

**STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION**

**APPLICATION OF GOODNIGHT
MIDSTREAM PERMIAN, LLC FOR
APPROVAL OF A SALTWATER
DISPOSAL WELL, LEA COUNTY,
NEW MEXICO.**

CASE NO. 22626

**RESPONSE IN OPPOSITION
TO MOTION TO DISMISS**

Goodnight Midstream Permian, LLC (“Goodnight Midstream”) files this response in opposition to Empire New Mexico, LLC’s motion to dismiss. For the reasons stated, the motion should be denied.

BACKGROUND

The Division’s public records, orders, rulings, and production data confirm that the San Andres formation within the Eunice Monument South Unit Area (the “Unit”) is a non-hydrocarbon-bearing formation. It is an aquifer and a saltwater disposal zone. For 62 years—before the Unit was created—it has been recognized by the Division as a saltwater disposal zone. The Division designated it as a saltwater disposal zone and assigned it the pool designation “SWD; San Andres” and pool code “96121” for “Salt Water Disposal.” A total of six other saltwater disposal wells have been approved for injection into the San Andres within the Unit Area operated by a total of four different operators—Owl SWD Operating, LLC¹; Rice Operating Company²; Goodnight Midstream³; and Empire.⁴ Five of the saltwater disposal wells

¹ Owl P15 #001 (API No. 30-025-46579)

² Rice EME SWD #021 (API No. 30-025-21852); Rice N11 #001 (API No. 30-025-46577)

³ Ryno SWD (API No. 30-025-43901); Sosa SWD (API No. 30-025-47947)

⁴ Empire E M S U #001 (API No. 30-025-04484)

are commercial and, like Goodnight Midstream's proposed Piazza SWD #1, have nothing to do with operations of the Unit.

As an aquifer, the San Andres has served an important purpose for the Unit. While the San Andres was included in the vertical limits of the Unit at the time the Division approved Order No. R-7765, it was not included as a mineral-bearing prospective zone. Without consideration of the authority to include a non-oil-and-gas-bearing formation in a statutory unit, the applicant for the Unit, Gulf Oil Corporation, determined that “[t]he bottom of the interval must be the base of the San Andres formations (sic) to include the area's most prolific water production zone[.]” See portions of Gulf Hearing Exhibit 21, Case No. 8397, attached as **Exhibit A**. The San Andres was expressly identified as a zone that would provide the massive quantities of water required for the initial fill-up period. See Gulf Hearing Exhibit 22, Case No. 8397, attached as **Exhibit B** (Gulf anticipated drilling nine water supply wells in the San Andres formation “to provide the water injection requirement which is expected to peak at 2.7 MM barrels per month during fillup”); see also Hearing Tr. Vol. 2, 214:23-215:4 Case No. 8397, attached as **Exhibit C** (“There are currently plans to drill approximately nine water supply wells to provide make-up water from the San Andres formation. This make-up water will be used initially as the primary source of injection water and once we have the unit fully developed, we will be switching over to using produced water as our primary source of injection water.”).

At the time the Unit was approved, Gulf had no intention of conducting waterflood operations within the San Andres formation. See Exhibit C at 224:22-25 (“Q: Now I understand that you will be injecting only into the Grayburg and Penrose and not the San Andres, is that correct? A: That is correct.”). The San Andres was determined to be non-prospective. In fact, Gulf made clear in its hearing testimony that the targeted oil column constituting the “unitized

formation” includes only the Grayburg and Penrose formations and does not extend into the San Andres. *See* Exhibit C, Hearing Tr. Vol. 1, 52:6-7 (“[T]he oil column in this area thins from the Grayburg up into the lower part of the Penrose.”); 53:1-4 (“Q: When you look at the oil column in the unit area, that is included generally in the Grayburg and the lower portion of the Penrose, is that correct? A: That’s correct.”). The “unitized formation” is defined in Order No. R-7765 as “the entire oil column under the unit area permitting the efficient and effective recovery of secondary oil therefrom.” *See* Finding ¶ 10. Thus, while the Division approved inclusion of the San Andres within the vertical limits of the Unit, the “unitized formation” is confined to the Grayburg and Penrose formations because the oil column is not present in the San Andres. Only the Graybrug and Penrose formations were “unitized” for efficient and effective recovery of hydrocarbons in the waterflood.

Thirty-eight years after the Unit was formed, six Unit water supply wells have been completed in the San Andres and have produced more than 300,000,000 barrels of water for waterflood operations. No oil production has ever been reported. Recognizing the San Andres as non-productive, the Division has designated the zone for saltwater disposal and has already approved six commercial saltwater disposal wells within the geographic limits of the Unit Area that all remain active.

ARGUMENT

A. The San Andres Formation is not Included in the “Unitized Formation” under Order No. R-7765.

Empire argues that the San Andres formation is off limits to any other operator for any use that is not related to Unit operations. While Order No. R-7765 includes the San Andres within the vertical limits of the Unit, it also limits the “unitized formation” to only that portion containing the oil column, which is found only in the Grayburg and Penrose formations. *See*

Exhibit D, Hearing Tr. Vol. 1, 52:6-7; 53:1-4. Therefore, only the Grayburg and Penrose formations are necessary for the “efficient and effective recovery of secondary oil” from the Unitized interval. The San Andres was included within the vertical limits of the Unit to serve as a water supply source for initial fillup and, if needed, to provide makeup water thereafter. *See **Exhibits A, B, C***.

Empire’s claim that Order No. R-7765 puts the San Andres off limits to commercial disposal finds no support in the language of the Order and is contrary to the evidence and testimony that supported creation of the Unit.

B. The Division Has Already Designated the San Andres within the Unit Area as Saltwater Disposal Zone.

Empire suggests that commercial disposal through Goodnight Midstream’s proposed Piazza SWD #1 is somehow improper without explaining how it will adversely impact Unit operations when it currently serves as a zone for saltwater disposal.

The Division has long recognized the utility of the San Andres in this area as a produced water disposal zone since the 1960s. The Division has designated the formation in this area for saltwater disposal and has approved six saltwater disposal wells within the Unit Area that actively inject into the San Andres. Empire itself currently uses the San Andres for water disposal within the Unit Area along with four other operators, whose commercial disposal is unrelated to Unit operations. Having produced more than 300,000,000 barrels of water for waterflood operations since 1984, the San Andres has extensive pore space available for produced water disposal with no evidence of adverse impacts on the oil column or waterflood operations, which are limited to the overlying Grayburg and Penrose formations.

Empire has recently taken over operations of the Unit, acquiring its interests from XTO Energy, Inc. effective as of July 23, 2021. Having only recently stepped into Unit operations,

Empire seeks to undo more than 60 years of Division approvals and saltwater disposal operations in the San Andres without providing any basis for doing so.

C. Goodnight Midstream has a Surface Use and Saltwater Disposal Agreement Authorizing Injection and Disposal into Subsurface Pore Space.

Empire incorrectly asserts Goodnight Midstream has no authority to inject into the pore space within the San Andres formation. In fact, Goodnight Midstream has entered into a surface use and saltwater disposal agreement with the Millard Deck Estate—the surface owner overlying the proposed injection location—that gives it the right to construct, drill, and operate the proposed saltwater disposal well, together with associated pipelines, facilities, and related equipment. The agreement gives Goodnight Midstream the express right to inject saltwater from oil and gas production into the substrata of its leased premises in Section 9, Township 21 South, Range 36 East, NMPM, Lea County, New Mexico.

D. Goodnight Midstream is not Required to Obtain BLM Approval to Inject.

Empire contends Goodnight Midstream is required to obtain BLM approval for saltwater disposal and that the BLM is precluded from granting access because it would interfere with Empire's oil and gas development from its federal lease. The only authority Empire cites is an IBLA decision in Penroc Oil Corp. et al., GFS (O&G) 8 (1985) (1984) that is factually and legally inapplicable to the circumstances at issue here.

In Penroc Oil Corp. et al., the IBLA determined that a saltwater disposal right-of-way granted to a third party for injection into a federal lessee's plugged well would improperly preclude the lessee's right to further explore, drill, and develop its existing oil and gas leasehold by preventing it from using its own well. The BLM granted a 30-year right of way on an existing federal oil and gas lease to an applicant seeking to inject produced water into the lessee's plugged well. The lessee challenged the right-of-way approval. The issue before the IBLA was

“whether BLM has the power to grant a right-of-way to a third party to enter and use a Federal lessee’s plugged oil and gas well to dispose of the third party’s saltwater.” *See id.* at **3. The IBLA determined that the federal lease grants the lessee “the right to re-enter its plugged wells to further drill, explore, or develop the leasehold at any time during the lease term.” *Id.* at **5. The right-of-way grant to convert the lessee’s well to injection while the oil and gas lease was still valid was therefore improper.

Here, Goodnight Midstream is not seeking to inject through Empire’s well. The holding in Penroc is limited to precluding the BLM from issuing rights-of-way grants to utilize lessee’s existing wellbores. Unlike in Penroc, Goodnight Midstream is not effectively precluding Empire from drilling, exploring, or developing Empire’s federal lease because it is not using Empire’s well for injection. And Goodnight Midstream is not seeking approval from the BLM. Even if Penroc can be read broadly to preclude any injection within federal leasehold acreage, which is not what it holds, the zone that Goodnight Midstream is targeting is an aquifer that has been designated by the Division as a saltwater disposal zone. It does not contain the oil column and, by definition, was not included within the unitized formation under Order No. R-7765. Injection will not interfere with Empire’s mineral interest, oil recovery, or its waterflood operations.

Moreover, in Penroc the surface and mineral estate appear to have been under uniform federal ownership, *see id.* at **6, whereas in the instant case the surface is owned in fee. The BLM recognizes that subsurface pore space is typically owned by the surface owner. *See* BLM Instruction Memorandum No. 2022-041, attached as **Exhibit D**. Here, the surface owner is the Millard Deck Estate, not the federal government. Goodnight Midstream has an agreement with the Millard Deck Estate to inject into and dispose of produced water within the subsurface pore space. BLM does not have authority to grant a right-of-way to Goodnight Midstream for

injection into the subsurface pore space in this acreage because it is not the surface owner and has no ownership rights in the non-mineral pore space. *See id.* (limiting BLM to authorizing ROWs for sequestration of CO₂ only “in federal pore space”).

Empire’s reliance on Penroc is misplaced and its assertion that injection will interfere with its oil and gas lease is legally and factually wrong.

CONCLUSION

For the reasons stated, Empire’s motion should be denied.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on June 14, 2022, I served a copy of the foregoing document via

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19087221_v1

EXHIBIT A

Minutes of Technical Committee Meeting

Proposed Eunice Monument South Unit

May 4, 1982

The Technical Committee meeting began at 9:00 a.m., May 4, 1982, at the Midland Center, Midland, Texas. Representatives of 15 operators having working interests within the proposed Unit were present. The attendees represented 93% of the Unit acreage.

Mr. D. T. Berlin, chairman of the Technical Committee, opened the meeting by introducing Gulf personnel. Mr. Berlin announced the agenda items and briefly reviewed the Technical Committee voting procedure. He then turned the meeting over to Mr. Tom Wheeler to proceed with the Committee discussion.

Mr. Wheeler began by reviewing the status of the data which has been requested from Unit Operators. Approximately two thirds of the Unit Operators have not complied with all data requests, and some have not answered any Unit correspondence. Mr. Wheeler asked that the Information Request summary, Attachment 1, be reviewed by all Operators. A complete parameter table cannot be constructed until all Operators have provided correct information regarding the tract legal descriptions and Working Interest divisions.

Mr. Wheeler introduced the three agenda items for the day as follows:

1. Definition of the vertical limits of the unitized interval
2. Finalization of the Unit boundary
3. Committee consensus of the Tract production decline curves

He reminded the participants that the goal of the Committee was to provide recommendations to the Working Interest Owners on these three topics.

During the discussion of the vertical interval to be unitized, Mr. Wheeler described the five alternatives which have been investigated by Gulf. The bottom of the interval must be the base of the San Andres formations to include the area's most prolific water production zone, however, the five alternatives for the top of the interval are as follows:

1. Top of the Grayburg Formation
2. Top of the Penrose Formation
3. An intermediate marker between the upper Penrose sand and lower Penrose carbonate section
4. A subsea datum
5. A combination of 1 and 4 (above)

Each alternative has advantages and disadvantages, however, after an extensive analysis of the cross sections from the Unit, Gulf engineers and geologists had concluded that the following vertical limit definition should be proposed to the Working Interest Owners: "The Unitized Interval shall include the formations from a lower limit defined by the base of the San Andres formation, to an upper limit defined by the top of the Grayburg formation or a -100 foot subsea datum, whichever is higher."

The significant advantages of this definition include the following:

1. Includes all known Eumont Oil and Eunice Monument Oil production in the Unit area
2. Excludes most gas well completions in the area
3. Minimizes the number of workovers required to prevent waterflooding non-unitized formations
4. Exposes the total oil productive interval in the Unit area to Water-flood operations

When no other alternatives were presented by Committee members for consideration, the Committee unanimously accepted the above definition of the Unit vertical limits.

The second discussion topic, final boundary selection, involved review of all properties adjacent to the current boundary to determine whether additional acreage should be included in the Unit. After discussion the Committee voted to include three tracts which have current or past Eunice Monument oil production. The three tracts are outlined on Attachment 2, and are identified below.

1. Tract 114 - 80 acres of Amoco "State 'C' Tract 11" Lease located in S/2 SE/4 Section 2, Township 21 South, Range 36 East, Lea County, New Mexico.
2. Tract 115 - Amoco "McQuatters" lease covering N/2 NE/4 Section 11, Township 21 South, Range 36 East, Lea County, New Mexico.
3. Tract 116 - 40 acres of Conoco "Lockhart B" Lease located in NW/4 NW/4 Section 13, Township 21 South, Range 36 East, Lea County, New Mexico.

Mr. Huan Pham presented ARCO's recommendation that the Committee consider adding three tracts as listed below:

1. Arco "Ida White" Lease - 80 acres in N/2 SE/4 Section 35, Township 20 South, Range 36 East.
2. Arco "Endure State" Lease - 160 acres in SE/4 Section 12 Township 21 South, Range 35 East.
3. Arco "State 176" Lease - 280 acres composed of N/2 NW/4, SE/4 NW/4 and W/2 E/2 Section 19, Township 21 South, Range 36 East.

The Technical Committee voted against the addition of the Arco tracts.

The Committee heard a request from Ms. Pam Morpew, representing the interests of Doyle Hartman and James Rasmussen, to delete tracts 70 and 113 from the Unit. These adjacent 40 acre tracts are located in the eastern portion of the Unit. Tract 70 is the Hartman operated Rasmussen State lease which has a high GOR Eunice Monument oil well, the #1 Rasmussen State, and an abandoned Eunice Monument well, the #1 Rasmussen State 'G'. Tract 113 has the abandoned #2 Rasmussen State 'G' Eunice Monument oil well. After discussion the Committee voted to recommend to the Working Interest Owners that the tracts not be excluded from the Unit at this time.

The last agenda item was the finalization of production decline curves. All curves were individually reviewed, declined and approved by group consensus. Reserve calculations will be based on these decline curves.

The meeting was adjourned following completion of the decline curve review.

EXHIBIT B

The water injection plant and treating facilities will be located at the central battery site. Water will be transferred under pressure to the primary distribution headers located at each satellite battery site, then to secondary headers located in the field, each serving from three to five injection wells.

The total water requirement will be provided by reinjection of produced water, and from make-up water provided by nine San Andres supply wells. For this cost estimate, the assumption was made that new water supply wells would be drilled; however, there is a possibility that existing wellbores may be available which could be purchased and completed in the San Andres.

COST ESTIMATE

The cost estimate for the above preliminary design can be summarized into seven major categories as listed below:

<u>Item</u>	<u>Tangibles</u>	<u>Intangibles</u>
1. Production and Injection Facilities	\$ 12,548,200	\$ 6,681,450
2. Drill & Equip 9 Water Supply Wells	3,051,000	1,989,000
3. Drill & Equip 19 Producers	2,726,500	3,543,500
4. Drill & Equip 16 Injectors	1,336,000	2,984,000
5. Remedial Work - 208 Wells	10,060,000	9,295,000
6. Coring Cost - 20 Wells		1,000,000
7. Pumping Unit Replacements	<u>6,726,000</u>	<u>570,000</u>
Subtotal	\$ 36,447,700	\$ 26,062,950
Grand Total	\$ 62,510,650	

1. Production and Injection Facilities

This item includes all storage, transfer, treatment, metering and sales equipment. This item also includes costs for electrifying the unit, retiring existing facilities as they are replaced, and settling right-of-way and damage claims due to construction.

2. Drill and Equip 9 Water Supply Wells

This item provides for drilling, completing, and equipping nine wells to provide water from the lower San Andres formation. The wells will be required to provide the water injection requirement which is expected to peak at 2.7 MM barrels per month during fill-up.

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A P P E A R A N C E S

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I N D E X

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At the top of this summary is another number. It says "well" and as an example "14-4". That would indicate that it's cross section 14 and the well is at location number 4, and that is from the west.

The Penrose in this area, the lower part of the Penrose, the oil column in this area thins from the Grayburg up into the lower part of the Penrose. The middle Penrose is usually tight across the whole area except for the southern western edge of the field and this provides a pretty effective barrier between the oil column and the Penrose sand.

The Penrose sand is -- is that sand in the very top of the Penrose and generally found over the whole field.

On the western and southern edges of the field the sand, which is a dolomitic sand, changes into dolomite by a facies change or is cemented tight with dolomitic cement, with a corresponding loss of porosity and permeability along the edge of the unit.

Q All right, sir, when you look at Exhibit Number Eighteen, which is the line of cross section east to west on the southern portion of the unit, would you describe what you see in that cross section?

A Basically it's the same as you see -- basically it's the same as our cross section 14 as to tops and datums and it shows the same as cross section 14 (not clearly audible).

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Q When you look at the oil column in the unit area, that is included generally in the Grayburg and the lower portion of the Penrose, is that correct?

A That's correct.

Q The upper portion of the Penrose is that sand that is gas productive.

A Yes, it is.

Q When you talked about the dense dolomites, are the dense dolomites between the oil column and the gas column?

A Yes, they are. The base of the sand is the top of the Penrose.

Q Within the Penrose section, then, there's a dolomite interval that separates the oil and the gas?

A Yes, sir, dolomite stringers, long sand stringers. The dolomite in the area is tight.

Q In your opinion is that an effective barrier between the oil and the gas in the area?

A Yes, it is, over most of the field.

Q All right, when we look at the top of the Grayburg and the base of the Penrose do we see any formational barrier between the top of the Grayburg and the base of the Penrose in the oil column?

A No, we don't.

Q Are you familiar with what Gulf proposes to use as the definition for the formation or the unit interval?

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STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

8 November 1984

COMMISSION HEARING

VOLUME II OF II VOLUMES

IN THE MATTER OF:

- Application of Gulf Oil Corporation for statutory unitization, Lea County, New Mexico. CASE 8397
- Application of Gulf Oil Corporation for a waterflood project, Lea County, New Mexico. CASE 8398
- Application of Gulf Oil Corporation for pool extension and contraction, Lea County, New Mexico. CASE 8399

BEFORE: Richard L. Stamets, Chairman
Commissioner Ed Kelley

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Commission:	Jeff Taylor Attorney at Law Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico 87501
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2 Q In addition to distributing in this pack-
3 age of exhibits Exhibit Thirty-two, I've also distributed
4 the next exhibit, which is 33-A.

5 A Yes, sir.

6 Q All right, would you identify that for
7 us?

8 A It lists data on the proposed operation
9 of the injection system for the waterflood project in the
10 Eunice Monument South Unit.

11 Q All right, sir, would you describe for us
12 what the proposed method of operation is for the unit?

13 A Okay. As shown on Exhibit Number Thirty-
14 three-A, our average daily rates and maximum daily rates are
15 400 and 500 barrels of water per day, respectively. The
16 system is going to be a closed system. The proposed average
17 and maximum injection pressures will be 350 psi and 740 psi,
18 respectively.

19 This will be until we can determine a
20 fracture gradient and obtain proper approval from the OCD
21 Director for possibly injecting at higher injection pres-
22 sures.

23 To monitor and control the rates and
24 pressures at the wellhead, our plans are to install pressure
25 rate controllers on each injection well.

26 There are currently plans to drill appro-
27 ximately nine water supply wells to provide make-up water
28 from the San Andres formation. This make-up water will be

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used initially as the primary source of injection water and once we have the unit fully developed, we will be switching over to using produced water as our primary source of injection water.

Q Do you have any estimates now of the percentages between make-up water and produced water that will be used by the project?

A Not at this time. Our present plans are that initially we'll be using approximately 60,000 barrels of water per day for 133 injection wells.

Q And what is the source of produced water in the unit?

A It will be from the unitized intervals, the Grayburg formation, principally.

Q Do you anticipate that the maximum injection pressure at any individual injection well will be based upon the .2 psi per foot of depth gradient established as matter of practice by the Commission until you have other data available to justify a higher rate?

A Yes, sir, that's our plan.

Q All right, sir, it you'll turn to Exhibit Number Thirty-three-B, I believe, is the next one, and describe that one for us.

A Thirty-three-B is a water compatibility analysis performed on the make-up water and the produced water and it illustrates that there is no incompatibility evident by the mixing of these two waters.

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2 ation. We can plug a lot of that into the computer to check
3 you to see that -- on your reports -- to see that you're
4 really following that. That's a lot of calculations for all
5 of us to try and figure out what individual pressure limits
6 are.

7 I'm wondering if it would be possible to
8 establish groupings of pressures in this reservoir, say per-
9 haps all the wells on the two sections on the west side
10 would have the same pressure limit, and the three down in
11 the middle, the same pressure limit, and so on, let's say,
12 for the east side, so that we wouldn't have, what, 149 dif-
13 ferent pressures; we might have, say, five or six different
14 pressure limits within the limits of the pool we would have
15 to process.

16 A With the installation of those pressure
17 rate controllers we'd be able to control pressures and rates
18 on an individual injection well basis.

19 Where we may want a well to take -- take
20 more water, inject more water into a well, it might require
21 different pressures, other situations.

22 Q It's just a suggestion. We can look into
23 it and if it works out, we'll try and do it.

24 A Okay, sir.

25 Q Now I understand that you will be in-
jecting only into the Grayburg and the Penrose and not the
San Andres, is that correct?

A That is correct.



U.S. DEPARTMENT OF THE INTERIOR
**BUREAU OF LAND
MANAGEMENT**

EXHIBIT D

NATIONAL POLICY FOR THE RIGHT-OF-WAY AUTHORIZATIONS NECESSARY FOR SITE CHARACTERIZATION, CAPTURE, TRANSPORTATION, INJECTION, AND PERMANENT GEOLOGIC SEQUESTRATION OF CARBON DIOXIDE IN CONNECTION WITH CARBON SEQUESTRATION PROJECTS

IM 2022-041

Instruction Memorandum

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

<https://www.blm.gov>

June 8, 2022

In Reply Refer To:

2800 (HQ-350) P

EMS Transmission 06/10/2022

Instruction Memorandum No. 2022-041

To: All Field Office Officials
From: Assistant Director, Energy, Minerals, and Realty Management
Subject: National Policy for the Right-of-Way Authorizations Necessary for Site Characterization, Capture, Transportation, Injection, and Permanent Geologic Sequestration of Carbon Dioxide in Connection with Carbon Sequestration Projects

Program Area: Lands and Realty Management

Purpose: This Instruction Memorandum (IM) conveys policy and direction for authorizing rights-of-way (ROWs) to use public lands for site characterization, transportation, injection, capture, and geologic sequestration of carbon dioxide (CO2) at appropriately classified injection well locations in connection with CO2 sequestration projects. This includes authorizing the use of pore space managed by the Bureau of Land Management (BLM) when surface facilities, including injection wells, are on private or state-owned lands or lands managed by another Federal agency. When authorizing any carbon sequestration projects on public lands, the BLM should issue ROWs under Title V of the Federal Land Policy and Management Act of 1976 (FLPMA), as amended, 43 USC 1761 et seq. These ROWs should appropriately address construction, operation, maintenance, and termination of surface facilities required to inject CO2 for permanent geologic sequestration. The BLM should similarly issue Title V ROWs when authorizing the occupation of federal pore space during and after injection operations. This IM is part of a comprehensive strategy to combat climate change and reduce CO2 levels in the atmosphere and applies only to BLM-administered lands. [1]

Administrative or Mission Related: Mission Related

Policy/Action: Title V of FLPMA and its implementing regulations, 43 CFR Part 2800, authorize the BLM to issue ROWs to geologically sequester CO2 in federal pore space, including for necessary physical infrastructure and for the use and occupancy of the pore space itself. In cases of split estate where the federal government owns only the surface or the mineral estate the question of pore-space ownership may arise. In those situations, pore-space ownership should be determined early in the process. Typically, pore space is owned by the surface owner, although it may be separately conveyed. In determining pore-space ownership, title documents should be reviewed. Questions about pore-space ownership should be resolved in coordination with the Solicitor's Office. If the BLM determines that a competitive interest exists for use of a specific area for CO2 sequestration, the BLM may use the competitive process outlined at 43 CFR 2804.23 when making an authorization decision.

The BLM should complete appropriate exploration and site characterization studies, including any mineral potential reports, and review any applicant-prepared characterization studies to determine surface and pore space ownership, geologic boundary limits, and formation impermeability before authorizing CO2 sequestration. This initial work ensures that no physical connections exist between different formations identified for CO2 sequestration. If needed, the BLM may issue short-term, non-renewable FLPMA Title V ROW authorizations for site testing and characterization studies related to a proposed CO2 sequestration project.

When authorizing ROWs for CO2 geological sequestration projects, the BLM must require the ROW holder to comply with applicable laws, including obtaining all necessary permits under the underground injection control (UIC) program to comply with the Safe Drinking Water Act of 1974 (SDWA). The UIC program is managed and permits for underground injection are issued by the Environmental Protection Agency (EPA) or a state agency with primacy for the UIC program.

Any ROW grants for long-term geologic sequestration and storage of CO₂ into subsurface formations should be issued for a minimum 30-year renewable term unless the applicant requests a shorter term. Typical authorizations under Title V of FLPMA for these purposes include those for use of pore space, pipelines, storage tanks, pumps, climate control buildings, compressor sites, power generation, electric transmission, injection wells and other associated facilities required for sequestration of CO₂. Before authorizing ROWs for these purposes, the BLM should ensure that there is an adequate monitoring program addressing the long-term stewardship of the surface and pore space injection areas to determine if any of the injectant CO₂ is escaping from the pore space.

Except in exceptional circumstances requiring approval by the State Director, all ROW authorizations for site characterization, carbon capture, injection, access, transportation, and sequestration should contain stipulations that require the ROW holders to avoid interference with any operations authorized under the Mineral Leasing Act of 1920 (MLA), as amended, require compliance with other applicable federal and state laws, and prevent damage to all other potentially recoverable mineral resources and other surface and subsurface authorized uses. The BLM will consider other uses, including uses under the MLA, when granting ROW authorizations in connection with CO₂ sequestration projects and, when warranted, will impose appropriate mitigation obligations.

Similarly, the BLM will authorize other uses of the public lands only if these uses will not interfere with previously authorized CO₂ sequestration projects, including the ROW holder's compliance with all of its permits and applicable law.

Wells previously authorized under the MLA for the extraction of leasable minerals may be considered for redrilling or recompletion to facilitate access to the pore space or formations for CO₂ sequestration, authorized under Title V of FLPMA and its implementing regulations in accordance with this policy. Mature oil and gas fields injecting CO₂ for enhanced oil recovery will not be considered as permanent sequestration for the purposes of this policy.

Proposed sequestration projects must be in conformance with the appropriate land and realty allocations within applicable Resource Management Plans (RMP). Public lands open for ROWs may not require an RMP amendment, although the terms and conditions of each RMP should be reviewed for conformance.

Sequestration projects will typically require an approved Plan of Development (POD) submitted along with the application (SF-299) form in accordance with 43 CFR 2804.25. Before approving a POD, the BLM should verify that it outlines all applicable phases of the project, from initial construction to termination and rehabilitation of the public lands involved. In addition, the BLM should verify that the POD appropriately identifies and describes how the project proponent will use temporary access and short-term use areas. Consistent with 43 CFR 2804.12(f), the Authorized Officer should request the applicant provide any permits associated with the project issued by Agencies other than the BLM at the time of application or upon receipt, if after the application is filed with the BLM. At the latest all other permits will be provided to the BLM prior to the notice to proceed for any construction.

Rental: Fair Market Value (FMV) for ROWs authorizing site characterization studies or the presence of surface facilities and infrastructure associated with a proposed CO₂ sequestration project will be based on appraised values or approved schedules, such as the linear ROW or the small site schedules, as appropriate, for the ROW surface acreage within the proposed project area as an annualized rental. In addition, the BLM will determine an appropriate charge in consultation with the Appraisal and Valuation Services Office (AVSO) for injecting actual amounts of CO₂ for sequestration into Federal pore space and use and occupancy of the pore space, as appropriate, on a per unit basis.

As required by 43 CFR 2806.10(a), the holder of a ROW grant "must pay in advance a rent the BLM establishes based on sound business management principles and, as far as practical and feasible, using comparable commercial practices." As outlined above, an appraisal, market study, or appropriate schedule will be used to determine the actual rental rate and any appropriate fees.

The BLM may, in accordance with 43 CFR 2806.16, collect an estimated rent when the final actual rent has not yet been determined. Upon completion of the necessary valuation product, the BLM will determine the appropriate rent. If the final rent determination is different than the estimated rent, the BLM will adjust the rent accordingly. If the estimated rent exceeds the actual rent as determined by consultation with AVSO, the over payment will be credited to the next year's rent.

Valuation: The AVSO, in coordination with the BLM, will complete the appropriate appraisals or other valuations to determine the rent that will apply for ROWs in connection with CO₂ sequestration projects.

Cost Recovery: Projects for CO₂ geologic sequestration should be processed as a major category for cost reimbursement with the collection of all reasonable costs associated with the project. Applications should not be considered complete until the applicant has paid the appropriate processing fees and a cost recovery agreement for the cost reimbursement has been executed. 43 CFR 2804.19-20.

Environmental Review: A 2010 Report of the Interagency Task Force on Carbon Capture and Storage ^[2] noted that Federal agencies would likely need to develop National Environmental Policy Act (NEPA) analysis, including consideration of appropriate mitigation, for CO₂ sequestration projects that require federal approval. Consistent with the recommendations of that Report, the BLM may prepare appropriate programmatic environmental documentation to evaluate standard practices to facilitate an expedited environmental review of CO₂ sequestration projects. Projects for the sequestration of CO₂ may be eligible for treatment as a covered project under the Fixing America's Surface Transportation (FAST-41) Act, 42 USC 4370m.

Bonding: All ROWs must be properly bonded as required under appropriate regulations unless the holder is exempt from bonding requirements, or the Authorized Officer has appropriately waived bonding requirements. Any required bonding will be in place prior to the execution of the grant by the Authorized Officer.

Timeframe: This policy is in effect immediately.

Budget Impact: Implementation of this Policy will have no impact on the budget due to cost recovery requirements under the regulations.

Background: Carbon Capture, Utilization and Storage (CCUS) refers to a set of technologies that capture CO₂ from emission point sources including oil and gas production, new and existing coal- and gas-fired power plants, and industrial processes, as well as from direct atmospheric capture for utilization or sequestration of the captured CO₂. This program is part of a greater goal to reduce CO₂ and other greenhouse gas emissions through capture and sequestration into deep rock geologic formations in an active effort to combat climate change and meet the President's domestic climate goal of net-zero emissions economy-wide by 2050.

The technologies for CCUS already exist, and continue to advance, with a reported 26 commercial-scale projects in operation globally. These projects are, by their nature, complex and include transportation, underground injection, and sequestration of CO₂. Projects may be subject to a range of Federal, state, and local permitting requirements, depending on their specific characteristics.

This IM updates expired IM 2012-035, Interim Guidance on Exploration and Site Characterization for Potential Carbon Dioxide Geologic Sequestration.

Manual/ Handbook Sections Affected: None

Coordination: The BLM Division of Lands, Realty and Cadastral Survey (HQ-350), Division of Solid Minerals (HQ-320), and the Division of Fluid Minerals (HQ-310) have coordinated preparation of this IM with relevant BLM State Offices. The Department of the Interior Solicitor's Office and the Appraisal and Valuation Services Office have reviewed and provided input to this policy prior to its finalization.

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Authenticated by:

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Division of Regulatory Affairs

and Directives (HQ-630)

[1] This IM is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its departments, agencies, instrumentalities or entities, its officers or employees, or any other person.

[2] Representatives of the Department of State, Department of the Treasury, Department of Justice, Department of the Interior, Department of Agriculture, Department of Commerce, Department of Labor, Department of Transportation, Department of Energy, Office of Management and Budget, Environmental Protection Agency, Federal Energy Regulatory Commission, Office of Science and Technology Policy, and Council on Environmental Quality participated in the Interagency Task Force that prepared the 2010 Report.

FISCAL YEAR

2022