



## DEPARTMENT OF THE INTERIOR

### Office of the Secretary

[MO4500181945]

### National Environmental Policy Act Implementing Procedures for the Bureau of Land Management (516 DM 11)

**AGENCY:** Office of the Secretary, Interior.

**ACTION:** Notice.

**SUMMARY:** This notice announces a revision to the National Environmental Policy Act (NEPA) implementing procedures for the Bureau of Land Management (BLM) at Chapter 11 of part 516 of the Department of the Interior's Departmental Manual (516 DM 11). The revision adds a new categorical exclusion (CX) for geothermal resource confirmation activities on Federal geothermal resource leases.

**DATES:** The CX is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** The new CX can be found at the web address for the BLM's revised NEPA procedures: <http://www.doi.gov/elips/> at Series 31, DM part 516, Chapter 11. The Substantiation Report for the CX is available at the BLM's ePlanning site: <https://eplanning.blm.gov/eplanning-ui/project/2034686/510>.

**FOR FURTHER INFORMATION CONTACT:** Heather Bernier, Division Chief, Decision Support, Planning, and NEPA, at (303) 239-3635, or [hbernier@blm.gov](mailto:hbernier@blm.gov).

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**SUPPLEMENTARY INFORMATION:**

## I. Background

The United States (U.S.) Department of the Interior (Department) published the proposed CX for geothermal resource confirmation on October 22, 2024, for a 30-day public comment period. Refer to the *Federal Register* notice (89 FR 84380) for more information regarding the background and rationale for the CX. This notice notifies the public of the BLM's establishment of the Geothermal Resource Confirmation CX and includes the BLM's responses to comments from the public on the proposed CX. The BLM has made clarifying edits to the CX text in response to comments as explained in this notice. These edits do not change the scope of the CX as proposed.

The Department proposed the CX for use by the BLM to support approval of an operations plan for lessees to drill and test wells to confirm the existence and capacity of a geothermal resource. Therefore, this increased efficiency will serve to expedite renewable energy development on BLM managed lands.

NEPA, 42 U.S.C. 4321 *et seq.*, requires Federal agencies to consider the environmental effects of their proposed actions in their decision-making processes and inform and engage the public in that process. Section 101(a) of NEPA sets forth a national policy to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which humans and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans. 42 U.S.C. 4331(a). Section 102 of NEPA directs agencies to interpret and administer Federal policies, regulations, and laws consistent with NEPA's policies. 42 U.S.C. 4332.

NEPA also created the Council on Environmental Quality (CEQ), which has issued regulations implementing NEPA, 40 CFR parts 1500 through 1508 (CEQ regulations).

CEQ also has issued numerous guidance documents to facilitate agency implementation of NEPA. *See* CEQ, CEQ Guidance Documents, <https://ceq.doe.gov/guidance/guidance.html>.

To comply with NEPA, agencies determine the appropriate level of review of any major Federal action—an environmental impact statement (EIS), environmental assessment (EA), or a categorical exclusion (CX). 40 CFR 1501.3. If a proposed action is likely to have significant environmental effects, the agency must prepare an EIS and document its decision in a record of decision. 40 CFR 1501.3(c)(3), part 1502, 1505.2. If the proposed action is not likely to have significant environmental effects or if the significance of the effects is unknown, the agency may instead prepare an EA, which is a concise public document used to support agency decision making on a proposed agency action. 40 CFR 1501.3(c)(2), 1501.5, 1508.1(j). After completing the analysis in the EA, the agency may conclude that the action will have no significant effects and document that conclusion in a finding of no significant impact, or conclude that the action is likely to have significant effects and therefore requires preparation of an EIS. 40 CFR 1501.6(a), 1508.1(j).

Under NEPA and the CEQ regulations, a Federal agency establishes CXs—categories of actions that the agency has determined normally do not have a significant effect on the human environment, individually or in the aggregate—in its agency NEPA procedures. 42 U.S.C. 4336(e)(1); 40 CFR 1501.4(a), 1507.3(c)(8), 1508.1(e). If an agency determines that a CX covers a proposed action, it then evaluates the proposed action for extraordinary circumstances, which are factors or circumstances that indicate a normally categorically excluded action may have a significant effect. 40 CFR 1501.4(b), 1508.1(o). If any extraordinary circumstances exist, the agency nevertheless may apply the CX if it conducts an analysis and determines that the proposed action does not in fact have the potential to result in significant effects notwithstanding an extraordinary circumstance, or the agency modifies the action to avoid the potential to result in significant effects. 40 CFR 1501.4(b)(1). In these cases, the agency must document such determination. *Id.* If the

agency cannot categorically exclude the proposed action, it will prepare an EA or EIS, as appropriate, before issuing any decision to authorize the action. 40 CFR 1501.4(b)(2).

The CEQ regulations require Federal agencies to develop procedures to implement NEPA and the CEQ regulations, facilitate efficient decision making, and ensure that the agencies make decisions in accordance with the policies and requirements of NEPA. 40 CFR 1507.3. As part of their procedures, agencies must establish CXs and identify extraordinary circumstances. 40 CFR 1507.3(c)(8). When establishing new or revising existing CXs in agency NEPA procedures, agencies must substantiate the proposed new or revised CXs with sufficient information to conclude that each category of actions does not have a significant effect, individually or in the aggregate, on the human environment, and provide this substantiation in a written record that is made publicly available as part of the notice and comment process for developing or revising proposed agency procedures. *See* 40 CFR 1507.3(b), (c)(8). In developing NEPA procedures, agencies must consult with CEQ and provide an opportunity for public review. 40 CFR 1507.3(b)(1)–(2). Before publishing final procedures, agencies must receive a determination from CEQ that the procedures conform with NEPA and the CEQ regulations. *See* 40 CFR 1507.3(b)(2).

## **II. Proposed Categorical Exclusion**

The text of the proposed CX, as provided in the October 22, 2024, Federal Register notice, was as follows:

Approval of an operations plan for geothermal resource confirmation wells (*e.g.*, core drilling, temperature gradient wells, and/or resource wells), including, but not limited to, construction of temporary routes for access, reclamation of all surface disturbance, and direct testing (*e.g.*, flow tests) to confirm the existence of a geothermal resource, to improve injection support, or to demonstrate communication between wells that:

- Does not include resource utilization;
- Does not exceed 20 acres of total (contiguous or noncontiguous) surface disturbance;

- Includes reclamation of temporary routes when their intended purpose(s) has been fulfilled, unless through a separate review and decision-making process the BLM incorporates and appropriately designates a route as part of its transportation system. Unless a temporary route is specifically intended to accommodate public use, use of the temporary route is limited to project specific geothermal resource confirmation purposes;
- Requires temporary routes to be constructed and used to allow for the reclamation, by artificial or natural means, of the temporary route and areas where the vegetative cover was disturbed by the construction or use of the route, and requires such treatment to be designed to reestablish vegetative cover as soon as possible, but at least within 10 years after approved reclamation commences; and
- Includes design elements to protect resources and resource uses consistent with the applicable Resource Management Plan, laws, regulations, and lease terms.

### **III. Comments on the Proposed CX**

The BLM received 27 comment letters during the 30-day public comment period on the proposed CX. Comments were submitted by State and local governments and agencies, interest groups, non-profit organizations, and private citizens. The BLM received comments both in support of and in opposition to the proposed CX. Some comments were beyond the scope of the BLM's proposed CX, such as a recommendation for the BLM headquarters to allocate more funding for new employees and another to require consultation on the forthcoming Infrastructure Impact Tool being developed by the United States Geological Survey, which is still in development and not led by the BLM.

The BLM considered all comments to date and responds in this notice to all 24 substantive issues raised in the public comments. The BLM has noted in the responses to comments when it changed the text of the CX in response to a comment. The BLM

appreciates the interest and participation of all respondents. The BLM, where appropriate, grouped together similar or related comments, and responds to the comments as follows:

*Comment 1:* At least 18 commenters expressed support for establishing the CX, stating that it would substantially reduce permitting timelines for geothermal energy authorizations and advance the responsible development of clean and reliable energy on public lands while keeping in place strong commitments to environmental stewardship. In addition, commenters noted that the availability of the CX for the BLM's use could help the BLM to expedite approval of new geothermal projects and promote the realization of their associated economic benefits while allowing the BLM's staff to focus on other proposals that may have a significant environmental effect.

*Response 1:* The BLM agrees with these comments and will continue to conduct the appropriate level of NEPA review for proposed Federal actions, including, where appropriate, application of available CXs, and public engagement, as necessary. The BLM will continue to appropriately consider potential adverse effects of proposed activities through the NEPA process.

*Comment 2 – Transparency and public input:* At least nine commenters requested that the BLM coordinate with the public and appropriate agencies when relying on the CX to authorize geothermal energy projects.

*Response 2:* The CEQ and Department's NEPA implementing regulations do not require public notice for an agency to use a CX. As provided in CEQ regulations and guidance, establishing, revising, and appropriately using CXs is consistent with NEPA. CXs are not exemptions or waivers from NEPA. Rather, they are a type of NEPA review intended to accomplish the purposes of NEPA efficiently and effectively. The establishment of a CX is a public process through which the agency must demonstrate that the category of actions does not normally have significant effects on the human environment, individually or in the aggregate (40 CFR 1501.4). Having made such a demonstration, subject to public

review and comment, the agency may then apply the CX to complete the NEPA environmental review process for proposals that fall within the scope of the CX, unless any extraordinary circumstances exist that make application of the CX inappropriate. The BLM will continue to cooperate and collaborate with Tribal, State, local, and Federal agencies as appropriate in managing the public lands. Although public engagement is not required as part of the process for applying a CX, the BLM may elect to involve the public (e.g., through notification or public scoping), where appropriate, in an action for which the BLM intends to rely on a CX for approval, based on various considerations, including the level of public interest (40 CFR 1501.9(c)(3)). Each use of this CX will be documented on the BLM NEPA register website (<https://eplanning.blm.gov/eplanning-ui/home>) and made available to the public.

*Comment 3 – Potential groundwater depletion:* At least three commenters expressed concern that use of the CX could lead to groundwater depletion.

*Response 3:* Geothermal resource confirmation includes drilling wells to confirm the existence of a geothermal resource and evaluate its commercial viability and to determine the extent of the resource by demonstrating communication between wells but does not include commercial utilization of the geothermal resource. Such drilling and flow testing of geothermal resources during the resource confirmation phase of development does not result in a consumptive use of groundwater. Groundwater extracted during geothermal resource confirmation activities is reinjected back into the geothermal resource. Groundwater consumption that may occur during any subsequent production or utilization phase would not be covered by the CX and would be subject to a separate authorization decision, based on a subsequent, independent NEPA review.

*Comment 4 – Adequate level of NEPA analysis:* At least two commenters asserted that NEPA analysis through an environmental assessment or environmental impact statement is necessary for approval of geothermal resource confirmation drilling projects.

*Response 4:* As documented in the accompanying Substantiation Report, the category of geothermal resource confirmation actions covered by this CX does not normally have significant effects on the human environment, individually or in the aggregate. The BLM reviewed 26 environmental assessments related to geothermal resource confirmation, as well as 20 oil and gas drilling projects, each of which supported a finding of no significant impact (FONSI). The BLM further confirmed that no unanticipated effects occurred because of project implementation for any of the studied projects. These 26 geothermal projects represent all of the geothermal resource confirmation projects that have been approved by the BLM over the last 21 years and were suitable for analysis in the Substantiation Report (i.e., those completed and where full documentation was available, including assessment of any unanticipated effects after project completion). In addition, for any proposed action that the BLM intends to approve in reliance on the CX, the BLM would evaluate effects to resources through the Department's extraordinary circumstances review process (43 CFR 46.205 and 46.215). This review would be documented and included in the information posted on the BLM's NEPA register. If the Responsible Official cannot rely on the CX to support a decision on a particular proposed action due to extraordinary circumstances, the Responsible Official will prepare an EA or EIS, consistent with 40 CFR 1501.4(b)(2) and 43 CFR 46.205(c), before issuing any decision to authorize the proposed action.

*Comment 5 – Potential air quality effects:* At least one commenter expressed concern for potential effects to air quality that might result from operation of geothermal power plants.

*Response 5:* Effects to air quality resulting from geothermal resource confirmation projects, which includes drilling wells to confirm the existence of a geothermal resource and evaluate its commercial viability, are normally minor and temporary, as documented in the accompanying substantiation report. The scope of the CX does not include the construction

or operation of power plants, and thus potential effects to air quality associated with any proposed geothermal power plant are beyond the scope of the CX. If a utilization plan is proposed, the potential effects of that plan (e.g., air quality effects) would be evaluated during the NEPA review associated with a proposed utilization project for geothermal development (e.g., operation of geothermal power plants).

*Comment 6 – Potential water quality effects:* At least one commenter expressed concern that geothermal systems may affect water quality through discharge of heavy metals and dissolved solids.

*Response 6:* Geothermal resource confirmation operations do not normally include the use of toxic heavy metals. With regard to dissolved solids, drilling muds composed of inert naturally occurring clays, such as bentonite and barite, are used, but these do not impact water quality. If a particular project would involve an atypical use of materials with potential to adversely affect water quality, the BLM would consider that fact as part of its consideration of extraordinary circumstances. Potential effects to water quality associated with any proposed geothermal power plant are beyond the scope of the CX, which does not include the construction or operation of a geothermal power plant. If a utilization plan is proposed, the potential for those effects would be reviewed during a future NEPA review associated with a proposed utilization project for geothermal development.

*Comment 7 – Potential land subsidence:* At least two commenters expressed concern that fluid withdrawals associated with geothermal development can cause land subsidence.

*Response 7:* Typically, the resource confirmation phase does not result in consumptive use of groundwater. The possibility of land subsidence that may be associated with the operation of any proposed geothermal power plant due to any fluid withdrawals is beyond the scope of the CX, as it is not included in the resource confirmation phase. If a utilization plan is proposed, the potential for those effects would be reviewed during the NEPA review associated with a proposed utilization project for geothermal development.

*Comment 8 – Potential biological and cultural resources effects:* At least six commenters expressed concern that geothermal exploration can affect vegetation and wildlife (including special status species like Greater sage-grouse), biodiversity, surface water, cultural resources, and groundwater; and at least one commenter recommended that the BLM incorporate protections for species into the CX text.

*Response 8:* The BLM’s geothermal operations plan review process includes several layers of protection, which ensure that resource confirmation projects will not significantly impact site-specific biological and cultural resources, regardless of the level of NEPA review. Therefore, these resources do not need to be addressed specifically in the text of the CX.

First, regardless of the level of analysis the BLM conducts for NEPA compliance, actions that are proposed to take place on BLM-managed lands, including geothermal resource confirmation activities, must be reviewed for conformance with the applicable BLM Resource Management Plan (RMP) as part of the BLM’s compliance with the Federal Land Policy and Management Act and its implementing regulations (43 CFR 1610.5-3). Any geothermal resource confirmation activities would be subject to applicable RMP terms and conditions and any applicable lease stipulations, which include requirements to ensure protection of sensitive resources.

Second, any geothermal resource confirmation activities must also comply with any lease stipulations. Such activities would be evaluated in the NEPA review conducted at the leasing stage. Leases may contain site-specific lease stipulations related to resource protection (e.g., seasonal restrictions for species and habitat protection, thermal features, water resources, vegetation) that become part of the enforceable lease terms. In addition, the BLM assembles an interdisciplinary team to facilitate coordination among agencies where appropriate. The BLM ensures that design elements are included in geothermal drilling permit (GDP) approvals to ensure conformance with the applicable RMP, lease

terms, and other relevant requirements. For example, it is typical for the BLM to address the timeframe of the activity and relevant drilling requirements as well as reclamation activities within a Conditions of Approval (COA) of the GDP (e.g., plugging, abandonment and reclamation activities must be completed within 3 years of project completion). BLM professionals review each proposed action for potential resource conflicts and incorporate appropriate design elements into an approval.

Third, the BLM must comply with the requirements of the Endangered Species Act regarding effects on any threatened or endangered species, as an obligation independent of compliance with NEPA.

Finally, before relying on the CX to approve any proposed action, the BLM must consider extraordinary circumstances (43 CFR 46.215), which include consideration of effects on public health and safety; natural resources and unique geographic characteristics such as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands; floodplains; national monuments; migratory birds; and other ecologically significant or critical areas; unresolved conflicts concerning alternative uses of available resources; unique or unknown environmental risks; precedent for future decision making; historic properties; listed or proposed species or critical habitat; low income or minority populations; access by Indian religious practitioners to, and for ceremonial use of, Indian sacred sites and the physical integrity of those sites; and contribution to the introduction, continued existence, or spread of invasive plants or non-native invasive species. This review would be documented and included in the information posted on the BLM's NEPA register. If the Responsible Official cannot rely on the CX to support a decision on a particular proposed action due to extraordinary circumstances, the Responsible Official will prepare an EA or EIS, consistent with 40 CFR 1501.4(b)(2) and 43 CFR 46.205(c).

*Comment 9 – Potential noise effects:* At least one commenter expressed concern that geothermal exploration can cause noise.

*Response 9:* As documented in the Substantiation Report, the BLM reviewed 26 environmental assessments related to geothermal resource confirmation that supported FONSI, as well as 20 similar oil and gas drilling project EAs. These environmental assessments analyzed noise effects associated with geothermal resource confirmation. The EAs concluded that noise effects were temporary in nature and could result from increased traffic on local roads. Ultimately, such effects are expected to be minimal, short-term, and addressed through the implementation of design elements.

*Comment 10 – Potential seismic effects:* At least four commenters expressed concern that geothermal development could contribute to seismic effects.

*Response 10:* When geothermal projects are submitted for approval, the BLM evaluates the volume of fluid to be injected and estimates potential for seismicity. Following a standard protocol, potential seismicity above a certain level would trigger requirements for reducing the injection rate or making other adjustments

(<https://www.energy.gov/eere/geothermal/articles/protocol-addressing-induced-seismicity-associated-enhanced-geothermal>).

This level is lowered when sensitive resources are nearby. This is standard practice regardless of the level of NEPA review conducted. In addition, for any proposed action that the BLM intends to approve in reliance on the CX, the BLM evaluates effects to resources through the Department's extraordinary circumstances review process set forth at 43 CFR 46.205 and 215. This review is documented and included in the information posted on the BLM's NEPA register. If the Responsible Official cannot rely on the CX to support a decision on a particular proposed action due to extraordinary circumstances, the Responsible Official prepares an EA or EIS, consistent with 40 CFR 1501.4(b)(2) and 43 CFR 46.205(c).

*Comment 11 – Water usage:* At least one commenter expressed concern that geothermal power plants require a large amount of water for cooling, which could create conflicts over water use.

*Response 11:* Geothermal resource confirmation activities do not use water for cooling. The scope of the CX does not include the construction or operation of power plants. If a utilization plan is proposed, the potential for the possibility of conflicts over water use that may be associated with any proposed geothermal power plant would be reviewed during the NEPA review associated with a proposed utilization project for geothermal development.

*Comment 12 – Produced hazardous waste:* At least one commenter expressed concern that geothermal exploration can produce hazardous waste that requires safe disposal.

*Response 12:* Geothermal resource confirmation activities do not normally produce hazardous waste because geothermal resource confirmation activities largely consist of drilling wells—using water and mud to drill, then placing steel casing and cement to construct a well bore. The mud is generally naturally occurring inert clay, such as bentonite or barite. If a particular project would involve an atypical use of materials with potential to adversely affect water quality, the BLM would consider that fact as part of its consideration of extraordinary circumstances.

*Comment 13 – Cumulative Effects:* At least five commenters expressed concern that projects approved using the CX would not account for analysis of cumulative effects and connected or closely related actions. At least one commenter suggested that all environmental reviews for geothermal exploration projects should include analysis of cumulative effects and connected actions of potential geothermal projects in one NEPA document. Additionally, at least one commenter expressed concern that the proposed CX was unclear about whether a proponent would be required to abandon a well and proceed to

reclamation if the BLM was simultaneously conducting a NEPA review for a utilization development proposal.

*Response 13:* Before authorizing a project in reliance on a CX, the BLM must complete an extraordinary circumstances review that includes evaluation of whether its proposed action has the potential to have “a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects.” 43 CFR 46.215(f). Therefore, unless the Responsible Official affirmatively determines that the proposed action does not have such a potential, the BLM cannot rely on this CX.

Geothermal exploration, resource confirmation, and utilization are distinct actions that are not dependent on each other. None of these three phases automatically triggers any other phase of geothermal development, and the BLM retains authority to impose conditions or deny permits at each phase. If the project proponent does not find a suitable geothermal resource, then the project proponent would not proceed to the next phase and site reclamation would commence; however, if a proponent does find suitable geothermal resource and proceeds to the next phase, separate authorization for that next phase, supported by a NEPA review, is required. The BLM does not envision requiring a project proponent to proceed to reclamation while processing an application for approval of a utilization (production) plan.

*Comment 14 –BLM objectivity:* One commenter expressed concern with the objectivity of the BLM in developing the proposed CX and suggested that establishment of the CX was a “giveaway” to energy industries.

*Response 14:* The Federal Land Policy and Management Act of 1976, as amended, requires the BLM to manage the public lands for multiple use and sustained yield unless otherwise provided by law. Not all lands need to be managed for the same uses; “multiple use” is defined as including, among other values, “a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable

and non-renewable resources” (43 U.S.C. 1702(c)). In accordance with the CEQ regulations (40 CFR 1500.5(a)), the BLM is proposing this CX to improve efficiency in processing applications for geothermal resource confirmation that normally have no significant effects. The BLM evaluated the potential for a geothermal resource confirmation CX independently without external influence, in accordance with existing laws and regulations. The BLM reviewed 26 environmental assessments related to geothermal resource confirmation projects as well as 20 environmental assessments for oil and gas drilling projects that supported FONSI, and subsequently confirmed that no unanticipated effects occurred because of project implementation. The Substantiation Report was available to the public during the 30-day comment period following *Federal Register* publication of the proposed CX. In addition, BLM consulted with CEQ on the development of this CX, as required by 40 CFR 1507.3(b).

*Comment 15 – Site-specific mitigation measures:* At least one commenter expressed concern that, although geothermal resource confirmation projects approved through the proposed CX would be subject to mandatory design features, the CX approval process would not consider or include site-specific mitigation measures typically developed during the NEPA process through an EA.

*Response 15:* Design elements include the requirements or limitations that are outlined in applicable RMPs, geothermal lease terms, and other relevant requirements (applicable Federal and State laws, regulations, and policy) to avoid or minimize environmental consequences and optimize efficient implementation to meet resource objectives in the location where the geothermal resource confirmation project would occur, if approved. As such, the BLM ensures that applicants are aware of these design elements and applicants can change their intended projects as first proposed to incorporate any design elements, or the BLM can include the elements in the permit approval through a COA. The range of potential effects and common protective measures are familiar to the BLM and to

operators. Regardless of the level of analysis that the BLM conducts for NEPA compliance, all geothermal development decisions and activities must be consistent with the applicable RMPs and lease stipulations placed on the parcel. Activities that are not in conformance with the BLM RMP decisions and lease stipulations are prohibited and will not be authorized, regardless of whether the BLM complies with NEPA through an EIS, EA, or a CX (see response to comment 8). Therefore, the CX relies on the limits in the applicable RMP and lease terms to ensure that the actions approved in reliance on the CX would include appropriate design elements and not have significant effects. In addition, for any proposed action that the BLM intends to approve in reliance on the CX, the BLM would evaluate potential effects to resources through the Department's extraordinary circumstances review process set forth at 43 CFR 46.205 and 215. This review would be documented and included in the information posted on BLM's NEPA register website. If the Responsible Official cannot rely on the CX to support a decision on a particular proposed action due to extraordinary circumstances, the Responsible Official will prepare an EA or EIS, consistent with 40 CFR 1501.4(b)(2) and 43 CFR 46.205(c).

*Comment 16 – Suggested revisions to allowable acreage:* At least 2 commenters suggested reducing the 20 acres of allowable surface disturbance proposed in the CX, while at least 1 other commenter suggested that the BLM expand the acreage amount of allowable surface disturbance.

*Response 16:* To support the development of the CX, in its Substantiation Report (Addresses section), the BLM examined the range of surface disturbance in 26 geothermal projects analyzed in EAs that all supported FONSI, and that were completed between 2005 and 2019, to identify potential effects resulting from the kinds of activities normally included in geothermal resource confirmation operations plans, as outlined in the Department's regulations at 43 CFR part 3200, subpart 3260. As discussed in the Substantiation Report, the EAs and associated FONSI were reviewed to determine the

scope of environmental effects anticipated to result from the proposed actions. The size and scale of geothermal resource confirmation projects reviewed in those documents were the basis of the surface disturbance limitations chosen for the CX, and as such the BLM declines to modify the allowable acreage.

*Comment 17 – Total surface disturbance:* At least one commenter recommended that the CX should include all types of routes, including drive and crush (routes that are made when vehicles drive over and crush any vegetation rather than by excavation or laying of any road surface) as part of the 20-acre disturbance limit.

*Response 17:* The BLM concurs and notes that all routes, including drive and crush, will be considered as part of the 20-acre disturbance limitation within the CX, which is standard practice for any BLM proposed action.

*Comment 18 – Potential effects from different kinds of geothermal resource confirmation projects:* At least one commenter expressed concern that the proposed CX failed to account for different kinds of geothermal resource confirmation projects with differing construction requirements that may result in effects to resources not contemplated by the proposed CX. Additionally, the commenter expressed concern that the CX fails to distinguish between or prioritize those projects that are most likely to minimize environmental effects.

*Response 18:* In its Substantiation Report, the BLM contemplated different well pad, well diameter, and access road requirements for confirming a resource. For example, as described within the Substantiation Report, within the 26 projects analyzed in the EAs reviewed, resource well pad size ranged from 2.5 to 4.1 acres, depending on the well diameter size, as well as the number of wells proposed per pad. The 20 acres of disturbance provides flexibility for these various resource confirmation project requirements. The commenter did not identify any specific kind of geothermal resource confirmation project

that the BLM did not adequately consider in developing this CX. The BLM's prioritization of different geothermal projects is outside the scope of establishment of a CX.

*Comment 19 – Geothermal drill permits:* At least one commenter expressed concern that the proposed CX was limited to approval of an operations plan, noting that geothermal resource confirmation projects require approval of a GDP and sundry notice in addition to approval of an operations plan.

*Response 19:* The BLM concurs with the commenter and has updated the text of the CX to make clear that it would apply to approval of both operations plans and associated GDPs. The analysis in the Substantiation Report includes the approval of GDPs. Therefore, the inclusion of GDPs in the CX clarifies the text while not changing the scope of the CX.

*Comment 20 – Potentially limiting multiple-use:* At least one commenter expressed concern that geothermal projects eliminate all other public uses of multiple-use land, including wildlife habitat and public recreation.

*Response 20:* The Federal Land Policy and Management Act of 1976, as amended, requires the BLM to manage the public lands according to the principles of multiple use and sustained yield, and to manage the lands under land use plans (i.e., RMPs) developed consistent with these principles. The BLM's RMPs and site-specific lease stipulations serve to protect resources on public lands, including wildlife habitat areas. FLPMA's definition of "multiple use" contemplates "the use of some land for less than all the resources." 43 U.S.C. 1702(c).

*Comment 21 – Previously disturbed lands:* At least one commenter recommends the use of previously disturbed lands, BLM lands identified for disposal, and other less environmentally sensitive land for geothermal energy projects.

*Response 21:* The BLM considers the appropriateness of using previously disturbed lands, lands identified for disposal, and other less environmentally sensitive land in relation

to proposed actions, consistent with the applicable RMP, regardless of the level of NEPA compliance conducted.

*Comment 22 – Extraordinary circumstances review:* At least one commenter expressed concern that the discretionary nature of extraordinary circumstances review could lead to variation in how the criteria are evaluated.

*Response 22:* For any proposed action that the BLM intends to approve in reliance on the CX, the BLM must evaluate effects to resources through the Department's extraordinary circumstances review process set forth at 43 CFR 46.205 and 46.215. This review would be documented and included in the information posted on the BLM's NEPA register. If the Responsible Official cannot rely on the CX to support a decision on a particular proposed action due to extraordinary circumstances, the Responsible Official will prepare an EA or EIS, consistent with 40 CFR 1501.4(b)(2) and 43 CFR 46.205(c). The Responsible Official relies upon the knowledge and experience of the BLM professionals when determining if extraordinary circumstances are present.

*Comment 23 – Resource management plan protections:* At least one commenter expressed concern that prior geothermal leasing EAs and older RMPs do not sufficiently analyze or provide protections for resources against effects caused by geothermal resource confirmation projects. Another commenter suggested updating the 2008 Programmatic Environmental Impact Statement for Geothermal Leasing in the Western United States.

*Response 23:* Although some RMPs date back to the 1980s, the 2008 Programmatic Environmental Impact Statement for Geothermal Leasing amended 114 RMPs that were signed prior to 2008, in the 12 western states of Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming, by adding design elements appropriate for exploration and development of geothermal resources. Additionally, responsible officials have the option of conducting additional NEPA analysis if the existing analysis supporting the lease and the RMP is not sufficient.

Suggestions or proposals regarding updating the 2008 Programmatic Environmental Impact Statement for Geothermal Leasing in the Western United States or revising or amending BLM land use plans are outside the scope of the establishment of the new CX in this notice.

*Comment 24 – Unanticipated effects:* At least one commenter expressed concerns that unanticipated effects occurred from three past geothermal projects.

*Response 24:* The BLM is unaware of any unanticipated effects that occurred as a result of any resource confirmation projects, and the commenter did not identify geothermal resource confirmation projects that resulted in unanticipated effects. Nor did the commenter identify these potential unanticipated effects.

#### **IV. Additional Clarifying Changes**

While considering the comments and recommendations the BLM received during the public comment period on the proposed CX revisions, the BLM incorporated several changes to the CX text proposed in October 2024. These changes and the rationale for them are described below.

In response to a comment recommendation, the BLM added “and associated Geothermal Drilling Permits” after “operations plan” in the CX text to make it clear that the CX includes issuance of Geothermal Drilling Permits associated with an approved operations plan for geothermal resource confirmation (as required in 43 CFR 3261.11). The BLM also added the word “a” before “geothermal resource confirmation” for readability. The BLM replaced the word “wells” with “project” after “geothermal resource confirmation” because the CX supports the entire project and not just individual wells. The BLM removed the following from the CX text “wells (e.g., core drilling, temperature gradient wells, and/or resource wells), including, but not limited to, construction of temporary routes for access, reclamation of all surface disturbance, and direct testing (e.g., flow tests) to confirm the existence of a geothermal resource, to improve injection support, or to demonstrate communication between wells” because these examples of geothermal

resource confirmation operations are not needed to define the scope of the CX. At the same time, the BLM added “pursuant to 43 CFR part 3200, subpart 3260” for clarification. These edits do not change the scope of the CX as proposed.

The BLM changed the format from a bulleted list to an alphabetized list. The BLM added a new third provision (c), “Requires reclamation of all surface disturbances when their intended purpose has been fulfilled,” to clarify that that all surface disturbance is reclaimed as soon as its intended purpose has been fulfilled. The proposed CX had focused on reclamation of temporary routes and did not explicitly address other reclamation.

In the third (c) and fourth provisions (d), the BLM replaced “Includes” with “Requires” making it clear that reclamation is a requirement for approval of an operations plan. Additionally, the BLM created a new fifth provision (e) from the second sentence of the third provision (c), which is now in the fourth provision (d), by rewording it to be consistent with the other provisions; therefore, the text proposed as “unless a temporary route is specifically intended to accommodate public use; use of the temporary route is limited to project-specific geothermal resource confirmation purposes;” is changed to “Does not make a temporary route available for public use unless a temporary route is specifically intended to accommodate public use;”.

The new sixth provision (f), after the word “used”, the BLM changed the word “to” to “so as to” for readability. Additionally, in the new sixth provision (f), “of the temporary route and areas where the vegetative” has been changed to “of vegetative cover on the temporary route” to simplify the language. Finally, in the new sixth provision (f), BLM changed the words, “at least” to “at most” to show that the 10-year requirement is the maximum time allowed for reclamation.

#### **V. Categorical Exclusion Justification**

The BLM finds that the category of actions described in the CX (below) does not normally have a significant effect on the human environment, individually or in aggregate.

This finding is based on the analysis of the BLM's proposal to establish the CX in the BLM's Substantiation Report and supporting record documents. The Substantiation Report explains that, because the restrictions on the proposed Geothermal Resource Confirmation CX limit surface disturbance and access road construction, and the required design elements incorporated into the operations plan and GDP approvals are effective to address environmental effects, the BLM concludes that the category of actions included in this CX does not normally result in significant environmental effects, individually or in the aggregate. The Substantiation Report summarizes the review of 26 geothermal resource confirmation EAs that supported FONISIs, as well as 20 similar oil and gas drilling project EAs, to demonstrate the finding that actions under the revised CX would not normally result in significant effects to the human environment. The Substantiation Report includes evaluation of the BLM NEPA analyses and available scientific research on the effects of routine actions included in the new CX over time and over different geographic areas, and following consideration of comments from the public.

The Department and the BLM consulted with CEQ on the proposed and final CX. CEQ issued a letter stating that it has reviewed the CX and found it to be in conformity with NEPA and the CEQ NEPA regulations. Therefore, the Department adds the final CX to the BLM's NEPA procedures at Department Manual at 516 DM 11.9. When applying this CX, Responsible Officials within the BLM will evaluate proposed actions covered by the CX to determine whether any extraordinary circumstances are present in accordance with the requirements in the Department's NEPA implementing procedures at 43 CFR 46.205 and 46.215. This review would be documented and included in the information posted on the BLM's NEPA register. If the Responsible Official cannot rely on this CX to support a decision to authorize geothermal resource confirmation activities due to extraordinary circumstances, the Responsible Official will prepare an EA or EIS before doing so, consistent with 40 CFR 1501.4(b)(2) and 43 CFR 46.205(c). When applying this CX, the

BLM will document its reliance and publish the documentation on the BLM NEPA register website.

## **VI. Amended Text for the Departmental Manual**

BLM's NEPA procedures in 516 DM 11 is modified as follows:

### **Part 516: National Environmental Policy Act of 1969**

#### **Chapter 11: Managing the NEPA Process—Bureau of Land Management**

##### **11.9 Actions Eligible for a Categorical Exclusion (CX)**

###### **B. Oil, Gas, and Geothermal Energy**

*(7) Approval of an operations plan and associated Geothermal Drilling Permits for a geothermal resource confirmation project, pursuant to 43 CFR part 3200, subpart 3260; which:*

- a. Does not include resource utilization;*
- b. Does not exceed 20 acres of total (contiguous or noncontiguous) surface disturbance;*
- c. Requires reclamation of all surface disturbances when their intended purpose has been fulfilled;*
- d. Requires reclamation of temporary routes when their intended purpose(s) has been fulfilled, unless through a separate review and decision-making process the BLM incorporates and appropriately designates the route as part of its transportation system;*
- e. Does not make a temporary route available for public use unless the temporary route is specifically intended to accommodate public use;*
- f. Requires temporary routes to be constructed and used so as to allow for the reclamation, by artificial or natural means, of vegetative cover on the temporary route and areas where the vegetative cover was disturbed by the construction or use of the route, and requires such treatment to be designed to reestablish*

*vegetative cover as soon as possible, but at most within 10 years after approved reclamation commences; and,*

*g. Includes design elements to protect resources and resource uses consistent with the applicable Resource Management Plan, laws, regulations, and lease terms.*

**Authorities:** NEPA, the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*); E.O. 11514, March 5, 1970, as amended by E.O. 11991, May 24, 1977; and CEQ regulations (40 CFR 1507.3).

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