

This document has been prepared as part of the implementation project of Legal Pathways to Deep Decarbonization (Michael B. Gerrard and John C. Dernbach, eds. Environmental Law Institute (2019)) (LPDD). For background information on the project, see <https://lpdd.org>

This model document proposes language to be included in a draft revision of BLM's CO<sub>2</sub> GS Instruction Memorandum (CO<sub>2</sub> GS IM).<sup>1</sup> The proposed language would expand the scope of the CO<sub>2</sub> GS IM to include both CO<sub>2</sub> GS characterization (by permit) and CO<sub>2</sub> GS development (by lease). The model document also proposes revisions which would incorporate more recent policy direction. The model language is intended to be consistent with the CO<sub>2</sub> GS IM language, unless the model document references a different source. In many cases, the source language has been adapted, and may not be replicated verbatim.

[1] **Subject:** Interim Geologic Carbon Sequestration Development Policy<sup>2</sup>

[2] **Program Area:** Leases and Permits, Geologic Carbon Sequestration.<sup>3</sup>

[3] **Purpose:** This Instruction Memorandum (IM) provides interim guidance on (1) processing land use proposals and permit applications for exploration and site characterization studies for potential subsurface geologic sequestration (GS) of carbon dioxide (CO<sub>2</sub>) on public lands administered by the Bureau of Land Management (BLM), (2) processing land use proposals and lease applications for long-term CO<sub>2</sub> GS development projects on public lands administered by BLM,<sup>4</sup> (3) processing land use proposals, permit applications, and lease applications for the transition from carbon dioxide enhanced oil recovery operations (CO<sub>2</sub>-EOR) to leases for CO<sub>2</sub> GS development projects on public lands administered by BLM.<sup>5</sup>

There is growing scientific consensus that, while the first priority for addressing climate change must be to avoid emissions, deployment of carbon capture, utilization, and sequestration (CCUS) technologies, to capture and utilize or permanently sequester carbon are likely needed to prevent the worst impacts of climate change.<sup>6</sup> The CO<sub>2</sub> GS long-term CO<sub>2</sub> GS development projects on public lands represents a CCUS activity.

This Instruction Memorandum (IM) updates the expired interim policy announced in IM No.2012-035.<sup>7</sup>

**CO<sub>2</sub> GS Exploration and Site Characterization:** This IM describes potential exploration and site characterization activities, identifies permit requirements,<sup>8</sup> and addresses competitive interests, procedural and informational requirements, environmental review, and technical assistance related to processing land use proposals and permit applications for CO<sub>2</sub> GS exploration and site characterization. In addition, this IM describes transition from CO<sub>2</sub>-EOR to CO<sub>2</sub> GS potential exploration and site characterization activities.<sup>9</sup>

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<sup>1</sup> U.S. Department of Interior, Bureau of Land Management, *Interim Guidance on Exploration and Site Characterization for Potential Carbon Dioxide Geologic Sequestration*, Instruction Memorandum No. 2012-035 (Dec 1, 2011, expired Sept 30, 2013) (CO<sub>2</sub> GS IM) <<https://www.blm.gov/policy/im-2012-035>>

<sup>2</sup> Modeled in part on U.S. Department of Interior, Bureau of Land Management, Interim Wind Energy Development Policy, Instruction Memorandum No. 2003-020 (Oct 16, 2002, expired Sept 30, 2004) (Interim Wind IM) <<https://windeis.anl.gov/documents/docs/IM2003-020,InterimWindEnergyDevelopmentPolicy.htm>>

<sup>3</sup> U.S. Department of Interior, Bureau of Land Management, *Leases and Permits* <<https://www.blm.gov/programs/lands-and-leases/leases-and-permits>> ("The regulations establishing procedures for these leases and permits are found in the Code of Federal Regulations, 43 CFR 2920.")

<sup>4</sup> Modeled on Interim Wind IM (cited in note 2). The term "Long-Term CO<sub>2</sub> GS Development Projects" used in CO<sub>2</sub> GS IM.

<sup>5</sup> See memorandum subsection 6.2.1.

<sup>6</sup> Council on Environmental Quality, *Carbon Capture, Utilization, and Sequestration Guidance*, 87 Fed Reg. 8808, 8808 - 8809 (Feb 16, 2022) (CEQ CCUS Guidance).

<sup>7</sup> Modeled on Orphaned Well Identification, Prioritization, and Plugging and Reclamation. Instruction Memorandum No. 2021-039 (July 13, 2021, expires Sept 30, 2024) <<https://www.blm.gov/policy/im-2021-039>>

<sup>8</sup> 40 CFR 2920.1-1(b). ("Permits shall be used to authorize uses of public lands for not to exceed 3 years that involve either little or no land improvement, construction, or investment, or investment which can be amortized within the term of the permit.")

<sup>9</sup> See memorandum subsection 6.2.1.

**Long-Term CO<sub>2</sub> GS Development Projects:**<sup>10</sup> This IM describes lease requirements,<sup>11</sup> including application, authorization, operation, monitoring processes, closure, post-closure care, and addresses competitive interest, procedural and informational requirements, environmental review, and technical assistance related to processing land use proposals and lease applications for CO<sub>2</sub> GS development projects.<sup>12</sup> In addition, this IM describes transition from CO<sub>2</sub>-EOR to CO<sub>2</sub> GS development projects.<sup>13</sup>

Liability and stewardship responsibilities for long-term CO<sub>2</sub> GS development projects are described in this IM for BLM-administered surface estate with or without the mineral estate.<sup>14</sup> Generally, however, there may be a need to clarify ownership, as well as the process for leasing pore space for CO<sub>2</sub> GS on public lands, including geological site characterization and monitoring.<sup>15</sup> To address those concerns regarding clarification, new regulations would likely be required with regards to these issues.<sup>16</sup>

[4] The BLM has been informed of private sector interest in potential commercial-scale CO<sub>2</sub> GS projects on public lands. The Department of Energy (DOE) has estimated that about 5.5 percent of the Nation's sequestration capacity exists on public lands.<sup>17</sup> These lands often contain large contiguous blocks of acreage in the West, offering the advantage of single ownership, that in turn simplify the aggregation of storage rights for CO<sub>2</sub> sequestration.

The policy as set forth in this IM will facilitate reviews associated with the deployment of CO<sub>2</sub> GS projects, and support the efficient, orderly, and responsible deployment, where appropriate.<sup>18</sup> The policy provides the mechanism to authorize CO<sub>2</sub> GS exploration and site characterization studies on public lands and long-term CO<sub>2</sub> GS development project on public lands.

In Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, the President committed federal agencies to lead by example in responding to the climate crisis, including alignment of public land management to support robust climate action.<sup>19</sup> The President also established a National Climate Task Force, and set forth his intention for the United States to be on a path to achieve net-zero emissions, economy-wide, by no later than 2050.<sup>20</sup>

Secretarial Order 3399, *Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decision-Making Process*, established a Departmental Climate Task Force to advise the Secretary as a member of the National Climate Task Force; develop a strategy to reduce climate pollution; improve and increase adaptation and resilience to the impacts of climate change; address current and historic

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<sup>10</sup> This is the term used in the CO<sub>2</sub> GS IM.

<sup>11</sup> 40 CFR 2920.1-1(a). ("Leases shall be used to authorize uses of public lands involving substantial construction, development, or land improvement and the investment of large amounts of capital which are to be amortized over time.")

<sup>12</sup> Modeled on CO<sub>2</sub> GS IM Exploration and Site Characterization provision directly above along with language which followed. ("Therefore, additional policy and guidance will be issued addressing the separate application, environmental review, authorization, and monitoring processes for long-term CO<sub>2</sub> GS development projects after those issues have been adequately addressed.")

<sup>13</sup> See memorandum subsection 6.2.1.

<sup>14</sup> See memorandum subsection 7.1. The limitation for BLM-administered surface estate is retained.

<sup>15</sup> Modified from Council on Environmental Quality, Council on Environmental Quality Report to Congress on Carbon Capture, Utilization, and Sequestration (June 2021) (CEQ CCUS Report) 42

<<https://www.whitehouse.gov/wp-content/uploads/2021/06/CEQ-CCUS-Permitting-Report.pdf>> Substituted "there is a need" to "there may be a need." "CO<sub>2</sub> GS" substituted for "geological sequestration (terrestrial) on Federal lands for CCUS-related activities."

<sup>16</sup> Id.

<sup>17</sup> U.S. Department of Energy, National Energy Technology Laboratory, *Storage of Captured Carbon Dioxide Beneath Federal Lands*, DOE/NETL-2009/1358 (May 8, 2009) 13. <[https://www.netl.doe.gov/sites/default/files/netl-file/Fed-Land\\_403-01-02\\_050809.pdf](https://www.netl.doe.gov/sites/default/files/netl-file/Fed-Land_403-01-02_050809.pdf)>

<sup>18</sup> CEQ CCUS Guidance at 8808 (cited in note 6).

<sup>19</sup> *Tackling the Climate Crisis at Home and Abroad*, Executive Order 14008, 86 Fed. Reg. 7619, 7623, § 204 (Feb 1, 2021). The Executive Order directs climate action towards renewable energy on public lands and in offshore waters, a pause and review of oil and natural gas development on public lands and in offshore waters, and an end to fossil fuel subsidies. Id. at 7624-7625, §§ 207-209.

<sup>20</sup> Id. at 7622 § 201.

environmental injustice; protect public health; and conserve Department-managed lands.<sup>21</sup> The Departmental Climate Task Force mission includes supporting the development and use of the best available science to evaluate the greenhouse gas emissions and associated climate change impacts of Federal land uses as well as opportunities to increase carbon sequestration.<sup>22</sup>

To reach the President’s ambitious domestic climate goal of net-zero emissions economy-wide by 2050, the United States will likely have to capture, transport, and permanently sequester significant quantities of CO<sub>2</sub>.<sup>23</sup>

#### **[5] Policy/Action:**

**Inventory and planning:**<sup>24</sup> It is BLM’s general policy to encourage using public lands in acceptable areas for CO<sub>2</sub> GS development projects in compliance with applicable state and Federal requirements.<sup>25</sup> The Federal Government has an existing regulatory framework that is capable of safeguarding the environment, public health, and safety as CO<sub>2</sub> GS projects move forward.<sup>26</sup>

**Applicability:** This policy applies only to the BLM-administered surface estate with or without the mineral estate.<sup>27</sup>

**Uses and Other Laws:**<sup>28</sup> As an overarching policy, BLM will ensure that oil and gas is not prioritized over other land uses, consistent with BLM’s mandate of multiple-use and sustained yield.<sup>29</sup>

Permits may be required from other agencies such as the Environmental Protection Agency (EPA) and must be addressed with prospective proponents as noted in the Discussion of Proposals and Authorization sections of this policy.

This interim policy is focused on CO<sub>2</sub> GS exploration and site characterization studies and long-term authorization of CO<sub>2</sub> GS development projects. This interim policy neither applies to nor modifies in any way current procedures under the Mineral Leasing Act, as amended; Federal Land Policy and Management Act (FLPMA), as amended; Safe Drinking Water Act; or any other state or Federal authorities that authorize CO<sub>2</sub> injection for the sole<sup>30</sup> purpose of enhanced hydrocarbon recovery, provided that this interim policy describes the transition process for authorization from CO<sub>2</sub>-EOR operations to CO<sub>2</sub> GS operations on public lands.<sup>31</sup>

#### **[6] Land Use Plan Conformance:**

As required by 43 CFR 1610.5-3, the BLM must determine land use plan conformance on an individual project basis.

The BLM anticipates exploration and site characterization activities will generally be in conformance with land use plans. Exploration and site characterization studies for CO<sub>2</sub> GS consist of activities necessary to obtain information to document permit area boundaries

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<sup>21</sup> U.S. Department of Interior, Secretarial Order 3399, *Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decision-Making Process* (Apr 16, 2021) (Secretarial Order 3399) §4 <[https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3399-508\\_0.pdf](https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3399-508_0.pdf)>

<sup>22</sup> Id. at §4(a)(2).

<sup>23</sup> CEQ CCUS Guidance at 8809 (cited in note 6). See also CEQ CCUS Report at 6 (cited in note 15).

<sup>24</sup> Interim Wind IM at 1 (cited in note 2).

<sup>25</sup> Id.

<sup>26</sup> CEQ CCUS Report at 56 (cited in note 15). “CO<sub>2</sub> GS” substituted for CCUS. See also CEQ CCUS Guidance at 8809 (cited in note 6).

<sup>27</sup> This IM limitation is retained. See memorandum subsection 7.1.

<sup>28</sup> Removed policy restrictions placed in the original guidance. See memorandum subsection 7.2.

<sup>29</sup> U.S. Department of the Interior, Report on the Federal Oil and Gas Leasing Program: Prepared in Response to Executive Order 14008 (Nov 2021) (DOI Leasing Report) 12.

<sup>30</sup> Word “sole” inserted due to transition wells discussion.

<sup>31</sup> See memorandum subsection 6.2.1.

as well as surface and subsurface ownership, delineate the area of review, and meet state and Federal criteria.<sup>32</sup> However, commercial long-term CO<sub>2</sub> GS development activities in some cases may not be in conformance with existing land use plans and it may be appropriate to amend the land use plan as a concurrent action with the same analysis for the long-term CO<sub>2</sub> GS development proposal. In both cases, however, applications for CO<sub>2</sub> GS exploration and site characterization and long-term CO<sub>2</sub> GS-development project projects will be processed in a timely manner.<sup>33</sup> The BLM recognizes the imperative for CO<sub>2</sub> GS actions to be considered in a timely manner and in the context of a strong regulatory regime that includes early consultation with Tribal Nations and meaningful engagement with communities, stakeholders, and other sovereigns.<sup>34</sup> BLM will ensure that CO<sub>2</sub> GS technologies are informed by community perspectives and are consistent with the Administration's climate, public health, and economic goals.<sup>35</sup> To determine an area's CO<sub>2</sub> storage potential and the likelihood of proposals, the DOE National Energy Technology Laboratory (NETL) Carbon Storage Atlas, Fifth Edition, and its associated National Carbon Sequestration Database and Geographic Information System (<https://www.netl.doe.gov/coal/carbon-storage/strategic-program-support/natcarb-atlas>) are valuable references. In addition, the U.S. Geological Survey's Geologic Framework for the National Assessment of Carbon Dioxide Storage Resources (<https://pubs.usgs.gov/of/2012/1024/>) provide more accurate estimates on a formation-wide scale.

#### **[7] Discussion of Proposals:**

BLM will encourage prospective land use proponents to schedule a meeting with the BLM as early as possible, before filing a land use proposal pursuant to the land use regulations at 43 CFR 2920.2-1. By this policy, the BLM will require all land use proponents to schedule and participate in a meeting with the BLM prior to submitting a land use proposal for proposed CO<sub>2</sub> GS exploration and site characterization studies or long-term CO<sub>2</sub> GS development projects on public lands. The BLM will not accept any proposals without first holding a meeting to discuss the draft proposal and other items identified below.

BLM will prohibit practices which can leave local community voices, including, in particular, Tribal Nations' voices, out of leasing and permitting processes. This includes the practice of allowing anonymous lease nominations, or restricting or eliminating public notice and comment periods.<sup>36</sup>

Transition from CO<sub>2</sub>-EOR to long-term CO<sub>2</sub> GS development projects on public lands: Holders on public lands of oil and gas leases with a CO<sub>2</sub>-EOR component are encouraged to file a land use proposal to transition the lease to a lease for long-term CO<sub>2</sub> GS development projects on public lands, where appropriate, or, in the case of split estates, holders of oil and gas leases are encouraged to coordinate with the surface owner for the filing of a land use proposal, where appropriate. Transition will be governed by this IM, and must be in compliance with applicable laws such as the oil and gas leasing regulations (43 CFR Part 3100), including 43 CFR Subpart 3108, and the Underground Injection Control (UIC) regulations (40 CFR Part 144) including 40 CFR 144.19, *Transitioning from Class II to Class VI*.

Suggestions by land use proponent: As set forth in 43 CFR 2920.2-1, the meeting will address whether the requested land use, suitability or non-suitability of the requested land

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<sup>32</sup> Some CO<sub>2</sub> GS IM sentences discussing characterization were deleted due to evolving information and guidance pertaining to exploration and site characterization.

<sup>33</sup> Modified from Interim Wind IM at 2 (cited in note 2).

<sup>34</sup> CEQ CCUS Guidance at 8809 (cited in note 6). See also memorandum subsection 7.3.

<sup>35</sup> CEQ CCUS Guidance at 8809 (cited in note 6).

<sup>36</sup> DOI Leasing Report at 14 (cited in note 29).

use based on a preliminary examination of existing land use plans, where available, is or is not in conformance with BLM policies and programs for the lands, local zoning ordinances and any other pertinent information;<sup>37</sup> identify the administrative requirements for the type of land use authorization which may be granted (lease or permit), including, but not limited to: additional information which may be required; qualifications; cost reimbursement requirements; associated clearances, other permits or licenses which may be required; environmental and management considerations; and special requirements such as competitive bidding and identification of on-the-ground investigations which may be required in order to issue a land use authorization;<sup>38</sup> and review the proposal content as outlined in 43 CFR 2920.2-4(a).

As set forth in 43 CFR 2920.1-1(d), a permit is not required for casual use of the public lands as defined in the regulations at 43 CFR 2920.0-5(k). During the discussion of the proposal, the land use proponent should be advised that certain non-commercial exploration and site characterization activities that do not cause surface disturbance may be conducted on the public lands, such as surveying, marking routes, and collecting data in compliance with local land use plans. As set forth in 43 CFR 2920.2-2(a), BLM may, without publication of a notice of realty action, issue a permit for a land use upon a determination that the proposed use is in conformance with BLM plans, policies and programs, local zoning ordinances and any other requirements and will not cause appreciable damage or disturbance to the public lands, their resources or improvements.<sup>39</sup> These activities will allow the land use proponent to collect sufficient initial data to prepare a thorough land use proposal and, ultimately, application and plan of development (POD)<sup>40</sup> (Attachment 1 for permits, and Attachment 3 for leases). Proposals for a land use authorization shall include a description of the proposed land use in sufficient detail to enable the authorized officer to evaluate the feasibility of the proposed land use, the impacts if any, on the environment, the public or other benefits from the proposed land use, the approximate cost of the proposal, any threat to the public health and safety posed by the proposal and whether the proposal is, in the proponent's opinion, in conformance with Bureau of Land Management plans, programs and policies for the public lands covered by the proposal.<sup>41</sup>

Proposal Review: Proposals must be reviewed in accordance with 43 CFR 2920.2-5 to determine if the public lands included in the proposal are appropriate for the proposed land use<sup>42</sup> (CO<sub>2</sub> GS exploration and site characterization studies, long-term CO<sub>2</sub> GS development project) and if the proposed land use conforms to the applicable land use plan and can be approved.<sup>43</sup>

BLM's determination that a land use proposal does not conform to the approved land use plan may be appealed by the proponent in accordance with 43 CFR 4.400. BLM shall advise the proponent of its determination and provide a written explanation of the reasons for

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<sup>37</sup> 43 CFR 2920.2-1(b).

<sup>38</sup> Id.

<sup>39</sup> This sentence is added since exploration and site characterization activities may fall into this category.

<sup>40</sup> A plan of development (POD) is not defined in 43 CFR Part 2920, but is used elsewhere in BLM regulations. For instance, the BLM geothermal regulations define a plan of development. See 43 CFR 3280.2. ("Plan of development means the document a unit operator submits to BLM defining how the unit operator will diligently pursue unit exploration and development to meet both initial and subsequent unit development and public interest obligations.") See also the definition of public interest under the geothermal regulations. ("Public interest means operations within a geothermal unit resulting in: (1) Diligent development; (2) Efficient exploration, production and utilization of the resource; (3) Conservation of natural resources; and (4) Prevention of waste.") Id. This compares to the required contents under FLPMA § 302(b) regulations. ("Proposals for a land use authorization shall include a description of the proposed land use in sufficient detail to enable the authorized officer to evaluate the feasibility of the proposed land use, the impacts if any, on the environment, the public or other benefits from the proposed land use, the approximate cost of the proposal, any threat to the public health and safety posed by the proposal and whether the proposal is, in the proponent's opinion, in conformance with Bureau of Land Management plans, programs and policies for the public lands covered by the proposal.") 43 CFR 2920.2-4(a).

<sup>41</sup> 43 CFR 2920.2-4(a).

<sup>42</sup> 43 CFR 2920.2-5(a).

<sup>43</sup> 43 CFR 2920.2-5(b)(1).

non-conformance with an existing land use plan. The authorized officer may consider a non-conforming proposal for land use as an application to amend or revise the existing land use plan pursuant to 43 CFR Part 1600.

Early Stakeholder Coordination: BLM will strongly encourage land use proponents to conduct or participate in early informal contacts with local community leaders, existing authorized users (both surface and subsurface), adjacent landowners, tribes, and other interested parties prior to publication of required notices (43 CFR 2920.4) and initiation of the environmental review process. In addition, the BLM will establish and implement a pre-review process for CO<sub>2</sub> GS projects with pertinent federal, state, Tribal, and local government entities.<sup>44</sup> Because CO<sub>2</sub> GS is a new type of action on the public lands and there is potential for high public interest, early and ongoing coordination with stakeholders is important in increasing awareness and avoiding potential conflicts, especially in areas where other uses exist. The BLM will engage in early and proactive stakeholder engagement.<sup>45</sup> The BLM will always ensure it is considering the views of local communities, Tribes, businesses, State and local governments, and other stakeholders.<sup>46</sup>

**[8] Notice of Realty Action:** The public notification requirements of 43 CFR 2920.4 will apply to all CO<sub>2</sub> GS land use proposals. These requirements include, at a minimum, publication of a Notice of Realty Action (NORA) in the *Federal Register* and in a newspaper of general circulation in the vicinity of the public lands included in the CO<sub>2</sub> GS land use proposal once a week for 3 consecutive weeks thereafter.

**[9] Application Procedures:** Applications for CO<sub>2</sub> GS exploration and site characterization studies on public lands and applications for long-term CO<sub>2</sub> GS development projects on public lands must be filed under Section 302(b) of FLPMA and 43 CFR 2920 using Form 2920-1 (Land Use Application and Permit)<sup>47</sup> which may be obtained from any BLM field office or at

<https://www.blm.gov/services/electronic-forms>

Applications for CO<sub>2</sub> GS permits and leases will not be accepted until a discussion of the proposal has taken place, a proposal has been submitted to the BLM, and publication of required notices and the NORA are complete (43 CFR 2920.4(d)). Applications must be reviewed to determine conformance to the NORA in accordance with 43 CFR 2920.5-3. Applications not meeting these requirements may be denied.

The BLM will keep confidential any information in the application the applicant has marked as “confidential” or “proprietary” in accordance with the procedures in the BLM Manual 1278 to the extent allowed by law.<sup>48</sup> Most of the information provided in an application is public information, available to anyone filing a request under the Freedom of Information Act (FOIA)(5 U.S.C. § 552). Concerned applicants should discuss their particular situation with a BLM field office FOIA Coordinator prior to submitting an application.

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<sup>44</sup> Federal Permitting Improvement Steering Council, *Title 41, Fixing America’s Surface Transportation Act (FAST-41): Fiscal Year 2021 Recommended Best Practices for Project Review and Permitting for Infrastructure Projects* (April 2021) (Best Practices Report) at 5 <<https://www.permits.performance.gov/documentation/fy-2021-recommended-best-practices-report>> See also memorandum subsection 7.3.

<sup>45</sup> Best Practices Report at 5 (cited in note 44).

<sup>46</sup> DOI Leasing Report at 12 (cited in note 29).

<sup>47</sup> Although BLM Form 2920-1 refers to permits, the form is also used for leases. Office of Management and Budget, Land Use Application and Permit (43 CFR part 2920), OMB Control Number 1004-0009, ICR 201905-1004-001 (Mar 18, 2020) Supporting Statement A <<https://omb.report/icr/201905-1004-001>> <<https://omb.report/icr/201905-1004-001/doc/99550301>>

<sup>48</sup> The identified manual section was superseded in 2012 with revised 1278. See U.S. Department of Interior, Bureau of Land Management, Manual Transmittal Sheet, 1278 - External Access to BLM Information (Public), Release 1-1744 (Sept 17, 2012) A-4 <[https://www.blm.gov/sites/blm.gov/files/uploads/mediacenter\\_blmmanual1278.pdf](https://www.blm.gov/sites/blm.gov/files/uploads/mediacenter_blmmanual1278.pdf)> (“Proprietary/Confidential Information: is information submitted (either voluntarily or as a requirement) to the Government with an expectation of confidentiality, the release of which would result in substantial competitive or financial harm to the submitter.”)

In instances where field offices, as of the effective date of this IM, have pending applications filed, the BLM will promptly request such applicants to withdraw their applications and reapply under the provisions identified above. Withdrawn applications replaced with applications for land use authorizations will be allowed to retain the original “application filed date” for purposes of determining application processing order.

**Bureau of Land Management Initiated Land Use Proposals:** In accordance with 43 CFR 2920.3, BLM may initiate land use proposals as a result of the land use planning process. BLM may identify a CO<sub>2</sub> GS use for the public land and notify the public that proposals for utilizing the land through a through a lease or permit will be considered.<sup>49</sup>

Application Content: To be considered complete, an application must contain information as required by 43 CFR 2920.5-2 and be of sufficient detail to initiate the environmental analysis process, and any necessary agency or tribal consultations as determined by the BLM authorized officer. The information required is the minimum needed by the BLM authorized officer to make a decision on the granting of a land use authorization.<sup>50</sup> In addition, processing fees as described in the cost recovery section below must be received. Applicants must use a POD to describe their application information. Attachment 1 provides an outline of required POD information for a carbon dioxide geologic sequestration exploration and site characterization permit. Attachment 3 provides an outline of required POD information for a long-term CO<sub>2</sub> GS development lease.

Applications must address all facilities for which authorization is sought, access needs and special types of easements that may be needed, as well as the subsurface pore space, including related facilities proposed to be located on public land but outside the land use area. Since CO<sub>2</sub> GS areas will be based on subsurface geologic formations for commercial scale CO<sub>2</sub> GS storage, field offices should anticipate that applications may involve thousands of acres. After review of the project description, the BLM authorized officer may require the applicant(s) to fund or to perform additional studies or submit additional environmental data, or both, in accordance with 43 CFR 2920.5-2(b)(1).<sup>51</sup>

Competitive Interest: BLM may offer land use authorizations either on a competitive or non-competitive basis pursuant to 43 CFR 2920.5-4. A competitive basis may be appropriate “if, in the judgment of the authorized officer, a competitive interest exists or if no equities, such as prior use of the lands, warrant non- competitive land use authorization.” 43 CFR 2920.5-4(a).

The BLM authorized officer shall consider bids on the basis of the public benefit provided, the financial and technical capability of the bidder to undertake the project, and the bid offered. 43 CFR 2920.5-4(a). The BLM will only initiate a competitive process if two or more applications are received for partially or completely overlapping land use areas, or if a land use planning decision has specifically identified an area for competitive leasing.<sup>52</sup> Because CO<sub>2</sub> capture and storage remains an emerging commercial technology, a competitive interest may only be demonstrated by overlapping land use applications that

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<sup>49</sup> 43 CFR 2920.3.

<sup>50</sup> U.S. Department of Interior, Bureau of Land Management, Leases, Permits and Easements; Land Use Authorizations Under the Federal Land Policy and Management Act, 46 Fed Reg. 5772, 5774 (Jan 19, 1981).

<sup>51</sup> 43 CFR 2920.5-2(b)(1).

<sup>52</sup> 43 CFR 2920.5-4(a) makes the competitive leasing decision subject to BLM discretion (e.g., uses the term “may,” rather than “shall only” as in the IM). This language includes wording used in the Interim Wind IM (cited in note 2) which seems to fit within the scope of 43 CFR 2920.5-4(a). The Interim Wind IM wording eventually evolved into 43 CFR Subpart 2809 - Competitive Process for Leasing Public Lands for Solar and Wind Energy Development Inside Designated Leasing Areas, at the end of the NEPA process. See Interim Wind IM at 8 (cited in note 2) (“BLM will only initiate a competitive process if a land use planning decision has specifically identified an area for competitive leasing, or if two applicants have current Power Purchase Agreements or Interconnect Agreements with utility transmission providers for a specific project area.”) See also U.S. Department of the Interior, Bureau of Land Management, Competitive Processes, Terms, and Conditions for Leasing Public Lands for Solar and Wind Energy Development and Technical Changes and Corrections, 81 Fed Reg. 92122, 92125 (Dec 19, 2016) and e.g., 43 CFR 2809.10(a).

meet procedural and informational requirements<sup>53</sup> and technical and financial capability requirements as determined by the BLM authorized officer to construct, operate, maintain and terminate the authorized land use.<sup>54</sup>

In addition, a substantial financial investment and commitment of resources are required of an applicant to adequately conduct CO<sub>2</sub> GS exploration and site characterization studies. Therefore, authorized officers must give careful consideration of the economic disadvantages that may be imposed upon applicants as identified in the regulations at 43 CFR 2920.5-4(b).<sup>55</sup>

Except when competitive procedures are deemed appropriate, as identified above, all CO<sub>2</sub> GS land use applications will be processed on a non-competitive, first-come, first-served basis beginning with the first complete application received with applicable cost recovery.<sup>56</sup> The focus should be on areas that have moderate or high potential for CO<sub>2</sub> GS, with high potential areas prioritized.<sup>57</sup> The processing of applications for CO<sub>2</sub> GS land use authorizations on a non-competitive basis is consistent with Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, and Secretarial Order 3399.<sup>58</sup>

To minimize ground disturbance and environmental impacts, BLM should encourage applicants who may have an interest in a common area to establish a partnership or cooperative agreement that establishes compatible use of the site among the applicants. If the applicants agree to establish a partnership or cooperative agreement, a single amended application may be filed along with a description of the terms of the partnership or cooperative agreement. If the applicants choose not to form a partnership or cooperative agreement, the BLM will process the first complete application which includes cost recovery or initiate a competitive process to determine the successful applicant following the procedures in the regulations (43 CFR 2920.5-4).

Cost Recovery: Applications are subject to cost recovery fees for application processing and cost of monitoring per 43 CFR 2920.6. An application will not be considered complete until the appropriate processing fees have been paid.

Acreage: The lands involved in the area must be described based upon the public land rectangular surveys and examples in *Specifications for Descriptions of Tracts of Land*, (2017) (<https://www.blm.gov/sites/blm.gov/files/SpecificationsForDescriptionsOfLand.pdf>). The area must be configured to encompass a reasonable amount of acreage to support the CO<sub>2</sub> GS activities, taking into consideration site geology, land ownership, and existing or proposed uses on the public lands and adjacent non-public lands. The legal land descriptions must clearly identify the acreage needed for facilities and infrastructure, such as roads, wells, and monitoring equipment/storage areas. The legal land description for surface uses must also identify a reasonably compact tract of land, limited to as much of the surface as is necessary to adequately advance the CO<sub>2</sub> GS activities, in order to assist with land use planning efforts.<sup>59</sup>

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<sup>53</sup> 43 CFR 2920.0-1 (“The procedural and informational requirements set by these regulations vary in relation to the nature of the anticipated use.”)

<sup>54</sup> 43 CFR 2920.5-2(b)(3).

<sup>55</sup> Here, reference to exploration and site characterization studies remains accurate.

<sup>56</sup> This is similar to Interim Wind IM at 8 (cited in note 2).

<sup>57</sup> DOI Leasing Report at 13 (cited in note 29).

<sup>58</sup> The Executive Order and the Secretarial Order are cited above in the [4] Background section.

<sup>59</sup> Modified from 43 CFR 3273.14, which applies to geothermal leases. Like CO<sub>2</sub> GS, geothermal leases have a limited surface impact. This important distinction between the amount of surface area needed as opposed to subsurface area could be inappropriately overlooked if the acreage is viewed in combination. See, e.g., Wendy B. Jacobs and Michael Craig, *Carbon Capture and Sequestration* in Michael B. Gerrard and John C. Dernbach, eds., *Legal Pathways to Deep Decarbonization in the United States* (Environmental Law Institute 2019) 713, 747. (“Notably, as described in Section II.B, sequestration activities occupy a small (about one acre) surface area; therefore, they are unlikely to conflict with noninvasive surface land uses, such as grazing.”)

For subsurface uses, the entire geologic formation or pore space to be studied and any of the surrounding region determined necessary for safety purposes must also be identified and included in the legal land description. For example, if the total surface disturbance area for a proposed land use is 20 acres, but the subsurface geologic formation identified for potential future CO<sub>2</sub> storage totals 6,000 acres, the legal land described must equal 6,000 acres.<sup>60</sup>

There are no statutory or regulatory limits on the acreage of the land use application submitted pursuant to this policy. However, the BLM may request additional site-screening information from the applicant to determine if the identified area is a reasonable size, considering content, safety, and known geologic data contained in the application. As stated above, the surface acreage will conform to the total acreage contained in the larger geologic formation, which is a function of both the planned injection volumes and the target geologic formation exhibiting potential for full geologic confinement that would safely constrain the vertical and horizontal migration of injected CO<sub>2</sub> to a well-defined area. Determinations, including acreage determinations, must be based on available science in accordance with Secretarial Order 3397 (<https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3397-revoking-3369-to-promote-scientific-integrity.pdf>).<sup>61</sup>

Nontechnical factors including location of CO<sub>2</sub> emission sources in relation to planned storage locations, property and pore space ownership, land use, and available infrastructure may also influence the acreage or location of surface facilities. Safety must be the primary consideration when determining if the acreage of a proposed area is appropriate. Thus, BLM field offices will not inappropriately limit the surface size of areas that may be needed to evaluate the subsurface area for potential GS development. The BLM will document a clear rationale why a reduction in acreage is necessary prior to making a decision that will affect the size of an area. Assistance in verifying appropriateness of area acreage may be requested as described in the technical assistance section below. To adequately assess the geologic suitability potential of an area, the applicant may not necessarily need to place facilities, drill injection or exploration wells on the involved public lands. In some cases, an applicant may propose to conduct CO<sub>2</sub> GS exploration and site characterization studies on adjacent non-public land with limited studies or disturbance to public land. In cases where a CO<sub>2</sub> GS land use is authorized for an area and no facilities or wells are proposed on public lands, the diligent site activities section of this IM will apply, including submission of data to the BLM from studies on non-Federal land.

If all activities can be accomplished on adjacent non-public land, a land use authorization is not required. In that instance the authorized officer must coordinate with the appropriate permitting or licensing authority(ies) to ensure the BLM administered resources are adequately protected.

Technical and Financial Capability: As provided by the land use regulations (43 CFR 2920.5-2(b)(3)), BLM will require applicants to provide information on the availability of sufficient financial capital to execute all aspects of the proposed land use from application processing, environmental review, operation, and maintenance to termination of operations and reclamation of the public lands. The BLM will ensure that bidders, and any subsequent proposed leaseholders or operators, are publicly identified and financially and technically qualified to develop leases.<sup>62</sup> If applicants are in bankruptcy or having other financial

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<sup>60</sup> Because the Model IM language applies to BLM-administered surface estate with or without the mineral estate, it is necessary to identify surface estate ownership. See memorandum subsection 7.1.

<sup>61</sup> Department of Interior, Secretarial Order 3397, *Rescission of Secretary's Order 3369 and 3369 Amendment A1, in order to promote scientific integrity* (Mar 3, 2021) <<https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3397-revoking-3369-in-order-to-promote-scientific-integrity-signed-508.pdf>>

<sup>62</sup> DOI Leasing Report at 13 (cited in note 29).

difficulties and are not able to meet the procedural and informational provisions<sup>63</sup> of this policy or the regulations at 43 CFR 2920.2-4, the application will be denied. For exploration and site characterization activities, the attached POD Outline (Attachment 1) provides the minimum information required in the POD. For long-term CO<sub>2</sub> GS development, the attached POD Outline (Attachment 3) provides the minimum information required in the POD. Included in both PODs is submittal of information on the financial and technical capability of the applicant.

**[10] Environmental Review:** All land use applications for CO<sub>2</sub> GS will be subject to the requirements of the National Environmental Policy Act (NEPA) which requires an analysis of the direct, indirect, and cumulative effects of the proposal and any related facilities (BLM NEPA Handbook, H-1790-1).

As always, agencies conducting NEPA analyses regarding proposed actions must analyze all reasonably foreseeable direct, indirect, and cumulative effects, including cumulative pollution from numerous sources. BLM will work with communities and Tribes during the scoping phase to identify alternatives to the proposed action, including alternatives that reduce environmental impacts, especially on overburdened and underserved communities.<sup>64</sup>

Environmental analyses for CO<sub>2</sub> GS exploration and site characterization permits and for long-term CO<sub>2</sub> GS development leases, including reasonably foreseeable development of other proposed facilities in the area, should focus on those activities identified in the land use application and BLM must analyze only those future CO<sub>2</sub> GS development scenarios that are reasonably foreseeable. An evaluation of a permit application is subject to all applicable laws and may trigger obligations under a variety of statutes including the Endangered Species Act, Migratory Bird Treaty Act, the National Historic Preservation Act, the National Environmental Policy Act (NEPA); the Clean Water Act; the Clean Air Act; the Safe Drinking Water Act; the Marine Protection, Research, and Sanctuaries Act; the Marine Mammal Protection Act;; the Bald and Golden Eagle Protection Act; the Natural Gas Pipeline Safety Act; the Rivers and Harbors Act of 1899; the Federal Land Policy and Management Act; and the Hazardous Liquid Pipeline Safety Act,<sup>65</sup> as well as fulfill all tribal consultation requirements.<sup>66</sup> Other safety, environmental, and ecological requirements may also apply.<sup>67</sup>

For an exploration and site characterization permit, the NEPA analysis need not evaluate CO<sub>2</sub> GS development projects as connected actions under the Council on Environmental Quality regulations at 40 CFR 1508.25(a)(1) and the BLM NEPA Handbook, H-1790-1, Section 6.5.2.1, because an exploration and site characterization permit does not authorize a CO<sub>2</sub> GS development project. A CO<sub>2</sub> GS exploration and site characterization permit conveys no possessory interest (43 CFR 2920.1-1(b)). A permittee has no established right to future CO<sub>2</sub> GS development. The BLM must evaluate all future proposed CO<sub>2</sub> GS development as a separate proposal/application and POD. However, the NEPA analysis must analyze as a connected action any related facilities proposed on public land outside of the permit area (see acreage section above), such as powerlines.

On July 16, 2020, the Council on Environmental Quality (CEQ) published in the Federal Register its final rule to revise the NEPA regulations (2020 Rule), which went into effect on September 14, 2020. 85 Fed. Reg. 43304 (July 16, 2020).<sup>68</sup> Consistent with Executive Order

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<sup>63</sup> 43 CFR 2920.0-1.

<sup>64</sup> CEQ CCUS Guidance at 8810 (cited in note 6).

<sup>65</sup> CEQ CCUS Guidance at 8809 (cited in note 6).

<sup>66</sup> U.S. Department of Interior, Bureau of Land Management, *Oil and Gas Leasing - Land Use Planning and Lease Parcel Reviews*, Instruction Memorandum 2021-027 (Apr 30, 2021, expires September 30, 2024) § I.C <<https://www.blm.gov/policy/im-2021-027>>

<sup>67</sup> CEQ CCUS Guidance at 8809 (cited in note 6).

<sup>68</sup> Secretarial Order 3399, §3 (cited in note 21).

13990, “Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis”, CEQ has begun a review of the 2020 Rule to, among other things, determine if the rule may adversely affect environmental justice communities, climate change or environmental quality.<sup>69</sup>

Consistent with Secretarial Order 3399, BLM will not apply the 2020 Rule in a manner that would change the application or level of NEPA that would have been applied to a proposed action before the 2020 Rule went into effect on September 14, 2020. BLM will continue to follow the Department’s NEPA regulations at 43 CFR Part 46, Department Manual procedures (516 DM Ch. 1-15), and guidance and instruction from the Office of Environmental Policy and Compliance. If BLM believes that Department NEPA regulations irreconcilably conflict with the 2020 Rule, they will elevate issues to the relevant Assistant Secretary and to CEQ.<sup>70</sup>

Projects will engage communities and Tribes in co-development of projects and approaches; protect communities from pollution; and incorporate environmental justice and equity considerations, especially in communities that are already exposed to multiple pollution sources.<sup>71</sup> Transparency shall be accomplished through publicly available analyses, such as uncertainty, life-cycle, geologic, and public health analyses, where appropriate.<sup>72</sup>

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<sup>69</sup> Id.

<sup>70</sup> Id. at §5(a).

<sup>71</sup> CEQ CCUS Guidance at 8811 (cited in note 6).

<sup>72</sup> Id and Mijndert van der Spek, et al, *Uncertainty analysis in the techno-economic assessment of CO2 capture and storage technologies. Critical review and guidelines for use*, 100 Intl J of Greenhouse Gas Control 103113 at 8 (July 2020) <<https://www.sciencedirect.com/science/article/pii/S1750583620303273>>

BLM will undertake measures to facilitate a transparent process and meaningful public engagement.<sup>73</sup> BLM will develop robust Tribal consultation and stakeholder engagement plans.<sup>74</sup> BLM will conduct regular engagement, such as detailing how stakeholder comments have been assessed and resolved.<sup>75</sup> In addition, BLM will prioritize the development and application of environmental justice best practices for its CO<sub>2</sub> GS efforts.<sup>76</sup> Actions that will be taken include:

- Evaluating the impacts of proposed CO<sub>2</sub> GS actions on potential host communities early in the planning process;
- Providing information about the impacts, costs and benefits of CO<sub>2</sub> GS in advance of Tribal consultation and stakeholder engagement;
- Consulting Tribal Nations on potential CO<sub>2</sub> GS projects in a manner that strengthens Nation-to-Nation relationships;
- Avoiding the imposition of additional burdens on overburdened and underserved communities, including by evaluating direct, indirect, and cumulative effects and identifying and implementing appropriate mitigation and avoidance measures; and
- Ensuring transparent decisions and accountability to Tribes and communities with respect to any applicable mitigation measures designed to reduce environmental impacts.<sup>77</sup>

BLM will proactively begin consultation with potentially impacted Tribes, both those currently in the proposed area and those with a historic presence, as well as engage potentially impacted environmental justice communities early in the project planning process. “Early in the project planning process” includes when BLM has enough information on a proposed action to determine that an environmental assessment or an environmental impact statement will be prepared.<sup>78</sup>

CCUS deployment such as CO<sub>2</sub> GS activities can and should reduce emissions of other kinds of pollution in addition to carbon pollution, protect communities from increases in cumulative pollution, and maintain and create good, union-friendly jobs across the country.<sup>79</sup> BLM acknowledges the need to further assess and quantify potential impacts on local criteria air pollutants and other emissions resulting from any carbon capture retrofits at industrial facilities in response to concerns regarding potential cumulative emissions from single and/ or multiple sources.<sup>80</sup> In addition to assessing criteria pollutants associated with CO<sub>2</sub> GS activities, agencies should also assess CO<sub>2</sub> emissions from project infrastructure.<sup>81</sup>

When considering the impact of greenhouse gas (GHG) emissions from a proposed action, BLM should use appropriate tools, methodologies, and resources available to quantify GHG emissions and compare GHG quantities across alternatives. When quantifying GHG emissions is not possible because tools, methodologies, or data inputs are not reasonably available, BLM will provide a qualitative analysis and the rationale for determining that a quantitative analysis is not warranted.<sup>82</sup>

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<sup>73</sup> CEQ CCUS Guidance at 8811 (cited in note 6). See memorandum subsection 7.3.

<sup>74</sup> CEQ CCUS Guidance at 8811 (cited in note 6).

<sup>75</sup> Id.

<sup>76</sup> Id.

<sup>77</sup> CEQ CCUS Guidance at 8811 (cited in note 6). See memorandum subsection 7.3.

<sup>78</sup> Secretarial Order 3399, at §5(c) (cited in note 21).

<sup>79</sup> CEQ CCUS Guidance at 8809 (cited in note 6).

<sup>80</sup> CEQ CCUS Report at 40 (cited in note 15).

<sup>81</sup> CEQ CCUS Guidance at 8811 (cited in note 6).

<sup>82</sup> Secretarial Order 3399, at §5(b) (cited in note 21).

In accordance Executive Order 13990, CEQ encourages agencies to use the 2016 “Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews” (2016 GHG Guidance) when analyzing climate effects in their NEPA reviews. CEQ has rescinded the 2019 Draft GHG Guidance.<sup>83</sup> The BLM will consider all available tools and resources in assessing GHG emissions and climate change effects of their proposed actions, including utilizing the 2016 GHG Guidance in the interim until the guidance is reviewed, revised, and updated consistent with Executive Order 13990.<sup>84</sup> Additionally, BLM will utilize the CEQ interim guidance document, “Carbon Capture, Utilization, and Sequestration Guidance,” (2022 CCUS Guidance) to assist BLM with the regulation and permitting of Carbon Capture, Utilization, and Sequestration (CCUS) activities in the United States, which includes CO<sub>2</sub> GS.<sup>85</sup> The 2022 CCUS Guidance is intended to address opportunities for clarifications and improvements to ensure that CCUS is responsibly scaled in a timely manner, while maintaining the integrity of public health, the environment, and the economy.<sup>86</sup>

**[11] Authorizations:** Land use authorizations shall be issued only at fair market value and only for those uses that conform with BLM plans, policy, objectives and resource management programs.<sup>87</sup> Conformance with land use authorizations will be determined through the planning process and procedures provided in 40 CFR part 1600.<sup>88</sup>

For CO<sub>2</sub> GS exploration and site characterization studies, a FLPMA permit (Form 2920-1, page 2) consistent with the provisions in 43 CFR 2920.1-1(b) will be used to authorize proposed CO<sub>2</sub> GS exploration and site characterization studies on public lands. Permits have a limited term of 3 years and may be renewed one time, for a maximum term of 6 years.<sup>89</sup>

Due to the nature of site characterization studies which likely involve test injections of a variety of substances as well as the need for careful scientific evaluation of subsurface geologic formations which are not impaired or altered by competing uses, it is not in the public interest to allow competing permittees to test within the same permit area. The BLM does retain the right to authorize other compatible uses of the public lands within the permit area in accordance with 43 CFR 2920.7(a); however, no additional competing CO<sub>2</sub> GS exploration and site characterization permits will be authorized within the permit area during the term of the permit.

For long-term CO<sub>2</sub> GS development, leases will be issued for a term, determined by the BLM authorized officer, that is consistent with the time required to amortize the capital investment. Leases are used to authorize uses of public lands involving substantial construction, development, or land improvement and the investment of large amounts of capital which are to be amortized over time. A lease conveys a possessory interest and is revocable only in accordance with its terms and the provisions of 43 CFR 2920.9-3.<sup>90</sup>

Regulations at 43 CFR 2920.7(b) require compliance with air and water quality standards established pursuant to applicable Federal or state law and state standards for public health and safety, environmental protection, siting, construction, operation, and maintenance if those standards are more stringent than applicable Federal standards. This compliance includes but is not limited to, compliance with injection well permits from EPA

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<sup>83</sup> CEQ CCUS Report at 40, note 109 (cited in note 15).

<sup>84</sup> Council on Environmental Quality, National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions, 86 Fed Reg. 10252, 10252 (Feb 19, 2021).

<sup>85</sup> See Model IM language note 6.

<sup>86</sup> CEQ CCUS Guidance at 8809 (cited in note 6).

<sup>87</sup> 43 CFR 2920.0-6(a).

<sup>88</sup> Id.

<sup>89</sup> 43 CFR 2920.1-1(b) does not contain a 6-year limitation.

<sup>90</sup> 43 CFR 2920.1-1(a).

(or from a state where there is primacy for the well class) under the UIC program, 40 CFR Part 144,<sup>91</sup> and compliance with the reporting requirements of EPA's Greenhouse Gas Reporting Program (GHGRP), 40 CFR 98, Subpart RR or UU.<sup>92</sup> A geological formation shall only be approved as a storage site, if under the proposed conditions of use there is no significant risk of leakage, and if no significant environmental or health risks exist.<sup>93</sup>

Infrastructure for long-term CO<sub>2</sub> GS projects is eligible for coverage under the Fixing America's Surface Transportation Act (FAST-41) (<https://www.permits.performance.gov/fpisc-content/federal-permitting-improvement-steering-council>).<sup>94</sup> Utilization of FAST-41 is expected to lead to improvement in the timeliness, predictability and transparency of the Federal environmental review and authorization process for the infrastructure.<sup>95</sup>

Exploration and site characterization permits will result in some sites being found unsuitable for future long-term CO<sub>2</sub> GS projects. Such results will be published to make further permitting processes more expedited.

Any related linear utilities proposed on public land outside the land use area, such as pipelines or powerlines, will require separate applications and if approved will be authorized by separate right-of-way grants using existing procedures in 43 CFR 2800 and 43 CFR 2880. Legal access will be considered ancillary to the primary lease or permit and authorized as part of the land use authorization. Current liquid CO<sub>2</sub> pipelines are primarily used for CO<sub>2</sub>-EOR.<sup>96</sup> Corridors for existing pipeline infrastructure may have potential for repurposing, but in most cases, the pipelines themselves, which currently carry other materials, would need to be replaced due to CO<sub>2</sub> pipeline specification requirements. Analysis has made clear that the push to net-zero has the potential to employ "orphaned" pipeline networks formerly used for oil and gas that pose significant environmental risks without proper remediation. Efforts to repurpose and utilize these pipelines safely is a focus of current research.<sup>97</sup> All activities associated with CO<sub>2</sub> GS on public land, no matter the type of authorization(s), will be subject to land use plan conformance determinations and appropriate NEPA compliance.

**[12] Administration of Authorized Uses:** Each permit and lease must contain appropriate best management practices (BMPs) as conditions of approval, and any additional site-specific stipulations identified through NEPA analysis to avoid and/or minimize potential environmental impacts. The BMPs include, but are not limited to, the BMPs and guidance documents identified in Attachment 6. The BMPs also include, but are not limited to, sediment and erosion control, road construction and maintenance techniques, drainage control, vegetation removal, invasive species control, and rehabilitation including recontouring and reseeding.

In addition, the publication *Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition* – Revised 2007 is a useful reference guide for conducting environmentally responsible field operations on public lands similar to the field operations that would be necessary for CO<sub>2</sub> GS permits and leases.

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<sup>91</sup> U.S. Environmental Protection Agency, Underground Injection Control (UIC), *Class VI - Wells used for Geologic Sequestration of CO<sub>2</sub>* <<https://www.epa.gov/uic/class-vi-wells-used-geologic-sequestration-co2>>

<sup>92</sup> CEQ CCUS Report at 54 (cited in note 15).

<sup>93</sup> Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 [2009] L 140/114 (EU CO<sub>2</sub> GS Directive) art 4(4) <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0031&from=EN>> See memorandum subsection 7.5.

<sup>94</sup> Id. at 31.

<sup>95</sup> Id.

<sup>96</sup> Id. at 27.

<sup>97</sup> CEQ CCUS Report 27 (reference omitted) (cited in note 15).

Terms and Conditions - Procedural and Informational Requirements: In determining the informational and procedural requirements, the authorized officer will consider the duration of the anticipated use, its impact on the public lands and resources and the investment required by the anticipated use.<sup>98</sup> The procedural and informational requirements identified in Attachment 2 (permits) must be included in all CO<sub>2</sub> GS exploration and site characterization permits. The procedural and informational requirements identified in Attachment 4 (leases) must be included in all long-term CO<sub>2</sub> GS development projects. Failure of the land use holder to comply with the procedural and informational provisions or terms and conditions is justification for the BLM authorized officer to terminate the authorization as specified in the regulations at 43 CFR 2920.9-3.

Performance and Reclamation Bond: A performance and reclamation bond will be required for all CO<sub>2</sub> GS permits and leases to ensure compliance with the terms and conditions as provided by the regulations at 43 CFR 2920.7(g). Attachment 5 provides a description of acceptable bond instruments, requirements, review, and amounts. The BLM will set the appropriate levels of bond amounts taking into consideration changes in technology, the complexity and depth of modern wells, inflation, and the risk of abandonment.<sup>99</sup> A reclamation plan will be required as a component of the POD submitted with the land use application along with a Reclamation Cost Estimate (RCE). The approved reclamation plan and RCE will be used as the basis for determining the standard for reclamation, revegetation, restoration, and soil stabilization of the area. The requirements for a reclamation plan and RCE are further described in Attachment 3. Assistance in reviewing RCEs for CO<sub>2</sub> GS permits and leases and determining performance and reclamation bond amounts may be requested as described in the technical assistance section below.

Rental: Holders of a land use authorization must pay rent annually, in advance, on a calendar-year basis consistent with the regulations at 43 CFR 2920.8. Rental fees for leases may be adjusted every 5 years or earlier, as determined by the authorized officer, to reflect current fair market value.<sup>100</sup> The permittee has the option of paying the rental for the entire term of the permit in advance. The rental fee for a permit or lease will be based on the total public land acreage included in the land use authorization as determined by the Department of the Interior, Appraisal and Valuation Services Office, or through competitive bidding, at not less than the appraised fair market value, as approved by the BLM authorized officer. For permits, there is no additional charge for surface drill sites, placement of instrumentation facilities or injection of substances within the permit area.

Renewal: Permits and leases may be renewed following the procedures in 43 CFR 2920.7(i). Permits may be renewed for a term not to exceed 3 years, only if a request for renewal is filed 120 days prior to the end of the initial permit term and the permittee provides a reasonable explanation as to why additional time is needed. The BLM authorized officer will consider the geologic, financial, and environmental data provided by the holders of a land use authorization and the performance of the holder during the initial period when determining if the renewal should be authorized and for what term. Under no circumstances will an exploration and site characterization permit renewal extend beyond a total of 6 years from the date of the initial permit. If unforeseen circumstances arise and the permittee requests a renewal beyond 6 years, the permittee must reapply for a new permit to continue data collection. If the permit expires prior to a new application being received, the BLM authorized officer may determine if a competitive interest exists and

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<sup>98</sup> 43 CFR 2920.0-6(b).

<sup>99</sup> DOI Leasing Report at 10 (cited in note 29).

<sup>100</sup> 43 CFR 2920.8(a)(2).

require competitive bidding (see competitive interest section). If the prior permittee is not the successful bidder, all right, title and interest in the facilities must be transferred to the successful bidder or removed in accordance with the POD and/or terms and conditions of the permit. The bond will be used for removal and reclamation, to the extent necessary, in accordance with 43 CFR 2920.7(g). The maximum 6-year time period also applies in instances where a permit is transferred to another party.

Transfers: Land use authorizations may be transferred in whole or in part to other parties consistent with the provisions of the regulations, 43 CFR 2920.7(j). All transfers must be approved by the BLM authorized officer and the qualifications of all transferees must comply with the procedural and informational requirements of this IM and the requirements of the regulations at 43 CFR 2920.

**[13] Diligent Site Activities:** There is potential for land speculators to apply for or obtain land use authorizations and thereby control valuable pore space that could preclude other applicants with serious interests from conducting CO<sub>2</sub> GS activities on public lands. This situation can be addressed by strictly enforcing the applicant qualification requirements of the 43 CFR 2920.5-2 regulations and requiring certain diligent site procedural and informational provisions in the land use authorization. In addition, to prevent filing of applications on public lands that do not exhibit potential for complete geologic confinement, applicants will be required to provide initial site- screening information that supports potential geologic suitability as part of the POD documentation. Assistance in determining an applicant's ability to meet diligent site activities requirements may be requested as described in the technical assistance section below.

Time Restrictions: Permittees and lessees are required to initiate exploration and site characterization activities within 1 year of authorization and complete site characterization within 3 years. The land use holder must provide the BLM authorized officer with good cause for any delays, an action plan identifying how the holder will resolve delays, and completion of delayed activities within a revised timeframe approved by the BLM authorized officer. The goal for characterization is to provide sufficient time to complete the necessary studies required to develop a reasonable assurance that a geologic formation exhibits full geologic confinement, estimation of storage capacity, and is conducive to long-term CO<sub>2</sub> sequestration. Permits and leases may be terminated for failure of the land use holder to use the land use authorization for the purpose for which it was authorized.<sup>101</sup> Failure to construct or nonuse for any continuous 2-year period shall constitute a presumption of abandonment and termination.<sup>102</sup>

Data Submission: The land use holder must provide geologic and other data obtained on land use areas authorized on public land to the BLM authorized officer at least annually or earlier at the direction of the BLM authorized officer.

The geologic data and other data obtained by the land use holder may be proprietary information protected under FOIA (5 U.S.C. § 552) to the extent allowed by Federal law. Information clearly marked by the land use holder as “confidential” or “proprietary” will be kept confidential in accordance with the procedures in the BLM Manual 1278 to the extent allowed by law. Other environmental information provided to the BLM such as biological studies, surface hydrology, and cultural resource studies and other related data collected by the land use holder will become public information to the extent allowed by Federal law. Additionally, the BLM will provide a link to data provided by EPA, such as under the UIC program and GHGRP, for the land use area.<sup>103</sup>

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<sup>101</sup> 43 CFR 2920.9-3(a)(3).

<sup>102</sup> Id. See also 46 Fed Reg. at 5776 for rebuttable presumption (cited in note 50).

<sup>103</sup> See memorandum subsections 6.2.1 and 6.2.2.

**[14] Supervision of the land use authorization:** Unless otherwise stated in the land use authorization, construction may proceed immediately upon receipt and acceptance of the land use authorization by the selected applicant.<sup>104</sup> The BLM authorized officer shall inspect and monitor construction as necessary, to assure compliance with approved plans and protection of the resources, the environment and the public health, safety and welfare.<sup>105</sup> The holder of a land use authorization may be required to provide proof of construction to the approved plan and required standards. Thereafter, operation of the authorized facilities may begin.<sup>106</sup> The BLM authorized officer shall inspect and monitor the operation and maintenance of the land use authorization area, its facilities and improvements to assure compliance with the plan of management and protection of the resources, the environment and the public health, safety and welfare, and the holder of the land use authorization shall take corrective action as required by the authorized officer.<sup>107</sup> Monitoring may become incorporated into a future nationwide CO<sub>2</sub> GS monitoring program.<sup>108</sup> Land use authorizations may be terminated or suspended in accordance with 43 CFR 2920.9-3. Upon termination, revocation or cancellation of a land use authorization, the holder shall remove all structures and improvements except those owned by the United States within 60 days of the notice of termination, revocation or cancellation and shall restore the site to its pre-use condition, unless otherwise agreed upon in writing or in the land use authorization.<sup>109</sup>

**[15] Technical Assistance:** Technical assistance with the various processing and administration stages of a CO<sub>2</sub> GS land use authorization may be obtained from the EPA or DOE, and may be requested through the Chief, Branch of Rights-of-Way (WO-350). Technical assistance is available in verifying appropriate acreages, reviewing RCEs, recommending performance and reclamation bond amounts, determining applicant's ability to meet diligent site activities requirements, reviewing reclamation plans, and any other phase of the processing and administration of a CO<sub>2</sub> GS land use authorization.

**[16] LR2000 Data Entry:** Existing LR2000 data standards applicable to 43 CFR 2920 land use authorizations will be used for CO<sub>2</sub> GS land use authorizations.

However, two new case types have been established to identify CO<sub>2</sub> GS related authorizations and to track these uses within LR2000 as follows: 292011 PERMIT-CO2SEQ PROJ TEST will be used for CO<sub>2</sub> GS exploration and site characterization applications/permits and 292021 LEASE-CO2 SEQ DEV FAC will be used for CO<sub>2</sub> GS development applications/leases. A new commodity code, 978 CO2 GEOLOGIC SEQ, will be used for both 292011 permit and 292021 lease case types. Serial register pages for CO<sub>2</sub> GS permits or leases must cross-reference and include case file serial numbers for any related linear authorizations using action code 501 and entering in action remarks the type of number from Data Element 2537, a hyphen, the case file serial number, and end with a semicolon (i.e., "SN-AZA123456;" or "SN-NMNM127654;").

**[17] Timeframe:** This IM is effective immediately. Any pending applications for CO<sub>2</sub> GS land use authorizations will be addressed consistent with the provisions of this IM.

**[18] Budget Impact:** The application of this policy will have minimal impacts on budget. Land use applications are subject to the cost reimbursement provisions of the regulations at 43 CFR 2920.6. In addition, the BLM monitoring activities are also subject to these cost recovery provisions of the regulations.

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<sup>104</sup> 43 CFR 2920.9-1(a).

<sup>105</sup> 43 CFR 2920.9-1(c).

<sup>106</sup> 43 CFR 2920.9-1(e).

<sup>107</sup> 43 CFR 2920.9-2.

<sup>108</sup> CEQ CCUS Guidance at 8811 (cited in note 6).

<sup>109</sup> 43 CFR 2920.9-3(d).

**[19] Manual/Handbook Sections Affected:** This IM transmits interim policy that amends and will be incorporated into BLM Manual 2920, *Leases, Permits and Easements*, during the next revision.<sup>110</sup>

## 6 Attachments

- 1 - Plan of Development Outline for Carbon Dioxide Geologic Sequestration Exploration and Site Characterization Permit <sup>111</sup>
- 2 - Terms and Conditions for Carbon Dioxide Geologic Sequestration Exploration and Site Characterization Permit <sup>112</sup>
- 3 - Plan of Development Outline for Long-Term CO<sub>2</sub> GS Development Leases <sup>113</sup>
- 4 - Terms and Conditions for Long-Term CO<sub>2</sub> GS Development Leases <sup>114</sup>
- 5 - Performance and Reclamation Bonds <sup>115</sup>
- 6 - Guidance Documents and Best Practice Resources<sup>116</sup>

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<sup>110</sup> There does not seem to currently be a BLM Manual 2920. U.S. Department of Interior, Bureau of Land Management, BLM Manuals <<https://www.blm.gov/policy/manuals>>

<sup>111</sup> The CO<sub>2</sub> GS IM included a related attachment, which would be revised and updated.

<sup>112</sup> The CO<sub>2</sub> GS IM included a related attachment, which would be revised and updated.

<sup>113</sup> This would be a new attachment, and would pertain to long-term CO<sub>2</sub> GS development leases. The attachment could incorporate concepts included in the EU CO<sub>2</sub> GS Directive, art 7 (cited in note 93). The attachment could also be guided by oil and gas leasing regulations. See, e.g., 43 CFR 3106.7-2 and 43 CFR 3106.7-6.

<sup>114</sup> This would be a new attachment, and would pertain to long-term CO<sub>2</sub> GS development leases. This attachment could incorporate concepts included in the EU Directive. Id, art 8.

<sup>115</sup> The CO<sub>2</sub> GS IM included a related attachment, which would be revised and updated. See, e.g., Manuel Wifling, *Financial precautions, carbon dioxide leakage, and the European Directive 2009/31/EC on carbon capture and storage (CCS)*, 163 *Climatic Change* 787 (Nov 2020) <<https://link.springer.com/content/pdf/10.1007/s10584-020-02904-1.pdf>> Additionally, because the Model IM language additionally addresses long-term CO<sub>2</sub> GS development projects, the acceptable bond instruments should be compared to those accepted for oil and gas leasing. 43 CFR 3104.1. Those bond instruments not identified in 43 CFR 3104.1 should be omitted. Cash and policies of insurance would no longer be acceptable bond instruments. 43 CFR 3104.1 has more specificity pertaining to the acceptable bond instruments which may also be appropriate. Geothermal leases have bonding requirements similar to those for oil and gas. 43 CFR 3214.15. BLM requires the same bonding form for oil and gas leases and geothermal leases. Oil and gas leases and geothermal leases include subsurface activities, as does long-term CO<sub>2</sub> GS development. See also memorandum §§ 5.2, 7.3.

<sup>116</sup> This would be a new attachment. The CEQ CCUS Report identifies pertinent guidance documents and best practice resources. CEQ CCUS Report at 34, §5.3 (cited in note 15).