table 4.5 (se Baseline Hydrologic Data Collection report Piteau (2019a) included in Final EIS Appendix P). Including infiltration recharge from other creeks would be double counting runoff recharge already applied by catchment. Huxel J.R, C.J., Parkes, 1966. Effects of Irrigation Development on the Water Supply of Quinn River Valley Area, Nevada and Oregon 1950-64. Water Resource Bulletin No. 34. Malmberg, G.T., Worts, G.F., 1966. Water Resources Bulletin No. 31. The Effects of Pumping on the Hydrology of Kings River Valley, Humboldt County, Nevada, 1957-64.
P334	4. Basalt geologic formations often are fractured, resulting in extremely high localized hydraulic conductivities, that may not be "normalized to bulk hydraulic conductivity values at the macroscopic scale." Very small model discretization with general hydraulic conductivity values will not reflect site specific characteristics. The groundwater model improperly ignores the characteristics of these formations.	See Common Response WATER-5. The groundwater model utilizes two distinct hydrogeologic units or HGUs to represent basalt. Their hydrogeologic properties fall within the anticipated range and were verified through model calibration. Although basalt can form transmissive units, it is unlikely that basalt at the proposed Thacker Pass project forms such units because: i) basalt flows were deposited after the moat sediments of claystone/ash and thus not a principal unit in the open pit; ii) where basalt is present in the open pit, it is confined by claystone, iii) there are not large, high flowing springs typically associated with continuous and fractured basalt flows.
P335	5. No justification was provided to create the very dense model grid of 100-ft horizontal and 50-ft vertical discretization at the mine site. The data in the modeling reports do not support a model grid of that size.	Please refer to response to comment P346.
P336	6. The LN consultant states that constant water levels are interpreted as recharge occurring from higher/wetter elevations. However, this is inconsistent with the prior statement that that seepage from stream channels was not considered. Our observations indicate that a substantial amount of water seepage is occurring in the perennial and intermittent stream channels within the LN AOI and vicinity. Unfortunately, the inclusion of seepage occurring within the various stream channels is not considered or presented.	Please refer to response to comment P333.
P337	7. No reference is provided that supports the conclusion that claystone and ash have similar hydrogeologic properties.	Hydrogeologic unit descriptions for interbedded claystone and ash, indurated claystone, and basal ash are presented in Section 4.2.1 and 4.2.4 of the Baseline Hydrologic Data Collection report (Piteau 2019a) included in Final

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		EIS Appendix P.
P338	8. No reference is provided that supports the conclusion that basal ash and lacustrine sediments have similar hydrogeologic properties.	Basal ash was deposited as part of moat sediments in the caldera, which were lacustrine in nature.
P339	9. A groundwater divide is identified and drawn between Crowley Creek and Thacker Creek in Figure 2.9. However, when one examines the groundwater contours as drawn, it appears the groundwater divide is drawn incorrectly. Normally, a groundwater divide crosses contours lines at right angles, which in this case they do not. Further, if the identified fault is acting as a groundwater barrier or flow path, then the groundwater divide will not cross it at an obtuse angle. But in this case the divide crosses the mapped fault at an obtuse angle.	The groundwater divide orthogonally crosses the groundwater contours, and represents the concept that the groundwater divide is east of the hydrologic divide. Preference in interpretation in this case was given to groundwater contours over fault traces.
P340	10. The Quinn River Valley groundwater levels include a description and discussion about the alluvium material as being very transmissive materials. According to the Bureau of Reclamation's Ground Water Manual, soils with relatively high permeability are associated with hydraulic conductivity values between 100 and 1000 ft/day. The DEIS indicates that the estimated hydraulic conductivity value for the Quinn River Valley alluvium based on the pump test of well QRPW18-01 is between 20 and 100 ft/day (Table 2.2), but has a final calibration value of 5 to 23 ft/day (Table 3.3). Neither the estimated hydraulic conductivity value nor the final calibration fit with the Bureau of Reclamation's definition of soils with relatively high hydraulic conductivity.	Please note that transmissivity is not equivalent to hydraulic conductivity nor permeability (although these terms are frequently used interchangeably). Transmissivity equates to an aquifers average hydraulic conductivity (expressed in units of Length/Time, or for example ft/d) multiplied by aquifer thickness and is expressed in units of Length**2/Time or ft2/d. Please refer to response to comment P344 describing calibrated alluvial aquifer values.
P341	11. It is stated that the eastern portion of the Quinn River valley has artificially lower levels due to agricultural pumping. The west side of the Quinn River valley has not experienced the same aquifer decline, because there are not as many irrigation wells on the west side. Introducing a large production well(s) that will be pumping 7.2 cfs on the west side of the river will result in substantially lower groundwater levels on the Quinn River west side.	Comment noted. Potential effects to the water table associated with the proposed groundwater pumping from the Quinn Production Well (and backup well) were evaluated as summarized in Section 4.3.
P342	12. It is stated that all wells within the AOI are owned by LNC, except for well log 380. This statement ignores wells within the area that are not owned by LNC. For example, the Windmill well and the domestic spring (SP-028) used by Mr. Youngberg are within the AOI and are not owned by LNC.	The Windmill Well was just outside the AOI. SP-028 is considered to be a spring.
P343	13. The DEIS (Appendix P, Part 2, Figure 2.2) notes that water right permit nos. 87006 (not 87008 as stated in the text) and 79742 are within the project AOI, not just the 5-mile radius of the project. The text ignores that they are within the AOI, and only discusses the 5-mile radius. The impacts to these permits must be assessed both within the AOI and with the 5-mile radius.	Comment noted. Impacts were analyzed as part of the Water Quality and Quantity Impacts report included in Final EIS Appendix P.
P344	14. The estimates of horizontal hydraulic conductivity in Table 2.2, Table 3.2, and resulting calibrated values in Table 3.3 are internally inconsistent. Most of the calibrated hydraulic conductivity values are approximately in the middle of the range presented in Table 2.2. However, the calibrated hydraulic conductivity values for the	Pumping tests in Quinn River Valley identify aquifer transmissivity, T = K*b. Transmissivity is the coefficient of resistance for groundwater flow and requires an aquifer thickness. The QRPW18-01 pumping test average transmissivity was 26,935 ft2/d. Hydraulic conductivity calculated from the

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	alluvium in the Quinn River valley and King River valley are low compared to the estimates from Table 2.2 and the test results from Table 3.2. Groundwater models are simplifications of very complex systems, and there are many assumptions that must be made. However, if a value is obtained by testing, such as pump testing the production well, then that value shouldn't be adjusted if possible. The Quinn River valley alluvium hydraulic conductivity results have a large range and previously stated to be very transmissive. However, the highest calibrated value for the Quinn River valley is 23 ft/day. A lower hydraulic conductivity value will result in less impact to wells farther away from the point of diversion. A comparison of alluvium hydraulic conductivity values is presented in Table 2 (Letter page 43), showing the low calibrated values of K, especially given that these values were tested.	pumping test used the saturated pumping well thickness to calculate hydraulic conductivity, which was ~550 ft. The value from Table 2.2 was thus 51.4 ft/d. The groundwater model had an alluvial aquifer thickness of ~ 1,300 ft in Quinn River Valley, thus the resulting hydraulic conductivity is ~21 ft/d. Model calibration used 23 ft/d, which honors the transmissivity identified via testing and achieved a better calibration. Thus, the model appropriately represents the Quinn River alluvium aquifer with the tested value of aquifer transmissivity.
P345	15. There is no discussion on the use of the MODFLOW-USG Transport solver, rather than the standard USG solver. Solver was not included with MODFLOW files. Model will not converge without the MODFLOW-USG Transport solver.	By definition MODFLOW-USG Transport is the only available version with capability to simulate fate and transport. All model geographic user interface (GUI) files and output files (.HDS, .CBB, .CON, .LST) were available for review. MODFLOW input and output files were made available to the public. Freeware versions of the Groundwater Vistas GUI allow users to review all input and import model results.
P346	16. Model cell discretization should be based on the refinement of available data. There is no increase of available data to support the cell refinement to 100-ft by 100-ft horizontal at the proposed pit and 200-ft by 200-ft horizontal at the Quinn River production well. This refinement suggests incorrectly that the model is based on more accurate data than exists and produces more accurate simulations.	Grid discretization is based on: i) the variability of aquifer properties; ii) curvature of the water table, iii) variability of boundary conditions, and; iv) variability of the problem definition (Anderson & Woessner, 1992). Finer resolution in the vicinity of the pit and production well is justified for several reasons: i) a fine grid resolution is necessary to represent the geometry of the proposed Thacker Pass project with minimal areal and volumetric error; ii) Because water levels are anticipated to be variable in the footprints of the proposed Thacker Pass open pits and at the Quinn River production well location, so finer cell sizes are necessary to resolve these changes smoothly and maintain numerical stability; iii) there is abundant geologic data from exploration which justifies a finer grid spacing at the proposed Thacker Pass mine, and; iv) several piezometers and monitoring wells at Thacker Pass are within 1,000 ft and require finer discretization to resolve spatially. Anderson, M.P., and W.W. Woessner, 1992. Applied groundwater modeling simulation of flow and advective transport, Academic Press, New York.
P347	17. No increase in available data supports the vertical cell refinement of 50-ft for layers 7 to 18. This refinement suggests that the model is based on more accurate data than exists.	Please refer to the response to Comment P346.

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P348	18. Model external boundary conditions were modeled as constant head. A constant head boundary can artificially increase or decrease the head at the boundaries to meet this condition. A more advanced model will adjust the boundary condition to a constant flux boundary that will allow heads at the boundary to adjust as needed.	Boundary conditions were selected to be sufficiently distant from the stresses associated with the proposed Thacker Pass project so as to not impact simulations. The resultant maximum extent of drawdown from associated stresses did not extend anywhere near constant head boundaries, indicating they did not constrain the simulated cone of depression.
P349	19. Comparisons of pre-1950 ET estimates and area are provided along with estimates of current ET area and estimates. The reduction of native ET estimates could be attributed groundwater diversion for irrigation. This has reduced the number of acres from 92,000 acres (pre-1950s) to 14,640 acres (Modern ET area). This is an 84% reduction in native ET area. If pumping is allowed to occur on the west side of the Quinn River, then the result will be a lowering of the water table due to pumping and a subsequent reduction in native ET area on the west side of the river.	Comment noted.
P350	20. The model was developed using the evapotranspiration package in MODFLOW. The evapotranspiration package includes the depth below the surface to allow ET to occur. The model was developed with an ET depth of 35-ft below the ground surface (Figure 3.9). There is no reference or discussion to justify extending the ET depth to 35-ft. A more valid ET depth would be 20-ft, because the published deepest roots of greasewood is 20-ft (USFS). Other phreatophytes have shallower average depth root systems. An excessively depth ET parameter could result in misrepresentation of when ET is occurring, resulting in a poor model calibration.	An extinction depth of 30 ft is referenced for phreatophytes in Nevada (Anderson & Woessner, 1992). An extinction depth of 40 ft was used for ET zones across Nevada in the Great Basin Carbonate and Alluvial Aquifer System (USGS, SI 2017-5072). The depth used in the groundwater model are reasonable for the setting. ET rates were used as a model calibration parameter for the water balance (see Table 3.8 Water Quantity and Quality Impacts report included in Final EIS Appendix P), thus not resulting in a poor model calibration. Anderson, M.P., and W.W. Woessner, 1992. Applied groundwater modeling simulation of flow and advective transport, Academic Press, New York.
P351	21. No detailed explanation of calibration approach is presented. Three major groups of water levels were created. But no results of calibration of these major water levels groups. If these major water levels groups were created, I would expect to see how the water level groups performed in each calibration.	As explained in Section 3.2 of the Water Quantity and Quality Report provided in Appendix P of the EIS, the calibration approach, as iterative. Key changes made to the model during the calibration process and how these changes affected the calibration statistics were identified in Table 3.9 in the Water Quantity and Quality Report provided in Appendix P of the EIS.
P352	22. Group of flux targets for springs and surface creeks were created. No presentation of calibration of flux targets for specific groups was included in the model summary. No indication of how flux target groups performed. Many spring targets were listed as 0 gpm, which was incorrect based on my visual observation in May and August 2020 and other local knowledge. Calibrating a model to incorrect target flows will result in an inaccurate model.	Only one group (Group 4) existed for flux targets which are described on Figure 3.44 in the Water Quantity and Quality Impacts report included in Final EIS Appendix P. More specific details of flux targets for streams, springs, and boundary conditions are documented in Table 3.5 of the Water Quantity and Quality Impacts Report. Eleven (11) flux targets were identified with 0 flow (Table 3.5 Water Quantity and Quality Impacts report) and refer to springs where no flow has been observed (Table 3.4 Baseline Hydrologic Data Collection report [Piteau 2019a] included in Final EIS Appendix P).
P353	23. We were provided calibration version “u”, so it is assumed that model calibration versions “a” through “t” also exist. We have one table (Table 3.9) that outlines 8 models with some results parameters. But no indication on what values were adjusted and in what order. A clear breakdown of model calibration approach would	Please refer to comment response P351.

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	be helpful to understand how the model was calibrated.	
P354	24. It was discussed that an automatic parameter estimation tool was used for the sensitivity of different model parameters after the model was calibrated. However, it was not stated if a parameter estimation tool was used for the calibration.	Correct. The PEST parameter estimation tool (Watermark Numerical Computing, 2010) was used to evaluate parameter sensitivity following manual calibration. PEST was also applied prior to the sensitivity runs following manual calibration to evaluate manual calibration efforts. Table 3.9 in the Water Quantity and Quality Impacts report (included in Final EIS Appendix P) shows a statistical summary following calibration after incorporating PEST results for K values (model run LNC19-SS-i).
P355	25. All streams and springs within the model were simulated as drains. However, most of the streams within the model are losing streams, which add water to the model. The addition of water seepage to the aquifer can be substantial (Crowley Creek loss rate of 0.52 cfs/1000-ft). Modeling rivers as only drains introduces conceptual error into the model, especially when the MODFLOW river package is available to use. When modeling a drain, if the water surface elevation decreases, then water will cease to flow from the aquifer to the drain. Water will never flow from the drain to the aquifer, which does not reflect how the streams in this system function.	See Common Response WATER-5. Several approaches could be applied to model recharge and discharge in a model. In this case, drains were applied to represent discharge of groundwater to springs or into gaining, perennial reaches of stream channels. Recharge was distributed evenly over each catchment. Including infiltration recharge from losing reaches of stream channels using the MODFLOW river package would be double counting runoff recharge already applied by catchment. Hence, the simulation of losing stream reaches using drains in this case is appropriate. Please see response to comment P333.
P356	26. The stated reason for not modeling the streams with the MODFLOW river package is that the streams are ephemeral. But has been discussed previously, classification of these streams as ephemeral is incorrect in most cases based on observations and the NRCS criteria.	See Common Response WATER-5 and response to comment P355.
P357	27. The Quinn River could act as a hydraulic barrier during portions of the year, and limit effects of production pumping to the west side of the river only.	It is unclear how the Quinn River could be a hydraulic barrier. The Quinn River across the conceptual model is a losing stream, thus it is a recharge boundary condition.
P358	28. Simulating the irrigation pumping rates in the Quinn River valley, the pumping rates were equally distributed across the irrigation acres. Based on the report, effort was made it identify all irrigation wells, locations, and quantities. Therefore, there is no justification to create a uniform distributed flux for all of the irrigation area. A better approach would be to model irrigation diversions from the well locations, then evaluations could be made of the impacts of LN production well pumping to existing groundwater wells.	Irrigation pumping is fundamentally a function of acreage and crop type. Given most agriculture in Quinn River Valley is of a similar crop type, irrigated acreage delineates the spatial variation of pumping. Note that not all locations of irrigation usage were available from the State Engineer, thus this approach was more accurate to remove the cumulative sum of irrigation pumping.
P359	29. Calibrated vertical anisotropy ratios varied between 1:1 and 1:10. However, Table 2.2 outlines a substantially wider range of 1:1 to upwards of 1:1000 (based on 2018 testing). No explanation is given of why the tests resulted in such a wide range of vertical anisotropy ratios and why the calibrated values were between 1:1 and 1:10.	Table 2.2 of the Water Quantity and Quality Impacts report included in Final EIS Appendix P outlines potential variability in vertical anisotropy based on published information and testing. Anisotropy values determined through model calibration support the assigned range which falls within the upper range of values reported in Table 2.2.
P360	30. Table 3.2 identifies the number of tests performed. There is no explanation in the text if these tests were the same tests that were reported in Table 2.2. It is unclear why different tests resulted in different aquifer estimations. Table 3.2 states that only 2 tests were performed on alluvium material, when a large portion of the model is	The Water Quantity and Quality Impacts report Table 3.2 (included in Final EIS Appendix P) refers to results of field testing performed as part of the Baseline Hydrologic Data Collection report (Piteau [2019a] included in Final EIS Appendix P). These tests are further described in Section 3.4 of Baseline

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	considered alluvium. Additional testing would provide better confidence in reported numbers. But the calibrated model does not even use these alluvium test results.	Hydrologic Data Collection report. Table 2.2 the Water Quantity and Quality Impacts report identifies sources for initial ranges of various hydrologic parameters.
P361	31. Some aquifer parameter tests in Table 3.2 resulted in a wide range of aquifer parameter values for the same aquifer material. For example, basalt has two tests of hydraulic conductivity ranging from 4.05 to 0.011 ft/day. However, the calibrated value was 0.6 ft/day. The wide range of values indicate that the material is highly variable and assume a single value for a large area could result in simulations that are missing important flow path.	The value of 0.6 ft/d is within the stated range and yielded a better match during calibration.
P362	32. Unfortunately, even alluvium tests of similar values in Table 3.2, which reported hydraulic conductivity values that range from 52.5 to 51 ft/day, ended up being discarded. The reported calibration value for hydraulic conductivity for alluvium for the model are 5 ft/day (zone 8, zone 21, and zone 22), 0.5 ft/day (zone 18), 8 ft/day (zone 19), 15 ft/day (zone 20), 23 ft/day (zone 23), and 10 ft/day (zone 24). None of these values are within the tested range. Generally speaking, a lower hydraulic conductivity value will decrease the extent of influence of pumping on surrounding areas.	Please refer to the response to Comment P344 which describes the difference between aquifer transmissivity and hydraulic conductivity and how the model accurately reflects alluvial basin transmissivity.
P363	33. Areas that have been identified as High K Gravel zones, such as Zone 24 in the model, do not have a corresponding high K value in the calibrated model. Zone 24 has a calibrated value of 10 ft/day, which is a low hydraulic conductivity value for alluvium (based on Bureau of Reclamation's Ground water manual).	Comment noted.
P364	34. Table 3.5 includes target flow rates for springs and surface flow rates. These are steady state flow rates. Many spring target values are zero. These zero values are not supported. Based on visual inspection in May and August, I conclude that the target values in Table 3.5 are lower than actual flow values. A model calibrated to incorrect flow values will be an inaccurate calibrated model.	See Common Response WATER-1. The spring targets with zero flow had never produced measured discharge during several visits for seep and spring surveying and/or were identified as man-made features. Site visits and photographs available in seep and spring surveys confirm zero flow conditions. Based on comments provided, springs which were visited by the Commenter include SP-055, SP-036, a spring in Rock Creek, and springs in Pole Creek. All of these springs were assigned non-zero flux targets, with the exception of an unnamed spring in Rock Creek. Annual average fluxes at non-perennial springs are naturally low because they are dry part of the year. Target values reflect the data collected across a full 4 quarters, rather than just May and August.
P365	35. Considering the discussion of concerns about the calibrated model based on inaccurate data, any simulation of mining conditions should be viewed with a degree of skepticism. Therefore, I have not included comments on all model simulations. But that does not preclude evaluations of individual model simulations in the future. A few additional comments on model simulations are presented.	See Common Response WATER-5. Quantitatively the model meets criteria set forth by BLM IM No. NV-2008-035, wherein: "The acceptable residual should be a small fraction of the differences between highest and lowest heads across the site or area." The scaled RMS error, scaled Mean residual error, and scaled standard deviation meet this criteria. Additionally, the model was calibrated to regional and site-specific flux targets. Qualitatively a spatial evaluation of errors indicate that errors are on the order of 1ft to 10's of feet,

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		and occur as both positive and negative residuals (see Figure 3.43 of the Water Quantity and Quality Impacts report included in Final EIS Appendix P). Groundwater flow directions align with observed data or topography. Discharge to streams and key discharge areas (e.g., Thacker Creek and near Indian springs) are aligned with observation. Thus, groundwater flow magnitudes and gradients are well represented. As such, the model was determined acceptable by BLM and fit for purpose to simulate regional effects from the proposed Thacker Pass project.
P366	36. In section 3.2.3 Pre-mining Simulations, Figure 3.43 shows almost a horizontal result of wells with an elevation near 4,100 amsl. This is due to an assumption of constant head boundary and other assumptions in the Quinn River valley. When values plot horizontally on the observed vs calibrated plot, it is apparent that there are errors in the assumptions with respect to specific zones. Additional refinement of this area could produce a model simulation that better reflects model target datasets.	The horizontal result of wells referred to in this comment appears to be referring to wells located in Kings River Valley not Quinn River Valley. Heads in Quinn River Valley follow a 1:1 trend of observed vs. simulated heads (see Figure 3.43 of the Water Quantity and Quality Impacts report included in Final EIS Appendix P). Water levels in Kings River Valley indicate a cone of depression in the center of the valley due to irrigation pumping. The simulation produced a flat water table which was sufficient for the purposes of the proposed Thacker Pass project, which has no footprint in the Kings River alluvial aquifer. Further effort could be placed to implement local pumping stresses in Kings River Valley, but this is not germane to the proposed Thacker Pass project.
P367	37. A statement is made that the model-simulated solution provides an acceptable match to the observed values across much of the model area. This is an opinion statement with no clarification of who or what criteria was used to determined it was acceptable.	Please refer to response to comment P365. By definition, calibration is subjective and should be evaluated both qualitatively and quantitatively (Anderson & Woessner, 1992). Likewise, ASTM standards for model calibration do not define specific quantitative criteria and notes that experience and professional judgement are necessary (ASTM D5981, Calibrating Ground-Water Flow Model Application).
P368	38. The traditional statistic for model fit is the RMS error. In the text, the RMS error is not presented. In all cases, the RMS error for the model simulations presented is higher than the reported statistics of mean.	RMS error, as well as several other statistical metrics are presented in Figures 3.43, 3.44, 3.47, 3.48, 3.52 and 3.53 of the Water Quantity and Quality Impacts report included in Final EIS Appendix P. By definition RMS error will be greater than residual mean because it considers the sum of residuals squared.
P369	39. The pre-mining simulation has a poor calibration of spring and creek flux, based on the observed/simulated plot and my opinion. The RMS error for the spring and creek flux (Figure 3.44) is listed at 27.5 gpm. The range of flows for the targets is 492 gpm to 0 gpm. With an average of 23.6 gpm. Median flow of 0.5 gpm.	The model underpredicts water levels near several springs in the Montana Mountains, as described in Section 4.4 of the Water Quantity and Quality Report included in Final EIS Appendix P. As a result, mining related drawdown in the Montana's is more conservative (e.g., of further extent) and water levels are lower. Additionally, several of the springs in the Montana's may represent perched conditions along geologic contacts between claystone and tuff, or along fault structures and may not necessarily represent groundwater elevation.
P370	40. A statement is made that the results indicate the simulation is well aligned with the conceptual hydrogeologic system, given the uncertainty in conceptual model inputs. No further discussion on model uncertainty is given. All values within the	Model uncertainty is discussed in Section 4.4 of the Water Quantity and Quality Impacts report included in Final EIS Appendix P. Sensitivity runs reflecting a range of predicted values are simulated in Section 4, 5, and 6 of

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	model are highly uncertain, which results in a very uncertain model. It is important for the reviewing public and the decision maker to fully understand the model's uncertainty – in other words how reliable and verifiable are the model results. The NEPA process requires there to be a high degree of confidence in the modeling. Likewise, the model is an important foundation for any mitigation and impact to other water users.	the same report. These elements capture potential variability surrounding groundwater modeling. Additionally, as described under Mitigation Measure WR-2 (Final EIS Section 4.3.2), BLM recognizes there is uncertainty inherent to any groundwater modelling effort and would require the groundwater model for the proposed Thacker Pass project to be updated and recalibrated periodically to account for differences between the model simulations and operational monitoring results. Model updates and recalibration would be based on the actual observed, as opposed to predicted, changes in groundwater elevation and allow for more refined estimates relating to potential water quantity and quality impacts.
P371	41. The following statement from the text is incomplete, "The groundwater model simulates perennial flow to the Upper and Middle reaches of Pole Creek of approximately ." No indication of what authors wanted to say about the upper and middle reaches, and what flow was modeled in these reaches.	Comment noted. The intent was to convey that the groundwater model indicates there is groundwater discharge to the Upper and Middle reaches of Pole Creek. Please refer to comment response P151 and Common Response WATER-9.
P372	42. A statement is made, "Simulated flows to the lower reach of Pole Creek are believed to be overestimated by the model in the vicinity of the confluence with Crowley Creek." No simulated flow data is provided, however, flow in Pole Creek at the confluence with Crowley Creek was measured and observed in August 2020.	Simulated data is provided in Table 3.8 and Table 3.10 of the Water Quantity and Quality Impacts report included in Final EIS Appendix P.
P373	43. In 2018 a pump test was performed on well QRPW18-01. It was pumped at 2316 gpm for 72 hours. The proposed mine diversion rate for Phase 2 is 3230 gpm. The well was not pump tested for the full required diversion rate. Nor were the impacts to neighboring wells evaluated at the full diversion rate. To fully analyze and calibrate the full production model, a pump test of the full production flow rate should have been performed.	The subject pumping test operated at 72% of the proposed production rate, and sufficiently stressed the aquifer to characterize transmissivity. Once aquifer transmissivity is known, resultant drawdown due to variable production rates can be determined. Also note that the production well produced at a rate of ~3,500 gpm during step testing and only generated 36 ft of drawdown in the borehole (see the Baseline Hydrologic Data Collection report [Piteau 2019a] included in Final EIS Appendix P).
P374	44. In the transient calibration, a statement is made that "the model reasonable represents the alluvial aquifer in the Quinn River valley to the east of the proposed project area." This again is an opinion statement that does not reflect the actual data. For example, figure 3.49d shows the difference between the observed and simulated water surface elevations in the windmill well of approximately 20-ft difference. I measured a seasonal difference in the windmill well of 0.91-ft (from May 2020 to August 2020). This is a very small seasonal difference and inaccurate modeling of 20-ft cannot be justified by seasonal differences.	Regional heads, head gradients, fluxes in Quinn River Alluvium, and drawdown during the QRPW18-01 pumping test are well matched to evaluate regional impacts, as discussed in Comment P366.
P375	45. Given the sensitive nature of wetland areas in the Quinn River valley to water surface elevations, a minor drawdown in water surface elevation will have substantial impact to native vegetation growth. Large model errors of 20-ft, for example, will not be able to accurately depict the impact of groundwater level change to wetland areas.	It is true wetland areas can be affected by drawdown if they are hydraulically connected to the main alluvial aquifer in Quinn River. Water levels in the alluvial areas are several feet higher than water levels at the Quinn River Production well, and are locally recharged by Crowley Creek. The presence of Lake Lahontan lacustrine sediments and fine-grained sediments deposited at the toes of alluvial fans are likely aquitards that cause the presence of the

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		wetlands. Thus, some degree of hydraulic separation, based on a steeper hydraulic gradient between the wetlands and the Quinn River Alluvium, separates the wetlands from the valley. Please refer to comment response P191 for more information on this topic.
P376	46. In the discussion in Section 4.2 Alternative Comparison, it was determined that the Open Pit Alternative had the largest extent of 10-ft drawdown with a diameter of ~5.5 miles. I know of no standard in evaluating impact to groundwater drawdown that limits the impact of 10-ft, regardless of size of model. Groundwater levels have seasonal variability, however, impacts to groundwater levels of less than 10-ft may impact sensitive creeks, springs, wetlands, and native vegetation. Six wells in the Quinn River valley were measured to find the depth to groundwater in May and August 2020, with an average seasonal change of 2.65 ft. The Burnsfield area has native wetland areas due to high water. Standing water was observed in May 2020, but was not observed in August 2020. The two wells in the Burnsfield area had a seasonal decline from May to August 2020 of 1.4 and 1.48-ft. Therefore, lowering the water table by just 1.5-ft can alter the hydrologic response in this area. Excluding impacts of less than 10-ft would not fully evaluate the maximum impact of the proposed project.	See Common Response WATER-3 regarding use of the 10-foot drawdown contour to define the drawdown area and establishment of the 1-mile buffer outside this area to evaluate impacts. Additionally, hydrographs of simulated water levels and fluxes through time were provided in Figure 4.9, Figure 4.20, Figure 4.30, Figure 4.33, Figure 4.34, and Appendix E of the Water Quantity and Quality Impacts report included in Final EIS Appendix P. These provide a quantification of drawdown magnitude through time at points of interest. Natural seasonal variation would be superimposed on these projections.
P377	47. In Appendix E there is an analysis showing impacts to ground water levels during mining and recovery for 300 years from the start of the mine operations. Changes to ground water elevations doesn't present a clear picture of the impact of mining on the springs. Any substantial change to the ground water elevations will impact water flow from springs. For example, SP-036 (tributary to Pole Creek) shows a decline in elevation during mining and the elevations that will not rebound after mining stops. Flow from this spring was measured in May 2020 at 0.14 cfs (62 gpm) but was dry in August 2020. At the predicted elevation declines Spring SP-036 will thereafter be dry year round.	The decline in water levels does not conclude that SP-036 will be dry year-round because surface water will still flow in the channel from upstream, and water levels at SP-036 will still seasonally oscillate due to snowmelt recharge. It is expected, based on modeling results, the period of groundwater flow to SP-036 could decrease. Additionally, as described under Measure WR-1 (Final EIS Section 4.3.2) BLM may require reasonable modifications and adjustments to include additional monitoring sites or increased monitoring frequencies based on the results of the proponent's proposed operational and post-mine groundwater and surface water monitoring program to ensure water resource impacts are adequately monitored and mitigated as necessary.
P378	48. Pumping of a production well in the Quinn River valley will alter the groundwater flow from historical patterns. Seepage from Crowley Creek could potentially be altered to flow to the production well, and reduce seepage that forms the wetland areas in the Burns Field.	This topic has already been addressed in comment responses P191 and P375.
P379	49. Decreases in water table at all stockwater wells will result in higher power requirements and pumping needs. Substantial impacts may result in increased power requirements, reduction in well yield or well going dry.	Potential impacts to water supply wells are discussed in Section 4.3.1.1 under the heading "Effects to Water Rights".
P380	50. Water Right transfer considers pumping from the existing production well and a second production well approximately 1-mile to the west. If the water right will potentially use multiple points of diversion, then each point of diversion should be evaluated for impact under all scenarios.	Please refer to comment response P210.

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P381	51. Additional information was provided to us by the BLM during the week prior to the deadline for the DEIS. We have not have sufficient time to analyze the information nor provide comments on additional documentation and nor assess how it impacts the models.	Comment noted. The BLM provided Mr. Bartell with the MODFLOW-USG files on 08-27-20. The MODFLOW-USG files were originally provided to Mr. Bartell on 02-21-2020.
P382	52. Two maps are provided to illustrate the range of impact of the 4-ft and 1-ft anticipated drawdowns from the production well (Map 1) and the open pit (Map 2). These maps were created using LN native MODFLOW model files that were received in March 2020. Model runs were made independently using the LN model to generate simulated drawdowns runs. Simulated runs were used to generate 4-ft and 1-ft drawdowns isolines on the maps [See Attachment A].	See Common Response WATER-3.
Comment Letter From Jason		
P383	I am against the thacker pass project.	Thank you for your comment.
Comment Letter From Katie Andrle		
P384	The SETT would like to clarify that indirect impacts such as noise are part of the HQT analysis; the sentence "Mitigation pursued by the applicant through the CCS program is used to offset impacts to GRSG and sagebrush habitat only, and is not intended to offset potential effects to other resources, such as impacts to riparian and water resources, or impacts from noise" can be revised to remove "or impacts from noise." However, because the HQT does include indirect impacts such as noise, it does not preclude the need to adhere to other minimization and avoidance measures, or guidance on noise monitoring protocols as provided by NDOW.	Thank you for your comment and clarification.
P385	"Mitigation pursued by the applicant through the CCS program is used to offset impacts to GRSG and sagebrush habitat only, and is not intended to offset effects to other resources, such as impacts to riparian and water resources," the SETT would like to acknowledge and reiterate that the CCS does not account for potential impacts to riparian and water resources that may not be realized until after the 41 year mine life; it also does not account for potential impacts beyond a 6km buffer of the proposed disturbance. The HQT in this case is based upon the assumption that no negative impacts will occur to these resources within the 6km buffer post reclamation of the mining operation. Therefore, the SETT strongly encourages the proponent and BLM to develop a robust monitoring and adaptive management plan as discussed during the meeting on September 1, 2020, as well as to consider additional conservation actions to address potential impacts to water or riparian resources.	Thank you for your comment. LNC has developed a water monitoring plan and has proposed groundwater monitoring and contingency mitigation measures. The monitoring plan is included in the Thacker Pass Project, Water Quantity and Quality Impacts Report-Addendum I (Piteau 2020a) that is included in Appendix P to the DEIS. BLM has also proposed additional monitoring to minimize drawdown effects to perennial surface waters as summarized in Section 4.3.2 of the DEIS. It is anticipated that BLM's annual review of monitoring results combined with the updated groundwater modeling predictions would provide early warning of potentially undesirable (and unanticipated) impacts to water-dependent resources to allow for possible implementation of appropriate adaptive management measures to mitigate their effects. Implementation of these measures would likely reduce or minimize potential impacts to water dependent resources. In addition, a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation. The TAG would consist of the applicant, the BLM, the NDOW, the USFWS, and any other agencies or academic institutions as appropriate.

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P386	The SETT has conducted the HQT for the exploration, and as currently planned our desktop analysis yielded a credit obligation of zero debits. However if the exploration plan changes the analysis may need to be revisited and possibly revised.	Text has been revised in EIS Section 4.5.1.1per the comment.
Comment Letter From Don and Sherilyn Brumley		
P387	Due to the proposed Lithium Mine Project on Thacker Pass in which our Upper Quinn River Allotment runs across State Highway 293 (also commonly known as Kings River Hwy), we are requesting for public safety that both sides of the Highway 293 be fenced. This is to prevent cattle from being on the road and causing severe traffic safety issues due to the increased trucks and vehicle traffic on the this route. Please feel fre to contact us with any questions regarding our request.	Thank you for your comment. Effects to traffic patterns are presented in Section 4.13.1.1. Potential project related off-site road modifications are the jurisdiction of NDOT. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations.
Comment Letter From Jim Balderson		
P388	Please be aware that the proposed facility is required to become permitted as a public drinking water system. Plans and specifications for the drinking water system are required to be submitted to the Nevada Division of Environmental Protection (NDEP), Bureau of Safe Drinking Water (BSDW) for review and approval prior to construction of any water system infrastructure. Questions or comments should be directed to Jim Balderson at 775-687-9517 or jbalderson@ndep.nv.gov.	Comment noted.
Comment Letter From Rebecca Lynn Palmer		
P389	The SHPO has reviewed the subject documents. The Bureau of Land Management has indicated that it intends to utilize the public scoping as part of compliance with the National Environmental Policy Act (NEPA) to involve the public in the Section 106 process and procure relevant information concerning cultural resources issues in the area. However, the SHPO is unable to find a similar statement, or a reference to the consultation requirements of the National Historic Preservation Act of 1966, as amended, in the NEPA documents provided to the public. Inclusion of a clear statement that the federal agency intends to comply with Section 106 as well as NEPA public notification requirements is recommended by guidance provided by CEQ and ACHP.	A statement confirming the BLMs continued compliance with Section 106 public notification requirements has been included in Section 6.1.
Comment Letter From David Schwartz, P.E.		
P390	1. The submittals show multiple access points located off SR293 to the proposed mine and exploration areas. Nevada Department of Transportation (NDOT) will require an Encroachment Permit for all access points and improvements within the NDOT highway right of way. All access points will have to meet NDOT standard for spacing requirements and construction. Improvements may also be required at the intersection of US95 and SR293 to accommodate for the increased traffic this site will generate.	The operator has acknowledge that an Encroachment Permit will be required, and all improvements will meet NDOT specifications. The Encroachment Permit is listed in Table O2 of Appendix O of the EIS.
P391	2. Any utilities that will cross NDOT right of way will require an Encroachment Permit. Please contact your utility provider to ensure they initiate the permit process.	It is understood that an Encroachment Permit will be required, and all improvements will meet NDOT specifications.

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P392	3. NDOT recommends that the mine and exploration area is fenced out or that cattleguards are installed at all access locations to ensure livestock are not able to access the highway.	The Mine Plan area would be fenced for public safety according to MSHA requirements. The exploration area would not be fenced under the Proposed Action to avoid effects upon wildlife and public access.
P393	4. Please clarify the 1000 peak construction employment status in comparison with the generated numbers for Phase 1 and 2. How will these employees be transported to and from the site?	Please see Appendix B for employee transportation information.
P394	5. Please identify on-site track out measures that may be implemented to ensure track out is minimized on SR293.	Specific measures will be identified by the operator through the NDOT encroachment permit process.
P395	6. Stormwater Appendix C/Figure 16 shows changes to the current drainage. Please include plans and calculations for any discharges that will enter NDOT highway right of way. Improvements to the existing culvert may be necessary to accommodate increased stormwater flow patterns. Inspections for noxious weeds will need to be completed for all discharge areas and reported as required.	Specific measures will be identified by the operator through the NDOT encroachment permit process. Stormwater discharges are not anticipated to enter the NDOT ROW.
P396	7. NDOT has a material site (N2695) located in T44N R36E S20. NDOT is requesting that this area is not impacted by mining activities and that access remain available to this area for future highway use.	The operator does not anticipate affecting access to the existing material site in T44N R36E S20.
P397	8. This plan includes the potential for pit dewatering. NDOT has been negatively impacted by mining dewatering projects in other areas. Please prepare a plan to monitor the NDOT right of way for ground movement before, during and after dewatering activities. NDOT will require course of action to correct any areas of impact directly related to dewatering ground movement.	The operator and the BLM do not anticipate the occurrence of ground subsidence due to effect of dewatering the open pit. Dewatering volumes are discussed in Section 2.2.3.1 of the EIS.
P398	1a) The enclosed comments are based on a hydrologic review of the Draft Environmental Impact Statement for the Thacker Pass Lithium Mine Project (DEIS), dated July 31, 2020; including a detailed review of Appendix P, Parts 1 - 8, "Water Resources Information".	Comment noted.
Comment Letter From Sue Braumiller		
P399	1b) These comments begin with a description of issues related to key hydrologic/hydrogeologic data, prior to addressing opportunities to improve (or confirm) the current hydrogeologic conceptual model, construction/calibration of the numerical groundwater flow model, and model predictions of future pit dewatering rates and the potential for dewatering impacts to streams and springs in the Montana Mountains. Specifically, limited additional groundwater level and pumping test data in the vicinity of the proposed pits could be collected (specific suggestions made) to improve the current understanding of the location of the water table (in the area of the proposed pits) and hydraulic characterization of the "E-W Fault" identified in the vicinity of the northern perimeter of the pits. In combination, the latter can be used to improve (or confirm) current estimates of project dewatering requirements. Additionally, improvements (or confirmation) of the hydraulic properties of the "E-W Fault" is necessary to confirm (or improve) the capacity of the numerical model to	Comment noted.

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	predict dewatering impacts in the Montana Mountains.	
P400	1c) If indeed required pit dewatering rates are de minimus (e.g., a maximum of 95 gpm in 41 years based on current model predictions), then the potential for impacts to streams and springs in the Montana Mountains due to dewatering will also be de minimus and issues with the structure and calibration of the current numerical model (i.e., possible offsetting structural/calibration errors) become unimportant because the model itself (at least the portion covering the Montana Mountains) is not needed.	Comment noted.
P401	1d) In these comments, the Thacker Pass Baseline Hydrologic Data Collection Report dated August 2019 (contained in Appendix P - Part 7 with figures in Part 8) is referred to as the "hydrologic data report"; and the Thacker Pass Project Water Quantity and Quality Impacts Report Revision 1 dated May 2020 (contained in Appendix P – Part 1 with figures and appendices in Parts 2, 3, 4, 5, 6, and 7) is referred to as the "impact report".	Comment noted.
P402	1e) The enclosed comments pertain to broad issues and are based on information provided in a number of documents: the Draft Environmental Impact Statement (DEIS) and many appendices presented in multiple "parts", which themselves include the data and impacts reports and their appendices. Consequently, these comments are not referenced to specific sections of the various documents and in most cases apply to multiple documents composing the current DEIS.	Comment noted.
P403	2a) Potential for Propagation of Drawdown into the Montana Mountains due to Pit Dewatering based on Groundwater Level/Head Measurements Available as of this DEIS: Based on groundwater level/head measurements made available as part of this DEIS/impact analysis (Figures 3.16a-j and 3.17a-j of the hydrologic data report), and documented in the Nevada Division of Water Resources and USGS NWIS databases (the latter limited to the floors of King River and Quinn River valleys), which comprise all of the groundwater level data available in the vicinity of the project and potential area of impact, it can be inferred that groundwater levels are elevated in Thacker Pass relative to the adjacent valley floors as expected based on topographic considerations. Moreover, data reported in Figures 3.16 and 3.17 of the hydrologic data report indicate that groundwater levels generally decrease from north to south across the project site under natural gradient (pre-project) conditions, as more or less depicted in Figure 4.2 of the data report – i.e., from the foot of the Montana Mountains to the south across the area of the proposed project facilities, consistent with the topography.	Comment noted.
P404	2b) Consequently, barring the presence of an impermeable structure (or unit) immediately north of the proposed pits (e.g., the "E-W Fault"), any pit dewatering-induced drawdown that extends beyond the immediate area of the project site (e.g., nearby Thacker Creek) can be expected to propagate north from the pits (upgradient) into the Montana Mountains in the general direction of Pole Creek, which includes	Comment noted.

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	habitat occupied by federally-listed endangered Lahontan Cutthroat Trout – about 2 ½ miles north of the proposed pits. As such, we recommend the "AOI", which currently stands for "Area of [Mining] Interest"(shown in Figure 1.2 of the data and impact reports) be expanded to create an "Area of Investigation (i.e., Study Area) sufficient to accommodate the collection of hydrologic data needed to confirm and/or improve the current hydrogeologic conceptual and numerical groundwater flow models, numerical model predictions of future pit dewatering rates, and numerical predictions of potential dewatering impacts to streams and springs in the Montana Mountains.	
P405	3a) Availability of Key Hydrologic/Hydrogeologic Data – Head/Groundwater Level Data in Thacker Pass (Vicinity of the Proposed Pits), Piezometers and Monitoring Wells: Nine monitoring wells and 9 nests of piezometers with vibrating wire piezometers (VWPs) grouted-in at 2 to 4 depths each have been installed by the project proponent in Thacker Pass (Footnote 1) : 7 of the 18 within or near the footprint of the proposed pits; 11 more located south, southwest and northwest of the proposed pits, but well within the project area and Thacker Pass. Based on a detailed examination and interpretation of the completion diagrams and groundwater level measurements made available for these 18 monitoring wells and nested piezometers (Appendices D and F, and Figures 3.16a, b, d-j and 3.17a, b, d-j of the data report): (Footnote 1: In addition to a single piezometer installed in 2017 near project water supply well QRPW18-01 in Quinn River Valley. The latter with no potential to affect streams or springs in the Montana Mountains; consequently, not discussed in these comments.)	Comment noted.
P406	3b) All nested VWPs (piezometers) in Thacker Pass are set at 190 ft or more below ground surface (bgs) (Footnote 2). VWPs at PZ18-08 and PZ18-01, located within or near the footprint of the proposed pits, are set a minimum of 360 and maximum of 590 ft bgs (Appendix D of the data report). Moreover, hydraulic head ("water level") measurements reported for piezometer VWPs in Figures 3.16b and d-j show that gradients include a downward vertical component at most locations in Thacker Pass (Footnote 3), and the magnitude of downward hydraulic gradients may be greatest in the area of the proposed pits (e.g., downward gradients at PZ18-01 are significantly greater than at PZ18-03 to -05 and PZ18-06 to -09). Consequently, even the shallowest of the piezometer VWPs installed in Thacker Pass necessarily underestimate to some degree, and cannot be interpreted to provide a reasonably precise estimate of, the elevation of the water table at their respective locations. (Footnote 2: With one exception; VWPs are installed at 65, 245, and 365 ft bgs in PZ18-05 near upper Thacker Creek.) (Footnote 3: Except close to Thacker Creek where the hydraulic gradient includes an upward vertical component (e.g., at PZ18-05), as expected in the vicinity of a gaining stream (Figure 3.10 of the data report).)	This comment implies that pore pressures measured at the uppermost vibrating wire piezometers (VWPs) do not provide a reasonable estimate of the water table. The BLM believe this suggestion is incorrect for the following reasons: 1) Vertical gradients in Thacker Pass piezometers are relatively low for fractured bedrock aquifers. For example, PZ18-01, which is identified as having a higher downward gradient, possess a vertical gradient of 0.064 ft/ft which is low for a fractured bedrock unit such as interbedded claystone/ash. Water levels in the lower sensor are approximately 8 ft lower than the upper sensor (Table 3.6, Baseline Hydrogeologic Data Collection Report provided in EIS Appendix P of the EIS). For reference, perched aquifers or zones would have a vertical gradient of >1. 2) Piezometric pressures measured in transducers of the same piezometer are within 15 ft of each other although sensors are located several hundred feet apart. This indicates piezometric levels are similar and provide a reasonable estimate of the water table. 3) The uppermost transducers in several piezometers have relatively low pore pressures of approximately 30 ft. These piezometers include PZ18-01, PZ18-

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		04, PZ18-05, PZ18-06, and PZ18-08. Low overlying pore pressures above the transducer indicate the sensor is at or near the water table. 4) The upper sensor in PZ18-08 is dry. This confirms that the water table resides below the uppermost sensor elevation (4877 ft, amsl). The next lowest sensor elevation registered a pressure of 4820.6 ft amsl, which is a reasonable elevation of the water table based on the dry sensor (Table 3.6, Baseline Hydrogeologic Data Collection Report provided in EIS Appendix P of the EIS). Please also refer to Common Response WATER-2 regarding vertical hydraulic gradients in the vicinity of the proposed open pit.
P407	3c) By way of explanation: If no vertical hydraulic gradients existed at the locations of the piezometers ("static" conditions prevailed, at least vertically), then pressure head as measured by one of the piezometer VWPs, plus its elevation (elevation head at the location of VWP), would predict the elevation of the water table at that location (pressure head zero at the water table). However, where hydraulic gradients are demonstrated to include a downward vertical component, as at most locations in Thacker Pass (particularly in the area of the proposed pits), hydraulic head at the depth of the piezometer VWPs is less than the elevation of the water table by an amount that cannot be estimated because, although the difference in pressure head is known (zero minus pressure head measured at the VWP), the vertical gradient in pressure (and hydraulic) head between any particular VWP and the water table is not known. Consequently, the elevation of the water table cannot be "back-calculated" from either pressure head or hydraulic head measured at the existing piezometer VWPs.	Please refer to comment response P406; and, Common Response WATER-2 regarding vertical hydraulic gradients in the vicinity of the proposed open pit.
P408	3d) Additionally, the nine monitoring wells are completed (sand-packed) over a minimum of 72 and maximum of 514 vertical feet to depths of up to 625 ft bgs (Appendix F of the data report). Because measured water levels in the wells represent some vertical average of head over the monitored intervals, they too underestimate the elevation of the water table at most locations in Thacker Pass due to downward vertical gradients (particularly in the area of the proposed pits). And as in the case of the piezometer VWPs, the elevation of the water table cannot be "back-calculated" from water levels measured in the wells (see previous bullet).	Please refer to comment response P406; and, Common Response WATER-2 regarding vertical hydraulic gradients in the vicinity of the proposed open pit.
P409	4a) Available Groundwater Level Data (Vicinity of the Proposed Pits) – Implications for Dewatering of the West Pit: Three monitoring wells are currently installed within the footprint of the proposed West Pit: MW18-01, WSH-11 and WSH-17. Water levels stabilized in MW18-01, located on the northeast end of the proposed West Pit, at about 4,822 ft amsl in 2019 based on the one month of available measurements (Figure 3.17g of the data report). Given that the well is completed (sand-packed) from 343 to 415 ft bgs (Appendix F of the data report) and vertical gradients are downward in the vicinity of the proposed pits based on head data collected in nearby PZ18-01 (Figure 3.16b of the data report), it follows that the elevation of the water	Please refer to comment response P406; and, Common Response WATER-2 regarding vertical hydraulic gradients in the vicinity of the proposed open pit.

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	table at MW18-01 is at least somewhat higher than the 4,822 ft amsl, but beyond that unknown due to the unknown influence of downward trends in head over the monitored interval (72 ft). Nonetheless, the elevation of the bottom of the pit at this location is a proposed ~5,010 ft amsl (Figure 1.3 of the data report). Consequently, no dewatering in the vicinity of MW18-01 should be necessary.	
P410	4b) Monitoring well WSH-11 is located approximately 1,500 feet southeast of MW18-01 within the footprint of the proposed West Pit. Water levels stabilized in WSH-11 at about 4,817 ft bgs in 2017/2018 (following a long period of equilibration (Footnote4), Figure 3.17c of the data report). Given that the well is completed (sand-packed) from 78 to 515 ft bgs (Appendix F of the data report) and vertical gradients are likely downward in the vicinity of the well, it follows that the elevation of the water table at WSH-11 is at least somewhat higher than 4,817 ft amsl, but beyond that unknown due to the unknown influence of downward trends in head over the monitored interval (a total of 437 ft). This notwithstanding, the elevation of the bottom of the pit at this location is a proposed ~4,850 ft amsl (Figure 1.3 of the data report). Consequently, no dewatering is likely to be required in the vicinity of WSH-11 – less than definitive but, for all practical purposes, a reasonably conclusion. (Footnote 4: The long periods of equilibration evident in hydrographs Figures 3.16b – g, j and 3.17b – f, i are hypothesized to be due to groundwater "equilibrating across blocks" of saturated sediments separated by faults (Section 3.4.3 of the data report); the consequence of which is that "static" groundwater level/head measurements are limited to: 2 to 6 months at the 9 nested piezometers (installed in 2018), 1 to 4 months in the MW18-series monitoring wells (installed in 2018), and about 2 to 2 ½ years in the WSH-series monitoring wells (installed in 2011). Additionally, groundwater level/head measurements are only available in all for a period of 6 or less months, late summer/fall 2018 to spring 2019.)	Comment noted. The BLM anticipates that groundwater level / head measurements would continue to be collected at representative locations to monitor groundwater levels through the life of the project as outlined in the monitoring and mitigation section for water resources (Section 4.3.2).
P411	4c) Monitoring well WSH-17 is located on the east end of the proposed West Pit, approximately 600 feet southeast of WSH-11. Water levels stabilized in WSH-17 at about 4,862 ft amsl in 2017/2018 (again following a long period of equilibration (Footnote 4), Figure 3.17f of the data report). Given that the well is completed (sand-packed) from 165 to 400 ft bgs (Appendix F of the data report) and gradients are likely downward in the vicinity of the well, it follows that the elevation of the water table in the vicinity of WSH-17 is at least somewhat higher than 4,862 ft amsl, but beyond that unknown (again due to the unknown influence of downward trends in head over the monitored interval, 235 ft). At the same time, the elevation of the bottom of the pit at this location is a proposed ~4,806 ft amsl (Figure 1.3 of the data report). Therefore, at least 56 ft of dewatering will be required in the vicinity of WSH-17, but the extent of dewatering may be measurably greater (Footnote5) and is so far unknown. (Footnote 4: The long periods of equilibration evident in hydrographs Figures 3.16b – g, j and 3.17b – f, i are hypothesized to be due to	Comment noted. Dewatering is anticipated in the pit in vicinity of WSH-17. However, the water level data at WSH-17 does not support the claim that "…extent of dewatering may be measurably greater and is so far unknown". The long period required for the equilibration of water levels in WSH-17 reflects the fact that the monitoring well was completed in a low transmissivity sequence of claystone, claystone/ash and silicified ash as shown on the geologic and drilling logs provided in the Baseline Hydrogeologic Data Collection Report (provided in EIS Appendix P of the EIS). Additional sensitivity analysis was performed to evaluate the sensitivity of the dewatering rates to changes in hydraulic conductivity of +/- 25% (Piteau 2020c). Sensitivities varied bulk hydraulic conductivity (k) values of rock units and bounding faults in the Thacker Pass Project area. (Note that neither sensitivity provides as good a model calibration as the base case.) Results of this sensitivity analyses are summarized as follows:

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	groundwater "equilibrating across blocks" of saturated sediments separated by faults (Section 3.4.3 of the data report); the consequence of which is that "static" groundwater level/head measurements are limited to: 2 to 6 months at the 9 nested piezometers (installed in 2018), 1 to 4 months in the MW18-series monitoring wells (installed in 2018), and about 2 to 2 ½ years in the WSH-series monitoring wells (installed in 2011). Additionally, groundwater level/head measurements are only available in all for a period of 6 or less months, late summer/fall 2018 to spring 2019.) (Footnote 5: A head difference of 8 ft has been documented between PZ18-01 VWPs set at 465 and 590 ft bgs (Figure 3.16b of the data report), 125 vertical feet apart – a downward vertical gradient of significant magnitude, ~0.064. Notably, the downward gradient documented at PZ18-01, located in the immediate vicinity of the proposed pits, is greater than at any other nested piezometers installed in Thacker Pass.)	(1). The low K sensitivity model results produce higher dewatering rates than the base case because the initial water levels are higher and have greater saturated thickness to dewater. This is evident by dewatering during early mining of the West Sub-pit which is expected to be mostly dry. Dewatering rates in the Low K sensitivity are still quite low, ranging from approximately 30 - 100 gpm. Due to the higher water levels, this sensitivity predicts dewatering during the entire mine life. (2) The high K sensitivity model results simulate lower dewatering rates than the base case because initial water levels are lower, and thus less of the pit required dewatering. The South Sub-pit is the primary zone requiring dewatering at rates between 30 - 85 gpm. (3) Sensitivities indicate peak dewatering rates are consistent, and thus adds confidence to estimated rates. The duration of dewatering was varied thus address the case where perched or marginally higher water levels are encountered during mining.
P412	4d) Complication: Greatly complicating any assessment of the elevation of the water table in the area of the proposed pits (including the West Pit), and consequently the estimation of dewatering requirements, are the apparent presence of what is described in Section 2.5.4 of the data report as "minor NE-SW trending faults" having the effect of "compartmentalizing groundwater". Although the elevation of the water table at the locations of monitoring wells MW18-01, WSH-11, WSH-17 (as well as piezometer PZ18-08) are uncertain, discontinuities in measured water levels (and heads) support that such faults are likely present between, for example, WSH-11 and WSH-17. However, this reviewer finds no basis in the information provided as part of this DEIS that would allow the locations of these faults to be mapped (as shown in Figures 2.15, 3.15 and 3.18 of the data report); unless based on the interpretation of cores recovered from exploratory boreholes shown in Figures 2.16 - 2.22 of the data report, but undisclosed. The locations of these faults (shown in Figures 2.15, 3.15, and 3.18 of the data report) appear to be largely speculative. Some do not appear to be supported by discontinuities in measured "static" water levels. Consequently, the locations and areal extent of "groundwater compartments" created by faults appear to be largely unknown, adding to the challenge of mapping the elevation of the water table (pre-project conditions); i.e., compounding uncertainties arising from the completions of the existing monitoring wells and presence of downward vertical gradients.	The basis for faults in the pit footprint is derived from a geophysical IP survey conducted by Zonge to determine the bottom topography of the deposit (Piteau 2020c). Fault offsets identified from the geophysical survey were corroborated by mine geologists through bedding offsets and gouge zones in core holes. Stair-stepping water levels provide further confirmation of geologic structure in the pit. (Piteau 2020c)
P413	4e) Suggestion: Uncertainties regarding the locations and areal extent of fault-bounded "groundwater compartments" cannot be easily resolved. However, delineation of the water table (under pre-project conditions) and the estimation of required dewatering rates could be greatly helped by installing a limited number of	Comment noted. The recommendation is not anticipated to affect dewatering estimates because (1) the hydrogeologic interpretation is based on sound geologic evidence; (2) there are already 9 active monitoring locations within the pit footprint whose piezometric levels reflect saturated bedrock conditions;

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	"water table monitoring wells" (sand-packed intervals relatively short, e.g. 10 ft), equipped with transducers (more accurate and precise than VWPs), at locations where the current groundwater level and head measurements suggest dewatering is likely to be required – directly and reliably measuring the elevation of the water table at the most critical locations. In the case of the proposed West Pit, we recommend this water table well be located just southwest of WSH-17 at the planned location of the deepest part of the pit (Figure 1.3 of the data report).	(3) the presence of perched or disconnected beds in the claystone would not represent transmissive, hydraulically connected zones that would produce long term drainage / dewatering to the pit.; and, (4) the dewatering rate sensitivity analysis (provided in Piteau 2020c and summarized in response to comment 411) indicates a similar range of dewatering rates across a reasonable set of hydraulic conditions.
P414	5a) Available Groundwater Level Data (Vicinity of the Proposed Pits) – Implications for Dewatering of the North Pit: Three wells have been installed within the footprint of the proposed North Pit: MW18-04, PH-1, and WSH-4. No water level data have been provided for WSH-4 (or logs or completion diagram). Monitoring well MW18-04 is located at the north end of the proposed North Pit. Water levels stabilized in MW18-04 at about 4,825 ft bgs in 2018/2019 (Figure 3.17j of the data report). Given that the well is completed (sand-packed) from 478 to 625 ft bgs (Appendix F of the data report) and vertical gradients are likely downward in the vicinity of the well, it follows that the elevation of the water table at MW18-04 is at least somewhat higher than 4,825 ft amsl, but beyond that unknown due to the unknown magnitude of vertical downward gradients over the monitored interval (147 ft in length). Nonetheless, the elevation of the bottom of the pit at this location is a proposed ~5,000 ft amsl (Figure 1.3 of the data report). Consequently, no dewatering in the vicinity of MW18-04 should be necessary.	Comment noted. For clarification, piezometric levels at MW18-04 were confined and rose after drilling through a confining horizon as described in section 3.3.2 of the Baseline Hydrogeologic Report (Appendix P of the EIS).
P415	5b) Monitoring well PH-1 is located on the south end of the proposed North Pit, approximately 700 feet south of MW18-04. Water levels stabilized in PH-1 at about 5,034 ft amsl in 2018 (following a long period of equilibration4, Figure 4.3 of the data report). Given that the well is completed (sand-packed) from 50 to 410 ft bgs and vertical gradients are likely downward in the vicinity of the well, it follows that the elevation of the water table at PH-1 is at least somewhat higher than 5,034 ft amsl, but beyond that unknown due to the unknown magnitude of vertical downward gradients over the monitored interval (360 ft). In contrast, the elevation of the bottom of the pit at this location is a proposed ~4,872 ft amsl (Figure 1.3 of the data report). Therefore, at least 162 ft of dewatering will be required in the vicinity of PH-1, but the extent of dewatering may be measurably greater (Footnote 5, see above) and is so far unknown.	Dewatering will be needed for the North Sub-pit based on piezometer data, however the claim that "the extent of dewatering may be measurably greater and is so far unknown" is unfounded based on the reasons provided in the responses to Comments P406 and P413.
P416	5c) Complication: The elevation of the water table at the locations of monitoring wells MW18-04, PH-1, and WSH-17 (the latter located south of PH-1 within the proposed West Pit) are uncertain as outlined above. However, discontinuities in the measured water levels support that faults are likely present between, for example, MW18-04 and PH-1, and between PH-1 and WSH-17, effectively "compartmentalizing" groundwater; although the locations of the faults, and consequently locations/areal extents of fault-bounded "groundwater compartments", are largely unknown (see previous comment).	Please refer to the response to Comment P412 regarding the derivation of faults.

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P417	5d) Suggestion: Uncertainties regarding the locations and areal extent of fault-bounded "groundwater compartments" in the area of the proposed pits cannot be easily resolved. However, delineation of the current (pre-project) elevation of the water table and the estimation of required dewatering rates could be greatly helped in the area of the North Pit by installing a "water table monitoring well" (sand-packed interval relatively short, e.g. 10 ft), equipped with a transducer (more accurate and precise than a VWP), northeast of PH-1 at the planned location of the deepest part of the pit (Figure 1.3 of the data report) – directly and reliably measuring the elevation of the water table at this important location.	Please refer to the responses to comment P412 and P413.
P418	6a) Available Groundwater Level Data (Vicinity of the Proposed Pits) – Implications for Dewatering of the South Pit: Three wells have been installed within the footprint of the proposed South Pit: WSH-6, WSH-5, and WSH-14. No water level data, logs, or completion diagrams have been provided for WSH-6 or WSH-5. Monitoring well WSH-14 is located in the eastern half of the proposed South Pit. Water levels stabilized in WSH-14 at about 4,813 ft bgs in 2017/2018 (Figure 3.17e of the data report). Given that the well is completed (sand-packed) from 95 to 443 ft bgs (Appendix F of the data report) and vertical gradients are likely downward in the vicinity of the well, it follows that the elevation of the water table at WSH-14 is at least somewhat higher than 4,813 ft amsl, but beyond that unknown due to the unknown magnitude of vertical downward gradients over the monitored interval (a total of 348 ft). At the same time, the elevation of the bottom of the pit at this location is a proposed ~4,680 ft amsl (Figure 1.3 of the data report). Therefore, at least 133 ft of dewatering will be required in the vicinity of WSH-14, but the extent of dewatering may be measurably greater5 and is so far unknown.	Dewatering of the South Sub-pit is anticipated as discussed in Section 4.1.1 and 4.1.2 of the Water Quantity and Quality Dewatering report. Compared to the North and West sub pit areas, the South Sub-pit would intercept a thicker section of saturated claystone / ash bedrock. Please refer to comment P411 for further description of dewatering sensitivity.
P419	6b) Complication: The elevation of the water table at the location of monitoring well WSH-14 is uncertain as outlined above. However, the difference between the level of water in WSH-17 (located at the east end of the West Pit) and WSH-14 (Footnote 6) suggests that one or more faults may be present between them, "compartmentalizing" groundwater in, or within, the proposed South Pit; although the locations of the fault(s), and locations/areal extent of fault-bounded "groundwater compartments", are unknown (see previous comments). (Footnote 6: While the elevation of the land surface decreases 127 ft from WSH-17 to WSH-14 (Table 3.7 of the data report), water levels in WSH-14 are only ~49 ft lower than in WSH-17 (Figures 3.17e & f of the data report)	Please refer to the responses to comment P412 and P413.
P420	6c) Suggestion: Uncertainties regarding the locations and areal extent of fault-bounded "groundwater compartments" in the area of the proposed pits cannot be easily resolved. However, delineation of the water table (under pre-project conditions) and the estimation of required dewatering rates could be greatly helped by installing a "water table monitoring well" (sand-packed interval relatively short, e.g. 10 ft), equipped with a transducer (more accurate and precise than a VWP),	Please refer to the responses to comment P412 and P413.

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	about 300 ft southeast of WSH-14 at the planned location of the deepest part of the South Pit (Figure 1.3 of the data report) – directly and reliably measuring the elevation of the water table at this important location.	
P421	7a) Available Groundwater Level Data (Vicinity of the Proposed Pits) – Current Depictions of the Elevation of the Water Table and Implications for the Estimation of Required Dewatering Rates: The elevation of the water table in the area of the proposed pits (as well as elsewhere in the project area) is not described or depicted in the data report. Only the elevation of water measured in monitoring wells and hydraulic head measured at (presumably the shallowest of) piezometer VWPs across Thacker Pass/the project site (Figures 4.2, 4.9 and 4.10). In each case, the latter is referred to as "groundwater contours" (Figure 4.2) and "water levels" (Figures 4.9 and 4.10), somewhat ambiguously; as opposed to "measured water levels" or "measured hydraulic heads" (the quantities plotted). No representation is made in the figures or elsewhere in the text of the data report that the location of the water table at Thacker Pass has been characterized to date – consistent with the issues described in comment nos. 3 – 6.	Comment noted. Contours in the figures identified in this comment refer to piezometric levels, which as described in response to comment P406, are a reasonable approximation of the water table.
P422	7b) Rather, the location of the water table in the area of the proposed pits (and other proposed project facilities) has not yet been characterized. Thus, the need to install a limited number of "water table monitoring wells" (sand-packed intervals relatively short, e.g. 10 ft), equipped with transducers (more accurate and precise than VWPs), at locations where the current groundwater level and head measurements suggest dewatering is likely to be required; followed by the collection of sufficient water level data to ensure that water levels in the new wells have "equilibrated" within fault-bounded "groundwater compartments" in the vicinity of the proposed pits (a documented problem). Specifically, we recommend a minimum of three such water table monitoring wells be installed within the footprints of the proposed West, North, and South Pits, respectively, at the locations suggested in comment nos. 4, 5, and 6. By installing and monitoring (for a sufficient period of time) this minimal number of water table monitoring wells (note - no water table monitoring wells are installed at the site at present), the current (pre-project) elevation of the water table can be directly and reliably measured at the most critical locations – information required to develop defensible estimates of the project's dewatering requirements	Comment noted. Nine (9) active groundwater monitoring locations are already installed in the footprint of the open pit and provide sufficient characterization of the piezometric surface in the claystone bedrock unit.
P423	7c) Regarding dewatering, the data report describes only that, "As mining progresses to the east and south [across the area of the proposed pits], the open pit will intercept the water table… likely requiring some dewatering to facilitate mining" (Sections 4.2.1 and 5 of the data report). To the contrary, it is clear from information developed in comment nos. 4, 5, and 6 (based on data provided in the data report and its appendices), that dewatering will be required to mine all three of the proposed pits. In particular, at least ~55 ft of dewatering will be required at the deepest part of the proposed West Pit; ≥ 160 ft in the deepest part of the North Pit; and ≥ 130 ft in the	The mining sequence is from west to east. Groundwater is anticipated to be intercepted within the pits. The basis for the statement that "the greatest saturated thickness is anticipated to be ~400 ft" was derived from subtracting the piezometric surface (Figure 4.2 Baseline Hydrogeologic Report provided in Appendix P of this EIS) from the pit floor.

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	deepest part of the South Pit. Additionally, the data report suggests that, "the greatest saturated thickness [encountered during mining] is anticipated to be ~400 ft." (Sections 4.2.1 and 5). The basis for this estimate is unclear. To the extent that this represents a possible worse-case in the absence of more definitive information, or is possibly based on the hypothesized location of lithologic contacts (in the absence of reliable information about the elevation of the water table) – this is not a sufficient basis for simulating or otherwise estimating pit dewatering requirements.	
P424	8a) Availability of Key Hydrogeologic Data (Vicinity of the Proposed Pits) – Implications for Hydraulic Characterization of the "E-W Fault" on the Northern Perimeter of the Proposed Pits: Whereas it is clear from claystone/ash logged in PH-1, WSH-17, and WSH-11 (Appendices E and H of the data report) versus the preponderance of rhyolite logged at depths greater than 65 to 100 feet in holes WSH-7 and WSH-8 (Appendix E of the data report) that a fault is present somewhere south of WSH-7 and WSH-8 (Footnote. However, it is unclear how the location of the fault (i.e., the "E-W Fault"), specifically its trace, could be mapped with any precision using the above information – or using lithology logged in well MW18-04 (Appendix E of the data report), which itself included a preponderance of rhyolite below about 100 ft. Moreover, it is unclear whether the location of the "E-W Fault" has been determined from exploratory drilling (Figures 2.16 to 2.21 of the data report) (Footnote 8). Conversely, static water levels in well MW18-04 are about 4,825 ft amls (Figure 3.17j of the data report), similar to static water levels in wells WSH-11 and MW18-01 (4,817 and 4,822 ft amsl, respectively; Figures 3.17c and g). Therefore, the fault is located somewhere between WSH-7 and MW18-04, about 240 ft apart (Table 3.7 of the data report). No information has been provided concerning the hypothesized dip of the fault. (Footnote 8: Whereas the legend of Figures 2.16 to 2.21 indicates that "faults" have been identified in the exploratory cores, none are clearly visible in the schematics.)	The E-W Fault is a known feature that has been mapped in several geologic reports most notably Henry et al 2017. In addition, in February 2020, mine geologists at LNC began to further evaluate the location of the E-W fault using outcrop mapping, core hole correlation, and seismic data. The findings indicate the following: (1) A steep topographic rise, or scarp, of over 300 m is associated with the E-W fault. The fault provides the boundary between McDermitt Tuff to the north and claystone sediments to the south. (2) The E-W fault is located further north than previously represented by geologic maps as identified by field mapping along the outcrop and aerial photography. The fault dips steeply (~75 degrees) to the south and offsets claystone bedrock. (3) Seismic surveying corroborates the presence of several high angle structures and offset beds at the fault scarp in the Montana's and indicates that there are sympathetic structures further behind the scarp. Although there are no core holes north of the E-W fault, the core holes located south of the fault verified the presence of fault gauge along the seismic traces, thus providing field confirmation. (4) Groundwater modeling and the impacts analysis conservatively assumes the E-W fault will be partially mined through. Detailed mapping of the structure indicate that this will likely not be the case, thus greatly reducing the likelihood of impacts north of the Thacker Pass project. Therefore, the groundwater model results are conservative in that they likely overpredict the areal extent and magnitude of drawdown north of the E-W fault. Regardless, the proposed monitoring piezometers north of the E-W fault are included in the monitoring and mitigation plan to provide hydrologic verification and long-term water level monitoring between the pit and water dependent resources located north of the pit. Henry, C.D., Castor, S.B., Starkel, W.A., Ellis, B.S., Wolff, J.A., Laravie, J.A., McIntosh, W.C., and Heizler, M.T., 2017, Geology and evolution of the McDermitt caldera, northern Nevada and southeast-ern Oregon, western USA: Geosphere, v. 13, no. 4, p. 1066–1112, doi:10.1130/GES01454.1.
P425	8b) Of significance, the static water level in hole WSH-7 was 5,285 ft amsl according to text of the data report (p 53), presumably during drilling – although not shown on the driller's log provided for the hole and, like hole WSH-8, later abandoned (not completed as well, no subsequent water level measurements). If	WSH-7 was drilled and volcanic tuff and rhyolite located north of the E-W fault. PZ18-02 was completed in alluvium and claystone/ash bedrock which indicate it was located south of the E-W fault, a fact which is well supported by the recorded piezometric levels. The contrast in water levels between these

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	indeed a head difference of ~460 ft is representative of conditions across the "E-W Fault", over the 1 ½ to 2 miles of the fault lying north of the proposed pits (and other proposed facilities), it can be reasonably inferred that the permeability of the fault (likely its footwall) is very low. At the same time, however, reliable and repeated head measurements indicate that the elevation of the water table is ~4,782 ft amls at the location of PZ18-02 (Figure 3.16c of the data report). Whereas PZ18-02 is located northeast of the area of the proposed pits and about ½ mile "outboard" of the foot of the Montana Mountains compared to WSH-7, this creates at least some question regarding the 460 ft difference in head inferred across the fault based on the single static water level measurement reported for WSH-7 during drilling.	points located on either side of the E-W structure supports the interpretation that the structure behaves as a strong impediment (or barrier) to flow.
P426	8c) Suggestion: Given that the "impermeability" of the fault appears to be inferred entirely from this single measurement (which cannot be confirmed – WSH-7, like WSH-8, abandoned after drilling), and is pivotal to the estimation of pit dewatering requirements (by any means), as well as the calibration of the current numerical model and its predictions, this critical component of the "conceptual model" should be confirmed. Specifically, we recommend a minimum of two monitoring wells be installed above the area of the proposed pits well outside the footwall of the "E-W Fault", the location of which does not appear to be precisely known, so that water levels can be obtained to confirm or improve on the information currently available regarding the difference in head across the fault (with implications for its permeability) (Footnote 9). Further, if less than a difference of hundreds of feet is documented across the fault, then we recommend a pumping test be planned and carried out that involves pumping in the claystones/ash (utilizing the new wells as "observation wells"), from which the conductivity of the fault can potentially be estimated (rather than assumed). As of now, no pumping test has been conducted in the vicinity of the proposed pits that could have stressed the fault. For example, the PH-1 test was a single-hole pumping test limited to 55 hours at a pumping rate of ~80 gpm (Section 3.4.3, Figure 3.25, and Appendix K of the data report); late time data collected during the pumping portion of the test unexplained. (Footnote 9: These same wells could additionally serve as "monitoring wells" during and following pit dewatering.)	Comment noted. Additional evidence of low permeability along the E-W Fault is discussed in Section 2.2 and Figures 2.4 to 2.5 of the Water Quantity and Quality Impacts Report. The principle line of evidence being that the hydraulic gradient between springs in the Montana's and Thacker Pass cannot exist unless there is a steep change in water levels across the E-W fault, or the springs in the Montana's are perched. Either scenario implies structural compartmentalization of some degree, either at the E-W fault or at the faults coincident with spring locations.
P427	9a) Current Estimates of Required Dewatering Rates: As of this DEIS and impact analysis, pit dewatering for the project has been estimated using the current numerical groundwater flow model (per Section 4.1 of the impact report), in which the "E-W Fault" is simulated as a "barrier to flow" (as described in Section 3.1.2 of the impact report, page 23). Inasmuch as this fault, located at the northern perimeter of the proposed pits along their full length, has potentially been simulated as "impermeable" (MODFLOW HFB parameters not provided in the impact report), the current estimates of pit dewatering largely (if not entirely) reflect and are limited to evacuation of groundwater presently residing in the area of the pits and precipitation falling directly on them in excess of evapotranspiration over time.	This comment implies that the E-W Fault located north of the project is the principal constraint on pit dewatering. The E-W fault is not the principal constraint for the following reasons: (1) The highest dewatering rates occur when mining the South Sub-pit, which is not in contact with the E-W fault (Figure 4.5 Water Quantity and Quality Report). Thus, the primary control on dewatering rates is the adjacent permeability of claystone and volcanic tuff material in contact with the open pit. (2) Post-mining groundwater inflow rates are also greatest at the South Sub-pit (Table 5.14) because it is exposed to more transmissive, albeit still low, bedrock

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	Dewatering rates/requirements are currently predicted to be de minimus, but could not have been otherwise given incorporation of the "E-W Fault" as a "barrier to flow" in the numerical model: i.e., a maximum of ~55 gpm under the "Backfilled Pit" Alternative (Section 4.1.1, page 50 of the impact report) and ~95 gpm (Section 4.1.2, pate 57 under the "Open Pit" Alternative) over 41 years.	materials. The E-W fault is not intersected by the South Sub-pit. (3) If the E-W fault were the primary control on dewatering rates, then the highest dewatering rates would be incurred when the E-W fault is mined through, beginning approximately in year 2035 of mining. This was not observed in dewatering simulations. (4) Geologic materials north of the E-W fault are comprised of McDermitt Tuff, which is a rhyolitic tuff of intrinsically low permeability. Model calibration confirmed the field testing of volcanic tuff materials with average bulk hydraulic conductivity values ranging from 0.0035 ft/d - 0.035 ft/d (Table 3.3 Water Quantity and Quality Report). Thus, with the removal of the E-W fault, these materials would still be incapable of transmitting large fluxes of groundwater to the pit.
P428	9b) Suggestion: Following confirmation and/or improvement of the hydraulic characterization of the "E-W Fault" with hydrologic data collected in the field (comment no. 8), the structure/calibration of the numerical model should be modified/improved as needed. With the benefit of the latter, and confirmation/improvement of information regarding the elevation of the water table in the area of the proposed pits under pre-project conditions (comment nos. 4, 5, and 6), the estimation of dewatering rates/requirements should be revisited prior to finalizing this EIS/impact analysis, as a critical determinant of the potential for impacts to streams and springs in the Montana Mountains.	It is important to clarify that the groundwater model is calibrated to a piezometric level at each transducer in the piezometer string. Thus, the groundwater model accounts for the three-dimensional spatial variation in piezometric head. Furthermore, groundwater model calibration indicates that fault structures are required in order to match the distribution of piezometric levels. Modifying low permeability fault structures produces water levels which are too high or too low as discussed in Section 4.3 of the Water Quantity and Quality Impacts results. The numerical groundwater model would be updated and recalibrated periodically over the life of the project as outlined in Measure WR2 provided in Section 4.3.2 of the EIS.
P429	10a) Calibration of the Current Numerical Model: First, of the springs in the Montana Mountains (elevation of spring orifices) used as targets for the steady calibration of the model (Section 3.1.2 and Figure 3.11), it is unclear how many and which are known to be perennial; consequently have a high likelihood of intersecting the water table in the mountains. Specifically, Section 2.2.1, page 7, of the impact report describes that only 21 springs of those surveyed (including springs outside the Montana Mountains in Thacker Pass) were found to be perennial; yet many more than 21 springs are implied to have been utilized as steady calibration targets in Figure 3.11. To the extent that other than perennial springs have been used as steady calibration targets for the Montana Mountains portion of the numerical model, the model calibrated elevation of the water table is likely too high at many locations. Had the "E-W Fault" at the foot of the Montana Mountains (in Thacker Pass) not been simulated a priori as a "barrier to groundwater flow", steady calibration to the elevation of springs which are not perennial and not hydraulically connected to the water table (but perched somewhere above the water table, perhaps hundreds of feet) would have resulted in model-calibrated conductivities for volcanic rocks in the mountains being underestimated (assuming model-simulated net recharge rates are	Spring flux targets utilized in Section 3.1.2 represent annualized average flows from springs because the groundwater model is based on average annual conditions. Thus, flux rates for seasonal springs are averaged across 4 quarters of data. There are several perennial springs in the Montana Mountains including SP-004, SP-051, SP-050, and potentially SP-055. Discussion surrounding the model calibration with respect to springs and compartmentalization in the Montana Mountains is found in Section 4.4 of the Water Quantity and Quality Impacts Report. The groundwater model underpredicts water levels at most springs in the Montana's. A discussion of the comment is as follows: (1) If springs are perched, then additional structural compartmentalization is to be expected in the Montana's, which would have the overall effect of reducing the bulk permeability of volcanic tuff in the Montana's. This is plausible, but was deliberately not considered for impacts modeling. (2) If the E-W fault were removed, piezometric levels in the Montana's would be lower and reduce the simulated groundwater flux to Pole Creek. Likewise, water levels in Thacker Pass would require greater compartmentalization in

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	reasonable). Rather, the "E-W Fault" was simulated as a "barrier to groundwater flow" (at the base of the Montana Mountains in Thacker Pass). The effect of the latter on model-calibrated conductivities in the Montana Mountains, in combination with the effects of using at least some non-perennial springs as steady calibration targets, is difficult to anticipate (irrespective of the "sensitivity" of the former, Section 3.2.5 of the impact report). The potential for offsetting structural/calibration errors in the development of the current numerical model is significant.	faults to generate stair stepping water levels observed. Observed data and the geologic setting indicate the most reasonable geologic interpretation of the E-W fault is that it is a hydrologic barrier to flow.
P430	10b) The above notwithstanding, the potential for significant (or even measurable) dewatering impacts to streams and springs in the Montana Mountains depends principally on the magnitude of dewatering required for the project. Consequently, the utility of pursuing suggestions made in these comment nos. 4 to 9 prior to finalizing this EIS/impact analysis.	Comment noted.
Comment Letter From Larry Johnson		
P431	The Coalition for Nevada's Wildlife (Coalition) submits the following comments regarding the Draft EIS for the proposed Thacker Pass Project. The Coalition is comprised of members of the major sportsmen/conservation organizations in northwest Nevada dedicated to the protection and enhancement of our wildlife resources. Our directors represent big game, waterfowl, upland game, fishing, sporting dog, and trapping organizations.	Thank you for your comment.
P432	Our concerns with this project primarily lie with lowering of the ground water in areas adjacent to the mine due to dewatering activities. Several streams, springs, and associated wet meadows may be impacted. We understand that a ground water model has been used to estimate the extent and magnitude of impacts, however the number of data points and duration of data collection makes the long-term conclusions suspect. Furthermore, ground water models have significant difficulty in accurately predicting dewatering impacts since ground water in bedrock mountains flow in fractures, shear zones, and bedding planes that can only be estimated without sufficient degrees of certainty. In short, the magnitude of impacts could be significantly greater than predicted.	Comment noted. As explained in Common Response WATER-3, the BLM has addressed model uncertainty by established a 1-mile buffer for the purpose of establishing monitoring of groundwater and surface water resources located outside of the maximum predicted extent of the 10-foot drawdown contour; and additional language provided in Monitoring and Mitigation Measure WR-1 that provides for the BLM to require reasonable modifications and adjustments to the monitoring program as necessary in response to observed drawdown patterns recorded through the mining and post-mining period.
P433	The Montana Mountains are one of the most important strongholds of our state bird, the Sage Grouse, which narrowly missed classification of an endangered species a few years ago. Not only are the springs, that are potentially impacted by the proposed mine dewatering, vital to Sage Grouse survival, but the associated wet meadows are critical to the species particularly during brood rearing periods. The state cannot risk having Sage Grouse listed as this would seriously damage our economy by impacting mining, ranching, energy, outdoor recreation, and all outdoor activities.	Comment noted.
P434	The streams that are potentially impacted are habitat for the Lahontan Cutthroat Trout, another species that we are working diligently to preserve. A myriad of wildlife species also depend upon not only streams and springs as water sources, but	Comment noted.

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	equally important the associated riparian habitat.	
P435	The Coalition strongly supports multiple use of our public lands including mining activities. However, we strongly feel that it is the duty of all concerned, particularly the project proponent and the land management agency, to fully identify potential impacts and to mitigate to the extent possible. Any monitoring program has the weakness of not identifying impacts until damage has occurred and mitigation measures are too late. For this reason, the project proponent should be fully willing, and the land management agency should require up front and continuing mitigation projects as a condition of approval. This project will undoubtedly adversely impact our wildlife resources, but this approach will minimize and help protect our wildlife.	Thank you for your comment. LNC has developed a water monitoring plan and has proposed groundwater monitoring and contingency mitigation measures. The monitoring plan is included in the Thacker Pass Project, Water Quantity and Quality Impacts Report-Addendum I (Piteau 2020a) that is included in Appendix P to the DEIS. BLM has also proposed additional monitoring to minimize drawdown effects to perennial surface waters as summarized in Section 4.3.2 of the DEIS. It is anticipated that BLM's annual review of monitoring results combined with the updated groundwater modeling predictions would provide early warning of potentially undesirable (and unanticipated) impacts to water-dependent resources to allow for possible implementation of appropriate adaptive management measures to mitigate their effects. Implementation of these measures would likely reduce or minimize potential impacts to water dependent resources. In addition, a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation. The TAG would consist of the applicant, the BLM, the NDOW, the USFWS, and any other agencies or academic institutions as appropriate.
Comment Letter From Terry Crawforth		
P436	Personal History and Observations - I have used my property in Kings River Valley for work and recreation for over 35 years and now permanently reside on that property. During that time I have found the Montana mountains of Humboldt County to be a truly unique environment and enjoy observing the natural resources, geology, history and the ever changing environment. I am a native Nevadan, born and reared in 2 Nevada Mining Towns which conducted chemical processing of ore and failed to properly close and remediate and are now considered super fund sites. Therefore, I am well aware of the positive and negative impacts of mining but I am not opposed to mining done under present day "best practices". My observations of mining and exploration practices in the Kings River area with little or no remediation or proper closing have been less than favorable. So, when Western Exploration arrived and began exploration throughout the Montana's I took a special interest and purchased a few shares of stock in the succeeding companies (now LNC) in order to better observe their findings and plans.	Thank you for your comment.
P437	Lithium Nevada Corporation (LNC) - I well understand that new mine development is a dynamic and somewhat secretive process. However, observation of what became the Thacker Pass Project has been very difficult due to the ever changing corporate structure, ownership, leadership and staff and proposed plans of development and operation. LNC and predecessors sponsored numerous local meetings which were largely public relations events aimed at gaining investors, minimizing the size and	Sulfuric acid would be produced by burning molten sulfur with air to produce sulfur dioxide (SO2), catalytically converting the SO2 to sulfur trioxide (SO3) and absorption of SO3 in acid while generating a large amount of excess heat that would be captured to produce steam to generate electrical power. Emissions of SO2 and other air pollutants from the sulfuric acid production process would be controlled. Air pollutants from facility operations are

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	impacts of the projects, trumpeting a clean environmental ethic and community investment. Many changes continue with LNC looking for joint venture partners, large investments by the Chinese corporation Gangfeng, sale of the owned South American property to Gangfeng, a number of conflicting reports and statements concerning environmental impacts and plans of operation, and new partnerships. Most bothersome is the proposal to use an experimental process to burn stockpiled sulfur which will become the primary method to dump toxic materials stockpiled in other locations, such as is the case with the Yucca Mountain Nuclear Repository or the recent proposal to dump millions of tons of garbage in Humboldt County from California. I find it ironic that a company that professes to be helping clean the planet would be allowed to burn thousands of tons of a chemical that we cannot burn in our vehicles.	reported in EIS Table 4.10. Facility-Wide On-Site Operational Emissions. Sulfuric acid would be used in the production process to produce lithium and compounds and sulfate compounds from the process would be disposed of in the CTFS. The CTFS is being designed as a zero-discharge facility. A summary table of the projected output and tailings pile constituents has been added to the EIS. Lithium Nevada is a domestic corporation registered in the State of Nevada. This issue is outside the scope of this document and the decision to be made.
P438	Environmental impact process - The stated full court press by LNC to get Thacker approved prior to the 2020 election, the fast track by the Department of Interior to implement the new policy to create U.S. energy independence and now the COVID pandemic has made it extremely difficult for the public to participate in this scoping process. The draft DEIS scoping meetings were again largely LNC public relations efforts with insufficient information before or after the meetings which would have allowed the public to make salient inquiry which will likely subject the process to judicial review.	This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P439	Draft Environmental Impact Statement (DEIS) - The drafters of the Deism have done a sufficient job of identifying newly planned activities but have failed to adequately identify environmental impacts and resolution in many areas or provide four viable alternatives on which to provide thoughtful comment.	This NEPA process is being executed under the protocol set by Secretarial Order 3355. CEQ regulations do not require the analysis of a specific number of alternatives.
P440	The Thacker Project, as proposed will have significant and potentially catastrophic impacts on portions of Humboldt County, which are mostly minimized or omitted from the DEIS.	Potential effects of the proposed project have been disclosed by the BLM through this NEPA process.
P441	The first and last alternatives stated in the DEIS are obvious but the second and third seem to be after thoughts since mine closing and pit back fill should be included in the first alternative. A better second alternative would be mining but no milling or production. The ore would be transported to where the processing materials, facilities, work force, and product shipping are more available. This would be more cost effective, reduce the foot print and resolve or reduce most environmental impacts.	The BLM must analyze a reasonable range of alternatives though the NEPA process. Alternatives must be technically and economically feasible to be considered for analysis.
P442	With mine life estimated at forty years there is no need for additional exploration at this time, except for that required in pit, immediately adjacent to the pit or monitoring.	Thank you for your comment.
P443	A third Alternative could provide for no exploration or mining other than at the proposed project at this time and resolve the "no mining the top", Thacker and Crowley Creek, south of Hwy 293, public access and some water issues for now.	Thank you for your comment.

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P444	Infrastructure - The Orovada area lacks sufficient services for the existing population who must have supplies shipped in or travel to Winnemucca. Emergency services and the few other services available would be inundated by a new workforce 3 times the size of the current population. Temporary and Permanent workforce estimates have quadrupled for this project. LNC has earlier stated that the workforce would be housed in Winnemucca and bused to the sight and that there would be no man-camp, onsite or random camping. This is only mentioned as a possibility in the DEIS. I have already had lost visitors at my home looking for places to set up camp during construction and others attempting to buy cheep property.	Thank you for your comment. As discussed in Section 4.14.1.1, it is anticipated that most of the permanent workforce, for both phases, will live in Winnemucca and travel to and from Thacker Pass by company-provided buses. This assumption is based on living and commuting habits of other mining operations around the state.
P445	Transportation - Highway 95 is a very busy 2 lane interstate route with considerable large load vehicles, wide loads, recreational vehicles, family vehicles and a 70 mph speed limit which is not well observed. Highway 95 is a well maintained highway with some passing lanes, one summit, 3 highway junctions, numerous private and recreational access, narrow shoulders and annually experiences numerous accidents, including several fatalities. The speed limit of 45 mph at Orovada is not well observed and makes for difficult ingress/egress. This is particularly true of the junction of 293 which is located a few yards from business, residents and facilities. The forecast number of mine vehicles per day, some carrying toxic materials would make it likely that a catastrophic accident will occur near the middle of town and must be made safe.	Thank you for your comment. Potential project related off-site road modifications are the jurisdiction of NDOT. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations.
P446	Highway 293 to the proposed mine site is in close proximity to a school, post office, telephone company and several residences at the junction with highway 95. The next 2 miles is subject to considerable heavy load traffic, farm equipment and associated activities and numerous side road accesses. The next 18 miles to the mine site is a narrow, poorly maintained highway with narrow and steep shoulders, a narrow bridge at the Quinn River and non fenced open range most of the distance to the mine site and results in a number of animal/vehicle collisions annually. Hwy 293 has not been rebuilt in years and only receives shoulder weed removal annually, is last in line for winter snow removal/ sanding, little annual maintenance to repair sinking cattle guards or damaged sign replacement and a once every 3 year chip seal which deteriorates rapidly. The proposed mine access is on a blind turn and hill near Thacker Summit and would provide poor visibility to oncoming traffic and needs to be changed. Hwy 293 is the only reasonable access to and from Kings River Valley and it is incredible that the DEIS asserts that no NDOT traffic study is required. This highway will not withstand the type of traffic the mine will produce and it is absolutely necessary that such a study be completed, and the highway rebuilt prior to mine construction and at LNC expense.	During the construction phase, contractors are anticipated to depend heavily on temporary housing at Winnemucca hotels, the existing man-camp, and RV parks. The company will not allow its contractors to camp on-site or at unauthorized sites in Nevada.
P447	Natural and Cultural Resources - The DEIS has done a good job of listing the flora and fauna of the planned site with some seasonal exceptions but with little or no quantification. The planned project will remove the last large south facing unburned	Thank you for your comment. In accordance with NEPA, BLM has fully disclosed all anticipated impacts to environmental resources. BLM has worked closely with NDOW and USFWS as cooperating agencies, and other agencies,

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	brush community winter range in the entire mountain range. This will likely result in the decline or total loss of several species to the Montana Mountains. The only action listed is regarding Golden Eagle nesting. However, LNC needs to reduce footprint, make way for several species, improve surrounding habitats, and prevent toxic waste water impoundments prior to operation.	such as the NNHP, as appropriate, to characterize existing environmental conditions and to identify plant communities and species of concern in the Project area and to develop avoidance and minimization measures to reduce adverse effects to natural resources.
P448	There is confusion in the DEIS as to recreational access. LNC has made numerous new roads to drill sites and their "Pit" while destroying or closing several two track traditional recreational access roads and posted the area to no trespass. The DEIS seems to indicate that access will be allowed from the corrals on the Rock Creek Road but not beyond. This is the primary access to the entire mountain range and may be a RS2477 road and must remain unfettered along with access development around/thru the mine to the area north and uphill from the mine site.	The DEIS is clear in that access to the Montana Mountains via Pole Creek/Rock Creek road would not be restricted by the proposed Project. Active mining areas would be fenced for public safety according to federal MSHA public safety requirements.
P449	Effects on water have been increased substantially in the DEIS compared to earlier estimates from LNC. Springs and Seeps will dry, water tables will drop, water usage by the mine will increase and the Thacker and Crowley Creek drainage's will be impacted. Accidental releases and leeks will eventually enter the Kings and Quinn River system and local ground water. Stringent practices need to be in place for prevention and remediation. LNC should be prepared to create alternate water sources for wildlife and livestock.	Comment noted. LNC proposed monitoring and mitigation plan, and the BLM recommended mitigation and monitoring measures (summarized in Section 4.3.2) are intended to address concerns regarding potential impacts to water resources. The requirements, and monitoring required under the state mandated Water Pollution Control Permit (WPCP) will provide additional stipulations design to address concerns regarding accidental releases.
P450	Grazing permits will be lost and LNC should make permit holders whole for loss of that entire part of their operation, not just the cost/value of the permit.	Thank you for your comment. The BLM has worked with the operator to identify feasible measures to avoid and minimize potential effects to the human and natural environment that are within the regulatory authority of the BLM. Many of these measures have been incorporated into the proposed Mine and Exploration Plans of Operation.
P451	How will Archaeological and Historical discoveries be addressed?	A Historic Properties Treatment Plan (HPTP) organized under BLM report No. CR2-3490 (Young et al. 2020) is currently in BLM-SHPO review. Within CR2-3490, there is a cultural resources discovery plan outlining that in the event of a discovery LNC personnel, contractors, or archaeological monitors will stop work immediately and report the find to a qualified archaeologist and appropriate BLM personnel/project agent via phone call and email. The individual reporting the incident will provide the location and nature of the discovery so that the BLM (or archaeological contractor) can assess the find and determine whether or not mitigation or additional work is necessary. Any return to work (i.e., notice to proceed) after the report of a discovery will be approved by the BLM in writing.
P452	Air Quality -I have previously lived near mines that used chemical processing, one of them sulfur, and can assure that the techniques offered in the DEIS will not prevent pollution or smell. I live less than five miles from the proposed site and during LNC exploration, I experienced light pollution that obliterated the Milky Way, heavy	NDEP regulation NAC 445B.22087 prohibits emissions of substances that may cause odors. If the project produces odors that NDEP determines violate NAC 445B.22087, LNC will implement appropriate mitigation measures. The technical noise study indicates noise levels are predicted to increase by up to

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	equipment and blasting noise pollution and fugitive dust and do not see recommendations in the DEIS that will allow LNC to control pollution required by regulation.	1.3 decibels in terms of a 24-hour average. An increase over this time scale is not considered to be noticeable (a difference of 5 decibels is considered be a noticeable change). However, noise levels at the nearest residences may be noticeable on an intermittent basis during equipment use in exploration areas. Best noise control practices identified in the EIS will be implemented where possible to minimize noise level increases outside the mine boundary. Regarding blasting, the individual events would be infrequent, and have been identified to occur at the highest rate during construction at a rate of 25 blasts per year, as described in the EIS. The blasting would be done during early afternoon hours which are not considered to be as noise sensitive as evening and nighttime hours. The operator has developed and would implement a Lighting Management Plan to avoid and minimize effects to dark skies while maintaining MSHA required operational light standards.
P453	Recommendation - Based on the above, I respectfully submit that ample justification exists to, and I request, that DEIS alternative D be selected for no Thacker Pass mine on my public lands in Humboldt County.	Thank you for your comment.
Comment Letter From Carl Erquiaga		
P454	We appreciate this opportunity to submit comments on the DEIS for the proposed Thacker Pass Lithium Mine Project. Your consideration and incorporation of our comments and recommendations into your decision-making process on this project is greatly appreciated.	Thank you for your comment.
P455	The Theodore Roosevelt Conservation Partnership (TRCP) is a national non-profit conservation organization working to guarantee all Americans quality places to hunt and fish. The TRCP works with our 60 formal partners and represents over 100,000 individual members nationally and more than 1,800 individuals throughout the state of Nevada. Given the resulting impacts of development on public land throughout the West, and clear science regarding these impacts, the future management of federal public lands administered by the Bureau of Land Management within the Winnemucca District is of great interest to us, our partners, and Nevada sportsmen.	Thank you for your comment.
P456	We greatly appreciate Lithium Nevada's desire to work with the Sagebrush Ecosystem Technical Team (SETT) to utilize the Conservation Credit System (CCS)	Thank you for your comment.
P457	Bighorn Sheep: Simply acknowledging the impacts in the DEIS is not a satisfactory response. If avoidance of these impacts cannot be achieved, then minimize is the next solution. If that is not realistic then mitigate is the next step. There are many ways Lithium Nevada could mitigate the damage or loss to this local resource in an area elsewhere in similar habitat. Water developments are a useful tool in dispersing population of large ungulates in arid Nevada. Each year sporting organizations spend thousands of dollars and volunteer time constructing and maintaining such developments. Those same organizations donate many thousands of dollars each year	Thank you for your comment. LNC has incorporated design features into the Proposed Action to minimize wildlife habitat disturbance and loss to the greatest extent possible. Habitat would be incrementally lost over the life-of-mine, not all at once, and LNC would initiate concurrent reclamation in mine areas no longer active. Once the mine site is reclaimed, habitat would be restored for big game species. In addition, a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success

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	to NDOW to fund projects such as disease surveillance, translocations and population surveys.	of mitigation. The TAG would consist of the applicant, the BLM, the NDOW, the USFWS, and any other agencies or academic institutions as appropriate. Instruction Memorandum (IM) 2019-018 directs the BLM to include compensatory mitigation in all of the action alternatives in a NEPA analysis only when it is required as part of a state plan, program, or authorization. Currently, no such requirements for compensatory mitigation exist for big game species, and LNC has not voluntarily committed to participating in compensatory mitigation programs for Bighorn Sheep.
P458	Pronghorn: As noted above Simply acknowledging the impacts in the DEIS is not a satisfactory response. If avoidance of these impacts cannot be achieved, then minimize is the next solution. If that is not realistic then mitigate is the next step. There are many ways Lithium Nevada could mitigate the damage or loss to this local resource in an area elsewhere in similar habitat. Water developments are a useful tool in dispersing population of large ungulates in arid Nevada. Each year sporting organizations spend thousands of dollars and volunteer time constructing and maintaining such developments. Those same organizations donate many thousands of dollars each year to NDOW to fund projects such as disease surveillance, translocations and population surveys. One such project requiring funds currently is GPS collaring of antelope to document migration and home range requirements.	Thank you for your comment. LNC has incorporated design features into the Proposed Action to minimize wildlife habitat disturbance and loss to the greatest extent possible. In addition, a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation. Instruction Memorandum (IM) 2019-018 directs the BLM to include compensatory mitigation in all of the action alternatives in a NEPA analysis only when it is required as part of a state plan, program, or authorization. No such requirements for compensatory mitigation currently exist for big game species. LNC has committed to purchasing GRSG conservation credits through the SETT, which could indirectly benefit other sagebrush steppe species, such as pronghorn.
P459	Mule Deer: As noted above Simply acknowledging the impacts in the DEIS is not a satisfactory response. If avoidance of these impacts cannot be achieved, then minimize is the next solution. If that is not realistic then mitigate is the next step. There are many ways Lithium Nevada could mitigate the damage or loss to this local resource in an area elsewhere in similar habitat. Water developments are a useful tool in dispersing population of large ungulates in arid Nevada. Each year sporting organizations spend thousands of dollars and volunteer time constructing and maintaining such developments. Those same organizations donate many thousands of dollars each year to NDOW to fund projects such as disease surveillance, translocations and population surveys. One such project requiring funds currently is GPS collaring of mule deer to document migration and home range requirements.	Thank you for your comment. BLM Instruction Memorandum (IM) 2019-018 directs the BLM to include compensatory mitigation in all of the action alternatives in a NEPA analysis only when it is required as part of a state plan, program, or authorization. No such requirements for compensatory mitigation currently exist for big game species, such as mule deer, and as such, BLM cannot require LNC to commit to compensatory mitigation for mule deer, unless it is voluntary.
P460	Pole Creek road and an un-named road south from the project area with access to the Double H Mountains are the two roads of most immediate concern. These roads serve as access points for the Montana and Double H mountains for hunters and recreationists. Public safety on these roads must be mandatory consideration.	Thank you for your comment. As noted in the DEIS, existing access roads to the Montana and Double H Mountains would not be closed or permanently blocked and the operator does not intend to restrict public access to any locations with the exception of the active mine areas that would be fenced and have restricted public access as required for public safety by MSHA regulations.
P461	Potential for future exploration outside of the current proposal - TRCP scoping comment: Lithium Nevada Inc controls additional claims at higher elevations north of Thacker Pass in important habitat. Development of those claims in the future	The scope of this EIS is disclosure and analysis of the effects of the Proposed Action and reasonable alternatives. Other locations owned or under control of the operator are outside the scope of this document.

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	would be an environmental disaster as the impacts to all the above listed species would be unavoidable. While it has been represented to the public that there is no intention to develop those claims, Lithium Nevada should place those claims in some sort of conservation easement in perpetuity. Likely it was deemed as not related to the current project. However, the TRCP continues to believe it should be a necessary part of this project approval.	
P462	In conclusion, BLM and Lithium Nevada must work to develop avoidance, minimization and mitigation strategies to protect and conserve the above-mentioned resources. Those strategies need to be developed and vetted before any further exploration or disturbance or development is allowed.	Thank you for your comment. The BLM has worked with the operator to identify feasible measures to avoid and minimize potential effects to the human and natural environment that are within the regulatory authority of the BLM. Many of these measures have been incorporated into the proposed Mine and Exploration Plans of Operation. Any BLM approval of the proposed Mine and Exploration Plans or alternatives would require that the operator obtain all necessary State and Federal permits and comply with all applicable State and Federal regulatory requirements.
Comment Letter From Katie Fite		
P463	This mine will be ecologically devastating for these lands. It will interject new massive human disturbance – road traffic, lights, noise, water depletion, weeds, wildlife habitat fragmentation, visual marring and a host of other adverse effects in a landscape where native biota are increasingly threatened by climate change stress. WildLands Defense strongly questions the adequacy of the environmental analysis and Methodology for the environmental analysis assumptions used for the environmental analysis of all environmental aspects of the EIS	Thank you for your comment. This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P464	A pro-mining article states: "Mining at Thacker Pass project: Conventional, continuous open-pit mining method using excavators and surface miners will be applied at the Thacker Pass project. … Ore will be mined by a surface miner, which will simultaneously load it into haul trucks. The ore will be hauled to an overland ore conveyor located near the pit limit, which will transport the material to the processing plant." https://www.nsenergybusiness.com/projects/thacker-pass-lithium-project-nevada-usa/	Thank you for your comment.
P465	The aerial photo shows the site has been torn up in many ways.	Existing surface disturbances from previously authorized actions are disclosed in Section 2.2.1.
P466	The processing plant is proposed to be developed in two phases, with the first phase treating an average of 2.2Mt of ore per annum during the first four years of production. Additional equipment and infrastructure will be installed as part of the second phase to increase the annual production to 60,000tpa.	This is quoted text; see response to Comment P472.
P467	The ore will be crushed, screened, and forwarded to the leaching circuit and treated with sulfuric acid to segregate lithium. The lithium-bearing solution from the leached unit will then be filtered and forwarded to neutralization process.	This is quoted text; see response to Comment P472.

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P468	Neutralization will be achieved with ground limestone during start-ups and sustained with recycled alkaline solids from an upstream precipitation process during normal operation.	This is quoted text; see response to Comment P472.
P469	The lithium brine will be passed through evaporation and crystallization processes using steam and electricity from the sulfuric acid production process in order to remove magnesium sulfate and extract water.	This is quoted text; see response to Comment P472.
P470	Quicklime will be added to the lithium brine to increase the pH value and precipitate magnesium hydroxide and calcium sulfate crystals.	This is quoted text; see response to Comment P472.
P471	The resultant product will be precipitated in a lithium carbonate precipitation circuit, wherein the lithium will be reacted with saturated soda ash solution to produce lithium carbonate solids. The solids will be filtered, washed, dried, and packaged for sale.	This is quoted text; see response to Comment P472.
P472	The full range of potentially harmful and/or toxic chemicals, gases, leachates, combinations of harmful chemicals, etc. that will be released into the air, water, and that may affect aquatic and terrestrial biota as a result of all these processes must be addressed.	The EIS includes assessments of impacts to air quality, water quality, and aquatic and terrestrial biota from construction and operation of the facility, based on the mining operations, consumption of chemicals and reagents, and production of products. A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS. A summary table of the projected output and tailings pile constituents has been added to the EIS.
P473	Infrastructure facilities at the Thacker Pass project: The Thacker Pass lithium project area can be accessed from the State Route (SR) 293, approximately 30km from the Highway 95 junction.	Thank you for your comment.
P474	Raw water supply to the plant will be sourced from a well or series of wells in the Quinn River Valley. Electrical submersible well pumps will be installed in the groundwater wells to bring water to a surface pump station, and pumped to the plant site using two booster pump stations and an approximately 12km-long pipeline.	Thank you for your comment.
P475	Power will be sourced from a local cogeneration plant and from the existing 115kV transmission line owned by Harney Electric and running along the site.	Thank you for your comment.
P476	The project will also feature a 60,000tpa ore stockpile pad and a limestone stockpile with a design capacity of 10,000t.	Thank you for your comment.
P477	The 30 km is through a remote area so the traffic disturbance will have a major adverse impact with noise, lights, etc. creating a disturbance footprint several miles from the access route itself.	Thank you for your comment. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations. Potential effects of noise are disclosed in Section 4.10 of the EIS. Potential effects of light upon the dark sky are discussed in Section 4.15.
P478	What is the full environmental footprint of the local cogeneration plant? How much new transmission line will be built?	The footprint of the proposed energy generation facility is illustrated on Figure 2.2 in Appendix A. Section 2.2.7.1.2 states that the proposed powerline would be approximately 7 miles in length.
P479	How much dust will be generated from all aspects of this? How much water will be used in dust suppression alone? Where is the dust likely to be deposited? How will it	Total facility-wide particulate emissions, including fugitive dust, are presented in the Thacker Pass Project NEPA Air Quality Impact Analysis Report [DEIS

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	affect snowmelt?	Tables 4.8, 4.9, & 4.10 and Appendix K, Sections 2.1, 2.2, & 2.3.7]. As discussed in the report, the potential impacts from the particulate emissions are below the National and Nevada Ambient Air Quality Standards [DEIS Table 4.12 and Appendix K, Section 3.14]. Water quantities for dust suppression are estimated to be approximately 250 AFA, however water quantities for dust suppression may vary slightly from year to year. Water is expected to be used as a dust suppressant on hot, dry, windy days when there is a potential fugitive dust emissions. Large amounts of fugitive dust emissions are not expected in moist conditions. For this reason, impacts to snow melt from fugitive dust and/or dust suppressants are not expected.
P480	Where will all water wells and water sources be located? One look at the Quinn River country shows large-scale existing depletion of waters, and desertification, related to livestock production on public and private lands.	The location of the production well and backup well are described in Section 2.2.7.3, and shown on Figure 2.2, Appendix A in the Draft EIS. Dewatering wells are not expected to be required due to the low flow rates predicted into the pit. However, if pit dewatering wells become necessary through the life of the mine they would be located as near the pit.
P481	This mine will create a massive disturbance for 46 years – if not more, as typically additional mining operations metastasize across the landscape.	Thank you for your comment.
P482	The developer has claimed this is a low impact mine. Yet BLM's press release states: "If approved, during construction, LNC would employ approximately 1000 contractors. Once construction is complete LNC would employ approximately 300 employees. At full capacity, the mine would produce 60,000 TPA of battery-grade lithium annually." This is an immense amount of disturbance - on and across roads with noise, pollution, sensitive species and other animal mortality and injury and disturbance of lands associated with activities on-site and all over across this very arid high desert landscape – including for gravel, water, etc. https://www.blm.gov/press-release/bureau-land-management-seeks-public-input-proposed-lithium-nevada-corporation-thacker	Thank you for your comment.
P483	"BLM's PR also states: ""The current exploration plan boundary encompasses approximately 3,550 acres. The project would involve expanding the plan boundary to approximately 18,000 acres, with an ultimate disturbance footprint of approximately 5,700 acres.""	Greenhouse gas emissions are discussed in Section 4.9.
P484	In reality, the disturbance footprint extends across a far greater area, both above and below ground. Roads use and maintenance, gravel pits, light pollution in this currently dark Sky area, explosions from mining destroying the earth, dust – which settles out on snow causing earlier melting of snow packs, etc. What may be sources of greenhouse gas production that increase climate change stress on the planet associated with all aspects of this mammoth project?"	Effects of the Proposed Action and alternatives are disclosed in Chapter 4 of the EIS. The operator has developed a Lighting Management Plan that would be implemented to avoid and minimize effects to dark skies while maintaining consistency with MSHA lighting safety standards. The operator would comply with requirements of Project air quality permits regulated by the NDEP-BAPC.

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P485	BLM's on-line public "meeting" presentation info was greatly biased towards the mine and the mine dominated much of the presentation.	Thank you for your comment.
P486	WLD objects to a mining company person being part of the presentation. The info lists Ted Grandy Lithium NV. The "public presentation" even contains the usual mine corporation "forward-looking-statement" BS. The mine's Grandy pretty much gets to dominate the session. His presentation includes: "LNC's purpose for this project is to construct and operate a lithium mine and processing plant, and to pursue continued exploration on public land in the vicinity of Thacker Pass, in accordance with applicable laws." This demonstrates that what the EIS describes may be just the tip of the iceberg – and the whole area of the crucial Sage-grouse, Pygmy Rabbit, migratory songbird and other sensitive species wildlife habitat in the Montana Mountains and other areas may be torn apart by "exploration" and incremental piecemeal expanded development.	Thank you for your comment.
P487	The mapping of the facility shows a scrubber, pit, water wells in the Quinn River valley side.	The estimated annual volume of water required for phase 1 and Phase 2 of the project is summarized in Section 2.2.7.3 of the Draft EIS.
P488	While water use is claimed to be 55 gpm towards end of project, much greater volumes will be consumed earlier.	Thank you for your comment. The BLM coordinated with the Nevada Sagebrush Ecosystem Technical Team (SETT) and Lithium Nevada Corporation (LNC) to calculate the amount of compensatory mitigation that would be required to offset residual impacts using the State of Nevada's Conservation Credit System (CCS). The BLM does not administer the development of credits or debits under the CCS and is not responsible for enforcement of program requirements.
P489	We are greatly concerned that the Great Basin Sagebrush Habitat Restoration fund does not adequately y mitigate the damage to sensitive species habitats and populations, and other public lands values. Instead, it often serves to destroy other wildlife habitat or prop up abusive ranching practices by throwing $$$ at projects and failing to address the serious degradation caused by livestock grazing in the arid West – which is exacerbated by climate change stress.	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P490	WLD stresses that the EIS greatly fails to address and take a hard look at the serious degradation and depletion of wildlife habitats being caused by public and private lands livestock grazing across this landscape. This is made worse by climate change stress. See Fleischner 1994, Belsky and Gelbard 2000. Williamson et al. 2020, Beschta et al. 2012, 2014.	Thank you for your comment. As summarized under Section 1.5.1, this EIS was developed to meet NEPA streamlining requirements under Secretarial Order (SO) 3355 and implementing orders under Executive Order (EO) 13807. Key issues and resources identified for detailed analysis in this EIS were identified through the scoping process, and were discussed in detail.
P491	We are greatly concerned about the Golden Eagle "take" statement – especially since the current population of Golden eagles in the West is under great stress from prey species habitats loss, and a primary prey species, jackrabbits, face a new deadly calcivirus that causes Rabbit hemorrhagic Disease.	Thank you for your comment. LNC has submitted an application to the USFWS for an incidental take permit related to potential disturbance to Golden Eagles resulting from construction, operation, and reclamation of the proposed Project. In determining the significance of effects of the Project on golden eagles, the USFWS has screened the Proposed Action against the

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		analysis provided in the PEIS (USFWS 2016a) and the USFWS's 2016 report, "Bald and Golden Eagles: Status, trends, and estimation of sustainable take rates in the United States." We also used our eagle-risk analysis (USFWS 2013, Appendix D), and Cumulative Effects Analysis (USFWS 2013, Appendix F) to quantify eagle fatality risk and cumulative local area population level effects. Eagle-specific post-construction monitoring is required for EITPs and is included as a permit condition, in addition to adaptive management measures described in the applicant's ECP. The Eagle Act authorizes the USFWS to issue EITPs only when the take is compatible with the preservation of each eagle species, defined (in USFWS 2016) as "consistent with the goals of maintaining stable or increasing breeding populations in all eagle management units (EMUs) and the persistence of local populations throughout the geographic range of each species." The USFWS will consider issuance of an eagle disturbance take permit if (1) the incidental take is necessary to protect legitimate interests; (2) the take is compatible with the preservation standard of the Eagle Act; (3) the applicant has avoided and minimized impacts to eagles to the extent practicable; and (4) compensatory mitigation will be provided for any take. The eagle population status report will be updated in 2022. This 2022 report will be an update of the "Bald and Golden Eagles, Population Demographics and Estimation of Sustainable Take in the United States," April 2016. The 2022 update will summarize overall population trend information from all impact sources. This EIS acknowledges loss of golden eagle foraging habitat in Section 4.5.5.1. Reductions in prey populations from natural sources (e.g., disease) could occur, but it would be speculative to relate that back to projects effects that would result in 'take' as defined by the Eagle Act.
P492	The comparison of alternatives table continues fails to include the volumes of water prior to year 30.	The anticipated flow rates into the pit and years when the flow is anticipated to be encountered is summarized in Section 4.3 Water Quality and Quantity of the EIS. As described on page 4-7 of the DEIS, "*The model results indicate that mining would encounter groundwater seepage into the pit beginning in 2035. From approximately 2035 through 2065, groundwater inflow rates are predicted to increase as mining progresses from less than 8 gpm in 2035 to approximately 55 gpm by the end of mining (2065). Groundwater seepage into the pit would be managed by sump pumps on the floor of the pit."*
P493	How has climate change stress been factored into analysis of aquifer levels?	Sensitivity analysis were conducted to evaluate the predicted recovery of the pit lakes by adjusting the potential evapotranspiration rates (Appendix P). However, an evaluation of the potential long-term effects of climate change on groundwater elevation in the model was considered outside the scope of the EIS analysis.

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P494	It appears that the emissions numbers may be under-estimates. Just the dust alone will likely be much greater in this arid, windy site near a pass.	For the Thacker Pass Project NEPA Air Quality Impact Analysis, wind erosion emission were calculated using on-site meteorological data [DEIS Appendix K].
P495	There is no alternative that further conserves water. There is no alternative that does not involve an open pit, except for No Action. Instead: Preferred Alt. A Phase I – 2,600 afy Phase II – 5,200 AFY; Alt. C. Phase I – 9,100 afy Phase II – 18,200 af. How can then the vehicle emissions, dust, etc., be the same under both Alts?	Only two mining phases are under consideration, Phase I: 2,600 afy and Phase II: 5,200 afy. The anticipated water use would be similar for all three alternatives.
P496	Phase I - 1.39 tpy Phase II – 2.34 tpy. Alt A GHG: Phase I – 79,998 tpy Phase II – 132,588 tpy , Alt C GHG: Phase I – 90,182 tpy Phase II – 142,772 tpy	Comment noted.
P497	Groundwater. Alt A. 2 drawdown areas. Maximum 10-ft drawdown area extends ~ 1.4 miles from Project area.	Comment noted.
P498	Alt. B 2 drawdown areas. Maximum 10-ft drawdown area extends ~ 4.8 miles from Project area.	Comment noted.
P499	Alt. C. 2 drawdown areas. Maximum 10-ft drawdown area extends ~ 5.2 miles from Project area.	Comment noted.
P500	Alt A 3 ephemeral springs affected within drawdown area	Comment noted.
P501	Alt C. 5 ephemeral springs within drawdown area. One spring covered by East WRSF.	Comment noted.
P502	Traffic appears to be an under-estimate. What was the baseline used? Phase 1 ~60 to 100 Phase II - ~120 to 200 additional truck trips/day. What about other vehicles like vans? Or worker buses?	Truck count estimates are in line with other similar Nevada mining operations. The number of mine staff buses is included in these estimates. The majority of mine staff are anticipated to use mine operated bus service to and from the mine in order to minimize mine related small vehicles.
P503	The acres given for Sage-grouse habitat are: Alt A. 5,011 acres of PHMA, 545 acres of GHMA would be removed. What is the complete noise, light, weed infestation, water depletion killing meadows/springs, increased fire risk, mortality --- footprint to GRSG,	Thank you for your comment. As discussed in Chapter 4 and Section 4.5 of the EIS, in accordance with NEPA, BLM has fully disclosed all anticipated impacts to environmental resources, including direct and indirect anticipated effects to GRSG and their habitat, and other wildlife and special status species. LNC is working with the Sagebrush Ecosystem Technical Team (SETT) to utilize the Conservation Credit System (CCS) to offset effects of the proposed Project's surface disturbance to GRSG and sagebrush habitat. The CCS provides a regulatory mechanism for GRSG habitat protection that ensures habitat effects from anthropogenic disturbances (debits) are fully compensated by long-term enhancement and protection of habitat that result in a net benefit for the species (credits). The BLM does not administer the development of credits or debits under the CCS and is not responsible for enforcement of program requirements. Appendix N presents detailed information on GRSG management and mitigation.
P504	Pygmy Rabbit and other sensitive species habitats? What are the #s of birds in local and regional population for all periods of time when records are kept?	Thank you for your comment. As discussed in Chapter 4 and Section 4.5 of the EIS, in accordance with NEPA, BLM has fully disclosed all anticipated impacts to special status species and migratory based on the most recent data available at the time of this analysis.

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P505	And lek locations for this time period? We stress that GRSG are in serious decline, and there has been large-scale habitat loss on the Holloway and other fires, and chronic significant cattle grazing depletion of habitats, including cheatgrass increases in the wake of the Holloway and other fires. See Connelly et al. 2019, re: sage-grouse declines while agencies are in denial. North American migratory birds are also in great trouble, with 3 billion lost in recent decades. Rosenberg et al. 2019.	Thank you for your comment. Potential effects to GRSG and their habitat have been fully disclosed in Section 4.5 and Appendix N of this EIS. LNC has proposed applicant-committed environmental protection measures applicable to the Proposed Action and other action alternatives, to incorporate Required Design Features and Management Decisions from the 2015 and 2019 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendments. To minimize effects, LNC would limit disturbance areas, perform breeding bird surveys before ground disturbance, fence areas surrounding the water management ponds, and conduct concurrent reclamation. Additionally, LNC is working with the Sagebrush Ecosystem Technical Team (SETT) to utilize the Conservation Credit System (CCS) to offset effects of the proposed Project's surface disturbance to GRSG and sagebrush habitat. The CCS provides a regulatory mechanism for GRSG habitat protection that ensures habitat effects from anthropogenic disturbances (debits) are fully compensated by long-term enhancement and protection of habitat that result in a net benefit for the species.
P506	Alt. C. 5,493 acres of PHMA, 545 acres of GHMA would be removed	Thank you for your comment.
P507	One lek within one mile (both A and C). How many leks within 3 miles? Within 5 miles? Certainly the sound, light pollution and visual impacts will travel this far.	Thank you for your comment. Refer to Section 4.5, Wildlife and Special Status Species, of the EIS for an analysis of anticipated effects, including habitat loss, noise, light, and visual effects. Refer to Appendix G, Section G.1.4, for descriptions of the existing affected environment, including numbers of GRSG leks, migratory bird density estimates, and special status species potentially occurring in the Project area.
P508	3,561 acres of Pygmy Rabbit habitat; 5,695 acres of Burrowing Owl habitat This is a huge amount of PR habitat that will be destroyed.	Comment noted.
P509	Alt A. 753 acres of Bighorn Sheep habitat; 852 acres of Mule Deer habitat; 427 acres of pronghorn year-round habitat and 4,960 acres of winter range. 798 acres of Bighorn Sheep habitat; 897 acres of Mule Deer habitat; 501 acres of pronghorn year-round habitat and 5,013 acres of winter range.	Comment noted.
P510	Vast areas of habitat are seriously degraded by public lands livestock grazing, and BLM has never even bothered to conduct current FRH processes across much of the Montana Mountains. There is no adequate baseline on the threats posed to biota and waters by this grazing.	The potential effects of BLM permitted livestock grazing on lands outside of the Project area are out of the scope of this analysis and are discussed in the current Winnemucca District Land Use Plan. Potential effects upon livestock grazing within the Project area are discussed in Section 4.8 of the EIS.
P511	Note that throughout, Alt D/No Action BLM claims that no effects are anticipated. Yet a significant area has been disturbed already in "exploration" hasn't it? To what degree has all the existing explo and other activities impacted the lands, waters, and habitat for native biota – including native vegetation?	Existing surface disturbances from previously authorized actions are disclosed in Section 2.2.1. Effects of those actions are disclosed in the respective NEPA documents for each action.
P512	Visual. Alt. A. Project features would be visible from KOPs 1,2,3,6, and 7. We are very concerned about the inadequacies of the KOPs and assessment of visual	Comment noted.

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	features, including the cumulative effects of all the welter of activities and disturbances – from gravel pits to wells to night-time 24 hour a day tariff, to the power plant, to linked expanded explo, etc.	
P513	Alt. C. Same as A, with the exception of increase contrasts and length of effects at KOP 7 due to remaining unbackfilled pit as a post-mining feature	Comment noted.
P514	Darkness of Night Skies. This will represent an extraordinary degree of night sky pollution in this Dark Sky area.	Comment noted. Analysis of light pollution has been revised, including mitigation measures to reduce changes to dark night skies.
P515	Aquifer drawdown and contamination of ground and surface waters.	Comment noted. Aquifer drawdown and potential for groundwater and surface water quality degradation were addressed in Section 4.3 of the DEIS.
P516	WLD is dismayed to see the omission of specific information on sensitive species and migratory birds – despite huge documented declines in many migratory bird species and great public concern about the loss of migratory birds and biodiversity. See Rosenberg et al. 2019.	Thank you for your comment. Refer to Section 4.5, Wildlife and Special Status Species, of the EIS for an analysis of anticipated effects, including habitat loss, noise, light, and visual effects. Refer to Appendix G, Section G.1.4, for descriptions of the existing affected environment, including numbers of GRSG leks, migratory bird density estimates, and special status species potentially occurring in the Project area.
P517	Will the ponds and any water sources be screened so birds and bats do not drown or be exposed to toxic substances? That is essential.	Thank you for your comment. All processing water would be contained inside of the mine processing facilities. No process ponds would be located outside. Stormwater management ponds would be located outside and would collect stormwater runoff from the Project area. These ponds would not contain any processing solutions or chemicals that could pose a threat to wildlife. Ponds would typically be kept dry. If an Industrial Artificial Pond Permit (IAPP) is required for this project, LNC would consult with NDOW to determine appropriate exclusionary devises, such as the use of bird balls or a HDPE floating pond cover, and those measures would be be addressed in NDOW's IAPP.
P518	We have many additional concerns and believe the project will fundamentally decimate and destroy irreplaceable wildlife populations over a vast land area. The scale of impacts to all elements of the environment is vastly under-estimated.	Comment noted.
Comment Letter From John Hadder		
P519	Great Basin Resource Watch (GBRW), and the Progressive Leadership Alliance of Nevada (PLAN) submits the following comments and attached documents for the proposed thacker Pass Lithium Mine. We also incorporate in these comments by reference the DEIS comments of Western Watersheds Project.	Thank you for your comment.
P520	The public engagement process around Thacker Pass must more adequately align with the National Environmental Policy Act (NEPA) than it has so far, and more time must be allotted to ensure the public is able to properly understand the proposed actions and have their concerns fully taken into account. A more thorough and transparent public engagement process is needed, particularly considering the local	The BLM has made good faith efforts to provide all information regarding the Project and its potential effects. Due to State and Local restrictions on public gatherings resulting from the COVID virus, online meetings were conducted for the safety of the community.

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	community's many articulated concerns and mistrust, as well as the fact that a great deal of the public process has occurred under extenuating circumstances of the pandemic. In addition, community members are currently still waiting for requested documents. The comment period must be extended due to the fact that these community members have still not been given access to the information they need in order to make meaningful comments at the DEIS stage.	
P521	The Bureau of Land Management (BLM) needs to address the problematic nature of streamlining a project in the midst of a pandemic where there is no clear community consent or an adequate means of engaging the public virtually to obtain it. Adequate public engagement should be prioritized and the community adequately met, consistent with the spirit of NEPA, in the unique challenges presented by the pandemic. Increased measures should be taken currently to address the challenges presented by the pandemic to ensure that the community is able to understand and engage with the project still. However, there were intentionally less measures taken to ensure this during the Thacker Pass DEIS virtual meeting. For example, there were no resource specialists at the August 9th, 2020, meeting. It was also stated during this virtual meeting that "in this format, we're hoping not to get into that," and that "we can't get into the specifics today in this [virtual] format." The virtual format should not be used as a justification for eliminating typical components of the public engagement project, and instead, extra means of engaging the public should be incorporated into the virtual process to compensate for the inability to meet in person. To sufficiently add these components and meet the spirit of NEPA, more time should be devoted to the permitting process, not less. Lithium Nevada's plan for an expedited permitting for Thacker Pass needs to be critically evaluated in light of this, and the comment deadline for the Draft Environmental Impact Statement (DEIS) needs to be extended at least through the end of September.	The BLM has made good faith efforts to provide all information regarding the Project and its potential effects. This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P522	The Structure of the DEIS makes Review Onerous. The "streamlining" process the BLM has used to craft the DEIS does a disservice to the public. The main body of the DEIS (Chapters 1-6) does not describe the project and its consequences, and how negative effects of the project are to be mitigated sufficiently. Therefore, it is necessary to review all the appendices as well. It is far more efficient for anyone reviewing the DEIS to be able to see all aspects in the same section of the document. By splitting out key aspects the reader is constantly going between various documents in a cumbersome process that actually requires more time. This conspires with the shorter timeframe to review (45 days is an absurdly short period of time for a new and complex mine plan) the DEIS to seriously undermine the ability of the public and in particular the affected community to fully understand and comment on the consequences of the proposed mine. BLM needs to return to its previous approach to the structure of the DEIS, which is more self contained and actually simpler for the public to review.	The BLM has made good faith efforts to provide all information regarding the Project and its potential effects. This NEPA process is being executed under the protocol set by Secretarial Order 3355.

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P523	The Review Period for the DEIS was Much too Short. GBRW/BRW/PLAN has requested a delay in the release of the DEIS, which did occur, but we also asked for a much longer period. We never received a response to the request dated May 2020. Many the affected community struggled to fully review the DEIS and requested comment period extensions as well. In addition requested additional information was slow to be honored and there is still outstanding information. It is clear that this administration does not care about the people in the community that will host this mine. As a result people continue lose respect for federal agencies as BLM, which further erodes the NEPA process. Ultimately, the behavior of the agency sets up a dynamic that fosters distrust and often results in increasing litigation, which ironically is in opposition to the goal of the administration to see mines permitted faster.	The BLM has made good faith efforts to provide all information regarding the Project and its potential effects. This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P524	Purpose and Need. As stated in the DEIS: "The purpose of the action is to approve a LNC's proposed MPO to construct and operate a lithium mine, lithium processing plant, and related facilities reasonably incident to mining operations on public lands within the Project area. The need for the Proposed Action is established by the BLM's responsibility under the Federal Land Policy and Management Act of 1976 (FLPMA) and the BLM's Surface Management Regulations at 43 CFR 3809 to ensure that operations under the Mining Law of 1872 prevent unnecessary or undue degradation." (DEIS p 1-3). This is incorrect. BLM's Purpose is to respond to LNC's submittal of a proposed Plan of Operations for the Thacker Pass Lithium Mine by determining whether BLM can approve it in its current form and still meet BLM's obligations under federal laws and regulations. By describing BLM's purpose solely as approving the mine, the DEIS omits BLM's obligations to protect wildlife, habitat, and scenic landscape.	The purpose and need statement for the project has been revised.
P525	Under NEPA, the BLM is required to CONSIDER a No Action Alternative. The DEIS has been written to review a full range of proposed alternatives including No Action. Writing that the purpose is to "approve" the project at this stage predetermines the outcome. A new Purpose and Need Statement should be written that is not so biased to the applicant.	The purpose and need statement for the project has been revised.
P526	1.3.1 Decision To Be Made by the BLM: "The BLM will decide whether the proposed Mine and Exploration Plans cause unnecessary or undue degradation and, consequently, whether to approve the Plans as proposed, approve with modifications, or deny the proposed Plans." (DEIS p 1-4)	Thank you for your comment.
P527	1a. Mining water availability is highly uncertain. Assess to water for the project is unresolved in the DEIS. There will be considerable water extraction with a consumptive use of 2,600 AF per year during Phase 1, and 5,200 AF per year during Phase 2. According to the DEIS Lithium Nevada Corporation (LNC) has 980 AFA (acre-feet annual) water rights and an option to purchase an additional 2,717 AFA. It is not clear how certain the option is and there is no discussion of what is the	The DEIS analyzes impacts associated with both Phase 1 and Phase 2 mining. Phase 2 mining represents a maximum impact scenario with regard to water consumption, mining rates, and disturbed area. If mining continues at Phase 1 rates, the impacts well be less than described.

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	meaning of the "option to allow" for the public to evaluate the certainty of access to the 2,717 AFA. There is also no discussion of how the project is to acquire the additional, 1,503 AFA annual for Phase II assuming that the 2,717 AFA is obtained. This leaves the possibility that Phase II may not proceed as planned or at all if the water rights are not obtained. Given this uncertainty, BLM must in the Final EIS (FEIS) analyze the affect of the project becoming stalled due to lack of sufficient water for Phase II, and have a plan for reclamation assuming the project becomes indefinitely stalled. BLM must in the FEIS require LNC to show how the additional water is to be obtained.	
P528	1b. BLM needs to consider that the source of water for the mine, Quinn River Valley Orovada hydrographic basin, is already over allocated as stated in the DEIS, "The Orovada Subarea is currently overallocated by approximately 30,271 AFA" (DEIS p 2-12). Thus, water extraction is hovering near the maximum sustainable volume in the basin. BLM needs to evaluate the increased consumptive water use with respect to a basin at or near its perennial yield. Keeping in mind that perennial yields are also and estimate it would be prudent to avoid water use right up to the perennial yield.	See Common Response WATER-8.
P529	1c. According to the Plan of Operations (PoO)1 Lithium Nevada acquired water rights totaling 995.5 acre-feet annual (AFA). Of this only 15.5 are for mining and milling. The PoO also mentions an option to acquire an additional 2,717 AFA. Thus, Lithium Nevada is anticipating that there will be sufficient water rights to develop Phase 1 assuming that the unsecured rights are not protested. Phase 2 of the PoO requires an additional 2,600 AFA, for which no option to acquire is mentioned. BLM needs to evaluate the possibility that the additional water rights are not available for Phase 2 and any environmental or socioeconomic consequences that may occur if Lithium Nevada has to suspend operations or close operations? BLM, should determine the needed bond in the case that Phase 2 is not implemented and the company abandons the site at that point.	See Common Response WATER-8.
P530	"2a. DEIS Unreasonably Only Considers the Ten-foot Drawdown. The DEIS provided no justification for the following, "EIS analysis conservatively assumes that there is a potential risk that drawdown associated with the mine could reduce baseflow to perennial springs located within (or within one mile of) the maximum extent of the 10-foot drawdown contour" (DEIS 4-10). The effects of drawdown on surface water resources are commonly shown as a risk to resources within a certain drawdown. In this DEIS, that is the ten-foot drawdown. Once the water table is drawn beneath a surface water resource dependent on the water table, it does not affect the surface resource any more to draw the water table down further.	See Common Response WATER-3.
P531	Therefore, it is reasonable to consider that a small drawdown can affect surface resources. A spring or seep that depends on the water table will go dry if the water table drops below that intersection of the water table with the surface. Therefore, it is	See Common Response WATER-3.

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	unreasonable for the DEIS to only consider the ten-foot drawdown for its consideration of effects (Figures 4.3-3 to 4.3-21, Appendix A, DEIS); a spring is just as dry for a one-foot drawdown as for a ten-foot drawdown. Additionally, the discharge from a spring would be reduced if the gradient controlling the discharge reduces without regard to there being any actual drawdown at the spring. "	
P532	2b. The one-mile buffer zone around the 10-foot drawdown is meaningless without knowing what drawdown occurs in that area. The DEIS only states, "The 1-mile buffer was selected based on review of the hydrographs showing the simulated changes in groundwater elevation at spring locations located outside the 10-foot drawdown contour (Appendix E, Piteau 2020a)." (DEIS 4-8). Appendix E is not provided by BLM for analysis. There is no discussion of how the threshold for changes in groundwater elevation. Review of this approach is not possible and the effectiveness of the use of the one-mile buffer zone is impossible to determine including in mitigation analysis.	See Common Response WATER-3.
P533	"2c. Many other EISs for mining projects have used a much lower drawdown for the consideration of impacts. The following is a small sample of those documents drawn from different states: (Copper Flat Copper Mine: Draft Environmental Impact Statement, Sierra County, New Mexico, BLM/NM/ES-16-02-1793 – 2015. The DEIS considers drawdown to 1 foot. https://eplanning.blm.gov/eplanning-ui/project/75353/570), (Donlin Gold Project, Final Environmental Impact Statement, Alaska, 2015. This EIS considers drawdown to 0.1 feet due to the nearby wetlands that could be dried. https://cdxnodengn.epa.gov/cdx-enepa-II/public/action/eis/details?eisId=247774), (Haile Gold Mine Project, Final Environmental Impact Statement, 2014, SAC 1992-24122-41A The FEIS considers drawdown to 1 foot.	See Common Response WATER-3.
P534	3. Draft Environmental Impact Statement (DEIS) Arbitrarily Eliminates Certain Surface Water from Affects of Drawdown. According to the DEIS, "A less than 5 percent reduction of flow would be difficult to accurately measure or distinguish from natural fluctuations and is presumed to be within the model uncertainty. For these reasons, for the purposes of this analysis, a flow reduction of 5 percent or greater is used to identify model-simulated springs and streams with the potential to experience measurable flow reductions." (DEIS 4-9). While the DEIS is correct that there are natural fluctuations, drawdown caused by dewatering is simply imposed on top of the natural water table and its fluctuations. In areas with significant natural fluctuation, drawdown may simply increase the time that the stream or spring is dry, which is just as important as causing a perennial source to go dry. Even with natural fluctuations time series plots can reveal if springs and surface waters are being affected. Therefore, the DEIS incorrectly concludes, mine related drawdown is not expected to result in a measurable effect to flows in the perennial stream reaches in the Project area including Thacker Creek (or flows into Thacker Pond), Crowley	The results of the model simulations were provided in Section 4.3.1 for each of the action alternative draft EIS including those predictions ranging from 0 to 5% reduction. BLM acknowledges the limitation and appropriate use of the results of the regional groundwater flow model in light of model uncertainty and ability to detect "measurable effects" as stated in Section 4.3.1.1: *"The regional model is not considered an appropriate tool to predict small (less than 5 percent) site-specific flow changes. A less than 5 percent reduction of flow would be difficult to accurately measure or distinguish from natural fluctuations and is presumed to be within the model uncertainty. For these reasons, for the purposes of this analysis, a flow reduction of 5 percent or greater is used to identify model-simulated springs and streams with the potential to experience measurable flow reductions."* The conclusions regarding expected measurable effects to perennial streams associated with mine-induced drawdown are correct.

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	Creek and Pole Creek." (DEIS 4-9).	
P535	2d. The DEIS therefore errs in not considering drawdown less than ten feet. Consideration of drawdown to one-foot would account for some variability in the estimate intended to be accommodated by the one-mile buffer zone. The DEIS clearly underestimates the potential effects of drawdown on surface water resources.	Comment noted. See Common Response WATER-6; and the revised Monitoring and Mitigation Measure WR1 in Section 4.3.2.
P536	"3. Draft Environmental Impact Statement (DEIS) Arbitrarily Eliminates Certain Surface Water from Affects of Drawdown. According to the DEIS, "A less than 5 percent reduction of flow would be difficult to accurately measure or distinguish from natural fluctuations and is presumed to be within the model uncertainty. For these reasons, for the purposes of this analysis, a flow reduction of 5 percent or greater is used to identify model-simulated springs and streams with the potential to experience measurable flow reductions." (DEIS 4-9).	See Common Response WATER-6. The model results do not indicate that the drawdown associated with the project would result in measurable reduction or dry up baseflow in perennial springs and streams in the potentially affected area. However, if unanticipated effects occur, the BLM agrees with the statement provided in the comment: "*The fact that amount of replacement water may be small, as compared to the Project's pumping rate ....*". The BLM has taken a "hard look" at potential impacts to water resources, including drawdown effects to springs and streams; and evaluated the effectiveness of recommended mitigation measures, as summarized in Section 4.3. Potential impacts to riparian areas is addressed in Section 4.4. See Common Response Water 7 regarding Federal Reserved Water Rights.
P537	While the DEIS is correct that there are natural fluctuations, drawdown caused by dewatering is simply imposed on top of the natural water table and its fluctuations. In areas with significant natural fluctuation, drawdown may simply increase the time that the stream or spring is dry, which is just as important as causing a perennial source to go dry. Even with natural fluctuations time series w plots can reveal if springs and surface waters are being affected. Therefore, the DEIS incorrectly concludes, mine related drawdown is not expected to result in a measurable effect to flows in the perennial stream reaches in the Project area including Thacker Creek (or flows into Thacker Pond), Crowley Creek and Pole Creek." (DEIS 4-9)."	The BLM does not agree that the "DEIS does not analyze much of the surface water, especially springs, that might be affected..." The BLM has used available baseline characterization data and the results from the calibrated numerical groundwater flow model to identify streams, spring and water rights located within the model simulated mine-induced drawdown area as described in Table L.2, in Appendix L (Analysis Methods) in the EIS. The statement quoted in the comment is taken out of context. The drawdown analysis for surface water resources describes, tabulates, and provides maps that clearly indicate all of the surface water resources within the drawdown areas. The analysis also conservatively assumes that (1) the perennial water sources are hydraulically commented with the aquifers that would be affected by drawdown induced by the project; and therefore, (2) there is a potential risk of flow reduction to any and all perennial water sources within the drawdown area. The groundwater model is a numerical representation of a conceptual model of the groundwater flow system. As such, the statement quoted in the comment is intended to acknowledge that, as with any similar type of predictive drawdown analysis, there are unavoidable uncertainties. Consequently, careful monitoring of both groundwater elevations and surface water flow are essential as noted in the paragraph following the statement cited in the paragraph and as recommended by the BLM in monitoring and mitigation measure WR1 provided in Section 4.3.3.
P538	4a. The water resources monitoring and mitigation plan fails to meet NEPA requirements. The DEIS fails to fully analyze the mitigation, and its effectiveness, of the purported plan to replace the waters lost at the various springs that will be	See response to P537.

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	adversely affected by the Project's pumping and dewatering. There is no estimation of the amount of "supplemental" water expected for mitigation of affected surface water and springs and existing water rights. It is also not established what will be the source of replacement water. The amount of water for phase I and then phase II (2,600 and 5,200 AFY respectively) is discussed as consumptive use for the project. (DEIS, APP B p 59). However, there is no breakdown as to where the water is to used, and specifically indication of how much water, if any, is available for the supplementation plan. Therefore, it is unclear whether LNC will have secured the needed water right for the supplementation plan. This calls into question the effectiveness of the mitigation plan, required by NEPA.	
P539	5c. The court also rejected BLM's contention that it was "impossible to conclusively identify specific springs and seeps that would or would not be impacted." Id. at 727: That these individual harms are somewhat uncertain due to BLM's limited understanding of the hydrologic features of the area does not relieve BLM of the responsibility to discuss mitigation of reasonably likely impacts at the outset. See National Parks [Conservation Assoc. v. Babbitt], 241 F.3d at 733 ("lack of knowledge does not excuse the preparation of an EIS; rather it requires [the agency] to do the necessary work to obtain it."). 588 F.3d at 727. The blanket statement in the DEIS parallels the FEIS for Cortez Hills for which the appeals court found that: "Nothing whatsoever is said [in the FEIS] about whether the anticipated harms [to surface and ground waters] could be avoided by any of the listed mitigation measures. This discussion is inadequate." Id. (emphasis in original). "NEPA requires that the agency give some sense of whether the drying up of these water resources could be avoided." Id. The appeals court also found that the FEIS "does not in fact assess the effectiveness of the mitigation measures related to groundwater," as required by NEPA. Id. The blanket statement in the DEIS parallels the FEIS for Cortez Hills for which the appeals court found that: "Nothing whatsoever is said [in the FEIS] about whether the anticipated harms [to surface and ground waters] could be avoided by any of the listed mitigation measures. This discussion is inadequate." Id. (emphasis in original). "NEPA requires that the agency give some sense of whether the drying up of these water resources could be avoided." Id. The appeals court also found that the FEIS "does not in fact assess the effectiveness of the mitigation measures related to groundwater," as required by NEPA. Id.	See comment response P537.
P540	5d. The Ninth Circuit further required BLM to "do the necessary work to obtain" the necessary underlying information regarding the "hydrologic features" that will be adversely affected by the Project as part of an adequate mitigation plan and EIS, as well as conducting an adequate "study of the serious effects of exhausting water resources." Id. at 727-28. The DEIS repeats the same error is not completely applying the available science to determine which surface waters are likely to be affected and how to avoid that impact.	See comment response P537.

Comment #	Comment	BLM Response
P541	7a. Incomplete documentation and unclear designation of springs and surface waters violates the public's ability to fully analyze impacts. Surface waters and spring are identified in Figure 2.2 in Appendix A, part 2. There are several listed using a black diamond symbol, and in the key identifies these as developed/no spring observed. If there is no spring then why are they listed in the springs part of the legend. Alternatively, Figure 1.2 in Appendix A, part two, which is the "Thacker Pass Hydrographic Baseline" illustrates these same locations as spring with no other designation. In one figure these locations are clearly springs in the other figure maybe there is water but no spring. BLM provides no documentation to clarify whether spring do exist at the black diamond locations in Figure 2.2. It is impossible to fully understand the affects of the mine on the springs and surface waters unless it is clear what are the water resource that could be affected. BLM needs to provide in the FEIS full documentation of all springs and surface waters.	The BLM used the best available information to identify and characterize the springs in the affected area as shown on Figure 4.3-1. The compilation was based on the spring inventories and spring monitoring that has been done for the project over the past several years. the comment refers to maps provided in support documentation provided in the Water Quantity and Quality Impacts report and baseline report prepared by LNC's consultant Piteau Associates provided in Appendix P. The comment confuses spring monitoring locations, i.e., locations which were monitored during surveying, with spring characterizations. The conclusions based on the spring surveying and monitoring identified several locations which were not natural springs as identified in Figure 2.2 of the Thacker Project Water Quantity and Quality Impacts Report provided in Appendix P of the EIS.
P542	8a. Draft Environmental Impact Statement (DEIS) Fails Fully Review Impacts to Federal Reserved Water Rights and Withdrawn Lands, and Prevent Adverse Impacts to Those Resources. The company's Plan of Operations acknowledges that the dewatering of the aquifer and substantial lowering of the water table may cause loss and/or elimination of springs and streams, which would violate BLM's duties to protect these resources under FLPMA and Presidential Order. Water flows in springs and waterholes on public land in the West are reserved for public use by Public Water Reserve # 107 ("PWR 107"), which was created by Executive Order by President Calvin Coolidge in 1926. The reservation of federal water rights also included a withdrawal from entry of public lands ¼ mile around each spring/waterhole. PWR 107 provides: [I]t is hereby ordered that every smallest legal subdivision of public land surveys which is vacant, unappropriated, unreserved public land and contains a spring or water hole, and all land within one quarter of a mile of every spring or water hole located on unsurveyed public land, be, and the same is hereby, withdrawn from settlement, location, sale, or entry, and reserved for public use in accordance with the provisions of Section 10 of the Act of December 29, 1916.	See Common Response WATER-7.
P543	8b. Executive Order of Apr. 17, 1926, previously codified at 43 C.F.R. § 292.1 (1938). See also GENERAL LAND OFFICE, DEPARTMENT OF INTERIOR, CIRCULAR 1066, 51 I.D. 457-58 (1926) ("[t]he above order [PWR #107] was designed to preserve for general public use and benefit unreserved public lands containing water holes or other bodies of water needed or used by the public for watering purposes."). 1926 I.D. LEXIS 45.	See Common Response WATER-7.
P544	8c. The 1926 Executive Order and withdrawal were promulgated under the authority of Section 10 of the Stock-Raising Homestead Act of Dec. 29, 1916, 39 Stat. 862, 865, 43 U.S.C. § 300 (SRHA), which provided that withdrawn "lands containing	See Common Response WATER-7.

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	water holes or other bodies of water needed or used by the public for watering purposes … shall, while so reserved, be kept and held open to the public use for such purposes….” Although the Stock-Raising Homestead Act and the underlying authority of the President to withdraw such lands pursuant to the Pickett Act of 1910, 36 Stat. 847, was repealed by FLPMA in 1976, withdrawals (such as the 1926 Executive Order) made pursuant to those authorities remain in force today. 43 U.S.C. § 1701 note (FLPMA).	
P545	8d. The Project’s ground water pumping/dewatering cannot cause springs/waterholes established under PWR 107 in 1926 to be eliminated or have substantially reduced flows. Under the PWR 107 Executive Order and related laws, BLM cannot authorize activities that will impair the public use of any reserved waters and/or lands. BLM’s approval of pumping/dewatering, and other activities associated with the Project, which could dry up or materially reduce springs and waterholes protected by PWR 107, would not be in compliance with these requirements.	See Common Response WATER-7.
P546	8e. BLM cannot cause the loss of federal property such as PWR 107 reserved water rights and lands without congressional or Presidential authorization. Destruction or loss of the reserved waters and withdrawn lands under PWR 107, including the location of Project facilities within the withdrawn lands, and/or the preclusion of public access via fencing, is prohibited under PWR 107, FLPMA, and the SRHA.	See Common Response WATER-7.
P547	8f. Failure to review and fully protect the reserved water rights, waters, springs and water holes, related withdrawn lands, and public uses of these lands and waters, violates PWR 107, the SHRA, and BLM’s duty under FLPMA to “by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the [public] lands.” 43 U.S.C. § 1732(b).	See Common Response WATER-7.
P548	8g. BLM must also review and fully protect these resources pursuant to FLPMA’s mandate that: “the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values.” 43	Comment noted.
P549	8h. In addition, BLM must ensure that the Project will not disturb public lands withdrawn by the 1926 Executive Order in contravention of the purposes for which the land was withdrawn. Any mining claims filed or located on lands withdrawn by PWR 107 are null and void unless they meet the requirements under the Mining Law for the discovery of a valuable mineral deposit. “Mining claims located on lands not open to appropriation are null and void ab initio.” Mount Royal Joint Venture v. Kempthorne, 477 F.3d 745, 756 (D.C. Cir. 2007), citing Shiny Rock Mining Corp. v. United States, 825 F.2d 216, 219 (9th Cir. 1987) (same).	See Common Response WATER-7.
P550	8i. BLM must also keep the withdrawn lands “held open to the public use” as required by the SRHA, PWR 107, and FLPMA. Two springs, BLM-05 and BLM-06, and within the Plan of Operations boundary, which could restrict access.	See Common Response WATER-7.

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P551	8j. BLM must consider, and can only approve, an alternative of locating/constructing Project facilities away from the lands withdrawn around the PWR 107 springs, and consider an alternative of not allowing the flows in these Springs to be diminished, in order to comply with PWR 107. The consideration of alternatives is "the heart of the environmental impact statement." 40 CFR § 1502.14. DOI/BLM has a duty to take a "hard look" at all reasonable alternatives to, and the environmental impacts from, Project operations. The agency must also adequately analyze mitigation measures to protect ground and surface water, and to adequately analyze the direct, indirect, and cumulative impacts to these resources.	See Common Response WATER-7.
P552	8k. Regarding PWR 107, the DEIS shows the springs labeled BLM-01, BLM-02, BLM-03, BLM-05, and BLM-06 could be affected, but have yet to be quantified or analyzed. Appendix E within Appendix P of the DEIS, "Spring Location Hydrographs" shows expected drops in groundwater elevation for all of these springs as a result of the proposed mine, which groundwater levles not recovering in all of the springs except BLM-01 for at least 300 years. For example, BLM-03, a listed BLM reserved water right would be expected to drop 2-3 feet permanently (extend of the 300 years analysis), and as stated above even a one foot drawdown could affect springflow and even eliminate springflow. In addition there are numerous springs located on BLM lands within the project boundary and within the 5 mile Area Of Influence (AOI). Any spring on BLM is eligible for protection under PWR 107. BLM must determined which of the springs on BLM managed lands satisfy as PWR 107 springs. BLM thus failed its duty to analyze these public rights under NEPA and FLMPA, and failed to protect them under its PWR 107 duties.	See Common Response WATER-7.
P553	9. The Baseline Surface Water Hydrology Contained within the DEIS is Incorrect and Incomplete.	See Common Response WATER-1.
P554	10. The Thacker Pass Project will Dry Up Springs, Wetlands, Meadows, and Lower Water Levels In the Wells of Water Rights Holders Causing UUD	Potential impacts to water resources are summarized in Section 3.4 of the EIS. Potential effects to water resources would be addressed as outlined in the water resource Monitoring and Mitigation measures provided in Section 4.3.2. Responses to specific comments from Mr. Bartell and Dr. Powell are provided above.
P555	11a. DEIS Does Not Completely Address Sulfide Oxidation that Could Cause UUD. The model of arsenic and antimony release from backfilled waste rock does not account for the amount of sulfide sulfur that oxidizes rock prior to flooding, and the associated amount of solutes that will be released by this oxidation process. The waste rock that will be produced at the Thacker Pass mine was determined by Piteau as not acid generating, and so acidic drainage is not considered to be a significant source of pollutant release. Instead, the water quality study states that several solutes of concern (antimony, arsenic, fluoride, and molybdenum) are probably released "through the process of ion-exchange and the mechanical increase of reactive areas through milling and mining".2 But the Thacker Pass waste rock does have	A mineralogical assessment was conducted on claystone materials of the ore body by as described in the Baseline Geochemical Characterization report for the project (SRK 2020a). Mineralogical findings indicate that minor amounts of pyrite are present with variation to marcasite. Lithium and molybdenum concentrations were found to correlate well to illite clays that comprise the ore body. Antimony and arsenic levels, which correlate with lithium, were also elevated along this clay horizon, although not as high as in hydrothermal gold deposits. The study also indicated several potentially acid-generating sulfate minerals (i.e., jarosite) were present. Calcite is abundant throughout the claystone deposit and is more abundant than clays in some layers. The release

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	appreciable sulfide S. Ten of the 20 rock samples subjected to humidity cell tests contained over 1% sulfide sulfur (i.e., acid generating potential greater than 31 kg CaCO3/tonne rock; Piteau 2020, Table 5.9, "HCT Sample Summary"). The effect of the sulfide sulfur in the waste rock can be seen in the initial sulfate concentrations in humidity cell effluents, some of which contain several thousand mg/l SO4 (see BLM 2020, Apx P, Part 6, various figures for sulfate in humidity cell effluent).3	of sulfate from HCT samples of claystone/ash suggest sulfide oxidation is occurring and undergoing neutralization by carbonates. Molar ratios of alkalinity are slightly greater than sulfate after week 4 for the extent of testing, indicating dissolution of carbonate minerals is taking place (Piteau 2020c). Initial HCT flushing releases more moles of sulfate than alkalinity, suggesting first flushes also release some soluble sulfate minerals. Calcium and magnesium molar ratios are approximately equal to sulfate during early flushing, suggesting dissolution of soluble sulfate minerals that may mask sulfide oxidation during weeks 0-4 as suggested by Maest and Nordstrom (2017). The molar ratio of antimony correlates weakly with sulfate in HCT leachate during early flushing (R2 coefficient of 0.65), although during late rinse cycles antimony and sulfate concentrations were more aligned. Alkalinity proved to correlate better with antimony, with an R2 coefficient of 0.85 and better tracking of concentrations particularly during early flushing. Given that mineralogical analysis indicates that antimony, and other hydrothermally enriched elements, is associated with illite/hectorite clays, and that the sulfide habit is diagenetic pyrite/marcasite; the release of antimony is more closely aligned with ion exchange. Correlation of antimony with alkalinity suggests that a component of antimony desorption is enhanced by microscopic pH fluctuation between clay colloids due to sulfide oxidation and subsequent buffering. Thus, sulfide oxidization is one of the geochemical processes involved in constituent release from claystone/ash and appears to be facilitating conditions for desorption. Maest Ann, and Nordstrom, Kirk D. (2017). A geochemical examination of humidity cell tests. Applied Geochemistry Vol. 81, p.109-131. SRK. 2020a. Baseline Geochemical Characterization Report for the Thacker Pass Project. January 2020..
P556	11b. In fact, several of these pollutants of concern, in particular arsenic and antimony, are frequently found in sulfide phases, and these solutes can be released by the oxidation of sulfide minerals, even when the conditions are not acidic. Thus while it is entirely possible that the pollutants of concern are being released by surface reactions such as desorption of ion exchange, BLM must confirm this.	Comment noted. Please refer to comment response P555 that summarizes the available mineralogical data and humidity cell testing results that support the assumptions regarding the geochemical processes involved in constituent release.
P557	"11c. In response, the water quality study supporting the effects of the open pits and backfill on groundwater quality (i.e., Piteau 2020) should be refined with two actions. 1) Estimate the cumulative amount of sulfide S mineral oxidation that will occur in the pit backfill, and use this in the groundwater model to indicate the amount of sulfate that will be released to groundwater when the backfill is flooded. 2)	Comment noted. Please refer to the response to comment P555 regarding sourcing of constituents. The physical flushing of backfill will be incremental, dynamically changing as water levels recover in accordance to the stage/volume relation of the pit. The geochemical model dynamically implements this process by accounting for the in and out mass fluxes of sulfate (among other constituents) throughout the simulation. A static calculation on total sulfur production is complicated by the

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		fact that pit lake recovery occurs faster than oxygen diffusion through pore space. Applying the Davis-Ritchie equation provides an estimate for the time it would take for the reaction front to propagate through the backfill. Under the given backfill parameters, the reaction front would require over 500 years propagate through backfill. Whereas water levels in the backfill are 90% recovered after 30 years post-closure. This estimate doesn't account for longer oxidation reaction time owing to the arid climate of Nevada (Fennemore et al., 1998). Thus, the flushing term applied in the geochemical model is appropriate to represent the release of sulfates, and other constituents. Continued mass loading to the backfill occurs through infiltration, runoff, and groundwater inflow. Fennemore G.G., Neller W.C., Davis A. 1998. Modeling Pyrite Oxidation in Arid Environments. Environmental Science Technology, vol. 32 pg. 2680-2687.
P558	"12a. Groundwater Contamination is Underestimated. The model of pollutant dissolution from waste rock appears to underestimate the concentration of antimony in groundwater flowing through the backfill, and the duration over which antimony and other pollutants in the backfill will exceed the drinking water standard. The water quality model supporting the Thacker Pass DEIS predicts that pore water in the back-filled pits will exceed the maximum contaminant level (MCL) for antimony during the entire 300-year model simulation period (DEIS, Apx P, Part 3).	Results from pore water modeling from the Proposed Action were converted to pore volumes through time to compare with the scaled chemical release function for backfill material (65% waste rock/35% gangue). The approach is described as: (1) Based on humidity cell tests (HCT) results, one week of HCT results was equivalent to approximately 1.5 pore flushes. (2) Cumulative pore flushes through backfill material was calculated by dividing the backfill volume at each time step by the cumulative inflows. This was used to track simulated pore water chemistry as a function of flushed pore volumes through time. (3) The chemical release function for backfill was derived using a weighted average of waste rock and gangue materials and scaled by a factor of 0.57 (Table 5.3, Water Quantity and Quality Results, Appendix P, EIS). A greater scaling factor would lead to overall higher concentrations, but the relative changes in pore water backfill concentrations would be equivalent. Results for antimony and sulfate concentrations through time provided in Piteau 2020c indicate that the geochemical model reasonably corresponds with loading rates from HCTs for antimony. Cumulative releases of antimony from the South and West pits are greater from the geochemical model. Concentrations decline slightly faster in the North pit compared to scaled HCT loading. Sulfate is overpredicted by the geochemical model using this approach, however sulfate loading also occurs from additional sources such as groundwater and infiltration. Results from this exercise can therefore be summarized as follows: (1) The release of antimony is adequately represented in the geochemical model, compared to chemical release functions for backfill.

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		(2) The solutes which release quickly, such as sulfate, are conservatively predicted using the geochemical model. (3) Lastly, the geochemical model underwent multiple sensitivity analyses for pore water chemistry, which capture variations in backfill composition and assumed geochemical conditions (See Section 5.5 Water Quality and Quantity Impacts Report provided in Appendix P of the EIS).
P559	12b. But the desorption of antimony from waste rock samples, as estimated from the humidity cell tests, indicate that the pore-water concentrations in backfill may release antimony at higher concentrations and for a longer duration than indicated in the model by Piteau 2020.	Please refer to comment response P558 regarding the comparison of model results with the humidly cell test results.
P560	12c. Assuming that antimony and other solutes of concern are release from waste rock by the process of ion exchange and not sulfide mineral oxidation (Piteau 2020), the humidity cell tests are essentially acting as sequential batch desorption reactors. The relevant chemical reaction is the desorption of solutes from mineral surfaces in the waste rock as the rock equilibrates with the water added on the last day of each humidity-cell-test cycle. In these tests, the duration between the humidity cell samples (these typically vary between 1 and 5 weeks for the Thacker Pass samples) is not relevant. What is relevant, however, is how the concentrations change between successive rinse cycles—this indicates how the pollutants of concern partition between the solid and dissolved phases over a range of concentrations. Also important is the ratio of water: rock in the lab test, which can be used to scale up to field conditions based on the water: rock ratio in saturated pit backfill, and thus estimate how the concentration of solutes will decrease when back-filled rock is rinsed under field conditions.	Comment noted. Please refer to comment response P558 regarding the comparison of model results with the humidly cell test results.
P561	12d. Scaling from laboratory humidity cell tests to field scale backfill can be estimated from the water:rock ratio under each set of conditions. • In the humidity cell tests, the ratio of water: rock ratio is 0.47 L water/Kg rock (i.e., in each leach cycle, 1.5 Kg of rock is rinsed with 0.7 L of water, so 0.7 L water / 1.5 Kg rock = 0.47 L water/Kg rock; Table 5.3 in Piteau 2020). • In the flooded waste rock backfill under field conditions, the water: rock ratio will be 0.14 L water/ Kg rock (i.e., in the backfill, the rock bulk density is 2.1 kg/L and porosity is 0.3, so when saturated, the water: rock ratio will be 0.3 L water/ 2.1 Kg rock, or 0.14 L water/Kg rock; Table 5.3 in Piteau 2020). • Thus the water: rock ratio in the humidity cell tests is 3.3 times higher than in backfilled waste rock (i.e., [0.47 L water/Kg-rock (lab)] / [0.14 L water/ Kg-rock (field)] = 3.3; Table 5.3 in Piteau 2020).	Comment noted. Please refer to comment response P558 regarding the comparison of model results with the humidly cell test results.

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P562	12e. In scaling from lab to field, one rinse cycle in the humidity-cell lab test is approximately equivalent to flushing the backfill with 3.3 pore volumes of water. Because desorption is the transfer of a solute from a surface to a solution, the amount of solute available for desorption is proportional to the waste-rock surface area. For the Thacker Pass waste rock, the ratio of field-to-lab mineral surface areas is estimated to be 0.4 (i.e., 17.7 m2/kg in field waste rock and 43.8 m2/kg in lab samples, so [17.7 m2/kg in field rock / 43.8 m2/kg in lab rock] ~ 2.5; Table 5.3 in Piteau 2020).	Comment noted.
P563	12f. Thus the decrease in antimony concentration in one humidity cell cycles indicates the drop in concentration expected by flushing the equivalent waste rock backfill with 3.3 pore volumes of water. But the concentration of available pollutants in the waste rock is only ~40% as high in the concentration of pollutants in the lab samples. Considering these effects together, one rinse cycle in a humidity cell test represents the amount of antimony desorbed when the waste rock is flushed with ~1.3 pore volumes of water (i.e., 3.3 field:lab water ratio * 0.4 field: lab surface area ratio ~ 1.3 net lab: field scale effect). This is a simplified method for combing the effects for water: rock ratio and mineral surface areas. But for this comparison, it provides an approximate method to illustrate the duration of pollution release from Thacker Pass waste rock using the humidity cell tests results.	Conceptually site conditions are less suited to leach constituents at the same rate as in the laboratory, thus total scaling factors between 0.05-0.6 are typically appropriate for waste materials (Morin, 2013; Lapakko and Olson, 2015). The geochemical modeling uses a total scaling factor of 0.57 for backfill based on project site specific conditions and available literature values. Identifying predictive scaling factors is challenging without large-scale site-specific data for a model calibration. Solute specific scaling factors can be derived, adding to complexity. For this reason, scaling factors, and other inputs to the geochemical model were subjected to sensitivity analyses in Appendix L of the Water Quantity and Quality Impacts Report (Appendix P of the EIS). The sensitivity analysis envelops the scaling factor of 1.3 used by the commenter. An additional fate and transport sensitivity analysis was prepared to evaluate the resultant distribution of antimony under a higher scaling factor (Piteau 2020c). Please refer to comment P581 regarding the results of this additional sensitivity simulation. The geochemical model is internally consistent with regard to antimony loading, as discussed in response to comment P558. Morin K.A. 2013. Scaling Factors of Humidity-Cell Kinetic Rates for Larger-Scale Predictions. www.mdag.com/case_studies/cs38.html Lapakko K.A., Olson M. 2015. Scaling Laboratory Sulfate Release Rates to Operational Waste Rock Piles. 10th ICARD/IMWA Annual Meeting. Santiago, Chile.
P564	12g. Using this approximate scale factor of 1.3 to go from each humidity cell leach step to one pore volume backfill, the antimony concentrations measured in humidity cell tests (BLM 2020, Appendix P, Part 6) can be used to indicate generally the duration over which groundwater in the backfill will exceed the antimony MCL. The water-quality modeling assumes that "Backfill comprised of 65% waste rock (claystone/ash and ash geochemical units) and 35% gangue would be placed in the open pit" (Piteau 2020, Section 5.4.1). Below then are plots of antimony concentration in humidity cell effluent from claystone/ash, ash, and gangue (BLM 2020, Appendix P, Part 6).	Comment noted.

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P565	12h. Key implications of the antimony concentrations in humidity cell tests on estimates of water quality in the Thacker Pass pit backfill are that: 1) Antimony concentrations tend to decrease with each rinse cycle, 2) In all three rock types representing backfill, the average antimony concentration in the humidity cell effluent remained above the MCL (0.006 mg/L) for 8 rinse cycles, which corresponds to ~10 pore volumes flushed through the backfill, and 3) In two of the rock types (Claystone/Ash and Ash) where the materials were subjected to more rinse cycles, the average antimony concentration in humidity cell test remained above the 0.006 mg/L MCL for 15 rinse cycles, which corresponds to ~20 pore volumes flushed through the backfill.	Comment noted.
P566	12i. These results indicate that although antimony in the backfill waste rock readily desorbs into water, the initial concentrations in the rock are high enough (and the adsorption to the mineral surfaces is strong enough) that the antimony concentration in the pore water of the backfilled pits will exceed the MCL until it has been flushed with at least 10 to 20 pore volumes of through flowing groundwater.	Geochemical modeling results indicate that pore water in backfill will exceed MCLs for longer than 20 pore volumes (Water Quantity and Water Quality Impacts report, Appendix P of this EIS).
P567	12j. Looking in more detail at the Claystone/Ash humidity cell tests (i.e., the rock that would represent ~65% of the backfill) indicates some basic characteristics about how antimony will desorb from this material: 1) The average antimony concentrations over the first 7 rinse cycles (approximately equivalent to ~9 flushes of backfill pore water) are 0.12, 0.13, 0.12, 0.11, 0.11, 0.06, and 0.05 mg/L antimony; and 2) The average concentrations after each rinse cycle, relative to the concentration in the initial rinse cycle, are: 100%, 106%, 99%, 90%, 90%, 50%, and 44%.	Comment noted. Please refer to comment response P558 regarding the comparison of model results with the humidly cell test results.
P568	12k. Considering first the 2nd observation, this slow decrease in antimony concentration in the humidity cell leachate indicates that most of the antimony in each humidity cell leach cycle is remaining adsorbed to the surface. It's not until the 6th rinse cycle that the dissolved antimony has decreased from the initial concentration by 50%, but by this time in the test the mass of water flushed through the rock was 2.8 times greater than the mass of rock (i.e., 6 rinse cycles X 0.7 Kg of water per rinse cycle = 4.2 Kg of water, and the mass of rock used in each humidity cell 1.5 kg, so 4.2 Kg water/ 1.5 Kg rock = 2.8 Kg water/Kg rock). Given that the water: rock ratio in each humidity cell tests is ~3.3 times larger than the water: rock ratio in a pore volume under field conditions, the concentration of antimony in the waste rock backfill can be expected to drop to ~50% of its initial concentration after the backfill has been flushed with ~ 20 pore volumes of through flowing groundwater (i.e., achieving a 50% drop in antimony in laboratory tests required 6 rinse cycles, and the water: rock ratio in one laboratory rinse cycle is 3.3 times larger than one pore volume under field conditions, so 6 rinse cycles x 3.3 field pore volumes/ rinse cycle ~ 20 field pore volumes).	Comment noted. Please refer to comment response P558 regarding the comparison of model results with the humidly cell test results.
P569	12l. Considering then item #1 above (change in average antimony concentration between humidity cell rinse cycles), the antimony concentration in the pore water of	Comment noted. Potential impacts to groundwater water quality downgradient from the backfilled pit would be addressed as outlined in Mitigation WR-3

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	the Claystone/Ash backfill will exceed the 0.006 mg/L MCL by a factor of at least 20 for the first ~3 pore volumes, and exceed the MCL by a factor of at least 10 through ~8 pore volumes. The backfilled pits will thus be a long-term (e.g., several centuries or longer) source of antimony to through-flowing groundwater. Therefore, perpetual management will be required.	provided in Section 4.3.2 of EIS.
P570	12m. The groundwater model used to support the DEIS does recognize the backfilled pits as long-term pollution sources, and include an estimate for the extent of the antimony plume that will exceed the 0.006 mg/L MCL out to 300 years beyond closure. But it does not indicate the concentration that will exist with the plume leaving the pits, nor does it indicate the number of pore volumes of through flowing groundwater that would be required before the antimony concentrations in groundwater decreased below the MCL.	Concentrations used to simulate saturated pore water in the fate and transport model are shown in Tables 6.1 through 6.3 in the Water Quality and Quantity Impacts report (Appendix P of this EIS). These are constant concentration cells applied to groundwater leaving the pits. Concentrations are assigned as a function of time in the geochemical model. Discharge from the pits is calculated internally by the groundwater model, and are the same fluxes applied to geochemical modeling, thus the cumulative mass predicted to leave the pits is consistent. Two additional sensitivity analyses of the source term in the fate and transport model were evaluated to envelop the distribution of antimony in groundwater should the backfill source remain higher than predicted (Piteau 2020c). Please refer to comment P581 for discussion of these additional sensitivity analyses.
P571	12n. The DEIS partially recognizes the uncertainty in the prediction of antimony migration away from the waste rock backfill, and the groundwater study indicates that "LNC will undertake additional geochemical testing to evaluate the sorption capacity of antimony onto volcanic tuff" (the volcanic tuff is the down-gradient geologic unit, Piteau 2020). The nature of this antimony adsorption onto the down-gradient volcanic tuff will be important. If antimony is irreversibly removed from solution by the volcanic tuff, then this natural attenuation mechanism could dramatically reduce the extent of the plume of antimony in groundwater. But if the antimony is attenuated by ion exchange to the mineral surfaces in the tuff, then the antimony plume will slow down relative to groundwater flow but antimony concentration in the plume may remain at approximately the same concentration, leaving a long-term slow moving plume of contaminated groundwater.	The fate and transport model conservatively simulated no adsorption / retardation in the bedrock surrounding the pit. This approach identifies the furthest extent of the plume to inform monitoring and mitigation. Future attenuation studies evaluating the potential of adsorption to volcanic tuff are included as part of the applicant committed mitigation plan provided in Section 8 of the Water Quantity and Quality Impacts Assessment Report (provided in Appendix P of this EIS).
P572	12o. In response, the model of antimony fate and transport (and other pollutants of concern) needs to: 1) Incorporate the expected concentrations of pollutants in the backfilled waste that are based on desorption models fit to the measured concentrations in the humidity cell tests. (The existing humidity cell tests should support estimates of concentrations change as the backfill as it is flushed with ~20 pore volumes of groundwater.) 2) Incorporate measurements of adsorption of antimony and other pollutants onto the Volcanic Tuff into the model estimates for pollutant concentrations in the groundwater plume that would migrate down-gradient from the backfilled pits. 3) Present model estimates for concentration contours of antimony and other pollutants that will exist within and down-gradient from the backfilled pits over the 300 year simulation period. 4) Present a model for an	Steps 1 – 4 in this comment are addressed in the Water Quality and Quantity Impacts Assessment report (Appendix P in this EIS) and in the responses to comments P558, P570, P571. Specifically, Step 1 is addressed in response to comment P558 and in the sensitivity analyses performed for the geochemical model in Appendix L of the Water Quantity and Quality Impacts Report. Step 2 is addressed in response to comment P571. Step 3 is addressed response to comment P570 and provided in Section 6 of the Water Quantity and Quality Impacts report. Step 4 was addressed by providing two closure alternatives which closed the open pit as a hydrologic sink. Potential impacts to groundwater water quality downgradient from the backfilled pit would be addressed as outlined in Mitigation WR-3 provided in Section 4.3.2 of EIS.

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	alternative closure option for the backfilled pits that prevents the release of pollutants in a groundwater plume, such as a period of active pumping and treating of pore water until the discharge from the waste-rock backfill is below the groundwater MCLs.	
P573	13a. A Poor Pollution Release Model is used in the DEIS. Modify the Thacker Pass groundwater solute transport model so that it uses a standard adsorption/desorption equation to more rigorously estimate the release of pollutants from pit backfill to the groundwater.	The fate and transport model applies mass from solutes to the groundwater system in accordance with the geochemical model. The fate and transport model conservatively simulated no adsorption/retardation in the bedrock surrounding the pit. Therefore, the approach identifies the furthest extent of the plume to inform monitoring and mitigation.
P574	13b. The desorption of trace constituents like antimony and arsenic from mineral surfaces is typicaly estimated using chemical models that account for factors such as the total adsorption capacity of the surface, multiple adsorption sites, and others. For example, a linear "Kd" model assumes that there is a constant ratio between adsorbed and dissolved concentrations of pollutants, and the Langmuir or Freundlich adsorption equations account for commonly observed non-linear behavior in adsorption/desorption reactions. Assuming that the dissolution of arsenic and antimony are surface exchange reaction and are not related to the oxidation of sulfide sulfur minerals, then the existing humidity cell tests are in fact just simple desorption batch reaction tests. These tests can be used to estimate pollution release from waste rock by fitting the leachate concentrations measured in humidity cell effluent to an adsorption/desorption equation.	Please see responses to comments P555, P558 and 581. As explained in response to comment P555, ion exchange is understood to be the primary mechanism for antimony release, although it is likely enhanced by oxidation. Use of test methods that only consider ion-exchange may not fully capture these geochemical processes. In short, the standard humidity cell test (HCT) method in combination with the other test methods used as part of the geochemical characterization program appropriately identify the geochemical processes that are responsible for short and long-term constituent release. The geochemical model incorporates mass loading through HCTs and additional inflows to approximate pore water chemistry. The resulting concentrations are applied to pore water in the fate and transport model. Response to comment P558 addresses how the cumulative release of antimony in the geochemical model is greater than the chemical release function for antimony, thus fate and transport modeling provides adequate representation of outflow from the pit. As discussed in the response to comment P581, two theoretical sensitivity analyses of the source term in the fate and transport model were evaluated to envelop the potential distribution of antimony in groundwater should the backfill source concentrations remain higher than predicted.
P575	13c. This approach—using adsorption isotherm equations based on measured pollutant desorption— has 3 advantages: 1) It is a standard and widely applied geochemical method used in groundwater solute transport modeling, 2) it accounts for changing aqueous concentrations over the full range of pollutant concentrations in the source rock, and 3) it accounts for the mass balance on pollutants remaining in the source over time. On a final positive point, this approach should be simpler than the pollutant-release assumptions in the current model. These three adsorption equations (linear, Freundlich and Langmuir) are already included as solute transport options in the USGS Modflow MT3D and then PhreeqC geochemical model that are used in the Thacker Pass water quality model study (Piteau 2020).	Comment noted. The BLM recognizes that there are alternative methods to evaluate the fate and transport of constituents believed to release through ion exchange. However, the approach used in the fate and transport model appropriately applies the mass of antimony to the groundwater system.
P576	14. Mitigation Plan Lacks Sufficient Detail for Complete Analysis as Required by NEPA. The DEIS shows existing monitoring wells, but there is no map and table of the proposed monitoring wells for water quality. This aspect is passed on to the state	A map and table of monitoring wells is provided in Section 8 and in Figures 8.1, 8.2, and 8.3 of the Water Quantity and Quality Impacts Report provided in Appendix P of the EIS.

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	of Nevada in the state level permitting. However, in order to evaluate the effectiveness of the monitoring and mitigation plan the locations and screening levels of each well are needed. Also not determined in the DEIS is the boundary of compliance for groundwater water quality. Again, the DEIS indicates that the state of Nevada will establish compliance boundaries, but again mitigation plans cannot be fully assessed without knowledge of where compliance will be measured.	
P577	15. The Pit Backfill Will Degrade Groundwater and Violate Nevada Law and Result in UUD. The pore water that forms in the waste rock of the backfilled pits should be considered waters of the state, and thus subject to compliance with Nevada groundwater quality standards. The discussion of post-closure groundwater monitoring of the Thacker Pass project indicates that "monitoring wells to measure pore water conditions in the backfill post-closure . . [in sub-pit MW-05 and West sub-pit MW-06] . . . would not be compliance points".4 It is not clear why the water in the pit backfill--a zone of saturated groundwater--will not be considered waters of the State of Nevada and thus subject to compliance with applicable groundwater quality standards. Further, once saturated, the backfilled waste rock will be a hydraulically conductive zone with an extremely high water storage value (porosity ~0.3, Table 5.3 in Piteau 2020), and could thus potentially be tempting future sources of water.	See Common Response WATER-4.
P578	16a. BLM Needs to Establish a LongTerm Funding Mechanism to Cover Perpetual Management. The rate at which antimony concentrations are predicted to decrease in the backfilled pits (Piteau 2020b) is much higher than expected given the relatively slow rate at which antimony was leached from samples of waste rock that were subjected to humidity cell testing. The groundwater model of antimony concentrations in saturated pit backfill predicts that the concentration of antimony in the South Sub-Pit and North Sub-Pit will decrease by a factors of ~3 and ~6, respectively, by the 200 years after the end of mining (Piteau 2020b, Figure 2.1, inserted below))(Letter page 31).	See Common Response WATER-10.
P579	16b. It's not clear how much water the model assumes would be flushed through the backfill over this 200 year simulation period, but the limited extent of the predicted plume of antimony between post-closure year 20 and year 200 suggests that it is less than one pore volume (see below, Figures 2.5 [model year 20] and Figure 2.8 [model year 200] from Piteau 2020b) (Letter page 32).	The Inflow / outflow rates used for the geochemical model were derived directly from the groundwater model. Therefore, the number of pore volumes flushed through the backfill is the same quantity of water discharging from the backfill to bedrock. Flushed pore volumes of backfill range are approximately 6, 14, and 260 for the South, North, and West Sub-pits respectively over the 200-year simulation period.
P580	16c. In contrast to these model estimates of rapid decrease in antimony concentrations in the backfill, the estimate that GBRW provided for the rate at which antimony would be flushed from the Claystone/Ash waste rock (this rock type is estimated to comprise be 65% of the backfilled waste rock) was that decreasing the pore-water concentration of antimony under field conditions by only 50% would take ~20 pore volumes of flushing, as discussed above Water Quality Aspects sub-comment 2.	Comment noted. Please refer to comment response P558 regarding the scaling factor used and comparison of model results with the humidly cell test results.

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P581	16d. In response, the model used to estimate antimony flushing from backfilled waste needs to: 1. More rigorously incorporate the desorption of antimony from the Thacker Pass waste rock, as measured in the humidity cell tests, and 2. Illustrate how the groundwater solute transport model simulates flushing of antimony from a representative column of average waste.	Comment noted. Please refer to comment response P558 regarding the scaling factor used and comparison of model results with the humidly cell test results; and comment response P582 regarding additional fate and transport simulations completed as part of a supplemental sensitivities analysis.
P582	16e. In terms of assessing impacts, this simple model simulation needs to first illustrates how the concentrations of antimony and other pollutants change in a unit block of waste rock as a function of pore volumes of water flushed through the rock. Once this simple simulation can show that the model of antimony desorption compares favorably to the desorption measured in humidity cell tests, the field-scale model of long-term antimony transport under post-closure field conditions can be used to estimate of extent and duration of pollutant migration from the backfilled pits.	Piteau (2020c) conducted two additional sensitivity runs to address the potential scenarios where antimony concentrations are higher and/or endure longer than simulated by the geochemical model. The first sensitivity run uses pore concentrations of antimony derived from the "Increased backfill scale factor" sensitivity of geochemical modeling (Section 5.5 of the Water Quantity and Quality Geochemical Report). The second sensitivity uses a constant pore concentration of 0.029 mg/l, which corresponds to the highest antimony concentration from the backfill chemical release function. Through these two sensitivities, maximum impacts to groundwater by variation of the source terms are evaluated. Results for the "Increased backfill scale factor" fate and transport model are provided in Piteau 2020c. The 300-year extent of the 0.006 mg/l isopleth is slightly larger than the base case scenario (Figure 6.10 Water Quantity and Quality Report, provided in Appendix P of the EIS) by approximately 350-750 ft. Longitudinally the isopleth is approximately 500 ft further east than the base case. Maximum concentrations within the contaminant plume are higher than the base case, however elevated antimony concentrations still remain on the project property and within mine infrastructure. Results for the "Constant backfill concentration" fate and transport model are presented in Piteau 2020c indicate that the 300-year extent of the 0.006 mg/l isopleth is slightly larger than the base case scenario (Figure 6.10 Water Quantity and Quality Report) by approximately 300-450 ft. Longitudinally the isopleth is approximately 350 ft further east than the base case. Again, elevated antimony concentrations remain on project property. The transport of contaminants in the groundwater is controlled primarily by advection and dispersion processes. Although the source terms in the backfill are higher and persist longer, the extent of the plume is less sensitive because the pore water velocity controlling dispersion are low. This is an expected condition in a low permeability claystone / ash material. For this reason, the sensitivity analyses of the fate and transport model, which vary transport parameters (hydraulic conductivity, effective porosity) as presented in the Water Quantity and Quality Impacts report, provide a more robust evaluation of antimony migration than does the sensitivity analysis of source terms. The results of the geochemical model simulations and sensitivity analysis provide a reasonable estimate of the timing, concentrations and areal extent of the potential migration of antimony that should be anticipated from the backfilled

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		pit. However, these sensitivity analyses results do not change the overall conclusions of the water quality impact analysis, or the approach to monitoring and mitigation outlined in measure WR-3 provided in Section 4.3.2 of the EIS.
P583	17a. Modeling Analysis Supporting Mitigation Option 4 is Inadequate. Water quality modeling should be conducted to estimate the concentrations of antimony, arsenic, and other solutes that would occur in Mitigation Option 4 ("Partial backfill closure) that would leave an evaporative wetland in the pits. The "Partial backfill closure (Option 4)" includes closing the Thacker Pass open pits in a manner that allows "the formation of a wetland in the South Sub-pit. . . [that] function[s] as a hydraulic sink for backfilled pits whose capture zone extends into the saturated portions of the North and West sub-pits"(Piteau 2020b).	Geochemical modeling was conducted to evaluate water quality for Alternative B (Partial Pit Backfill) that would allow for the development of a seasonal pond as summarized in Section 4.3 of the EIS; predicted water quality for the seasonal pond is provided in Table 5.26 in the Water Quality Impacts Report provided in Appendix P.
P584	17b. Such a wetland in the backfilled pits would be a vegetated evaporative sink that draws its water primarily by up flow through the underlying waste rock. In such terminal basins (i.e., zero outflow), the concentration of solutes loaded by all inflowing water increases until they reach some concentration limiting value (e.g., adsorption, mineral precipitation, co-precipitation, etc.). The rate at which solutes increase in evaporating terminal basins depends on the depth of the water body. In a shallow wetland overlying a backfilled Thacker Pass pit, the potential evaporation far exceeds annual precipitation, and most water would enter the wetland by upflow from the waste rock below. That is, groundwater would flow into the waste rock backfill, leach solutes from the waste rock, notably arsenic and antimony, concentrate these pollutants to their solubility limit whenever the shallow wetland was evaporated to dryness, and allow uptake of this concentrated solution by vegetation. It's hard to imagine how these conditions would not lead in just a few years to a vegetated wetland full of water and plants that were acutely toxic to terrestrial and avian wildlife. We thus believe that closure with a wetland over the waste-rock backfill is a terrible mitigation option. But we also believe that it is very important that this option be retained as an alternative and be subjected to quantitative water quality modeling and at least a screening level ecological risk assessment. This quantitative analysis would create an administrative record illustrating the risk of wetland-in-pit-backfill mine closure, and would add to the institutional knowledge within Nevada's environmental regulatory agencies of this potential risk.	An Ecological Risk Assessment was completed by SRK for the wetlands alternative as summarized in Section 4.5.3. Although the wetland was assumed to be vegetated, the evaporative demand without vegetation is sufficient to cause a permanent hydraulic sink at this elevation as discussed in Section 4.4.2.2 of the EIS.
P585	18. BLM Needs to Establish a Long-Term Funding Mechanism to Cover Perpetual Management. As noted above the need to treat toxic drainage from the backfilled pit will be required well past the proposed closure	See Common Response WATER-10.
P586	19a. Incorrect Air Quality Baseline. The DEIS does not use relevant baseline data for the air quality analysis. Baseline data for CO and NO2 was based on date from Yosemite National Park-Turtleback Dome, and for SO2 from White Mountain Research Center–Owens Valley Lab. According to Appendix K of the DEIS, "may be considered representative of a rural area in Nevada for conservative SO2 background	There are no ambient monitoring stations located in the Thacker Pass region. Therefore, as discussed in the Thacker Pass Project NEPA Air Quality Impact Analysis Report, based on available ambient monitoring stations collecting CO, NO2, and SO2 data, the selected stations are considered representative of rural areas in Nevada, including the Thacker Pass region due to the proximity

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	concentrations. Both stations (Yosemite and White Mountain in California) are in relatively rural settings in terms of nearby population centers and traffic activity" (DEIS App K, p20). Again, the DEIS does not justify this assertion with technically defensible data and analysis. In fact both Yosemite National Park-Turtleback Dome and White Mountain Research Center–Owens Valley Lab are significantly different than the region that contains Thacker Pass. Thacker Pass bridges two agriculturally intensive valley's, which is not the case for the locations used in the DEIS.	to the proposed Project area and similar site-specific conditions [DEIS Appendix K, Section 3.10].
P587	19b. In the case of H2S, PM2.5, and PM10 the DEIS simply states that Nevada-based, NDEP baseline values are use, but with no justification for this assignment. In particular there is no justification for a zero H2S background level especially in an agricultural area and were riparian zones exist. The existence of Nevada baseline values does not absolve BLM from conducting its own baseline analysis. An incorrectly determined baseline leads to an incorrect analysis and the inability to analyze the effectiveness of air quality mitigation plan.	The modeling for hydrogen sulfide (H2S) was conducted to demonstrate compliance with the Nevada Ambient Air Quality Standard for H2S, which does not include naturally occurring background concentrations. There is no National Ambient Air Quality Standard for H2S. As H2S is not a criteria pollutant, it is not typically measured at ambient monitoring stations. A web search for H2S ambient monitoring stations found none in the vicinity. There are also no anthropogenic sources of H2S – such as oil and gas refineries, kraft pulp mills, and waste-water treatment plants – in the Thacker Pass area. As there are no nearby sources of H2S emissions, it is appropriate to use zero for the H2S background concentration.
P588	20a. Sulfur Dioxide Emissions Analysis is Inadequate. The DEIS cites very low sulfur dioxide (SO2) emissions from the facility as shown in Table 4.10. For Phase I SO2 the table shows 75.8 tons per year (TPY) for the production of 337,895 tons of sulfuric acid (H2SO4) per year. This is a very low emission rate that currently does not exist in the United States for sulfuric acid production. Furthermore, Phase II of the mine plan will involve doubling the acid production; however, SO2 emissions are still only 76.1 TPY. Phase II would be a truly impressive emission capture rate. The DEIS does not justify these emission numbers. Appendix K of the DEIS provides only the following statement; "In order to minimize the emissions from the sulfuric acid plant, LNC has committed to installing a state-of-the-art scrubbing control, which is above customary industry standard. As a result, the sulfur dioxide and acid mist emissions from the sulfuric acid plant will be well below the emission standards (4 pounds SO2 per ton of acid produced and 0.15 pounds H2SO4 per ton of acid produced) in the Code of Federal Regulations, Title 40, Part 60 (40 CFR 60), Subpart H, Standards of Performance for Sulfuric Acid Plants. While the exact scrubbing system has not yet been determined, LNC has committed to installing a control that, at the minimum, meets the emission levels used in this analysis." (DEIS, App. K, pp 6-7)	The NEPA Air Quality Impact Analysis was completed based on guidance and specifications from a sulfuric acid plant manufacturer, which included manufacturer guaranteed emission levels for Phase 2. (These guaranteed emission levels were conservatively used for Phase 1 as well) [DEIS Appendix K, Sections 2.3.5 & 2.3.7]. Since completing the NEPA Air Quality Impact Analysis, LNC has concluded that the sulfuric acid plant tail gas scrubber will utilize a sodium sulfate scrubbing solution containing sodium hydroxide. The scrubber pH and sulfate concentration will be maintained to optimize the scrubber control efficiency. The emission limits for the sulfuric acid plant, starting with Phase 1, will be enforced through the Nevada Division of Environmental Protection Air Quality Operating Permit for the Thacker Pass Project. Furthermore, as discussed in the Thacker Pass Project NEPA Air Quality Impact Analysis Report, the sulfuric acid plant emissions must be maintained below the Federal standards in 40 CFR Part 60, Subpart H [DEIS Appendix K, Section 2.3.5].
P589	20b. Indeed, the scrubbing technology would have to be state-of-the-art or beyond. But, the DEIS does not discuss any specifics, it only mentions a yet to be determined technology. Thus, there is no way for there to be an analysis of the effectiveness on this technology as a mitigation for sulfur dioxide emissions in violation of NEPA. There must be evidence of the effectiveness of the scrubbing technology.	See comment response P588.

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P590	21. The NO2 Modeling Scheme is Incomplete. The modeling approach for the production of NO2 from NO ignores the oxygen reaction pathway assuming that the ozone pathway would predominate so significantly such that NO2 production by way of oxygen is unimportant. This assumption is quite valid in an urban setting, but it is questionable in a rural setting where ozone levels are likely to be very low. The analysis of air emissions needs to explore the oxygen pathway to be sure that correct values of NO2 are used in the air quality analysis.	As discussed in the Thacker Pass Project NEPA Air Quality Impact Analysis Report, NO2 modeling was conducted consistent with EPA Guidance [DEIS Appendix K, Section 3.12.1].
P591	22. Cumulative Air Quality Analysis is Inadequate. The cumulative analysis will be inadequate based on the above three comments.	See comment response P588 and P590
P592	23a. The DEIS Misrepresents the BLM's Legal Obligations by Focusing on Resource Extraction and Downplaying the Federal Government's Obligations to Protect Wildlife, Habitat and Other Land Uses. The DEIS describes the Federal Land Management and Policy Act (FLPMA) as follows: "This act did not amend the Mining Law of 1872, but did affect the recordation and maintenance of claims. Persons holding existing claims were required to record their claims with the BLM, and all new claims and sites were required to be recorded with the BLM. The law gave the BLM information on the location and number of unpatented mining claims, mill sites, and tunnel sites; helped determine the names and addresses of current owners; and helped remove any cloud of title on abandoned claims."	Thank you for your comment.
P593	23b. DEIS at O-7. But in The Federal Land Policy and Management Act of 1976 As Amended, BLM states, "The Federal Land Policy and Management Act of 1976, as amended, is the Bureau of Land Management "organic act" that establishes the agency's multiple-use mandate to serve present and future generations."6 Instead of merely clarifying mining issues as the Project's DEIS states, FLPMA declares: ["T]hat it is the policy of the United States that the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use."	Thank you for your comment.
P594	23c. 43 U.S.C. §1701 (a) and (a)(8). Furthermore, FLPMA states, "In managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C. § 1732(b). Under FLPMA, the requirement that the Secretary prevent unnecessary or undue degradation is not waived for mining. See second and final sentences of 43 U.S.C. § 1732(b).	Comment noted.
P595	23d. Similarly, the DEIS's description of the Migratory Bird Treaty Act omits that under Section 704 of the MBTA, USFWS is "authorized and directed" to determine the exceptions to the MBTA's take prohibition, i.e., USFWS has the sole authority	Comment noted.

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	and responsibility "to determine when, to what extent, if at all, and by what means" taking of migratory birds is permissible, and to "adopt suitable regulations permitting and governing the same." 16 U.S.C. § 704(a). Significantly, the statute does not have a mens rea requirement, i.e., entities that violate the Act can be prosecuted on a strict liability basis regardless of intent or motive to take or kill migratory birds. Although in 2017 the Department of the Interior attempted to overturn decades of federal policy on legal liability for incidental (non-purposeful) take of MBTA-protected birds with Solicitor's -Opinion M-37050, in August 2020, that M-Opinion was vacated by a federal court. See Natural Resources Defense Council v. U.S. Dep't of the Interior, No. 1:18-cv-4596 (S.D.N.Y. Op. and Order Aug. 11, 2020).7	
P596	23e. In 2015, USFWS proposed to promulgate regulations that would create permits authorizing incidental (non-purposeful) take of birds protected by the MBTA. However, these regulations were never finalized, and currently there are no permits available to authorize the incidental take of MBTA-protected birds. Instead, USFWS works with companies on measures to avoid, minimize and mitigate the impacts of industrial projects on birds protected by the MBTA. Such collaboration relies on companies and industries voluntarily taking actions agreed upon with or recommended by USFWS to protect migratory birds. It is very important to note that USFWS, not BLM, determines whether a company's projects have illegal incidental take of MBTA-protected birds.	Comment noted.
P597	23f. Furthermore, the DEIS's description of EO 131868 and its implementing Memorandums of Understanding (MOUs) between federal agencies such as BLM and USFWS omits crucial provisions. Such MOUs do not merely require that an agency's environmental analysis "evaluates the effects of actions and agency plans on migratory birds, with emphasis on species of concern." DEIS at O-9. Instead, "(e) Pursuant to its MOU, each agency shall, to the extent permitted by law and subject to the availability of appropriations and within Administration budgetary limits, and in harmony with agency missions: (1) support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions; (2) restore and enhance the habitat of migratory birds, as practicable; (3) prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable; (4) design migratory bird habitat and population conservation principles, measures, and practices, into agency plans and planning processes (natural resource, land management, and environmental quality planning, including, but not limited to, forest and rangeland planning, coastal management planning, watershed planning, etc.) as practicable, and coordinate with other agencies and nonfederal partners in planning efforts; (5) within established authorities and in conjunction with the adoption, amendment, or revision of agency management plans and guidance,	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.

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	ensure that agency plans and actions promote programs and recommendations of comprehensive migratory bird planning efforts such as Partners-in-Flight, U.S. National Shorebird Plan, North American Waterfowl Management Plan, North American Colonial Waterbird Plan, and other planning efforts, as well as guidance from other sources, including the Food and Agricultural Organization's International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries;	
P598	"23g. (6) ensure that environmental analyses of Federal actions required by the NEPA or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern;	Comment noted.
P599	(7) provide notice to the Service in advance of conducting an action that is intended to take migratory birds, or annually report to the Service on the number of individuals of each species of migratory birds intentionally taken during the conduct of any agency action, including but not limited to banding or marking, scientific collecting, taxidermy, and depredation control;	Comment noted
P600	(8) minimize the intentional take of species of concern by: (i) delineating standards and procedures for such take; and (ii) developing procedures for the review and evaluation of take actions. With respect to intentional take, the MOU shall be consistent with the appropriate sections of 50 C.F.R. parts 10, 21, and 22; (9) identify where unintentional take reasonably attributable to agency actions is having, or is likely to have, a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. With respect to those actions so identified, the agency shall develop and use principles, standards, and practices that will lessen the amount of unintentional take, developing any such conservation efforts in cooperation with the Service. These principles, standards, and practices shall be regularly evaluated and revised to ensure that they are effective in lessening the detrimental effect of agency actions on migratory bird populations. The agency also shall inventory and monitor bird habitat and populations within the agency's capabilities and authorities to the extent feasible to facilitate decisions about the need for, and effectiveness of, conservation efforts;"	Comment noted.
P601	23h. (10) within the scope of its statutorily-designated authorities, control the import, export, and establishment in the wild of live exotic animals and plants that may be harmful to migratory bird resources; (11) promote research and information exchange related to the conservation of migratory bird resources, including coordinated inventorying and monitoring and the collection and assessment of information on environmental contaminants and other physical or biological stressors having potential relevance to migratory bird conservation. Where such information is collected in the course of agency actions or supported through Federal financial assistance, reasonable efforts shall be made to share such information with the Service, the Biological Resources Division of the U.S. Geological Survey, and other appropriate repositories of such data (e.g, the Cornell Laboratory of Ornithology);	Comment noted.

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	(12) provide training and information to appropriate employees on methods and means of avoiding or minimizing the take of migratory birds and conserving and restoring migratory bird habitat;	
P602	"24b. D. Work collaboratively to identify and address issues that affect species of concern, such as migratory bird species listed in the Birds of Conservation Concern (BCC) and FWS's Focal Species initiative. Potential activities could include monitoring abundance of birds and the creation, conservation, and protection of habitats important to these species. E. Promote and contribute migratory bird population and habitat data to interagency partnership databases including the: National Biological Information Infrastructure (NBII), the Breeding Bird Research and Monitoring Database (BBIRD), Avian Knowledge Network (AKN), Waterbird Monitoring Partnership Database (WMPD), Natural Resources Monitoring Partnership (NRMP), and other databases that meet the needs of the Parties. F. Adopt the recommendations in the NABCI Monitoring Subcommittee report Opportunities for Improving Avian Monitoring" (February 2007), where applicable, when developing and implementing migratory bird conservation activities that warrant monitoring. Take appropriate steps to implement actions identified in the NABCI Monitoring Subcommittee's Annual Work Plan (https://nabci-us.org/how-we-work/monitoring/). G. Provide training to agency employees on bird population and habitat inventory and monitoring methods, as well as management practices that minimize adverse impacts and promote beneficial proactive approaches to migratory bird conservation. H. Increase awareness of the information contained within comprehensive planning efforts for migratory birds, such as the bird conservation initiatives, to facilitate integration of conservation measures into land management and project planning."	Comment noted.
P603	24c. Participate on the interagency Council for the Conservation of Migratory Birds established by the Executive Order to evaluate the implementation of this MOU. The Director of the BLM, or a representative designated by the BLM Director, will serve on the Council. USFWS-BLM MOU at 4-5, emphases added.	Comment noted.
P604	"25a. Moreover, BLM shall: A. Maintain or update current policy guidance regarding management of migratory birds and their habitat pursuant to the MBTA and EO 13186. B. Address the conservation of migratory bird habitat and populations when developing, amending, or revising management plans for BLM lands, consistent with the Federal Land Policy and Management Act, Endangered Species Act, and other applicable law. When developing the list of species to be considered in the planning process, BLM will consult the current FWS Species of Concern lists (see Definitions under Species of Concern).	Comment noted.
P605	C. Evaluate and consider management objectives and recommendations for migratory birds resulting from comprehensive planning efforts (this includes the Partners in Flight North American Landbird Conservation Plan, North American	Comment noted.

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	Waterfowl Management Plan, U.S. Shorebird Conservation Plan, Western Hemisphere Shorebird Reserve Network, North American Waterbird Conservation Plan, and other planning integrated through the NABCI). D. During the planning process, consider special designations that may apply to all or part of the planning area, such as Important Bird Areas in the United States, and consider such designations in the appropriate plan documents. E. Participate in planning efforts of Bird Conservation Regions (BCRs) to facilitate development of conservation actions that benefit migratory bird species across multiple land ownerships, such as large-scale watersheds and coastal area restoration projects. This would include collaborative regions specific inventory monitoring such as that initiated among BLM, FWS, and the states in BCR 17. Increase awareness within the agency of information contained within these plans and within other comprehensive planning efforts for migratory birds."	
P606	"25b. F.At the project level, evaluate the effects of the BLM's actions on migratory birds during the NEPA process, if any, and identify where take reasonably attributable to agency actions may have a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. In such situations, BLM will implement approaches lessening such take. Examples of possible approaches include those conservation measures listed in VII.G below.	Comment noted.
P607	G. In coordination with the FWS, develop conservation measures and ensure monitoring of the effectiveness of conservation measures to minimize, reduce or avoid unintentional take. As needed, modify conservation measures to be more effective in reducing unintentional take and, as practicable, to restore and enhance the habitat of migratory birds. Examples of potential conservation measures include taking steps to: 1. Avoid identified raptor nests during motorcycle races. 2. Prevent bird entry into heater vents at oil and gas production facilities. 3. Avoid areas of raptor concentration when placing wind turbines. 4. Avoid nesting season during rangeland improvements, such as prescribed fire. 5. Manage livestock to avoid impacts on nesting birds and to improve migratory bird habitat."	Comment noted.
P608	"25g. 6. Alter the season of some recreational activities and events to minimize disturbance of migratory bird breeding activities.	Comment noted.
P609	7. Modify wild horse and burro gathering activities to minimize disturbance of migratory birds during the breeding season.	Comment noted.
P610	"26a. The USFWS-BLM MOU calls for BLM to complete a migratory bird conservation strategic plan within two years of the signing of the MOU. The plan that BLM produced contains a number of goals and measures that apply to the Thacker Pass Lithium Mine Project, including the following:	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P611	Goal 1: Address BLM priority migratory birds during the NEPA and planning	Comment noted.

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	process, including consistent consideration of national and regional conservation goals and objectives.	
P612	27a. BLM Strategic Plan for Migratory Bird Conservation at 10 and 11, emphases original.9 In its Migratory Bird Strategic Conservation Plan, BLM made significant commitments to implementing EO 13186 and its related BLM-USFWS. Since many of these commitments involve BLM's Resource Management Plans, they should permeate BLM's management actions and be visible in the evaluation of potential approvals of projects such as the Thacker Pass Lithium Mine Project, which must conform to those plans. Furthermore, although the Project DEIS names Birds of Conservation Concern, BLM Special Status Species and NDOW species of concern that have been observed in the Project Area during surveys,10 but doesn't include consistent consideration of national and regional conservation goals and objectives, starting with not identifying those goals and objectives in the DEIS.	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P613	In order to address migratory birds in land use planning, BLM offices shall identify and understand the bird conservation goals and habitat protection objectives for the planning area's Bird Conservation Region, promoted through the North American Bird Conservation Initiative, contained in the comprehensive bird conservation plans. Then, as appropriate, incorporate these into the Resource Management Plan (RMP)s, implement identified actions and, with partners, monitor the results of these management actions.	Comment noted.
P614	27c. In order to be consistent with EO 13186 and its related USFWS-BLM implementing MOU, the DEIS must not only include these birds in the Project's environmental analysis but also incorporate conservation measures. Moreover, by approving the Project without fully avoiding, minimizing, and mitigating impacts to migratory birds of USFWS, BLM, and NDOW conservation significance, BLM is managing these species for decline, which is not in accordance with the commitments the federal government, including BLM, has made in international migratory bird conservation plans. At a minimum, there should be a Project alternative that maximizes conservation of these birds in accordance with the goals of the migratory bird conservation plans in which the federal government is a participant.	Comment noted. Operator committed conservation measures regarding migratory birds are documented in the Project Bird and Bat Conservation Strategy developed by the operator in coordination with the BLM and USFWS.
P615	27d. The DEIS's descriptions of FLPMA and the MBTA should be revised so that the public and BLM itself are not misled by the DEIS's cherry-picked, overly narrow summaries of these laws. BLM should also revise the Project's environmental analysis in accordance with the full extent of FLPMA, MBTA and the federal government's commitments to national and international migratory bird conservation plans, in order to ensure that the Project's environmental analysis complies with NEPA and all other applicable federal laws and regulations.	Thank you for your comment.
P616	28a. The Project Must Comply with Applicable RMPs. As part of its FLPMA	Thank you for your comment.

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	compliance, BLM must ensure that all aspects of the Project comply with the applicable Resource Management Plan (RMP), including any Amendments such as for the Greater Sage Grouse (see Appendix N of the DEIS). BLM is under the mistaken view that, regardless of the fact that the Project will violate the RMP/Amendments the BLM must nonetheless authorize such use/access under FLPMA, the 36 CFR Part 3809 mining regulations, and the 1872 Mining Law. For example, regarding the violation of the Greater Sage Grouse RMP Amendments, BLM stated: "LNC holds valid existing rights and therefore is not subject to the application of seasonal restrictions identified in the 2015 and 2019 GRSG Amendments." DEIS Appendix N. The same is true for BLM's acknowledgement that the Project would violate the Class II Visual requirements of the RMP.	
P617	"28b. BLM is wrong. BLM must ensure compliance with all RMP provisions under FLPMA. This is required under the general land use conformity requirement of FLPMA, as well as BLM's duty to "prevent unnecessary or undue degradation" of the public lands. 43 U.S.C. 1732(b). FLPMA requires that all resource management decisions "shall conform to the approved [land use] plan." 43 C.F.R. § 1610.5-3(a). See Ore. Natural Res. Council Fund v. Brong, 492 F.3d 1120, 1128 (9th Cir. 2007) (holding that BLM project components "are inconsistent with the Plan and, consequently, violate FLPMA."). BLM "shall take appropriate measures . . . to make operations and activities under existing permits, contracts, cooperative agreements or other instruments for occupancy and use, conform to the approved [land use] plan	Thank you for your comment.
P618	"28c. If a proposed action is not clearly consistent with the land use plan, BLM must either rescind the proposed action or amend the plan, complying with NEPA and allowing for public participation. See 43 C.F.R. §§ 1610.5-3, 1610.5-5. See also National Parks and Conservation Ass'n v. FAA, 998 F.2d 1523, 1526 (10th Cir. 1993) (nonconforming land use required RMP amendment). The IBLA recognizes that this "consistency" requirement reflects the mandatory duty to fully and strictly comply with the governing land management plans. See, e.g. Jenott Mining Corp., 134 IBLA 191, 194 (1995); Uintah Mountain Club, 112 IBLA 287, 291 (1990); Marvin Hutchings v. BLM, 116 IBLA 55, 62 (1990); Southern Utah Wilderness Alliance, 111 IBLA 207, 210-211(1989)."	Thank you for your comment.

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P619	28d. There is no exception to the Plan requirements for mineral operations. As a leading federal court decision interpreting FLPMA and the Part 3809 regulations noted, BLM specifically requires compliance with all Plan provisions. Interior argues that the 2001 Regulations satisfy FLPMA's multiple use policies by expressly including a performance standard that all operations under § 3809 be managed in accordance with the applicable land use plans. Interior directs the court to § 3809.420(a)(3), which provides as follows: "Land use plans. Consistent with the mining laws, your operations and post-mining land use must comply with the applicable BLM land-use plans and activity plans, and with coastal management plans under 16 U.S.C. § 1451, as appropriate."	The Record of Decision and Resource Management Plan for the Winnemucca District Planning Area (2015) states on page 2-4, "11. Management of energy and non-energy mineral resources will be consistent with the acts of Congress relating to the Domestic Minerals Program Extension Act of 1953, the Mining and Minerals Policy Act of 1970, the Federal Land Policy and Management Act of 1976, the National Materials and Minerals Policy, Research and Development Act of 1980, and the Energy Policy Act of 2005, and the 43 CFR 3100, 3200, 3500, 3600, 3700, 3800 regulations." The purpose of the Surface Management Regulations (43 CFR 3809) is to "Prevent unnecessary or undue degradation of the public lands by operations authorized by the mining laws." Operations and activities that are necessary for the "…development, extraction, and processing of minerals deposits locatable under the mining laws, ..." are neither unnecessary nor undue.
P620	28e. 43 C.F.R. § 3809.420(a)(3). Relying on § 3809.420(a)(3), as well as the provisions set forth in BLM's Land Use Planning Handbook, Interior maintains that "when BLM receives a proposed plan of operations under the 2001 rules, pursuant to Section 3809.420(a)(3), it assures [sic] that the proposed mining use conforms to the terms, conditions, and decisions of the applicable land use plan, in full compliance with FLPMA's land use planning and multiple use policies." Mineral Policy Center v. Norton, 292 F.Supp.2d 30, 49 (D.D.C. 2003)(emphasis added).	Thank you for your comment.
P621	28f. In addition, as noted herein, BLM bases its failure to ensure compliance with the RMP on its view that "LNC holds valid existing rights and therefore is not subject to the application of seasonal restrictions identified in the 2015 and 2019 GRSG Amendments." Yet BLM nowhere ascertains and verifies the extent of these "valid existing rights." As noted herein, the simple fact that LNC has filed mining claims across the Project site does not establish "valid existing rights." Without verifying whether the company truly holds valid existing rights on all its claims, BLM arbitrarily and capriciously limits its FLPMA and NEPA reviews and its authority to protect public land under FLPMA.	Thank you for your comment. Potential effects to greater sage-grouse and their habitat have been fully disclosed in this EIS. LNC has proposed applicant-committed environmental protection measures applicable to the Proposed Action and other action alternatives, to incorporate Required Design Features and Management Decisions from the 2015 and 2019 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendments. To minimize effects, LNC would limit disturbance areas, perform breeding bird surveys before ground disturbance, fence areas surrounding the water management ponds, and conduct concurrent reclamation. Additionally, LNC is working with the Sagebrush Ecosystem Technical Team (SETT) to utilize the Conservation Credit System (CCS) to offset effects of the proposed Project's surface disturbance to GRSG and sagebrush habitat. The CCS provides a regulatory mechanism for GRSG habitat protection that ensures habitat effects from anthropogenic disturbances (debits) are fully compensated by long-term enhancement and protection of habitat that result in a net benefit for the species.
P622	29a. The DEIS Fails to Take a Hard Look at the Project's Impacts to Greater Sage-Grouse. The project site has been documented to be sage-grouse habitat. Portions of the Project area are identified as Priority Habitat Management Area (PHMA),	Thank you for your comment. Impacts to greater sage-grouse have been fully disclosed in Section 4.5.1.1, Section 4.5.2.1, and 4.5.3.1 of this EIS as required by NEPA.

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	General Habitat Management Area (GHMA) (DEIS at 4-28). Using the 2015 ARMPA habitat mapping, the Proposed Action would disturb approximately 5,011 acres of PHMA and 545 acres of GHMA. Using the 2019 ARMPA habitat mapping, approximately 5,695 acres of PHMA would be disturbed (DEIS p 4-39).	
P623	29b. The applicant admits that habitat fragmentation and spread of invasive weeds will impact an already declining sage-grouse population. Sage-grouse are experiencing huge population declines, and even crashes in many populations, across its range, and large projects such as Thacker Pass Lithium will only contribute for the need to list the Greater sage-grouse under ESA.	Thank you for your comment. Potential effects to greater sage-grouse and their habitat have been fully disclosed in this EIS. LNC has proposed applicant-committed environmental protection measures applicable to the Proposed Action and other action alternatives, to incorporate Required Design Features and Management Decisions from the 2015 and 2019 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendments. To minimize effects, LNC would limit disturbance areas, perform breeding bird surveys before ground disturbance, fence areas surrounding the water management ponds, and conduct concurrent reclamation. Additionally, LNC is working with the Sagebrush Ecosystem Technical Team (SETT) to utilize the Conservation Credit System (CCS) to offset effects of the proposed Project's surface disturbance to GRSG and sagebrush habitat. The CCS provides a regulatory mechanism for GRSG habitat protection that ensures habitat effects from anthropogenic disturbances (debits) are fully compensated by long-term enhancement and protection of habitat that result in a net benefit for the species.
P624	29c. According to the DEIS: The construction of transmission line structures could increase predation by enhancing local raptor and corvid (raven) populations. Subsidized food sources such as garbage and roadkill, elevated nest platforms provided by transmission lines, and landscape alterations such as transitions to annual grasses, can also increase raven populations. (DEIS p 4-40)...A raven control plan would be developed in coordination with BLM and NDOW and implemented to deter raven predation of GRSG so that overall numbers of sage-grouse and the recruitment of young sage-grouse into the local breeding population does not decrease due to conditions enabled by the construction and operation of the Project. (DEIS p 4-40). This Raven Control Plan would be deferred until after public review and after the final agency decision. This important plan and mitigation measure needs to be analyzed now, and in the Final EA, not at a later date after the project is approved	As outlined in the Thacker Pass Plan of Operation, LNC's raven control plan would include the following mitigation measures: carcass removal, garbage/waste management protocols, installation of artificial perch deterrents and implementation of APLIC guidelines for nest deterrents, limiting water availability on-site, and structure removal following decommissioning. Additionally, LNC will work with NDOW and the Technical Advisory Group (TAG) to further develop the raven control plan and determine any additional measures, as necessary, through monitoring. LNC has provided adequate preliminary details regarding the raven control plan to analyze potential effects in this EIS.
P625	29d. Any mitigation negotiated with the Conservation Credit System should be fully disclosed to the public.	The BLM does not administer the development of credits or debits under the CCS and is not responsible for enforcement of program requirements. It is LNC's responsibility to work with the SETT to determine the appropriate compensatory mitigation for the proposed project. The BLM coordinated with the Nevada Sagebrush Ecosystem Technical Team (SETT) and Lithium Nevada Corporation (LNC) to calculate the amount of compensatory mitigation that would be required to offset residual impacts using the State of

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		Nevada's Conservation Credit System (CCS). CCS transactions are private market transactions, and the State cannot release details to the public regarding the location of credits purchased, only that credits have been purchased and the applicant has met their requirement.
P626	29e. The DEIS underestimates the Project's impacts to sage-grouse. The Project site is occupied by sage-grouse from the Lone Willow Population Management Unit (Lone Willow PMU), which is a subpart of the Western Great Basin population of greater sage-grouse. The FEIS for the 2015 Grouse ARMPA describes mining as a substantial, but non-imminent threat to the Western Great Basin population of greater sage-grouse. 2015 Grouse AMPA FEIS at 3-36.11 This is based on the 2013 Conservation Objectives Team Report (COT Report), which states that the substantial but non-imminent threat is specifically from lithium and uranium exploration and extraction: "The Lone Willow portion of the Western Great Basin population (connected with Oregon) was affected by a very large wildfire in 2012. The Holloway Fire burned approximately 214,000 acres in Nevada and 245,000 acres in Oregon of which about 140,000 acres in Nevada and 221,000 acres in Oregon were considered important or essential sage-grouse habitat. The Miller Homestead fire in Oregon included an additional 162,000 acres of sagebrush habitat within its perimeter, 149,000 acres of which was identified as a PAC for the Western Great Basin population. Fire and annual grasses should be characterized as substantial and imminent threats within this portion of the population. Additionally, this area faces threats from lithium and uranium exploration and extraction. Along with infrastructure that may come with this potential development, it may be appropriate to characterize mining and infrastructure as substantial, nonimminent threats to this portion of the population."	Impacts to greater sage-grouse have been fully disclosed in this EIS as required by NEPA. Additionally, LNC is working with the Sagebrush Ecosystem Technical Team (SETT) to utilize the Conservation Credit System (CCS) to offset effects of the proposed Project's surface disturbance to GRSG and sagebrush habitat. The CCS provides a regulatory mechanism for GRSG habitat protection that ensures habitat effects from anthropogenic disturbances (debits) are fully compensated by long-term enhancement and protection of habitat that result in a net benefit for the species.
P627	29f. COT Report at 84.12 Since the 2013 COT Report and 2015 Grouse ARMPA, the situation has changed. Lithium exploration and mining are now an imminent threat to the Lone Willow PMU and the larger Western Great Basin sage-grouse population via the Thacker Pass Lithium Mine and related Kings Valley Lithium Exploration Project.13 But the Thacker Pass DEIS completely omits the fact that the COT Report identified lithium exploration and extraction as a substantial threat to sage-grouse in this PMU, a threat that has with this project and its prior exploration become imminent.	Thank you for your comment. Impacts to greater sage-grouse have been fully disclosed in Section 4.5.1.1, Section 4.5.2.1, and 4.5.3.1 of this EIS as required by NEPA. Refer to page 4-39 of the DEIS for a discussion of the Lone Willow PMU.
P628	29g. Part of the danger to greater sage-grouse of BLM approving this project is that LNC has mining claims north of the project in the Montana Mountains, a Nevada greater sage-grouse stronghold. If BLM approves this Project, it will put greater sage-grouse in the Montana Mountains at risk, not only through the Project's noise degrading conditions for grouse at nearby Montana Mountains leks, but also by increasing the likelihood that the Project will expand in the future into the Montana Mountains, with the less-thorough environmental analysis that often accompanies	Thank you for your comment. Refer to page 4-39 of the DEIS for a discussion of habitat triggers in the Lone Willow PMU. The DEIS text states: "The proposed Project area is located within the Lone Willow population management unit (PMU) as designated by NDOW. This unit has experienced recent population declines due to wildfire and fragmentation of suitable habitat (NDOW 2014). The PMU includes the Kings River Valley and all of the Double H, Montana, and Bilk Creek Mountains. According to the 2014

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	mine expansions, such as incorporating prior NEPA documents through reference rather than doing new analysis that reflects current conditions. The DEIS also omits the fact that the Lone Willow PMU has reached a habitat trigger, as was acknowledged in the Nevada Sagebrush Ecosystem Program's Fall 2019 Adaptive Management Trigger Summary.	Nevada Greater Sage-grouse Management Plan, the most significant risk factor to the Lone Willow population is the large acreage of sagebrush habitat lost to wildfire and converted to invasive species such as cheatgrass as well as the immediate threat of loss of the remaining winter habitat for GRSG within the PMU. The 2014 plan includes an adaptive management process which includes both warnings and triggers associated with sage grouse habitat and populations and identifies the Lone Willow PMU as having crossed a population threshold that may trigger the need for adaptive management approaches."
P629	30. Migratory Birds. Removal of 5,695 acres of prime sagebrush steppe habitat for horned larks, sagebrush sparrows, mourning doves, and Western meadowlarks is unmitigated in the EA. The only response is to try to revegetate reclaimed land after the mine potentially closes in 41 years. No discussion of how this is to be done is analyzed. Will local seeds be collected for use in reclamation? How will ancient Biological Soil Crusts be restored, as these may take a century to regrow? Cheatgrass may undoubtedly expand here with new roads, exploration, industrial activity and ground disturbance. No discussion of how old-growth native perennial grasslands, such as those that consist of bluebunch wheatgrass (Pseudoroegneria spicata=Elymus spicatus), Sandberg bluegrass (Poa secunda), and various needlegrasses (Stipa spp.). Grassland and sage-steppe birds need these kinds of complex native grasslands, yet there is no assurance that 41 years from now BLM and the applicant will plant commonly available non-native grasses such as crested wheatgrass (Agropyron cristatum) that form monocultures of poor quality habitat for birds and sage-grouse.	Reclamation of disturbed areas resulting from activities associated with the Project are outlined in the Thacker Pass Project Plan of Operations and Reclamation Plan. The Reclamation Plan will be completed in accordance with BLM and NDEP regulations. Performance methods and standards conveyed in the Reclamation Plan are designed in accordance with regulations established by BLM's Subpart 43 CFR 3809 - Surface Management - and the State of Nevada. LNC will prepare revegetation plans for the Project in accordance with NAC 519A.330. The proposed reclamation seed mix for the Project (Table 6-2 of Reclamation Plan) was developed for the Project location through coordination with the University of Nevada, Reno. The seed mix is especially adapted for the Project site's clay soils, and is designed to provide species that can exist in the environment of northwestern Nevada, are proven to be robust species for revegetation, or are native species found in the plant communities prior to disturbance.
P630	31. Pronghorn Antelope. Two pronghorn movement corridors lie within the project area, between summer and winter ranges (DEIS p 4-35). No mitigation is suggested. Blocking pronghorn migration routes could significantly impact the antelope populations locally. The EA fails to analyze this significant impacts, and BLM should map the movement corridors and consider other alternatives. Pronghorn antelope may avoid these mining developments, just as they avoid oil and gas developments.15	Thank you for your comment. The EIS fully discloses anticipated effects to pronghorn from development of the Proposed Action. LNC has incorporated design features into the Proposed Action to minimize wildlife habitat disturbance and loss to the greatest extent possible. In addition, a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation. BLM Instruction Memorandum (IM) 2019-018 directs the BLM to include compensatory mitigation in all of the action alternatives in a NEPA analysis only when it is required as part of a state plan, program, or authorization. No such requirements for compensatory mitigation currently exist for big game species, such as pronghorn, and as such, BLM cannot require LNC to commit to compensatory mitigation for pronghorn, unless it is voluntary.
P631	"32a. Pygmy Rabbit. The DEIS states about this Special Status Species: Potential direct effects to pygmy rabbit would include the loss of up to 3,561 acres of suitable (sagebrush dominated) habitat and the potential for mortality from vehicle related collisions, crushing of adults or young in burrows, or abandonment of young in	Comment noted.

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	burrows…39 inactive burrows and 10 pellets unassociated with burrows were identified (SWCA 2019). Suitable habitat does exist within the Project area, and the loss of suitable habitat from surface disturbance or degradation, and the potential for mortality under	
P632	32b. No Pygmy Rabbit Translocation Plan has been offered for public review, and if this is the sole mitigation measure for this at-risk species, then a translocation plan should be developed for pygmy rabbits, similarly to plans developed for the federally threatened Agassiz's desert tortoise (Gopherus agassizii). An example of a desert tortoise translocation plan is referenced.16 We expect to see such a carefully thought-out plan included with the Final EA, which describes how any pygmy rabbit found would be carefully removed and transported offsite to a recipient site. This plan should include measures to ensure translocated rabbits have shelter and artificial burrows if need be, in order to avoid predation and maintain thermal requirements. A plan should also describe the methodology that is used in clearance surveys that accurately finds and removes the vast majority of rabbits prior to construction and ground-breaking to avoid direct mortality.	Thank you for your comment. BLM has developed measures for pre-construction clearance surveys for pygmy rabbit as identified in recommended mitigation measure SSS-5. BLM will continue to work with the Technical Assistance Group (TAG) to further discuss and develop additional measures that may be needed to avoid or mitigate effects to pygmy rabbits.
P633	32c. Translocation of desert tortoise to make way for development projects on public lands in California and Nevada across two decades has not resulted in halting the continued severe decline of this species. Based on line-distance sampling surveys to estimate population trends of tortoise across the Mojave Desert, the latest U.S. Fish and Wildlife Service report suggests most populations are actually crashing.17 Therefore, clearance surveys are not warranted as an efficacious mitigation measure for pygmy rabbit. No mitigation is considered for destruction of delineated pygmy rabbit habitat on the project site.	Clearance surveys for pygmy rabbit are proposed to minimize and mitigate direct mortality to pygmy rabbits, but would not reduce impacts from habitat loss. BLM Instruction Memorandum (IM) 2019-018 directs the BLM to include compensatory mitigation in all of the action alternatives in a NEPA analysis only when it is required as part of a state plan, program, or authorization. No such requirements for compensatory mitigation currently exist for pygmy rabbit or their habitat, and as such, BLM cannot require LNC to commit to compensatory mitigation unless it is voluntary.
P634	32d. The Columbia Basin population of pygmy rabbit is listed as federally endangered in Washington state under the Endangered Species Act (ESA).18 Primary threats are loss and fragmentation of habitat. There have been petitions to list the pygmy rabbit across its range by conservation organizations in the past,3 that were found not warranted by U.S. Fish and Wildlife Service. If this Lithium mine project moves forward, this will add evidence that the pygmy rabbit should indeed be reconsidered for listing under the ESA with a new petition because of significant impacts to its populations. There are many other development projects and threats occurring that are contributing to a push to list this species. The Thacker Pass Lithium mine project should not be one of them.	Comment noted.
P635	32e. BLM should analyze much more detailed and substantive mitigation measures to protect pygmy rabbit habitat and populations, and avoid as much direct mortality and habitat loss as possible, in order to avoid an ESA listing petition. Stakeholders should work together to help conserve local pygmy rabbit populations with better mitigation measures that we would like to see analyzed in the final EA.	Thank you for your comment. BLM has developed mitigation measure SSS-5 to reduce potential mortality to pygmy rabbits from construction activities. This mitigation measure would reduce direct mortality from construction activities, but would not reduce impacts to loss of pygmy rabbit habitat. LNC has incorporated design features into the Proposed Action to minimize wildlife habitat disturbance and loss to the greatest extent possible. In addition, a

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		biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation. Instruction Memorandum (IM) 2019-018 directs the BLM to include compensatory mitigation in all of the action alternatives in a NEPA analysis only when it is required as part of a state plan, program, or authorization. No such requirements for compensatory mitigation currently exist for pygmy rabbit. LNC has committed to purchasing GRSG conservation credits through the SETT, which could indirectly benefit other sagebrush steppe species, such pygmy rabbit.
P636	33. Lahontan Cutthrout Trout. Significant unmitigated effects could harm trout populations from indirect effects due to a lack of stormwater and flood damage impacts to nearby trout streams, including sedimentation of spawning habitats, erosion, and leaching of toxic chemicals from the project's industrial chemical manufacturing of batteries into adjacent trout streams from storm runoff. The EA gives no mitigation measures and no analysis of these very significant impacts.	Thank you for your comment. LNC will implement BMPs throughout the Project site to limit erosion and reduce sediment loading in precipitation runoff from Project facilities and disturbed areas during construction, operations, and initial stages of reclamation. LNC will also develop and implement erosion and sedimentation BMPs in accordance with their SWPPP (Appendix C of the Plan of Operations). Additionally, LNC will operate the Project as a zero-discharge facility. The CTFS will be designed with a liner system in accordance with the Water Pollution Control Permit (WPCP) criteria. LNC has proposed monitoring groundwater levels between the open pit and springs and Pole Creek located north of the mine; and contingency mitigation measures to minimize drawdown effects to perennial surface waters as summarized in Section 4.3.3 of the EIS. Refer to Section 4.3 for details regarding potential effects and recommended mitigation and monitoring for surface and groundwater resources. Refer to Section 4.16 for an analysis of potential effects regarding hazardous materials and the appropriate plans and procedures required to prevent exposure to environmental resources. No affects to LCT are anticipated from sedimentation or exposure from hazardous materials produced during chemical processing.
P637	34a. Golden Eagle. The DEIS says compensatory mitigation will reduce impacts of the mining operation to less than significant:	Thank you for your comment. In using the 80th quantile rather than the mean estimate for eagle equivalency, plus using a 1.2 to 1.0 ratio of mitigation to eagle equivalency, the Service's mitigation requirements gives two additional increases to the overall mitigation amount which address any indirect impacts not otherwise explicitly addressed. The "Golden Eagle (GOEA) Resource Equivalency Analysis: A Mitigation Framework for Permitted Takes of Golden Eagle Disturbance at Nests", dated October 22, 2018, USFWS, provides further details.
P638	Alternative A includes USFWS issuing an EITP under the Eagle Act, related to mining operations within the scope of the Project. Under the Proposed Action, the applicant is requesting authorization for disturbance to and loss of annual productivity from one Golden Eagle breeding pair (territory #5 as shown on Figure 4.5-16, Appendix A) during the period of up to five years from the date of the	Thank you for your comment. Estimated noise effects from construction, operation, and reclamation activities associated with the proposed Project on eagles are analyzed in Section 4.5.6 of the DEIS. Additional risks to golden eagles are analyzed in LNC's Eagle Conservation Plan, submitted with their EITP application. LNC has submitted an application to the USFWS for an

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	issuance of the permit. The Proposed Action would authorize the disturbance to and loss of annual productivity from one Golden Eagle territory for a maximum of five breeding seasons. This Alternative would include monitoring of the nest site and mitigation to offset impacts to Golden Eagles. Under this Alternative, the Project would provide the compensatory mitigation at the required 1.2:1 ratio by retrofitting electric utility poles, as discussed in the Eagle Rule Revision 2016 PEIS (USFWS 2016). The intent would be to minimize the potential for eagle electrocutions and ensure that the effects of eagle take caused by the Project are offset at the population level. (DEIS pp2.1-2.2)"	incidental take permit related to potential disturbance to one Golden Eagle territory resulting from construction, operation, and reclamation of the proposed Project. In determining the significance of effects of the Project on golden eagles, the USFWS screened the Proposed Action against the analysis provided in the PEIS (USFWS 2016a) and the USFWS's 2016 report, "Bald and Golden Eagles: Status, trends, and estimation of sustainable take rates in the United States." We also used our eagle-risk analysis (USFWS 2013, Appendix D), and Cumulative Effects Analysis (USFWS 2013, Appendix F) to quantify eagle fatality risk and cumulative local area population level effects. Eagle-specific post-construction monitoring is required for EITPs and is included as a permit condition, in addition to adaptive management measures described in the applicant's ECP. The Eagle Act authorizes the USFWS to issue EITPs only when the take is compatible with the preservation of each eagle species, defined (in USFWS 2016) as "consistent with the goals of maintaining stable or increasing breeding populations in all eagle management units (EMUs) and the persistence of local populations throughout the geographic range of each species." The USFWS will consider issuance of an eagle disturbance take permit if (1) the incidental take is necessary to protect legitimate interests; (2) the take is compatible with the preservation standard of the Eagle Act; (3) the applicant has avoided and minimized impacts to eagles to the extent practicable; and (4) compensatory mitigation will be provided for any take.
P639	34c. No mitigation measures are analyzed concerning pit dewatering, where golden eagle prey animals may be attracted to pit water and water truck water. This might attract eagles, and increase impacts to the local population. Stormwater ponds and any other ponds constructed at the plant could also attract golden eagle prey. BMPs do not indicate these ponds would be netted to prevent birds from entering, only fenced.	Thank you for your comment. Proposed stormwater management ponds would typically be kept dry. If an Industrial Artificial Pond Permit (IAPP) is required for this project, LNC would consult with NDOW to determine appropriate exclusionary devises, such as the use of bird balls or a HDPE floating pond cover, and those measures would be addressed in NDOW's IAPP. Mitigation measure SSS-3 would require LNC to install exclusionary devices, such as bird balls or HDPE netting, at water management ponds. Sump pumps would be used to for pit dewatering would directly fill water trucks for on-site dust suppression. No storage tanks or wells would be needed to support dewatering operations. Golden Eagle prey may be attracted to pit dewatering areas, but the increased traffic and human activity would likely prohibit eagle attraction to the site. Text has been added to Section 4.5.4 of the EIS to address this issue. Section 4.5.5.1 in the EIS has been updated to reflect the procedures the applicant would follow and the permit that the applicant would obtain as described here. Water from pit dewatering would be pumped directly into tanked trucks for use in dust suppression and would not be stored in open ponds or available for eagle or other wildlife use. All other ponds (stormwater, emergency, and reclaim ponds) would be dry during normal operations and

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		water would only be present in stormwater ponds temporarily following storm events. Both reclaim and emergency ponds would be fenced to exclude wildlife and the operator would obtain an Industrial Artificial Pond Permit from NDOW which would include review and implementation of appropriate wildlife exclusion or deterrent measures.
P640	34d. A new substation would require transmission line infrastructure, and this could be a collision hazard to golden eagles. This needs to be analyzed.	Thank you for your comment. Eagle collision risk with electrical lines has been included in Section 4.5.4. Risks from electrocution or collision with transmission lines would be minimized through LNC's incorporation of APLIC guidelines into the construction of electrical transmission facilities. All energy infrastructure would be constructed consistent with APLIC recommendations for avian safety. The proposed 25-kV transmission line would be collocated with the existing Harney Electric 115-kV powerline to minimize potential effects to eagles. Additional text regarding risk of collision has been included in the FEIS in Section 4.5.5.1.
P641	34e. The meager compensatory mitigation of retrofitting electric utility poles will not fully mitigate these many significant impacts. Better compensatory mitigation should be considered, such as purchase of private parcels that hold good golden eagle nesting and foraging habitat.	Thank you for your comment. Current Eagle Act permit regulations require a compensatory mitigation ratio of 1.2 to 1 to be used (USFWS 2016) to offset Golden Eagle take. The 1.2 to 1 ratio for compensatory mitigation achieves a net benefit to Golden Eagle populations ensuring that regional eagle populations are maintained consistent with the preservation standard of the Eagle Act, which authorizes the USFWS to issue EITPs only when the take is compatible with the preservation of each eagle species, defined (in USFWS 2016) as "consistent with the goals of maintaining stable or increasing breeding populations in all eagle management units (EMUs) and the persistence of local populations throughout the geographic range of each species." Under the Proposed Action, final compensatory mitigation would fully offset the estimated eagle take for the Project, and would provide additional net benefit to eagle populations. Proposed USFWS mitigation for disturbance to eagle territories is consistent with the Eagle Act and is adequate to offset anticipated impacts. Currently, power pole retrofitting is the only approved compensatory mitigation measure under the Eagle Act, although the Eagle Act does allow for some experimental mitigation (such as described in Alternative C) to aid in the future approval of additional forms of mitigation. The USFWS approach to calculating mitigation is identified in the PEIS (USFWS 2016a). Additional detail is provided in the "Golden Eagle (GOEA) Resource Equivalency Analysis: A Mitigation Framework for Permitted Takes of Golden Eagle Disturbance at Nests," dated October 22, 2018, USFWS. As described in these documents, we use a conservative approach to calculating mitigation: we use the 80th quantile rather than the mean estimate for eagle equivalency, and we use a 1.2 to 1.0

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		ratio of mitigation to eagle equivalency.
P642	34f. Helicopter traffic in and out of the Helicopter pad is also an unanalyzed threat top local golden eagles. This needs analysis and further mitigation measures.	The text has been revised to include potential affects to eagles from the proposed helicopter pad. Refer to Section 4.5.5.1 for additional details. An emergency helicopter pad would be constructed in the proposed processing plant area by the operator as part of the Proposed Action (Figure 2-4). The helicopter pad would be used only by medical personnel for emergency ambulance flights to medical care facilities during human health emergency situations. The anticipated flight path of any helicopter using the emergency pad would be to approach the Project area from Winnemucca or Reno from the south. Once medical emergency passengers are onboarded at the mine site, the helicopter would then generally follow the most direct southerly route to the nearest hospital. If emergency helicopter flights occur during the avian breeding season, potential effects to eagles could include increased noise disturbance with potential negative effects to Golden Eagle breeding and nesting activities.
P643	35. Short-eared Owl. The DEIS states that the short-eared owl has a high potential for occurrence on the project site. The species is a year-round resident in the region. The project will remove foraging habitat and could be a good wintering habitat for the species. It is a BLM Sensitive Species and protected under the Migratory Bird Treaty Act. Open pits and pit lakes will create hazardous materials, waste rock, new transmission and roads will create collision hazards. Noise from construction, blasting and operation will disturb individuals and breeding including noise from helicopters. Short-eared owls are threatened in 7 northeastern U.S. states with significant declines noted in most western states. What mitigation would compensate for the loss of so much habitat?	Thank you for your comment. LNC has incorporated design features into the Proposed Action to minimize disturbance and loss of wildlife habitat to the greatest extent possible. Habitat would be incrementally lost over the life-of-mine, not all at once, and LNC would initiate concurrent reclamation in mine areas no longer active. Once the mine site is reclaimed, habitat would be restored for avian species. In addition, LNC has voluntarily developed a Bird and Bat Conservation Strategy to develop avoidance, minimization and mitigation measures to reduce potential effects to migratory and resident birds from the project. Instruction Memorandum (IM) 2019-018 directs the BLM to include compensatory mitigation in all of the action alternatives in a NEPA analysis only when it is required as part of a state plan, program, or authorization. No such requirements for compensatory mitigation currently exist for short-eared owl.
P644	36. Non-Native and Invasive Plants The DEIS admits that invasive plants, such as cheatgrass (Bromus tectorum) will most likely be spread by the mining activities. Yet no mitigation measures or Best Management Practices are considered. Cheatgrass negatively impacts sage-grouse habitat. Surface disturbance activities from implementation of the proposed project as well as other future projects could further spread noxious weeds and non-native invasive plant species into previously undisturbed areas. (DEIS pp 5-10)	Best Management Practices for control of noxious weeds are included in the operators Thacker Pass Project Noxious and Invasive Weed Management Plan which is referenced in Section 4.7.1.1 of the EIS. Potential effects to GRSG and their habitat are addressed through mitigation required under Nevada Revised Statutes.
P645	37a. Visual Resources. The Approved Winnemucca RMP States: The Goal for managing the Visual Resources at Thacker Pass is to: “Manage public land actions and activities to provide protection of the visual values and scenic quality of existing landscapes consistent with the Visual Resource Management (VRM) class objectives.”	Thank you for your comment.

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P646	37b. Thacker Pass Visual Resource Impacts. The Bureau of Land Management should maintain the Visual Resource Management Class Objectives that have been designated in the 2015 Record of Decision (ROD) and Approved Winnemucca BLM District Resource Management Plan. According to the RMP Final Environmental Impact Statement: "Visual Resources In general, all alternatives would involve actions that maintain or improve the quality of visual resources. In addition to relying on the visual resource contrast rating system to preserve the overall scenic quality of BLM-administered land, specific actions also maintain or improve visual resources involving air, water, flora, fauna, wildland fire, cultural resources, minerals, and recreation."	Thank you for your comment.
P647	37c. The ROD designated Visual Resource Management Classes for the entire BLM District. The BLM will manage visual resources on BLM lands under the following VRM class designations: • Class I – 418,201 acres; • Class II – 2,793,312 acres; • Class III - 3,073,906 acres; and • Class IV - 961,504 acres. Most of the Thacker Pass area is designated VRM Class II and some is VRM Class III. The two most impacted VRM Classes in the area are defined: Class II Objective: The existing character of the landscape is retained. The level of change to the characteristic landscape should be low. Changes can be seen but should not attract the attention of the casual viewer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. Class III Objective: The existing character of the landscape is partially retained. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.	Thank you for your comment.
P648	37d. Roughly 100,000 acres of VRM Class II lands would potentially be impacted by the Thacker Pass Project. Equally, tens of thousands of acres of VRM Class III lands could be impacted by the project.	Thank you for your comment.
P649	37e. The Federal Lands Policy Management Act (FLPMA) provides for the management and protection of public lands, including their scenic quality. ROW grants on federal lands must contain terms and conditions that would minimize damage to scenic quality and aesthetic values (Section 505a). The BLM manages land under its jurisdiction according to the goals and policies outlined in their RMPs; the 2015 Winnemucca District RMP is the applicable plan for the Thacker Pass Project. The 2015 RMP identifies the components of the VRM system that apply to lands within the Winnemucca district. The VRM system provides a means to identify visual values, establish objectives through the RMP process for managing these values, and provide timely inputs into proposed surface-disturbing projects to ensure that these objectives are met. The Project area is within VRM Class II because of the natural features and settings within the area.	Thank you for your comment.

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P650	38a. BLM has Failed to Initiate a Plan Amendment nor a VRM Class Downgrade. When the BLM opened up the scoping process for this project, they originally intended to give us a plan amendment to the Winnemucca RMP with a 90 day comment period. This was because the project is located mostly in VRM Class II designated area under the Winnemucca RMP. As the DEIS admits, the Thacker Pass Project would not be in conformance with the RMP.	Thank you for your comment.
P651	38b. On January 21st, 2020 a Notice of Intent was released in the Federal Register. The NOI indicated that there would be a plan amendment for the DEIS review for the Thacker Pass mine. Below is the quote: ”A Land Use Plan Amendment addressing visual resources would be included with the Project and analyzed in the EIS if visual resource issues cannot be mitigated during the exploration, construction, and operation of the Project to conform with the visual resource management class-2 designation in the current RMP, approved in 2015.”19	Thank you for your comment.
P652	38c. According to the DEIS: “1.5.3 Land Use Plan Conformance The Proposed Action is subject to and has been reviewed for conformance with the following plan: Winnemucca District Resource Management Plan The Proposed Action and Project alternatives conform with the BLM’s WD Record of Decision and Resource Management Plan (RMP) (ROD/RMP) with the exception of existing Visual Resource Management (VRM) designations (BLM 2015a).” (DEIS p 1-5) The BLM has told BRW in a personal communication that there is no language in 43 CFR 3809 that requires them to downgrade the VRM Class, but According to the RMP Final Environmental Impact Statement: “Visual Resources In general, all alternatives would involve actions that maintain or improve the quality of visual resources. In addition to relying on the visual resource contrast rating system to preserve the overall scenic quality of BLM-administered land, specific actions also maintain or improve visual resources involving air, water, flora, fauna, wildland fire, cultural resources, minerals, and recreation.”	Thank you for your comment.
P653	"38d. Visual resources must be protected under the Federal Land Policy and Management Act of 1976, 43 U.S.C. 1701 et. seq.; 16 1. Section 102 (a)(8). States that “...the public lands be managed in a manner that will protect the quality of the...scenic...values.” 2. Section 103 (c). Identifies “scenic values” as one of the resources for which public land should be managed. 3. Section 201 (a). States that “The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including scenic values).” 4. Section 505 (a). Requires that “Each right-of-way shall contain terms and conditions which will... minimize damage to the scenic and esthetic values” B. National Environmental Policy Act of 1969, 43 U.S.C. 4321 et. seq.; 1. Section 101 (b). Requires measures be taken to “ ...assure for all American esthetically pleasing surroundings. ” 2. Section 102. Requires agencies to “Utilize a systematic, interdisciplinary approach which will ensure the integrated use of Environmental	Thank you for your comment.

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	Design Arts in the planning and decision making”"	
P654	38e. Both NEPA and FLPMA recommend that Visual Resource Management be decided on the RMP level. On a cumulative level, the Thacker Pass lithium mine would have distant visual impacts that must be thoroughly analyzed in the EIS. A Full 90-Day Comment Period Required for RMP Amendments. To amend the RMP to accommodate the Thacker Pass lithium mine, BLM must follow NEPA implementing regulations. These include, but are not limited to, providing a full 90-day public comment for the RMP amendment, per 43 CFR §1610.2(e): “Ninety days shall be provided for review of the draft plan and draft environmental impact statement.”	Thank you for your comment.
P655	38f. 43 CFR §1610.5-5: “An amendment shall be made through an environmental assessment of the proposed change, or an environmental impact statement, if necessary, public involvement as prescribed in §1610.2 of this title, interagency coordination and consistency determination as prescribed in §1610.3 of this title and any other data or analysis that may be appropriate. In all cases, the effect of the amendment on the plan shall be evaluated. If the amendment is being considered in response to a specific proposal, the analysis required for the proposal and for the amendment may occur simultaneously.” In the same personal communication, BLM also told BRW that “management” made the decision to have no plan amendment or downgrade the VRM Class, as shown below in an email from BLM:	Thank you for your comment.
P656	38g. BLM’s Winnemucca District Office concluded that the Thacker Pass Project boundary falls primarily within VRM Class II per the 2015 Record of Decision and Resource Management Plan for the Winnemucca District Planning Area, with an exception to the east end of the Project area which fall within VRM Class III (BLM 2015a).” (DEIS p 4-91). And, goes on to say that for the proposed action: “Overall, changes in the landscape character from the Thacker Pass Project would result in short-term strong contrast during construction, long-term strong contrast during mining operations, and long-term weak contrast in final reclamation.” (DEIS p 4-93). And, “Overall, the construction and operation of the Proposed Alternative would not meet the current VRM Class II objectives, and would not conform with the existing ROD/RMP (see Section 1.5.2). The existing character of the landscape would not be retained, and the level of change to the characteristic landscape would be noticeable and likely attract the attention of the casual observer. Overall, the construction and operation of Alternative A would not meet the current VRM Class II objectives, and would not conform with the existing ROD/RMP.” (DEIS p 4-93)	Thank you for your comment.
P657	38h. For construction the DEIS states: “Construction would remove vegetation, add roads, waste rock storage facilities, clay tailings, pits, and associated buildings and infrastructure. The largest visual impacts would result from the mass-grading and reshaping of soils and landforms that would alter topography. Visual changes to the landscape would include removal of vegetation and exposure of soil, causing a	Thank you for your comment.

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	contrast in color, line, form, and texture to the existing landscape." (DEIS p 4-94)	
P658	38h. For construction the DEIS states: "Construction would remove vegetation, add roads, waste rock storage facilities, clay tailings, pits, and associated buildings and infrastructure. The largest visual impacts would result from the mass-grading and reshaping of soils and landforms that would alter topography. Visual changes to the landscape would include removal of vegetation and exposure of soil, causing a contrast in color, line, form, and texture to the existing landscape." (DEIS p 4-94)	Thank you for your comment.
P659	39a. Weak Key Observation Point (KOP) Simulations Thacker Pass is located in a scenic caldera between the Montana and Double H Mountains. The area is isolated by topography and has a largely wild appearance. The following photos are taken from the Lithium America website (Letter page 54). Key Observation Points should be developed from a wider diversity of areas. These photos show viewpoints that would be greatly impacts by this project. KOP's from viewpoints like these would provide a better perspective of the visual impacts of this project.	It is unclear from where the photographs the commenter provided were taken, and if they are accessible to people (i.e. hikers, travelers, residences, etc.). The KOPs selected for analysis were chosen to include critical locations where the proposed mine site and process facilities could be visible to the public, including travel corridors, recreation areas, and the nearest residence. No change made.
P660	39b. The KOP's appear to have been rushed through and the simulations do undermine the severity of the visual impacts. KOP's 1, 2 and 3 appear to be using very quick color blotches made in a photoshop simulation: KOP 1 only shows outlines of the locations. Without the outlines, it would be difficult to see the full impacts. This should be closer with a more professional, detailed simulation.	Impacts to visual resources have been disclosed through both the simulations and the qualitative descriptive analysis of visual changes. By utilizing a variety of methods (visual simulations, contrast ratings, viewshed analysis) a comprehensive picture of the changes is provided. The overall impacts are disclosed and are based on all the analysis methods combined.
P661	40. KOP 4 and 5 Fail to Even Show the Mine. More KOPs should be created that show the facilities in detail. It appears that the BLM picked some of the least obvious and controversial points to make these visual simulations. The KOP's should detail the open pit mine; waste rock storage facilities; coarse gangue stockpiles; a clay tailings filer stack; growth media stockpiles; haul and secondary roads; and additional mine facilities. There is also no night-time or dark sky KOP simulation and the project will operate 24/7. This should be included.	KOPs 4 and 5, located at a recreation location in the Montana Mountains and an access road just north of SR 293, respectively, show that there would be no visual impacts from these accessible locations. The selected KOPs were chosen to include critical locations where the proposed mine site and process facilities would be visible to the public.
P662	41. Visual Impacts of Mining Exploration not Addressed. The mining exploration phase of this proposed project will also have visual impacts to the VRM Class II landscape and these are not addressed in the DEIS. Mining exploration activity creates new roads, sumps, cleared land, reclaimed pits with waste rock, large truck-sized drill rigs and visually obtrusive lighting that runs all night for 24/7 operations. Many of these impacts are temporary with the exception of newer roads which can be seen for years in arid environments. The DEIS should address the visual impacts of exploration and create at least on KOP Mining Exploration simulation.	Text has been revised in Section 4.15.1 to include impacts on visual resources during exploration.
P663	"42. The BLM should consider a Reduced Footprint Alternative as well as a Phase One Only Alternative Should be Considered. It would use 2,600 acre feet of water as opposed to the proposed 5,200 acre feet of water for Phase 2. At this point, LNC currently holds 15.5 acre-feet per annum (AFA) of water rights (mining and milling use) within the Project area. Not only would this save water, it would reduce the	A Phase I only alternative is not an economically feasible alternative for the operator. Alternatives must be technically and economically feasible for BLM consideration.

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	amount of disturbance and hazardous material needed for this project. A smaller footprint alternative would reduce impacts to biological resources. There would be less habitat disturbance and noise for sage grouse, bighorn sheep, golden eagles and other birds and other species. A smaller footprint alternative would disturb less cultural resources. A smaller footprint alternative would also reduce impacts to the VRM Class II landscape."	
P664	43. Sediment Ponds Need to be Lined Page 31: 2.2.7.2 Water Management Ponds Stormwater runoff from the Project area would be managed through the construction of unlined stormwater sediment ponds. Stormwater runoff could carry contaminant and chemicals used for processing lithium. These sediment ponds should be lined to take an extra step to prevent contamination from runoff from the project site.	Proposed stormwater management ponds would not contain water that has come into contact with processing materials or components. The proposed reclaim and emergency ponds would be lined.
P665	44. BLM Should also Consider an Off-site Processing Alternative. This alternative could reduce the footprint, acres, water use and impacts to resources. If items such as the lithium processing facility, battery production facility, sulfuric acid plant could all reduce noise, visual, hydrologic and biological impacts.	An offsite processing alternative that would require hauling of ore to an offsite location is not an economically feasible alternative for the operator. Alternatives must be technically and economically feasible for BLM consideration.
P666	45a. Alternatives to Perpetuity Treatment is Needed. The DEIS never clarifies the need to perpetual management of contaminated groundwater, although this is no doubt the case as discussed above in the Water Quality section of these comments. There must be a detailed analysis of approaches to close the mine site without the need for perpetual treatment, even if these alternatives seem infeasible on the surface. It is important for the public to be informed about this option and decide for themselves if perpetual care is acceptable. Federal law requires that the mine operator "must minimize uncontrolled migration of leachate; and … Long-term, or post-mining, effluent capture and treatment are not acceptable substitutes for source and migration control, and you may rely on them only after all reasonable source and migration control methods have been employed," (43 CFR Part 3809.420). The DEIS does not present a clear case that all other options that avoid treatment in perpetuity have been considered.	Potential impacts to water quality associated with the open pit mining, open pit backfill placement, waste rock and gangue storage, and clay tailings storage facilities were summarized in Section 4.3.1 of the EIS. The three action alternatives analyzed (full backfill, partial backfill and no backfill; Alternatives A, B and C, respectively) were selected in part to allow for a comparison of the potential risk to groundwater quality associated with pit backfill placement options; and potential development of a pit lake. See Common Response WATER-6.
P667	45b. Mining projects like the Thacker Pass Proposed Action, which anticipates perpetual active management as virtually certain outcome, are inherently controversial. Explicit engineering plans to capture and treat water, funded by a diversified financial trust, leaves the public uncomfortable with the cross-generational obligations. There is good reason for this, since the status of governments, laws, and financial institutions are not guaranteed in perpetuity (500 years or more by the BLM definition). At it's core, the Proposed Action provides a private mining entity with short-term profit while leaving to society an obligation to maintain for centuries an active treatment system amidst the unavoidable uncertainty in future institutional stability.	Thank you for your comment. The BLM has worked with the operator to identify feasible measures to avoid and minimize potential effects to the human and natural environment that are within the regulatory authority of the BLM. Many of these measures have been incorporated into the proposed Mine and Exploration Plans of Operation. Any BLM approval of the proposed Mine and Exploration Plans or alternatives would require that the operator obtain all necessary State and Federal permits and comply with all applicable State and Federal regulatory requirements.

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P668	46. BLM Needs to Include an Original Point of Diversion Alternative. As was pointed out to both BLM and LNC in writing by Orovada residents damages to existing water rights holders due to lowering of their wells as related to the mine production wells can be entirely mitigated by simply leaving the points of diversion where they currently are and piping the water an additional distance to the mine site.	Comment noted. See Common Response WATER-8.
P669	47a. The Project Needs also to be Analyzed as a Power Plant. The project proponent intends to produce 15 MW of energy, likely onto the grid, with waste heat from Sulfuric acid production. This will have significant unanalyzed impacts.	Combustion of sulfur for the production of sulfuric acid would also generate waste heat that would be recovered for the production of electricity through use of a waste heat boiler for electricity production. The sulfuric acid plant would not continuously consume off-road diesel fuel or other fossil fuels during operation and would not operate as a conventional coal or natural gas-fired power plant, in which fossil fuels are burned on a continuous basis. Off-road diesel fuel would be used intermittently in the package boiler for the sulfuric acid plant. The sulfuric acid plant package boiler would operate approximately four times per year for 72 hours each cycle (see EIS Table 2.4. Proposed Fuel and Chemical Storage footnote 1). Off-road diesel fuel consumption during package boiler runtime would be an estimated 300 gallons per hour. Total consumption of off-road diesel fuel for operation of the sulfuric acid plant package boiler would be approximately 86,400 gallons per year (300 gallons per hour x 72 hours per cycle x 4 cycles per year).
P670	47b. 2.2.5.10 Sulfuric Acid Plant and Energy Production. Concentrated sulfuric acid would be required to leach lithium from the clay ore. The production of sulfuric acid produces excess heat that is converted to steam and electricity. Sulfuric acid would be produced by burning molten sulfur with air to produce sulfur dioxide (SO2), catalytically converting the SO2 to sulfur trioxide (SO3) and absorption of SO3 in acid while generating a large amount of excess heat that would be captured to produce steam to generate electrical power. Electricity produced would be either distributed directly to the Project facilities or sold back into the power grid. The Project is expected to be a net exporter of electricity, not exceeding 15 megawatts (MW) in Phase 1. (DEIS p 2-8). This needs to go through a Nevada Public Utilities Commission application, and be analyzed under the Utility Environmental Protection Act (UEPA) of Nevada. BLM needs to analyze the impacts of producing energy in this manner—from hazardous chemicals, how will any spills be cleaned up?	As discussed in Section 4.16.1 of the EIS, a Solid and Hazardous Waste Management Plan would be developed for the Project that outlines proper storage, handling, and disposal methods that include preventing exposure to toxic substances. Hazardous materials would be stored and managed under the Spill Contingency Plan, which is prepared pursuant to 43 CFR 3809.401(2)(vi) (Plan of Operations) and establishes responsibilities and guidelines for actions to be taken by mine and plant personnel in the event of a spill of hazardous materials at the Project site. Emergency response would be conducted in accordance with the project Emergency Response Plan.
P671	47c. A byproduct of burning Sulphur in air is the generation of nitrogen oxides NOx, and this is additive to NOx emissions already estimated to be emitted from process, fugitive and trucking/transport (DEIS p 4-72). How will these emissions be controlled? The power plant will emit air pollution—"smog" and the EA fails to analyze this. This will be an air pollutant contribution to climate change and local communities.	LNC will comply with all requirements and conditions of its air quality permits. The proposed power plant is not anticipated to emit ozone or smog. Ozone emissions from the proposed project are discussed in Section 4.9.1.1 of the EIS.
P672	47d. Apparently the waste heat production would turn a steam turbine to produce electricity, and the water use from groundwater pumping was not analyzed. Will the	Exact technical specifications of the energy production facility are under development and would be consisted with all required Federal and state

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	steam turbine unit be wet-cooled, dry-cooled to conserve water? There are many significant impacts from using a steam turbine power plant on site that have not been analyzed.	permits. Steam is not anticipated to be emitted from the power generation facility. Water usage analyzed in the DEIS includes water to be used in the energy facility.
P673	47e. We request a supplemental EA in order to analyze the impacts of a steam turbine power plant on the site—to air quality, climate change, and water resources.	Air pollutant emissions and greenhouse gas emissions from the proposed project, including combustion of sulfur and fossil fuels in the sulfuric acid plant, are reported in the Air Quality and Greenhouse Gas Emissions Section (Section 4.2) of the EIS in Table 4.10. Facility-Wide On-Site Operational Emissions (tons/year). The steam turbine would operate using waste heat recovered from the sulfuric acid plant to generate electricity and the steam turbine would not itself combust fossil fuels, sulfur, or other hazardous materials to generate heat or electricity. Impacts related to the operation of the sulfuric acid plant and the steam turbine are reported in the EIS.
P674	47f. Burning sulphur in air to produce waste heat for a steam turbine is not a renewable energy form, but a toxic, polluting, dirty, and inefficient form of energy production. This industrial waste heat energy generation is not renewable energy.	Thank you for your comment.
P675	47g. The Utility Environmental Protection Act was enacted in 1971 to address environmental issues related to the construction of utility facilities. The UEPA states: The PUCN cannot approve or modify a permit unless it finds and determines: • The probable effects on the environment. • The extent to which facility is needed for reliability if it emits greenhouse gases and does not use renewable energy as its primary source for generating electricity. • The need for the facility balances any adverse effects on the environment. • The facility represents the minimum adverse effects on the environment given current technology and feasible alternatives. • All permits, licenses and approvals required by federal, state, and local jurisdictions are obtained or in the process of being obtained for construction. • The facility will serve the public interest.20 The facility will be so large that it will have a huge construction and operational carbon footprint. This would not be renewable energy but industrial waste heat energy. The project will overuse water, threaten groundwater for ranchers and wildlife. The project will use hazardous chemicals which potentially can pollute water sources. The project will threaten wildlife including Golden eagles, sage grouse and Lahontan cut-throat trout. The project will destroy the scenic values of the region. The project will create unhealthy air quality for local residents. The project does not meet the standards of the UEPA.	Thank you for your comment.
P676	48a. BLM Is Not Applying the Proper Regulatory Authorities Over the Project. BLM appears to be basing its review of the Project on the assumption that Nevada Lithium has statutory rights to conduct all of their proposed operations, based on the mere staking of claims under the 1872 Mining Law, 30 U.S.C. §§21-43. This includes the permanent waste rock and tailings dumps, which cover thousands of acres. BLM's position is wrong. Rights to mine and possess lands containing valuable minerals "under the mining laws of the United States" do not extend to lands that do not	Thank you for your comment.

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	contain such valuable minerals: "A claimant may not use the deposit present in one location to lend validity to an adjacent location. See Waskey v. Hammer, 223 U.S. 85, 91 (1912) ('A discovery without the limits of the claim, no matter what its proximity, does not suffice.'); Lombardo Turquoise Milling & Mining Co. v. Hemanes, 430 F.Supp. 429, 443 (D. Nev. 1977)." Center for Biological Diversity v. U.S. Fish and Wildlife Service, ---F.Supp.3d---, 2019 WL3503330, *11 (D. Ariz. 2019).	
P677	48b. "The statute [1872 Mining Law] grants two rights, (1) the right to explore and purchase all valuable mineral deposits in lands belonging to the United States; and (2) the right to occupation and purchase of the lands in which valuable mineral deposits are found. … [I]t is clear under both the mining law and the regulations that a discovery of valuable mineral is the sine qua non of an entry to initiate vested rights against the United States." Davis v. Nelson, 329 F.2d 840, 844-45 (9th Cir. 1964). Thus, without the discovery of a valuable mineral deposit, the claimant does not have a statutory right to occupation of those lands.	Thank you for your comment.
P678	48c. Such statutory rights can only accrue to the company if these claims satisfy the requirements of the 1872 Mining Law for possessory rights. "A mining claimant has the right to possession of a claim only if he has made a mineral discovery on the claim." Lara v. Secretary of the Interior, 820 F.2d 1535, 1537 (9th Cir. 1987). See also Davis v. Nelson, 329 F.2d at 845 (9th Cir. 1964)("right to occupation and purchase of the lands" is limited to only those lands "in which valuable mineral deposits are found.").	Thank you for your comment.
P679	48d. The Mining Law limits the permanent use and development of mining claims on public lands to only those lands that contain a "valuable mineral deposit." "All valuable mineral deposits in lands belonging to the United States … shall be free and open to exploration and purchase, and the lands in which they are found to occupation and purchase." 30 U.S.C. § 22. Only upon the discovery of a "valuable mineral deposit," within the boundaries of each mining claim does the claimant have rights to permanently use and occupy those public lands.	Thank you for your comment.
P680	48e. "Thus, although a claimant may explore for mineral deposits before perfecting a mining claim, without a discovery, the claimant has no right to the property against the United States or an intervenor. 30 U.S.C. § 23 (mining claim perfected when there is a 'discovery of the vein or lode'); see also Cole v. Ralph, 252 U.S. 286, 295–96 (1920)." Freeman v. Dept. of Interior, 37 F.Supp.3d 313, 319 (D.D.C. 2014). "If there is no valuable mineral deposit beneath the purported unpatented mining claims, the unpatented mining claims are completely invalid under the 1872 Mining Law, and no property rights attach to those invalid unpatented mining claims." Center for Biological Diversity v. U.S. Fish and Wildlife Service, ---F.Supp.3d ---, 2019 WL3503330, *5 (D. Ariz. 2019)(emphasis in original).	Thank you for your comment.
P681	48f. To satisfy the discovery requirement necessary for a valid mining claim, "the	Thank you for your comment.

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	discovered deposits must be of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine." U.S. v. Coleman, 390 U.S. 599, 602 (1968). This economic test for claim validity necessarily includes the consideration of all costs necessary to develop, process, transport, and market the mineral, including costs to protect public land and the environment. "[I]t must be shown that the mineral can be extracted, removed and marketed at a profit." Id.	
P682	48g. There is no evidence in the record that the mining claims covering the public lands proposed for the tailings, waste rock dumps, and other ancillary operations are valid under the Mining Law. BLM must inquire into whether the mining claims at the Project site are valid as a prerequisite for BLM to base its review/approval on any purported "rights" under the Mining Law.	Thank you for your comment.
P683	48h. Based on the proposed PoO, there is no evidence that the claims to be used for waste rock dumps, tailings waste facilities, and other non-extraction operations away from the mine pit are valid under the Mining Law. Based on the available record, these lands contain common varieties of rock that are not considered locatable minerals under federal mining law. Under the Surface Resources and Multiple Use Act of 1955, "common varieties" of minerals are not locatable (i.e., cannot be legitimately claimed) under the Mining Law. 30 U.S.C. § 611. BLM must determine whether the lands to be used for the waste rock dumps, the tailings facilities, and other non-extractive operations contain locatable minerals or common variety minerals.	Thank you for your comment.
P684	48i. Unless the company provides the necessary credible evidentiary support for the assertion of occupancy rights under the Mining Law on each claim, BLM must apply its special use permitting regulations. 43 C.F.R. Part 2900/2920 (Leases, Permits, Easements). Here, because the waste rock dumps, tailings facilities and other Project activities are not governed under any rights associated with the 1872 Mining Law as noted above, the agency must regulate all of these activities under Part 2900/2920, instead of Part 3809.	Thank you for your comment.
P685	48j. FLPMA requires BLM to "by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the [public] lands." 43 U.S.C. § 1732(b). In addition, FLPMA mandates that: "the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." 43 U.S.C. § 1701(a)(8).	Thank you for your comment.
P686	48k. FLPMA does, however, contain some limits on DOI/BLM authority over operations authorized by the 1872 Mining Law: Except as provided in section 314, section 603, and subsection (f) of section 601 of this Act and in the last sentence of this paragraph, no provision of this section or any other section of this Act shall in	Thank you for your comment.

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	any way amend the Mining Law of 1872 or impair the rights of any locators or claims under that Act, including, but not limited to, rights of ingress and egress. In managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands. 43 U.S.C. § 1732(b)(emphasis added).	
P687	48l. Under FLPMA, DOI/BLM has full discretion and authority over operations proposed on public lands, including hardrock mining operations such as the Project, to "protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." 43 U.S.C. § 1701(a)(8). However, such discretion/authority is limited to only "preventing unnecessary or undue degradation" of public resources if the application of that discretion/authority "impair[s] the rights of any locators or claims under that Act [the 1872 Mining Law]." 43 U.S.C. § 1732(b).	Thank you for your comment.
P688	48m. Here, as detailed above, neither the company nor BLM have attempted to show that the company has met the legal prerequisites of the Mining Law to have "rights" to the use and possession of its mining claims (e.g., no evidence that the claims covering all of the waste/tailings facilities contain the requisite valuable deposit of a locatable mineral). As such, there are no "rights" that can be "impaired" by BLM's full discretionary authority over those aspects of the Project that do not have the necessary factual basis to support such rights.	Thank you for your comment.
P689	48n. BLM's discretionary authority is implemented in part via BLM's special use FLPMA regulations, which apply whenever activities are not "authorized" by other laws. "Any use not specifically authorized under other laws or regulations and not specifically forbidden by law may be authorized under this part." 43 CFR § 2920.1-1. Thus, because the waste rock, tailings dump, and other ancillary facilities are not "authorized by the mining laws," absent verified evidence that these uses satisfy the Mining Law's prerequisite requirements, they are governed by Part 2900/2920, not Part 3809.	Thank you for your comment.
P690	48o. The Part 2920 FLPMA regulations require that: (b) Each land use authorization shall contain terms and conditions which shall: (1) Carry out the purposes of applicable law and regulations issued thereunder; (2) Minimize damage to scenic, cultural and aesthetic values, fish and wildlife habitat and otherwise protect the environment; (3) Require compliance with air and water quality standards established pursuant to applicable Federal or State law; and (4) Require compliance with State standards for public health and safety, environmental protection, siting, construction, operation and maintenance of, or for, such use if those standards are more stringent than applicable Federal standards. (c) Land use authorizations shall also contain such other terms and conditions as the authorized officer considers necessary to: (1) Protect Federal property and economic interests; (2) Manage efficiently the public lands which are subject to the use or adjacent to or occupied by	Thank you for your comment.

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	such use; (3) Protect lives and property; (4) Protect the interests of individuals living in the general area of the use who rely on the fish, wildlife and other biotic resources of the area for subsistence purposes; (5) Require the use to be located in an area which shall cause least damage to the environment, taking into consideration feasibility and other relevant factors; and (6) Otherwise protect the public interest. 43 C.F.R. § 2920.7(b).	
P691	48p. These FLPMA requirements – to "protect the public interest," to "Protect federal property," and to "minimize damage to scenic, cultural and aesthetic values, fish and wildlife habitat and otherwise protect the environment," are not found in the basic command to "prevent unnecessary or undue degradation" that applies to "operations authorized by the mining laws." 43 C.F.R. § 3809.1(a).	Thank you for your comment.
P692	48q. Accordingly, BLM must fully consider the alternative of regulating (and/or potentially denying) these facilities under the Part 2920 regulations including any Environmentally Preferred Alternative and the No-Action Alternative.	Thank you for your comment.
P693	48r. Similarly, BLM can only approve access and other public land uses such as pipelines, transmission lines, etc, under FLPMA's Title V Right-of-Way (ROW) provisions. Under FLPMA Title V, Section 504, the agency may grant a Right-of-Way (ROW) only if it "(4) will do no unnecessary damage to the environment." 43 U.S.C. § 1764(a). Rights of way "shall be granted, issued or renewed … consistent with … any other applicable laws." Id. § 1764(c). A right-of-way that "may have significant impact on the environment" requires submission of a plan of construction, operation, and rehabilitation of the right-of-way. Id. § 1764(d). A Title V SUP/ROW "shall contain terms and conditions which will … (ii) minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment." Id. § 1765(a). In addition, the ROW can only be issued if activities resulting from the ROW: (i) protect Federal property and economic interests; (ii) manage efficiently the lands which are subject to the right-of-way or adjacent thereto and protect the other lawful users of the lands adjacent to or traversed by such right-of-way; (iii) protect lives and property; (iv) protect the interests of individuals living in the general area traversed by the right-of-way who rely on the fish, wildlife, and other biotic resources of the area for subsistence purposes; (v) require location of the right-of-way along a route that will cause least damage to the environment, taking into consideration feasibility and other relevant factors; and (vi) otherwise protect the public interest in the lands traversed by the right-of-way or adjacent thereto. FLPMA, § 1765(b).	Thank you for your comment.
P694	48s. At least three important potential substantive requirements flow from the FLPMA's ROW provisions. First, BLM has a mandatory duty under Section 505(a) to impose conditions that "will minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment." Id. §1765(a). The terms of this section do not limit "damage" specifically to the land within the ROW	Thank you for your comment.

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	corridor. Rather, the repeated use of the expansive term "the environment" indicates that the overall effects of the ROW on cultural/historical, wildlife, environmental, scenic and aesthetic values must be evaluated and these resources protected. In addition, the obligation to impose terms and conditions that "protect Federal property and economic interests" in Section 505(b) requires that the USFS must impose conditions that protect not only the land crossed by the right-of-way, but all federal land affected by the approval of the ROW. This includes the federal waters and water rights that will be eliminated or significantly reduced by the project.	
P695	48t. The requirements in Section 505(b) mandate a USFS determination as to what conditions are "necessary" to protect federal property and economic interests, as well as "otherwise protect[ing] the public interest in the lands traversed by the right-of-way or adjacent thereto." (emphasis added). This means that the agency can only approve the ROW if it "protects the public interest in lands" not only upon which the road would traverse, but also lands and resources adjacent to and associated with the ROW. As noted herein, USFS would be unable to make a legitimate finding that industrial use of the lands served by the ROW, given the massive adverse impacts from the Mine, would "protect the public interest."	Wrong agency (USFS) cited. Thank you for your comment.
P696	48u. Third, is the requirement that the right-of-way grants "do no unnecessary damage to the environment" and be "consistent with … any other applicable laws," id. §§ 1764(a)-(c). This means that a grant of a ROW supporting other activities must satisfy all applicable laws, regulations and policies, including FLPMA, the Endangered Species Act, Organic Act, NFMA, NHPA, Clean Water and Air Acts, all state and local laws, etc. The federal courts have repeatedly held that the federal land agency not only has the authority to consider the adverse impacts on lands and waters outside the immediate ROW corridor, it has an obligation to protect these resources under FLPMA. In County of Okanogan v. National Marine Fisheries Service, 347 F.3d 1081 (9th Cir. 2003), the court affirmed the agency's imposition of mandatory minimum stream flows as a condition of granting a ROW for a water pipeline across public land. This was true even when the condition/requirement restricted or denied vested property rights (in that case, water rights). Id. at 1085-86.	Thank you for your comment.
P697	48v. Similar to the County of Okanogan and Colorado Trout Unlimited federal court decisions noted above, the Interior Department has held that the fact that a ROW applicant has a property right that may be adversely affected by the denial of the ROW does not override the agency's duties to protect the "public interest." In Kenneth Knight, 129 IBLA 182, 185 (1994), the BLM's denial of the ROW was affirmed due not only to the direct impact of the water pipeline, but on the adverse effects of the removal of the water in the first place: [T]he granting of the right-of-way and concomitant reduction of that resource, would, in all likelihood, adversely affect public land values, including grazing, wildlife, and riparian vegetation and wildlife habitat. The record is clear that, while construction of the improvements	Thank you for your comment.

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	associated with the proposed right-of-way would have minimal immediate physical impact on the public lands, the effect of removal of water from those lands would be environmental degradation. Prevention of that degradation, by itself, justified BLM's rejection of the application. 1994 WL 481924 at *3.	
P698	"48w. The Interior Department has ruled that pipelines and associated infrastructure, including those across public land related to a mining operation, are not covered by statutory rights under the Mining Law. “[A] right-of-way must be obtained prior to transportation of water across Federal lands for mining.” Far West Exploration, Inc., 100 IBLA 306, 308 n. 4 (1988) citing Desert	Thank you for your comment.
P699	Survivors, 96 IBLA 193 (1987). See also Alanco Environmental Resources Corp., 145 IBLA 289, 297 (1998) (“construction of a road, was subject not only to authorization under 43 C.F.R. Subpart 3809, but also to issuance of a right-of-way under 43 C.F.R. Part 2800.”); Wayne D. Klump, 130 IBLA 98, 100 (1995) (“Regardless of his right of access across the public lands to his mining claims and of his prior water rights, use of the public lands must be in compliance with the requirements of the relevant statutes and regulations [FLPMA Title V and ROW regulations].”)."	Thank you for your comment.
P700	48x. The Interior Board of Land Appeals has expressly rejected the argument that rights under the mining laws apply to pipelines and roads associated with water delivery: "Clearly, FLPMA repealed or amended previous acts and Title V now requires that BLM approve a right-of-way application prior to the transportation of water across public land for mining purposes. See 43 U.S.C. § 1761 (1982). As was the case prior to passage of Title V of FLPMA, however, approval of such an application remains a discretionary matter and the Secretary has broad discretion regarding the amount of information he may require from an applicant for a right-of-way grant prior to accepting the application for consideration. Bumble Bee Seafoods, Inc., 65 IBLA 391 (1982). A decision approving a right-of-way application must be made upon a reasoned analysis of the factors involved in the right-of-way, with due regard for the public interest. See East Canyon Irrigation Co., 47 IBLA 155 (1980)." BLM apparently contends that a mining claimant does not need a right-of-way to convey water from land outside the claim for use on the claim. It asserts that such use is encompassed in the implied rights of access which a mining claimant possesses under the mining laws. Such an assertion cannot be credited.	Thank you for your comment.
P701	48z. Desert Survivors, 96 IBLA 193, 196 (1987)(emphasis added). See also Far West Exploration, 100 IBLA 306, 309, n. 4 (1988)(“a right-of-way must be obtained prior to transportation of water across Federal lands for mining.”). The same analysis applies to water, tailings, and power either delivered to, or conveyed from, the project sites. The leading treatise on federal natural resources law confirms this rule: “Rights-of-way must be explicitly applied for and granted; approvals of mining plans or other operational plans do not implicitly confer a right-of-way.” Coggins and	Thank you for your comment.

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	Glicksman, PUBLIC NATURAL RESOURCES LAW, §15.21.	
P702	48aa. Lastly, BLM must comply with the financial requirements of the FLPMA regarding ROW applications and approvals, as well as for Special Use Permits. At a minimum, BLM must obtain "Fair Market Value" (FMV) for the use of federal land and resources. FLPMA requires that "the United States receive fair market value of the use of the public lands and their resources." 43 U.S.C. §1701(a)(9). "The holder of a right-of-way shall pay in advance the fair market value thereof, as determined by the Secretary granting, issuing, or renewing such right-of-way." 43 U.S.C. §1764(g). In addition, Nevada Lithium must fully "reimburse the United States for all reasonable administrative and other costs incurred in processing an application for such right-of-way and in inspection and monitoring of such construction, operation, and termination of the facility pursuant to such right-of-way." Id.	Thank you for your comment.
P703	49a. Cultural Aspects. BLM Failed to Consult with Native American Communities in a Meaningful and Effective Way The DEIS states: "Executive Order 13084 directs the BLM to establish regular and meaningful consultation and collaboration with Native American Tribal governments on the development of regulatory policies and permit approvals for proposed projects that could substantially or uniquely affect tribal communities. The BLM sent letters to the tribal representatives listed in Section 6.3.5, Tribal Organizations." (DEIS 6-2 to 6-3)	BLM has conducted ongoing government to government consultation with Native American community representatives regarding the proposed Project since 2018. During this time BLM has sent multiple letters and conducted meetings with various Native American tribal representatives and no objections to the process have been received.
P704	49b. Executive Order 13175 of November 6, 2000 requires that, "Each agency shall have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." (Section 5 (a)). Key to this executive order is "meaningful" consultation. A simple letter as sent by BLM is not meaningful to the tribes as they have stated repeatedly over the years. Even as contained in "Department of the Interior Policy on Consultation with Indian Tribes"21 requires as a "Guiding Principle," "This Policy requires a government-to-government consultation between appropriate Tribal Officials and Departmental officials." (emphasis added) Given that the process needs to "meaningful" between "appropriate Tribal Officials and Departmental officials" consultation should be an in person meeting. The policy document goes on to state, "Communication will be open and transparent without compromising the rights of Indian Tribes or the government-to-government consultation process," (emphasis added) and further discusses "Innovative and Effective Consultation Practices" which include, "Host regular meetings between the Secretary and Indian Tribes."	BLM has conducted ongoing government to government consultation with Native American community representatives regarding the proposed Project since 2018. During this time BLM has sent multiple letters and conducted meetings with various Native American tribal representatives and no objections to the process have been received.
P705	49c. BLM needed to meet in person with all of the tribes for a meaningful consultation that does not "compromise the rights of Indian Tribes." Sending merely a letter to the tribes generally disrespects the tribes and their desire for in person meetings, especially regarding a project such as Thacker Pass involving very significant changes to their lands.	There is no mandatory requirement for meetings by law, executive order, or otherwise. The BLM meets with any and all tribes that express an interest in doing so and cannot require Tribal Representatives to meet to discuss projects.

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P706	"50. Native American Cultural. In the American Indian Religious Freedom Act (AIRFA), Congress stated that "[i]t shall be the policy of the United States to protect and preserve for American Indians their inherent freedom to believe, express, and exercise the traditional religions." 42 USC § 1996 (1982). The BLM must analyze the cumulative impact to the ability of Native Americans to fully practice the traditional religions within the study area (at least as defined by the mines delineated on page two above).	Nevada Department of Transportation (NDOT) has been in contact with Lithium America regarding the future BLM Thacker Pass Lithium Mine Project. All improvements will have to meet NDOT specifications and standard plans. Based on previous discussions with the future Permittee, improvements may include roadway widening, deceleration lanes, acceleration lanes, dedicated turn lanes, roadway lighting, roadway striping, roadway signage and any other improvements deemed necessary.
P707	The analysis must include both known sacred and spiritual sites as well as traditional food and medicine gathering, important components of traditional practice."	Thank you for your comment.
P708	51a. A cumulative impact is "the impact on the environment which results from incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."22 This definition is critical to determining the proper area to be studied in a cumulative impact assessment.	The DEIS provides discussion of potential effects of reasonably foreseeable future actions where possible in addition to the disclosure of publicly available surface disturbances from past and present actions.
P709	51c. For example the cumulative effects on wetlands and riparian areas are stated to be "very limited" according to the DEIS, and it is further stated that, "If effects on wetland and riparian areas are determined to be unavoidable based on site-specific analysis, effects would be quantified through the Section 404 permit process and mitigated through enhancement, restoration, or replacement." (DEIS 5-8) Again, the DEIS passes on the required analysis putting it off to later time, so the public does not have complete information. The effects need to be quantified in the EIS.	Effects of the Proposed Action are discussed in Section 4.4 of the EIS. Specific cumulative impacts from other actions are unknown at this time and quantification of future effects to wetlands from other actions would be speculative. Other actions that directly affect Waters of the US would be required to obtain permits from the US Army Corps of Engineers under the Clean Water Act specific to that action.
P710	51d. The DEIS also provides no concrete analysis on the cumulative effects of "Wastes, Hazardous and Solid," simply stating, "mineral development and transportation corridors are the most likely to contribute cumulatively to effects to waste management within Humboldt County" (DEIS 5-18). Where is the analysis of what will be those effects?	The DEIS provides information on actions that are reasonably foreseeable and acknowledges that future development in Humboldt County would have effects on solid waste management. These effects cannot be quantified based upon available information. The BLM cannot speculate on or quantify future effects of actions that are not publicly available.
P711	51e. The Ninth Circuit recently and squarely rejected such reliance on the listing of the acreages of other projects as the primary means to review cumulative impacts: "A calculation of the total number of acres to be [impacted by the other projects] in the watershed is a necessary component of a cumulative effects analysis, but it is not a sufficient description of the actual environmental effects that can be expected from [impacting] those areas.	The DEIS provides discussion of potential effects of reasonably foreseeable future actions where possible in addition to the disclosure of publicly available surface disturbances from past and present actions.
P712	51f. Klamath Siskiyou Wildlands Center v. BLM, 387 F.3d 989, 995 (9th Cir. 2004): "[T]he general rule under NEPA is that, in assessing cumulative effects, the Environmental Impact Statement must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment."	Thank you for your comment.

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	See Neighbors of Cuddy Mountain v. United States Forest Serv., 137 F.3d 1372, 1379-80 (9th Cir.1998); City of Carmel-By-The-Sea v. United States Dept. of Transp., 123 F.3d 1142, 1160-61 (9th Cir.1997).	
P713	51g. Lands Council v. Powell, 395 F.3d 1019, 1028 (9th Cir. 2005): "The [agency] cannot simply offer conclusions. Rather, it must identify and discuss the impacts that will be caused by each successive [project], including how the combination of those various impacts is expected to affect the environment, so as to provide a reasonably thorough assessment of the project's cumulative impacts."	The DEIS provides discussion of potential effects of reasonably foreseeable future actions where possible in addition to the disclosure of publicly available surface disturbances from past and present actions.
P714	51h. Klamath Siskiyou, 387 F.3d at 1001. In a major mining and NEPA decision, the Ninth Circuit recently specifically rejected the type of brief mention or listing of projects/acreages as found in the DEIS: "In a cumulative impact analysis, an agency must take a "hard look" at all actions. An EA's analysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. … Without such information, neither the courts nor the public ... can be assured that the [agency] provided the hard look that it is required to provide."	The DEIS provides discussion of potential effects of reasonably foreseeable future actions where possible in addition to the disclosure of publicly available surface disturbances from past and present actions.
P715	51i. Te-Moak Tribe of Western Shoshone, 608 F.3d 592, 603 (9th Cir. 2010) (Rejecting EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations. Although that case involved an EA, the need for a complete cumulative impacts analysis also fully applies to an EIS).	The DEIS provides discussion of potential effects of reasonably foreseeable future actions where possible in addition to the disclosure of publicly available surface disturbances from past and present actions.
P716	51j. In Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971-974 (9th Cir. 2006), the court struck down the same sort of acreage listing and brief, generalized descriptions of mining impacts in the region. The court required BLM to include "mine-specific … cumulative data." Id. at 973. Relying on Klamath-Siskiyou, and Lands Council, the court highlighted the need for a "quantified assessment of their [other projects] combined environmental impacts" and "objective quantification of the impacts." Id. at 972. That has not been done here.	The DEIS provides discussion of potential effects of reasonably foreseeable future actions where possible in addition to the disclosure of publicly available surface disturbances from past and present actions.
P717	51k. For example, although the DEIS lists the nearby mining and other projects on cultural, Native American, water, wildlife, air, and other resources, there is no "mine-specific … cumulative data" for any other these past, present, or reasonably foreseeable future actions. Nor is there a "quantified assessment of their [other projects] combined environmental impacts" and "objective quantification of the impacts."	The DEIS provides discussion of potential effects of reasonably foreseeable future actions where possible in addition to the disclosure of publicly available surface disturbances from past and present actions. All past, present and RFFA mining actions are disclosed in Chapter 5 of the EIS.
P718	51l. Overall, this DEIS's cumulative impacts discussion is very similar to the Final EIS deemed inadequate under NEPA in Great Basin Mine Watch v. Hankins. As such, BLM must prepare a revised DEIS (and may not proceed directly to a Final EIS) to correct these deficiencies, and the other errors noted in these comments	Comment noted.

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P719	52a. NEPA requires BLM to fully analyze all mitigation measures, their effectiveness, and any impacts that might result from their implementation. NEPA regulations require that an EIS: (1) "include appropriate mitigation measures not already included in the proposed action or alternatives," 40 CFR § 1502.14(f); and (2) "include discussions of: . . . Means to mitigate adverse environmental impacts (if not already covered under 1502.14(f))." 40 CFR § 1502.16(h). NEPA requires that BLM review mitigation measures as part of the NEPA process -- not in some future decision shielded from public review. 40 CFR § 1502.16(h). This includes mitigation for all potentially affected resources such as air and water quality, wildlife, cultural, recreation, visual, etc.	The effectiveness and related impacts to the human and natural environment of applicant committed and proposed mitigation measures have been discussed in the respective resource sections of the EIS.
P720	52b. Under NEPA, the DEIS must also fully review all direct, indirect, and cumulative environmental impacts of the Project. 40 C.F.R. §§ 1502.16, 1508.8, 1508.25(c). Direct effects are caused by the action and occur at the same time and place as the proposed project. Id. § 1508.8(a). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Id. § 1508.8(b). Types of impacts include "effects on natural resources and on the components, structures, and functioning of affected ecosystems," as well as "aesthetic, historic, cultural, economic, social or health [effects]." Id. Cumulative effects are defined as: [T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7.	Thank you for your comment.
P721	52c. The DEIS must provide any meaningful analysis of the cumulative impacts of all past, present, and reasonably foreseeable future activities/actions. In its cumulative impact analysis, an agency must take a "hard look" at all actions: [A]nalysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. Without such information, neither the courts nor the public can be assured that the [agency] provided the hard look that it is required to provide. Te-Moak Tribe of Western Shoshone v. U.S. Dep't of Interior, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations).	Thank you for your comment.
P722	52d. The Ninth Circuit has repeatedly faulted the federal land agencies' failures to fully review the cumulative impacts of mining projects. In the most recent case, vacating BLM's approval of a mine, the court stated that "'in a cumulative impact analysis, an agency must take a 'hard look' at all actions that may combine with the action under consideration to affect the environment.'" Great Basin Resource Watch	Thank you for your comment.

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	v. BLM, 844 F.3d 1095, 1104 (9th Cir. 2016) (emphasis in original) (quoting Te-Moak Tribe). BLM violated NEPA because it "did not 'identify and discuss the impacts that will be caused by each successive project, including how the combination of those various impacts is expected to affect the environment.'" Id. at 1105, quoting Great Basin Mine Watch, 456 F.3d 973-74.	
P723	"52e. In Great Basin Mine Watch, the Ninth Circuit required "mine-specific . . . cumulative data," a "quantified assessment of their [other projects] combined environmental impacts," and "objective quantification of the impacts" from other existing and proposed mining operations in the region. Id. at 972-74. The agency cannot "merely list other [projects] in the area without detailing impacts from each one." Id. at 972. See also ONRC v. Goodman, 505 F.3d 884, 893 (9th Cir. 2007)."	Thank you for your comment.
P724	52f. In addition to the fundamental cumulative impacts review requirements noted above, NEPA regulations also require that the agency obtain the missing "quantitative assessment" information. 40 C.F.R. § 1502.22. "If there is 'essential' information at the plan- or site-specific development and production stage, [the agency] will be required to perform the analysis under § 1502.22(b)." Native Village of Point Hope v. Jewell, 740 F.3d 489, 499 (9th Cir. 2014). Here, the adverse impacts from the Project when added to other past, present, or reasonably foreseeable future actions is clearly essential to BLM's determination (and duty to ensure) that the projects comply with all legal requirements and minimizes all adverse environmental impacts.	Thank you for your comment.
P725	52g. Under NEPA, BLM must also fully analyze the baseline conditions of all potentially affected resources. BLM is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 CFR § 1502.15. The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process. "Without establishing the baseline conditions which exist ... before a project begins, there is simply no way to determine what effect the project will have on the environment, and consequently, no way to comply with NEPA." Great Basin Resource Watch, 844 F.3d at 1101, quoting Half Moon Bay Fisherman's Mktg. Ass'n. v. Carlucci, 857 F.2d 505, 510 (9th Cir.1988). "[W]ithout [baseline] data, an agency cannot carefully consider information about significant environment impacts. Thus, the agency fails to consider an important aspect of the problem, resulting in an arbitrary and capricious decision." N. Plains Resource Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1085 (9th Cir.2011). This includes the requirement to fully analyze for public review the quality and quantity of ground and surface waters, wildlife, recreation, cultural, air quality, and all potentially affected resources.	Baseline resource information is presented in Appendix G of the EIS. This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P726	52h. FLPMA and BLM mining regulations require that all activities on public land comply with all environmental protection standards, including air and water quality standards. See, e.g., 43 CFR § 3809.5 (definition of "Unnecessary of Undue	Thank you for your comment.

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	Degradation" prohibited under FLPMA includes "fail[ure] to comply with one or more of the following: … Federal and state laws related to environmental protection."); § 3809.420(b)(4) (listing Performance Standards that must be met, including the requirement that "All operators shall comply with applicable Federal and state air quality standards, including the Clean Air Act (42 U.S.C. 1857 et seq.)."	
P727	52i. The same is true for operations that are not specifically authorized by the 1872 Mining Law (such as the waste and tailings facilities discussed above) which are properly governed by DOI/BLM's FLPMA special use regulations : "(b) Each land use authorization shall contain terms and conditions which shall: … (3) Require compliance with air and water quality standards established pursuant to applicable Federal or State law." 43 C.F.R. §2920.7(b)(3). NEPA requires that: "Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of sections 101 and 102(1) of the Act [NEPA] and other environmental laws and policies." 40 C.F.R. § 1502.2(d).	Thank you for your comment.
P728	53a. Project Approval would Violate FLPMA'S UUD Mandate. Taken together, the significant, and in many cases unmitigated, damage to critical environmental, cultural, historical, and religious resources noted herein fails to comply with FLPMA"s mandate that BLM "shall … take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C. § 1732(b). This is known as the "UUD" standard. As the leading FLPMA and mining federal court decision states, this duty to "prevent undue degradation" is "the heart of FLPMA [that] amends and supersedes the Mining Law." Mineral Policy Center v. Norton, 292 F.Supp.2d 30, 42 (D.D.C. 2003). FLPMA, by its plain terms, vests the Secretary of the Interior [and BLM] with the authority – and indeed the obligation – to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land. Id. "FLPMA's requirement that the Secretary prevent UUD supplements requirements imposed by other federal laws and by state law." Center for Biological Diversity v. Dept. of Interior, 623 F.3d 633, 644 (9th Cir. 2010).	Thank you for your comment.
P729	53b. BLM complies with this mandate "by exercising case-by-case discretion to protect the environment through the process of: (1) approving or rejecting individual mining plans of operation." Id. at 645, quoting Mineral Policy Center, 292 F.Supp.2d at 44. The Ninth Circuit has stressed the "environmental protection provided by the MPO [mining plan of operation] process." Center for Biological Diversity, 623 F.3d at 645 (emphasis in original).	Thank you for your comment.
P730	53c. BLM cannot approve a mining plan of operations that would cause "unnecessary or undue degradation." 43 C.F.R. § 3809.411(d)(3)(iii). BLM's mining regulations further require that all operations "must take mitigation measures specified by BLM to protect public lands." 43 CFR § 3809.420(a)(4). As noted herein, BLM violated these overarching duties.	Thank you for your comment.

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P731	52i. The same is true for operations that are not specifically authorized by the 1872 Mining Law (such as the waste and tailings facilities discussed above) which are properly governed by DOI/BLM's FLPMA special use regulations : "(b) Each land use authorization shall contain terms and conditions which shall: … (3) Require compliance with air and water quality standards established pursuant to applicable Federal or State law." 43 C.F.R. §2920.7(b)(3). NEPA requires that: "Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of sections 101 and 102(1) of the Act [NEPA] and other environmental laws and policies." 40 C.F.R. § 1502.2(d).	Thank you for your comment.
Comment Letter From Jennifer Hall		
P732	This project will destroy valuable habitat that will adversely impact species diversity necessary for continued life on earth, if we continue to destroy our environment to extract resources soon there will be nothing left and life on earth will die. Humans are not the only species on earth, we just act like it. Please consider future generations in your plans, not just immediate profits and greed.	Thank you for your comment.
Comment Letter From Pam Harrington		
P733	Lithium Nevada has reached out on several occasions to Trout Unlimited and other organizations as the Thacker Pass project plans were being developed. The communication and information sharing have been appreciated as this proposal is extremely complex.	Thank you for your comment.
P734	Trout Unlimited is the leading coldwater conservation organization with a mission to protect, conserve and restore our nation's trout and salmon fisheries and their watersheds. With more than 300,000 members and supporters nationwide, TU has a strong base of anglers, hunters, and recreationists in Nevada who depend upon Nevada's unique natural resources for their multiple-use activities, both now and in the future. Public lands, such as these within the Montana Mountains, sustain some of the best wildlife habitat for multiple species in Nevada, including threatened Lahontan Cutthroat Trout (LCT).	Thank you for your comment.
P735	Threatened Lahontan cutthroat trout are present in some of the streams near the site, although modelling shows the expected ten-foot drawdown area will not impact these stream reaches. There is a concern for unintended impacts to wildlife. Mitigation for impacts that might not be felt until decades after mining are not realistic (Appendix P Section 8, Option 4. How does the BLM bond and ensure funds are available for an action that might be needed decades after closure? How does the BLM bond and ensure funds for actions that may be needed in perpetuity?	Thank you for your comment. LNC has developed a water monitoring plan and has proposed groundwater monitoring and contingency mitigation measures. The monitoring plan is included in the Thacker Pass Project, Water Quantity and Quality Impacts Report-Addendum I (Piteau 2020a) that is included in Appendix P to the DEIS. BLM has also proposed additional monitoring to minimize drawdown effects to perennial surface waters as summarized in Section 4.3.2 of the DEIS. It is anticipated that BLM's annual review of monitoring results combined with the updated groundwater modeling predictions would provide early warning of potentially undesirable (and unanticipated) impacts to water-dependent resources to allow for possible implementation of appropriate adaptive management measures to mitigate

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		their effects. Implementation of these measures would likely reduce or minimize potential impacts to water dependent resources. In addition, a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation, and would consist of the applicant, the BLM, the NDOW, the USFWS, and any other agencies or academic institutions as appropriate. [BONDING INFORMATION...]
P736	The Thacker Pass project would affect the local community and wildlife on a multitude of levels. Trout Unlimited suggests that a Good Neighbor Agreement be formed with the local interests and Lithium Nevada. This instrument could be used to provide direct communication between the local community and Lithium Nevada. Monitoring and mitigation measures could be reported on regularly. Agreements on operation and expectations could be memorialized which is especially important given the long timeframe for the project and potential impacts. Monitoring and mitigation reports, along with other concerns, could be reviewed by a third-party reviewer for the community. We hope the BLM can consider integrating a Good Neighbor Agreement into the ROD, if this project moves forward. Lithium Nevada staff have expressed the desire to be a good neighbor in the community, this approach would help all to achieve this vision.	Thank you for your comment. A biological resources focused Technical Assistance Group would be created for the Project to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation. The TAG would consist of the applicant, the BLM, the NDOW, the USFWS, and any other agencies or academic institutions as appropriate.
Comment Letter From Susan Juetten		
P737	Please consider my concerns regarding the proposed Thacker Pass lithium mine and take them into account in the NEPA process.	Thank you for your comment.
P738	Of greatest concern to me are the potential effects of the proposed mine on wildlife, particularly sage grouse, bighorn sheep, golden eagles, and Lahontan Cutthroat Trout. I would like to see that all potential harm from the proposed action and alternatives be thoroughly analyzed and that baseline studies be thorough to ensure the protection these species.	Thank you for your comment. Effects to wildlife and special status species, including sage grouse, bighorn sheep, golden eagles, and Lahontan Cutthroat Trout have been fully disclosed in this EIS, as required under NEPA. Additionally, monitoring plan and a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation. The TAG would consist of the applicant, the BLM, the NDOW, the USFWS, and any other agencies or academic institutions as appropriate.
P739	Up to this point, the Bureau of Land Management has not done adequate baseline analysis to fully understand the effect of the mine on wildlife, water, air, and land resources; the analysis of impacts is not in sufficient enough detail for me to understand how the Bureau of Land Management drew its conclusions and whether or not there are adequate mitigation measures.	Thank you for your comment. LNC has developed a water monitoring plan and has proposed groundwater monitoring and contingency mitigation measures. The monitoring plan is included in the Thacker Pass Project, Water Quantity and Quality Impacts Report-Addendum I (Piteau 2020a) that is included in Appendix P to the DEIS. BLM has also proposed additional monitoring to minimize drawdown effects to perennial surface waters as summarized in Section 4.3.2 of the DEIS. It is anticipated that BLM's annual review of monitoring results combined with the updated groundwater modeling predictions would provide early warning of potentially undesirable

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		(and unanticipated) impacts to water-dependent resources to allow for possible implementation of appropriate adaptive management measures to mitigate their effects. Implementation of these measures would likely reduce or minimize potential impacts to water dependent resources. In addition, a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation, and would consist of the applicant, the BLM, the NDOW, the USFWS, and any other agencies or academic institutions as appropriate.
P740	I would specifically like to point out that the Lahontan Cutthroat Trout, listed as a threatened species under the Endangered Species Act rely on streams that could potentially be affected by the project's water use.	Thank you for your comment. The EIS has fully disclosed potential direct and indirect effects to LCT and their habitat as required under NEPA. The BLM has been working closely with the USFWS to analyze potential effects on LCT from the Project. There are no anticipated direct effects expected from construction or operation of the proposed Project on LCT. Proposed Monitoring and Mitigation Plans and Adaptive Management strategies would also minimize any potential affects to this species.
P741	Furthermore, for all wildlife in the area, adequate mitigations should be sought and the protection of habitat prioritized for mitigation--especially the Montana Mountains, which are biologically sensitive (and hold great intrinsic value by many in the community as well). The protection of the Montana Mountains as an Area of Critical Environmental Concern should be thoroughly considered.	Thank you for your comment. BLM is applying mitigation that is required under Federal and state regulation. See Section 4.5.7 for discussion of wildlife mitigation.
P742	Also, the public engagement process around Thacker Pass must more closely align with NEPA than it has so far, and more time must be allotted to ensure the public is able to thoroughly understand the proposed actions and have their concerns fully taken into account.	This NEPA process is being executed under the protocol set by Secretarial Order 3355. The BLM has made good faith efforts to provide all information regarding the Project and its potential effects. Due to State and Local restrictions on public gatherings resulting from the COVID virus, online meetings were conducted for the safety of the community.
P743	It does not seem with the intent of the law to streamline a project in the midst of a pandemic. There needs to be adequate means of engaging the public, perhaps multiple meetings in outside locations or virtual processes if used enhanced to compensate for the inability to meet in person.	This NEPA process is being executed under the protocol set by Secretarial Order 3355. The BLM has made good faith efforts to provide all information regarding the Project and its potential effects. Due to State and Local restrictions on public gatherings resulting from the COVID virus, online meetings were conducted for the safety of the community.
P744	More time should be devoted to the permitting process, not less, for the sake of the public. Lithium Nevada's plan for an expedited permitting for Thacker Pass needs to be critically evaluated in light of this, and the comment deadline for the Draft EIS needs to be extended at least through the end of September.	This NEPA process is being executed under the protocol set by Secretarial Order 3355.
Comment Letter From Jim Kidd		
P745	Sulfur will be burned which will create sulfur dioxide gas, most of this sulfur dioxide gas will be captured and converted to sulfur trioxide and ultimately sulfuric acid.	The total facility-wide emissions for all regulated air pollutants are presented in the Thacker Pass Project NEPA Air Quality Impact Analysis Report [DEIS Table 4.10 and Appendix K, Section 2.3.7]. As discussed in the report, the

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		potential impacts from each criteria pollutant are below the National and Nevada Ambient Air Quality Standards [DEIS Table 4.12 and Appendix K, Section 3.14].
P746	There will be scrubbers collecting the pollution but scrubbers generally are not 100% effective. Due to the fact hundreds of tons of sulfur will be burned every day if even 1% is released that will be a substantial amount.	The total facility-wide emissions for all regulated air pollutants are presented in the Thacker Pass Project NEPA Air Quality Impact Analysis Report [DEIS Table 4.10 and Appendix K, Section 2.3.7]. As discussed in the report, the potential impacts from each criteria pollutant are below the National and Nevada Ambient Air Quality Standards [DEIS Table 4.12 and Appendix K, Section 3.14].
P747	When the Air Quality Permits come out we need to pay close attention to the maximum allowable discharges and the required monitoring of air discharges.	43 CFR 3809.420 (a)(6) requires that operations must be conducted in a manner that complies with all pertinent Federal and state laws, including requirements of state air quality permits.
P748	There will probably be some release of small particles of Sulfuric Acid, and Sulfur Trioxide.	The total facility-wide emissions for all regulated air pollutants are presented in the Thacker Pass Project NEPA Air Quality Impact Analysis Report [DEIS Table 4.10 and Appendix K, Section 2.3.7]. As discussed in the report, the potential impacts from each criteria pollutant are below the National and Nevada Ambient Air Quality Standards [DEIS Table 4.12 and Appendix K, Section 3.14].
P749	There will probably also be some release of sulfur dioxide.	The total facility-wide emissions for all regulated air pollutants are presented in the Thacker Pass Project NEPA Air Quality Impact Analysis Report [DEIS Table 4.10 and Appendix K, Section 2.3.7]. As discussed in the report, the potential impacts from each criteria pollutant are below the National and Nevada Ambient Air Quality Standards [DEIS Table 4.12 and Appendix K, Section 3.14].
P750	Plant accident consequences. This major industrial facility will store 13,000 tons of molten sulfur. Molten sulfur will be burned here. An uncontrolled fire in storage could release enormous quantities of toxic chemicals. According to the Plan of Operations, Chlorine gas, and Hydrogen Sulfide gas will be used in processing (these gasses are highly toxic and both have historically been used in chemical warfare). A fire or any other major accident would pose significant risks to the Community.	Chlorine gas would not be stored or transported at the facility. Dry chlorine gas would be produced within the metal cells and would be delivered through process piping to fully automated skid-mounted sodium hypochlorite continuous production units. The dry chlorine gas would be reacted with caustic soda and water to produce sodium hypochlorite solution (chlorine bleach). Chlorine gas produced by the process would remain contained within the process equipment prior to consumption in the sodium hypochlorite production process. Dry chlorine gas would be produced and consumed within the sodium hypochlorite production process. Hydrogen sulfide gas also would not be stored or transported at the facility. Hydrogen sulfide gas would be generated within the lithium sulfide production process and consumed in the production of lithium sulfide. Hydrogen sulfide gas produced by the process would remain contained within the process equipment prior to consumption in the lithium sulfide production process. A maximum of 13,454 tons of molten sulfur would be stored on site at any one-time during Phase I operation: a

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		maximum of 26,908 tons during Phase II operation. Molten sulfur would be stored within the Sulfuric Acid Plant and Sulfur/Sulfuric Acid Storage/Loading/Unloading area as shown in EIS Appendix A Figure 2-4 Proposed Plant Site Layout. Storage of molten sulfur and operation of molten sulfur storage tanks would be conducted in accordance with hazardous materials storage permits issued by the Nevada Department of Motor Vehicles and Public Safety, Fire Marshall Division, Fire Protection Licensing Bureau, HAZMAT Office. Molten sulfur storage tanks would be equipped with heating and ventilation systems and control and monitoring systems to maintain the temperature of the sulfur within safe operating limits. LNC would establish a fire protection plan, including fire protection equipment, for the Project in accordance with State Fire Marshal standards, and pursuant to 30 CFR 56.4330(a), LNC would establish an emergency response plan and emergency firefighting, evacuation, and rescue procedures and coordinate in advance such procedures with available firefighting organizations for emergency response.
P751	It appears the Tailings pile will be a chemical Dump. Enormous quantities of chemicals are going to be hauled into the community. It appears that the tailings pile will be a defacto dump for chemicals. It also appears that many of the chemicals dumped will have entirely originated outside of the mine site, (now in different chemical forms). It appears as though millions of tons of imported chemical compounds will be dumped over the life of the mine. It also looks as though even usable compounds such as gypsum and epsom salts will be dumped rather than recycled into usable products, see the Plan of Operations. "The unleached clay solids and the solids generated during acid leaching, primarily gypsum, will be removed by pressure filtration prior to being conveyed to the CTFS for disposal." POO page 47 "The magnesium sulfate salt generated, otherwise known as Epsom salt, will be centrifuged prior to being conveyed to the CTFS for disposal" POO page 47 CTFS stands for Clay Tailings Filter Stack (i.e the tailings pile)	The amounts of chemical reagents and fuels and fluids that would be used in production operations are reported in EIS Table 4.17. Chemicals and Reagents (Hazardous Materials) on Site and Table 4.18. Storage and Use of Fuels and Equipment Maintenance Fluids on Site including the annual consumption of chemicals and reagents and fuels and fluids and maximum quantities that would be stored on site at any one time. A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS. A summary table of the projected output and tailings pile constituents has been added to the EIS.
P752	Smell and Emissions from the Tailings Pile? There will probably be Sulfuric Acid remaining in the tailings pile. While this can be somewhat neutralized with other chemicals, the degree it is neutralized is dependent upon the amount of chemicals used and the efficiency of mixing. Even if all Sulfuric Acid was to be converted into Sulfate, bacteria and chemicals in the soil can convert safer sulfur compounds into dangerous ones. There is also conflict within the permit applications with some locations saying all Sulfuric Acid will be converted to Sulfate Salts. But the Water Pollution Control Permit on page 3-11 acknowledges the potential of continued leaching (theoretically controlled by the liner).	These questions center around the potential for sulfate reduction in the tailings pile. The reduction of sulfate produces hydrogen sulfide gas. Very specific conditions must exist at the subsurface for sulfate to be reduced and none of these conditions exist in the tailings pile. Sulfate reduction in the subsurface is almost exclusively mediated by sulfate reducing bacteria. These bacteria are anaerobes that gain energy for growth from the oxidation of organic material using sulfate as the terminal electron acceptor. This is why hydrogen sulfide gas (rotten egg odor) is sometimes associated with landfills as there is commonly enough organic material to sustain the growth of sulfate reducing bacteria. There simply is no organic matter in the Thacker Pass tailings pile that could sustain growth of sulfate reducing bacteria. If any organic material was present

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		in the ore, it is removed during the acid leaching process and no organic material is added to the tailings during the production process.
P753	Concerns with Leaching Toxic Materials. Sulfides are some of the worst polluters, if large amounts of Sulfuric Acid remains in ore it continually leaches out metals and radioactive materials. These can then contaminate groundwater and water bodies. The bottom of the tailings pile will be lined. However, we need to ensure that the liner will last indefinitely and not be subject to puncture or overflow. Linings that are subject to failure could make contamination problems worse since they focus contaminates at the source of the leak rather than broadly dispersed. Read about Sulfide contamination at a historic copper mine here. Copper mines have historically been known as some of the worst polluters since sulfides are often encountered during the mining process. Copper mines now are often able to recycle the sulfur found in the ore, to utilize in their processing. The Thacker Pass Lithium mine is instead proposing to import millions of tons of Sulfur over the life of the mine.	A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS. Tailings impoundments for disposal of mining and processing wastes are subject to regulation and permitting by the Nevada Department of Environmental Protection (NDEP) Bureau of Mining Regulation and Reclamation (BMRR) under Nevada regulations for Mining Facilities (NAC 445A.350-NAC 445A.447). Major permits that would be required for construction and operation of the facility are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. The NDEP BMRR has established requirements for waste rock, overburden, and ore characterization and evaluation and for ecological risk assessment for proposed mining projects
P754	Concerns with Airborne Mine dust and Smell from Tailings Pile. This area is subject to heavy winds and dust storms. If dust blows off of tailings pile, would that dust still contain acid? What would the impact of airborne Sulfate Salt dust be? And would that impact the health of surrounding communities? Read about the dangers Sulfuric Acid Here. If the mine has dust abatement procedures what happens if the mine goes broke?	43 CFR 3809.420 (a)(6) requires that operations must be conducted in a manner that complies with all pertinent Federal and state laws, including requirements of state air quality permits.. Long-term financial guarantees for reclamation costs are addressed under the regulatory authority of the Nevada Division of Environmental Protection.
P755	Sulfur Compounds can be Unstable and Convert to other forms that Smell Bad or are Toxic. Certain species of bacteria synthesize sulfur and readily convert safe sulfur compounds into compounds that stink or are toxic. Even the very stable gypsum (drywall) can be converted by bacteria into the foul smelling toxic hydrogen sulfide (read gypsum conversion to hydrogen sulfide in landfills here, Here is a separate power point discussing hydrogen sulfide produced at landfills in South Carolina. Another article discusses the sulfur conversion in groundwater read about sulfur converting bacteria in groundwater here. Will bacteria colonize the tailings pile and result in toxic or foul smelling gas?	Thank you for your comment.
P756	Please fully investigate these environmental concerns and prioritize the local residents' health and businesses over the concerns of distant operators.	The EIS includes assessments of impacts to air quality, water quality, and aquatic and terrestrial biota from construction and operation of the facility, based on the mining operations, consumption of chemicals and reagents, and production of products. A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS. A summary table of the projected output and tailings pile constituents has been added to the EIS.
Comment Letter From Spencer Morgan		
P757	I am writing to express my opposition to the proposed lithium mine in Thacker Pass. I find it absurd that it is even being considered to build this mine. It will create	Comment noted.

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	massive amounts of land and water pollution and destroy habitat all for the illusion of "green" energy. Please do not approve this project.	
Comment Letter From Dennis Morrison		
P758	The Thacker Pass lithium mine in Northern Nevada will have a lifespan of over 40 years and burn 11,000 gallons of diesel per day. It will also burn 1,896 tons of sulfuric acid a day, pollute water resources and eventually use up to 5,200 acre feet of water per year. It is the most dirty way to produce green energy. It will impact Lahontan cut-throat trout, golden eagles, bighorn sheep and sage grouse. Lithium mining is not green. It uses up water, pollutes air and water resources, is carbon intensive, requires a huge land footprint and is speculative. The EIS states that :"the purpose is to approve the project" apparently ignoring the required No Action Alternative. Green energy should not prop up a wasteful lifestyle. There should be more effort given to Lithium recycling. We can do much better than this environmental disaster. Please disapprove or take the No Action alternative on Thacker Pass.	Thank you for your comment.
Comment Letter From Jan Morrison		
P759	My family and I are very much in support of the Thacker Pass lithium mine and related facilities. We have followed this project for several years and have read all the updates that Lithium Nevada has provided and also the detailed information provided through the Winnemucca Office of the BLM. From the beginning, we appreciated the approach Lithium Nevada took that moved the active mining location out of the Montana Mountains key hunting, recreation, and sage grouse areas. We are excited that the company embraces and is working towards a carbon-neutral footprint. Recognizing that the current large sources for lithium are not in the U.S., this project will provide a plentiful supply of this valuable mineral within our borders, and secure our country's self-sufficiency. The mining of resources throughout our area provides the base of a very good economy. However, even though those resources are mined here, they are transported and processed elsewhere. Lithium Nevada will mine and process the mineral here, eventually producing a finished product. This is a great economic diversification, the kind that is needed to provide good jobs and long-term stability for our community. Thank you for this opportunity to comment. We view Lithium Nevada as a great neighbor and positive addition to our community.	Thank you for your comment.
Comment Letter From George Payne		
P760	I call Kings River Valley my home along with many other Humboldt County, Nevada residents. Many of us live within a few miles of the project area, closer than both Orovada and McDermitt. Most of us commute to Orovada, McDermitt, and Winnemucca on a regular basis; that is daily for school and employment, to the post office, for shopping, auto repair, and many other important daily activities. We have a K-8 school located in the valley as well as a community center and a store.	Thank you for your comment.
P761	Despite an informational meeting about the project that was held in Kings River, the	Revisions to the EIS have been included to revise and clarify that the nearest

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	draft EIS is almost silent on its impact to our residents. For example, under 4.12.1 of the EIS which addresses issues such as public safety, lighting, and traffic, only Orovada and McDermitt are identified as near the project site. In fact, Kings River valley residents will be just as impacted, if not more so, by such things as night sky lighting and increased traffic.	designated residential area is located 19 miles from the Project (Orovada), that the nearest residence is located approximately 0.5 miles from the proposed mine site, and that several residences are located in the Kings River Valley.
P762	The 4.12 mitigation recommendation is to hire residents from all locales to include Kings River. I fail to see what that has to do with the issues of lighting, public safety, etc.	The cited mitigation measure is in regard to supporting local hiring to reduce the effect of hiring staff positions from outside of Humboldt County.
P763	The fact of the matter is that Kings River Valley residents will be impacted by: a. Light pollution as no mitigation requirement exists and we are the closest community to Thacker Pass b. Increased vehicle collisions especially when one considers the only EIS recommendation is to possibly put in a turn lane on US 95 at Orovada. (4.13.2) c. The adverse visual effects of the surface disturbances related to the mine and chemical plant that Kings River Valley residents will see in their commutes. d. The smell of sulfur from a chemical plant burning hundreds of tons of sulfur daily.	LNC will comply with all requirements and conditions of its air quality permits. LNC will comply with NDEP regulation NAC 445B.22087, which prohibits emissions of substances that may cause odors. If the project produces odors that NDEP determines violate NAC 445B.22087, LNC will implement appropriate mitigation measures. Off-site modifications to state and local roadways is the authority of NDOT. On-site transportation modifications to roads will be addressed by NDOT in the operators Encroachment Permit.
P764	Alternatives B and C appear to be cooked up to make Alternative A look good. They do not include any viable choices. This project has developed into more of a toxic chemical plant than a mine. It includes the hauling of scores of truckloads of dangerous chemicals to the project site, burning hundreds of tons of sulfur per day, and the production of tons of sulfuric acid. A realistic alternative would have been to assess having the chemical plant located in a more remote and safer location.	Alternatives B and C were developed in response to potential water quality effects. An off-site processing alternative is not considered economically feasible.
P765	The EIS acknowledges significant loss to the big game wildlife habitat, wildlife avoidance, and fragmentation due to site disturbance and exploratory drilling. This is in addition to wildlife mortality associated with increased traffic on state route 293. However, other than the creation of some sort of wildlife focus group, there appears to be no concrete big game conservation plan.	Thank you for your comment. LNC has incorporated design features into the Proposed Action to minimize wildlife habitat disturbance and loss to the greatest extent possible. Habitat would be incrementally lost over the life-of-mine, not all at once, and LNC would initiate concurrent reclamation in mine areas no longer active. Once the mine site is reclaimed, habitat would be restored for big game species. In addition, a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources and to evaluate the success of mitigation. The TAG would consist of the applicant, the BLM, the NDOW, the USFWS, and any other agencies or academic institutions as appropriate. Instruction Memorandum (IM) 2019-018 directs the BLM to include compensatory mitigation in all of the action alternatives in a NEPA analysis only when it is required as part of a state plan, program, or authorization. Currently, no such requirements for compensatory mitigation exist for big game species, and LNC has not voluntarily committed to participating in compensatory mitigation programs for Bighorn Sheep.
P766	With respect to sage grouse, the EIS says and I quote “LNC is working with the SETT to utilize the CCS to offset effects of the proposed project’s surface	Thank you for your comment and we apologize for any confusion or lack of clarity in the document. Acronyms are spelled out earlier in the document and

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	disturbance to GRSG and sagebrush habitat." Too many acronyms, this statement needs to be translated into English.	should read: " Lithium Nevada Corporation (LNC) is working with the Sagebrush Ecological Technical Team (SETT) to utilize the Conservation Credit System (CCS) to offset effects of the proposed project's surface disturbance to Greater Sage-Grouse (GRSG) and sagebrush habitat."
P767	It is my recommendation that Nevada Lithium should be required to plant sagebrush seed in the Montana Mountains in areas impacted by the Holloway fire to mitigate both big game and sage grouse habitat loss.	Thank you for your comment.
P768	Uranium will be naturally encountered during the mining process and, as I understand it, will end up in the tailings pile. Contamination will be prevented with a tailings pile liner. Is there a chance the liner will fail? How will the soil and water contamination threshold be determined? What will happen to the quality of our water and soil if the liner fails? These are questions of significant environmental and public safety concern.	See response to comment P220 regarding the evaluation of the potential environmental risk from uranium in solution. Tailings impoundments for disposal of mining and processing wastes are subject to regulation and permitting by the Nevada Department of Environmental Protection (NDEP) Bureau of Mining Regulation and Reclamation (BMRR) under Nevada regulations for Mining Facilities (NAC 445A.350-NAC 445A.447). Major permits that would be required for construction and operation of the facility are identified in EIS Appendix O, *Regulatory Setting and Project Permits*, Table O.2. *Major Permits and Approval*s. The NDEP BMRR has established requirements for waste rock, overburden, and ore characterization and evaluation and for ecological risk assessment for proposed mining projects, including for disposal of naturally-occurring radioactive material from mining operations. NDEP mining regulations do not require or anticipate separation of naturally-occurring radioactive material prior to disposal of mining and processing wastes. The Thacker Pass facility Clay Tailings Filter Stack is being designed as a zero-discharge facility as defined under Nevada regulation NAC 445A.385. "Zero discharge" means the standard of performance for the protection of surface waters which requires the containment of all process fluids. This type of HDPE lined facility is considered a proven technology that is commonly used for mine facilities in Nevada (and for landfills throughout the country) to prevent leachate from seeping out of the facility. Therefore, the BLM considers the case of a liner failure to be highly unlikely. However, groundwater monitoring will be used to verify that the leakage does not occur in accordance with the NDEP Water Pollution Control Permit monitoring requirements. In the unlikely event that groundwater monitoring detects leakage from the facility, impacts to water quality would be mitigated as required by the NDEP in accordance with the Water Pollution Control Permit requirements. Therefore, it is anticipated that effects to water resources from discharge would not occur.
P769	Finally, I respectfully disagree with representations already made by Nevada Lithium and comments from the BLM regarding this project (see my public scoping	Thank you for your comment. A Lighting Management Plan has been developed by the applicant and aspects of the plan are included in the analysis

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	comments). Therefore, when they say Nevada Lithium will develop a plan to monitor night sky issues, study big game impacts, survey, monitor, and focus on various other environmental issues; credibility with me is lacking. And let me be clear, public trust is an important and substantive issue.	of visual resources in Section 4.15 of the FEIS.
Comment Letter From Javier Riviera		
P770	As the property owner of the office buildings located on 91 Malarkey Street in Winnemucca and the owner of Chihuahua's Restaurant, I have come to know the Lithium team very well. I am writing to express support for the Thacker Pass Project. I have a good understanding of the project and appreciate the economic benefits and much needed employment opportunities this project will bring to Humboldt County. Lithium Nevada has become active in our community supporting the Winnemucca Food Bank, Great Basin College, Winnemucca Domestic Violence Services, and local schools. Lithium Nevada is a good company and a pleasure to do business with, I am pleased to have them join our community. I will also be happy to offer our restaurant banquet room for any meetings or our recently purchased hotel rooms if they need assistance in rooming extra individuals.	Comment noted.
Comment Letter From Mac Smason		
P771	The giant lithium mine proposed for Thacker Pass NV is a horrible environmental problem & must be stopped!	Comment noted.
Comment Letter From Richard Stone		
P772	As the Bureau of Land Management (BLM) reviews the Thacker Pass Environmental Impact Statement (EIS) and weighs the community impacts of the project, please know that the City of Winnemucca supports the project and looks forward to the benefits it will bring to our city. Winnemucca has worked closely with Lithium Nevada over the past several years while the company has designed the Thacker Pass project. We are eager for construction and hiring to begin.	Thank you for your comment.
P773	Thacker Pass will help diversify and strengthen our economy as we work to recover from the COVID pandemic. We look forward to the construction jobs that will provide much needed economic actively; moreover, the project will bring as many as 300 quality fulltime jobs once operations begin. Most of those employees will be located in Winnemucca helping our community to prosper.	Thank you for your comment.
P773	Thacker Pass will help diversify and strengthen our economy as we work to recover from the COVID pandemic. We look forward to the construction jobs that will provide much needed economic actively; moreover, the project will bring as many as 300 quality fulltime jobs once operations begin. Most of those employees will be located in Winnemucca helping our community to prosper.	Thank you for your comment.
P774	Lithium Nevada has already become an active member of our community supporting our K-12 schools and the Great Basin College. It is helping to provide training	Thank you for your comment.

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	opportunities through the newly created BuildNV program ensuring Winnemucca residents will be given every opportunity to gain employment at Thacker Pass. It supports our local Food Bank, Winnemucca Domestic Violence Services, the Great Basin Sagebrush Restoration Fund and more. Lithium Nevada has already proven to be a good addition to Winnemucca, and we look forward to the construction and operation of Thacker Pass, which will provide profound benefits to our city.	
P775	Thank you for your thorough work on the Thacker Pass EIS. If you need any additional information regarding the City's support for the project, please do not hesitate to call me.	Thank you for your comment.
Comment Letter From Ken Tipton		
P776	Humboldt County, Nevada (County) offers these comments to the proposed Thacker Pass Lithium Mine Project (project) Draft Environmental Impact Statement (DEIS). Given the magnitude of this document and short comment period offered, the County reserves the right to add, supplement or revise these comments.	Thank you for your comment.
P777	Of the approximately 6.2 million acres that make up the County, about 4.3 million acres are public lands managed by the Bureau of Land Management (BLM). BLM-managed public land in the County supports multiple uses, critical watersheds, scenic values, and critical wildlife habitat which are all important to the County's customs, culture, and economy. While the County is generally supportive of the project given the positive economic development opportunities it will generate, the County wants to ensure that the project is developed in a manner that appropriately and adequately avoids, minimizes, or mitigates negative impacts to natural resources, multiple uses of public lands, and private property, including water rights.	Thank you for your comment.
P778	The County appreciates the BLM's inclusion and citation to the Humboldt County Regional Master Plan, and generally agrees that the project is consistent to the pertinent goals and policies. Sections for the Humboldt County Regional Master Plan pertinent to this project include: From the Open Space Element: Goal: To guide development within well-defined boundaries that will enhance the health, safety and welfare of the community and its residents, promote economic development, and protect the region's natural environment.	County Master Plan goals and policies relevant to the proposed Project have been added to Section 1.5 of the FEIS.
P779	"From the Economic Development Element: Goal: To maintain and enhance natural resource-based industries including mining, agriculture, ranching, recreation and tourism, and seek value-added manufacturing of those resources. Policy: Identify and manage important natural resource lands to be used for resource-based industries. Policy: Promote opportunities for additional products based on local resources and to increase production of resources that are underutilized within the region.	
P780	Policy: Encourage increased retail trade and tourism by protecting and enhancing the appearance of the built and natural environments."	County Master Plan goals and policies relevant to the proposed Project have been added to Section 1.5 of the FEIS.
P781	Further, the County has an approved Water Resources Plan which should also be	County Master Plan goals and policies relevant to the proposed Project have

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	cited by the BLM on page 1-6 of the DEIS. The below excerpts from that Plan are pertinent to this project: • General Policy 1: The County supports the doctrines of prior appropriation and beneficial use as established by Nevada State law, and recognizes that the right to buy, sell, and own water rights is a property right available to individuals, corporations, municipalities, and other organizations. o Procedure: The County supports private development of water resources on private, State and federal lands for beneficial use in Humboldt County in a manner that does not deplete or degrade water resources, lead to impacts on natural resources, Health & Safety or negatively impact the economy of the County. The County supports beneficial uses including, but not limited to, municipal water supply, economic development (industrial uses / mining and milling), irrigation, stock water, recreation and wildlife uses. The County recognizes the State Engineer's authority to issue water rights in this regard and will provide input as appropriate particularly when issuance of such a right may negatively impact the County's customs, culture, economy, or environment.	been added to Section 1.5 of the FEIS.
P782	• Procedure: The County shall encourage and engage in cooperative data collection of water resources in Humboldt County, and sharing of such data to better inform decision related to water management. Any monitoring conducted by the County should focus on general surface and groundwater resources and not on specific water rights unless part of an agreement between the water right holder, State Engineer and County.	County Master Plan goals and policies relevant to the proposed Project have been added to Section 1.5 of the FEIS.
P783	• Procedure: The County supports retaining authority of the State, rather than the US Environmental Protection Agency, to protect water quality under the Clean Water Act, and will encourage coordination among all responsible and affected interests when considering water quality actions.	County Master Plan goals and policies relevant to the proposed Project have been added to Section 1.5 of the FEIS.
P784	• General Policy 6: The County supports the temporary reservation of water for reclamation of irrigated lands that are retired from production in the event of a water transfer. Reclamation would consist of establishment of desirable, adapted perennial vegetation that would stabilize the site from erosion (wind and water) and prevent establishment of non-desirable invasive or noxious species. o Procedure: The County shall work with the University of Nevada, Reno and/or UNR Cooperative Extension as well as local and regional economic development authorities to quantify the economic value of water being used in Humboldt County, as well as identifying future water needs for economic stability and development within the County.	Thank you for your comments.
P785	1a. A review of the DEIS, recent presentations provided to this Commission by both concerned citizens and the project proponent as well as participation in the project's virtual public meetings resulted in the following document-specific comments:	Thank you for your comment.

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P786	1b. Page 1-6. the County would like to know if the project is consistent with the State of Nevada Sage-grouse Conservation Plan and whether or not conformance with the 2015 BLM Sage-grouse Approved Resource Management Plan Amendment requires compliance with the State's Conservation Credit Program. This relationship should be better described in this section for clarity.	The proposed Project is consistent with the 2015 Greater Sage-grouse Land Use Plan Amendment. See Appendix N for discussion of Project consistency with the Nevada Conservation Credit System.
P787	1d. Page 2-5, Section 2.2.5.1 Mine Facilities. This section describes primary access to these facilities from State Route 293. Given the number of temporary construction workers and full-time employees, this section should describe or cite the appropriate section that describes what improvements will be made to SR 293, given that it is not currently designed to handle this level of traffic. o This is an important issue to the County from both a safety standpoint, as well as ensuring safe, uninterrupted traffic flow, especially to and from Kings River Valley and through Orovada.	Nevada Department of Transportation (NDOT) has been in contact with Lithium America regarding the future BLM Thacker Pass Lithium Mine Project. Detailed engineering design (of the acceleration/deceleration lanes) are not available at this time; however, all improvements will have to meet NDOT specifications and standard plans. Based on previous discussions with the operator, improvements may include roadway widening, deceleration lanes, acceleration lanes, dedicated turn lanes, roadway lighting, roadway striping, roadway signage and any other improvements deemed necessary. Potential project related off-site road modifications are the jurisdiction of NDOT. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations.
P788	1e. Page 2-7, Section 2.2.5.5 Lithium Processing Plant: describes substantial deliveries of raw materials and chemicals to the facility. Again, the County would question the ability of SR 293 to safely handle these additional loads and traffic, as well as the need for improved traffic patterns to avoid conflicts with local traffic.	Nevada Department of Transportation (NDOT) has been in contact with Lithium America regarding the future BLM Thacker Pass Lithium Mine Project. Detailed engineering design (of the acceleration/deceleration lanes) are not available at this time; however, all improvements will have to meet NDOT specifications and standard plans. Based on previous discussions with the operator, improvements may include roadway widening, deceleration lanes, acceleration lanes, dedicated turn lanes, roadway lighting, roadway striping, roadway signage and any other improvements deemed necessary. Potential project related off-site road modifications are the jurisdiction of NDOT. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations.
P789	1f. Pages 2-7 and 2-8, Multiple Sections: describes the various co-products and biproducts that will be produced on-site. However, there is very little description of how these products will be moved off-site to market safely. This needs to be better described here, or a citation needs to be provided to the appropriate section(s) that describe this. There has been a high level of feedback provided to this Commission about the risks associated with some of the materials used / produced and processes generally described in these sections. However, there is little information or citation as to the safety protocols designed to address these concerns and/or the permitting processes that will be required to ensure safe delivery, handling, processing, and export of these materials. Given the amount of interest around this issue, the County is requesting better clarity in these regards.	Major permits that would be required for mine construction, operation, and reclamation are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. Major permits identified in Appendix O include hazardous materials storage permits that would be issued by regulatory agencies for storage and management of hazardous materials. Safety plans and procedures for operation of the mine and processing plant are described in the Mine Plan of Operations (EIS Appendix B). Spill prevention, control, and countermeasures plans and safety plans for the proposed project are described in EIS Section 4.16, Wastes, Hazardous and Solid. The Mine Plan of Operations includes an Emergency Response Plan (ERP) (PoO Appendix F) prepared in accordance with OSHA Emergency Action Plan regulation 29 CFR 1910.38(a). LNC would also prepare a Spill Prevention, Control, and Countermeasures (SPCC) plan and Stormwater Pollution

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		Prevention Plan (SWPPP) in accordance with Clean Water Act standards and a Fire Protection Plan in accordance with Nevada Fire Marshall standards. Transportation of reagents and products would be conducted in accordance with U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA), Nevada Department of Transportation, and Nevada Department of Public Safety standards and permitting requirements for road transport of hazardous materials, including requirements of NAC Chapter 459.975 Transportation of Hazardous Materials on Public Highways. Hazardous materials would be transported to and from the site using licensed hazardous materials transport vendors.
P790	1g. Page 2-11, Table 2.4: specifically lists fuel and chemical storage on-sight, anticipated trucks / day, and approximate daily consumption. A similar table with this level of detail may better disclose and address the concerns described in the above bullet.	A summary table of the amounts of lithium products and other products that would be produced at the facility and transported off site has been added to the EIS.
P791	1h. Pages 2-11 and 2-12, Section 2.2.7.1.5, Solid and Hazardous Waste Handling and Disposal: the County understands that this will be conducted in accordance with Federal and State laws and regulations; however, these should be better described or listed in this section, and/or a citation provided to where said regulations and permitting processes are described. The County has received comments from concerned citizens about this aspect of the project, and this section does not provide adequate detail as to the safeguards, regulations and permitting processes that are in place to alleviate these concerns.	Major permits that would be required for mine construction, operation, and reclamation are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. Major permits identified in Appendix O include permits that would be issued by the U.S. Bureau of Land Management; NDEP Bureau of Air Pollution Control (BAPC); NDEP Bureau of Mining Regulation and Reclamation (BMRR); U.S. Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF), Nevada Department of Transportation (NDOT); Nevada Fire Protection Licensing Bureau HAZMAT Office; U.S. Environmental Protection Agency (USEPA); NDEP Bureau of Health Protection Services (BHPS); NDEP Bureau of Waste Management (BWM); NDEP Bureau of Safe Drinking Water (BSDW); Public Utilities Commission of Nevada (PUCN); Nevada Division of Water Resources (NDWR); Nevada Department of Wildlife (NDOW); NDEP Bureau of Water Control (BWPC); the Humboldt County Planning Department; and the Humboldt County Building Department. Permits would be required for construction and operation of the Clay Tailings Filter Stack (CTFS), for mine construction, operation, and reclamation, for water withdrawal and stormwater and wastewater discharge, and for on-site storage of hazardous materials, including flammable materials and explosives.
P792	1i. Page 2-12, Section 2.2.7.3 Water Supply: describes LNC's current water holdings and proposed changes in both place and manner of use. The County appreciates this level of disclosure and will likely be involved in the State process to transfer these rights. The County is especially interested in ensuring that these changes do not result in impacts to other existing water rights in the area, particularly given the overallocation of the Quinn River Valley. Two aspects that are not described in this section that the County is interested in, include: 1) What is LNC's proposed	See Common Response WATER-8.

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	contingency plan if these rights are not adequate or if impacts to other critical water resources or water rights are realized? 2) What does LNC propose to do with these described water rights at the conclusion of the project?	
P793	1j. Page 2-13, Section 2.2.7.5 Truck Access and Product Loading: describes 60 to 100 one-way truck trips per day, mostly between the project and Winnemucca. This section talks specifically about access roads within the project area, but the County is concerned with this additional traffic on existing highways and State Route 293. There should be some discussion here on any collaborative efforts with the Nevada Department of Transportation and/or Humboldt County to address both traffic loading and potential impact to emergency services that will be tasked with responding to accidents.	Nevada Department of Transportation (NDOT) has been in contact with Lithium America regarding the future BLM Thacker Pass Lithium Mine Project. Detailed engineering design (of the acceleration/deceleration lanes) are not available at this time; however, all improvements will have to meet NDOT specifications and standard plans. Based on previous discussions with the operator, improvements may include roadway widening, deceleration lanes, acceleration lanes, dedicated turn lanes, roadway lighting, roadway striping, roadway signage and any other improvements deemed necessary. Potential project related off-site road modifications are the jurisdiction of NDOT. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations.
P794	1k. Pages 2-15 and 2-16, Section 2.2.10 GMSs and Section 2.2.11 Closure and Reclamation Plan: The County fully supports stockpiling of growth media, development of site-specific seed mixes (including desirable adaptive species), and collaboration with local (County Extension Agent), state (University of Nevada, Reno College of Agriculture, Biotechnology and Natural Resources) and federal (Agricultural Research Service) restoration specialists. Further, the County supports the summary provided in this section and clear citation to Appendix B and C for more detailed information. This same approach would help alleviate some of the concerns listed for other sections above.	Thank you for your comment.
P795	1l. Pages 2-19 through 2-24, Table 2.6 Comparison of Potential Effects by Alternative: The County appreciates this table, and would suggest adding a column that directs the reader as to where the conclusions and detailed analysis for each row is found within the document, attachments or appendices.	Comment noted. BLM believes that the Table of Contents for the EIS is sufficient to allow the reader to identify where to locate information in the EIS.
P796	1m. Page 3-1 and 3-2, Table 3.1 Supplemental Authorities. Given that the water rights acquired by LNC are primarily used for "irrigation" at present, the County would question the decision to show "Prime Farmlands" as not affected. If water rights are being moved from areas currently identified as Prime Farmlands to the mine, then that connected action is resulting in an impact. Please reconsider this evaluation and if it is determined that Prime Farmlands are not affected, please provide a more thorough rationale.	See Common Response WATER-8.
P797	1n. Page 3-3, Table 3.2 Additional Affected Resources. The County would disagree that Fuel Management and Wildfire will not be affected. The County appreciates implementing best management practices and encourages them; however, the increased activity associated with the project and the increased traffic on local roadways will inevitably increase fire risk.	Comment noted. BLM has determined that the applicants fire response and emergency preparedness plans meet the standard for MSHA and NDOT requirements for the proposed mining operation.

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P798	1o. Page 4-1 and 4-2, Table 4.1 Issues Identified for Evaluation. The County generally agrees with the identified issues and would make the following comments: 1) The row on Water Quality and Quantity should include some disclosure as to the proposed changes to water rights. 2) As stated above, the County believes that wildfire is an issue that should be added to this list. 3) The County knows that impacts to big game, general wildlife and Greater Sage-grouse are of interest to many stakeholders. This should be added to the table and given the high profile of the Greater Sage-grouse issue, the BLM might consider a separate row like that provided for Bald and Golden Eagles.	Comment noted. Text regarding water rights modifications has been included in the table. BLM has determined that the applicant's fire prevention and emergency preparation plans are consistent with MSHA and NDOT regulations for the proposed mining operation.
P799	1p. Page 4-4, 4.2.2 Issue – Public Safety. The County believes that the increased traffic to and from the project as well as materials being hauled along public roadways warrants mention in this section.	The issue statement in Section 4.2.2 is related to how potential effects to Geology resources could affect public safety with a focus on stability of the proposed mine facilities (waste rock storage facility, gangue stockpile, clay tailing filter stack). Public safety and transportation of materials is addressed in Section 4.16 of the DEIS.
P800	1q. Page 4-11, Effects to Seeps and Springs. The County appreciates the disclosure that the connectivity between groundwater and seeps and springs is uncertain. The County further appreciates the commitment by LNC to monitor groundwater levels between the open pit, springs and Pole Creek. The County would encourage further monitoring of both surface water sources as well as any potentially affected water rights. The County is willing to participate in a work group with LNC, the State of Nevada and any potentially affected water rights holders to ensure proper monitoring and mitigation protocols to address any unforeseen impacts.	Comment noted. The description of Monitoring and Mitigation measure WR1 was expanded to include additional language regarding BLM's recommended adaptive management measures to address concerns regarding potential effects unforeseen effects to water resources.
P801	1r. Page 4-11 and 4-12, Effects to Water Rights. The County appreciates inclusion of this section. All information should be confirmed with the Nevada Division of Water Resources, and the BLM and LNC should also realize that there may be valid vested right that have yet to be claimed in the area. This issue has been raised in front of the County Commission in terms of the potential impact to existing water rights that either aren't identified here or where there is a disagreement on the conclusion that there will be minimal to no impacts on existing water rights. As such, the County would encourage a work group to focus on the potential need for additional monitoring (see above).	The water rights inventory used for the EIS analysis was updated to include additional water rights owned by Bartell Ranch, LLC within the portion of the within the Quinn River Valley, Orovada Subarea (Hydrographic Basin 033A) located within the water resources study area. Section 4.3, water resource figures provided in Appendix A was updated as necessary to identify these water rights and evaluate potential impacts for those water rights located within the predicted drawdown area.
P802	"1s. Appendix O. While the County appreciates the overall summary of the "Regulatory Environment", given the interest shown by the community, the County recommends adding the following information to this table / Appendix: o Permits required; o Permitting agency for each; and, o Anticipated permitting timeframes for each."	Table O2 provides information on the Major Permits required for the proposed Project and the regulatory agency for each. The BLM does not have specific information on the timeframes for each individual permit with the exception of the requirement for all permits to be approved and in place prior to providing a final Notice to Proceed to the applicant.
P803	1t. Based on the above inputs and review of these documents, the County encourages the BLM and Project Proponent to further develop and clarify the information presented. Of the Action Alternatives presented, the County preferers Alternative A,	Thank you for your comment. The BLM has provided clarifying information for all topics where additional information is available at the time of publication. The BLM will continue to coordinate with the Humboldt County

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	as it results in fewer overall long-term impacts and less overall impact to water resources. However, the County is also interested in continuing to learn more about the project and specifically reviewing how constituent concerns are addressed. The County fully intends to remain engaged in this and other pertinent State permitting processes as appropriate to ensure a project that will benefit the County economically, while also avoiding, minimizing and mitigating the identified significant impacts to natural resources and multiple uses.	Commissioners in its role as a cooperating agency.
Comment Letter From Gordon Wood		
P804	STOP THIS INSANITY!	Comment noted.
P806	SAVE THE HUMANS FROM THEIR OWN GREED AND STUPIDITY!!!	Comment noted.
P807	(Expletive removed) TRUMP!!!!	Comment noted.
P808	What if imagination and art are not frosting at all, but the fountainhead of human experience?	Comment noted.
Comment Letter From Jean Prijatel		
P809	The U.S. Environmental Protection Agency has reviewed the above-referenced document. We are providing comments pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. EPA is a cooperating agency on the project in accordance with the Memorandum of Understanding Between EPA and Nevada BLM for Mining Environmental Impact Statements, and we provided scoping comments (February 19, 2020) and comments on the Preliminary Draft EIS (February 18 and April 27, 2020).	Thank you for your comment.
P810	The Lithium Nevada Corporation (LNC) proposes to construct, operate, close, and reclaim an open pit lithium mine and conduct mine exploration activities on 18,008 acres of BLM land approximately 20 miles northwest of Orovada, Nevada. The project would occur in two phases and includes a 41-year mine life and a minimum five-year closure and reclamation period. The Draft EIS identifies and evaluates a No Action Alternative and three action alternatives and does not identify a preferred alternative.	Thank you for your comment.
P811	The EPA appreciates the BLM's commitment to interagency coordination and addressing many of the recommendations that we provided earlier in the process, including the development of an artificial burrow system due to loss of burrowing owl habitat and hiring from the local population to mitigate for environmental justice impacts.	Thank you for your comment.
P812	We have remaining concerns about the project's potential impacts to water quality, the sufficiency of proposed monitoring and mitigation plans, potential impacts to air quality, and long-term post-closure financial assurance. Please see our enclosed comments for a description of these concerns and our recommendations for the Final EIS.	Thank you for your comment.

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P813	Effective October 22, 2018, the EPA no longer includes ratings in our comment letters. Information about this change and the EPA's continued roles and responsibilities in the review of federal actions can be found on our website at https://www.epa.gov/nepa/epa-review-process-under-section-309-clean-air-act.	Comment noted.
P814	Adsorption of Antimony. In addition to proposed Options 1-3 to mitigate for antimony contamination and mobilization in the backfilled open pit, the Draft EIS proposes two future studies "to evaluate options to reduce or attenuate antimony mass prior to discharge from the backfill" (Appendix P Part 1 p. 154). While the Draft EIS indicates that these studies would be completed prior to mitigation implementation, constraints around chemical conditions and efficacy at this scale warrant further review and discussion. Recommendation for the Final EIS: Prior to selecting a mitigation option for antimony contamination in the backfilled pit area, evaluate results from studies completed by LNC to support antimony adsorption amendments as a mitigation option. Include a summary of the results in the Final EIS.	Antimony adsorption studies have not performed. LNC proposes to perform antimony attenuation studies during operations, and, depending on the results, may decide to propose modifications to the closure or mitigation strategy to the NDEP and BLM.
P815	Blending and Discharge of Treated Waters. Mitigation Option 1 includes four potential options to manage discharge produced from the pump back system and would require infiltration basins for the "blending and discharging to surface waters" and "active treatment" options (Appendix P Part 1 p. 155-156); however, installation of such basins may result in additional disturbance and impacts that have not been analyzed in the Draft EIS. Recommendations for the Final EIS: Identify potential areas where infiltration basins would be constructed. Ensure that potential impact analyses are updated and reflect potential disturbance from basin construction.	Blending and discharge options for this mitigation have not been evaluated, and therefore may not be feasible for consideration as mitigation for the FEIS. LNC proposes to perform antimony attenuation studies during operations, and, depending on the results, may decide to propose modifications to the closure or mitigation strategy to the NDEP and BLM.
P816	"Monitoring, Mitigation, and Adaptive Management. The Draft EIS identifies various monitoring and mitigation measures that have been developed for specific resources. As indicated in our previous comments, monitoring, mitigation, and adaptive management will be critical due to varying degrees of uncertainty associated with modeling constraints. It is possible that additional and different management measures not implemented as part of the project will be identified in the future and prove to be more effective in achieving protection of human health and the environment; however, the Draft EIS and supporting documents do not provide an adaptive approach overview. The Draft EIS also concludes that the Groundwater Quality Monitoring and Groundwater Quality Management Plans are expected to "effectively mitigate impacts to groundwater quality downgradient from the pit" without providing specific mitigation measures in enough detail to support this conclusion (p. 4-25). Recommendations for the Final EIS: Include drafts of the mitigation and monitoring plans committed to in measures WR1, WR2, and WR3 and the anticipated effectiveness of the plans. Identify measurable site-specific objectives for all water resources and trigger thresholds for specific mitigation actions.	Comment noted. See Common Response WATER-6; and the revised Monitoring and Mitigation Measure WR1 in Section 4.3.2.
P817	Include the following in the Mitigation and Monitoring Plan: • Tables identifying all groundwater, surface water, and mine facility locations that will be monitored during	Comment noted. The BLM anticipates that the additional monitoring details requested in the comment would be provided in either the comprehensive

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	all phases of mining operations. • Identify parameters, including those required by the Nevada Division of Environmental Protection permit, that will be monitored. • Discuss the frequency and duration of monitoring and reporting.	water resources monitoring plan that would be required as recommended in monitoring and mitigation measure WR-1 (Section 4.3.20; or the monitoring and reporting requirements that would be included under the Water Pollution Control Permit administered by the NDEP.
P818	Air Quality. The Draft EIS states that no mitigation is required because "air quality analysis has demonstrated that all pollutant concentrations with the project would be less than the NAAQS [National Ambient Air Quality Standards] and Nevada standard" (p. 4-75); however, Table 4.12 indicates that the modeled estimates of construction emissions of nitrogen dioxide and sulfur dioxide are near the corresponding primary NAAQS for the Proposed Action (p. 4-73). If any changes or refinements to the project occur later that would increase the total emissions, exceedances of NAAQS could occur. Recommendation for the Final EIS: Provide additional detail about how the NDEP's Surface Disturbance Permit and Class II Air Quality Operating Permit will monitor air quality to prevent exceedances of NAAQS (Table O-2, p. O-6) and discuss mitigation options if NAAQS are exceeded.	The Nevada Division of Environmental Protection Air Quality Operating Permit for the Thacker Pass Project will include appropriate emission limits and monitoring requirements to ensure compliance with both National and Nevada Ambient Air Quality Standards. The applicant is currently working with NDEP-BAPC to obtain an approved permit. Details of NDEP required mitigation and monitoring are not currently available for inclusion in the EIS.
P819	Funding for Long-Term Post-Closure Management. In our scoping and Preliminary Draft EIS comments, we expressed concerns regarding the adequacy of funding for long-term post-closure management. Although BLM will require LNC to secure a bond for reclamation work (POO p. 127), it is unclear what funding mechanism would be utilized to mitigate and monitor for groundwater impacts that may persist for at least 300 years (p. 4-112). Recommendations for the Final EIS: Determine an appropriate level of funding for Thacker Pass Mine post-closure management monitoring and disclose the specific mechanism that will be established for the Proposed Action. Analyze the adequacy of the disclosed funding amount and funding mechanism to ensure that all financial obligations would be met. Include projected costs for any post-closure activities and discuss whether the BLM would impose a requirement, on the mine operator, to establish a trust fund or other funding mechanism to ensure post-closure care, in accordance with 43 CFR 3809 and BLM's H-3809-1 Surface Management Handbook.	See Common Response WATER-10.
P820	Environmental Justice. We appreciate the coordination between the EPA and BLM regarding environmental justice issues. We note that PDF pages 55 and 56 in Appendix G Affected Resources contains inaccurate environmental justice information that the BLM has since updated in other sections of the Draft EIS, and we request that these pages also be updated or removed to eliminate conflicting and inaccurate information.	Thank you for your comment. A notation in Appendix G describes how the information was revised as well as a note in Chapter 6.
Comment Letter from Matt Maples (NDOW) (Email #36)		
P821	Thank you for providing the Nevada Department of Wildlife (NDOW) with the opportunity to review the Lithium Nevada Corporation's Thacker Pass Lithium Mine Project Draft Environmental Impact Statement (Draft EIS). As a cooperating agency,	Thank you for your comment.

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	we have worked extensively with the Bureau of Land Management (BLM) since 2018 and provided detailed and comprehensive throughout the process.	
P822	The Preferred Alternative results in likely and potential impacts to wildlife, ground and surface waters, and riparian vegetation within and outside the project area. Many of these impacts will likely result in adverse consequences to wildlife resources. During our review of the Draft EIS, we noted that many of our previous comments have been addressed and we appreciate the BLM's effort to continually improve the clarity of the Draft EIS, disclose potential impacts, and take steps towards avoiding and minimizing impacts as a result of the Project.	Thank you for your comment.
P823	Although we recognize that significant progress has occurred on addressing wildlife related concerns associated with this Project, there are still a few issues that we are optimistic can be resolved before the FEIS is approved with a Record of Decision (ROD). It is our hope that the comments and recommendations presented here will be helpful towards achieving this goal. A general summary of our remaining primary concerns is included in this letter. Our specific comments on the Draft EIS are included as an attachment (Thacker Pass Project – Public Draft EIS Comments).	Thank you for your comment.
P824	1a. Groundwater dependent habitats in the Montana Mountains north of the Project area boundary are critical to greater sage-grouse, Lahontan cutthroat trout, mule deer, pronghorn, and many other wildlife species. Given the arid nature of this region, water sources, riparian vegetation, and wet-meadow habitats are essential to wildlife and the loss or degradation of these areas will have significant negative impacts on wildlife populations.	Comment noted.
P825	1b. We recognize that impacts to groundwater and surface water resources based on the hydrologic model and defined in the Draft EIS by the 10-foot drawdown extent, have limited effect on perennial streams and springs. We also recognize that groundwater models include a degree of uncertainty and are based upon a set of assumptions. We also recognize that model predictions become much less certain beyond the 10-foot drawdown threshold, but this does not necessarily mean that ecological impacts to groundwater-dependent systems at drawdowns of less than 10-feet will not occur. We appreciate the Draft EIS's inclusion of the 1-mile buffer to account for this uncertainty and have provided additional recommendations in our specific comments (Attachment 1).	Comment noted.
P826	1c. We appreciate the general commitment to a Monitoring and Mitigation Plan as described in the Draft EIS and recommend the Final EIS/Record of Decision (ROD) include additional details on groundwater monitoring, modeling, and adaptive management. A commitment to monitoring and adaptive management improves our collective ability to respond to unanticipated conditions and is a valuable addition to any project with the potential to impact water resources. We support the concept of a Technical Advisory Group and look forward to participating in this process. We have	Comment noted.

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	provided detailed recommendations to improve this plan in our specific comments, but in general we recommend the following be included in the Final EIS:	
P827	1d. • Provide information on the number, location, frequency and duration of ground and surface monitoring locations. Surface water monitoring locations should include springs currently classified as perennial and ephemeral, Thacker Creek, Crowley Creek, and Pole Creek. Stream monitoring should be completed such that perennial, intermittent, and ephemeral reaches are defined and understood. We support the use of piezometers to monitor groundwater elevations north of the Project area boundary and encourage enough sites be established to capture natural geologic and hydrologic variability. Monitoring should be sufficient to provide statistically reliable results, account for natural variation, and be located within and outside the predicted 10-foot drawdown extent. This will help when comparing the results of the model and the analysis of impacts in the Draft EIS to any observed changes. It will also provide information on potential deviations from anticipated impacts and allow for model revisions to better predict additional changes. • Monitor surface water resources on a monthly interval when not precluded by winter conditions for the first 5-10 years of the project. As the project is not anticipated to encounter groundwater for many years, this provides an opportunity to increase the baseline dataset and better understand pre-project variation in these systems. • Consider using isotope analysis to better understand and define groundwater dependency. • Commit to re-run the groundwater model as necessary when additional geologic and hydrologic information becomes available through project construction and monitoring. • Develop a process to define changes in ground and surface water resources and how to determine if changes are related to project activities. A clear set of thresholds and adaptive management triggers and processes will be needed to ensure the Monitoring and Mitigation Plan is functional and successful.	See Common Response WATER-6.
P828	1e. It is our understanding that LNC has tentatively proposed additional Applicant Committed Environmental Protection Measures to help address concerns related to hydrologic impacts, uncertainty, and the subsequent effect on riparian resources, springs/seeps, and wildlife. These include funding the Riser Creek Headwaters Riparian Pasture and Water Development Project and the Washburn Creek and Riser Creek Water Gap Rebuild Project as developed and supported by the Jordan Meadows Working Group. This measure also includes an option to fund a comparable project (scope, value, and alignment with Working Group objectives) if these projects are completed early or otherwise no longer viable options.	Comment noted.

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P829	We view these types of projects as a better alternative than those relying upon small diameter wells and solar pumps to augment water to surface resources. By improving the ecological function of existing stream and spring systems, these habitats will have greater resistance and resilience to minor changes in groundwater elevations and will enhance wildlife values ahead of any potential impact. NDOW greatly appreciates LNC's willingness to assist with and fund these projects as a means to offset potential impacts and uncertainty related to hydrology. We applaud their approach to taking these measures proactively and strongly support the inclusion of this commitment in the Final EIS/ROD.	Comment noted.
P830	2a. We appreciate the DEIS's inclusion of the updated noise calculations at the Montana-10 and Pole Creek 01 greater sage-grouse leks. The calculation methods comply with NDOW's 2020 Interim Guidance Clarifications. The calculations predict that project related noise at these leks will exceed BLM ARMPA standards and result in potential impacts. Increased noise at sage-grouse leks has been shown to have negative effects on lek attendance, with likely implications to sage-grouse populations. Current research indicates that as noise levels reach 10 dBA L50 above natural background levels (Pre-Project L90), sage-grouse lek attendance declines and lek abandonment can occur. Thus, the anticipated project related noise increases at Montana-10 and Pole Creek 01 could have significant negative effects on these leks and the Lone Willow PMU. Based on average lek attendance, the Montana-10 lek is one of the three largest leks in the Lone Willow PMU and the loss of this lek would likely be of high consequence to greater sage-grouse populations.	Thank you for your comment. BLM recognizes NDOW's position regarding the 2015 GRSG ARMPAs current noise level recommendations of 10 dBA (L50) for GRSG and the importance of the Montanta-10 lek. Noise simulations calculated for the Project by Saxelby (2019) were conducted in accordance with NDOW's guidance provided in 2018. Noise estimates were based on a "worst-case" scenario, and concluded that anticipated noise levels would likely not exceed the recommended 10 dBA (L50). Noise levels produced by mining and processing activities were predicted to result in maximum noise level increases of 8.7 dBA at the Montana-10 sage-grouse lek, 5.9 dBA at the Pole Creek lek, 3.8 dBA at the Thacker Creek lek, and 1.5 dBA at the Crowley lek. Noise calculations conducted using NDOW's 2020 Interim Guidance show that noise levels could increase to 11.4 dBA, indicating potential risk for noise effects to GRSG. BLM would like to clarify that indirect effects, such as noise, are part of the CCS HQT analysis, and that LNC is working with the SETT to utilize the CCS to offset effects of the proposed Project on GRSG and their habitat. Development of a noise monitoring plan in coordination with the BLM and NDOW would further reduce the potential for noise-related effects. The proposed project is a non-discretionary 43 CFR 3809 action and BLM's discretion is limited to preventing unnecessary and undue degradation, and may not impose timing or operational restrictions directed under the 2015 GRSG ARMPA.
P831	2b. We appreciate the inclusion of a noise monitoring plan and recommend this plan be developed in conjunction with the BLM, NDOW, and LNC. Monitoring during project construction and operation is essential to determine confirm the noise model's predictions and ascertain if project related noise impacts are likely to occur. While we appreciate DEIS's inclusion of noise reduction measures and restricting high noise activities to times less critical to wildlife, this does not change the model's predictions that important thresholds will be exceeded. We recommend that additional details for monitoring, mitigation, and adaptive management be determined in advance of the Final EIS to address the potential noise impacts on these leks.	Thank you for your comment.,. LNC has committed to development of a noise monitoring plan in coordination with the BLM and NDOW to collect further data regarding noise emissions from the Project and to identify appropriate noise emission thresholds with regards to human and wildlife receptors and prescribe effective noise reduction measures should thresholds be surpassed during project construction or operation. Development of a noise monitoring plan may help in identifying activities that produce high noise levels and recommend timing restrictions during critical breeding periods (March-May); however, these measures would be voluntary actions. The proposed project is a non-discretionary 43 CFR 3809 action and BLM's discretion is limited to

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		preventing unnecessary and undue degradation, and may not impose timing or operational restrictions directed under the 2015 GRSG ARMPA.
P832	We appreciate the opportunity to review and provide comments on the Thacker Pass Lithium Mine Project Draft Environmental Impact Statement. We look forward to continuing to work cooperatively with the BLM and LNC on this project to ensure impacts to wildlife and habitat are resolved to the extent possible	Thank you for your comment.
P833	Production of energy for use off-site (selling back into the power grid) will require an AB307 application per NRS 701.610-701.640. Proponent reached out to NDOW previously to discuss energy production but indicated it would only be used on-site for project needs.	Major permits that would be required for mine construction, operation, and reclamation are identified in EIS Appendix O, Regulatory Setting and Project Permits, Table O.2. Major Permits and Approvals. Major permits identified in Appendix O include an Energy Projects Fund Permit that would be issued by the Nevada Department of Wildlife (NDOW).
P834	Fencing should reference BLM fencing handbook in coordination with NDOW for wildlife-friendly fences. While the BLM fencing handbook is well established and commonly used, it is somewhat outdated for some wildlife fencing specifications. Coordination with both agencies will better capture appropriate specifications.	Text in Section 2.2.7 has been revised to include "Specific fencing designs would be developed to be consistent with MSHA regulations and where possible. In areas where the design of Project related fencing is not determined by MSHA requirements, LNC would consult with NDOW to identify wildlife friendly fence designs and specifications."
P835	Should this section also include a reference to NDOW required permits? Other water-related (rights) sections include the State Water Engineers Office requirements	LNC would obtain all permits and authorizations as part of project development as described in the Thacker Pass Project Plan of Operations (See Section 3.29, and Table 3-10, LNC 1019a) including those required for construction and operation of the pond.
P836	Typo on fifth bullet. Should be a semi-colon before “and”	Text revised per comment.
P837	The document states exploration drilling may occur at any time, day or night. Does this mean there will be no seasonal timing restrictions for Greater sage-grouse? We also recommend appropriate precautions be used to prevent wildlife mortalities in drilling sumps. This is a previous comment that was flagged for additional discussion.	Potential ACDF for BLM/LNC review: "During exploration activities, LNC has voluntarily committed to installing wildlife escape ramps in all open trenches and drilling sumps or areas where wildlife could become trapped. LNC would coordinate with BLM to minimize any potential mortality associated with drilling sumps." [NEED TO CONFIRM WITH LNC]
P838	Start of very last sentence on page “The USFWS would the Project to…” – need to insert the word “require” between “would” and “the”	Text revised per comment.
P839	Wetland and Riparian Resources for Alt A should be updated. If it is anticipated that seeps and springs flow will be affected in Alt A, and the discussion in chapter 4 describes potential impacts to wetland/riparian resources, that should be disclosed in this table.	The potential effect of changes in groundwater hydrology to wetlands and riparian are disclosed in Sections 4.3.1.1 and 4.4.1.1. The quantitative effect of any potential groundwater effects is unknown.
P840	Is it difficult to follow potential impacts to streamflow between the DEIS and the Water Quantity and Quality Impacts Assessment Report – some of the valuer appear inconsistent. Table 2.6 in the DEIS states a ~1% reduction in flows to Thacker Creek, Pole Creek, and Crowley Creek. However, the Water Quantity and Quality Impacts Assessment Report on page 51 appears to indicate a ~4% reduction in Thacker Creek at baseflow. The Water Quantity and Quality Impacts Assessment Report tables provide the following data: Simulated Water Budget (Table 3.10, Pre-	The estimated reductions in baseflow flow to stream reaches listed in Table 2-6 were updated for consistency with the values presented in the model report (Piteau 2020a). The estimated average baseflow of 492 gpm is based on the description of Crowley Creek provided in Section 2.2.2, Streams in the model report (Piteau 2020a). The difference in values reflect the fact that the 492 gpm is the baseflow estimated from the available stream flow monitoring data; the 650 gpm is the baseflow rate simulated by the numerical model and includes

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	mining) Thacker Creek: 228gpm. Crowley Creek: 650gpm* Lower Pole Creek: 24gpm. Simulated Water Budget (Table 4.2, End of Mining) Thacker Creek: 221gpm (228-221 = 7gpm/228 = 3%) Crowley Creek: 634gpm* (650-634 = 16gpm/650 = 2.5%) Lower Pole Creek: 10gpm (24-10 = 14gpm/24 = 58%). Please confirm the contents of Table 2.6 in the DEIS are accurate and match the appropriate sections of the Water Quantity and Quality Impacts Assessment Report. *Why is the simulated pre-mining water budget listed at 650gpm when page 4-9 of the DEIS lists the Crowley Creek average baseflow of 492gpm?	the simulated flow from both Crowley Creek and SP-035 (Indian Springs) as noted in Table 3-10 in the model report.
P841	We appreciate and support inclusion of the 1-mile buffer around the 10-foot drawdown extent. We recommend the BLM include a description of how 1-mile was selected. Does the 1-mile buffer align with a specific drawdown threshold (e.g. 5' of drawdown)? We recommend disclosing the method used to select the 1-mile distance. If a specific model threshold was not used, changing the buffer distance to one that aligns with drawdown predictions would be more objective approach. For example, provide a buffer (and disclose spring sites) where predicted groundwater decline is <10' but >= 5' and where predicted groundwater decline is <5' but >= 1'. We recommend including a map showing the buffer distances, spring sites, and predicted groundwater drawdowns.	See Common Response WATER-3. Maps showing the maximum extent of the drawdown area were modified to illustrate the 1-mile buffer area.
P842	The drawdown impacts predictions included here do not match those in Table 2.6.	Table 2.6 has been revised.
P843	The DEIS draws a hard line between ephemeral and perennial springs and stream reaches and the potential effects based on an assumption of groundwater dependency. We recommend the DEIS clearly disclose that defining ephemeral vs perennial is based on relatively limited field data collection and does not account for annual variation of these systems. In some cases, springs are defined as ephemeral or perennial in the DEIS based on a single year of data. We would offer that this may not be representative of actual conditions as relative water supply (precipitation/snowpack) and current vegetative habitat conditions can affect the duration of surface water expression. Based on the Water Quantity and Quality Impacts Assessment data, it appears that if no water expression was noted during the 3rd quarter measurement, the spring was classified as ephemeral and thus, not connected to groundwater. This may not always present accurate results. We recommend future monitoring continue to evaluate perennial vs ephemeral status to provide more robust data and dilute the impact of annual variation. Other mining projects in Nevada have use isotope analysis to determine connectivity to groundwater and we recommend this be included in future monitoring.	Comments noted. See response to comment P318.
P844	The DEIS states "exploration activities would avoid stream reaches." We appreciate this inclusion and recommend it be strengthened by including a quantitative buffer for Pole Creek, Crowley Creek and spring sites (ephemeral and perennial).	The BLM is applying all regulatory requirements applicable to proposed non-discretionary minerals projects.
P845	We appreciate and support a monitoring and mitigation plan to address potential	See Common Response WATER-6.

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	effects to surface and groundwater resources. We recommend that additional details on the monitoring and mitigation plan be included in the FEIS/ROD. To this end, we would recommend and support: - Information on the number, location, and frequency of ground and surface monitoring locations. Monitoring should be sufficient to provide statistically reliable results. - Information on the duration of monitoring and reporting (e.g. number of years post-closure or other milestone) and what financial assurances are in place to continue perform this work. We recommend monitoring continue until groundwater resources reach their new equilibrium state. - Groundwater monitoring at various locations within and outside the 10-foot drawdown extent. The number of required locations should be sufficient to be statistically reliable and account for currently unknown hydrologic and geologic conditions outside of the project area. If effects to ground or surface waters are observed, then additional monitoring should be considered. - Surface water monitoring at all springs (perennial and ephemeral) within the 10-foot drawdown extent, the one-mile buffer placed around the 10-foot drawdown extent, and any other springs noted in the Water Quantity and Quality Impacts Assessment Report that may fall outside either of these boundaries, but where hydrographs indicate potential for a reduction in groundwater. - Surface water monitoring at Thacker Creek, Pole Creek, and Crowley Creek. Monitoring locations should be placed at several locations to identify and monitor perennial, intermittent, and ephemeral reaches. Given the intermittent nature of certain reaches, a single monitoring point is likely insufficient. - We would support monthly monitoring instead of quarterly monitoring at spring sites for a period of time (5-10 years), starting with the initiation of the project, to establish more robust baseline conditions and provide more statistically reliable information on whether a spring is perennial or ephemeral (groundwater dependent). - Isotope analysis between groundwater and surface waters should be considered as another method to determine groundwater connectivity and inform whether a surface water is ephemeral, perennial, or intermittent. It may be useful to review other project's seep and spring monitoring plans to serve as a template in guiding this process.	

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P846	NDOW would consider supplemental flow augmentation (e.g. wells and solar pumps as described in Appendix P - Water Quantity and Quality Impacts Assessment Report) as a last ditch effort to mitigate the loss of spring, seep, riparian, and stream habitats that are critical to wildlife populations. Rather, we recommend spring and riparian protection and enhancement projects that are coordinated among affected stakeholders (BLM, NDOW, USFWS, Livestock Permittees, Water Right Holders, Private Landowners, etc.). Implemented properly, these types of projects have the potential to increase ecological function and lessen the impact of reduced groundwater. Please see next comment for additional information on proposed Applicant Committed Environmental Protection Measures that addresses this concern.	See Common Response WATER-6.
P847	As of September 11, 2020, LNC has tentatively proposed additional Applicant Committed Environmental Protection Measures to address concerns related to hydrologic impacts and uncertainty and the subsequent effect on riparian resources, springs/seeps, and wildlife. These include a commitment to fund the Riser Creek Headwaters Riparian Pasture and Water Development Project and the Washburn Creek and Riser Creek Water Gap Rebuild Project as developed and supported by the Jordan Meadows Working Group. This commitment also includes an option to fund a comparable project (scope and value) if these projects are completed early or otherwise no longer available. NDOW greatly appreciates LNC's willingness to assist with and fund these projects as a means to offset impacts and uncertainty related to hydrology and would strongly support the inclusion of this commitment in the FEIS/ROD.	Comment noted.
P848	An annual review of monitoring and 5-year review of modeling results is unlikely to reduce or minimize potential impacts to water dependent resources due to the permanent nature of groundwater impacts and we recommend the FEIS clarify this nuance. These efforts will be very useful in understanding current groundwater/surface water conditions and future of these systems. However, without a clear set of thresholds and triggers to define what constitutes a change and how those changes are or are not attributed to the project, there is no definitive means to start an adaptive management process. We recommend a process be initiated, using the Technical Advisory Group approach, to establish additional details on monitoring, modeling, determination of thresholds/triggers, and resulting actions. If possible, a document providing this process should be included in the FEIS. If the document cannot be finalized in time for the FEIS/ROD, then we recommend a draft document capturing the major needs and objective should be included, or at very least referenced, to guide future work by the Technical Advisory Group.	Comment noted. See Common Response WATER-6; and the revised Monitoring and Mitigation Measure WR1 in Section 4.3.2.
P849	As indicated in a previous comment, the Direct effects to vegetation and wetlands are described in this section, but not reflected in Table 2.6. Please update the table for Alternative A (Proposed Action) as wetland and riparian resources, specifically	Text revised in Table 2.6 to "Limited vegetation loss and surface disturbance over the life of the mine. Effects would be concurrently reclaimed but could occur through 2065."

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	vegetation, will be impacted by a reduction in veg cover, forage production, and wildlife habitat.	
P850	We appreciate the incorporation of our previous comments and applaud the BLM for recognizing that the direct disturbance will result in loss of habitat, displacement, and indirect effects to wildlife resulting from displacement. We also appreciate the recognition that some species may not select reclaimed areas for use in the future and that revegetating disturbed areas may not only prove challenging, but that loss of certain habitat types are likely to either be permanent or extend beyond final reclamation of the project. While these effects are difficult to accurately quantify with available pre-project information, the current disclosure of these effects is a much more accurate representation than that of previous language.	Comment noted.
P851	We recommend double-checking the methodology used to determine these density calculations. At 0.035 small birds per acre, this means that at total, only 199 small birds would be expected to occupy this area. At 0.000026 large birds per acre, this means that less than 0.2 (0) large birds would be expected to occupy this area. We appreciate the inclusion of density calculations to capture more quantitative impacts, but these appear to be much lower than expected given the birds observed during survey. It would be helpful to identify which bird species were classified as large birds vs small birds as this may help put context to the density calculations.	Thank you for your comment. The text has been revised to provide species associated the with density estimates reported. The EIS also clarifies that these estimates are preliminary.
P852	We appreciate the incorporation of our previous comments regarding fencing and exclusion of avian species and bats. If exclusionary devices are required to prevent access to ponds, we recommend use of bird balls or a HDPE floating pond cover instead of exclusionary netting. These types of measures can also be addressed in NDOW's Industrial Artificial Pond Permit (IAPP) if one is required for this project.	Thank you for your comment. All processing water would be contained inside of the mine processing facilities. No process ponds would be located outside. Stormwater management ponds would be located outside and would collect stormwater runoff from the Project area. These ponds would not contain any processing solutions or chemicals that could pose a threat to wildlife. Ponds would typically be kept dry. If an Industrial Artificial Pond Permit (IAPP) is required for this project, LNC would consult with NDOW to determine appropriate exclusionary devises, such as the use of bird balls or a HDPE floating pond cover, and those measures would be addressed in NDOW's IAPP. Text has been revised to include: "The creation of the reclaim, emergency, and stormwater management ponds could intermittently attract birds to the Project site during intermittent periods when the ponds may contain water. These ponds would remain dry under normal mine operations and the emergency and reclaim ponds would be fenced to deter wildlife. The installation of avian exclusionary devices at pond locations would be consistent with requirements of the NDOW Industrial Artificial Pond permit for the Project."
P853	We appreciate the incorporation of our previous comments regarding direct and indirect impacts to mule deer, pronghorn, and their habitats within and adjacent to the project. The current disclosure of these effects is a much more accurate representation than that of previous language.	Thank you for your comment.

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P854	We appreciate the updated noise calculations at Montana 10 and Pole Creek 01 being included in the DEIS. The calculation methods now comply with NDOW's 2020 Interim Guidance Clarifications to the NDOW Sage Grouse Noise Protocol. We recommend including predicted noise increases, using the same calculation methods as used for lek, at the BLM ARMPA compliance point (0.25 miles from the lek, towards the proposed action). As currently presented, this section does not appear to be in full compliance with the BLM Sage Grouse ARMPA. Increased noise at sage grouse leks has been shown to have negative effects on lek attendance, with likely implications to sage grouse populations. At high enough noise levels, sage grouse cease using the impacted lek and it is unknown if they successfully move to other leks/habitats. Thus, noise impacts to Montana 10 and to a lesser extent, Pole Creek 01, could dramatically impact or eliminate these leks and create significant impacts on this portion of the Lone Willow PMU sage grouse population. The Montana 10 lek has an average peak male attendance of 38 birds over the past five years. Based on average lek attendance, the Montana 10 lek is one of the three largest leks in the Lone Willow PMU and the loss of this lek from mining noise is a significant impact.	Thank you for your comment. BLM recognizes NDOW's position regarding the 2015 GRSG ARMPAs current noise level recommendations of 10 dBA (L50) for GRSG and the importance of the Montanta-10 lek. Noise simulations calculated for the Project by Saxelby (2019) were conducted in accordance with NDOW's guidance provided in 2018. Noise estimates were based on a "worst-case" scenario, and concluded that anticipated noise levels would likely not exceed the recommended 10 dBA (L50). Noise levels produced by mining and processing activities were predicted to result in maximum noise level increases of 8.7 dBA at the Montana-10 sage-grouse lek, 5.9 dBA at the Pole Creek lek, 3.8 dBA at the Thacker Creek lek, and 1.5 dBA at the Crowley lek. Noise calculations conducted using NDOW's 2020 Interim Guidance show that noise levels could increase to 11.4 dBA, indicating potential risk for noise effects to GRSG. BLM would like to clarify that indirect effects, such as noise, are part of the CCS HQT analysis, and that LNC is working with the SETT to utilize the CCS to offset effects of the proposed Project on GRSG and their habitat. Development of a noise monitoring plan in coordination with the BLM and NDOW would further reduce the potential for noise-related effects. The proposed project is a non-discretionary 43 CFR 3809 action and BLM's discretion is limited to preventing unnecessary and undue degradation, and may not impose timing or operational restrictions directed under the 2015 GRSG ARMPA.
P855	We recommend the construction timing for the access road crossing at Crowley Creek avoid the spring and early summer (if Crowley Creek is flowing) to reduce impacts to LCT that may be found in this area during that time period. We also recommend any road crossing be constructed in a manner that does not create a fish passage barrier (e.g. culvert that does not support fish passage).	Thank you for your comment. BLM has included mitigation measure SSS-12 to state: "Construction or improvement activities at Crowley Creek would be limited to times in the year when the stream is dry or during low flow periods. If construction or improvement activities do occur during streamflow, construction would be limited to low water periods. Construction would not impede fish movement and fish-friendly culverts would be used."
P856	We appreciate and support the inclusion of the TAG and look forward to participating as a partner agency.	Thank you for your comment and participation.
P857	SSS-1 will specifically avoid and minimize impacts to migratory bird nests during construction but will not avoid and minimize other impacts such as habitat degradation or loss. We recommend the DEIS clarify what impact SSS-1 will mitigate.	Thank you for your comment. Text has been revised to state that "Implementation of this measure would limit the timing and location of surface disturbance activities, which would reduce the potential for disruption to migratory bird breeding and nesting activities. However, this measure does not serve to minimize or mitigate loss to migratory bird habitat."
P858	There will be an additional residual effect with regards to effects at the Montana 10 and Pole Creek 01 leks. Predicted noise level increases included in the DEIS suggest either a decline in attendance or abandonment of these leks is possible. The potential loss of these leks, in particular the Montana 10 lek, will be a significant impact to the Lone Willow PMU sage grouse population. While we agree that at cessation of mining and reclamation, noise levels may return to baseline conditions, at this point	Information regarding noise modeling results from the applicant and NDOW has been included in the EIS for disclosure including the potential effect of increased noise levels on the nearby leks. It would be speculative to conclude the Montana 10 lek would be abandoned and to state so in the residual effects section. BLM will continue to coordinate w/ the applicant and NDOW throughout the NEPA process and beyond though the Technical Advisory

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	sage grouse will not have used these traditional lekking areas for upwards of 40-50 years and we have no information to suggest that sage grouse will re-occupy these leks. In general, if the noise level increases are consistent with what is predicted in the Noise Model and DEIS, we would assume permanent loss of these leks and recommend this be disclosed as a Residual Effect.	Group for wildlife.
P859	We appreciate the inclusion of a noise monitoring plan in Section 4.14.2 and would propose the FEIS/ROD contain additional information and commitments on noise monitoring and mitigation. Anticipated increases in noise are sufficient to expect impacts to the lek will occur and that noise increases will also exceed BLM ARMPA standards. Thus, we propose a robust monitoring and mitigation plan be developed in conjunction with the BLM, NDOW, and project proponent, and be included in the FEIS/ROD. Monitoring during project construction and operation is essential to determine the accuracy of the noise model and ensure objectives and standards for limiting noise impacts are achieved. We appreciate the recommendation to implement noise reduction measures or restricting high noise activities to times less critical to wildlife, this does not change the model's predictions that important thresholds for sage grouse will be exceeded. We recommend including additional details and a more robust commitment in the FEIS for these noise reduction measures. As currently written, there is insufficient information to determine if these measures offset anticipated noise impacts. It is clear from language on Page 4-60 (Mitigation required under State Regulation) that states the CCS is "not intended to offset effects to other resources…or impacts from noise" that this is currently an unaddressed impact. We strongly recommend appropriate monitoring and mitigation to account for noise impacts at Montana 10 and Pole Creek 01.	Thank you for your comment. BLM recognizes NDOW's position regarding the 2015 GRSG ARMPAs current noise level recommendations of 10 dBA (L50) for GRSG. Noise simulations calculated for the Project by Saxelby (2019) were conducted in accordance with NDOW's guidance provided in 2018. Noise estimates were based on a "worst-case" scenario, and concluded that anticipated noise levels would likely not exceed the recommended 10 dBA (L50). Noise levels produced by mining and processing activities were predicted to result in maximum noise level increases of 8.7 dBA at the Montana-10 sage-grouse lek, 5.9 dBA at the Pole Creek lek, 3.8 dBA at the Thacker Creek lek, and 1.5 dBA at the Crowley lek. Noise calculations conducted using NDOW's 2020 Interim Guidance show that noise levels could increase to 11.4 dBA, indicating potential risk for noise effects to GRSG. BLM would like to clarify that indirect effects, such as noise, are part of the CCS HQT analysis, and that LNC is working with the SETT to utilize the CCS to offset effects of the proposed Project on GRSG and their habitat. Development of a noise monitoring plan in coordination with the BLM and NDOW would further reduce the potential for noise-related effects. The proposed project is a non-discretionary 43 CFR 3809 action and BLM's discretion is limited to preventing unnecessary and undue degradation, and may not impose timing or operational restrictions directed under the 2015 GRSG ARMPA.
P860	The Noise Model completed for the DEIS's analysis predicts that not only will noise level increases exceed GRSG thresholds at the Montana 10 and Pole Creek 01 leks, but they will exceed ambient levels and are therefore noticeable. There is insufficient quantifiable information in the Recommended Mitigation and Monitoring to accurately make this claim. If the Recommended Mitigation and Monitoring will reduce noise levels to near ambient, we would strongly recommend re-running the Noise Model to provide clear information on how concerns regarding noise are addressed. Using the information currently provided, the effectiveness claim contradicts the DEIS's own Noise Model.	Thank you for your comment. The proposed project is consistent with the 2015 GRSG ARMPA, and LNC has proposed a suite of applicant committed design features to limit effects on GRSG. LNC is working with the Sagebrush Ecosystem Technical Team (SETT) to utilize the Conservation Credit System (CCS) to offset effects of the proposed Project's to GRSG and sagebrush habitat (GRSG Amendment, Mitigation MD MIT1). LNC complied with all protocols provided by NDOW in 2018 for estimating noise levels.
P861	We disagree that the noise levels, analysis, and resulting mitigation for noise are consistent with the 2015 and 2019 GRSG ARMPA. The consistency table indicates "project related noise emission modeling indicate a low probability for noise level exceedances of greater than 10dBA at active GRGS leks…" Section 4.5.2.1 (page 4-49) of the DEIS describes predicted noise level increases that exceed 10dba above	BLM has reviewed this issue closely and has determined that the applicant followed current modeling protocols provided to them in 2018 by NDOW. BLM has included NDOW's revised calculations in the EIS for complete disclosure. Noise restrictions included in the 2015 and 2019 GRSG ARMPAs are not applicable to non-discretionary minerals projects.

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	ambient sound levels at the lek, which contradicts the consistency table. There is no analysis presented for predicted noise level increases at the compliance point 0.25 miles from the leks, but it can be assumed those increases will be slightly higher than what is expected at the lek because of closer proximity to the project. While we appreciate the intent to develop a Noise Monitoring Plan (Section 4.14.2), we are unaware of any other mitigations to reduce noise impacts presented in the DEIS. The Recommended Mitigation and Monitoring (Section 4.14.2) items are likely already included in the Noise Model because the model uses actual sound levels from comparable equipment and sources. The use of electric motors instead of gasoline or diesel-powered motors would likely have an appreciable impact on the predicted noise levels, but this currently is not something LNC has committed to implementing and is not reflected in the Noise Model.	
Letter from Jean and Richard Williams and Bob and Tina Kinsley (ePlanning Letter #18)		
P862	We would like to submit our proposal for alternative D. When the Lithium mine was presented to me years ago, it was going to be a "ore concentrate haul out" not a manufacturing entity. This project has a bad feel, in that sulfur and chemical hauling to the site is very large and presents a huge danger to human health and to our environment.	Thank you for your comment.
P863	We are a water basin that is not going to fare well with a concentrated large use of water at the lower end of the basin.	Comment noted.
P864	I am going to approach each subject individually. We also wish to put on record here that an extension of this comment period was denied. We are in favor of an extension due to Covid 19, delaying asked information being delivered to Edward Bartell and other participants. We have relied heavily on Edward's knowledge for this process. He has been impeded by these delays and that is on top of his regular job being a rancher.... If this goes to court, our comment is documented here.	Thank you for your comment. This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P865	1) Traffic: NV SR 293 to Kings River is a two lane highway. Heavy truck traffic of this magnitude may deteriorate the roadbed even more. There is problems over by the Cherry Creek outflow where the roadbed lost its footing in the past. Farm machinery and harvest trucks use 293 to access fields and deliver crops. They are slow moving and require caution to approach as they sometimes cannot readily see traffic behind them. There is open range to consider that would require fencing by the mine to offset roadkill by the increased mine traffic. This would be paid for by the mine, not the BLM or the permit holders. The speed limit for SR 293 would have to be dropped to 45 all the way to the mine site for safety reasons, i.e.: hazardous materials trucks and increased traffic.	Nevada Department of Transportation (NDOT) has been in contact with Lithium America regarding the future BLM Thacker Pass Lithium Mine Project. Detailed engineering design (of the acceleration/deceleration lanes) are not available at this time; however, all improvements will have to meet NDOT specifications and standard plans. Based on previous discussions with the operator, improvements may include roadway widening, deceleration lanes, acceleration lanes, dedicated turn lanes, roadway lighting, roadway striping, roadway signage and any other improvements deemed necessary. Potential project related off-site road modifications are the jurisdiction of NDOT. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations.

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P866	2) Water: If the manufacturing plant goes into construction, 5200 AFA of water will be required according to the mine proposal. As in other mining situations, that number could and probably will increase. This could only be the minimum amount required or a starting point. The claim is that the concentration of AFA on one well source will not hurt the aquifer of the Orovada Quinn Basin. We beg to differ. Like a sink in your kitchen, that much water concentrated at one point will drain and lower the aquifer over time. The drop may be drastic, more so than the 10 feet projected by paid staff or contractors of the mine. This will decrease the amount of native and planted vegetation that ranchers and wildlife rely on in the mine vicinity as the surface aquifer is depleted. Springs and creeks will more than likely dry up and stock water and irrigation wells will be impacted. Granted, they are buying water rights to do this. But the pumping will be 24 hours/ 7 days/ 365 days a year. Who is going to deepen the existing wells with rights and flows already established? The mine should. We are not deep pockets and have the right to farm and ranch in peace. This water concentration can be far reaching into our area as the rainfall in the basin is 7 to 10 inches annual... Wells on the east side towards hwy 95 could see the largest table drop as they are farther away and at higher elevation. The water Orovada relies on and the major creeks from the top of Paradise Hill to the Quinn River and Flat Creek could all have impeded flows as the water is drawn for this mine. Sheep Creek on the Kings River side has been dried up due to prospect/ test holes not being sealed up after drilling. Thacker Pond will more than likely be impacted as well, let alone the Kings River aquifer. If and when mining ceases, this water could be piped out of our basin to Reno. This will further deplete our aquifer as it does not get used for irrigation to help recharge the basin. It also depletes our county of water.	Comment noted.
P867	3) Sulfur: A very big and unknown impact on our aquifer, land and air if the manufacturing plant goes into production. Established farms and ranches could see a drop in production. Who is going to pay for this? The mine? They are paying Chinese companies for loans at very high interest rates. If they are defaulted on, will the Chinese follow our standards? Is this following the Critical Mineral Production Guidelines if Chinese own the mine/ high percentage of ownership to produce this mineral for the United States? Will the mineral stay in the United States...? This could be a disaster. Elon Musk is having a big announcement on September 21st after the comment period closes. Is he changing the content of his batteries? Is he buying the mine? This mine may be a water grab.	Application of Nevada regulations for management of hazardous materials at the facility and hazardous materials storage permit requirements for the facility would not be affected by mine ownership status.
P868	4) Uranium: In the area. Will the mine be able to pay cancer lawsuits if the Lithium is contaminated? Will disturbing the Uranium result in environmental and water contamination?	Radiological hazards associated with operation of the project include potential exposure to Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) due to processing of ore containing naturally occurring radionuclides, including naturally-occurring uranium. NDEP has established screening levels for monitoring on-site disposal of wastes containing uranium and other radioactive materials, referred to as Profile I-R Reference Values (see

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		EIS Section 4.16 Wastes, Hazardous or Solid). Baseline geochemical characterization indicated that radionuclides are elevated in some samples of materials including tailings and waste rock and ore, and there is the potential for leaching of radionuclides from tailings at concentrations exceeding threshold values. The Clay Tailings Filter Stack would be constructed as a zero-discharge facility to avoid potential impacts to groundwater. The LNC Waste Rock and Gangue Management Plan (LNC 2020b) establishes provisions for quarterly groundwater sampling and reporting including laboratory analysis of leachate for Nevada Profile I and Profile I-R constituents including uranium, thorium, radium226/radium228, and gross alpha radiation. In 2020 LNC commissioned an additional study to evaluate the concentrations of uranium associated with materials generated from the proposed Project to determine the risk that these materials pose to human health (SRK Consulting 2020). The study compared concentrations of uranium in waste materials to U.S. EPA risk-based Soil Screening Levels (SSLs) for industrial site soil and residential site soil concentrations. None of the waste rock and process materials that would be disposed of on site would exceed the U.S. EPA SSLs for industrial soil (230 mg/kg; EPA, 2020). Uranium concentrations for each type of waste rock material would be below the EPA SSL for uranium for residential soils (16 mg/kg) with the exception of the maximum values.
P869	5) Sage Grouse: Habitat will be depleted. Buying credits is not habitat. Ranchers have done more to help the habitat than the mine will. It appears the Bi State Sage Grouse Agreement will go out the window.	Thank you for your comment. LNC is working with the Sagebrush Ecosystem Technical Team (SETT) to utilize the Conservation Credit System (CCS) to offset effects of the proposed Project's surface disturbance to GRSG and sagebrush habitat. The CCS provides a regulatory mechanism for GRSG habitat protection that ensures habitat effects from anthropogenic disturbances (debits) are fully compensated by long-term enhancement and protection of habitat that result in a net benefit for the species (credits). The BLM does not administer the development of credits or debits under the CCS and is not responsible for enforcement of program requirements.
Letter from Great Basin Research Watch (ePlanning Letter #20)		
P870	Great Basin Resource Watch, Basin and Range Watch, and The Progressive Leadership Alliance of Nevada submit the attached comments and 17 supporting documents for the proposed Thacker Pass Lithium Mine in Humboldt County Nevada.	Thank you for your comments.
Letter from Max Wilbert (ePlanning Letter #26)		
P871	Hello BLM officials, I am submitting a comment on the Thacker Pass DEIS for the proposed lithium mine at Thacker Pass. I am resident of Oregon but regularly recreate, hike, photograph, hunt and gather wild foods, and otherwise visit Nevada including the Humboldt County area. Few people consider Nevada to be one of the	Thank you for your comment. Global climate change is not within the scope of this analysis. Effects to groundwater are presented in Section 4.3. Acid mine drainage is not anticipated under the proposed Project. Effects to wildlife are presented in Section 4.5. State of Nevada requirements for compensatory

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	treasures of the United States but this certainly the case. The lack of water and harsh terrain, as well as the fact that the federal government owns most of the land, has preserved Nevada as the most wild state outside of Alaska. Remote landscapes such as the Thacker Pass area preserve a mostly-intact ecology that is unimaginable along the eastern seaboard or the population centers of the west coast. Ironically, given that proponents point towards uses in the green energy industry, lithium mining is a polluting and destructive process. Turning wild land into extraction zones, whether for green energy or otherwise, is a dereliction of duty for agencies like the BLM. The economy of resource extraction is something that is coming to an end, and must come to an end to provide a livable future for our children. I'm scared for the world they are going to inherit. Some people will say "it's only one mine." But then there is another, and another, and another. Nevada has a finite number of mountains, and a finite amount of lithium. As someone who considers this landscape as a second home, I want this landscape protected against industrial interests that will benefit a few at the expense of the public, wildlife, and future generations. I urge you to choose option D, the no action alternative. Do not permit and move forward with this mine. Specifically, the draft EIS does not adequately address impacts to 1) global climate change, 2) groundwater pollution, 3) acid mine drainage, 4) wildlife and bird impacts, specifically how the loss of habitat rather than direct take would affect populations in the area, 5) impacts to pronghorn migration, and 6) impacts to pygmy rabbit and burrowing owl habitat (in this case, DEIS alternatives apart from the "no action alternative" fail to meaningfully mitigate for harm to these species in any way). Additionally, 6) impacts to Greater Sage-Grouse are unacceptable within the context of the 99% decline of the species. Thank you and please keep me appraised of developments regarding this project. Sincerely, Max Wilbert	mitigation to offset effects to greater sage-grouse are discussed in Section 4.5. The BLM cannot require offsite mitigation for effects to habitat but compliance with all federal, state, and local regulations is a required condition of BLM approvals.
Letter from Kelly Fuller (ePlanning Letters # 21-25)		
P872	I am writing to submit comments and Attachments on the DEIS of the Thacker Pass Lithium Project, on behalf of Western Watersheds Project. (Attachments might be submitted separately from the letter, depending on what this web portal allows.)	Thank you for your comment.
Letter from Elisabeth Robson (ePlanning Letter #27)		
P873	Dear BLM, I completely oppose the development of the Thacker Lithium Mine. It will destroy much needed habitat for wildlife, and cause incredible damage to the fragile desert ecosystems. I urge you to NOT approve the development of this mine. Thank you Elisabeth Robson Washington State	Thank you for your comment.
Letter from Elizabeth Ulion (ePlanning Letter #28)		
P874	Please do not approve this mine. It is a threat to human life and non-human life on a grand scale. The mine would destroy prime habitat for Greater sage-grouse, pygmy rabbits, burrowing owls, and pronghorn antelope migratory corridors. It would release massive amounts of air, water, and soil pollution.	Thank you for your comment.

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Letter from E. Quist (ePlanning Letter #29)		
P875	I am writing in full opposition to the Chinese/Canadian mining conglomerate proposal for a massive 6,000 acre Lithium Mine for Thacker Pass, Nevada. This would be a continental-scale mine built to satisfy the entire lithium demand for the United States. The mine would destroy prime habitat for Greater sage-grouse, pygmy rabbits, burrowing owls, and pronghorn antelope migratory corridors. It would release massive amounts of air, water, and soil pollution. And it's got massive backing from the largest corporations in the world—as well as many "green" energy advocates. Stop killing everything for human greed & gluttony.	Thank you for your comment.
Letter from Aletha Woodruff (ePlanning Letter #31)		
P876	I have a lot of concerns about a mine of this scale on sensitive habitat. The sage-grouse, pygmy rabbits, burrowing owls, pronghorn antelope.... not to mention the carbon release and pollution. We are at a crossroads as a species right now. We can start consuming less and using our *amazing* ingenuity to find other solutions, or we can continue to extract from our planet until it is drained of all life and we ourselves are extinct. The wildfires, COVID, the massive amounts of habitat loss and destruction are all a result of our greedy and irresponsible land and water management practices. It is time we remembered our role in this ecosystem and re-imagined ourselves as something other than a drain. I am opposed to this project or any project fundamentally that is based in a large scale extraction based paradigm.	Thank you for your comment.
Letter from Andrea Finley (ePlanning Letter #33)		
P877	This mine will destroy prime habitat for Greater sage-grouse, pygmy rabbits, burrowing owls, and pronghorn antelope migratory corridors. It will decimate the last known habitat of a specific buckwheat wildflower, causing that species to go extinct. It will release massive amounts of air, water, and soil pollution. Perhaps we need to rethink our need for lithium, putting massive efforts into research & development of alternatives rather than polluting even more of our planet in our insatiable need for resources.	Thank you for your comment.
Letter from Shannon White (ePlanning Letter #34)		
P878	This EIS does not adequately provide for sensitive species Within the project area. Please do not approve this EIS.	Thank you for your comment.
Letter from Spencer Hamil (ePlanning Letter #35)		
P879	The externalized costs of this mine would far surpass the short term benefits for people looking to benefit from lithium. This project needs to be rejected for the local and global environment, for people, for wildlife, and for future generations. This is an unwise project that people in the future would regard with disgust and disdain. The people making this project happen would be hated by everyone for millennia.	Thank you for your comment.

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Letter from Liz Lafferty (ePlanning Letter #36)		
P880	Please do not approve this project. We must slow down all extractive activities till we bring ourselves back into better balance with what air, water, soil can tolerate without massive impacts on the world that sustains us. To do otherwise is to kill the Golden Goose. We've given the keys to a 911 Porsche to a 17 year old boy and his friend, we can count on him to behave appropriately for a 17 year old boy-- and we shouldn't be surprised when he drives that beautiful Porsche over the guard rail. That is his nature. His 17 year old wiring leaves room for little else. Profit above all else is the same destructive ride-- fun while it lasted and destined for a catastrophic ending. Thank you for slowing down and looking for better solutions.	Thank you for your comment.
Letter from Kelly Fuller (ePlanning Letter #38)		
P881	These supplemental comments on the Thacker Pass DEIS and their four Attachments are submitted on behalf of Western Watersheds Project. They are in addition to comments we submitted earlier today. Thank you for BLM's consideration of our comments.	Thank you for your comment.
Letter from B. Meredith (ePlanning Letter #39)		
P882	The proposed project for the lithium mine at Thacker Pass should not be approved. I have been going up to Orovada and Kings River for over twenty years. We have a unspoiled area in the Double H mountains and the Montana mountains. The building of this mine will devastate the rural lifestyle of all the residents of Orovada and Kings River valley. The increase in truck traffic to and from Winnemucca will be more then any of the roads can handle. The effects to the environment and wildlife will be dramatic. The rural lifestyle of all the local residents will be changed forever. I don't believe the processing of this mineral is as safe as we are being told it is. I strongly feel this project should not be approved, please side with the locals and not approve it.	Thank you for your comment.
Letter from Kirk Mader (Email #37)		
P883	I am very concerned about the adverse effect that the Thacker Pass Lithium Mine may have on our community of Orovada. I believe the mine will have a detrimental effect on: groundwater levels, our environment, our property values, our quality of life, our traffic, our cohesiveness as a community.	Thank you for your comment. Potential effects to groundwater are presented in Section 4.3. Potential effects to property values and quality of life are addressed in Section 4.11.
P884	I am also very alarmed about the foreign ownership.	Lithium Nevada is a domestic corporation registered in the State of Nevada. This issue is outside the scope of this document and the decision to be made.
P885	Please consider all of these things and the many other effects that I did not address as we go through this process. Thank you very much for your time.	Thank you for your comment.

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Letter from Wendlyn Muratore (Email #38)		
P886	1a. I am writing to you as a concerned resident of Kings River Valley. As I know you are aware NLC plans to mine the lithium found in the area of Thacker Pass. I have grave concerns about their plans, or lack thereof, for instance:	Thank you for your comment.
P887	1b. Pages 2-3 and 2-4, Section 2.2.3.1 Pit Dewatering. This section describes that pit dewatering is not anticipated until 2055, and at that point, peak dewatering is anticipated at 50 gallons-per minute. What happens if dewatering must occur before 2055? Will the water coming from the pit be contaminated, with sulfur, arsenic, and uranium? Or is that only in the tailings pile that is only supposed to be toxic for 300 years?	Potential effects to water quantity and water quality were addressed in Section 4.3.
P888	Page 2-7, Section 2.2.5.5 Lithium Processing Plant: Substantial deliveries of raw materials and chemicals to the facility. SR 293 is a two lane road, hay trucks, and people living in Kings River use this state Route to get out to 95, NLC is talking about 60 to 100 one way trucks, loaded one way, unloaded going out? Sounds like an accident looking for a lot of places to happen.	Approximately 60 to 100 one-way truck trips per day, predominantly between the transloading facilities near Winnemucca and the plant, would be made during Phase 1. During Phase 2, between 120 to 200 one-way truck trips per day would be required to support the Project through reagent and product shipments. Transport of hazardous materials is a common and appropriate use of public roadways, and all commercial transportation of hazardous materials on public roadways would be subject to NDOT and USDOT regulations. Transportation of reagents and products would be conducted in accordance with U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA), NDOT, and Nevada Department of Public Safety standards and permitting requirements for road transport of hazardous materials, including requirements of NAC Chapter 459.975 Transportation of Hazardous Materials on Public Highways. Hazardous materials would be transported to and from the site using licensed hazardous materials transport vendors. Transportation of molten sulfur and other hazardous materials to and from the proposed LNC facility on public roads would be conducted by licensed transport vendors holding appropriate hazardous materials transportation licenses. LNC is developing proposed on-site roadway improvements in coordination with NDOT. These improvements are anticipated to include acceleration / deacceleration lanes on SR 293 at the entrance to the proposed mine site. These improvements would reduce traffic impacts and reduce the likelihood of roadway accidents from truck transportation of hazardous materials at the proposed LNC facility. Off-site road improvements on public roadways are outside of the BLM's regulatory authority and would be determined through consultation between the applicant and NDOT. PHMSA reported 366 hazardous materials incidents involving highway transportation of molten sulfur nationwide between January 1, 1990 and September 29, 2020, corresponding to approx. 12 incidents per year. The data provided in the PHMSA incident database are from PHMSA Hazardous

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		Materials Incident Report Form 5800.1. Incidents reported in the PHMSA incident database included accidents occurring on public roadways and incidents related to loading and unloading of highway vehicles and related equipment carrying molten sulfur. PHMSA reported no fatalities involving molten sulfur transportation during this period and reported eleven incidents involving non-fatal injuries, the most recent of which occurred in August 2009. The remaining 10 reported injury incidents involving molten sulfur transportation occurred prior to January 1, 2000. In each reported injury incident, the injured individual(s) were equipment operators and other personnel, not members of the public. Considering the reported incident rate of approx. 12 incidents per year nationwide related to highway transportation of molten sulfur, the likelihood of an incident occurring at any specific location is low. Reference: U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA) Incident Statistics. Accessed September 29, 2020. https://www.phmsa.dot.gov/hazmat-program-management-data-and-statistics/data-operations/incident-statistics
P889	These are two examples of our concerns, the list goes on to water and air quality, effects to water rights, effects to Seeps and Springs, Public safety. Oh, and let's not forget NLC's claim that there is no residential areas within 19 miles of the mine, my home is approximately 7 miles from the mine site, and there are homes closer than mine. NLC has categorized our farming and ranching community as industrial, while we do have equipment on our farms and ranches, we also have families, children, and grandchildren we are raising here in the "industrial area",	Revisions to the EIS have been included to revise and clarify that the nearest designated residential area is located 19 miles from the Project (Orovada) and that the nearest residence is located approximately 0.5 miles from the proposed mine site.
P890	Kings River Valley isn't just a farming and ranching community, people come here from all over the state to hunt, fish, and recreate, Kings River is a well know spot for hunting big horned sheep, mule deer, and antelope. It's one of the most picturesque places in the stat e. Kings River will be desecrated by NLC, when all's said and done, they go back to Canada, and Kings River is left in ruins. They won't bring back the springs or pond that are dried up, or the rock formations that will be blasted away, the wildlife that has left the area because of all the activity going on in and around the mine. We won't recognize Thacker Pass when they are done.	Thank you for your comment. Potential effects to recreation resources are addressed in Section 4.17. Potential effects to visual resources are addressed in Section 4.15.
P891	Our community feels like they don't have a voice in this matter, "its progress and growth, you can't stop it", well maybe so, but I at least am going to go down screaming.	Thank you for your comment. This NEPA process is being executed under the protocol set by Secretarial Order 3355.
Letter from Danny and Judy Lamb (Hardcopy Letter #4)		
P892	We are writing to you as concerned residents of Kings River Valley. We have concerns regarding this project.	Thank you for your comment.

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P893	We have concerns regarding how this is going to affect us. We. have read the counties letter to you. We are against the transfer of water from the Orovada area for this project. We don't agree with transferring these to the project.	See Common Response WATER-8.
P894	In the early stages of this proposal, we understood there was to be very little water usage. Now it seems they are proposing more. There was so Iittle water proposed that it was not a concern. Now it seems there will be a dewatering pit. Will the standards for purifying this water be followed? Will there be residue of sulfur, arsenic, uranium? Or will the tailings contain these elements for the next 300 years?	Potential effects to water quantity and water quality are addressed in Section 4.3 of the EIS.
P895	We keep hearing that this project is 19 miles from the nearest home. That is not true, it will only be ·5 miles from the first home in Kings River Valley. The whole thing is more concerning for Kings River Valley than Orovada. The traffic will off ect the roads very much. Who will pay for maintenance and upkeep? The mine should have to pay for all this, not the taxpayers.	Revisions to the EIS have been included to revise and clarify that the nearest residential area is located 19 miles from the Project (Orovada) and that the nearest residence is located approximately 0.5 miles from the proposed mine site. Nevada Department of Transportation (NDOT) has been in contact with Lithium America regarding the future BLM Thacker Pass Lithium Mine Project. Detailed engineering design (of the acceleration/deceleration lanes) are not available at this time; however, all improvements will have to meet NDOT specifications and standard plans. Based on previous discussions with the operator, improvements may include roadway widening, deceleration lanes, acceleration lanes, dedicated turn lanes, roadway lighting, roadway striping, roadway signage and any other improvements deemed necessary. Potential project related off-site road modifications are the jurisdiction of NDOT. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations.
P896	The lithium processing plant is another issue. We support the Counties letter and have noticed the continuing asking of all these questions of the NLC in the past and it has seemed that all of these questions have been answered vaguely and possibly skirted around. All of a sudden the BLM seems to be in a hurry to get the EIS done for NLC. Usually an EIS takes a very long time to complete. What is the rush?	Thank you for your comment. This NEPA process is being executed under the protocol set by Secretarial Order 3355.
P897	The hunting and fishing, farming and ranching, are going to be changed for ever and we fear not for the better.	Thank you for your comment.
P898	Pages 2-13, section 2.27.5 re truck access and product shipping is still very much in the dark. This is an issue that needs to be completely and very much secured decisions made. SR293 and HWY 95 do not have the benefits of the Interstate roads that are in use for most of the other mines in Nevada	Revisions to the EIS have been included to revise and clarify that the nearest residential area is located 19 miles from the Project (Orovada) and that the nearest residence is located approximately 0.5 miles from the proposed mine site. Nevada Department of Transportation (NDOT) has been in contact with Lithium America regarding the future BLM Thacker Pass Lithium Mine Project. Detailed engineering design (of the acceleration/deceleration lanes) are not available at this time; however, all improvements will have to meet NDOT specifications and standard plans. Based on previous discussions with the operator, improvements may include roadway widening, deceleration lanes, acceleration lanes, dedicated turn lanes, roadway lighting, roadway

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		striping, roadway signage and any other improvements deemed necessary. Potential project related off-site road modifications are the jurisdiction of NDOT. All off-site trucking and shipping would be conducted consistent with NDOT and USDOT regulations.
P899	Please realize our concerns and take into consideration before letting this project proceed.	
Letter from Kelly Fuller (ePlanning Letter #38)		
P900	Western Watersheds Project (WWP) thanks you for this opportunity to provide comments on the Draft Environmental Impact Statement (DEIS) for the Thacker Pass Lithium Mine (DOI-BLM-NV-W010-2020-0012-EIS). We previously submitted scoping comments on this project and incorporate them by reference.1	Thank you for your comment.
P901	Western Watersheds Project is a non-profit organization with more than 12,000 members and supporters. Our mission is to protect and restore western watersheds and wildlife through education, public policy initiatives and legal advocacy. Western Watersheds Project and its staff and members use and enjoy the public lands and their wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic, and other purposes, including in Nevada. Western Watersheds Project also has a direct interest in mineral development that occurs in areas with sensitive wildlife populations and important wildlife habitat, such as greater sage-grouse and designated sage-grouse habitat management areas. The Thacker Pass Lithium Mine (Project) would be located in and have affects to areas where we have enjoyed camping, photographing natural high desert beauty, watching golden eagles and greater sage-grouse, and just in general hanging out.	Thank you for your comment.
P902	1a. The DEIS Misrepresents the BLM's Legal Obligations by Focusing on Resource Extraction and Downplaying the Federal Government's Obligations to Protect Wildlife, Habitat and Other Land Uses. The DEIS describes the Federal Land Management and Policy Act (FLPMA) as follows: This act did not amend the Mining Law of 1872, but did affect the recordation and maintenance of claims. Persons holding existing claims were required to record their claims with the BLM, and all new claims and sites were required to be recorded with the BLM. The law gave the BLM information on the location and number of unpatented mining claims, mill sites, and tunnel sites; helped determine the names and addresses of current owners; and helped remove any cloud of title on abandoned claims.	See comment response P592.
P903	1b. DEIS at O-7. But in The Federal Land Policy and Management Act of 1976 as Amended, BLM states, "The Federal Land Policy and Management Act of 1976, as amended, is the Bureau of Land Management "organic act" that establishes the agency's multiple-use mandate to serve present and future generations." 2 Instead of merely clarifying mining issues as the Project's DEIS states, FLPMA declares: [T]hat it is the policy of the United States that the public lands be managed in a	Thank you for your comment.

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	manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.	
P904	1c. 43 U.S.C. §1701 (a) and (a)(8). Furthermore, FLPMA states, "In managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C. § 1732(b). Under FLPMA, the requirement that the Secretary prevent unnecessary or undue degradation is not waived for mining. See second and final sentences of 43 U.S.C. § 1732(b).	Thank you for your comment.
P905	2a. Similarly, the DEIS's description of the Migratory Bird Treaty Act omits that under Section 704 of the MBTA, USFWS is "authorized and directed" to determine the exceptions to the MBTA's take prohibition, i.e., USFWS has the sole authority and responsibility "to determine when, to what extent, if at all, and by what means" taking of migratory birds is permissible, and to "adopt suitable regulations permitting and governing the same." 16 U.S.C. § 704(a). Significantly, the statute does not have a mens rea requirement, i.e., entities that violate the Act can be prosecuted on a strict liability basis regardless of intent or motive to take or kill migratory birds. Although in 2017 the Department of the Interior attempted to overturn decades of federal policy on legal liability for incidental (non-purposeful) take of MBTA-protected birds with Solicitor's -Opinion M-37050, in August 2020, that M-Opinion was vacated by a federal court. See Natural Resources Defense Council v. U.S. Dep't of the Interior, No. 1:18-cv-4596 (S.D.N.Y. Op. and Order Aug. 11, 2020).3	Comment noted. Appendix O of the EIS presents a summary of MBTA information and refers the reader to those regulations for detailed information. LNC has worked closely with the USFWS and has developed a Bird and Bat Conservation Strategy (BBCS) and ECP to develop avoidance, minimization and mitigation measures to reduce potential effects to migratory birds. Please see Section 4.5.4 for discussion of USFWS consideration of approval of an incidental take permit for potential effects to eagles.
P906	2b. In 2015, USFWS proposed to promulgate regulations that would create permits authorizing incidental (non-purposeful) take of birds protected by the MBTA. However, these regulations were never finalized, and currently there are no permits available to authorize the incidental take of MBTA-protected birds. Instead, USFWS works with companies on measures to avoid, minimize and mitigate the impacts of industrial projects on birds protected by the MBTA. Such collaboration relies on companies and industries voluntarily taking actions agreed upon with or recommended by USFWS to protect migratory birds. It is very important to note that USFWS, not BLM, determines whether a company's projects have illegal incidental take of MBTA-protected birds.	Comment noted. USFWS proposed revisions to existing regulations are not within the scope of this EIS analysis. LNC has worked closely with the USFWS and has developed a Bird and Bat Conservation Strategy (BBCS) and ECP to develop avoidance, minimization and mitigation measures to reduce potential effects to migratory birds.
P907	2c. Furthermore, the DEIS's description of EO 131864 and its implementing Memorandums of Understanding (MOUs) between federal agencies such as BLM and USFWS omits crucial provisions. Such MOUs do not merely require that an agency's environmental analysis "evaluates the effects of actions and agency plans on migratory birds, with emphasis on species of concern." DEIS at O-9. Instead, (e)	Thank you for your comment.

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	Pursuant to its MOU, each agency shall, to the extent permitted by law and subject to the availability of appropriations and within Administration budgetary limits, and in harmony with agency missions: (1) support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions; (2) restore and enhance the habitat of migratory birds, as practicable; (3) prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable; (4) design migratory bird habitat and population conservation principles, measures, and practices, into agency plans and planning processes (natural resource, land management, and environmental quality planning, including, but not limited to, forest and rangeland planning, coastal management planning, watershed planning, etc.) as practicable, and coordinate with other agencies and nonfederal partners in planning efforts;	
P908	2d. (5) within established authorities and in conjunction with the adoption, amendment, or revision of agency management plans and guidance, ensure that agency plans and actions promote programs and recommendations of comprehensive migratory bird planning efforts such as Partners-in-Flight, U.S. National Shorebird Plan, North American Waterfowl Management Plan, North American Colonial Waterbird Plan, and other planning efforts, as well as guidance from other sources, including the Food and Agricultural Organization's International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries; (6) ensure that environmental analyses of Federal actions required by the NEPA or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern;	Comment noted.
P909	2e. (7) provide notice to the Service in advance of conducting an action that is intended to take migratory birds, or annually report to the Service on the number of individuals of each species of migratory birds intentionally taken during the conduct of any agency action, including but not limited to banding or marking, scientific collecting, taxidermy, and depredation control; (8) minimize the intentional take of species of concern by: (i) delineating standards and procedures for such take; and (ii) developing procedures for the review and evaluation of take actions. With respect to intentional take, the MOU shall be consistent with the appropriate sections of 50 C.F.R. parts 10, 21, and 22; (9) identify where unintentional take reasonably attributable to agency actions is having, or is likely to have, a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. With respect to those actions so identified, the agency shall develop and use principles, standards, and practices that will lessen the amount of unintentional take, developing any such conservation efforts in cooperation with the Service. These principles, standards, and practices shall be regularly evaluated	Comment noted.

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	and revised to ensure that they are effective in lessening the detrimental effect of agency actions on migratory bird populations. The agency also shall inventory and monitor bird habitat and populations within the agency's capabilities and authorities to the extent feasible to facilitate decisions about the need for, and effectiveness of, conservation efforts;	
P910	2f. (10) within the scope of its statutorily-designated authorities, control the import, export, and establishment in the wild of live exotic animals and plants that may be harmful to migratory bird resources; (11) promote research and information exchange related to the conservation of migratory bird resources, including coordinated inventorying and monitoring and the collection and assessment of information on environmental contaminants and other physical or biological stressors having potential relevance to migratory bird conservation. Where such information is collected in the course of agency actions or supported through Federal financial assistance, reasonable efforts shall be made to share such information with the Service, the Biological Resources Division of the U.S. Geological Survey, and other appropriate repositories of such data (e.g., the Cornell Laboratory of Ornithology); (12) provide training and information to appropriate employees on methods and means of avoiding or minimizing the take of migratory birds and conserving and restoring migratory bird habitat;	Comment noted.
P911	2g. (13) promote migratory bird conservation in international activities and with other countries and international partners, in consultation with the Department of State, as appropriate or relevant to the agency's authorities; (14) recognize and promote economic and recreational values of birds, as appropriate; and (15) develop partnerships with non-Federal entities to further bird conservation. EO 13186 at 3854 to 3855, emphases added.	Comment noted.
P912	2h. Moreover, BLM has additional responsibilities under its MOU with USFWS that implements EO 13186. The MOU states that both BLM and USFWS shall: A. As practicable, protect, restore, and conserve habitat of migratory birds, addressing the responsibilities in Executive Order 13186. B. Follow the FWS Bald Eagle Management Guidelines, as appropriate and consistent with agency missions, which can be found at http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BaldEagle/National BaldEagleManagementGuidelines.pdf. The Guidelines are a tool for landowners and planners who seek information and recommendations regarding how to avoid disturbing bald eagles. The document should be used in concert with a site-specific analysis to ensure all site conditions have been evaluated and addressed in avoidance and minimization measures. Many states and some tribal entities have developed state-specific management plans, regulations, and/or guidance for landowners and land managers to protect and enhance bald eagle habitat, and the FWS encourages the continued development and use of these planning tools to benefit bald eagles. C.	Comment noted.

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	Follow other migratory bird conservation measures as appropriate and consistent with agency missions. The measures, which are currently being developed, are anticipated to contain information and recommendations regarding how to avoid disturbing raptors (including golden eagles) and other migratory birds and how to avoid negatively affecting their populations.	
P913	2i. D. Work collaboratively to identify and address issues that affect species of concern, such as migratory bird species listed in the Birds of Conservation Concern (BCC) and FWS's Focal Species initiative. Potential activities could include monitoring abundance of birds and the creation, conservation, and protection of habitats important to these species. E. Promote and contribute migratory bird population and habitat data to interagency partnership databases including the: National Biological Information Infrastructure (NBII), the Breeding Bird Research and Monitoring Database (BBIRD), Avian Knowledge Network (AKN), Waterbird Monitoring Partnership Database (WMPD), Natural Resources Monitoring Partnership (NRMP), and other databases that meet the needs of the Parties.	Comment noted.
P914	2j. F. Adopt the recommendations in the NABCI Monitoring Subcommittee report Opportunities for Improving Avian Monitoring" (February 2007), where applicable, when developing and implementing migratory bird conservation activities that warrant monitoring. Take appropriate steps to implement actions identified in the NABCI Monitoring Subcommittee's Annual Work Plan (http://www.nabci-us.org/monitoring.html). G. Provide training to agency employees on bird population and habitat inventory and monitoring methods, as well as management practices that minimize adverse impacts and promote beneficial proactive approaches to migratory bird conservation.	Comment noted.
P915	2k. H. Increase awareness of the information contained within comprehensive planning efforts for migratory birds, such as the bird conservation initiatives, to facilitate integration of conservation measures into land management and project planning. I. Participate on the interagency Council for the Conservation of Migratory Birds established by the Executive Order to evaluate the implementation of this MOU. The Director of the BLM, or a representative designated by the BLM Director, will serve on the Council. USFWS-BLM MOU at 4-5, emphases added.	Comment noted.
P916	2l. Moreover, BLM shall: A. Maintain or update current policy guidance regarding management of migratory birds and their habitat pursuant to the MBTA and EO 13186. B. Address the conservation of migratory bird habitat and populations when developing, amending, or revising management plans for BLM lands, consistent with the Federal Land Policy and Management Act, Endangered Species Act, and other applicable law. When developing the list of species to be considered in the planning process, BLM will consult the current FWS Species of Concern lists (see Definitions under Species of Concern). C. Evaluate and consider management objectives and recommendations for migratory birds resulting from comprehensive planning efforts	Comment noted.

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	(this includes the Partners in Flight North American Landbird Conservation Plan, North American Waterfowl Management Plan, U.S. Shorebird Conservation Plan, Western Hemisphere Shorebird Reserve Network, North American Waterbird Conservation Plan, and other planning integrated through the NABCI).	
P917	2m. D. During the planning process, consider special designations that may apply to all or part of the planning area, such as Important Bird Areas in the United States, and consider such designations in the appropriate plan documents. E. Participate in planning efforts of Bird Conservation Regions (BCRs) to facilitate development of conservation actions that benefit migratory bird species across multiple land ownerships, such as large-scale watersheds and coastal area restoration projects. This would include collaborative regions specific inventory monitoring such as that initiated among BLM, FWS, and the states in BCR 17. Increase awareness within the agency of information contained within these plans and within other comprehensive planning efforts for migratory birds. F. At the project level, evaluate the effects of the BLM's actions on migratory birds during the NEPA process, if any, and identify where take reasonably attributable to agency actions may have a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. In such situations, BLM will implement approaches lessening such take. Examples of possible approaches include those conservation measures listed in VII.G below.	Comment noted.
P918	2n. G. In coordination with the FWS, develop conservation measures and ensure monitoring of the effectiveness of conservation measures to minimize, reduce or avoid unintentional take. As needed, modify conservation measures to be more effective in reducing unintentional take and, as practicable, to restore and enhance the habitat of migratory birds. Examples of potential conservation measures include taking steps to: 1. Avoid identified raptor nests during motorcycle races. 2. Prevent bird entry into heater vents at oil and gas production facilities. 3. Avoid areas of raptor concentration when placing wind turbines. 4. Avoid nesting season during rangeland improvements, such as prescribed fire. 5. Manage livestock to avoid impacts on nesting birds and to improve migratory bird habitat. 6. Alter the season of some recreational activities and events to minimize disturbance of migratory bird breeding activities. 7. Modify wild horse and burro gathering activities to minimize disturbance of migratory birds during the breeding season. 8. Retain snags for nesting structures where snags are underrepresented. 9. Retain the integrity of breeding sites. 10. Minimize collisions with fences and meteorological towers on public lands through construction and marking stipulations.	Comment noted.
P919	2o. H. Work with Federal and non-Federal partners such as the Strategic Habitat Conservation partnership and joint ventures to integrate migratory bird and habitat conservation into BLM planning efforts. This would include participation in the Council for the Conservation of Migratory Birds to oversee the implementation of	Comment noted.

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	the Executive Order 13186 and appropriate BLM participation in Joint Venture boards. I. Integrate migratory bird conservation measures, as applicable, into future Activity Management Planning (Grazing, Recreation, Cultural Resources, Wildlife, etc.), surface operating standards and guidelines for oil and gas exploration and development, and renewable (wind, solar, and geothermal) energy development NEPA mitigation. This will address habitat loss and minimize negative impacts.	
P920	2p. J. Complete and begin implementation of a migratory bird conservation strategic plan within two years of the signing of this MOU, contingent upon the completion of the FWS Raptor Conservation Measures. The strategic plan will include the BLM's priority goals and objectives for bird conservation based upon legal responsibilities, and physical and natural resource opportunities. While foundation for this initially will be the existing four bird conservation strategies of Fish and Wildlife 2000, this comprehensive strategy will be driven by the needs of Bird Species of Concern. The BLM-wide plan will emphasize addressing the needs for inventory, monitoring, habitat treatments, and monitoring effects of habitat treatments and will be consistent with BLM wildlife program priority workload measures. Outreach, marketing, and partnerships, including economic and recreational value of birds, will also be addressed in the plan.	Comment noted.
P921	2q. K. Prevent and manage invasive species for the benefit of migratory birds through collaboration and local participation in cooperative weed management and invasive species management plans and efforts through the BLM invasive species program. L. Minimize or prevent the pollution or detrimental alteration of the environments utilized by migratory birds whenever practical by assessing information on environmental contaminants and other stressors relevant to migratory bird conservation. M. Support management studies and research to identify the habitat conditions needed to conserve migratory birds and to evaluate the effects of management activities on habitats and populations of migratory birds. N. Promote participation in NABCI, PIF, training of international students at the National Training Center, international joint ventures, and resource personnel exchange programs.	Comment noted.
P922	2r. O. Recognize and promote the value of migratory birds to the public through support of, and participation in, International Migratory Bird Day events; through development of Watchable Wildlife viewing sites that focus on bird conservation: and by sponsoring bird watching and appreciation activities (e. g. bird festivals and celebrations and youth education (WOW) programs) that draw visitors to the BLM lands. P. Continue and enhance partnerships with non-Federal entities to further bird conservation to further regional conservation planning, outreach, and education. Q. BLM will follow all migratory bird permitting requirements for activities subject to 50 CFR part 21. While working through the permitting process with FWS, the BLM will, to the maximum extent practicable, minimize the intentional take of species of concern and, if necessary, develop standards and procedures regarding such take.	Comment noted.

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	USFWS-BLM MOU at 5-8, emphases added.	
P923	3a. The USFWS-BLM MOU calls for BLM to complete a migratory bird conservation strategic plan within two years of the signing of the MOU. The plan that BLM produced contains a number of goals and measures that apply to the Thacker Pass Lithium Mine Project, including the following: Goal 1: Address BLM priority migratory birds during the NEPA and planning process, including consistent consideration of national and regional conservation goals and objectives.	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P924	3b. In order to address migratory birds in land use planning, BLM offices shall identify and understand the bird conservation goals and habitat protection objectives for the planning area's Bird Conservation Region, promoted through the North American Bird Conservation Initiative, contained in the comprehensive bird conservation plans. Then, as appropriate, incorporate these into the Resource Management Plan (RMP)s, implement identified actions and, with partners, monitor the results of these management actions. • North American Bird Conservation Initiative (http://www.nabci-us.org) • Partners in Flight (http://www.partnersinflight.org) • North American Waterfowl Management Plan • (http://www.fws.gov/birdhabitat/NAWMP/index.shtm) • North American Waterbird Conservation Plan (http://www.waterbirdconservation.org) • U.S. Shorebird Conservation Plan (http://shorebirdplan.fws.gov/)	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P925	3c. Goal 2: Address national and regional conservation goals and objectives for migratory birds. Action 1: Within one year of plan approval, the BLM WO shall incorporate consideration of national and regional bird conservation plan goals in every Land Use Planning document. Action 2: Within one year of plan approval, the BLM WO shall develop metrics for determining the effectiveness of plan implementation and guidance on outcomes to migratory birds. Action 3: Within one year of plan approval, the BLM WO shall complete a draft of the handbook for migratory bird conservation on BLM public lands. The Handbook will increase awareness and use of third-party "best available knowledge" as information to support planning decisions and NEPA analyses. (Division of Fish and Wildlife Conservation Lead)	Comment noted
P926	3d. EMPHASIS AREA 2: Migratory Bird Conservation Measures Goal 2: Identify and implement feasible measures, in coordination with the USFWS, to avoid or minimize unintentional take of migratory birds that may result from conducting BLM authorized activities (Appendix E). BLM Strategic Plan for Migratory Bird Conservation at 10 and 11, emphases original.5 In its Migratory Bird Strategic Conservation Plan, BLM made significant commitments to implementing EO 13186 and its related BLM-USFWS. Since many of these commitments involve BLM's Resource Management Plans, they should permeate BLM's management actions and	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.

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	be visible in the evaluation of potential approvals of projects such as the Thacker Pass Lithium Mine Project, which must conform to those plans. Furthermore, although the Project DEIS names Birds of Conservation Concern, BLM Special Status Species and NDOW species of concern that have been observed in the Project Area during surveys,6 but doesn't include consistent consideration of national and regional conservation goals and objectives, starting with not identifying those goals and objectives in the DEIS.	
P927	3e. Appendix H of the DEIS identifies birds that have been identified by USFWS, BLM, and Nevada Department of Wildlife (NDOW) as being of conservation concern: • Bank Swallow [c] • Brewer's Sparrow [a][c] • Canvasback [c] • Common Nighthawk [c] • Lewis's Woodpecker [a][c] • Loggerhead Shrike [a][c] • Long-billed Curlew [a][b][c] • Redhead[c] • Sage Thrasher [b][c] [a] BLM Special Status Species [b] USFWS Bird of Conservation Concern [c] NDOW species of concern	Comment noted.
P928	3f. DEIS at H-24 to H-25. Notably, Appendix B of the USFWS-BLM MOU implementing EO 13186 identifies what was then called BLM's Humboldt River Field Office as a top BLM field office for habitat fulfilling the breeding requirements of BLM Special Status Species Brewer's Sparrow and Sage Thrasher.7 This further indicates the need for BLM to incorporate strong bird habitat conservation measures into its analysis and decision about the Thacker Pass Project, including shrinking the Project's footprint.	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P929	3g. In order to be consistent with EO 13186 and its related USFWS-BLM implementing MOU, the DEIS must not only include these birds in the Project's environmental analysis but also incorporate strong conservation measures. Moreover, by approving the Project without fully avoiding, minimizing, and mitigating impacts to migratory birds of USFWS, BLM, and NDOW conservation significance, BLM is managing these species for decline, which is not in accordance with the commitments the federal government, has made in international migratory bird conservation plans. At a minimum, there should be a Project alternative that maximizes conservation of these birds.	Comment noted. The content of this comment is out of scope of the analysis of the Proposed Action and alternatives.
P930	3h. Moreover, the DEIS's listing of the Winnemucca District RMP's Objectives only shows ones related to mining and resource extraction, giving the misimpression that BLM does not have conservation obligations. The Winnemucca District RMP's conservation and wildlife-related Objectives need to be included in the DEIS too.	The Winnemucca District RMP is included by reference.
P931	3i. The DEIS's descriptions of FLPMA, the MBTA, and the Winnemucca District RMP's Objectives should be revised so that the public and BLM itself are not misled by the DEIS's cherry-picked, overly narrow summaries of these laws. BLM should also revise the Project's environmental analysis in accordance with the full extent of FLPMA, MBTA and the federal government's commitments to national and international migratory bird conservation plans, in order to ensure that the Project's	Thank you for your comment.

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	environmental analysis complies with NEPA and all other applicable federal laws and regulations.	
P932	4. The New Council on Environmental Quality (CEQ) NEPA Regulations Are Unlawful and Currently Being Challenged in Court. Many environmental groups (including Western Watersheds Project) and at least 22 states (including Nevada) have challenged CEQ's new NEPA regulations in federal court, in four lawsuits in the 2nd, 4th and 9th circuits.8 If the new regulations are ruled unlawful and BLM has based any of the Project's NEPA review, decision, or implementation of its decision on the new regulations, those will also be unlawful.	Thank you for your comment.
P933	5a. The Project Must Comply with Applicable RMPs. As part of its FLPMA compliance, BLM must ensure that all aspects of the Project comply with the applicable Resource Management Plan (RMP), including any Amendments such as for the Greater Sage Grouse (see Appendix N of the DEIS). BLM is under the mistaken view that, regardless of the fact that the Project will violate the RMP/Amendments the BLM must nonetheless authorize such use/access under FLPMA, the 36 CFR Part 3809 mining regulations, and the 1872 Mining Law.	Thank you for your comment.
P934	5b. For example, regarding the violation of the Greater Sage Grouse RMP Amendments, BLM stated: "LNC holds valid existing rights and therefore is not subject to the application of seasonal restrictions identified in the 2015 and 2019 GRSG Amendments." DEIS Appendix N. The same is true for BLM's acknowledgement that the Project would violate the Class II Visual requirements of the RMP.	The BLM is applying all regulatory requirements applicable to proposed non-discretionary minerals projects from the respective Greater Sage-grouse Land Use Plan Amendments (2015 and 2019) according to current mineral policy.
P935	5c. BLM is wrong. BLM must ensure compliance with all RMP provisions under FLPMA. This is required under the general land use conformity requirement of FLPMA, as well as BLM's duty to "prevent unnecessary or undue degradation" of the public lands. 43 U.S.C. 1732(b). FLPMA requires that all resource management decisions "shall conform to the approved [land use] plan." 43 C.F.R. § 1610.5-3(a). See Ore. Natural Res. Council Fund v. Brong, 492 F.3d 1120, 1128 (9th Cir. 2007) (holding that BLM project components "are inconsistent with the Plan and, consequently, violate FLPMA."). BLM "shall take appropriate measures . . . to make operations and activities under existing permits, contracts, cooperative agreements or other instruments for occupancy and use, conform to the approved [land use] plan " See 43 C.F.R. § 1610.5-3(b).	The BLM is applying all regulatory requirements applicable to proposed non-discretionary minerals projects.
P936	5d. If a proposed action is not clearly consistent with the land use plan, BLM must either rescind the proposed action or amend the plan, complying with NEPA and allowing for public 8 See Attachments 18, 19, 20, and 21.. participation. See 43 C.F.R. §§ 1610.5-3, 1610.5-5. See also National Parks and Conservation Ass'n v. FAA, 998 F.2d 1523, 1526 (10th Cir. 1993) (nonconforming land use required RMP amendment). The IBLA recognizes that this "consistency" requirement reflects the	The BLM is applying all regulatory requirements applicable to proposed non-discretionary minerals projects.

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	mandatory duty to fully and strictly comply with the governing land management plans. See, e.g. Jenott Mining Corp., 134 IBLA 191, 194 (1995); Uintah Mountain Club, 112 IBLA 287, 291 (1990); Marvin Hutchings v. BLM, 116 IBLA 55, 62 (1990); Southern Utah Wilderness Alliance, 111 IBLA 207, 210-211 (1989).	
P937	5e. There is no exception to the Plan requirements for mineral operations. As a leading federal court decision interpreting FLPMA and the Part 3809 regulations noted, BLM specifically requires compliance with all Plan provisions. Interior argues that the 2001 Regulations satisfy FLPMA's multiple use policies by expressly including a performance standard that all operations under § 3809 be managed in accordance with the applicable land use plans. Interior directs the court to § 3809.420(a)(3), which provides as follows: Land use plans. Consistent with the mining laws, your operations and post-mining land use must comply with the applicable BLM land-use plans and activity plans, and with coastal management plans under 16 U.S.C. § 1451, as appropriate. 43 C.F.R. § 3809.420(a)(3). Relying on § 3809.420(a)(3), as well as the provisions set forth in BLM's Land Use Planning Handbook, Interior maintains that "when BLM receives a proposed plan of operations under the 2001 rules, pursuant to Section 3809.420(a)(3), it assures [sic] that the proposed mining use conforms to the terms, conditions, and decisions of the applicable land use plan, in full compliance with FLPMA's land use planning and multiple use policies." Mineral Policy Center v. Norton, 292 F.Supp.2d 30, 49 (D.D.C. 2003), emphases added.	The BLM is applying all regulatory requirements applicable to proposed non-discretionary minerals projects.
P938	5f. In addition, as noted herein, BLM bases its failure to ensure compliance with the RMP on its view that "LNC holds valid existing rights and therefore is not subject to the application of seasonal restrictions identified in the 2015 and 2019 GRSG Amendments." Yet BLM nowhere ascertains and verifies the extent of these "valid existing rights." As noted herein, the simple fact that LNC has filed mining claims across the Project site does not establish "valid existing rights." Without verifying whether the company truly holds valid existing rights on all its claims, BLM arbitrarily and capriciously limits its FLPMA and NEPA reviews and its authority to protect public land under FLPMA.	The scope of the Surface Management Regulations includes "... all operations authorized by the mining laws on public land where the mineral interest is reserved to the United States, ..." That scope is not affected by the presence or absence of a mineral claim or claims.
P939	6a. The Project Does Not Implement All of the Grouse Protection Measures Required by the 2015 Grouse ARMPA, and Therefore Fails to Conform to the ARMPA and Will Cause Unnecessary or Undue Degradation. The 2015 Nevada/Northeastern California Greater Sage-Grouse Approved Resource Management Amendments (2015 Grouse ARMPA) is currently in effect due to an October 2019 court ruling that prohibits BLM from implementing the 2019 Grouse ARMPA.9 Greater sage-grouse are declining across their range, and mining is one of the threats destroying their habitat and otherwise harming them, as the 2015 Grouse ARMPA indicates. See 2015 Grouse ARMPA at 1-8 through 1-11. In order for greater sage-grouse to avoid extinction in general or extirpation from the local area,	The BLM is applying all applicable regulatory requirements applicable.

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	they need to maintain redundancy, representation, and resilience. See COT Report, for example pages 12-14 (Attachment 9). In the absence of an Endangered Species Act listing of greater sage-grouse, BLM's current mechanisms for preventing greater sage-grouse extinction and extirpation and maintaining greater sage-grouse redundancy, representation, and resilience are the grouse protection measures in the 2015 Grouse ARMPA. Unfortunately, the Thacker Pass Lithium Mine Project does not conform to the 2015 Grouse ARMPA, as described below:	
P940	6b. The Project does not conform to MD SSS 1, which states: In PHMAs and GHMAs, work with the proponent/applicant, whether in accordance with a valid existing right or not, and use the following screening criteria to avoid effects of the proposed human activity on GRSG habitat A. First priority—locate project/activity outside PHMAs and GHMAs B. Second priority—if the project/activity cannot be placed outside PHMAs and GHMAs, locate the surface-disturbing activities in non-habitat areas first, then in the least suitable habitat for GRSG 1. In non-habitat, ensure the project/activity will not create a barrier to movement or connectivity between seasonal habitats and populations C. Third priority—collocate the project/activity next to or in the footprint of existing infrastructure	The applicant has consolidated its proposed Project facilities in areas of lesser quality greater sage-grouse habitat after coordination with the BLM. Original mine plans were located on other mineral claims located in high quality habitat in the Montana Mountains.
P941	6c. 2015 Grouse ARMPA at 2-6, footnote omitted. The Thacker Pass Lithium Project's DEIS asserts that because past exploration and the current Project Plan were not located in the Montana Mountains, this ARMPA measure has been met. DEIS at N-5. However, sage-grouse habitat can be degraded not just by obvious impacts to vegetation and land, but also by noise impacts that can result in greater sage-grouse abandoning their leks, resulting in less habitat available to them, which is especially significant because sage-grouse show high fidelity to lek locations. The Project's Proposed Action has not avoided effects to sage-grouse habitat through relocation. Actual avoidance would be moving the Project further away from the Montana Mountains, to protect the viability of lek habitat there and/or shrinking the size of the Project's footprint in grouse PHMAs and GHMAs.	Mineral deposits are not flexible in terms of location. The applicant has consolidated its proposed Project facilities in areas of lesser quality greater sage-grouse habitat after coordination with the BLM. Original mine plans were located on other mineral claims located in high quality habitat in the Montana Mountains.
P942	6d. In addition, the DEIS has not demonstrated that the Project conforms to the 2015 Grouse ARMPA's measure MD SSS 2A, which limits disturbance in PHMA to 3 percent at both the Biologically Significant Unit level and the project level. See 2015 Grouse ARMPA at 2-6 to 2-7. The DEIS reports that this Project's Proposed Action would exceed that cap because the State of Nevada determined that there would be 12% disturbance at the project level. DEIS at N-5. The DEIS asserts that under the 2015 Grouse ARMPA in Nevada valid existing rights under the 1872 Mining Law may be excepted from the MD SSS 2A disturbance cap under some circumstances.10 But the Project's DEIS does not provide evidence that all of the Project's mining claims are valid, and therefore it is currently unknown whether the Project has valid existing rights. BLM must first determine if the Project's mining claims constitute valid existing rights. In the absence of an actual determination that	Thank you for your comment.

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	valid existing rights exist, the Project does not conform to MD SSS 2. By failing to implement all the grouse protection measures required by the 2015 Grouse ARMPA, the Project does not meet FLPMA's general land use conformity requirement and would cause unnecessary or undue degradation.	
P943	6e. Furthermore, the DEIS does not demonstrate that the Project conforms to MD SSS 2B, which states: In PHMA, in undertaking BLM management actions, and consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation.	Thank you for your comment. The BLM has worked with the operator to identify feasible measures to avoid and minimize potential effects to the human and natural environment that are within the regulatory authority of the BLM. Many of these measures have been incorporated into the proposed Mine and Exploration Plans of Operation. Any BLM approval of the proposed Mine and Exploration Plans or alternatives would require that the operator obtain all necessary State and Federal permits and comply with all applicable State and Federal regulatory requirements. The State of Nevada requirement to obtain sufficient credits through the Conservation Credit System is included.
P944	6f. 2015 Grouse ARMPA at 2-7. Here, two things are very important. First, unlike MD SSS 2A, MD SSS 2B does not mention the 1872 Mining Law. Nor does MD SSS 2B state that valid existing rights specifically related to mining are exempted from the net conservation gain mitigation requirement. Second, even if valid existing rights related to mining were exempted from the 2015 Grouse ARMPA's net conservation gain mitigation requirement, the Project's DEIS does not provide evidence that all of the Project's mining claims are valid, and therefore it is currently unknown whether the Project has valid existing rights. By failing to implement all the grouse protection measures required by the 2015 Grouse ARMPA, the Project does not meet FLPMA's general land use conformity requirement and would cause unnecessary or undue degradation.	Thank you for your comment.
P945	6g. The Grouse ARMPA's MD SSS 2C requires adherence to the ARMPA's Required Design Features unless at least one of the criteria below is demonstrated in a Project's NEPA analysis: 1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. 2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. 3. A specific RDF will provide no additional protection to GRSG or its habitat.	Thank you for your comment.
P946	6h. 2015 Grouse ARMPA at 2-8. The Thacker Pass DEIS mistakenly labels MD SSS 2C as part of MD SSS 2B (DEIS at N-6), and inaccurately states that this RDF measure does not apply to the Project. First, unlike MD SSS 2A, MD SSS 2C does not mention the 1872 Mining Law. Nor does MD SSS 2C state that valid existing rights specifically related to mining are exempted from the 2015 Grouse ARMPA's lek buffer requirement. Second, even if valid existing rights related to mining were exempted from the lek buffer requirement, the Project's DEIS does not provide evidence that all of the Project's mining claims are valid, and therefore it is currently	Thank you for your comment.

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	unknown whether the Project has valid existing rights. By failing to implement all the grouse protection measures required by the 2015 Grouse ARMPA, the Project does not meet FLPMA's general land use conformity requirement and would cause unnecessary or undue degradation.	
P947	6i. The Project also fails to conform to the 2015 Grouse ARMPA's measure MD SSS 2C because it does not demonstrate that RDFs not being applied to the Project meet at least one of the three criteria for exception. Instead, the DEIS merely asserts, "Under the Proposed Action, the Project would be consistent with a majority of RDFs presented in Table N.3 and Table N.4 below due to the application of the Applicant Committed Environmental Protection Measures presented in Appendix D." DEIS at N-6. By failing to implement all the grouse protection measures required by the 2015 Grouse ARMPA, the Project does not meet FLPMA's general land use conformity requirement and would cause unnecessary or undue degradation. This failure is explained RDF by RDF later in this letter.	Thank you for your comment.
P948	6j. The DEIS states that there is one active lek 0.96 miles of the Project and sage-grouse displaying at it within 0.75 miles of the Project, plus 3 active leks within 3.1 miles of the Project. DEIS at 4-38. This does not fulfill the 2015 Grouse ARMPA measure MD SSS 2D (mandating the use of lek buffer distances in Manier's 2014 lek buffer report). These lek buffer distances are as follows: • linear features (roads) within 3.1 miles of leks • infrastructure related to energy development within 3.1 miles of leks. • tall structures (e.g., communication or transmission towers, transmission lines) within 2 miles of leks. • low structures (e.g., fences, rangeland structures) within1.2 miles of leks. • surface disturbance (continuing human activities that alter or remove the natural vegetation) within 3.1 miles of leks. • noise and related disruptive activities including those that do not result in habitat loss (e.g., motorized recreational events) at least 0.25 miles from leks.	Thank you for your comment.
P949	6k. 2015 Grouse ARMPA at B-1. BLM may approve actions within these lek buffers in GHMA only within certain circumstances: • Based on best available science, landscape features, and other existing protections, (e.g., land use allocations, state regulations), the BLM determines that a lek buffer- distance other than the applicable distance identified above offers the same or a greater level of protection to GRSG and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area; or • The BLM determines that impacts to GRSG and its habitat are minimized such that the project will cause minor or no new disturbance (ex. co-location with existing authorizations); and • Any residual impacts within the lek buffer-distances are addressed through compensatory mitigation measures sufficient to ensure a net conservation gain, as outlined in the Mitigation Strategy (Appendix E).	Thank you for your comment..
P950	6l. 2015 Grouse ARMPA at B-2. BLM may approve actions within these lek buffers in PHMA only within certain circumstances: • The BLM, with input from the state fish and wildlife agency, determines, based on best available science, landscape	Thank you for your comment.

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	features, and other existing protections, that a buffer distance other than the distance identified above offers the same or greater level of protection to GRSG and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area. – Range improvements which do not impact GRSG, or, range improvements which provide a conservation benefit to GRSG such as fences for protecting important seasonal habitats, meet the lek buffer requirement. – The BLM will explain its justification for determining the approved buffer distances meet these conditions in its project decision. 2015 Grouse ARMPA at B-2 to B-3.	
P951	6m. The DEIS's assertion that the 2015 Grouse ARMPA measure MD SSS 2D (mandating the use of lek buffer distances in Manier's 2014 lek buffer report) does not apply to the Project is incorrect. DEIS at N-6. (Please note, the DEIS mislabels MD SSS 2D as MD SSS C.) First, unlike MD SSS 2A, MD SSS 2D does not mention the 1872 Mining Law. Nor does MD SSS 2D state that valid existing rights specifically related to mining are exempted from the 2015 Grouse ARMPA's lek buffer requirement. Second, even if valid existing rights related to mining were exempted from the lek buffer requirement, the Project's DEIS does not provide evidence that all of the Project's mining claims are valid, and therefore it is currently unknown whether the Project has valid existing rights. By failing to implement all the grouse protection measures required by the 2015 Grouse ARMPA, the Project does not meet FLPMA's general land use conformity requirement and would cause unnecessary or undue degradation.	Thank you for your comment.
P952	6n. Moreover, the DEIS's assertion that the 2015 Grouse ARMPA measure MD SSS 2E (seasonal timing limitations) does not apply to the Project is incorrect. DEIS at N-6 to N-7. (Please note, the DEIS mislabels MD SSS 2E as MD SSS 2D.) First, unlike MD SSS 2A, MD SSS 2E does not mention the 1872 Mining Law. Nor does MD SSS 2E state that valid existing rights specifically related to mining are exempted from the 2015 Grouse ARMPA's lek buffer requirement. Second, even if valid existing rights related to mining were exempted from the lek buffer requirement, the Project's DEIS does not provide evidence that all of the Project's mining claims are valid, and therefore it is currently unknown whether the Project has valid existing rights. By failing to implement all the grouse protection measures required by the 2015 Grouse ARMPA, the Project does not meet FLPMA's general land use conformity requirement and would cause unnecessary or undue degradation.	Thank you for your comment.
P953	6o. Similarly, the DEIS's assertion that MD SSS 2F (limiting noise near sage-grouse leks) does not apply to the Project is incorrect. DEIS at N-8. (Please note, the DEIS mislabels SSS 2F as SSS 2E.) First, unlike MD SSS 2A, MD SSS 2f does not mention the 1872 Mining Law. Nor does MD SSS 2F state that valid existing rights specifically related to mining are exempted from the 2015 Grouse ARMPA's lek buffer requirement. Second, even if valid existing rights related to mining were exempted from the lek buffer requirement, the Project's DEIS does not provide	Thank you for your comment.

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	evidence that all of the Project's mining claims are valid, and therefore it is currently unknown whether the Project has valid existing rights. By failing to implement all the grouse protection measures required by the 2015 Grouse ARMPA, the Project does not meet FLPMA's general land use conformity requirement and would cause unnecessary or undue degradation.	
P954	6p. Furthermore, the DEIS's statement that MD SSS 3C (lek buffers in GHMA) does not apply to the Project is incorrect. First, unlike MD SSS 2A, MD SSS 3C does not mention the 1872 Mining Law. Nor does MD SSS 3C state that valid existing rights specifically related to mining are exempted from the 2015 Grouse ARMPA's GHMA lek buffer requirement. Second, even if valid existing rights related to mining were exempted from the lek buffer requirement, the Project's DEIS does not provide evidence that all of the Project's mining claims are valid, and therefore it is currently unknown whether the Project has valid existing rights. By failing to implement all the grouse protection measures required by the 2015 Grouse ARMPA, the Project does not meet FLPMA's general land use conformity requirement and would cause unnecessary or undue degradation.	Thank you for your comment.
P955	6q. The DEIS's claims that MD SSS 3D and MD SSS 3E (GHMA seasonal timing restrictions and noise levels near leks) do not apply to the Project are similarly incorrect. DEIS at N-9 to N-10. First, unlike MD SSS 2A, MD SSS 3D and MD SSS 3E do not mention the 1872 Mining Law. Nor do they state that valid existing rights specifically related to mining are exempted. Second, even if valid existing rights related to mining were exempted from the GHMA seasonal timing restrictions and noise levels near leks requirements, the Project's DEIS does not provide evidence that all of the Project's mining claims are valid, and therefore it is currently unknown whether the Project has valid existing rights. By failing to implement all the grouse protection measures required by the 2015 Grouse ARMPA, the Project does not meet FLPMA's general land use conformity requirement and would cause unnecessary or undue degradation.	Thank you for your comment.
P956	6r. The Project also fails to meet the requirements of MD SSS 2C, MD SSS 3B, MD SSS 4 (Required Design Features in PHMA, GHMA and OHMA), as follows: • RDF Gen 1: The DEIS states, "LNC has minimized new roads to the extent practical while still allowing access to valid claims" but does not provide evidence that the claims are valid. DEIS at N-11. • RDF Gen 15 states, "When interim reclamation is required, irrigate site to establish seedlings more quickly if the site requires it." 2015 Grouse ARMPA at C-2. However, the Thacker Pass DEIS asserts that the RDF is not being applied and does not explain why irrigation will not be required to establish seedlings. DEIS at N-13. Furthermore, the explanation provided by the DEIS references the Project's Reclamation Plan, which is not an Appendix of the DEIS, nor has it been posted on ePlanning, so has been unavailable for the public to review.	Thank you for your comment.
P957	6s. • It is impossible for the public to assess whether RDF Gen 17 and RDF Gen 18	Thank you for your comment.

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	will be met by the Project. The Project's Reclamation Plan is not an Appendix of the DEIS and has not been posted on ePlanning, so has been unavailable for the public to review, even though the DEIS states that the Reclamation Plan will need to be approved and will need to be consistent with the Winnemucca District RMP. DEIS at N-14. • The Project does not appear to meet the requirements of RDF Gen 19. The DEIS explains that employees will be given some instruction in regard to wildlife, but the explanation does not include the exact text of the RDF regarding avoiding "harassment and disturbance of wildlife, especially during the GRSG breeding (e.g., courtship and nesting season). In addition, the DEIS explains that pets will not be allowed within the Thacker Pass operations area, but it does not clarify whether that includes the exploration areas or if that includes during construction as the RDF requires. DEIS at N-14.	
P958	6t. • RDF Gen 20 limits the construction of vertical facilities and fences to the minimum number and amount needed and requires the installation of anti-perch devices where applicable. The DEIS at N-14 does not demonstrate that vertical facilities and fences will be limited to the minimum and amount needed. Indeed, it states that a new overhead 25 kV powerline will be built. Powerlines are well known for providing perches for raptors that prey on greater sage-grouse, and that powerline should be undergrounded instead. • RDF Gen 21 states, "Outfit all reservoirs, pits, tanks, troughs or similar features with appropriate type and number of wildlife escape ramps (BLM 1990; Taylor and Tuttle 2007). 2015 Grouse ARMPA at C-3. However, the DEIS states that RDF Gen 21 will not be applied and no explanation at all is given. That does not meet the criteria for variation from the 2015 Grouse ARMPA's Required Design Features. DEIS at N-14.	Thank you for your comment.
P959	6u. • RDF Gen 22 requires projects to "[l]oad and unload all equipment on existing roads to minimize disturbance to vegetation and soil." 2015 Grouse ARMPA at C-3. However, the DEIS states that RDF Gen 22 will not be applied and no explanation at all is given. That does not meet the criteria for variation from the 2015 Grouse ARMPA's Required Design Features. DEIS at N-14. • The DEIS states that RDFs LOC 1 through LOC 7 will not be applied. However, the DEIS provides no explanation at all as to why. That does not meet the criteria for exemption from the 2015 Grouse ARMPA's Required Design Features. DEIS at N-15. RDFs LOC 1 through LOC 7 are specific to Locatable Minerals, and BLM's refusal to apply them or grant variance to them through one of the three variance criteria is highly improper and defiant.	Thank you for your comment.
P960	6v. Failing to apply the 2015 Grouse ARMPA's Required Design Features or to meet the criteria for variation from them is unnecessary or undue degradation. For the Project to conform to this portion of the 2015 Grouse ARMPA, the Required Design Features must be applied or an explanation that meets at least one of the ARMPA's	Thank you for your comment.

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	variation criteria must be provided in the EIS.	
P961	6w. As discussed elsewhere in this letter, the Lone Willow PMU has reached at least one adaptive management trigger level under the 2015 Grouse ARMPA. Therefore, some of MD SSS 17 through MD SSS 24 will apply, but the DEIS must disclose and discuss this trigger before the public can determine which do. See management measures in the 2015 Grouse ARMPA at 2-12 to 2-13. By failing to implement all the grouse protection measures required by the 2015 Grouse ARMPA, the Project does not meet FLPMA's general land use conformity requirement and would cause unnecessary or undue degradation.	Thank you for your comment.
P962	6x. The Project's spectacular failure to fulfil the requirements of the 2015 Grouse ARMPA will put the redundancy, representation, and resilience of local and regional greater sage-grouse at risk. This must be remedied in the EIS not only to keep greater sage-grouse from moving closing to extinction or extirpation, but also so the Project will conform to the ARMPA and avoid causing unnecessary or undue degradation.	Thank you for your comment.
P963	7a. The DEIS Fails to Take a Hard Look at the Project's Impacts to Greater Sage-Grouse. The DEIS underestimates the Project's impacts to sage-grouse. The Project site is occupied by sage-grouse from the Lone Willow Population Management Unit (Lone Willow PMU), which is a subpart of the Western Great Basin population of greater sage-grouse. The FEIS for the 2015 Grouse ARMPA describes mining as a substantial, but nonimminent threat to the Western Great Basin population of greater sage-grouse. 2015 Grouse AMPA FEIS at 3-36.11 This is based on the 2013 Conservation Objectives Team Report (COT Report), which states that the substantial but nonimminent threat is specifically from lithium and uranium exploration and extraction:	Thank you for your comment. Impacts to greater sage grouse have been fully disclosed in this EIS as required by NEPA in Section 4.5.4 and Appendix N.
P964	7b. The Lone Willow portion of the Western Great Basin population (connected with Oregon) was affected by a very large wildfire in 2012. The Holloway Fire burned approximately 214,000 acres in Nevada and 245,000 acres in Oregon of which about 140,000 acres in Nevada and 221,000 acres in Oregon were considered important or essential sage-grouse habitat. The Miller Homestead fire in Oregon included an additional 162,000 acres of sagebrush habitat within its perimeter, 149,000 acres of which was identified as a PAC for the Western Great Basin population. Fire and annual grasses should be characterized as substantial and imminent threats within this portion of the population. Additionally, this area faces threats from lithium and uranium exploration and extraction. Along with infrastructure that may come with this potential development, it may be appropriate to characterize mining and infrastructure as substantial, nonimminent threats to this portion of the population.	Thank you for your comment. Impacts to greater sage grouse have been fully disclosed in this EIS as required by NEPA.
P965	7c. COT Report at 84.12 Since the 2013 COT Report and 2015 Grouse ARMPA, the situation has changed. Lithium exploration and mining are now an imminent threat to	Thank you for your comment. Impacts to greater sage grouse have been fully disclosed in this EIS as required by NEPA.

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	the Lone Willow PMU and the larger Western Great Basin sage-grouse population via the Thacker Pass Lithium Mine and related Kings Valley Lithium Exploration Project.13 But the Thacker Pass DEIS completely omits the fact that the COT Report identified lithium exploration and extraction as a substantial threat to sage-grouse in this PMU, a threat that has with this project and its prior exploration become imminent.	
P966	7d. The DEIS reports that the State of Nevada determined that the Project would result in 12% disturbance at the project level. DEIS at N-5. This is significant disturbance, fragmentation, and removal of habitat, and should be discussed in the DEIS under potential impacts to greater sage-grouse. Instead, the DEIS buries the 12% estimate in an Appendix instead of analyzing what it could do to the local greater sage-grouse population and the Lone Willow PMU. Plus, the DEIS's discussion of potential impacts to greater sage-grouse from habitat fragmentation and loss is generalized and doesn't analyze what could happen to local and Lone Willow PMU sage-grouse population numbers and trends as a result. See DEIS at 4-40. How many of these particular sage-grouse could be lost? How much closer will the Project move sage-grouse in the local area to extirpation? How will Lone Willow PMU population numbers be affected? There has already been much grouse habitat lost in the local area. Sage-grouse can't afford to keep losing more habitat and more population. Maintaining local and regional populations is what creates the redundancy, representation, and resilience that is key to long-term survival of the species.	Under BLM's regulations at 43 CFR 3809.420(a)(6), a mining operator is required to conduct all operations in a manner that complies with all pertinent Federal and state laws to prevent unnecessary or undue degradation.. The proponent has included a suite of applicant-committed environmental protection measures into their Proposed Action, to incorporate Design Features and Management Decisions from the 2015 and 2019 GRSG ARMPAs. As a result, the proposed project is consistent with the 2015 and 1029 GRSG ARMPAs. The 2015 GRSG Amendment Appendix E directs that a disturbance cap analysis should be conducted and results provided in the NEPA analyses, The BLM complied with this requirement, by including the disturbance cap analysis in Appendix N of this EIS, in the calculations were conducted in accordance with the methodology presented in Appendix E of the 2015 GRSG Amendment. No change was made to the document to address this comment. Quantification of the number of birds and PMU population trends potentially affected by the Project would be speculative.
P967	7e. The Project would put four greater sage-grouse leks in the Montana Mountains at high risk of abandonment. The DEIS states there is one active lek 0.96 miles of the Project and sage-grouse displaying at it within 0.75 miles of the Project, plus 3 active leks within 3.1 miles of the Project. DEIS at 4-38. The Project's noise levels near greater sage-grouse leks have strong probability of being too high and causing lek abandonment. The risk of lek abandonment and how losing four leks would potentially impact local sage-grouse population numbers and Lone Willow PMU sage-grouse population numbers is not analyzed in the DEIS.	Thank you for your comment. BLM recognizes the 2015 GRSG ARMPAs current noise level recommendations of 10 dBA (L50) for GRSG and the importance of the Montanta-10 lek. Noise simulations calculated for the Project by Saxelby (2019) were conducted in accordance with NDOW's guidance provided in 2018. Noise estimates were based on a "worst-case" scenario, and concluded that anticipated noise levels would likely not exceed the recommended 10 dBA (L50). Noise levels produced by mining and processing activities were predicted to result in maximum noise level increases of 8.7 dBA at the Montana-10 sage-grouse lek, 5.9 dBA at the Pole Creek lek, 3.8 dBA at the Thacker Creek lek, and 1.5 dBA at the Crowley lek. Noise calculations conducted using NDOW's 2020 Interim Guidance show that noise levels could increase to 11.4 dBA, indicating potential risk for noise effects to GRSG. BLM would like to clarify that indirect effects, such as noise, are part of the CCS HQT analysis, and that LNC is working with the SETT to utilize the CCS to offset effects of the proposed Project on GRSG and their habitat. Development of a noise monitoring plan in coordination with the BLM and NDOW would further reduce the potential for noise-related effects. Potential effects to the Lone Willow PMU are discussed in Section 4.5.1.1, Section

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		4.5.1.2, Section 4.5.1.3 and Section 4.5.1.4.
P968	7f. The DEIS also omits the fact that the Lone Willow PMU has reached a habitat trigger, as was acknowledged in the Nevada Sagebrush Ecosystem Program's Fall 2019 Fall 2019 Adaptive Management Trigger Summary.14 Instead, the DEIS discusses a trigger level possibly met under a 2014 Nevada state plan rather than discuss how triggers and adaptive management work under the 2015 Grouse ARMPA. See DEIS at 4-39. In addition, a 2018 grouse research presentation disclosed triggers that had been reached in the Winnemucca District in 2016 (triggers are called signals in the report). It is unclear whether this includes the habitat trigger disclosed in the 2019 Nevada trigger summary report. See Attachment 22 at slide 178.	Thank you for your comment. Text has been revised to include information from the 2019 summary report regarding habitat triggers. Text revised to state: "The 2019 Sagebrush Ecosystem Technical Team also assigned triggers to GRSG PMUs in 2019, consistent with the Nevada Greater Sage Grouse Conservation Plan adaptive management process. The summary document identifies the Lone Willow PMU as having crossed a habitat trigger in the North Central conservation planning area, resulting from habitat loss due to fire occurrence (SETT 2019)."
P969	7g. The 2015 Great Basin Grouse ARMPAs Record of Decision states, Soft triggers represent an intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses. If a soft trigger is tripped during the life of the ARMPAs, the BLM will implement more conservative or restrictive conservation measures on a project-by-project basis to mitigate for the specific cause in the decline of populations or habitats, taking into consideration local knowledge and conditions. In each ARMPA, a soft trigger begins a dialogue between the State, FWS, and the BLM to see if the cause can be determined and what implementation-level activities can be used to reverse any trend. These adjustments will be made to prevent tripping a hard trigger, which signals more severe habitat loss or population declines. Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPAs. In the event that a hard trigger were tripped, the BLM would implement plan-level decisions, such as allocation changes, to immediately institute greater protection for GRSG and its habitat.	Comment noted.
P970	7h. 2015 Grouse Great Basin Record of Decision at 1-29 (Attachment 7). Under the 2015 Grouse ARMPA, adaptive management requirements related to triggers are MD SSS 17 through MD SSS 24. 2015 Grouse ARMPA at 2-12 to 2-13. According to the 2010 the Lone Willow PMU has reached a habitat trigger. Attachment 11 at unnumbered page 4/13. The state's report does not discuss whether this is a soft or a hard trigger. The DEIS must discuss this trigger, the adaptive management measures that are being taken in response to it, and how the Project will be modified to meet the 2015 Grouse ARMPA's trigger adaptive management requirements, as well as any other triggers that may also have been met.	Thank you for your comment. LNC is working with the Sagebrush Ecosystem Technical Team (SETT) to utilize the Conservation Credit System (CCS) to offset effects of the proposed Project's surface disturbance to GRSG and sagebrush habitat (GRSG Amendment, Mitigation MD MIT1).
P971	7i. The DEIS is unclear on exactly what is happening to PHMA, GHMA and OHMA. In some places the DEIS states that the habitat would be disturbed, but the alternatives comparison chart states that the habitat would be removed (DEIS at 2-24 to 2-25). How much PHMA, GHMA, and OHMA will be disturbed and what constitutes disturbance? How much PHMA, GHMA, and OHMA will be fragmented	Thank you for your comment. The text will be revised for consistency when referring to habitat disturbance. Refer to Section 4.5.1, which provides a description for the use of the term "Surface disturbance." The text states that "surface disturbance associated with mining activities and development of mine facilities, including the open pits, WRSF, CGS and GMSs, CTFS,

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	and what constitutes fragmentation? How much PHMA, GHMA, and OHMA will be removed or completely destroyed and what constitutes removal? Is it complete destruction of the grouse habitat such as through a mining pit or is it total vegetation removal? If vegetation removal, how much GHMA, PHMA, and OHMA will have vegetation removed? If complete destruction, how much GHMA, PHMA, and OHMA will be completely destroyed?	process plant and ancillary facilities, and roads, water lines, and power lines would directly affect wildlife through the loss of potentially suitable habitat by vegetation removal, and removal of seeps and springs and seasonal water sources for wildlife." Habitat disturbance is synonymous with surface disturbance, assuming the removal of vegetation. Habitat fragmentation refers to reducing the landscape size for species that require large breeding or foraging ranges, increasing barriers to migration or movement, changing abiotic and biotic factors making the habitat less suitable, and reducing access to resources and potential mates, as described in the text.
P972	7j. Part of the danger to greater sage-grouse of BLM approving this project is that LNC has mining claims north of the project in the Montana Mountains, a Nevada greater sage-grouse stronghold. If BLM approves this Project, it will put greater sage-grouse in the Montana Mountains at risk, not only through the Project's noise degrading conditions for grouse at nearby Montana Mountains leks, but also by increasing the likelihood that the Project will expand in the future into the Montana Mountains, with the less-thorough environmental analysis that often accompanies mine expansions, such as incorporating prior NEPA documents through reference rather than doing new analysis that reflects current conditions.	Thank you for your comment.
P973	8. The DEIS's Purpose and Need Statement Misstates BLM's Purpose and Is Unlawful. The DEIS states, "The purpose of the action is to approve a [sic] LNC's [Lithium Nevada Corporation's] proposed MPO [Mining Plan of Operations] to construct and operate a lithium mine, lithium processing plant, and related facilities reasonably incident to mining operations on public lands within the Project area." DEIS at 1-3. This is incorrect. BLM's Purpose is to respond to LNC's submittal of a proposed Plan of Operations for the Thacker Pass Lithium Mine by determining whether BLM can approve it in its current form and still meet BLM's obligations under federal laws and regulations. By describing BLM's purpose solely as approving the mine, the DEIS omits BLM's obligations to protect wildlife, habitat, scenic, water, air quality, and other resources. This purpose also shows that BLM has predetermined its decision, which is unlawful.	The purpose and need statement for the project has been revised.
P974	9a. The DEIS Does Not Analyze a Full Range of Alternatives as Required by NEPA. The DEIS does not analyze any alternatives that provide greater protection to wildlife than the Proposed Action, despite our and other commentors having asked for such alternatives in scoping comments. We note that the Project has three action alternatives (A-Proposed Action, B, and C), but according to the DEIS, Alternatives B and C would have greater impacts on wildlife than the Proposed Action. See DEIS comparison chart at 2-24 to 2-25. The lack of an alternative dedicated to wildlife protection and providing more wildlife protection than the Proposed Alternative is particularly egregious given the DEIS's failure to apply all of the greater sage-grouse protection measures required by the 2015 Grouse ARMPA, as is described elsewhere	Thank you for your comment.

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	in this letter.	
P975	9b. To meet NEPA's requirement for analyzing a full range of alternatives, the EIS must analyze in full at least one detailed wildlife protection alternative. We suggest analyzing the four below, as well as others suggested by other commenters:	Thank you for your comment.
P976	9c. Montana Mountains Wildlife Mitigation Alternative Immediately to the north of the proposed Project lie the Montana Mountains. They include important habitat for wildlife, including greater sage-grouse and Lahontan cutthroat trout, as well as highly suitable bighorn habitat that was occupied until the Montana Mountain bighorn herd was euthanized in 2016 due to a disease outbreak. To mitigate for the proposed Project's destruction of wildlife habitat and noise impacts to wildlife, the Montana Mountains should be protected as an Area of Critical Environmental Concern managed to protect wildlife and cultural resources. It is our understanding that the Project Applicant stated publicly during the scoping period that it will not mine in the Montana Mountains, so if the Project Applicant intends to follow through on that, creating an ACEC would not thwart potential expansion plans.	Creation of an ACEC in the Montana Mountains is not within the scope of this analysis. This alternative would not support the BLM or USFWS Purpose and Need for the EIS.
P977	9d. Creating a new ACEC is an option that is open to BLM because BLM is not only preparing an EIS for the proposed Thacker Pass lithium mine, but also needs to prepare a Resource Management Plan amendment related to the mine's downgrading of Visual Resource Management classes in the Project area. The RMP amendment process is the administrative moment in which new ACECs are considered. 43 CFR § 1610.7-2 states, "Areas having potential for Areas of Critical Environmental Concern (ACEC) designation and protection management shall be identified and considered throughout the resource management planning process."	Creation of an ACEC in the Montana Mountains is not within the scope of this analysis. This alternative would not support the BLM or USFWS Purpose and Need for the EIS.
P978	9e. A Montana Mountains ACEC would meet 43 CFR § 1610.7-2's criteria for ACEC designation (relevance and importance). The relevance criterion is met because there are there are significant fish and wildlife resources currently present in the Montana Mountains (Lahontan cutthroat trout15 and greater sage-grouse leks and habitat). The importance criterion is met because the Montana Mountains have state and regional importance as wildlife habitat (Lahontan cutthroat trout, greater sage-grouse) that go well beyond the Montana Mountains' local importance to wildlife. Because this is a viable mitigation alternative that meets the ACEC designation criteria and because BLM already plans to revise the RMP, BLM is obligated to fully analyze this alternative in the EIS.	Creation of an ACEC in the Montana Mountains is not within the scope of this analysis. This alternative would not support the BLM or USFWS Purpose and Need for the EIS.
P979	9f. Double H Mountains Wildlife Mitigation Alternative. Immediately to the south of the Project lie the Double H Mountains. They include important habitat for wildlife, including the Double H bighorn herd. To mitigate for the proposed Project's wildlife mortality, destruction of wildlife habitat, and noise impacts to wildlife, the Double H Mountains should be protected as an Area of Critical Environmental Concern managed to protect wildlife and cultural resources. Creating a new ACEC is an	Creation of an ACEC in the Double H Mountains is not within the scope of this analysis. This alternative would not support the BLM or USFWS Purpose and Need for the EIS.

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	option that is open to BLM because BLM is not only preparing an EIS for the proposed Thacker Pass lithium mine, but also needs to prepare a Resource Management Plan amendment related to the mine's downgrading of Visual Resource Management classes in the Project area. The RMP amendment process is the administrative moment in which new ACECs are considered. 43 CFR § 1610.7-2 states, "Areas having potential for Areas of Critical Environmental Concern (ACEC) designation and protection management shall be identified and considered throughout the resource management planning process."	
P980	9g. A Double H Mountains ACEC would meet 43 CFR § 1610.7-2's criteria for ACEC designation (relevance and importance). The relevance criterion is met because there are there are significant fish and wildlife resources currently present in the Double H Mountains (Double H bighorn herd). The importance criterion is met because the Double H Mountains have state and regional importance as wildlife habitat. The Double H bighorn herd is a source stock for translocation efforts elsewhere,16 so protecting its habitat is important for protecting the health of bighorn herds beyond the local area. Because this is a viable mitigation alternative that meets the ACEC designation criteria and because BLM already plans to revise the RMP, BLM is obligated to fully analyze this alternative in the EIS.	Creation of an ACEC in the Double H Mountains is not within the scope of this analysis. This alternative would not support the BLM or USFWS Purpose and Need for the EIS.
P981	9h. Thacker Creek Protection Alternative. Perennial surface water is precious in the desert and needs to be protected everywhere it occurs. Thacker Creek is an especially important surface water resource for area wildlife. The EIS should include an alternative with protection measures that ensure that Thacker Creek's water quality and quantity does not decrease. These include, but are not limited to, moving mine features considerably further away from Thacker Creek than currently shown on Project maps.	Alternatives must be technically and economically feasible for BLM consideration. The BLM has worked with the operator to identify feasible measures to avoid and minimize potential effects to the human and natural environment that are within the regulatory authority of the BLM. Many of these measures have been incorporated into the proposed Mine and Exploration Plans of Operation. Mineral deposit locations identified by the operator are fixed and cannot be modified. The operator has worked with BLM to proposed appropriate mitigation measures to reduce potential effects to surface and ground water resources (see Section 4.3.2). Any BLM approval of the proposed Mine and Exploration Plans or alternatives would require that the operator obtain all necessary State and Federal permits and comply with all applicable State and Federal regulatory requirements.
P982	9i. Greater Sage-Grouse and Other Wildlife Protection Alternative This alternative would avoid, minimize, and mitigate impacts to wildlife to a greater extent than the Proposed Action does. BLM should work with USFWS and NDOW to identify a suite of wildlife protection measures to be included in this alternative. There may be some measures the wildlife agencies have already asked BLM for that have not been included in an analyzed alternative. In addition to measures identified by the wildlife agencies, this general wildlife protection alternative could include, but certainly not be limited to, undergrounding the new power line to protect greater sage-grouse from birds of prey, shrinking the Project's footprint, and finding ways to reduce the Project's water use and impacts on surface waters.	Thank you for your comment. The BLM has worked with the operator to identify feasible measures to avoid and minimize potential effects to the human and natural environment that are within the regulatory authority of the BLM. Many of these measures have been incorporated into the proposed Mine and Exploration Plans of Operation. Any BLM approval of the proposed Mine and Exploration Plans or alternatives would require that the operator obtain all necessary State and Federal permits and comply with all applicable State and Federal regulatory requirements. An alternative with a significantly reduced footprint is not an economically feasible alternative for the operator. Alternatives must be technically and economically feasible for BLM

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		consideration.
P983	10a. The Project Would Change the Area's Visual Resource Management Class, But Would Not Amend the RMP and Would Cause Unnecessary or Undue Degradation. As discussed earlier in this letter, BLM cannot downgrade the Project area's Visual Resource Management class by allowing this Project to change the area's visual character without preparing an RMP amendment to the Winnemucca District RMP. We note that BLM has said publicly that its specialists think it's OK, not that its solicitors have approved it. (See screenshot below.) Have BLM and/or Department of the Interior solicitors OK'ed this? If so, how do BLM and/or Department of the Interior reconcile nonconformity with the governing RMP with BLM's legal obligation to comply with FLPMA?	Thank you for your comment.
P984	10b. Allowing the Project to downgrade the area's visual resources without performing the necessary RMP amendment will not only be unlawful, but will also shortchange the public by damaging the area's natural beauty. The Project would be located on a high plateau near two agricultural communities that still retains sagebrush steppe, high-desert beauty and provides respite and solace to the public, as well as opportunities for wildlife watching, star gazing, nature photography, camping, hiking and many more. The public's ability to enjoy these activities is predicated on the area remaining natural. See Attachment 23 for a selection of photos taken within the Project area, looking into the Project area, or close enough to the Project to be impacted by it. They were taken in September 2018 and September 2020.	Thank you for your comment.
P985	11a. The DEIS Improperly Defers Analysis of Impacts to Dark Night Skies and Viewing of Celestial Objects. The DEIS states: The Thacker Pass Project area does not have an International Dark Sky Place designation. However, due to the rural location of the project, protecting the area from light pollution is important. In conjunction with final engineering design, LNC is developing a lighting plan for the Project to protect night skies in the area. Through this lighting plan, mitigation measures would be taken to ensure the quality of night skies and dark environments that is protected for scientific, natural, educational, cultural heritage, and/or public enjoyment. Lighting would be chosen strategically and designed to be used where and when it is needed. Shields would be used where practicable to direct light downward. Warmer color lighting would be chosen to minimize sky brightness. Long-term nighttime lighting on project features would be limited to the minimum necessary for project security, safety, and compliance with Federal Aviation Administration, Mine Safety and Health Administration, and Occupational Safety and Health Administration requirements. Where possible, long-term lighting would avoid the use of constant-burn lighting (LNC 2019g). Inclusion and implementation of these mitigation measures would likely result in moderate to weak visual changes on dark night skies. However, further analysis may be necessary to determine the potential impacts to night sky	Text has been revised to reflect the information in the Lighting Management Plan, completed in September 2020.

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	effects once the lighting plan is finalized. DEIS at 4-97, emphasis added.	
P986	11b. BLM cannot defer analysis of the potential night sky effects but must include it in this EIS and provide the public an opportunity to comment on it. In addition to the possibility of Project lighting interfering with the public's ability to enjoy a dark sky full of stars, planets, moons, and other heavenly objects, dust created by the Project or haze created by the Project's air emissions could also interfere with night-time celestial viewing and must be analyzed in the EIS.	Text has been revised to reflect the information in the Lighting Management Plan, completed in September 2020.
P987	12a. The EIS Must Analyze the Project's Potential Impacts to Lichens and Bryophytes, As Well As the Resulting Impacts to the Area's Natural Visual Appearance. Part of the Project area's natural visual characteristics are the area's lichens, which add color and beauty. The three photos below are merely a small sampling of lichens in the area (See Letter pages 27-28). Lichens are well-known for their sensitivity to air pollutants, including, but not limited to, sulfur dioxide.17 In fact, they are so sensitive to air pollutants that they often have been used to detect air pollution.18 Any damage to the area's lichens caused by the Project's air emissions will damage the area's natural beauty and will also damage the sense of well-being that the presence of lichens provides to human visitors (given lichens' well-known sensitivity to air pollution). But the DEIS does not analyze the Project's potential impacts to lichens.	U.S. Forest Service (1992) guidance suggests sensitivity classes to gauge the response of lichens and bryophytes to sulfur dioxide (SO2). "Sensitive" species are affected at an annual SO2 concentration of 5-15 ppb, "intermediate" species at 10-35 ppb, and "tolerant" species at 30 ppb or greater. Project modeling results for annual average SO2 are not available; however, the results for shorter averaging periods suggest, based on EPA (1992), that maximum annual average SO2 concentrations due to the project could be in the 5-15 ppb range. At this level of impact, sensitive species near the project site could be affected, but as concentrations decrease with distance from the project, sensitive species at greater distances likely would not be affected.
P988	12b. The Thacker Pass Mine Project's air emissions would potentially put the area's lichens at risk, which would in turn affect the area's natural visual appearance. According to the DEIS, the Project will produce sulfur dioxide on site and will have sulfur dioxide emissions: The sulfuric acid required for leaching the lithium bearing ore will be produced on site in a sulfuric acid plant. In the plant, molten sulfur will be burned with air to produce sulfur dioxide, which is catalytically converted to sulfur trioxide and then absorbed in water to produce sulfuric acid. Sulfur dioxide, sulfuric acid mist, and particulate (primarily consisting of sulfuric acid mist as condensable particulate matter) emissions from the sulfuric acid plant will be controlled by a tail gas scrubber. In order to minimize the emissions from the sulfuric acid plant, LNC has committed to installing a state-of-the-art scrubbing control, which is above customary industry standard. As a result, the sulfur dioxide and acid mist emissions from the sulfuric acid plant will be well below the emission standards (4 pounds SO2 per ton of acid produced and 0.15 pounds H2SO4 per ton of acid produced) in the Code of Federal Regulations, Title 40, Part 60 (40 CFR 60), Subpart H, Standards of Performance for Sulfuric Acid Plants. While the exact [Air Quality Appendix at 6] scrubbing system has not yet been determined, LNC has committed to installing a control that, at the minimum, meets the emission levels used in this analysis. The sulfuric acid plant will also emit nitrogen dioxides from the combustion of sulfur in air, but it is not expected to emit any HAPs. DEIS Appendix K at 6-7.	U.S. Forest Service (1992) guidance suggests sensitivity classes to gauge the response of lichens and bryophytes to sulfur dioxide (SO2). "Sensitive" species are affected at an annual SO2 concentration of 5-15 ppb, "intermediate" species at 10-35 ppb, and "tolerant" species at 30 ppb or greater. Project modeling results for annual average SO2 are not available; however, the results for shorter averaging periods suggest, based on EPA (1992), that maximum annual average SO2 concentrations due to the project could be in the 5-15 ppb range. At this level of impact, sensitive species near the project site could be affected, but as concentrations decrease with distance from the project, sensitive species at greater distances likely would not be affected.

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P989	13a. According to the DEIS, the Project's sulfur dioxide emission scrubbing technology has not yet been selected. DEIS Appendix K at 6-7. Therefore, the DEIS's modeled estimates of how much sulfur dioxide the Project will emit are highly speculative and should not be relied upon. The DEIS states that these modeled sulfur dioxide emission estimates are lower than the legal limits for sulfur dioxide and that LNC has committed to meeting them. DEIS Appendix K at 7. However, without knowing which scrubbing technology will be used, BLM has no technical specifications with which to verify that the DEIS's lower modeled emissions are reasonable. In addition, these emission estimates appear to be only for Phase I. Sulfur dioxide emissions would reasonably foreseeably increase during the Project's Phase II.	The NEPA Air Quality Impact Analysis was completed based on guidance and specifications from a sulfuric acid plant manufacturer, which included manufacturer guaranteed emission levels for Phase 2. (These guaranteed emission levels were conservatively used for Phase 1 as well and are based upon the best available information at the time) [DEIS Appendix K, Sections 2.3.5 & 2.3.7]. Since completing the NEPA Air Quality Impact Analysis, LNC has concluded that the sulfuric acid plant tail gas scrubber will utilize a sodium sulfate scrubbing solution containing sodium hydroxide. The scrubber pH and sulfate concentration will be maintained to optimize the scrubber control efficiency. The emission limits for the sulfuric acid plant, starting with Phase 1, will be enforced through the Nevada Division of Environmental Protection Air Quality Operating Permit for the Thacker Pass Project. Furthermore, as discussed in the Thacker Pass Project NEPA Air Quality Impact Analysis Report, the sulfuric acid plant emissions must be maintained below the Federal standards in 40 CFR Part 60, Subpart H [DEIS Appendix K, Section 2.3.5]. Once approved, NDEP-BAPC operating permits would provide specifics on monitoring and adaptive management of project related emissions.
P990	13b. In order to understand how the area's lichens and in turn the natural visual appearance of the area will potentially be affected, the EIS must analyze the impacts of the Project's air emissions – including but not limited to sulfur dioxide -- on lichens not just in the immediate area of the Project, but all lichens that will potentially be impacted, which means taking into account wind patterns, over both Phase I and Phase II of the Project. Furthermore, because the Project's sulfur dioxide emission scrubbing technology has not yet been selected, the legal limits for sulfur dioxide, those legal limits should be used in this analysis, not the DEIS's lower modeled estimates. This is also true for any other air pollutants produced by the Project whose emissions reduction systems have not yet been selected. If nevertheless BLM chooses to use the DEIS's lower modeled estimates for the analysis and chooses to approve this Project, its ROD and Conditions of Approval must hold LNC to these lower modeled estimates, and specify that the Project will be required to shut down if they are exceeded. Otherwise, the Project would be operating outside the limits of its NEPA analysis.	U.S. Forest Service (1992) guidance suggests sensitivity classes to gauge the response of lichens and bryophytes to sulfur dioxide (SO2). "Sensitive" species are affected at an annual SO2 concentration of 5-15 ppb, "intermediate" species at 10-35 ppb, and "tolerant" species at 30 ppb or greater. Project modeling results for annual average SO2 are not available; however, the results for shorter averaging periods suggest, based on EPA (1992), that maximum annual average SO2 concentrations due to the project could be in the 5-15 ppb range. At this level of impact, sensitive species near the project site could be affected, but as concentrations decrease with distance from the project, sensitive species at greater distances likely would not be affected.
P991	13c. In addition, bryophytes are sensitive to air pollutants, 19 and the Project's potential impacts on them must be analyzed in the DEIS. Currently they are not. Bryophytes play an important ecological role and "contribute to nutrient cycling, water retention, water availability, higher plant biomass, and community maintenance."20 Nevada has at least 300 known bryophyte species, including many in arid parts of the state,21 so bryophytes should not be dismissed as not within the Project's air emissions sphere of influence. The creeks and creekside riparian areas in and near the Project area (e.g., Pole Creek, Thacker Creek, etc.) are strong potential	U.S. Forest Service (1992) guidance suggests sensitivity classes to gauge the response of lichens and bryophytes to sulfur dioxide (SO2). "Sensitive" species are affected at an annual SO2 concentration of 5-15 ppb, "intermediate" species at 10-35 ppb, and "tolerant" species at 30 ppb or greater. Project modeling results for annual average SO2 are not available; however, the results for shorter averaging periods suggest, based on EPA (1992), that maximum annual average SO2 concentrations due to the project could be in the 5-15 ppb range. At this level of impact, sensitive species near the project site could be affected,

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	locations for bryophytes, but not the only places where they might be found.	but as concentrations decrease with distance from the project, sensitive species at greater distances likely would not be affected.
P992	13d. Before making a decision on the Project, BLM should locate and photograph lichens and bryophytes in the Project's air emissions sphere of influence, in order to create a baseline as is required by NEPA. On the need for a baseline, see Or. Natural Desert Ass'n v. Jewell, 840 F.3d 562 (9th Cir. 2016); N. Plains Res. Council v. Surface Transp. Bd., 668 F.3d 1067, 1084 (9th Cir. 2011); Am. Rivers v. FERC, 201 F.3d 1186, 1195 n.15 (9th Cir. 1999); Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci; and 857 F.2d 505, 510 (9th Cir. 1988). If the Project is approved, the ROD and Conditions of Approval should include frequent monitoring of these lichens and bryophytes and should require additional air emissions reduction measures to be taken or the Project to be shut down if these bioindicators of air pollution show damage. By monitoring and protecting these air pollution bioindicators, BLM will also protect human health and wildlife health.	U.S. Forest Service (1992) guidance suggests sensitivity classes to gauge the response of lichens and bryophytes to sulfur dioxide (SO2). "Sensitive" species are affected at an annual SO2 concentration of 5-15 ppb, "intermediate" species at 10-35 ppb, and "tolerant" species at 30 ppb or greater. Project modeling results for annual average SO2 are not available; however, the results for shorter averaging periods suggest, based on EPA (1992), that maximum annual average SO2 concentrations due to the project could be in the 5-15 ppb range. At this level of impact, sensitive species near the project site could be affected, but as concentrations decrease with distance from the project, sensitive species at greater distances likely would not be affected.
P993	14. The Thacker Pass Mine Project Public Comment Period Did Not Allow Full Participation by the Public. The Thacker Pass mine Project's DEIS public comment period did not allow for full participation by the public. It was only 45 days and was held during the COVID-19 pandemic and during historic wildfires that disrupted life for millions of people in the western U.S., whether through the fires themselves or through exposure to hazardous air blowing in from the fires. These wildfires harmed WWP's ability to include all of the comments we were wanted to make because our drafter of these comments had to move to a different location on the other side of the mountains twice for safety and health reasons, first to avoid being trapped by a wildfire and then again to escape hazardous air quality. Because of these wildfires, WWP did not in fact have a full 45 days to comment and has not been able to fully participate in the DEIS public comment period. BLM has often held 90 day public comment periods for mining DEISs, and BLM should re-open the Project's public comment period for another 30 to 45 days. Re-opening the public comment period would help ensure that the Project meets NEPA requirements. Fast tracking that does not allow the public to fully participate in review of the project is unlawful.	The BLM has made good faith efforts to provide all information regarding the Project and its potential effects. Due to State and Local restrictions on public gatherings resulting from the COVID virus, online meetings were conducted for the safety of the community.
P994	15. Eagles and Eagle Take Permit. Given the large number of active eagle nests in the area, there will be more disturbance to eagles than the proposed eagle take permit will cover, raising the issue of compliance with the Bald and Golden Eagle Protection Act.	Thank you for your comment. LNC has submitted an application to the USFWS for an incidental take permit related to potential disturbance to one Golden Eagle territory resulting from construction, operation, and reclamation of the proposed Project. In determining the significance of effects of the Project on golden eagles, the USFWS screened the Proposed Action against the analysis provided in the PEIS (USFWS 2016a) and the USFWS's 2016 report, "Bald and Golden Eagles: Status, trends, and estimation of sustainable take rates in the United States." We also used our eagle-risk analysis (USFWS 2013, Appendix D), and Cumulative Effects Analysis (USFWS 2013, Appendix F) to quantify eagle fatality risk and cumulative local area population level effects.

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		Eagle-specific post-construction monitoring is required for EITPs and is included as a permit condition, in addition to adaptive management measures described in the applicant's ECP. The Eagle Act authorizes the USFWS to issue EITPs only when the take is compatible with the preservation of each eagle species, defined (in USFWS 2016) as "consistent with the goals of maintaining stable or increasing breeding populations in all eagle management units (EMUs) and the persistence of local populations throughout the geographic range of each species. "The USFWS will consider issuance of an eagle disturbance take permit if (1) the incidental take is necessary to protect legitimate interests; (2) the take is compatible with the preservation standard of the Eagle Act; (3) the applicant has avoided and minimized impacts to eagles to the extent practicable; and (4) compensatory mitigation will be provided for any take. Demonstrable sound impacts to eagles which cause take as defined under the Eagle Act are limited to 2 miles, based on the physics of sound attenuation. Also, consider section 4.5.5.1, which describes a large number of nests in the area, and why only one is expected to be disturbed to the point of potential 'take.' Finally, in using the 80th quantile rather than the mean estimate for eagle equivalency, plus using a 1.2 to 1.0 ratio of mitigation to eagle equivalency, the Service's mitigation requirements give two additional increases to the overall mitigation amount which address any indirect impacts not otherwise explicitly addressed. The "Golden Eagle (GOEA) Resource Equivalency Analysis: A Mitigation Framework for Permitted Takes of Golden Eagle Disturbance at Nests," dated October 22, 2018, USFWS, provides further details.
P995	16a. The DEIS Fails to Take a Hard Look at Impacts to Bighorn Sheep. As detailed in the scoping comments WWP previously submitted to the BLM and which are incorporated by reference in these DEIS comments, bighorn sheep are listed as a BLM Sensitive Species in Nevada and as a Species of Conservation Priority in the State Wildlife Action Plan. As such, bighorn sheep are subject to direction included in BLM Manual 6840, among other guidance. Scoping comments regarding the protected status of bighorn sheep are included in the May 11, 2020 Scoping Report, yet are ignored throughout the remainder of the planning documents: bighorn sheep are classified as 'General Wildlife' in the DEIS and as 'Big Game' in DEIS Appendix G, and bighorn sheep aren't even mentioned in the Wildlife and Special Status Species Information report, Appendix H. Unsurprisingly, a detailed assessment of the effects of the project alternatives on bighorn sheep, monitoring elements designed to analyze how ongoing operations area affecting bighorn sheep, and mitigation proposals which would reduce the impacts of the project on bighorn sheep are likewise omitted from the planning documents. This is unacceptable.	Thank you for your comment. BLM has updated the EIS to reflect the status of bighorn sheep as a BLM Sensitive Species and a Species of Conservation Priority in Nevada. The discussion of potential effects to bighorn sheep has been moved under the Special Status Species discussion in Section 4.5.1. Additional analysis pertaining to potential effects from the action alternatives on bighorn sheep has been included in the EIS. A discussion of bighorn sheep has been added to Table H.1 in Appendix H.
P996	16b. While the DEIS asserts that "[m]ovement along the southwestern portion of the	The Proposed Action would not create a physical barrier for bighorn sheep

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	Project area would not likely be restricted," there is no support for this statement.22 Thacker Pass is a bighorn sheep migration corridor joining occupied habitat in the Double H Mountains and high quality unoccupied habitat in the Montana Mountains. The suitable bighorn sheep corridor running through the pass is less than 9/10ths of a mile across, and it is bisected by Highway 293, the primary roadway servicing the proposed mine site. The mine site itself begins inside the eastern edge of the corridor, and stretches more than 10 miles to the east.	movement between habitat in the Double H and Montana Mountains. The Project would remove 753 acres of mapped bighorn sheep year-round habitat, the majority of which is located in the flatter areas of the valley, where bighorn sheep movement would be not be likely. The Exploration Plan and Mine Plan Boundaries overlap with mapped bighorn sheep movement corridor, but those areas would not be fenced. Fencing would be installed around mine facilities, and would be built according to NDOW, BLM, and NDEP specifications, as needed.
P997	16c. The mine is expected to cause increased traffic along the highway, at a rate of 60 to 200 additional vehicle trips per day. DEIS at 2-23. With fewer than 120 animals in the Double H bighorn herd, mortalities associated with increased traffic from mining activities could have a significant direct effect on the bighorn sheep population.	BLM has disclosed potential effects to bighorn sheep resulting from increased vehicular traffic on SR 293. Refer to page 4-36 for potential effects from Project-related traffic increases on big game species.
P998	16d. Increased highway traffic will also affect bighorn sheep migration and reestablishment to the Montana Mountains, where a disease outbreak recently caused the extirpation of a bighorn sheep herd. Collar data from that herd from prior to the die-off shows that the population primarily occupied the southwest portion of the range, concentrating on the slopes surrounding the proposed mine site. Should a group of bighorn sheep cross into the Montana Mountains, they would likely be displaced from optimal habitat areas by the mine and associated activity. While the DEIS states that roughly 753 acres of bighorn sheep habitat will be lost as a result of the proposed action,23 in reality the entire Montana Mountains habitat area, totaling more than 45,000 acres, may remain unoccupied by bighorn sheep as a result of mining activities. Location of NDOW mapped bighorn sheep habitat and movement corridors. Collar data shows that animals from the Montana Mountains herd concentrated on slopes adjacent to the proposed project area (Letter page33). (Locations of animals in the Double H herd are not shown.)	Thank you for your comment. BLM has incorporated information from NDOW's collaring study into our analysis (NDOW 2010). Bighorn sheep activity is concentrated along the slopes adjacent to the project area, but bighorn sheep habitat is highly limited within the Project boundary. Bighorn sheep habitat would be lost during mine development (753 acres), and additional habitat may be lost due to an avoidance response from increased noise and activity from mine operations. The EIS has been updated to include further discussion regarding the potential effects to bighorn sheep, including potential bighorn sheep habitat loss due to displacement. However, bighorn sheep have shown the ability to acclimate to mining activity over time as long as that activity is not associated with harassment or hunting (Jansen et al 2007; MacCallum 1988; MacCallum 1991), and the Project would not create a physical barrier to bighorn sheep movement along the slopes of the Project's western boundary. BLM's analysis does not support the conclusion that future bighorn sheep dispersal into the into the Montana Mountains would be permanently inhibited by development of the Proposed Action.
P999	17. We are concerned that if the DEIS's estimates of dewatering and lowered water quantity in streams occupied by Lahontan cutthroat trout are incorrect, these iconic ESA-listed fish will be harmed. What could happen to Lahontan cutthroat trout if the DEIS's estimates are wrong? What do USFWS and NDOW say about potential risk to Lahontan cutthroat trout, especially in regard to hydrological issues? Have they raised concerns? Has BLM initiated ESA Section 7 consultation with USFWS?	Thank you for your comment. LNC has developed a water monitoring plan and has proposed groundwater monitoring and contingency mitigation measures. The monitoring plan is included in the Thacker Pass Project, Water Quantity and Quality Impacts Report-Addendum I (Piteau 2020a) that is included in Appendix P to the DEIS. BLM has also proposed additional monitoring to minimize drawdown effects to perennial surface waters as summarized in Section 4.3.2 of the DEIS. It is anticipated that BLM's annual review of monitoring results combined with the updated groundwater modeling predictions would provide early warning of potentially undesirable (and unanticipated) impacts to water-dependent resources to allow for possible implementation of appropriate adaptive management measures to mitigate

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		their effects. Implementation of these measures would likely reduce or minimize potential impacts to water dependent resources. In addition, a biological resources focused Technical Assistance Group (TAG) would be created to develop appropriate monitoring and mitigation for biological resources, such as LCT, and to evaluate the success of mitigation. The TAG would consist of the applicant, the BLM, the NDOW, the USFWS, and any other agencies or academic institutions as appropriate. BLM has worked closely with the USFWS as a cooperating agency in development of this EIS. Effects on LCT are not anticipated to occur from the project, therefore, no formal Section 7 consultation was required.
P1000	18. We think this Project has a strong possibility of harming Thacker Creek and thus harming the wildlife that depend on it. Even a small reduction in its water quantity could be harmful, given the precious and rare nature of perennial water in the Nevada desert.	See Common Response WATER-5 and WATER-6.
P1001	19. Thank you again for this opportunity to assist BLM during the NEPA process. We respectfully request to be notified of all future public comment opportunities related to the Thacker Pass Lithium Mine Project, the availability of any NEPA analysis BLM undertakes in relationship to it, and BLM's decisions related to it, per 40 CFR § 1506.6.	Thank you for your comment.
Letter from David Ricker (ePlanning Letter #41)		
P1002	Please accept these comments on behalf of the Nevada Chapter of Backcountry Hunters & Anglers	Thank you for your comment.
P1003	Backcountry Hunters and Anglers is nationwide organization with state and province chapters across North America. Our stated mission is to advocate on behalf of wildlife and wild places to maintain our tradition of public land hunting and fishing. We recognize the multiple use mandate of public lands under the purview of the BLM. However, extreme care must be taken to avoid negative wildlife impacts as much as possible. If this care is not maintained at the forefront of development, listing of threatened and endangered species could cause landscape scale impacts that perhaps no stakeholder would find palatable.	Thank you for your comment.
P1004	In appendix H, it is asserted that the Lahontan Cutthroat Trout are not projected to be affected by this project's related water depletions. It is generally understood that hydrology models involve inherent uncertainty. Given the length of potential impact that this mine may have, and the tenuous nature of both the LCT and Greater Sage grouse populations within the area of interest (AOI) and adjacent BLM land, we contend that the mine operator should agree to voluntary mitigation measures to ensure surface water adjacent to the project area within the Montana Mountains is maintained at pre-mine levels.	See Common Response WATER-6. See Section 4.3.2 for applicant and BLM proposed water resources mitigation measures.
P1005	Furthermore, a robust monitoring plan for potential surface water impacts related to	See Common Response WATER-6.

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	mine activity and a good faith agreement or MOU with NDOW to mitigate impacts due to dewatering should such surface water impacts come to fruition would go a long way to assuage our general wildlife concerns.	
P1006	We would ask that it be explicitly stated that NDOW is to be consulted at every step of the decision-making process, so that wildlife impacts can be addressed.	BLM will continue to coordinate with NDOW as a cooperating agency throughout the NEPA process.

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