Lifting the Pause on the Issuance of New Federal Coal Leases for Thermal (Steam) Coal

Final Environmental Assessment

DOI-BLM-WO-WO2100-2019-0001-EA

Department of the Interior
Bureau of Land Management (Lead Agency)
Office of Surface Mining Reclamation and Enforcement (Cooperating Agency)

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1.0 INTRODUCTION

The Mineral Leasing Act of 1920 (MLA), 30 U.S.C. § 181 et seq., as amended by the Federal Coal Leasing Amendments Act of 1976, provides that Federal coal deposits "shall be subject to disposition" under the Act. The Department of the Interior (Department) has managed Federal coal leasing under the MLA for nearly a century, and has promulgated regulations implementing this process, which are codified at 43 C.F.R. Subpart 3400. In addition, under the Federal Land Policy and Management Act of 1976 (FLPMA), it is the policy of the United States that public lands be managed in a manner that recognizes the nation's need for domestic sources of minerals (43 U.S.C. § 1701(a) (12)). FLPMA also authorizes the Bureau of Land Management (BLM) to manage the use, occupancy, and development of public lands through leases and permits (43 U.S.C. § 1732(b)). This statutory and regulatory framework does not provide explicit authority to pause BLM's leasing of Federal coal deposits.

1.1 Background and Overview

Despite Congressional direction under the MLA – "an Act to promote the mining of coal, phosphate, oil, oil shale, gas, and sodium on the public domain" – in January 2016, then-Secretary Sally Jewell issued Secretary's Order 3338 (the Jewell Order) pausing the processing of Federal coal leases for thermal (steam) coal with several exemptions and exceptions. In addition, and without any explicit authority, the Jewell Order instituted a temporary pause (pause) on certain Federal coal leasing.

The paused actions covered a range of the BLM's leasing activities: processing of certain new lease applications; conducting of lease sales on certain pending applications; and issuance of leases and lease modifications on certain pending applications. Notably, the Jewell Order included a series of exemptions and exclusions, to minimize economic hardship during the preparation of a discretionary Programmatic Environmental Impact Statement (PEIS). These exemptions and exclusions narrowed the scope of the pause and significantly limited the number of lease applications impacted, as further discussed in Chapter 2. Thus, the Jewell Order was never intended to establish an indefinite pause on all coal leasing activities; rather it contemplated a limited pause in some leasing activities for the explicit purpose of facilitating preparation of the PEIS, a discretionary undertaking, not required by any proposed action, and to avoid the impacts of discrete leasing decisions that might not be supported by subsequent leasing policies. On the latter point, Section 5 of the Jewell Order took the view that, "[c]ontinuing to conduct lease sales or approve lease modifications during this programmatic review risks locking in for decades the future development of large quantities of coal under current rates and terms that the PEIS may ultimately determine to be less than optimal." In other words, while the study of leasing policies under the Jewell Order occurred at the programmatic level, it was understood that the impacts of the existing leasing policies that were being studied were incurred (or "locked-in") at the leasing stage.

No Environmental Assessment (EA) or other analysis of environmental impacts supported the Jewell Order. By the terms of the Jewell Order, the pause was to be effective "until the completion of the PEIS" initiated by the Jewell Order. In January 2017, the BLM produced the scoping report for the PEIS ("PEIS Scoping Report"). According to the review schedule included

in the PEIS Scoping Report, the PEIS Record of Decision (ROD) was anticipated to be completed in March 2019.

Subsequently on March 28, 2017, the President issued Executive Order 13783, Promoting Energy Independence and Economic Growth (the Trump Order). In order to advance domestic energy security and economic strength, the Trump Order instructed that "heads of agencies shall review all existing regulations, orders, guidance documents, policies, and any other similar agency actions . . . that potentially burden the development or use of domestically produced energy resources . . ." Directing "particular attention" to coal and other fossil fuel resources, the Trump Order directed agency heads to revise or rescind "as soon as practicable" those agency actions that their review identified as burdensome. For purposes of the Trump Order, "burden" meant "to unnecessarily obstruct, delay, curtail, or otherwise impose significant costs on the siting, permitting, production, utilization, transmission, or delivery of energy resources." In addition, the Trump Order specifically directed the Secretary of the Interior to amend or withdraw the Jewell Order, lift the pause, and "commence Federal coal leasing activities consistent with all applicable laws and regulations."

On March 29, 2017, then-Secretary Ryan Zinke issued Secretary's Order 3348 (the Zinke Order), which lifted the Jewell Order, thereby terminating the limited leasing pause and formally canceling preparation of the discretionary PEIS. The Zinke Order does not authorize any new coal leasing. Rather, it requires that when coal applicants submit leasing applications, BLM process them in accord with existing law. In effect, the Zinke Order resumed the full measure of the BLM's coal leasing activities, as required by applicable law, and as they had been carried out prior to the Jewell Order. The Zinke Order also accommodated the practical reality that Congress in 2017 had denied the appropriations needed to complete a discretionary PEIS, which the leasing pause was designed to facilitate.[1] In addition, the D.C. Circuit Court of Appeals subsequently determined that completion of a PEIS for Federal coal leasing activities is both discretionary and unnecessary.[2] Thus, at various times, all three branches of government separately weighed in against the completion of the PEIS. In the absence of any legal obligation, funding, or intent to move forward with completing the PEIS, the underlying purpose and rationale for the pause no longer exists.

[1] Congress did not allocate funding for the PEIS in the Fiscal Year (FY) 2017 budget. President Obama's FY 2017 budget requested approximately $4.5 million for the study. At the time of the Zinke Order's issuance, the BLM estimated that the PEIS would cost approximately $12 million. Because this amount exceeds the BLM's annual coal management budget, in the absence of additional congressional funding, the BLM lacked the resources to complete the PEIS.

[2] On November 24, 2014, the Western Organization of Resource Councils and Friends of the Earth filed a complaint in federal district court alleging that the Administrative Procedure Act (APA) and the National Environmental Policy Act (NEPA) obliged the BLM to prepare a PEIS to analyze the effect of Federal coal leasing on climate change and the social cost of carbon. On August 27, 2015, the district court granted the United States' motion to dismiss. *W. Org. of Res. Councils v. Jewell*, 124 F. Supp. 3d 7, 13 (D.D.C. 2015). The plaintiffs' appeal was held in abeyance while the Jewell Order paused Federal coal leasing until the completion of the discretionary PEIS. Following the Zinke Order, the appeal proceeded. On June 19, 2018, the Court of Appeals affirmed the district court decision. The Court of Appeals concluded that since no statute required the BLM to prepare a PEIS, "[w]e therefore lack the authority to compel the Secretary to do so." *W. Org. of Res. Councils et al. v. Zinke, No. 15-5294 D.C. App.* (June 19, 2018).

The limited scope of the leasing pause reduced the potential impact of its rescission, and by extension, any potential impacts of the Zinke Order. Because the BLM continued normal leasing activities for those leases exempt or excluded from the Jewell Order, rescission of the Jewell Order had no effect on a significant number of applications received. Among these exempt or excluded lease applications were nine leases issued during the pause, as well as two leases issued following its termination, which would have been exempt from the pause had it remained in place. As detailed in this EA, from the start of the pause to the present, 11 leases have been issued that fall within the exemptions and exclusions set forth in the Jewell Order, and as such, fall outside the scope of the pause instituted therein. By comparison, during this same period, BLM issued only four leases that would have fallen within the scope of the Jewell Order's pause.

Notably, secretarial orders that merely establish policy are not reviewable under the APA because they do not constitute final agency action.[3] However, on April 19, 2019, the U.S. District Court of Montana (the district court) in *Citizens for Clean Energy et al. v. U.S. Department of the Interior et al.*, Nos. CV-17-30-GF-BMM, CV-17-42-GF-BMM, 2019 WL 1756296 (D. Mont. Apr. 19, 2019), ruled that the Department's issuance of the Zinke Order constituted a final agency action under the APA as well as a major Federal action that triggers compliance with the (NEPA (42 U.S.C. § 4321 et seq.).[4] Although the administrative policies of the Department are categorically excluded from NEPA analysis,[5] the BLM elected not to seek authorization of an appeal of the noted district court ruling and instead to comply with the court's directive that it analyze the environmental impacts of lifting the coal pause, by relying on a NEPA analysis (either an EA or an EIS),[6] rather than relying on the categorical exclusion, which would be an equally valid method of complying with NEPA in this instance.

This EA discloses the potential environmental effects of the issues (see Section 1.4.1, *Issues*) and alternatives (see Chapter 2, Alternatives) and informs the BLM's decision whether an EIS is required. The BLM has developed this EA pursuant to the NEPA, Council for Environmental Quality (CEQ) implementing regulations (40 C.F.R. § 1500 et seq.), the Department's implementing regulations (43 C.F.R. Part 46), and the BLM's NEPA policy (H-1790-1, National Environmental Policy Act Handbook).

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[3] The Zinke Order merely establishes a policy that BLM will not defer proceedings on lease applications. It makes no decision on any individual lease application. Nor does it affect the legal rights or obligations of any party or create any legally enforceable requirement on BLM. Instead, the legally enforceable obligations regarding BLM's leasing process exist separately, in the MLA, FLPMA, NEPA, the CEQ regulations, and the Department's implementing regulations.

[4] Like the Zinke Order, the Jewell Order was not accompanied by a NEPA analysis, making it also legally vulnerable under the district court's reasoning. Consequently, the court's reasoning supports the conclusion that the Jewell Order is legally deficient and, if accepted, would render the Zinke Order superfluous.

[5] 43 C.F.R. § 46.210(i) (Listing categorical exclusions to include: "Policies, directives, regulations, and guidelines: that are of an administrative, financial, legal, technical, or procedural nature; or whose environmental effects are too broad, speculative, or conjectural to lend themselves to meaningful analysis and will later be subject to the NEPA process, either collectively or case-by-case.").

[6] *See Citizens for Clean Energy,* No. CV-17-30-GF-BMM, 2019 WL 1756296 at *1281-82.

1.1.1 Coal

Coal is a fuel which at one time in geological history was vegetation material, which has subsequently been converted into a solid, combustible hydrocarbon through a chemical and geological process. Coal has been used as a fuel source for thousands of years and is found only in locations with the correct combination of source materials and geological processes to support its formation. Though coal has no intrinsic value, coal is subject to robust market demand for use as fuel to generate electric power. Also, certain types of coal can be used for metallurgical processes, like forging steel, smelting metals, or even in smelting sands, which are used to cast metal. After coal mining extracts the resource, a combination of public and private stakeholders—including States, operators, and the Department's Office of Surface Mining Reclamation and Enforcement (OSMRE)—direct reclamation and remediation efforts to minimize and mitigate adverse impacts. Coal mining takes one or two forms:

Surface mining

Conventional surface mining removes the material above the coal seam (the "overburden"), extracts the underlying coal, separates the overburden topsoil and subsoil, and replaces the overburden to reclaim the mined area. Grading, resoiling and planting may be used to further restore the surface. During operations, operators may utilize a variety of heavy equipment, such as haul trucks, excavators, draglines, and dozers. Blasting may be utilized to break up rock or coal, or to assist in overburden removal.

Underground mining

Underground mining is used for coal that cannot be economically mined by surface extraction methods. Because the coal is found as a bedded deposit, underground mining is usually accomplished by utilizing "room and pillar" or "longwall" methods. Standard room and pillar underground mining typically leaves sufficient coal unmined to support the mine's roof, both for safety and to minimize the amount of surface subsidence after mining has occurred, while long wall or pillar extraction underground mining causes surface subsidence in a predictable and controlled manner. In underground mining, the surface disturbance is limited to the surface facilities necessary to support the underground operations and subsidence in the mining area.

1.1.2 Overview of BLM's Federal Coal Leasing Activity

The BLM manages coal leasing on the Federal mineral estate with development potential, which totals about 570 million acres, though less than 1 percent of this acreage was under lease by BLM in 2017. Ownership of the overlying surface estates varies and may be, as to any particular tract: the BLM; other Federal agencies; state or local governments; tribal entities; or private landowners. Under various authorities, including the MLA, the Mineral Leasing Act for Acquired Lands, and FLPMA, the BLM conducts sales and leasing of the Federal coal estate.

As of Fiscal Year 2018, the BLM administered 299 Federal coal leases, encompassing 458,636 acres in 12 states, with an estimated 6.5 billion tons of recoverable Federal coal reserves. From

2009 to 2018, the BLM has held 21 coal lease sales and managed leases that produced approximately 3.9 billion tons of coal and $9.81 billion in royalty revenue during this period.

The BLM's regulations authorize two separate competitive coal leasing processes: regional leasing where the BLM selects tracts within a region for competitive sale; and leasing by application (LBA), where the public nominates a particular tract of coal for competitive sale. In practice, however, all of the BLM's coal leasing is done by application, and compliance with NEPA is completed prior to issuing leases. By application, lessees may also seek a lease modification (LMA) enlarging the leased tract under an existing lease. Approvals for lease modifications also require compliance with NEPA.

The approval to begin mining Federal coal is provided through the Surface Mining Control and Reclamation Act (SMCRA) permitting and the approval of the Mining Plan Decision Document by the Assistant Secretary for Land and Minerals Management ("ASLM"). OSMRE is the Federal agency responsible for compliance with SMCRA and the oversight of the SMCRA permitting programs within 24 states that are the regulatory authority (RA) for issuing permits for mining coal in their states. For Federal coal, the RA submits the complete permit application package (PAP), which includes the findings and recommendations of the RA, to OSMRE. OSMRE prepares the Mining Plan Decision Document, which includes the PAP, documentation of NEPA compliance and compliance with other applicable laws, BLM's resource recovery and protection plan, and OSMRE's formal recommendation for approval, disapproval, or approval with conditions for ASLM's review and decision. See 30 C.F.R. Part 746. Mining Federal coal cannot begin until ASLM approves the mining plan and the RA issues the SMCRA permit.

1.2 Disposition of Coal Lease Applications Related to the Jewell and Zinke Orders

As shown in Table 1.1 below, 45 lease applications were pending with the BLM on the date of the Jewell Order. Of these, 17 applications (38 percent) were either excluded or exempt from the pause, and leases were issued for nine of these applications during the 14 months the Jewell Order was in effect. Of the remaining 28 pending applications, seven were withdrawn and 21 non-exempt applications were processed in the same manner as they would if no pause were in-place.[7] Therefore, the timeline for processing these 21 applications was not affected by the Zinke Order. The BLM received two new applications during the 14 months the Jewell Order was in place. Consistent with Section 5(a)(i) of the Jewell Order, these new applications were not processed until the pause was lifted by the Zinke Order. Both applications were subsequently withdrawn by the applicants.

[7] Section 5(a)(ii) of the Jewell Order states that at an applicant's request, "preparatory work on pending applications may continue (including the preparation of NEPA analyses), but no final decision on whether to hold a lease sale will be made unless one of the exceptions listed in Section 6 of this Order applies."

Table 1.1 Coal Leasing Applications and Leases Issued between January 15, 2016, and March 2019.[8]

Lease Applications	**Jewell Order** *January 2016-March 2017 (14 Months)*	**Zinke Order** *(March 2017-March 2019 (24 Months)*	**Leases Issued (Sub-Total)**
Exempt Applications Pending on Date of Jewell Order	**17**	**--**	**--**
In Progress	6	4	--
Withdrawn	2	--	--
Lease issued	9	2	11[i]
Non-Exempt Applications Pending on Date of Jewell Order	**28**	**--**	**--**
In progress	21	19	--
Withdrawn	7	--	--
Lease Issued	0	2	2[ii]
Applications Submitted After Issuance of Jewell Order	**2[iii]**	**10**	**--**
In progress	--	8	--
Withdrawn	2[iii]	0	--
Lease Issued (Would have been exempt)	--	0	0
Lease issued (Would not have been exempt)	--	2	2[ii]
Total	**47**	**10**	**15**

[i] A total of 11 exempt leases were issued between January 15, 2016, and March 2019.
[ii] A total of 4 non-exempt leases were issued between January 15, 2016, and March 2019.
[iii] Two new applications were submitted in 2016 under the coal lease pause (Jewell Order). These two applications were not considered until the pause was lifted under the Zinke Order and were later withdrawn by the applicants.

In the 24-month period from the Zinke Order to the anticipated date when coal leasing activities would resume, the BLM received 10 new lease applications. Of these 10 applications, as of the date of the district court order, two were issued leases, and eight are pending applications that the BLM continues to process. The processing actions that BLM field staff have taken with respect to these eight pending leases have occurred since the Zinke Order. By the terms of the Jewell Order, the BLM's processing of these pending applications would have been delayed 24 months in the absence of the Zinke Order.[9] However, this does not necessarily translate into discernable impacts, such as hastened production and emissions. Many factors could impact when and whether BLM will approve the eight lease applications it is still processing and whether the coal

[8] This represents the timeframe between the Jewell Order and the scheduled date of the PEIS ROD.

[9] Section5(a)(i) of the Jewell Order provides that, "[n]o new applications for thermal (steam) coal leases or lease modifications will be processed, subject to the enumerated exclusions in Section 6 of this Order."

will ultimately be mined. These factors include, but are not limited to, the results of the site specific NEPA analyses, whether the BLM is able to obtain the required fair market value for the lease, state permitting, mining plan authorization and market factors. It is likely that BLM could issue some or all of these leases in the future. But, based on the above factors, it is speculative for BLM to ascertain with any certainty which, if any leases or lease modifications it will issue, the aggregate reserves associated with those issuances, and what impacts resulted to the processing of these leasing decisions from early termination of the pause. The resulting weight of uncertainty from the various assumptions required of such a calculation would undermine its utility to the public. However, the BLM concedes that these applications, like all those that would have been non-exempt lease applications received after the Zinke Order, are being processed up to 24 months earlier than they would be in lieu of the Zinke Order.

The BLM issued a total of six leases during the 24-month timeframe between the lifting of the pause and the presumptive date on which the BLM would have resumed leasing activities had the Jewell Order remained in effect. Of these six leases, two of the applications were exempt from the pause under the terms of the Jewell Order.[10] The remaining four non-exempt leases and their respective issue dates represent the universe of lease issuances traceable to the Zinke Order's early resumption of normal leasing procedures.

1.2.1 Federal Coal Leasing Since the Zinke Order

The BLM herein reviews the environmental effects of the four Federal coal leases attributable to the Zinke Order, defined as those leases issued after the Zinke Order which would not have qualified as excluded or exempt under the terms of the Jewell Order. As shown below, each of these four leases were subject to a site-specific NEPA analysis memorialized in a contemporaneous NEPA document.

Pollyanna 8 Coal Lease (OKNM-091190)

- Issued May 25, 2018.
- Modification Application EA (DOI-BLM-NM-0040-2018-0001-EA); BLM Oklahoma Field Office, Oklahoma. Available online at: https://eplanning.blm.gov/epl-front-office/eplanning/projectSummary.do?methodName=renderDefaultProjectSummary&projectId=91329.

Alton Coal Tract Lease by Application (UTU-081895)

- Issued February 14, 2019.
- Final EIS (DOI-BLM-UT-C040-2015-0011-EIS); BLM Kanab Field Office, Utah. Available online at: https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=79446&dctmId=0b0003e880ef641f

[10] Table 1.1 and the subsequent text has been updated from the May 2019 Draft EA to correct the category of the SUFCO (U-63214) application from exempt to non-exempt. This application was submitted post-Zinke Order and contained approximately 50 acres, thereby meeting the Jewell Order's small-acreage exemption. The operator subsequently revised the application to approximately 170 acres, taking it outside the scope of the exemption. Therefore, four leases are associated with the proposed action, rather than three as was noted in the Draft EA.

South Fork Federal Coal Lease Modification (SUFCO) (UTU-84102)

- Issued February 14, 2019.
- EA (DOI-BLM-UT-G020-217-0053-EA)[11]; BLM Price Field Office, Utah; USDA Forest Service Fishlake and Manti La-Sal National Forests, Utah. Available online at: https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=89382&dctmId=0b0003e880fa638c.

South Fork Federal Coal Lease Modification (SUFCO) (U-63214)

- Issued February 14, 2019.
- EA (DOI-BLM-UT-G020-217-0053-EA)[12]; BLM Price Field Office, Utah; USDA Forest Service Fishlake and Manti La-Sal National Forests, Utah. Available online at: https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=89382&dctmId=0b0003e880fa638c.

As appropriate, this EA incorporates these previous NEPA analyses by reference (40 C.F.R. §1500.4(j) and §1502.21) and focuses its analysis on the environmental impacts of the resumption of normal leasing procedures 24 months ahead of schedule.

1.3 Purpose and Need

The purpose and need for the Zinke Order was to respond to the Trump Order. The Trump Order directed all Federal agencies to advance domestic energy security and economic strength. To this end, it specifically directed the Secretary of the Interior to "lift any and all moratoria on Federal land coal leasing activities" related to the Jewell Order. On a purely practical level, the Zinke Order's cancellation of the PEIS ratified Congress's effective cancellation of the PEIS by denying funds required to complete it.

The purpose of this EA is to respond to the U.S. District Court of Montana's order issued on April 19, 2019, *Citizens for Clean Energy et al. v. U.S. Dep't of the Interior et al.*, No. CV-17-30-GF-BMM, 2019 WL 1756296 (D. Mont. Apr. 19, 2019), indicating that the Zinke Order constituted final agency action and a major Federal action triggering compliance with NEPA and directing the BLM to prepare an appropriate NEPA analysis. This EA discloses the environmental impacts of resuming lease processing 24 months ahead of schedule. Since, as the Jewell Order recognized, impacts are not locked-in until the leasing stage, these impacts are limited to hastening by up to 24 months the impacts of the four Federal coal leases, not exempt

[11] This document jointly analyzed two applications to modify the South Fork Federal Coal (SUFCO) lease. Note that the second, SUFCO lease modification U-63214, originally fell below the acreage threshold set in the Jewell Order and would have been exempt from the pause on that basis. However, the acreage for U-63214 application was later revised to 170 acres, prior to the estimated PEIS publication date. At this new, higher acreage, it would no longer have been exempt under the Jewell Order. The BLM now considers both SUFCO applications to be non-exempt for the purpose of this EA.

or excluded from the Jewell Order's coal leasing pause, issued between March 29, 2017 and March 2019.[13]

1.4 Scoping and Issues

Scoping is not required for EAs (40 C.F.R. §1501.7). As described in Section 1.1, *Background and Overview*, the impetus to conduct an environmental review of the effects of the Zinke Order's resumption of normal leasing procedures is the April 19, 2019, court order. The BLM determined that no external scoping was needed for this EA since comments were already available from both the January 2017 Federal PEIS Scoping Report and the plaintiffs' complaints addressed by the district court order. In addition, BLM considered a 15-day comment period on the Draft EA appropriate to obtain public comment.

The BLM conducted internal scoping using an interdisciplinary team of resource specialists. This internal process was used to formulate and refine the purpose and need, define issues and alternatives, and identify data needs and other information that needed analysis to determine impacts. Interdisciplinary team members also sought information from BLM Field Offices and other agencies and land managers, as appropriate, to identify any connected, cumulative, or similar actions associated with this EA.

The Draft EA was published on May 22, 2019 with a comment period extending through June 10, 2019. This EA is final with updates, and it addresses the comments received on the Draft EA. The BLM received 280 unique comment letters and additional comments associated with 15 form letter campaigns. Form letter campaigns accounted for 47,666 comment submissions. Responses to the substantive comments are provided in Appendix A, Responses to Comments, and they are incorporated as appropriate in this EA.

1.4.1 Issues

The interdisciplinary team identified potential issues associated with the resumption of normal leasing procedures in March 2017, as compared to March 2019, the anticipated publication date of the PEIS ROD. As outlined in the BLM NEPA Handbook (H-1790-1), an "issue" is a point of disagreement, debate, or dispute with a proposed action based on some anticipated environmental effects. An issue is more than just a position statement: an issue reflects a cause and effect relationship with the proposed action or alternatives.

Based on the internal scoping for this EA, which included a review of the information available from documents and history associated with the March 2015 Listening Sessions, the June 2018 Court of Appeals decision,[14] and the April 19, 2019 district court order, the BLM identified several preliminary issues. Not all of these issues warrant detailed analysis. The BLM analyzes issues in detail when:

- The issue is related to how the proposed action or alternatives respond to the purpose and need; or

[13] *See Supra* Section 1.1, *Background and Overview*.
[14] *See Supra* note 2.

- The issue is significant (an issue associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of impacts).

The following issues are analyzed in detail in *Chapter 3 - Affected Environment and Environmental Effects* of this EA:

- **Issue 1:** How would lifting the Federal coal leasing pause in March 2017 impact greenhouse gas emissions from mining of Federal coal and the associated downstream combustion?

- **Issue 2:** How would lifting the Federal coal leasing pause in March 2017 change socioeconomic impacts associated with coal production levels?

- **Issue 3**: How would lifting the Federal coal leasing pause in March 2017 affect water quality, quantity, and riparian areas?

1.4.2 Issues Considered, but Not Analyzed in Detail

The issues identified below were not carried forward for detailed analysis either because they did not relate to the purpose and need, or the impacts did not rise to the level of potentially significant. There were no new issues identified from the comments on the Draft EA.

1.4.2.1 How would lifting the pause on Federal coal leasing in March 2017 affect BLM's leasing management framework for issuing Federal coal leases and the potential associated impacts?

The BLM considered, but did not analyze in detail, the effects of lifting the pause on BLM's Federal coal leasing and returning to the management framework that the BLM has implemented for over 40 years because this issue does not relate to the purpose and need or inform a question of significance.

The Zinke Order, as outlined in detail in Section 1.3, was a response to the Trump Order. As it did for the four leases identified in this EA, the BLM completes site-specific NEPA analyses of each and every coal lease application to evaluate the effects on the human environment. Lifting the limited pause on Federal coal leasing did not alter the current leasing regulations, lease application requirements, review process, or the decision process for leasing Federal coal. Prior to approving and issuing a coal lease, the BLM makes an informed decision of where to lease, what to lease, whether to lease, and if leased, the conditions required for the lease. The resumption of normal leasing procedures allowed lease applications to be reviewed, considered for leasing, publicly sold, and issued as before the Jewell Order.

The Secretary retains discretion to determine whether and how to review Federal coal leasing to consider if modifications are advisable and consistent with policy objectives. Therefore, lifting the pause returned Federal coal leasing to the status quo that existed before the Jewell Order, and

did not implement any new regulations or restrict future review or changes that could affect Federal coal leasing or its associated impacts.

The rescission of the Jewell Order reflected the Department's view that a PEIS was both discretionary and unnecessary. This view is consistent with the determination of the D.C. Circuit Court of Appeals that "neither NEPA nor the APA requires the Secretary to update the PEIS" for Federal coal leasing. It is speculative whether completing the discretionary PEIS initiated by the Jewell Order would have identified, recommended, or resulted in changes to Federal coal leasing let alone what form any changes might have taken or what impact, if any, such changes would have on the disposition of individual lease applications. In addition, the decision to lift the pause on issuance of coal leases does not preclude future evaluation of Federal coal leasing.

1.4.2.2 How would lifting the pause on Federal coal leasing in March 2017 affect the issuance of Federal coal leases and the evaluation of potential impacts from such leasing?

The BLM considered, but did not analyze in detail, the effects resumption of normal leasing procedures would have on leasing and evaluation of its potential effects because this issue does not relate to the purpose and need or inform a question of significance. The pause under the Jewell Order was temporary and estimated to be lifted in March 2019. Terminating the pause 24 months earlier than initially planned had no bearing on the ultimate decision to issue the four relevant leases or on the environmental impacts of these leases. In addition, because the Secretary maintains discretion to revisit leasing policies, the decision to return to normal leasing *procedures* does not impact leasing decisions and lease issuances beyond hastening the timing of those leases actually issued following the Zinke Order.

The BLM made the decision to issue the four above-referenced leases after each application completed all the review stages of the Federal coal program, including disclosure and consideration of the environmental impacts consistent with NEPA. For the pending leases, it is too uncertain to determine if the change in timing of the pause would have affected the actual timing of issuing those leases. In addition, it is purely speculative whether the outcome of a discretionary PEIS would have identified or recommended changes to Federal coal leasing that would have materially impacted the disposition of those lease applications. The only known and measurable difference resulting from the resumption of normal leasing procedures is that these four leases were issued between 1 and 11 months earlier than they could have been in the absence of the Zinke Order. In the context of a typical 20-year lease, even a 24-month difference in issuance does not rise to the level of significance and would not generate impacts additional to those defined in the lease-specific NEPA documentation.

1.4.2.3 How would lifting the pause on Federal coal leasing in March 2017 affect management of greater sage-grouse and its habitat?

The BLM considered, but did not analyze in detail, the effects that resumption of normal leasing procedures would have on the BLM's management of greater sage-grouse and its habitat. No detailed analysis was conducted because the issue neither relates to the purpose and need, nor informs a question of significance.

As explained below, of the four coal leases issued, only the Alton Coal Development area has the potential to impact the greater sage-grouse habitat, as it is the only lease of the four that is located within greater sage-grouse habitat.

The Pollyanna #8 leasing action in Oklahoma is located too far east to affect any greater sage-grouse habitat.

The lease modification areas in the two SUFCO applications (i.e., UTU84102 and U-63214) did not overlap any greater sage-grouse priority habitat management areas (PHMA), or areas that were previously identified as general habitat management areas (GHMA) in the 2015 Utah Greater Sage-Grouse Approved Resource Management Plan Amendment (ARMPA). Accordingly, the biological assessment for the SUFCO lease modifications notes that there would be no impacts to greater sage-grouse. Additionally, the analysis associated with the SUFCO lease modifications did not anticipate any surface disturbing activity and noted that surface disturbance from subsidence in the modification area would be minimal due to the thick overburden compared to the thin coal seam to be removed. The combination of no greater sage grouse habitat in the lease modification area and the lack of surface impacts from lease development resulted in no impacts to greater sage-grouse or its habitat, regardless of whether the parcels were covered by the leasing pause.

The Alton Coal Development area is located in PHMA and one greater sage-grouse lek is located within the lease area. The lease included stipulations and design features specifically to prevent, minimize, and restore impacts from mining operations on greater sage-grouse and their habitat. This included management actions to ensure conformance with the Kanab Resource Management Plan (RMP), as amended by the 2015 Utah Greater Sage-Grouse ARMPA. After leasing, there were changes to the greater sage-grouse management in Kanab RMP through the 2019 Utah Greater Sage-Grouse ARMPA; however, implementation of the 2019 Utah ARMPA has been halted through a Federal district court's issuance of a preliminary injunction on October 16, 2019. See *Western Watersheds Project v. Bernhardt*, 16-cv-083-BLW (D. Idaho). Whether the 2019 Utah ARMPA was enjoined or not, the changes made as part of the 2019 Utah ARMPA would not have changed the management applied to the Alton lease, which was issued before the 2019 Utah ARMPA was completed. The 2019 Utah ARMPA changes related to coal unsuitability, mitigation requirements, disturbance and density caps, and lek buffers all require close coordination with the appropriate State of Utah agency to ensure sagebrush systems are conserved, enhanced, or restored. Throughout the Alton lease consideration process, the BLM coordinated closely with the State of Utah Public Lands Policy Coordinating Office and Division of Wildlife Resources. This involved the development of the Greater Sage-Grouse Mitigation Strategy and evaluating local greater sage-grouse monitoring data to determine seasonal use areas and associated lek buffers necessary to provide for lek persistence in concert with other management to provide habitat for the affected greater sage-grouse population.

In summary, due to the location of the affected leases issued and the nature of the changes in the 2019 Utah Greater Sage-Grouse ARMPA, the resumption of normal leasing procedures through the Proposed Action did not result in any additional impacts to greater sage-grouse.

2.0 ALTERNATIVES

Chapter 2 presents the alternatives considered in this EA.

2.1 Alternatives Analyzed in Detail

NEPA directs the BLM to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources…" (42 U.S.C. § 4332(E)). This allows consideration of alternative means of meeting the purpose and need for the action. In determining the alternatives to be analyzed in detail, the emphasis is on what is "reasonable." This means analyzing those alternatives necessary to permit a reasoned choice (40 C.F.R. §1502.14). As such, an alternative is only "reasonable" if it would satisfy the purpose and need for the action.

Based on review of the information available from documents and history associated with the noted district court litigation, the BLM identified two alternatives for detailed analysis in this EA, one of which is the required "no action" alternative. 40 C.F.R. § 1502.14(d).

2.1.1 Alternative 1 - No Action Alternative

The No Action alternative provides a baseline for comparison of environmental effects and demonstrates the consequences of not meeting the need for action. The No Action alternative is typically a description of what would (or would not) occur if the BLM does not take action. Specific to this EA, the No Action alternative is defined as the conditions that would have obtained had the Zinke Order not immediately lifted the pause on coal leasing on March 29, 2017.

The No Action alternative retains the pause on the issuance of coal leases established by the Jewell Order through the timeframe in which the BLM would have completed the PEIS. As noted above in Section 1.1,*Background and Overview*, the purpose of the pause was to avoid lock-in of impacts while the BLM considered potential alternative leasing policies. Given this rationale and the MLA's leasing mandate, it is a reasonable assumption that the temporary pause would have been lifted upon the issuance of the PEIS ROD, and leasing activities for non-exempt leases would have resumed at some level in March of 2019, the anticipated ROD issue date. Accordingly, a 24-month period provides the baseline for defining the impacts from hastened lease issuances following the Zinke Order since the review of new lease applications and the issuance of coal leases for non-exempt, approved applications likely would not have happened until March 2019 in the Zinke Order's absence.

The No Action alternative does not address hypothetical alternative leasing regimes which could have followed the PEIS, for a number of reasons. The simplest alternative, a permanent pause—or "no leasing" option—is contrary to the MLA's express direction that the Secretary "shall, in his discretion" offer Federal lands for leasing in response to applications from the public or on his own motion. 30 U.S.C. §201(a) (1). Under these terms, the Secretary is directed to lease as a general matter but retains discretion over whether to offer discrete parcels. The Secretary's mandatory obligation to lease is reinforced by reference to other parts of Section 201 which make plain the statute's affirmative leasing mandate. For example, Section 201 establishes a

minimum proportion of acreage that should be leased under a system of deferred bonus payment, and a minimum number of tracts which "shall be reserved and offered for lease" to public entities. The MLA's development mandate is further confirmed by the fact that the only prohibition on leasing applies as to prospective lessees that have failed to sufficiently develop the Federal leases they already hold. 30 U.S.C. § 201(a) (2) (A). Though the Secretary has significant discretion in which parcels to offer for sale, properly assessing action alternatives short of a wholesale, permanent shut-down of leasing necessarily requires the very information and analysis which the PEIS sought to develop. Given the time and resources required of such an undertaking, and the above referenced input of the President, Congress, and the D.C. Circuit Court of Appeals, the BLM concludes that it would be neither "reasonable" nor practicable to consider more nuanced action alternatives that fall within the BLM's delegated discretion under the MLA.

As noted above, the Jewell Order's leasing pause did not preclude all coal leasing. There were exemptions and exclusions that allowed many lease applications to be processed and issued. The exemption and exclusion criteria included:

- leases for metallurgical coal;
- emergency leases as defined in 43 C.F.R. § 3425.1-4;
- lease modifications, as defined in 43 C.F.R. § 3432.1, that do not exceed 160 acres or the number of acres in the original lease, whichever is less;
- lease exchanges as defined in 43 C.F.R. § 3425.1, 3436.1, and 3436.2;
- the rights of preference right lease applicants based on prospecting permits issued prior to August 4, 1976; and
- the sale and issuance of new thermal coal leases by application, 43 C.F.R. Subpart 3425, or the issuance of thermal coal lease modifications, 43 C.F.R. Subpart 4332, under permitting applications for which environmental analysis under NEPA has been completed and a Record of Decision or Decision Record had been issued by the BLM or the applicable Federal surface management agency as of the date of the Jewell Order. This exception extended to previously issued Records of Decision or Decision Records that had been (or may be) vacated by judicial decisions and are undergoing re-evaluation in accordance with the judicial decision.

There were 45 lease applications pending with the BLM when the Jewell Order was issued, and two lease applications submitted after the Jewell Order was issued. (See Table 1.1). The processing and review of these 47 applications would have continued through March 2019 at the same rate without pause with or without the Zinke Order. Specifically, the BLM would have continued to process lease applications with the potential to issue leases for 17 applications meeting the exemption or exclusion criteria. Of these 17 applications 11 leases were issued, two were withdrawn, and four remained pending between January 2017 through March 2019.

2.1.2 Alternative 2 – Resume Normal Leasing Procedures in March 2017

Consistent with the April 19, 2019 district court ruling, the action (Alternative 2) is the Zinke Order's rescission of the Jewell Order. Under this alternative, the pause was terminated, and BLM resumed processing of current and new applications and issuing leases for non-exempt

lease applications consistent with applicable law beginning March 29, 2017, approximately 24 months sooner than anticipated under the No Action Alternative. Since the anticipated date for resumption of processing of non-exempt coal applications predates this EA, the BLM is able to identify with certainty the number of leases that were processed during the 24-month time span between the Zinke Order (lifting the pause) and the anticipated pause end date. The timing of lease applications is outlined in Table 1.1

Specifically, Alternative 2 is defined by what leasing activities occurred during the 24 months of application reviews and approvals of coal leases. During the 24-month time period, there were ten new applications submitted, two withdrawn, eight still in review, and a total of four applications approved with leases issued (see Table 1.1). These non-exempt lease applications, identified in Tables 2.1, 2.2, and 2.3, were or are under BLM's consideration as a result of lifting the pause, and the hastened issuances are considered the consequences of Alternative 2.

Table 2.1. Non-exempt leasing applications the BLM received *prior to* January 15, 2016, where leases were issued between March 29, 2017 and March 2019.

State	Mine	Application Type (Serial No.)	Acres	Leased Tons (Millions)	Mining Type	Application Date	Issued and Effective Dates
OK	Pollyanna #8	LMA (OKNM-91190)	520	3.37	Underground	1-Sep-09	25-May-18; 1-May-18
UT	Alton Coal Development	LBA (UTU-81895)	2,682	30.8	Surface and Underground	12-Nov-04	14-Feb-19; 1-Feb-19

Table 2.2. Non-exempt leasing applications the BLM received *after* January 15, 2016, where leases were issued between March 29, 2017, and March 2019.

State	Mine	Application Type (Serial No.)	Acres	Tons (Millions)	Status	Application Date	Issued and Effective Dates
UT	SUFCO	LMA (UTU-84102)	740	4.40*	Underground	8-May-17	14-Feb-19; 1-Mar-19
UT	SUFCO	LMA (U-63214)	170**	1.40	Underground	8-May-17	14-Feb-19; 1-Mar-19

*Initially applied for as 5.85 MMst, but later revised to current estimated total of 4.40 MMst.
**Initially applied for as 50 acres, but later revised to current estimated total of 170 acres.

Table 2.3. Pending Coal Leasing Applications received after Zinke Order.

State	Mine	Application Type (Serial No.)	Acres 1	Coal Authorized/ Applied for (Million Tons)	Status 1	Status 2
CO	King II	LBA (COC-078825)	2,462	9.54	New	Pending
CO	Twenty-mile	LBA (COC-78449)	640	5.2	New	Pending

ND	Coyote Creek	LBA (NDM 110277)	320.00	5.2	New	Pending
OK	Pollyanna #8	LMA (OKNM 91190)	270.00	1.1	New	Pending
UT	Lila Canyon	LMA (UTU-014218)	317	1.3	New	Pending
UT	Lila Canyon	LMA (UTU-126947)	1,252	7.6	New	Pending
UT	Walker Flat Tract	LBA (UTU-093214)	2,236.00	--	New	Pending
WV	Freedom Energy (FE), LP	LBA (WVES-59357)	6,384.00	21.9	New	Pending

2.2 Alternatives Considered, but Not Analyzed in Detail

Based on the internal scoping for this project, which included a review of the information available from documents and history associated with the court case, the BLM did not identify any additional preliminary alternatives beyond those presented in Section 2.1, *Alternatives Analyzed in Detail*.

A number of commenters on the Draft EA requested that the BLM analyze an alternative to complete the PEIS. Congress did not allocate funding for the PEIS in the Fiscal Year (FY) 2017 budget. Specifically, President Obama's FY 2017 budget requested approximately $4.5 million for the study. At the time of the Zinke Order's issuance, the BLM estimated that the PEIS would cost approximately $12 million. Because this amount exceeds the BLM's annual coal management budget, in the absence of additional congressional funding, the BLM has lacked the resources to complete the PEIS at all times relevant to the Proposed Action and this EA. Therefore, an alternative to complete the PEIS is not an economically feasible alternative capable of being implemented. In addition, canceling preparation of the PEIS does not preclude the BLM from making future improvements to the Federal coal leasing program. By contrast, analyzing the impacts of a PEIS alternative decoupled from an ongoing pause would require speculating both about what changes to leasing policy a PEIS would produce and the impacts of those changes. It is impossible to determine with any certainty the likely results of (or likely policy changes attributable to) completing an unfinished, unfunded PEIS. Similarly, speculating about the impacts of any such changes is not feasible without the information and analysis that the PEIS sought to produce and which is not practicable to produce in the absence of congressional funding.

Additional alternatives proposed in comments on the Draft EA included a no leasing alternative, a carbon budget alternative, a preventing speculative leasing alternative, a good operator alternative, a maximizing reclamation alternative, and alternatives based on the outcome of a PEIS. None of these preliminary alternatives were found to meet the purpose and need of the proposed action and as such were not carried forward for additional analysis.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

Chapter 3 of this EA discloses the affected environments and environmental effects of the issues identified for detailed analysis (see Section *1.4.1, Issues*).

3.1 Issue 1: How would lifting the pause on Federal coal leasing in March 2017 impact greenhouse gas emissions from mining of Federal coal and the associated downstream combustion?

The three most common greenhouse gasses (GHGs) associated with the production, transportation, and downstream combustion of coal are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). When quantifying GHG emissions, the BLM presents results in terms of CO_2 equivalents (CO_2e) which allows for an "apples to apples" comparison of emissions of different gases. The impact of a given GHG on global warming depends both on its radiative forcing and how long it lasts in the atmosphere. Emissions of each GHG are converted to a common term using the global warming potential (GWP) of each gas. Each GHG has a different atmospheric lifetime: for example, CH_4 dissipates in the atmosphere relatively quickly (on the order of 12 years), whereas other gases such as CO_2 typically last for hundreds of years or longer. GHGs also vary with respect to the amount of outgoing radiation absorbed by each gas molecule relative to the amount of incoming radiation it allows to pass through, i.e., its level of radiative forcing. A molecule of N_2O is far more effective at absorbing outgoing radiation than a molecule of CO_2. GWPs have been developed for several GHGs over different time horizons including 20 years, 100 years, and 500 years. The choice of emission metric and time horizon depends on the type of application and policy context. The 100-year GWP was adopted by the United Nations Framework Convention on Climate Change and its Kyoto Protocol. In addition, the Environmental Protection Agency (EPA) uses the 100-year time horizon in its Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2016 (EPA 2018a), GHG Reporting Rule requirements under 40 C.F.R. Part 98 Subpart A, and in its science communications, consistent with the International Panel on Climate Change (IPCC) Fifth Assessment Report, Climate Change Synthesis Report, 2014 (IPCC 2014). In this EA, the BLM uses the 100-year GWP time horizon in its GHG emission calculations and also includes a comparison of GHG emissions using the 20-year time horizon. The GWPs used for CO_2 are 1 for both time horizons. For CH_4, GWPs of 28 and 84 are used for the 100-year and 20-year time horizons, respectively. For N_2O, GWPs of 265 and 264 are used for the 100-year and 20-year time horizons, respectively.

Coal mining operations typically result in both direct and indirect GHG emissions during several operational phases, including: onsite mining equipment and operations (direct emissions): stockpiles and product storage (indirect emissions); offsite transportation of produced coal (indirect emissions); and the end use of the produced coal (indirect emissions). GHGs from mining operations may be emitted from sources such as the combustion of fuel (e.g., diesel) in excavation and processing equipment, methane released from the coal seam/face, and the electricity used to power equipment. Indirect emissions from storage and transportation may include releases of methane from storage piles and the transportation of produced coal via diesel locomotive or truck. Another form of indirect emissions is the end use of produced coal, which typically includes combustion for electricity generation but may also include the use of metallurgical coal for steel production.

For purposes of this EA, the BLM evaluated potential impacts from GHGs by comparing the indirect emissions from the end use phase (downstream combustion) between alternatives. This evaluation considered the effects from the downstream combustion for all 57 mining actions and assumed that 100 percent of the coals that would potentially be produced, would be consumed in

a typical U.S. power plant for electricity generation. According to the U.S. Energy Information Administration, in 2017, 81 percent of all U.S. produced coal was used for U.S. electricity generation (EIA 2019a). Table 3.1 shows the mining actions considered in this evaluation and the associated tonnages of coal for each mine, as included in either the mining action application or authorization.

Direct emissions of GHGs (onsite mining processes) and indirect GHG emissions from storage and transportation, which typically represent only a fraction of combustion impacts, were also considered for the four approved leases and are disclosed in Table 3.2. This analysis was possible because these four mining actions had previously undergone full NEPA analysis, including a robust air analysis for each mine. As noted, those analyses are incorporated herein by reference. Information on direct and indirect emissions was readily available for these mines and the estimated emissions reflect variations in the four leases' life expectancies and mining operations. BLM did not quantify direct or indirect storage and transportation related GHG emissions for the remaining 53 mining actions because air analyses were not yet completed for these actions and the data used to calculate these emissions was not readily available. The BLM is disclosing that GHG emissions would occur from these phases of operation at each potential mining location to varying degrees depending on life of mine, type of and depth to coal, production rates, mining methods, equipment types and fuels, and distribution of produced coal (i.e. mine-mouth combustion vs. transport to terminal or remote combustion site), but because of the degree of uncertainty and speculation inherent in quantifying these emissions, cannot provide reasonable estimates of the indirect storage and transportation emissions. The degree of speculation and uncertainty in quantifying the direct and indirect-transportation emissions for the remaining 53 mining actions would not provide defensible or reasonable information useful to the public or decision maker.

In addition, these emissions were not quantified for the following reasons:

- With respect to the 53 pending leases, indirect storage and transportation emissions will be evaluated under the appropriate NEPA analysis to be completed for each action;
- At present, the multiple parameters used to evaluate direct and indirect GHG emissions at each mine are not known for many of the proposed/pending mining actions and it would be speculative to look at the summation for the total number of actions considered under this EA;
- The proportion of direct emissions and indirect storage and transportation emissions from mining operations compared to the downstream combustion emissions is typically very small. The summation of these emissions for the total number of actions considered under this EA, are likely to be negligible compared to the downstream combustion emissions as evidenced by the four mining actions where direct and indirect storage and transportation emissions were estimated;
- The quantification of indirect emissions due to storage and transport are highly dependent on the specifics at each mine. Storage quantity, location, and duration are not known for all of the evaluated mining actions. Transport to an adjacent power plant vs. transport by rail or truck and associated distances are not known for all of the evaluated mining actions; and
- Evaluation of the estimated GHG emissions from the downstream combustion of the potential produced coal from all of the evaluated mining actions provides reasonable and

relevant criteria with which to compare alternatives, inform the public, and disclose potential impacts.

Table 3.1 shows the mining action status and estimated coal production for all 57 Federal coal leasing applications that were either received or pending during the time period between the issuance of the Jewell Order and April 19, 2019, the date of the Court Order. Non-exempt coal leases issued after the pause and before the Court Order are bolded. Non-exempt lease applications received after the issuance of the Jewell Order that the BLM began processing following the issuance of the Zinke Order are italicized. The coal production value is shown as zero for those applications that have been subsequently withdrawn and are not considered a Reasonably Foreseeable Future Action (RFFA) for purposes of cumulative impacts analysis.

Table 3.1. Mining Action Status and Estimated Coal Production*

State	Mine	Application Type (Serial No.)	Current Status	Coal Applied for/ Authorized (million tons)
Mineral Leasing Actions considered EXEMPT under the Jewell Order				
AL	Narley Mine No. 3	LBA (ALES55199)	Issued	0.5
CO	Colowyo	LMA (COC123475)	Issued	0.0
CO	Foidel Creek	LMA (COC54608)	Issued	0.3
CO	West Elk	LMAs (COC1362 & COC67232)	Issued	10.1
ND	Center Mine	LBA (NDM102083)	Issued	2.4
ND	Falkirk Mine	LBA (NDM107039)	Issued	2.2
UT	SUFCO Mine	LBA (UTU84102)	Issued	55.7
WY	Antelope	LMA (WYW177903)	Issued	13.6
CO	King II Mine	LMA (COC62920)	Issued	4.7
WY	Black Butte	LMA (WYW6266)	Issued	8.7
UT	SUFCO	LMA (U63214)	Issued	0.4
MT	Rosebud	LMA (MTM080697)	Pending	6.8
OH	Buckingham Coal	LBA (OHES57390)	No bids received	1.4
WY	Black Thunder	LBA (WYW164812)	Pending	467.6
WY	Cordero Rojo	LBA (WYW180711)	Pending	233.60
WY	Bridger	LMA (WYW154595)	Withdrawn	0.0
WY	Buckskin	LBA (WYW172684)	Withdrawn	0.0
Mineral Leasing Actions PAUSED under the Jewell Order				

OK	**Pollyanna #8**	**LMA (OKNM-91190)**	**Issued**	**3.4**
UT	**Alton Coal Development**	**LBA (UTU81895)**	**Issued**	**30.8**
AL	Cassidy	LBA (ALES55797)	Pending	22.8
AL	Yellow Creek	LBA (ALES56519)	Pending	27.3
AR	Bates	LBA (ARES57757)	Pending	0.10
CO	Bookcliffs	LBA (COC70538)	Pending	78.0
CO	New Elk Coal Co	LBA (COC71978)	Pending	8.0
KY	Alma Deep	LBA (KYES55296)	Pending	5.3
MT	Decker	LMA (MTM101099)	Pending	17.5
MT	Decker	LBA (MTM108494)	Pending	203.4
MT	Spring Creek	LBA (MTM105485)	Pending	170.22
MT	Spring Creek	LMA (MTM094378)	Pending	7.9
ND	Center Mine	LBA (NDM105513)	Pending	11.2
OK	Heavener	LBA (OKNM130536)	Pending	TBD
OK	Heavener	LMA (OKNM91569)	Pending	TBD
OK	Liberty No. 8	LBA (OKNM124610)	Pending	3.2
OK	McCurtain	LBA (OKNM127509)	Pending	3.6
OK	Rock Island	LMA (OKNM91571)	Pending	TBD
OK	Shady Point/Cavanal	LMA (OKNM91590)	Pending	TBD
UT	UT Am. Energy-Williams Draw	LBA (UTU080043)	Pending	TBD
WY	Antelope	LBA (WYW184599)	Pending	441.0
OK	Decker Mine	LBA (OKNM131007)	Withdrawn	0.0
OK	Milton	LMA (OKBLM17902)	Withdrawn	0.0
OK	Pollyanna	LBA (OKNM134392)	Withdrawn	0.0
WY	Belle Ayr	LBA (WYW180238)	Withdrawn	0.0
WY	Black Thunder	LBA (WYW172388)	Withdrawn	0.0
WY	Haystack	LBA (WYW159423)	Withdrawn	0.0
WY	Rawhide	LMA (WYW83395)	Withdrawn	0.0
Mineral Leasing Actions SOUGHT AFTER the Zinke Order and considered Reasonably Foreseeable Future Action (RFFA)				

UT	**SUFCO**	**LMA (UTU84102)**	**Issued**	**4.4**
UT	**SUFCO**	**LMA (U63214)**	**Issued**	**1.4**
CO	*King II*	*LBA (COC-078825)*	*Pending*	*9.54*
CO	*Twentymile*	*LBA (COC-78449)*	*Pending*	*5.2*
ND	*Coyote Creek*	*LBA (NDM 110277)*	*Pending*	*5.2*
OK	*Pollyanna #8*	*LMA (OKNM 91190)*	*Pending*	*1.1*
UT	*Lila Canyon*	*LMA (UTU-014218)*	*Pending*	*1.3*
UT	*Lila Canyon*	*LMA (UTU-126947)*	*Pending*	*7.6*
UT	*Walker Flat Tract*	*LBA (UTU-093214)*	*Pending*	*TBD*
WV	*Freedom Energy (FE), LP*	*LBA (WVES-59357)*	*Pending*	*21.9*
UT	Alton	LBA (UTU-091615)	Withdrawn	0.0
WY	Bridger	LBA (WYW-185637)	Withdrawn	0.0
		Total tons considered in cumulative =		1899.36

*Bold means actions included as part of the Proposed Action.

Direct and Indirect Effects

Under the No Action alternative, it is assumed that the coal leasing pause would have continued until March of 2019, and that the status of each mining action would have remained the same as stated in Table 3.1 through that date. Allowing the pause to run its course would have no direct effect on the quantity of GHG emissions potentially emitted from the mining actions other than to delay the timing of those emissions for the four approved leases 1-11 months earlier and up to 24 months earlier for the eight pending leases, than would have been produced under Alternative 1.

Under Alternative 2, the four mining leases approved between March 2017 and March 2019 will produce GHG impacts 1 to 11 months earlier than they would have occurred under Alternative 1, as demonstrated later in Section 3.2, *Issue 2: How would lifting the pause on Federal coal leasing in March 2017 change socioeconomic impacts associated with coal production levels*. The approximate impacts for the four approved leases would be far less than what is estimated below in Table 3.2, which shows the annual GHG emissions for direct (mining operations), indirect (transportation and combustion) and annual GHG emissions total, because the SUFCO leases were each hastened by only one month, the Alton lease by 2 months, and the Pollyanna #8 by 11 months respectively. At most, the Proposed Action increases the supply of coal in the near term for a short period (less than two years) and hastens when supply from these actions will cease (by up to two years) as the tracts impacted by the Zinke Order will exhaust their reserves earlier than if development had been delayed by up to 24 months. Each of these approved leases

underwent NEPA analysis that included quantification of emissions of criteria air pollutants, hazardous air pollutants, and greenhouse gases. Those analyses of GHG emissions included direct emissions from mining operations, indirect emissions from storage and transportation of produced coal, and indirect emissions from the downstream combustion of produced coal. Emissions were evaluated on an annual and life of mine basis. Table 3.2 shows the estimated emissions for each of the four approved mining actions in million metric tonnes per year (MMmt/yr).

Table 3.2. Estimated GHG Emissions for Alternative 2.

Mine	Annual GHG Emissions Direct (Mining Operations) CO_2e (MMmt/yr)	Annual GHG Emissions Indirect (Transportation) CO_2e (MMmt/yr)	Annual GHG Emissions Indirect (Combustion) CO_2e (MMmt/yr)	Annual GHG Emissions Total CO_2e (MMmt/yr)	Life of Mine GHG Emissions Total CO_2e (MMmt)
SUFCO LMA (UTU84102)	0.05	0.06	14.8	14.9	22.30.12
SUFCO LMA (UTU63214)					
Alton	0.12	5.15	4.36	9.63	144
Pollyanna #8	0.01	1.02	6.40	7.43	59.4
Total =	***0.18***	***6.23***	***25.5***	***31.9***	***226***

1. South Fork (SUFCO) Federal Coal Lease Modifications UTU-84102 and U-63214 Environmental Assessment, DOI-BLM-UT-G020-2017-0053-EA, June 2018
2. Alton Coal Tract Lease by Application, DOI-BLM-UT-C040-2015-0011-EIS, Final Environmental Impact Statement, July 2018
3. Pollyanna 8 Coal Lease Modification Application OKNM 091190 Environmental Assessment, DOI-BLM-NM-0040-2018-0001-EA, November 2017

Cumulative Effects

Cumulative GHG emissions were evaluated by considering emissions from the past and present actions, the alternatives, and the Reasonably Foreseeable Future Actions (RFFA). GHG emissions from past and present actions are assumed to be represented in the national GHG emissions inventory completed by the Environmental Protection Agency (EPA), which accounts for many source categories including energy generation, manufacturing, agriculture, and motor vehicles. Against this backdrop, the BLM then estimated GHG emissions for the downstream combustion of all coal that could potentially be produced by the mining actions included in Table 3.1 (i.e., the 57 lease applications, grouped in the same three categories reflected in Table 3.1, that is, exempt, paused by the Jewell Order, and sought after the Zinke Order). This includes the

proposed action and the RFFA. The potential coal production was then multiplied by GHG emission factors developed by the EPA for the stationary combustion of coal. Because the rank[15] of coal that could potentially be produced at each mine is not known, averages of the emission factors for each GHG for bituminous and sub-bituminous coal were used (4,410 lb CO_2/ton coal, 0.51 lb CH_4/ton coal, and 0.07 lb N_2O/ton coal). Table 3.3 shows the estimated annual GHG emissions from the downstream combustion of the coal that could potentially be produced from the listed mining actions in million metric tonnes (MMmt).

Estimated life-of-mine extensions for each action range from 6 months to 15 years, which means that the emissions result shown in Table 3.3 can be considered annual as well as gross emissions. The results are compared to the total U.S. GHG emissions and GHG emissions from electricity generation and the energy sector for 2017.

Table 3.3 Cumulative GHG Emissions Comparison

Mining Action Category	Coal Applied for/ Authorized (million tons)*	Cumulative GHG Emissions Indirect (Combustion) CO_2e 100-yr (MMmt/yr)	Cumulative GHG Emissions Indirect (Combustion) CO_2e 20-yr (MMmt/yr)	Percentage of 2017 U.S. Electricity Generation GHG Emissions (%)	Percentage of 2017 U.S. Energy Sector GHG Emissions (%)	Percentage of 2017 U.S. Total GHG Emissions (%)
Exempt	808	814.0	819.2	47.0	16.7	12.5
Paused by the Jewell Order	1033.72	1057.25	1063.95	61.0	21.7	16.3
Sought post Zinke Order	56.5	57.0	57.3	3.3	1.2	0.9

* Represents total produced coal over the life of the mine. Assume 2 years extended mine life for annual emissions.
U.S. Total GHG Emissions 2017 = 6,472 MMmt
U.S. Energy Sector Fossil Fuel Combustion GHG Emissions 2017 = 4,912 MMmt
U.S. Electricity Generation Fossil Fuel Combustion GHG Emissions 2017 = 1,732 MMmt
Source: EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks, Public Review of Draft U.S. Inventory of Greenhouse Gas Emissions and Sinks: 1990-2017

Early termination of the coal leasing pause would not change the cumulative levels of GHG emissions resulting from coal leasing between Alternative 1 and Alternative 2. As described above in the direct and indirect effects, the total quantity of GHG emissions would be the same under both alternatives. The only difference is that Alternative 2 would produce GHG emissions for the four issued leases 1-11 months earlier and up to 24-months earlier for the eight pending leases, than would have been produced under Alternative 1.

[15] Coal is categorized by "rank," or type and amount of carbon contained in a coal deposit. There are four ranks: anthracite, bituminous, subbituminous, and lignite. Each rank will emit different amounts of GHG per a given tonnage combusted, and a coal tract may include deposits of more than one rank of coal.

Energy related CO_2 emissions have declined for seven of the ten years in the decade from 2007 to 2017 and were 14 percent (849 MMmt) lower than 2005 levels in 2017 (EIA 2018a). Energy related CO_2 emissions rose by 2.9 percent in 2018, however, the EIA forecasts that these CO_2 emissions will decline by 1.6 percent in 2019 and by 0.5 percent in 2020 (EIA 2019b). The 2018 increase largely reflected increased weather-related natural gas use because of additional heating needs during a colder winter and for higher electric generation to support more summer cooling use than in 2017. The EIA expects emissions to fall in 2019 and 2020 because of forecasted temperatures that will return to near normal and natural gas and renewables making up a higher share of electricity generation, relative to coal. The portion of the projected decrease attributable to coal is between 28 – 87 MMmt per year (EIA 2019b).

Coal has historically been the second largest source of energy related CO_2 emissions since 1990 and coal related CO_2 emissions have been declining since 2007. Petroleum and other liquids continue to be the largest source of energy related CO_2 emissions. In 2015, natural-gas-related CO_2 emissions exceeded coal-related CO_2 emissions. The natural gas share of electricity generation has generally been growing, while the coal share has been declining. However, because natural gas produces more energy for the same amount of emissions as coal, growth in natural gas consumption contributed to the overall 2017 decline in carbon intensity and emissions. CO_2 emissions from electricity generation have decreased overall by 28 percent from 2005 to 2017 (EIA 2018a).

Forecasting into the future, the EIA's Annual Energy Outlook for 2018 projects that carbon intensity (CO_2 emissions per BTU of energy consumed) will decrease by 9 percent due to energy efficiency, improved fuel economy, reductions in the consumption of carbon intense fuels, and the use of low or no-carbon fuels. Coal-fired electric generating capacity is projected to decrease through 2030 then levels off through 2050 while coal production generally decreases through 2022 and then levels off through 2050 primarily due to retirements of coal-fired power plants (EIA 2018b). Electric generating related CO_2 emissions are anticipated to remain relatively flat in part due to increased natural gas use and policies supporting renewable sources compared to coal (EIA 2018b). However, different fuel prices, especially for natural gas could increase the use of existing coal-fired generation units for electricity and thus coal related CO_2 emissions (EIA 2018b).

Current understanding of the climate system comes from the cumulative results of observations, experimental research, theoretical studies, and model simulations. The IPCC is the body created under the auspice of the United Nations that reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change.

The Fifth Assessment Report of the IPCC (AR5), issued in 2013, makes certain conclusions about the future impacts of GHG emissions on climate change based largely on several modeling analyses that evaluate the natural systems and feedback mechanisms contributing to climate variability over the entirety of the Earth. The modeling analyses consider a range of global GHG emissions scenarios known as Representative Concentration Pathways (RCPs). The RCPs evaluate different pathways of GHG emissions and atmospheric concentrations, air pollutant emissions, and land use patterns. The anthropogenic GHG emissions represented in each

scenario are influenced by assumptions of population size, economic activity, lifestyle, energy use, land use patterns, technology and climate policy. The RCPs include a stringent mitigation scenario (RCP2.6), two intermediate scenarios (RCP4.5 and RCP6.0) and one scenario with very high GHG emissions (RCP8.5) (IPCC, 2014 pg. 8).

Each RCP scenario has been used in multiple global integrated assessment models to make predictions about future warming associated with those GHG emissions. For example, by 2050, global surface temperature change is projected to *likely* range from 0.5 to 2.0 degrees Celsius (°C) for the high emissions scenario (RCP8.5), but likely to range from 0.3 to 1.0°C for the low emissions scenario (RCP2.6) (IPCC, 2014 pg. 59-60).

In addition to the IPCC predictions, the Fourth National Climate Assessment (NCA, 2018) provides an assessment of the science of climate change, with a focus on the United States, and was developed by three Federal agencies (National Oceanic and Atmospheric Administration, NASA, Department of Energy) and other contributing authors under the auspices of the U.S. Global Change Research Program (NCA, 2018 pg. 1). The NCA includes an evaluation of the impacts of climate change in 10 different regions. The NCA also used RCPs as the basis for its modeled predictions including: (1) a "lower scenario" (RCP4.5) which assumes lower emissions and concentrations of GHGs and aerosols and projects a lower change in radiative forcing by 2100; and (2) a "higher scenario" (RCP8.5) which assumes a continued dependence on fossil fuels, higher GHG emissions and concentrations, and projects a larger change in radiative forcing by 2100 (NCA, 2018 pg. 16). Although changes in average global temperature are predicted to be in the range of 0.3 to 2.0°C by 2050, warming rates can vary across the globe and are greater at higher latitudes due in part to reduced snow cover and reduced albedo. For example, in the Northern Great Plains, Montana, Wyoming, North Dakota, South Dakota, and Nebraska), where more than 80 percent of the coal analyzed for this EA is produced, climate model predictions show a warmer future with conditions becoming consistently warmer in two to three decades and temperatures rising steadily towards the middle of the century, irrespective of the climate scenario modeled with predicted temperature increases of between 2 to 4°F (approx. 1-2oC) projected by 2050 under the lower scenario (NCA, 2018 pg. 196-197).

The US Geological Survey recently published a report on GHG emissions from extraction and use of fossil fuels produced on Federal lands and GHG sinks (carbon storage by terrestrial ecosystems) on Federal lands in the US (USGS 2018). In 2014, nationwide emissions from fossil fuels (oil, gas, and coal) extracted from Federal lands were 1,279.0 MMmt carbon dioxide equivalents (CO_2e) of carbon dioxide, 47.6 MMmt CO_2e of methane, and 5.5 MMT CO_2e of nitrous oxide based on 100-year GWPs (USGS, 2018 pg. 6). In 2014, carbon storage by terrestrial ecosystems on Federal lands in the conterminous United States (not including Alaska and Hawaii) was 83,600 MMmt CO_2e. Soils stored 63 percent of carbon, with vegetation and dead organic matter storing 26 percent and 11 percent, respectively (USGS, 2018 pg. 12). Between 2005 and 2014, the annual rate of net carbon uptake by terrestrial ecosystems in the conterminous US ranged from a sink (sequestration) of 475 MMmt tons of CO_2e per year to a source (emission) of 51 MMmt CO_2e per year due to changes in climate/weather, land use, land cover change, wild fire frequency, and other factors. Terrestrial ecosystems on Federal lands sequestered an average of 195 MMmt CO_2e per year nationally between 2005 and 2014 (USGS, 2018 pg. 13-17).

A protocol to estimate what is referenced as the "social cost of carbon" (SCC) associated with GHG emissions was developed by a Federal Interagency Working Group (IWG), to assist agencies in addressing EO12866, which requires Federal agencies to assess the cost and the benefits of proposed regulations as part of their regulatory impact analyses. The SCC protocol produces a monetary estimate of the economic costs associated with an increase in CO_2 emissions and is intended to be used as part of a cost-benefit analysis for proposed rules. As explained in the Executive Summary of the 2010 SCC Technical Support Document, "the purpose of the [SCC] estimates…is to allow agencies to incorporate the social benefits of reducing CO_2 emissions into cost-benefit analyses of regulatory actions that have small, or 'marginal,' impacts on cumulative global emissions," (Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under EO 12866 February 2010 (withdrawn by EO13783)). While the SCC protocol was created to meet the requirements for regulatory impact analyses during rulemakings, there have been requests by public commenters or project applicants to expand the use of SCC estimates beyond rulemaking to include project-level NEPA analyses.

In preparing this EA, a decision was made not to expand the use of the SCC protocol to lifting the coal leasing pause 24 months earlier than anticipated for several reasons. Most notably, this action is not a rulemaking for which the SCC protocol was originally developed. Second, on March 28, 2017, the President issued EO 13783 which, among other actions, withdrew the Technical Support Documents upon which the protocol was based and disbanded the earlier Interagency Working Group on Social Cost of Greenhouse Gases. The EO further directed agencies to ensure that estimates of the social cost of GHGs used in regulatory analyses "are based on the best available science and economics" and are consistent with the guidance contained in OMB Circular A-4, "including with respect to the consideration of domestic versus international impacts and the consideration of appropriate discount rates" (E.O. 13783, Section 5(c)). In compliance with OMB Circular A-4, interim protocols have been developed for use in the rulemaking context. However, the Circular does not apply to project decisions, so there is no EO requirement to apply the SCC protocol to project decisions.

Further, NEPA does not require a cost-benefit analysis (40 C.F.R. § 1502.23), although NEPA does require consideration of "effects" that include "economic" and "social" effects. 40 C.F.R. 1508.8(b). Without a complete monetary cost-benefit analysis, which would include the social benefits of the proposed action to society as a whole and other potential positive benefits, inclusion solely of an SCC cost analysis would be unbalanced, potentially inaccurate, and not useful in facilitating an authorized officer's decision. Any increased economic activity, in terms of revenue, employment, labor income, total value added, and output, that is expected to occur with the proposed action is simply an economic impact, rather than an economic benefit, in as much as such impacts might be viewed by another person as negative or undesirable impacts due to potential increase in local population, competition for jobs, and concerns that changes in population would change the quality of the local community. Economic impact is distinct from "economic benefit" as defined in economic theory and methodology (Watson, Wilson, Thilmany, and Winter 2007), and the socioeconomic impact analysis required under NEPA is distinct from an economic cost-benefit analysis, which is not required.

Finally, the SCC protocol does not measure the actual incremental impacts of a project on the biophysical environment at a specific geographical location and does not include all damages or benefits from carbon emissions. The SCC protocol estimates economic costs associated with an increase in CO_2 emissions – typically expressed as a one metric ton increase in a single year – and includes, but is not limited to, potential changes in net agricultural productivity, human health, and property damages from increased flood risk over hundreds of years. The estimate is developed by aggregating results "across models, over time, across regions and impact categories, and across 150,000 scenarios" (Rose et al. 2014). The dollar cost figure arrived at based on the SCC calculation represents the value of damages avoided if, ultimately, there is no increase in carbon emissions. But the dollar cost figure is expressed in a broad range, reflecting a degree of uncertainty that greatly diminishes the SCC's utility as an input to the Secretary's decision making. For example, in a previous environmental impact statement, OSMRE estimated that the selected alternative had a cumulative SCC ranging from approximately $4.2 billion to $22.1 billion depending on dollar value and the discount rate used. The cumulative SCC for the no action alternative ranged from $2.0 billion to $10.7 billion. Given the uncertainties associated with assigning a specific and accurate SCC resulting from the proposed action and that the SCC protocol and similar models were developed to estimate impacts of regulations over long time frames, this analysis quantifies direct and indirect GHG emissions and evaluates these emissions in the context of U.S. and global GHG emission inventories as discussed above in this section.

To summarize, this analysis does not undertake an analysis of SCC because 1) it is not engaged in a rulemaking for which the protocol was originally developed; 2) the Interagency Working Group, technical supporting documents, and associated guidance have been withdrawn; 3) NEPA does not require cost-benefit analysis; and 4) the full social benefits of coal-fired energy production have not been monetized, and quantifying only the costs of GHG emissions, but not the benefits, would yield information that is both potentially inaccurate and not useful.

3.2 Issue 2: How would lifting the pause on Federal coal leasing in March 2017 change socioeconomic impacts associated with coal production levels?

The BLM has analyzed the socioeconomic effects associated with coal production levels from lifting the pause on new coal leasing activities by comparing the scenario under Alternative 2 with one in which the pause was not lifted until March 2019 under Alternative 1- No Action.

For the purpose of this analysis, the BLM assumes that only a change in coal production activities would result in any economic, social, or environmental impact. Absent such a change, there is no difference in the reality experienced at these coal mines and in the communities impacted by their development that would be relevant for consideration here.

Direct and Indirect Effects

The BLM measured the socioeconomic impact of lifting the pause as follows for these four leasing applications:

Pollyanna #8 LMA (underground - OKNM-91190)

- Alternative 1: Lease effective on April 1, 2019

- Alternative 2: Lease effective on May 1, 2018
- Difference: Leasing timeline advanced by 11 months

Alton Coal Development LBA (surface - UTU-81895)
- Alternative 1: Lease effective on April 1, 2019
- Alternative 2: Lease effective on February 1, 2019
- Difference: Leasing timeline advanced by 2 months

SUFCO LMA (underground - UTU-84102)
- Alternative 1: Processing begins May 8, 2017, lease effective April 1, 2019
- Alternative 2: Lease processing begins May 8, 2017, lease effective March 1, 2019
- Difference: Leasing timeline advanced by 1 month

SUFCO LMA (underground - U-63214)
- Alternative 1: Processing begins May 8, 2017, lease effective April 1, 2019
- Alternative 2: Lease processing begins May 8, 2017, lease effective March 1, 2019
- Difference: Leasing timeline advanced by 1 month

Of the four approved applications, three were LMAs and one was an LBA. For these actions, the effect of lifting the pause resulted in potential timing changes to their anticipated productive life by allowing development of additional reserves. The calculation of these changes is as follows:

Pollyanna #8 LMA (underground - OKNM-91190)
- 3.4 million short tons (MMst) of new reserves.
- Expected annual production rate of 0.4 MMst.
- Extension of the mine life by approximately 8 years.

Alton Coal Development LBA (surface - UTU-81895)
- 30.8 MMst of new reserves.
- Expected annual production rate of 2.0 MMst.
- Extension of the mine life by16 years.

SUFCO LMA (underground - UTU84102)
- 4.4 MMst of new reserves.
- Expected annual production rate for the whole mine of 5.6MMst.
- Extension of the mine life by 0.8 years.

SUFCO LMA (underground - U-63214)
- 1.4 MMst of new reserves.
- Expected annual production rate for the whole mine of 5.6 MMst.
- Extension of the mine life by 0.25 years.

The BLM does not regard the starting dates for production of the acreage in these leasing actions under the two alternatives as relevant to their impact on expected mine life. In other words, the mine life extensions listed above would be the same with BLM approval prior to March 2019 under current circumstances (Alternative 2), as well as with BLM approval in March 2019 (Alternative 1).

The only avenue through which there would be a difference between Alternatives 1 or 2 is if any of the coal leases issued, between their actual dates of approval and March 2019, would have had to idle production activities during that interim period. Under the No Action Alternative, leasing would have resumed on a 24-month delay and the same volume of coal production would occur from the four leases that have been issued subsequent to the Zinke Order, all other things being equal. This assumption is supported by the fact that the Jewell Order was not intended as a permanent pause on coal leasing. Consequently, long-term supply of coal to the market would continue. At most, the Proposed Action increases the supply of coal in the near term for a short period (less than two years) and reduces supply over a similar period in the medium term, as the tracts impacted by the Zinke Order will exhaust their reserves earlier than if development had been delayed by up to 24 months. Further, because large capital investments in the electrical fuel sector limit the ability of utilities and other relevant market actors to switch from coal to other generation sources in response to short-term price volatility, the BLM concludes that a 1 to 11 month shift earlier in production from these four leases will not have appreciable market effects impacting usage or emissions over any period. Because each of the four coal leases issued already had sufficient reserves to continue operations through March 2019, they would have been able to continue producing at the rates observed under the Zinke Order (Alternative 2) as would have occurred with a coal leasing pause remaining in-place (Alternative 1). Thus, the BLM does not find there to be any socioeconomic impact from the Zinke Order and lifting the leasing pause on these four leases. The BLM has determined that the four leases in the proposed action did not alter coal production levels or rates or cause any change to associated socioeconomic impacts. The socioeconomic impacts from the eight pending leases that the BLM began processing after the pause was lifted are too speculative to ascertain with any meaningful precision.

Cumulative Effects

Cumulative effects are defined by CEQ as ". . . the 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 actions" (40 C.F.R. § 1508.7). In other words, an action must have direct and indirect effects in order for there to be an incremental impact of the action. As there are at most only negligible direct or indirect effects to socioeconomics associated with coal production levels, BLM does not anticipate there would be any appreciable cumulative effects.

3.3 Issue 3: How would lifting the pause on Federal coal leasing in March 2017 affect water quality, quantity, and riparian areas?

Coal mining construction, development and operations may intercept ground or surface waters. This can impact water quality, quantity, and riparian areas (for this analysis in surface coal mining). This interception may result in dissolution of minerals within the coal mine/area that could be transported into groundwater or surface water. Analysis from the site-specific NEPA documents associated with the four leases at issue indicates that discharge of dissolved constituents in water from these mines will not adversely impact surface and ground water resources. Surface disturbing activities (e.g., roads, staging areas, mines, or other infrastructure)

on top of riparian areas may temporarily remove riparian areas at those locations until reclamation occurs. In addition, these surface activities can cause release of sediment loads that are mostly mitigated onsite by retention ponds; however, some sediment may be transported to surface waters. Indirect impacts to water resources from surface subsidence as a result of underground coal mining may cause surface water flow disruption as well as groundwater flow and quality degradation until mitigation is achieved. Groundwater impacts from subsidence will be minimal due to the slow hydraulic conductivities of Tropic Shale at Alton and deep overburden at the two SUFCO LMAs. Because of project design features included in Pollyanna #8, it is not expected to have subsidence. Mining operations may require the use of some of the groundwater and/or surface water collected onsite for the safety of mining operations or for activities such as dust control and drilling.

The BLM evaluates coal lease/lease modification applications and associated operations to determine what protective project design features are needed to apply to provide for the appropriate protection of water quality, quantity, and riparian resource management consistent with applicable laws, regulations, and governing RMPs. Lease terms, stipulations or conditions of approval to the plan are added to ensure these controls are implemented.

Direct and Indirect Effects

Because the BLM reviews all coal leases/lease modifications to determine appropriate protections for water resources, lifting the coal leasing pause 24 months early, by itself, would have no direct or indirect effects on water quantity, quality, or riparian areas, beyond those already analyzed in the NEPA analyses performed for the four issued leases. In other words, implementation of the four leases/lease modifications issued as described under Alternative 2 would result in impacts to water quality, quantity, and riparian areas as disclosed in each NEPA document developed for the approval of each the Pollyanna #8 LMA, Alton lease, and both SUFCO LMAs. These same impacts would also occur under Alternative 1, except that they would have been delayed by up to 24 months compared to Alternative 2, as discussed in Section 2.1.2 above. Similarly, the effects from the eight pending leases that the BLM began processing after the pause was lifted would be the same under Alternative 1 and Alternative 2, only they would occur up to 24 months earlier under Alternative 2. In sum, the acceleration of these leasing actions would not result in additional impacts to water resources other than those already analyzed in each respective NEPA document for these leasing actions. This is due, in part, to the fact that these three mines encompassing the four leasing actions are not hydrologically connected.

The three NEPA documents are incorporated by reference, (1) USDOI BLM. 2017. Pollyanna 8 Coal Lease Modification Application. Environmental Assessment. November 2017, (2) USDOI BLM. 2018. Alton Coal Tract Lease By Application. Final Environmental Impact Statement. July 2018 and (3) USDOI BLM, USDOI OSMRE, and USDAFS. 2018. South Fork Federal Coal Lease Modifications UTU-84102 and U-63214. The following summarizes the conclusions reached by each NEPA review completed for the four leases issued between March 2017 and March 2019 regarding water resources:

Pollyanna #8

The Pollyanna #8 EA analyzed the impacts of the lease modification as proposed, the coal stockpile and the permanent disposal of the coal waste. Coal and adjacent strata often contain iron sulfide minerals that can, when exposed to oxygen and water, chemically break down to produce acid. Underground mining equipment, continuous miners and coal shuttle cars, require a certain roof height to operate. If the coal bed thickness is less than that height, a portion of the roof rock must be ground away with the coal. However, the rock at the Pollyanna #8 mine is generally left mixed in with the coal and shipped to the power plant.

Further, underground development waste is earth material excavated from adjacent strata to access the coal either during construction of the portal or when a fault or other geologic feature within the mine works must be crossed. Underground development waste, a type of coal mine waste, is separated from the coal and deposited in onsite disposal pits. Groundwater within a saturated coal mine waste deposit might discharge to the nearby Poteau River or spread outward to water wells.

The land disturbance, including their associated coal waste disposal features, has not had a consistent effect on local monitored groundwater or Poteau River water. Statistical analysis of the available water data reported to OSMRE suggests that, to date, the coal mine waste has not been a major contributor of solutes, and that this is unlikely to change with mining of the 520-acre LMA. This inference is consistent with the nature of the overburden in the tract for which tests show a lack of acid-forming strata above the coal bed. Based on these conclusions, the Proposed Action is unlikely to result in impacts to shallow groundwater or Poteau River water quality due to the permanent storage of coal mine waste. Therefore, it would not contribute to cumulative effects when added to current coal mine waste storage at the portal areas or storage of coal mine waste resulting from mining the future Pollyanna #8 LMA. As a result, there would be no impacts to fish and wildlife species that depend on the Poteau River and would not interfere with recreational uses of the river.

Poteau River water showed no statistically significant change at the 95 percent confidence level in solutes or suspended solids when comparing samples collected at upstream station SWMP-7 and downstream station SWMP-6. While SWMP-7 appears to be located above any influence from Pollyanna #8 Mine, a sediment pond at portal 2 discharges below SWMP-6. Consequently, sampling at SWMP-6 captures effects of most but not all mine-related surface runoff and groundwater discharge into the adjacent Poteau River. In summary, land disturbance at portals 1 and 2, including their associated coal waste disposal features, has not had a consistent effect on local monitored groundwater or Poteau River water.

Based on the implementation of the design features along with the results from the Ground Control Analysis completed in the area east of the Pollyanna #8 LMA tract, no measurable subsidence would occur. The EA found the proposed action would be unlikely to impact the shallow ground water or the Poteau River water quality by extending the workings into the lease modification area and leaving the coal waste pile in place. By allowing this lease modification to proceed 24 months earlier than it would have been under the Jewell Order, any potential impacts would simply happen sooner.

Alton Coal Tract

The Alton EIS analyzed the proposed lease by application. The BLM identified preferred alternative limited the amount of acreage from that applied for by the applicant.
Irreversible and Irretrievable Commitments of Water Resources: The following commitments of water resources would be irretrievable until successful reclamation is completed under the action alternatives:

- Loss of Robinson Creek's (ephemeral) channel function and riparian vegetation
- Changes to Robinson Creek's (discharge volume and water quality resulting from its realignment)
- Loss of wetland area and function due to its removal and reconstruction
- Loss of riparian area and function due to its removal along Robinson Creek
- Surface disturbance to floodplains and probable AVFs as a result of the construction of dispersed facilities and relocation of Kanab Field Office

At the existing Coal Hollow Mine (which is an underground mine located on private lands adjacent to the south end of the Alton Coal tract), the water monitoring plan includes 54 monitoring sites that are monitored quarterly. The monitoring information is submitted to Utah Division of Oil, Gas and Mining (DOGM), which reviews and analyzes the monitor data. The water monitoring information is available to the public through the DOGM on-line coal water quality database. The water monitoring program at the Coal Hollow Mine includes monitoring at 10 stream locations, 12 spring locations, and 32 well monitoring locations. Water quantity parameters (flow rates for streams and springs and water levels for wells) are collected at all 54 monitoring stations. Field water quality measurements including temperature, pH, and specific conductance (and dissolved oxygen concentrations at streams) are performed at 29 monitoring sites. Laboratory water quality analyses are performed on water samples from 20 monitoring locations.

Surface Water Quantity: Under the Proposed Action, adverse short-term impacts to surface-water quantity would occur from the implementation of sediment- and erosion-management BMPs. Under this alternative, 1,993 acres of the tract would be disturbed by surface mining, the construction of centralized and dispersed facilities, and road relocation (completed in 2010)). Impacts to surface-water quantity at Alton (Alternative K1-BLM Preferred Action Alternative) would be of the same nature as those under the Alternative B (the Proposed Action) and Alternative C (Reduced Acreage Limitations) but would be of lesser magnitude. Under this alternative, 905 acres of the tract would be disturbed by surface mining and the construction of centralized facilities (905 acres more than would be disturbed under the No Action Alternative). Under the Proposed Action, no direct adverse impacts to surface-water quality are likely. Runoff from disturbed areas on the tract would be captured in retention ponds, which do not release water into downstream receiving waters.

Surface Water Quality: The action alternatives would result in indirect impacts on surface water quality from the diversion of surface runoff to retention ponds, and an associated loss of surface water from evaporation and infiltration. There would be small sediment loads into streams from dispersed facilities and road relocation. The loss of instream dilution could increase concentrations of total dissolved solids, which are already over the state water quality standard of

1,200 milligrams per liter. The primary pollutant that could pose a concern to Kanab Creek is TDS, because current concentrations of TDS in surface water in and around the tract already exceed the standard of 1,200 mg/L. Reduced instream flows could also result in less water available for irrigation downstream because water captured in retention ponds is not discharged downstream. There would be a small risk of surface-water contamination from accidental spills on 13.8 miles of stream that are within 100 feet of the reasonably foreseeable coal haul transportation route. There would also be a small increase in fine particles in streams associated with deposition of fugitive dust and coal dust.

Under the Proposed Action, no direct adverse impacts to surface-water quality are likely. Runoff from disturbed areas on the tract would be captured in retention ponds, which do not release water into downstream receiving waters. Erosion of sediment from dispersed facilities and the relocation of KFO Route 116 would be controlled with silt fences and other sediment-control Best Management Practices (BMPs). These BMPs are more than 90 percent effective in capturing sediment when installed and maintained properly. Therefore, most of the sediment and associated contaminants found in surface runoff from the tract would be contained and would not pose any direct threat to surface waters.

Impacts to surface-water quality under Alternative K1 would be the same as those under the Proposed Action but would be of a lesser magnitude. Under Alternative K1, approximately 14 acre-feet of water would be captured from disturbed areas. This quantity of water would no longer reach receiving waters downstream, resulting in reduced dilution and therefore a potential increase in the concentration of pollutants in associated surface waters compared to the No Action Alternative.

Ground Water: In the absence of appreciable groundwater or surface-water resources in the Alton area, there is no significant potential for the underground mining activities to impact important overlying groundwater or surface water resources. Because of the presence of thick sequences of low-permeability Tropic Shale bedrock in potential underground mining areas, the potential for the downward migration of recharge waters from the land surface through the Tropic Shale to underlying strata is considered low. Any discharge from mining operations will be monitored and regulated under a Utah Pollutant Discharge Elimination System (UPDES) permit. Groundwater in the coal and in the geologic units above and below the underground mine workings would enter the underground workings during mine development and are partly dissipated by removal with the mined coal, by evaporation through the mine ventilation system, or drainage into mined out areas of the underground workings. Excess water that interferes with mining operations is collected from the underground mine workings, will meet UPDES standards, and be discharged at the surface into the same basin.

Groundwater would be affected by the action alternatives through the use of groundwater for dust suppression, the removal of groundwater as moisture contained in coal, and the evaporation of groundwater exposed in pits.

Town of Alton Water Source: Due to the appreciable distances between springs used by the town of Alton and the tract, and because these springs discharge from strata that are not present in the

tract, water quality and water quantity at these springs should not be impacted by the Proposed Action.

The impacts to water resources identified by the EIS and summarized above would be the same but would occur earlier than they would have had the pause remained in effect until March 2019.

SUFCO (UTU-84102 and U-63214)

The SUFCO EA analyzed two lease modification applications estimated at 8.55 million tons of coal by the lease stipulated method of underground mining.

The analysis area for water resources consists of two LMA areas and an additional 0.25- mile area around the two LMA areas. This analysis considers the water resources downstream of the lease modifications that may experience potential effects from the proposed mining. There are no registered water supply wells in the analysis area and groundwater is only used at the point of surface discharge at springs and seeps).

The two lease modifications are on the boundary of two drainage basins: the Sevier River/Sevier Lake basin and the western Colorado River basin. The Sevier River basin is a closed basin, where surface water flow eventually terminates at Sevier Lake. Surface waters in the eastern half of the lease modifications are within the Muddy Creek watershed.

Springs and seeps located in the two lease modifications are most likely supported by shallow water migration through the Flagstaff Limestone and discharged from the North Horn Formation. The springs and seeps are separated from the coal seams proposed for mining by a sequence of interbedded, low-permeability claystones, mudstones, and shales, indicating that the potential for vertical groundwater flow through this low-permeability, heterogeneous rock sequence is low.

Existing inflow into the SUFCO Mine is from isolated groundwater that is stored in sandstone paleochannels or localized perched aquifers. Groundwater in the coal and in the geologic units above and below the SUFCO Mine would enter the underground workings during mine development and longwall mining will be partly dissipated by removal with the mined coal, by evaporation through the mine ventilation system, or drainage into mined out areas of the underground workings. Excess water that interferes with mining operations is collected from the SUFCO Mine, treated to meet UPDES standards and discharged at the surface into the same basin. The water encountered in the mining sequence becomes a part of a closed-circuit system whereby the water is directed, stored and then used for dust suppression during mining.

Removing infiltrating groundwater (dewatering) from the mine, which is then discharged is not anticipated to affect the surface water quality of local creeks and tributaries. SUFCO has been discharging excess water into local creeks without a change in flow or water quality. Thirty-eight stream sites are being monitored within and adjacent to the SUFCO Mine permit area. With only one exception, the SUFCO Mine has not identified any mining-related impacts and future diversion of stream flow is considered to be an overall low risk. No increase in mine-related discharge to surface water is expected; therefore, changes to the stream flow, impacts from erosion, and impacts from degradation of surface water quality from dewatering are not

anticipated. No loss or relocation of perennial water sources are expected to occur from mining the lease modifications.

The interbedded claystones, siltstones, and sandstones of the Wasatch Plateau are known to be rich in swelling clays which absorb water and expand appreciably relative to their dry volume. These swelling clays reduce the hydraulic conductivity of the rock or soil that contains them and contributes to the rapid closing or healing of tension fractures that could result from subsidence). Due to the lack of connectivity between the groundwater and the seeps and springs, impacts on the flow to surface water systems are not expected.

The primary impact resulting from mine dewatering and drawdown of groundwater would be related to the direct discharge to surface waters. Effects from mining the South Fork Federal Coal Lease Modifications at the SUFCO mine are expected to remain the same.

Drawdown or water pressure reductions in the coal due to mine dewatering could create a groundwater flow gradient toward the mine; however, the drawdown flow rates are expected to be very low due to the low vertical permeability of the interbedded silts, shale, sandstones, and coals of the Blackhawk Formation.

Effects on groundwater from the underlying Star Point Sandstone or from the hydrogeologic units located stratigraphically above the coal are expected to be localized, short-term, negligible and unmeasurable (Cirrus, 2014). Due to the thickness of the overburden in the lease modifications area, it is unlikely that water quality in shallower perched aquifers would be affected by caving and fracturing of the overburden allowing groundwater to flow into the mine. The Utah DOGM has discovered that water quality downstream from coal mines in the Wasatch Plateau is often better than natural spring flow or base flow.

Based on the above analysis and due to the thick overburden compared to the thin coal seam to be removed, impacts to groundwater quality and quantity are expected to be minimal. No surface disturbing activity or subsidence are foreseen in the modification areas. Monitoring for subsidence impacts is required.

The EA found that the impacts of the proposed action would be minimal on both ground and surface water resources. The identified minimal effects stated in this analysis for these lease modifications began earlier in time because of the Zinke Order. This means that the effects will likely end sooner than they would have had the pause remained in effect until March 2019.

Cumulative Effects on Water Resources

There are no incremental cumulative effects of the lifting of the coal leasing pause on water quality, quantity, or riparian areas. There is no possibility for a combined cumulative effect of the coal leases issued between March 2017 and March 2019, as none of those mines have direct, indirect, and cumulative effects for those resources that intersect. The BLM analyzes regional

and local groundwater trends for all NEPA documents, including the Pollyanna #8, Alton, and SUFCO leasing actions. Additional detail with respect to water quality, quantity, or riparian areas analysis for each of these actions is provided in each respective NEPA document. In each of these cases (Pollyanna #8, Alton, and SUFCO), the individual NEPA documents concluded, based on the topographic and geologic settings unique to each case, that there was no cumulative regional impact.

In summary, early lifting of the pause will not result in direct or indirect effects, or cumulative effects to water resources (i.e., surface water, groundwater, and riparian areas) beyond those studied in the NEPA analysis for the four leases issued between March 2017 and March 2019. Implementation of mining operations could cause effects on those resources as described and analyzed in the respective NEPA documents for each coal mine. Cumulative effects of coal leases issued between March 2017 and March 2019 are not anticipated because there is no hydrologic connection between water resources or riparian areas of the four locations. Impacts to water resources, including cumulative impacts, (e.g., riparian areas along with surface and ground water at Alton and groundwater at SUFCO and the Pollyanna #8) of the individual mines that make up the proposed action are adequately disclosed in the respective NEPA documents and subsequent analysis and are expected to be short-term and/or fully reclaimed unless otherwise disclosed.

4.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED

This chapter describes the coordination and consultation that occurred during the preparation of this EA.

4.1 Cooperation

The BLM may invite any agency with jurisdiction by law, or with special expertise, to participate as a cooperating agency in an EA (43 C.F.R. § 46.225(e)). Special expertise means, "... statutory responsibility, agency mission, or related program experience" (40 C.F.R. § 1508.26). The BLM invited OSMRE to participate as a cooperating agency in this EA, because the agency has special expertise with the Federal coal program and NEPA review process. OMSRE accepted this invitation and has provided their special expertise in the preparation of this EA.

4.2 Consultation

The BLM has determined that the decision to lift the coal leasing pause does not constitute an "undertaking" as defined by the Endangered Species Act (ESA) or the National Historic Preservation Act (NHPA). As such, no consultation under Section 7 of the ESA or Section 106 of the NHPA is necessary. Further, the Department's Tribal Consultation Policy states that it does not apply to matters that are in litigation. See the Department's Policy on Consultation with Indian Tribes, Section III, p. 3.

The BLM met its obligations under Section 7 of the ESA for each separate leasing action. For all four leases, the U.S. Fish and Wildlife Service (USFWS) provided official lists of endangered or threatened species (or species proposed for listing) that may occur on the tracts or that may be affected by mining on the tracts. For the SUFCO and Pollyanna projects it was determined that there would be "no effect" on any of the federally listed species or designated critical habitat; therefore, further consultation was not required (see BLM 2017 and BLM 2018). For the Alton project, the BLM received a letter from the USFWS concurring with the BLM's determination that the Proposed Action was not likely to adversely affect threatened or endangered species and that a biological assessment was not needed (see Alton Final EIS Section 5.2.3 and Alton ROD Section 7.7).

The BLM conducted government-to-government consultation with tribes that would be potentially affected by the individual leases traceable to the Zinke Order prior to their issuance. Table 4.1 outlines the extent of this consultation.

Table 4.1. List of Tribes Consulted during the original project specific NEPA.

Coal Project Name	**Tribes Consulted during the original project specific NEPA**
Pollyanna #8	Caddo Nation, Cherokee Nation, Choctaw Nation, Osage Nation, Thlopthlocco Tribal Town, Wichita and Affiliated Tribes
Alton	Cedar Band of Paiutes, Hopi Tribe, Indian Peak Band of Paiutes, Kaibab-Paiute Tribe, Kanosh and of Paiutes, Koosharem Band of Paiutes, Navajo Nation – Bodaway/Gap Charter, Ute Cultural Rights and Preservation
SUFCO UTU84102 and SUFCO U-63214	Hopi Tribe, Navajo Nation, Paiute Indian Tribe of Utah, Ute Indian Tribe

4.3 List of Preparers

The team members listed below prepared this EA and the analyses needed to assess the impacts in compliance with NEPA, as directed by the U.S. District Court of Montana's order.

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APPENDIX A: RESPONSES TO COMMENTS

APPENDIX A: RESPONSES TO COMMENTS

This appendix summarizes the substantive comments that the BLM received during the public comment period for the Lifting of the Coal Leasing Pause Draft EA and provides the BLM responses to those comments.

On May 22, 2019, the BLM released the Draft EA announcing a 15-day comment period that would conclude on June 6, 2019. Due to technical difficulties with the ePlanning system and requests to extend the comment period, the BLM extended the comment period until June 10, 2019. The BLM received 280 unique comment letters and 15 form letter campaigns. Form letter campaigns accounted for 47,666 comment submissions. Comments were received from individuals, groups, organizations, businesses, elected officials, Federal, state, and local government agencies, and Tribes.

The BLM considered all comments submitted during the comment period. The BLM treated all submissions equally and did not give different consideration to submissions based on geographic location, organizational affiliation, or other status of the respondents. Additionally, the BLM did not give different consideration to comments based on the number of submissions making the same comment.

The BLM reviewed comments to identify substantive comments, which are comments that:

- Question, with reasonable basis, the accuracy of information in the EA;
- Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis;
- Present new information relevant to the analysis;
- Present reasonable alternatives other than those analyzed in the EA; and
- Cause changes or revisions in one or more of the alternatives (BLM NEPA Handbook (H-1790-1, p. 66).

The BLM combined similar concerns voiced in multiple letters and summarized these substantive comments into ‘comment groups.’ Comment groups describe the similar issues or concerns expressed from the multiple comments.

This document lists the comment groups in bullet form and presents the BLM responses to each comment group. The comment group summaries and responses are intended to be explanatory in nature; if there are any inadvertent contradictions between this document and the main chapters of the Final EA, the main chapters of the Final EA are controlling.

PREAMBLE

The Final EA’s analysis is based on the understanding that the Jewell Order imposed a temporary pause in processing of certain categories of lease applications for the purpose of deferring some new leasing decisions until the completion of a discretionary PEIS. In addition,

the Final EA based its analysis of effects on the best information currently available to the BLM, including a March 2019 anticipated completion date of the PEIS. Of course, the BLM cannot ascertain with any certainty the information that the PEIS might have produced had it been fully funded by Congress and completed. Because the BLM made a reasoned decision not to complete the PEIS, the information the Jewell Order endeavored to produce from it is unavailable. Under the circumstances, attempting to produce that information is not feasible in light of its complex nature and the Department's resource constraints. As the U.S. District Court for the District of Columbia noted and the Court of Appeals for the D.C. Circuit agreed, the law does not require the BLM to complete a programmatic review of federal coal leasing, and the existence of a temporary pause does not trigger such an obligation. See Final EA, Section 1.1.

It would be purely speculative to assume specific impacts from future leasing or production following termination of the discretionary PEIS. Speculation is required to answer questions surrounding not only what recommendations would have been included in the PEIS, but also whether they would have any bearing on the volume or pace of future leasing or production, and how the BLM would have moved forward with implementation of any reforms. A number of commenters believe that the BLM would have more information relevant to evaluating effects had the PEIS been executed to completion. The Draft EA acknowledged that the Secretary decided to return Federal coal leasing to the status quo ante without the additional information that a programmatic review would have produced. However, in response to certain comments from the public, the BLM believes that it must provide a more thorough discussion of information that it determined to be incomplete or unavailable for the Final EA. This discussion requires addressing the status of the PEIS as of the date of the Zinke Order, which is key to understanding the then-existing and current state of knowledge that informs the Final EA's analysis of cumulative effects.

In January 2017, the BLM published the PEIS Scoping Report (Scoping Report). Two months later, in March 2017, the Zinke Order was issued. A primary purpose of the PEIS was to explore whether "improvements" and "alternatives" to existing coal leasing policy were warranted and to develop policy proposals for analysis in the context of the PEIS. (Scoping Report, ES-6). A primary purpose of the pause, according to the Jewell Order, was to avoid locking-in impacts from lease decisions until a policy process could be completed. Once fully developed, the Department intended to consider various combinations of these proposals and present policy set options in the PEIS. The PEIS would then have analyzed the impacts of these policy options across a range of impacts (e.g., revenue, employment, externalities). (Scoping Report, ES-6).

The Scoping Report outlined what it called "three possible option combination packages" for further investigation and analysis in order to lay the groundwork for the PEIS. These were not presented as proposed alternatives but rather "[t]o demonstrate how the various options could be combined to *develop* alternatives in the PEIS . . ." (Scoping Report, ES-6 [emphasis added]). In turn, the Scoping Report made clear that as of publication these various policy reform packages had not been sufficiently developed or analyzed, either individually or in combination, to serve as valid alternatives in a NEPA analysis. (Scoping Report, ES-6 and 7). Rather, the BLM explained that the state of knowledge of policy alternatives was insufficient to inform a NEPA

analysis: “additional analysis is needed before these or other combinations of options can be included as alternatives for consideration in the PEIS.” (Scoping Report, ES-7). This disclaimer was deemed necessary because, “each option presents its own range of analytical issues and because that complexity may be compounded by interactions among the reform options if they are implemented in combination.” (Scoping Report, ES-7).

Because the BLM terminated the PEIS shortly after the publication of the Scoping Report, information regarding proposed policy changes remains insufficient to serve as a basis for an alternative action analysis here. 40 C.F.R. § 1502.22. This conclusion is supported by the Scoping Report itself, as noted above, and relevant events since its publication. As noted in the Final EA, the combined input of all three branches of government point to the discretionary nature of developing this information and the practical challenges associated with that effort. A key barrier is a continuing lack of funding for the effort. (Final EA, Section 1.1). The lack of funding stretches back to the 115th Congress, which commenced in the same month the Scoping Report was published. The result is that the incomplete information identified by the Scoping Report has not been developed as envisioned. For this reason, the judgment of the Scoping Report still applies with equal force. The available information on policy alternatives remains insufficient to inform a NEPA analysis of proposed and alternative actions.

It is true that if available, this information would inform – not direct – the policy choice of whether to pursue changes to federal coal leasing, and if so, which changes to implement and in what combination, consistent with statutory authority governing Federal coal development. However, the unstated premise of some comments is that further development and study of policy alternatives necessarily would have resulted in policy changes. This is speculative, even as a general proposition. Additional assumptions about the nature and extent of changes that would have occurred had the PEIS been completed require further speculation. Given the sheer weight of speculation entailed, the BLM does not find this litany of assumptions to be a proper basis to inform the Final EA’s impact analysis.

In addition, since the unavailable information amounts to policy proposals and thorough analysis of how they might be implemented alone or in combination, references to scientific evidence alone would not produce the information many commenters seek to have included in the Final EA. *See* 40 C.F.R. § 1502.22(b) (1).

1. UNDERSTANDING THE CONTEXT OF THE ZINKE ORDER

A number of comments assert that the Draft EA takes an artificially narrow view of the effects the Zinke Order. It does so, according to these comments, by mischaracterizing the reach and effects of the Jewell Order that it rescinded. These comments assert that the Jewell Order's pause on processing lease applications was in effect a permanent ban on new federal coal development, rather than a temporary adjunct to the Jewell Order's PEIS. They also assert that the BLM must analyze the Zinke Order as though it created an entirely new program for coal development where none previously existed. Based on this understanding, the comments then go on to claim that the Zinke Order's effects include all emissions associated with federal coal leasing from the date of the Zinke Order through the present and going forward in perpetuity. In essence, these comments assert that the BLM is obliged by the Jewell Order, which curtailed the Mineral Leasing Act scheme without notice-and-comment rulemaking, to complete the functional equivalent of a programmatic review before the Secretary may lift a temporary, discretionary pause primarily intended to facilitate the programmatic review. These comments imply that the Jewell Order created a new enforceable mandate to complete a PEIS under the guise of initiating what Secretary Jewell herself characterized as a "discretionary" PEIS. As noted in greater detail below, the Final EA reflects the BLM's careful and legally sound analysis of the reach and scope of the Jewell Order as well as the causal relationship between the Zinke Order and subsequent leasing activity. As noted in the Final EA, the BLM's conclusions in this regard are based on a careful reading of both orders and an examination of other important contextual factors.

Several comments assert the belief that the programmatic review called for in the Jewell Order necessarily would have resulted in certain reforms to federal coal leasing and urge that the EA should examine alternatives that reflect the commenters' supposed outcomes of the programmatic review. If the PEIS had been completed, these comments claim, the BLM would have resumed processing applications and leasing on substantially different terms than it currently does. Some of these comments reference the Scoping Report to identify specific areas where policy changes might have occurred or to support contentions that policy changes were needed in certain areas and therefore must be studied in the Final EA. However, these comments generally stop short of advocating specific policy proposals. The few comments that do mention specific policy proposals are not well developed, are often confined to passing references, and reflect a high degree of generality. As noted in greater detail below, not only is the adoption of any particular set of reforms inherently speculative but the BLM lacks the specific information and detail necessary to meaningfully analyze the commenters' presumed policy reforms as action alternatives in the Final EA. The BLM is thus not obliged to undertake such analysis. 40 C.F.R. § 1502.22.

RESPONSE:

The BLM disagrees with these characterizations of the Jewell Order's pause and programmatic review process. The Jewell Order did not purport to end processing of all

new federal coal applications, but rather paused processing of some (but not all) applications. As the Draft EA noted, the BLM continued processing of exempt federal coal lease applications. Further, the pause called for in the Jewell Order was not open-ended in duration. Non-exempt applications were paused only to allow for development of new information through a programmatic review. The PEIS Scoping Report confirms this. It includes a project schedule which anticipated completion of the PEIS in March of 2019, and hence, a lifting of the pause at that time. Notably, the Scoping Report was published in January of 2017, at which point Congress had already declined Interior's 2016 request to fund the PEIS for FY 2017.

Given this context, an assessment of the Zinke Order's effects requires the BLM to establish a causal relationship (if any) between the Zinke Order and the four lease issuances that the Zinke Order made possible. The temporary nature of the Jewell Order supports the BLM's conclusion that the Zinke Order's effects are appropriately limited to the timing of lease issuances, specifically in allowing lease issuances to occur earlier than would have happened if the PEIS had adhered to the project schedule in the PEIS Scoping Report. For this reason, comments ignoring the Scoping Report's stated end date are unwarranted.

The commenters' sweeping characterizations of the Jewell Order and its programmatic review are not supported by the text of the Jewell Order and are certainly not consistent with Secretary Jewell's choice to issue the Order without NEPA analysis. This choice suggests that the Department, in 2016, viewed the Jewell Order's operation as more modest than what some comments have alleged. It also supports the BLM's view that the Jewell Order's designs were incremental, focusing on producing new information to assist policy makers in considering possible reform, and open-ended in terms of what form such reform might take. Many of the comments in this regard ignore that the Jewell Order principally established a process for developing and studying proposals rather than predetermining any policy prescriptions. Many of these comments unjustifiably construe the Jewell Order as expecting particular outcomes. Operating within its discretionary authority, the BLM respectfully declines to engage in such speculation.

2. The Draft EA Fails to Address Issues Linked to Resuming Normal Processing of Coal Leases and Termination of the PEIS

Concerns that the analysis was based on inappropriate baseline conditions because it assumes the Jewell Order would have ended by March 2019 with no program reforms.

RESPONSE:

As noted above, the Jewell Order initiated a temporary pause and not an indefinite pause on coal leasing activities; it contemplated a limited pause in some leasing activities for the explicit purpose of facilitating preparation of the discretionary PEIS (See Final EA, Section 1.1). The Jewell Order made clear that the PEIS was discretionary. This

conforms with the 2018 holding by the D.C. Circuit Court of Appeals that the completion of a PEIS for federal coal leasing activities is both discretionary and unnecessary, given that no regulatory change or other major federal action had been proposed. See W. Org. of Res. Councils et al. v. Zinke, 892 F.3d 1234 (D.C. Cir. 2018). The Montana district court declined to follow this authority in its April 2019 decision on the ground that the Zinke Order, in the case before it, constituted the "major Federal action" that was lacking in Western Organization of Resource Councils. The BLM respectfully disagrees with this conclusion because the Zinke Order did not approve or authorize any "proposal" for environmentally-impactful action, see 40 C.F.R. § 1502.4, but instead merely opened the door to consideration of such proposals. But regardless of whether the Zinke Order is a major federal action (which relates only to the question whether a traditional NEPA analysis -- i.e., non-programmatic -- was required for the Zinke Order), the holding in Western Organization of Resource Councils makes clear that the more expansive and far-reaching programmatic analysis some commenters insist on is not necessary. Comments contending that a programmatic analysis is required are not supported by either the Montana district court ruling or the D.C. Circuit ruling.

Based on this information, it would not be reasonable to assume that the entire Federal coal program would have been paused indefinitely absent the Zinke Order. The No Action Alternative reflects the Jewell Order's representation that the coal pause was designed to facilitate the PEIS and avoid lock-in of impacts from leasing decisions before the PEIS's reassessment of the leasing program was complete. The best available information for establishing an anticipated completion date of the PEIS is the review schedule included in the January 2017 scoping report, which anticipated a Record of Decision in March 2019.

By rescinding the Jewell Order and canceling the discretionary PEIS, the BLM foreclosed future reform to federal coal leasing and did not appropriately consider that impact in the Draft EA.

RESPONSE:

As explained in the Final EA and above in the preamble and in response #1, the Jewell Order imposed a temporary pause on the processing of certain categories of coal lease applications for the purpose of deferring certain leasing decisions until after completion of the PEIS's discretionary review of leasing policy. By rescinding this temporary policy and returning federal coal leasing to normal operations, the Zinke Order effectively hastened leasing decisions that otherwise would have occurred after the Jewell Order's directives ran their course. It also deferred a review of leasing policy. However, since Congress had already declined to fund the PEIS's considerable cost in FY 2017 before the Zinke Order was issued, the PEIS likely would not have been completed even absent formal termination. Thus, the only certain consequence of the Zinke Order is a forward shift in the timing of federal coal lease processing.

Terminating an unfunded programmatic review does not foreclose future study of possible changes to federal coal leasing in any of the areas identified for study in the

PEIS Scoping Report. Further, the information included in the Scoping Report about these reforms was not sufficiently developed to allow for an effective analysis. The Scoping Report was explicit on this point. Since the policy information contained in the Scoping Report has not been further developed, the BLM cannot factor potential policy changes that were not fully studied into an effects analysis without engaging in the type of speculation that would not be informative to the public. In short, commenters ask the BLM to presume in the Final EA that reforms would have resulted from completion of the PEIS and to divine what those reforms would have entailed. NEPA does not require agencies to examine consequences that are not reasonably foreseeable.

The Draft EA analysis concluded that re-starting the federal coal leasing program has no significant climate impacts

RESPONSE:

The Jewell Order did not permanently end federal coal leasing but rather placed some leasing activities on a temporary pause. As stated in the preamble, the Final EA explains that the Zinke Order terminated the temporary pause approximately two years ahead of schedule. The Final EA examines the impact of hastening CO_2 emissions due to lifting the leasing pause in March of 2017 instead of March 2019, as called for in the No Action Alternative (See Final EA Section 3.1).

The BLM acknowledges that GHG emissions impact the global climate system and contribute to global climate change and concludes that there is no appreciable difference in cumulative GHG emissions between the two alternatives analyzed in Section 3.1 of the Final EA. Because there is no basis for concluding that the Zinke Order would result in a change in the amount of coal production or associated impacts in the long term, the BLM concluded that there would be no difference in cumulative GHG emissions or associated impacts between the alternatives, rather only a minor change in the time table of impacts.

3. NARROW PURPOSE AND NEED AND SCOPE

The "purpose and need" for the action is too narrow, limited in scope and does not address the revocation of all parts of the Jewell Order

RESPONSE:

In accordance with NEPA, the BLM has discretion to establish the purpose and need for a proposed action (40 C.F.R 1502.13). The BLM must construct its purpose and need to conform to existing decisions, policies, regulations, and law (BLM Handbook H-170-1, Section 6.2). The U.S. District Court of Montana in Citizens for Clean Energy et al. v. U.S. Department of the Interior et al., No. CV-17-30-GF-BMM, 2019 WL 1756296 (D. Mont. Apr. 19, 2019), ruled that DOI's issuance of the Zinke Order constituted a final agency action for purposes of the APA and a major Federal action that triggers compliance with the National Environmental Policy Act (NEPA) (42 U.S.C. § 4321).

Although, the administrative policies of the DOI are categorically excluded from NEPA analysis, the BLM elected not to seek authorization of an appeal of the noted district court ruling and instead sought to comply with the court's directive that it analyze the environmental impacts of lifting the coal pause in a NEPA analysis (either an EA or an EIS). The Final EA in Section 1.3 has been revised to include more detail and clarify the purpose and need of the Zinke Order.

As stated in Section 1.3 of the Final EA, the purpose and need for the Zinke Order was to respond to the March 28, 2017 Executive Order 13783, Promoting Energy Independence and Economic Growth (the Trump Order). The Trump Order directed all federal agencies to advance domestic energy security and economic strength. To this end, it specifically directed the Secretary of the Interior to "lift any and all moratoria on Federal land coal leasing activities," which is what is reflected in the Jewell Order. The Zinke Order responded to the Trump Order by lifting the pause, and on a purely practical level, the Zinke Order addressed and confirmed the termination of the PEIS in response to Congress's FY2017 denial of requested funds required to complete it. The level of analysis in the Final EA for the Zinke Order is commensurate with this type of administrative action.

4. MISCHARACTERIZED PROPOSED ACTION AND NO-ACTION ALTERNATIVE

The No Action Alternative did not analyze a permanent moratorium

RESPONSE:

The Jewell Order paused processing of non-exempt lease applications and its text does not support commenters' suggestions that it established an indefinite pause in all coal leasing activities. Rather, the text supports the view that the Jewell Order contemplated a limited pause in some leasing activities for the explicit purpose of facilitating preparation of a discretionary PEIS (See Final EA, Section 1.1). Based on this information, it is not reasonable to assume that the entire Federal coal program would have been paused indefinitely. The No Action Alternative reflects the reality that the pause was expected to continue through March 2019, when it was anticipated the PEIS would have been completed according to the project schedule in the PEIS Scoping Report.

Concerns that the Draft EA did not consider all pending and future leases as direct products of the Zinke Order and the characterization of the Proposed Action and the No Action Alternative

RESPONSE:

Since the Zinke Order did not specifically authorize or issue leases but instead called for resumption of normal lease processing earlier than planned, the consequences of the Zinke Order are defined by the applications that were processed between issuance of the Zinke Order and the assumed date that the leasing pause would have been lifted.

There were 57 applications that were submitted and available for consideration during the period of time from the issuance of the Jewell Order to April 19, 2019, the date of the District of Montana Court Order.

The potential impacts of the Zinke order were identified from a review of the status of the lease applications that did not meet the exemptions from the Jewel Order. Specifically, the applications that were potentially affected by lifting the pause included applications that were:

1) in review at the time of the Jewell Order,
2) received after the Zinke Order,
3) in review after the Zinke Order, and
4) issued prior to the anticipated completion of the PEIS.

All 57 applications and their status are outlined in Table 1.1 of the Final EA, and Table 3.1 lists and categorizes these projects. Below is the information of those two tables in narrative format to assist comprehension:

1. *Seventeen (17) applications were considered exempt from the pause under the Jewell Order and thus are not affected by the Zinke Order. The BLM could continue to process these even with the leasing pause in-place (No Action Alternative).*

2. *Twenty-eight (28) applications were not exempt from the conditions under the Jewell Order. Of these 28:*
    i. *Seven were withdrawn.*
    ii. *The remaining 21 were submitted prior to issuance of the Jewell Order, and thus could be processed but not issued under the No Action Alternative.*

3. *After issuance of the Zinke Order, the BLM processed and issued two of the above remaining 21 leases - the Pollyanna #8 mine in Oklahoma and the Alton Coal Development mine in Utah. These issuances could not have occurred absent the lifting of the coal leasing pause under the Zinke Order (Proposed Action). This advanced their issuance by 11 months and 2 months respectively compared to the theoretical publication date of the PEIS under the No Action Alternative, and;*

4. *Ten (10) coal lease applications were submitted to the BLM after the issuance of the Zinke Order. Of these 10,*
    i. *Two leases were issued for the Southern Fork (SUFCO) mine in Utah. Of these two leases,*
        1. *One lease (UTU63214) would have been exempt under the Jewell Order under the No Action Alternative since it was submitted with an approximate area of 50 acres. However, this application was revised to propose 170 acres, above the Jewell Order's small-acreage exemption threshold and thus subject to the pause. This application was included in the Draft EA incorrectly as exempt and has been corrected in the Final EA.*

2. *The other lease (UTU84102) would not have been considered exempt under the Jewell Order. Both leases were issued since the pause had been lifted by the Zinke Order. Therefore, a total of four leases were issued and included under the Proposed Action.*

ii. *Eight remaining leases submitted to the BLM after issuance of the Zinke Order are pending, and the BLM has performed some review and processing of these applications, which could have only occurred from the issuance of the Zinke Order and not under the No Action Alternative. It is not clear and indeterminate whether any of the processing that occurred would have affected or advanced these applications or even which of these eight lease applications ultimately will be issued.*

5. RESTRICTED ACTION ALTERNATIVES

The Draft EA did not analyze finishing the programmatic environmental impact statement as an alternative

RESPONSE:

As outlined in the preamble, the purpose of and need for the Zinke Order would not change with or without the PEIS. Lifting the pause is a reasonable alternative that fulfills the needs outlined in the Trump Order, and the Zinke Order does not preclude the BLM from reviewing, studying or making improvements to the federal coal leasing program in the future. Speculating as to the outcome of this study is not a reasonable alternative. If funding was available for the PEIS, the BLM's need to be responsive to the Trump Order would still exist.

Concerns that the only action alternative is to terminate the federal coal leasing moratorium and adhere to the Zinke Order

RESPONSE:

As stated in the preamble, the district court defined the Proposed Action as the Zinke Order, which directed the BLM to lift the coal leasing pause. The Zinke Order meets the purpose and need to respond to the Trump Order.

The Draft EA does not analyze a range of alternatives and analyzes only a two-year delay between the Proposed Action and the No Action alternative.

RESPONSE:

The BLM has reviewed for inclusion additional alternatives suggested in the comments on the Draft EA including a no leasing alternative, carbon budget alternative, preventing speculative leasing alternative, good operator alternative, maximizing reclamation alternative, and alternatives based on the presumed outcome of a PEIS. None of these were found to meet the purpose and need as identified in the Final EA in Section 1.3, because they would not respond to Executive Order 13783 which directs the Secretary of the Interior to "lift any and all moratoria on Federal land coal leasing activities related

to Order 3338" and to "commence Federal coal leasing activities consistent with all applicable laws and regulations." Furthermore, alternatives based on the outcome of a PEIS that has not been completed at this time would be conjectural and require speculation as to what reforms, if any, officials might have made. (See Final EA, Section 2.2 and the Preamble of this Appendix)

The Draft EA assumes the BLM has no authority to continue the pause on federal coal leasing which has limited the range of alternatives.

RESPONSE:

Interior had no authority to continue with the pause on federal coal leasing in light of Executive Order 13783. The Mineral Leasing Act of 1920 (MLA), 30 U.S.C. § 181 et seq., as amended by the Federal Coal Leasing Amendments Act of 1976, provides that federal coal deposits "shall be subject to disposition" under the Act. DOI has managed federal coal leasing under the MLA for nearly a century, and has promulgated regulations implementing this process, which are codified at 43 C.F.R. Subpart 3400. These regulations require DOI to process lease applications as received. See 43 C.F.R Subparts 3425 and 3432. In addition, the Federal Land Policy and Management Act of 1976 (FLPMA), provides that it is the policy of the United States that the public lands be managed in a manner that recognizes the nation's need for domestic sources of minerals (43 U.S.C. § 1701(a) (12)). FLPMA also authorizes the BLM to manage the use, occupancy, and development of public lands through leases and permits (43 U.S.C. § 1732). This statutory and regulatory framework does not provide explicit authority to pause the BLM's leasing of federal coal deposits. The BLM is required by law to allow coal leasing under the MLA and FLPMA.

The BLM also did not carry these suggested alternatives forward for detailed study, including a permanent federal coal leasing pause alternative, because those alternatives would not be responsive to the Trump Order and do not meet the purpose and need of the action. The Final EA responds to the U.S. District Court of Montana's Order issued on April 19, 2019, directing the BLM to analyze and disclose the environmental impacts of the Zinke Order's termination of the Federal coal leasing pause set forth in the Jewell Order, and the environmental impacts of the specific federal coal leases that were paused under the Jewell Order. Alternatives based on the outcome of a PEIS that has not been completed would be conjectural and speculative. The Final EA reviewed environmental impacts of the specific federal coal leases that would have remained paused under the Jewell Order with a definable schedule of March 2019. The Final EA did not analyze "what if" scenarios because doing so would be speculative and without a foundation. There were additional alternatives identified in the comments on the Draft EA, including a no leasing alternative, carbon budget alternative, preventing speculative leasing alternative, good operator alternative, maximizing reclamation alternative, and alternatives based on the outcome of a PEIS, but the BLM appropriately eliminated these alternatives from further consideration as not meeting the purpose of and need for the Proposed Action.

6. FLAWED EFFECTS ANALYSIS

Insufficient analysis of indirect and cumulative impacts to water quality, including potential risk from accidents or spills

Impacts from coal transportation including vehicle/train accidents and release of particulate matter were not considered in cumulative and connected actions in the Draft EA

State and/or private coal extracted from the same mine as federal coal were not considered in cumulative and connected actions

***RESPONSE*:**

> *Lifting the pause did not change the intensity or degree of impacts that would have occurred under the No Action Alternative, only the timeframe in which those impacts occur. Identification of cumulative and connected actions is done on a case by case basis by considering several factors (See BLM NEPA Handbook, H-1790-1, Section 6.5.2.1). A site specific NEPA analysis is required before any leases may be issued, see 40 C.F.R. § 3425.3, as occurred here with respect to the four leases issued following the Zinke Order. The Final EA is not intended to support and inform a decision on a specific leasing action at a specific location, but rather examines the effect of a policy decision to resume normal lease processing earlier than would have occurred under the Jewell Order. Impacts of specific leasing actions are appropriately analyzed in site specific NEPA documents and are outside the scope of the Final EA.*

Disagreement with the BLM's conclusion in the Draft EA, that there would be no cumulative effects to water resources because, "there is no direct connection between water resources at those locations"

> ***RESPONSE*:**
>
> *What the BLM meant by that statement is that the geographic scope of the three mines encompassing the four leases in the proposed action does not overlap, therefore they could not add incremental hydrologic impacts to one another (i.e. cumulative effects).*

Concerns that impacts to greater sage-grouse in the Alton Coal Lease area were not adequately analyzed and disclosed

> ***RESPONSE:***
>
> *The Zinke Order did not impact the decision whether the Alton Lease should be issued, rather only the timing of issuance. Therefore, the impacts would be the same in the absence of the Zinke Order.*
>
> *As explained in Section 1.4.2.3 of the Final EA, the BLM considered, but did not analyze in detail, the effects that resumption of normal leasing procedures would have on the BLM's management of greater sage-grouse and its habitat. Of the four coal leases*

issued, only the Alton Coal Development area has the potential to impact the greater sage-grouse habitat, as it is the only lease of the four that is located within greater sage-grouse habitat. For more detailed discussion, see the above referenced section of the Final EA or the site-specific Alton EIS.

GHG emissions from onsite mining, storage and transportation should have been included in the evaluation

RESPONSE:

The Final EA considered and disclosed that both direct GHG emissions (such as onsite mining processes) and indirect GHG emissions (such as storage, transportation, downstream combustion) would be emitted from each of the individual mining actions considered in this Final EA. For the four approved leases, estimated direct and indirect GHG emissions were estimated in the associated NEPA analyses and were disclosed in Table 3.2. These four mining actions have been through a previous decision-making process which included a robust air analysis for each of these mines. Information on direct and indirect emissions was readily available for these mines and the estimated emissions reflect variations in the four leases' life expectancies and mining operations. The BLM did not quantify direct or indirect transportation related GHG emissions in this Final EA for the remaining 53 mining actions because air analyses were not yet completed for these actions and data used to calculate these emissions was not readily available. The BLM is disclosing that GHG emissions would occur from these phases of operations at each potential mining location to varying degrees depending on life of mine, type of and depth to coal, production rates, mining methods, equipment types and fuels, and distribution of produced coal (i.e. mine-mouth combustion vs. transport to terminal or remote combustion site), but because of the degree of uncertainty and speculation inherent in quantifying these emissions, cannot provide reasonable estimates of these emissions. The Final EA also considered and estimated the indirect-downstream combustion GHG emissions for all 57 mining actions. The indirect emissions due to downstream combustion related to annual national GHG emissions compiled by EPA represent the cumulative effects of GHG emissions evaluated in the Final EA (see Table 3.3). To the extent commenters express concern that cumulative effects of onsite mining processes and transportation were not considered, it is important to note that, although such data was available for the four approved leases (see Table 3.2) due to the fact that actual NEPA processes had been completed as to those leases, such information was not available for any of the 53 other applications at the time when the Draft EA was issued. Emissions estimates based on speculative assumptions for the summation of the evaluated mining actions would not provide additional useful information to the public or the decision maker. The Final EA explains why the BLM chose not to include an evaluation of direct emissions for this analysis in Section 3.1. The level of analysis of cumulative GHG emissions is appropriate for this EA, as this action does not involve a leasing decision.

Wrongly assumes that greenhouse gas emissions would be the same between the Proposed Action and the No Action Alternative

Did not consider recent scientific information on the impacts of coal leasing policy on markets in the analysis of greenhouse gas emissions

Court ruled against federal agency NEPA reviews that assumed climate impacts from greenhouse gas emissions would be the same between the Action and the No Action Alternative based on a market substitution theory

RESPONSE:

The BLM has reviewed the cases cited by the commenter for the belief that the "no action" alternative would not have the same GHG emissions as the action alternative and concludes that because those cases turned on fundamentally different facts than presented by the Zinke Order, they are of limited application to the Final EA's analysis of the effects. The NEPA documents implicated in those cases, WildEarth Guardians v. BLM, 870 F.3d 1222, 1236 (2017) (Wright Area decision) and Montana Environmental Information Center v. OSM, 274 F.Supp.3d 1074, 1098 (D. Mont. 2017) (Bull Mountains decision), analyze the issuance of leases for particular coal tracts and contemplated, in the "no action" alternatives, that the tracts proposed for leasing would never be developed , whereas here, development is merely delayed by a number of months. In both cases, the court concluded that the BLM did not adequately analyze potential impacts that lease issuance might have on the long-term supply, price, and use of coal. In the Wright Area decision, the Tenth Circuit had faulted the BLM for presuming that the tract's reserves would be replaced in the market by increased production from other mines under the No Action Alternative, leaving long-term supply, price, and usage unchanged. In response to the court's decision, the BLM's corrective NEPA examined how electricity markets do not conform to conventional supply and demand theory to further support this proposition.

By comparison, the Final EA addresses the Zinke Order's early termination of a temporary pause in leasing. Under the No Action Alternative, leasing would have resumed on a 24-month delay and the same volume of coal production would occur from the four leases that have been issued subsequent to the Zinke Order, all other things being equal. This assumption is supported by the fact that the Jewell Order was not intended as a permanent pause on coal leasing. Consequently, long-term supply of coal to the market would continue. At most, the Proposed Action increases the supply of coal in the near term for a short period (less than two years), and reduces supply over a similar period in the medium term, as the tracts impacted by the Zinke Order will exhaust their reserves earlier than if development had been delayed by up to 24 months. Further, because large capital investments in the electrical fuel sector limit the ability of utilities and other relevant market actors to switch from coal to other generation sources in response to short-term price volatility, the BLM concludes that a 1 to 11 month shift earlier in production from these four leases will not have appreciable market effects impacting usage or emissions over any period.

Rather, the Final EA concludes that under the No Action Alternative, the same volume of coal production and resultant emissions would occur from these very same coal mines, upon publication of the discretionary PEIS. This assumption is supported by the fact that the Jewell Order was not intended as a permanent pause on coal leasing. For this reason, the Proposed Action analyzes a shift in lease issuance of up to 24 months sooner than would have occurred under the No Action Alternative.

Such an assumption is not based upon presumed actions by wholesale power providers, coal-fired power-plants, or coal mines other than those considered by the Final EA. The BLM premises its conclusion on altogether different facts from those before the federal district court in Montana and the Tenth Circuit in WildEarth Guardians v. BLM, 870 F.3d 1222, 1236 (2017) and Montana Environmental Information Center v. OSM, 274 F.Supp.3d 1074, 1098 (D. Mont. 2017)]. Those decisions are not similar or applicable to the action of the Zinke Order evaluated in the Final EA.

Concerns that there is not enough information at the leasing phase to accurately analyze downstream emissions

RESPONSE:

Although the exact location and end use of each ton of produced coal is not known, the BLM has made a reasonable assumption that the produced coal evaluated in the Final EA will be combusted for electricity generation as consumption data from EIA shows that between 80 and 90 percent of all coal produced in the US is used for this purpose and the remaining 10 to 20 percent (not combusted for electricity generation purposes) would presumably be combusted for another purpose, such as steel production. The BLM has then used emissions factors from the EPA based on material balance equations for coal combustion to derive GHG emissions. Furthermore, because greenhouse gas emissions from coal used in electricity generation are greater than those from coal used in the steel industry, the assumption that all coal included in the analysis will be used for electricity generation conservatively provides for an estimate of <u>maximum</u> greenhouse gas emissions.

Concerns that the analysis of socioeconomic impacts contradict the purpose of the Zinke Order

RESPONSE:

The comment assumes without basis that the Trump Order and Zinke Order shared a singular purpose and ignores the explicit purpose of both orders to restore the Federal coal program's compliance with statutory authorities (e.g., the Mineral Leasing Act). The Zinke Order responded to the Trump Order directing agency heads to revise or rescind "as soon as practicable" those agency actions that their review identified as burdensome. For purposes of the Trump Order, "burden" meant "to unnecessarily obstruct, delay, curtail, or otherwise impose significant costs on the siting, permitting, production, utilization, transmissions, or delivery of energy resources." The Zinke Order lifted the pause consistent with the direction and intent from the Trump Order to remove a "burden." In addition, the Trump Order specifically directed the Secretary of the

Interior to amend or withdraw the Jewell Order, lift the pause, and "commence Federal coal leasing activities consistent with all applicable laws and regulations."

Because there is no record evidence that the Zinke Order will result in a change in the amount of coal production or associated impacts in the long term under the No Action Alternative, leasing would have resumed after a 24 month delay and the same volume of coal production would occur from the four leases that the BLM has issued subsequent to the Zinke Order. The BLM concluded that there would be no appreciable difference in socioeconomics between the alternatives, as explained in the Final EA in Section 3.2, Issue 2. This assumption is supported by the fact that the Jewell Order was not intended as a permanent pause on coal leasing. Consequently, the Proposed Action does not impact the long-term supply of coal to the market. At most, the Proposed Action increases the supply of coal in the near term for a short period (less than two years), and reduces supply over a similar period in the future, as the tracts impacted by the Zinke Order will exhaust their reserves earlier than if development had been delayed by up to 24 months. Because large capital investments in the electrical generation sector limit the ability of utilities and other relevant market actors to switch from coal to other fuel sources in the short-term, the BLM concludes that a hastening in production from these four leases will not have appreciable market effects impacting usage or emissions over any period.

Concerns that the Zinke Order authorized leases whose development would impact tribal members and those impacts were not adequately considered

RESPONSE:

As discussed in Section 1.1 of the Final EA, the Zinke Order did not authorize or issue any new coal leases. Rather, it requires that when coal applicants submit leasing applications, the BLM processes them in accordance with existing law, including compliance with NEPA.

Section 4.2 and Table 4.1 of the Final EA discuss the government-to-government consultation with tribes that the BLM conducted during the NEPA process for the individual leases.

7. FAILED TO USE MARKET MODELS TO ANALYZE WHETHER THE PROPOSED ACTION HAS MARKET EFFECTS

Disagreement with the BLM's conclusion that the No Action Alternative would have no direct effect on the quantity of greenhouse gas emissions other than to delay the timing, because it is based on the mischaracterized No Action Alternative

The BLM must accurately account for the different market impacts of the alternatives and reference several models available (e.g. Energy Information Administration's National Energy Modeling System (NEMS) and ICF's Integrated Planning Model (IPM))

Commenters referenced a 2018 paper published in Nature: Climatic Change, by Peter Erickson and Michael Lazarus that modeled the market response to production cuts that would result from a permanent federal leasing moratorium. Using the IPM, they concluded that reductions in the federal coal production results in a continued reduction in net emissions (particularly in the absence of the Clean Power Plan). Based on this conclusion, the commenters find it unreasonable to assume that the Zinke Order would not change the cumulative levels of greenhouse gas emissions resulting from coal leasing.

RESPONSE:

As explained above and in the Final EA, the No Action Alternative has been appropriately characterized. The Final EA addresses the Zinke Order's early termination of a temporary pause in leasing. Because the Proposed Action does not direct the sale or issuance of leases on particular tracts, the Final EA does not involve a leasing decision that would impact coal supply over a sustained period implicating market effects. Under the No Action Alternative, leasing would have resumed on a 24-month delay and based on the information currently available to the BLM it is reasonable to assume that the same volume of coal production would occur from the four leases that were issued subsequent to the Zinke Order. This assumption is supported by the fact that the Jewell Order was not intended as a permanent pause on coal leasing. Consequently, the Proposed Action does not impact the long-term supply of coal to the market. At most, the Proposed Action increases the supply of coal in the near term for a short period not exceeding two years, and reduces supply over a similar period in the medium term, as the tracts impacted by the Zinke Order will exhaust their reserves earlier than if development had been delayed by up to 24 months. Because large capital investments in the electrical generation sector limit the ability of utilities and other relevant market actors to switch from coal to other fuel sources in response to short-term price volatility, the BLM concludes that a 1 to 11 month hastening of production from these four leases will not have appreciable market effects impacting usage or emissions over any period.

The Coal Market Module (CMM), as incorporated into NEMS, was not used as it does not look at specific coal fields or make assumptions regarding leasing policy, whether Federal or non-Federal. Furthermore, there is no lease-level data layer in the CMM. Thus, CMM's outputs are not responsive to changes in Federal leasing policy. Rather, the CMM simply provides supply curves based on transportation and production costs, under the assumption that production occurs in mining regions that can offer the best available price to the power plants purchasing under the Electricity Market Module

(EMM). For more information, go to: https://www.eia.gov/outlooks/aeo/assumptions/pdf/coal.pdf.

Additionally, the BLM does not believe it is necessary to apply the IPM to compare greenhouse gas (GHG) emissions under the Proposed Action and the No Action Alternative scenarios. As noted in Section 2.1.2 of the Final EA, the pause was terminated and the BLM's ability to process new applications and issue non-exempt leases was restored beginning March 29, 2017, approximately 24 months before the BLM would have begun issuing such leases under the No Action Alternative. Accordingly, there is no discernable difference between total GHG emissions under the Proposed Action and the No Action Alternatives because both scenarios envision a return to leasing consistent with the Mineral Leasing Act, simply under modified timelines.

As discussed in Section 2 of the Final EA, the respective hastening of production from the four leases that were issued after the Zinke Order (Proposed Action) that were not already exempt under the Jewell Order were of 11 months (Pollyanna #8), two months (Alton Coal Development), and one month (SUFCO). The advancement of these timelines is the only quantifiable difference between the Proposed Action and No Action Alternative. Although there was some processing on an additional eight lease applications received after the Zinke Order that are still pending, the BLM is unable to speculate which, if any, would be issued, and any effect from early termination of the pause on hastened production from any of these eight leases to warrant quantifying in the Final EA (See Section 1.2, Table 1.1, Section 2.1.2, Section 3.1: Cumulative Effects, and Section 3.2: Direct and Indirect Effects).

Of the four leases issued, only Pollyanna #8 had its timeline advanced by a large enough period (11 months) to impact the results of an annual energy model. Rounded up, this would amount to coal production and GHG emissions from that project occurring one year sooner in a model like IPM. However, the Lease Modification Application Pollyanna #8 would add only 3.4 million short tons (MMst) of recoverable coal. This would extend the mine's life by approximately eight years, given the mine's annual production of 0.4 MMst per year (for more information: https://eplanning.blm.gov/epl-front-office/projects/nepa/91329/129545/157492/20171218_EA_Pollyanna8_FINAL_508CB.pdf). For reference, this amount is equal to approximately 0.05 percent (or 1 / 2,000) of the 755.5 MMst of total U.S. coal production in 2018 (https://www.eia.gov/coal/production/quarterly/pdf/t1p01p1.pdf).

The BLM has considered the information provided by the commenter on the impacts of coal leasing policy on markets in the analysis of greenhouse gas emissions. Specifically, the BLM considered the submitted study by Erickson and Lazarus, which is based on an altogether different policy (i.e., a permanent moratorium on new leases) than that countermanded by the Zinke Order. The study includes findings from the IPM which conclude that for every exajoule (EJ) of federally produced steam coal not supplied to U.S. markets there would be a 0.69 EJ reduction in coal-fired power consumption, and

that for every EJ of federally produced steam coal not supplied to Asian markets there would be a 0.30 EJ reduction in coal-fired power consumption.

For the purpose of the Final EA, however, such substitution analyses as used in CMM or IPM would not be necessary, because the BLM does not conclude that there would be a volumetric reduction in overall coal supplied in the No Action Alternative, under which the Jewell Order remained in-effect until publication of the PEIS. The BLM has determined that the four non-exempt coal leases issued and the eight non-exempt coal lease applications partially processed during the noted 24-month period would result in the same total volume of steam coal made available to power plants as under the No Action Alternative. The full amount of estimated coal reserves are available for production and supply to consumers for those leases that are approved under both scenarios, and the only thing that changed was the date of when this coal supply is added (sooner under the Proposed Action than under the No Action Alternative scenario).

Because the aggregate coal supply from the Federal leases affected by the Zinke Order would not change, the impact on electrical power prices of making this supply of coal supply available to consumers, potential substitution of Federal coal from other Federal and non-Federal coal basin production and/or other power sources (plus potentially some reduced overall electric power consumption), and GHG emissions under market equilibrium would not change between the Proposed Action and the No Action Alternative scenarios. As a result, consideration of alternative models would not aid the analysis of how the Proposed Action affects power sector GHG emissions compared to the No Action Alternative, because there are no volumetric differences that could serve as an input for these or other models to compute. In other instances, the BLM could use similar market modules where volumetric differences may result from the Proposed Action scenario. But this is not the case for the situation considered in this Environmental Assessment and thus is not useful here.

8. Social Cost of Carbon, Methane

The Draft EA did not analyze the social cost of carbon or apply the social cost of carbon methodology developed by the federal government for analytical purposes.

RESPONSE:

The Final EA's scope is to evaluate the impact of lifting the pause. The cumulative carbon emissions do not change between the Proposed Action and the No Action Alternative analyzed in Section 3.1 of the Final EA; the SCC tool has limited utility in this analysis. Aside from the issue of whether an SCC analysis could provide a fully accurate cost projection, the only difference that would need to be quantified for the Final EA would pertain to the timing rather than the total amount of carbon emissions, which as stated in the Final EA does not differ between the Alternatives examined. It is less that there would be inaccuracies with an SCC analysis and more that any differences to be analyzed would be solely due to the degree to which all associated carbon emissions are discounted into net present value terms.

9. COMPUTATIONAL ERRORS, TYPOS

The Freedom Energy LBA and the New Elk LBA were classified as applications for thermal (steam) coal lease but they are applications for a metallurgical coal lease.

RESPONSE:

The Freedom Energy (FE) LBA is for metallurgical coal, which is an exemption under the Jewell Order. This application was new and received in July 2018 after the Zinke Order was issued and is still pending. Tables 1.1, 2.3 and 3.1 each relate to the timing of submittal either after the issuance of the Jewell Order or after the Zinke Order. For clarity purposes and since the FE LBA remains pending as of the Final EA, the FE LBA was included in Table 3.1 in the group for Mining Actions AFTER the Zinke Order and considered Reasonably Foreseeable Future Actions (RFFA). This classification is not meant to distinguish between leases that appear to be exempt or non-exempt under the Jewell Order, but rather reflects their status at the time of the Zinke Order.

The application for the New Elk LBA was submitted in 2007 (revised in 2013), for metallurgical coal. However, despite the exception made in the Jewel Order for metallurgical coal, the LBA was actually paused at the time of the Zinke Order due to additional information needed from the applicant to complete NEPA and the applicant was ready to proceed with processing after the Zinke Order, therefore it was included in Table 3.1 as "Mining Actions Paused under the Jewell Order". This classification is not meant to distinguish between leases that appear to be exempt or non-exempt under the Jewell Order, but rather reflects their status at the time of the Zinke Order.

Concerns over coal tonnages used in the Draft EA

RESPONSE:

The BLM received comments requesting corrections to some of the tonnages listed in the Draft EA Table 3.1. One was regarding a typographical error. As a result of these comments the BLM re-reviewed the numbers throughout Table 3.1 in the Final EA and updated several numbers, as well as the corresponding analysis in Section 3.1 specifically, Issue 1: How would lifting the pause on Federal coal leasing in March 2017 impact greenhouse gas emissions from mining of Federal coal and the associated downstream combustion? and Issue 2: How would lifting the pause on Federal coal leasing in March 2017 change socioeconomic impacts associated with coal production levels?

An apparent error in the recoverable reserve was shown in Table 3.1 for the Bookcliffs LBA, COC 70538. After review, the BLM concluded that the correct reserve amount for Book Cliffs LBA remains 78 million tons. The BLM apologizes for this error.

The BLM has clarified inconsistencies in Table 3.1, when compared to other the BLM documents, in the recoverable coal reserve for the New Elk LBA, COC 71978. Typically, an initial estimate of recoverable coal in an LBA is greater than the estimated recoverable coal at the time of lease sale. This is due to gaining a better understanding to

the LBA area through geologic exploration and investigations into potential surface impacts during the processing of the application. In this case, there was a significant change in the proposed mining method that had an adverse effect on the recoverable coal reserve. The revised Table 3.1 reports a recoverable reserve of 8 million tons for the New Elk LBA. This is consistent with the April 2019 New Elk Coal Mine Lease by Application Environmental Assessment (DOI-BLM-CO-F020-2019-0014-EA). https://eplanning.blm.gov/epl-front-office/projects/nepa/118470/176016/214475/DOI-BLM-CO-F020-2019-14_PRELIM_EA-508.pdf.

The BLM received a comment that the recoverable coal reserve for the West Antelope II LMA was not consistent with other available the BLM data. Specifically, the commenter noted that the LMA initially identified 15.751 minable million tons, and that the BLM offered 14.82 million minable tons, yet Table 3.1 reported only 13.6 million tons of recoverable coal. Two things happened while processing this LMA: first the reserve declined due to new geologic information becoming available; and second, the difference between a minable ton of coal (43 C.F.R. 3480.0-5(a)(23)) and a recoverable ton of coal (43 C.F.R. 3480.0-5(a)(32)). The recoverable coal reserve is a subset of the minable reserve base, with the difference being coal that technically cannot be mined due to required property barriers, fenders, or pillars. In this case, the difference between 14.82 million tons and 13.6 million tons, 1.22 million tons, is that coal that cannot be mined due to required property barriers, fenders, and pillars. Therefore, 13.6 million tons is the correct amount.

The initial West Antelope II LMA's approval subject to the IBLA's decision was before the Jewel Order. After the IBLA's decision, the BLM approved the lease with a new decision record on November 30, 2017. This lease was not subject to the pause because it was originally approved prior to the Jewel Order.

In regard to a reduction in the acreage of the Spring Creek LBA, MTM 105485, that Table 3.1 did not similarly reflect a reduction in tonnage. The comment is correct, and the BLM has changed the tonnage shown to the Spring Creek LBA in Table 3.1 to 170.2 million tons.

The acreage reported in the Draft EA for the King II pending application was inaccurate

RESPONSE:

Commenter provided information on amended acreage for the King II lease. King II is a pending application that had been amended to account for a change in acreage and information from an internal geological engineering report on maximum economic recovery. As a result, the BLM corrected the acreage and tonnage in the Final EA to reflect the changes to the application and incorporate the information from the engineering report. In addition to Table 3.1, the BLM modified the corresponding analysis in Section 3.1 specifically, Issue 1: How would lifting the pause on Federal coal leasing in March 2017 impact greenhouse gas emissions from mining of Federal coal and the associated downstream combustion? and Issue 2: How would lifting the pause on Federal coal leasing in March 2017 change socioeconomic impacts associated with coal production levels?

The use of the term "avoidance" in the Draft EA in reference to post-action mitigation was confusing

RESPONSE:

The Draft EA states "avoidance" in Section 1.1.1, Coal, and we agree referencing avoidance is confusing in relation to "after mining." Avoiding impacts from mining is typically identified prior to the mining. But avoidance of impacts is also a BLM goal throughout the life of the lease. For clarity, the term "avoidance" in this sentence was deleted from the Final EA. Specific mitigation for mining impacts is proposed and analyzed on a case-by-case basis with individual leases and is outside the scope of this EA. Site specific NEPA reviews for the Alton and SUFCO leases included mitigation measures, which can be found in their respective NEPA documents on the BLM ePlanning website. The site-specific EA for Pollyanna 8 determined no mitigation was necessary.

Concerns over the discussion of the Fourth National Climate Assessment

RESPONSE:

One commenter expressed concern that the discussion of the federal government's Fourth National Climate Assessment was limited to only one region. The paragraph in Section 3.1 has been revised to include additional information. In addition, references are provided for the reader to four different documents with additional information on GHG emissions and the effects of climate change globally and nationally. Information pertaining to the Northern Great Plains was included as an example because that is the region where more than 80 percent of the coal analyzed in the Final EA is produced. The scope of the Final EA is to evaluate the impacts of a past Proposed Action and not a specific leasing decision where the impacts from GHG emissions due to the Proposed Action and alternatives would be evaluated within the area of analysis, regionally, and nationally.