EARTHJUSTICE

July 3, 2023

Michael S. Regan
Administrator
Environmental Protection Agency
1101A EPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Washington, D.C. 20004
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Re: Docket No. EPA-HQ-OW-2023-0073
Comment in opposition to EPA's proposed final rule approving Louisiana's application to implement the UIC program for Class VI injection wells.

Dear Administrator Regan,

Deep South Center for Environmental Justice ("DSCEJ"), through its counsel Earthjustice, together with Healthy Gulf, Vessel Project of Louisiana, Taproot Earth, Property Rights and Pipeline Center, Lake Maurepas Preservation Society, and Louisiana Against False Solutions submit the following comments on the "State of Louisiana Underground Injection Control Program; Class VI Program Revision Application"—EPA's proposed final rule approving Louisiana's application for the Louisiana Department of Natural Resources, Office of Conservation ("LDNR") to implement the Underground Injection Control ("UIC") program for Class VI injection wells ("Proposed Approval").

Class VI wells are the newest in EPA's Underground Injection Control program. Carbon dioxide ("CO_2") storage is a uniquely challenging emerging technology that involves a myriad of serious risks to drinking water, safety, and climate; the stakes are high. Neither of the two states already granted Class VI primacy have operational Class VI wells, and EPA itself has permitted few, a mere two of which have injected CO_2. Yet Louisiana, a state notorious for weak monitoring and enforcement, has committed to permit at least a whopping six wells in two years alone, should it receive primacy. For these reasons, among others, EPA must scrutinize whether Louisiana can actually implement its program within the confines of the law and consistent with public safety. The answer is that it cannot: (1) The application has not met key minimum requirements such as showing the State has the expertise or staff to carry out the program; (2) some of Louisiana's regulations are less stringent than federal requirements, for instance regarding post-site closure operator liability, leaving the public to clean up; (3) Louisiana's regulations often recite minimum requirements where the state already has a bad track record with other well programs, regarding, for instance, enforcement and abandoned wells—despite statutory requirements that the application contain a satisfactory *showing* that the state *will* implement a program that meets the minimum requirements; and (4) Louisiana's control over Class VI wells would not meet federal standards for and would degrade environmental justice.

Contrary to EPA's stated requirements for primacy approval, Louisiana failed to develop any rules or requirements for environmental justice review to apply to the more than 31 Class VI injection wells already proposed in the state. Instead, LDNR has stated publicly that it does not have the authority under its own laws to implement environmental justice in permitting decisions, and the agency does not consider environmental justice in practice. Given Louisiana's disturbing disregard for environmental justice, particularly in the siting process, its predilection for striking back at the specter of accountability and justice, and the fact that its regulations contain no express requirement to consider environmental justice, its application is not ripe for approval.

In addition, the application is incomplete as a matter of law because it fails to include copies of—or reference to—all applicable State statutes and regulations, including Louisiana's 2023 carbon capture and sequestration bill.

Regrettably, EPA ignored our request, and at least 18,000 others, to extend this comment period, even after Louisiana passed House Bill 571, which made significant changes to Louisiana's Class VI injection well program. Hence, these Commenters have not had the opportunity to explore fully the ramifications of this new law on the regulations forming the basis of EPA's proposed rulemaking. Given that EPA regulations require applications to include all applicable state statutes and regulations, and given these laws are not within the application nor reflected in the Federal Register, the application should be revised and the comment period reopened before any rulemaking is approved.

For these reasons, discussed more fully below, EPA must deny Louisiana's Application and retain oversight of the Class VI well program until and unless Louisiana adopts laws that are at least as stringent as EPA's, obtains the necessary expertise to safely carry out the program, and adopts environmental justice procedures and regulations that fully integrate environmental justice and equity considerations into its Class VI permitting program.

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I. Background: The Safe Drinking Water Act and the Class VI UIC Well Program for Carbon Sequestration.

Congress enacted the SDWA[1] to "insure the quality of publicly supplied drinking water."[2] A key component of the SDWA is the Underground Injection Control (UIC) program.[3] Congress and EPA designed the UIC program to prevent fluids or waste injected underground from contaminating Underground Sources of Drinking Water (USDWs). By default, EPA has the sole authority to issue permits for injection wells under the UIC program.[4] EPA may delegate this authority to states that submit a proposed UIC program that "contains a showing satisfactory to the Administrator that the State has adopted after reasonable notice and public hearings, and will implement, an underground injection control program which meets the requirements" set forth by the SDWA and in EPA's regulations.[5]

Through the UIC program, EPA and the states to whom EPA has granted primacy enforce regulatory programs for six types of wells, delineated as Classes I-VI.[6] Class I wells are for the injection of wastes into deep rock formations.[7] Class II wells are for the injection of fluids associated with oil and gas production.[8] Class III wells inject fluids for the extraction of minerals.[9] Class IV wells are shallow wells used for injection of hazardous wastes.[10] Class V wells are for non-hazardous fluids.[11] Class VI wells are for the injection of CO_2 into deep subsurface rock formations for long-term storage.[12]

EPA's regulations for Class VI wells became effective in 2011, making Class VI wells the newest Class of injection wells for which EPA has written regulations.[13] Few Class VI wells exist and relatively little is known about the efficacy and safety of long-term CO_2 storage. In its report to Congress, EPA acknowledged the dearth of information and data on this technology and

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[1] The SDWA is codified at Subchapter XII of Chapter 42 of the U.S. Code, 42. U.S.C. § 300f *et seq*.
[2] *Sierra Club v. Chesapeake Operating, LLC*, 248 F. Supp. 3d 1194, 1199–200 (W.D. Okla. 2017).
[3] 42 U.S.C. § 300h *et seq*.
[4] *See id.*; 42 U.S.C. § 300h-1(c) ("If [EPA] disapproves a State's program … or if a State fails to submit an application [for primacy] …the Administrator shall … prescribe … a [UIC] program.").
[5] *See* 42 U.S.C. § 300h-1(b) (providing that states may submit applications for primacy that meet "the requirements of regulations in effect under section 300h of this title [(the UIC program)] …"). EPA's requirements for state UIC programs are codified at 40 C.F.R. Part 145. The elements of a program submission are listed at 40 C.F.R. § 145.22.
[6] 40 C.F.R. § 144.6.
[7] *Id*. § 144.6(a).
[8] *Id*. § 144.6(b).
[9] *Id*. § 144.6(c).
[10] *Id*. § 144.6(d).
[11] *Id*. § 144.6(e).
[12] *Id*. § 144.6(f).
[13] *See* Announcement of Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO_2) Geologic Sequestration (GS) Wells Final Rule, 76 Fed. Reg. 56982 (Sept. 15, 2011); EPA, *Class VI – Wells Used for Geologic Sequestration of Carbon Dioxide* (Dec. 9, 2022), https://www.epa.gov/uic/class-vi-wells-used-geologic-sequestration-carbon-dioxide#:~:text=Additional%20information-,Definition%20of%20Class%20VI%20wells,atmosphere%20and%20mitigate%20climate%20change.

stated its intention to revisit its regulations and guidance:

> At this time, only two Class VI wells have injected CO_2 and no Class VI wells have completed a full permit lifecycle (*i.e.*, through the injection phase and [post-injection site care] phase to site closure). As Class VI activity increases and additional projects are permitted and deployed, EPA will have additional data and information to perform a data-driven evaluation of its regulations and guidance to determine if any revisions are needed.[14]

On March 4, 2021, the State of Louisiana submitted an Application to revise its existing UIC Program under Section 1422 of the SDWA by adding primary enforcement authority over Class VI carbon sequestration wells. The Application names the Louisiana Department of Natural Resources Office of Conservation ("LDNR" or "Office of Conservation") as the administrator of the proposed Class VI well program.

To date, only two states have primacy over Class VI wells: North Dakota and Wyoming. To our knowledge, although permits have been issued, neither of these states have any operational wells.[15] At least four other states have applications for primacy for Class VI wells pending before EPA (Arizona, Louisiana, Texas, and West Virginia).[16]

A. Class VI Wells Impose More Risks than Other Injection Well Programs.

EPA acknowledges that "tailored requirements, modeled on the existing UIC regulatory framework, are necessary to manage the unique nature of CO_2 injection for geologic sequestration."[17] EPA has flagged "the large injection volumes of CO_2, its mobility within subsurface geologic formations, its corrosivity in the presence of water, and the potential presence of impurities in the captured CO_2 stream" as unique challenges with managing the injection of CO_2 and protecting USDWs.[18] EPA has raised additional concerns with the potential location of Class VI wells in saline formations and in areas that have already been heavily drilled, due to increased injection zone pressures, increased potential for leakage, and the displacement of salty, toxic brine from the injection of CO_2 into rock formations.[19]

The Class II Enhanced Oil Recovery ("EOR") well program has been considered the closest analog to the Class VI well program. The UIC Class II EOR program authorized, among other things, CO_2 injection into oil-bearing formations to recover residual oil and in limited

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[14] EPA, EPA Report to Congress: Class VI Permitting, at 22, (Oct. 2022), attached hereto as **Exhibit 1**.
[15] EPA, *Primary Enforcement Authority for the Underground Injection Control Program* (Aug. 18, 2022), https://www.epa.gov/uic/primary-enforcement-authority-underground-injection-control-program-0#who_loop.
[16] *Id*.
[17] Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO_2), 75 Fed. Reg. 77230, 77233 (Dec. 10, 2010).
[18] *Id*.
[19] Angela C. Jones, Cong. Rsch. Serv., R46192, Injection and Geologic Sequestration of CO_2: Federal Role and Issues for Congress, at 22, (2022), attached hereto as **Exhibit 2**.

applications, natural gas. Risks with Class II EOR wells include induced seismicity,[20] leaks through fractures or faults leading to potential contamination of USDWs,[21] and subsurface migration of CO_2 toward abandoned and/or unplugged wells. The same risks apply to Class VI wells but are worsened due to long term carbon storage or sequestration. Accordingly, the technical requirements for the Class II versus the Class VI well programs differ vastly.[22]

A key focus of injecting CO_2 in a given formation for the purpose of EOR is to maintain a specific range of reservoir pressure by balancing the injection of fluid (CO_2) with the extraction of fluid (oil).[23] The goal of Class VI wells is to inject large volumes of CO_2 over time to sequester and trap it under pressure for long term storage and to *prevent* fluid or gas from leaving the rock formation used as a reservoir. As more CO_2 is injected into a rock formation for long-term storage, reservoir pressure increases, and there is no fluid being extracted to "balance" the pressure that a given formation can handle before increasing the risk of fractures and leaks. Because of this important difference, the injection of CO_2 for long-term storage is far more technically complicated and dangerous than Class II residual storage.

Class VI wells also pose unique dangers and risk compared to liquid disposal wells because CO_2 is more buoyant than Class I (hazardous and non-hazardous liquids at deep wells) and non-EOR Class II's (oil and gas related liquid waste) denser liquid wastes, allowing it to migrate vertically to endanger USDWs more readily than liquid waste.[24] To account for this, the Class VI well requirements are more rigorous than both Class I[25] and Class II well requirements.

B. CO_2 Sequestration and Planned Class VI Well Projects in Louisiana.

Since Louisiana submitted its Application for primacy, more information on the enormous scope of planned carbon capture and sequestration has come to light, highlighting the need to closely and strictly regulate Class VI well permitting in the State.

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[20] White, J. & Foxall, W., *Assessing induced seismicity risk at CO_2 storage projects: Recent progress and remaining challenges*, Int'l. Journal of Greenhouse Gas Control (2016), attached hereto as **Exhibit 3**.
[21] *Id*.
[22] *See* Derek Vikara *et al*., *CO_2 Leakage During EOR Operations - Analog Studies to Geologic Storage Of CO_2,* at 34-36, (2019), attached hereto as **Exhibit 4**.
[23] *See* IEA, *Storing CO_2 Though Enhanced Oil Recovery: Combining EOR with CO_2 Storage (EOR+) for Profit* 10 (2015), attached hereto as **Exhibit 5**. "Pressure balance is critical to CO_2-EOR: to achieve miscibility, the reservoir pressure must be maintained above the so-called minimum miscibility pressure (MMP) while the maximum reservoir pressure is limited by the reservoir fracture pressure. Pressure can be maintained in this window by balancing the injection and withdrawal of fluids from the reservoir." *Id*.
[24] *See* Derek Vikara & Allison Guinan, *NETL's Analog Studies to Geologic Storage of CO_2 – Overview,* DOE, at 5, (2019), attached hereto as **Exhibit 6**. Class VI requirements are more rigorous than Class I wells due to:

> the long operational timeframes and greater volumes of CO_2 stored in the subsurface compared to UIC Class I wells used for waste disposal purposes. Additionally, supercritical CO_2 is highly buoyant compared to displaced formational fluids and has a greater potential to migrate vertically in the subsurface and endanger shallower formations (including drinking water sources) than that of denser waste types common to Class I deep well disposal practices.

[25] *Id*.

Currently, at least 31 Class VI well permits for Louisiana are pending before EPA at 15 different facilities.[26] This is far more than in any other state. There are at least 20 planned underground CO_2 storage sites across Louisiana—the vast majority of which are proposed by oil and gas companies.[27] These planned buildouts would involve thousands of miles of related CO_2 pipelines and additional carbon capture infrastructure at carbon-emitting facilities (See Figure 1).[28] Most of these projects would involve tens of thousands of acres to over 100,000 acres each.[29]

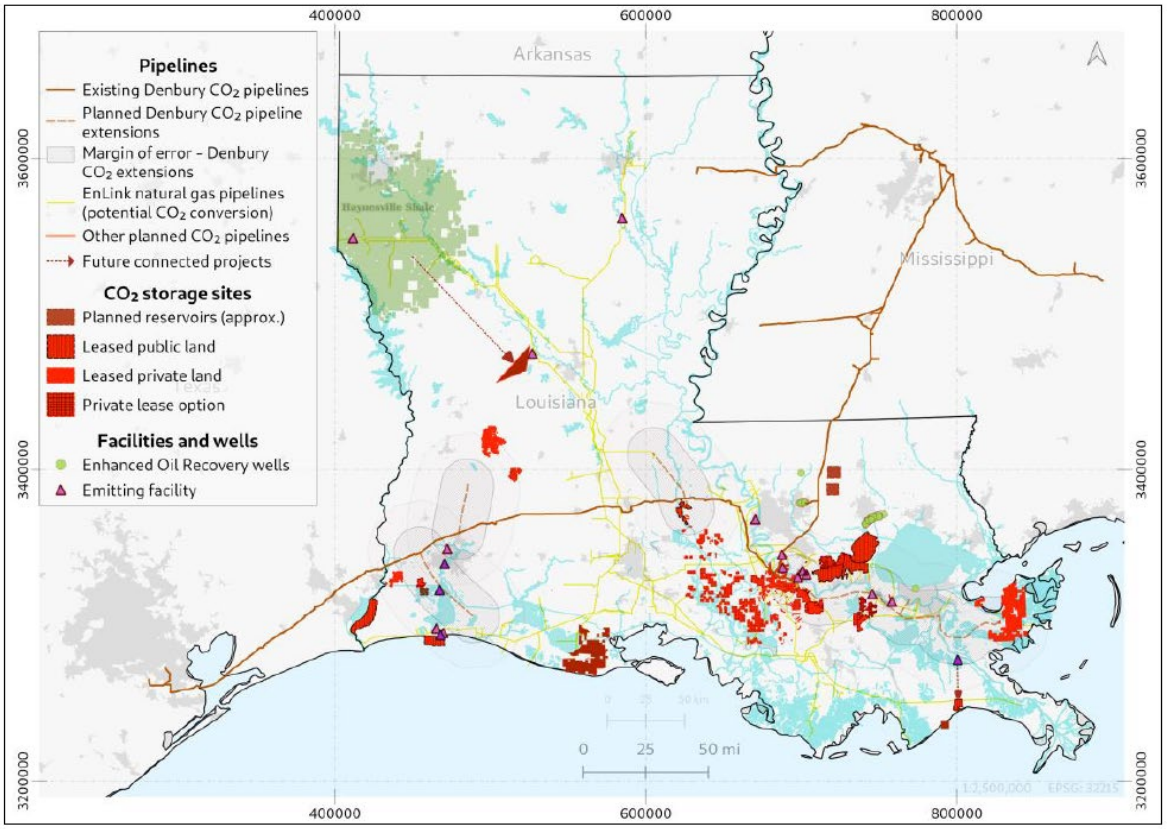

Figure 1. *Map of existing and planned CO_2 pipelines and storage sites in Louisiana, according to the Empower, LLC report released in June 2023.*[30]

According to the recent report by Empower, LLC commissioned by the 2030 Fund:

> Ten companies or joint ventures are developing 14 underground CO_2 sequestration hubs to store emissions from multiple customers. Nine of the companies are oil producers, while the other two are Blackstone, the world's largest private equity firm, and the Stream Family, a Louisiana family with major, oil-producing land holdings. […] Denbury has CO_2 sequestration deals amounting to about 20 million

[26] EPA, *Class VI Wells Permitted by EPA* (June, 25, 2023), https://www.epa.gov/uic/class-vi-wells-permitted-epa.
[27] Empower LLC, Carbon Capture & Sequestration In Louisiana, Part 1: Permitting for rapid expansion, at 3 (June 7, 2023), attached hereto as **Exhibit 7**.
[28] *Id*.
[29] *See id* at pp. 7-9.
[30] *Id*. at 10,

> tons per annum (mtpa), 18 mtpa of which are in Louisiana—far more than any other competitor—and claims to be negotiating an additional 55 mtpa. Approximately half of the projects currently in negotiations are "greenfield" (new development), while the others are "brownfield" (existing emitters).[31]

This rapid onslaught of proposed oil and gas-related carbon storage projects could increase both greenhouse gas and toxic air pollutant emissions in the state. According to a report by the European Environment Agency ("EEA"), air pollutant emissions from CCS (e.g., nitrous oxides ["NOx"], sulfur dioxide ["SO_2"], ammonia ["NH_3"], non-methane volatile organic compounds ["VOCs"], and particulate matter ["PM"]) could increase due to the additional combustion of fossil fuels associated with CCS.[32]

In addition, these projects could significantly impact water resources and water quality. A recent report by the Center for Progressive Reform highlights:

> There are no comprehensive studies regarding the impact of CCS on water sustainability and freshwater resources. A 2018 report published in Energy, Sustainability, and Society examined the effects of CCS on water sustainability. The report finds a need for a complete analysis of the impact of CCS installations on water sustainability in Louisiana. Little or no existing research focuses on the impact of CCS development on wetlands or vice versa or the impact of climate and natural disasters on CCS infrastructure.[33]

If Louisiana obtains primacy, it would rapidly open large portions of the state for mass CO_2 disposal (Figure 1), using a still new and emerging disposal practice, unproven at anywhere near the planned scale. Such an outcome would have grave impacts on climate, the local environment, and human health.

C. Requirements to Obtain Primary Enforcement Authority Over the Class VI UIC Well Program.

The SDWA provides that all state UIC programs must satisfy the requirements of EPA's regulations for state programs,[34] while recognizing that states will have to tailor their program regulations to the unique situations of each state. The Act provides that UIC regulations shall ''permit or provide for consideration of varying geologic, hydrological, or historical conditions in different States and in different areas within a State.''[35] After reviewing the state primacy application, and after a notice and comment period, the Administrator "shall by rule either approve, disapprove, or approve in part and disapprove in part the State's underground injection

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[31] *See id*. at 9.
[32] EEA, *Air pollution impacts from carbon capture and storage (CCS)*, at 21 and 24, (2011), attached hereto as **Exhibit 8**.
[33] *See* Klaus, H. & Schmitt, K. *Uncertainties and gaps in research on carbon capture and storage in Louisiana*, at 13-14, (2023), attached hereto as **Exhibit 9**.
[34] 42 U.S. Code § 300h–1(b)(1)(A)(i); 40 C.F.R. § 144.1(b)(1).
[35] 42 U.S.C. § 300h(b)(3).

control program."[36] In the UIC program primacy context "EPA retains primary enforcement responsibility whenever the State program is disapproved in whole or in part."[37]

In all cases, EPA must ascertain that a state program is designed to ensure that permitted projects will not endanger USDWs.[38] As EPA stated in its Class VI Primacy Manual for State Directors:

> States seeking to obtain Class VI primacy will need to develop regulations that ensure the protection of underground sources of drinking water (USDWs) with requirements for the permitting, siting, construction, operation, monitoring, plugging, post-injection site care and site closure of Class VI injection wells to ensure that GS projects are properly managed and do not endanger USDWs.[39]

To help ensure USDWs are protected, Subpart B of 40 C.F.R. part 145 lists a variety of specific requirements for state programs. These regulations incorporate a list of dozens of additional regulations from 40 C.F.R. part 124 ("Procedures for Decision-making" for EPA's Water Programs) and part 144 (UIC Program) that State programs must conform with to obtain primacy.[40] These requirements include the identification of USDWs in the primacy application,[41] the prohibition of the movement of fluids into USDWs in the primacy application,[42] applicable permit conditions,[43] and corrective actions.[44] Other regulations in part 145 list requirements for compliance evaluation programs,[45] enforcement authority,[46] and information sharing.[47]

States must also have mechanisms to enforce their programs and recover appropriate civil and criminal remedies.[48] This includes requirements that states must be able to "restrain immediately and effectively any person … from engaging in any unauthorized activity which is endangering or causing damage to public health or the environment."[49] EPA regulations also set requirements for compliance evaluation programs, including that any state program must be capable of making comprehensive surveys of all facilities and activities to identify noncompliance, contains a program for periodic inspections in a manner designed to determine compliance or non-

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[36] 42 U.S.C. § 300h-1(b)(2); *Phillips Petroleum Co. v. EPA*, 803 F.2d 545, 548 (10th Cir. 1986) ("If a state fails to adopt or adequately enforce an approved underground injection control program, the EPA must install its own federally administered program for the state or that part of the state not covered by an EPA approved program.").
[37] 40 C.F.R. § 145.21(f).
[38] 42 U.S.C. § 300h(b)(3)(C).
[39] EPA, Geologic Sequestration of Carbon Dioxide: Underground Injection Control (UIC) Program Class VI Primacy Manual for State Directors, 1 (Apr. 2014), attached hereto as **Exhibit 10** (hereinafter "Class VI Primacy Manual").
[40] *See* 40 C.F.R. § 145.11.
[41] *See id.* § 144.7.
[42] *See id.* § 144.12.
[43] *See id*. § 144.51.
[44] *See id*. § 144.55.
[45] *Id.* § 145.12.
[46] *Id*. § 145.13
[47] *Id*. § 145.14.
[48] *Id.* § 145.13.
[49] *Id*. § 145.13(a)(1).

compliance, and be capable of investigating information and complaints from the public concerning potential violations.[50] Accordingly, to ensure that states meet the statutory and regulatory minimum requirements for enforcement and compliance evaluation, EPA must examine the structures and resources that states have in place to restrain violations, surveil activities at Class VI wells, inspect wells, and collect information about noncompliance.

Overall, EPA has the authority under the SDWA and its regulations to look deeply and substantively at any proposed state program and work closely with a state in developing a program.[51] Afterall, states must not only show that they've adopted regulations that meet the requirements of the SDWA, but also that they "will implement" the program to meet those requirements. [52] States therefore have to go beyond a copy and paste of the minimum regulations in order show they can safely carry out enforcement of a Class VI well primacy program.

Finally, EPA must "tak[e] into account any comments submitted" during the public comment period when it approves, disapproves, or approves only in part a state program.[53] EPA is therefore statutorily and regulatorily compelled to consider any additional issues raised by the public in deciding whether to grant a state primacy application.

II. Louisiana's Application Is Incomplete Because It Does Not Include the State's Recently Passed Statutes Governing Class VI Injection Wells.

A state's application to obtain primary enforcement authority over a Class VI well program must include "[c]opies of all applicable State statutes and regulations, including those governing State administrative procedures."[54] After EPA published this proposal, Louisiana passed House Bill 571, which contains statutory provisions governing the permitting and site closure of Class VI injection wells.[55] Louisiana signed House Bill 571 into law with an effective date of June 14, 2023.[56] House Bill 571 contains a number of critical changes to the Class VI well program that EPA proposes to approve, warranting further review by the agency.

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[50] *Id.* §145.12(b) (emphasis added).
[51] *See HRI, Inc. v. E.P.A.*, 198 F.3d 1224, 1241 (10th Cir. 2000), *as amended on denial of reh'g and reh'g en banc*, (Mar. 30, 2000) (noting that "**[i]nterpretation of the procedural regulations pertaining to the grant, modification, and withdrawal of primacy** and to the grant, denial, or revocation of aquifer exemptions **are matters within the agency's expertise, and entitled to deference**) (emphasis added); *see also Legal Env't Assistance Found., Inc. v. U.S. E.P.A.*, 276 F.3d 1253, 1265 (11th Cir. 2001) (recognizing that EPA's approval of a UIC program is reviewable under the arbitrary and capricious standard of the Administrative Procedure Act, even if the program complies with EPA's regulations); EPA, Class VI Primacy Manual, at App. A (explaining collaboration between EPA and states applying for primacy at all phases of a primacy application).
[52] 42 U.S.C. § 300h-1(b)(1)(A)(i).
[53] 40 C.F.R. § 145.31(e); After a determination that a state UIC program application is complete, EPA must publish notice of the submission to the Federal Register, schedule a public hearing at least 30 days after the notice, and allow at least 30 days for public comment. *Id*. § 145.31(c).
[54] 40 C.F.R. § 145.22(a)(5).
[55] The Text of House Bill 571 (Act No. 378) is attached to the Earthjustice Request for Extension of Public Comment Period (Jun. 20, 2023), attached hereto as **Exhibit 11**.
[56] *See* La State Legislator 2023 Regular Session, HB571, available at: https://www.legis.la.gov/legis/BillInfo.aspx?i=244567

When EPA published the Proposed Approval on May 4, 2023, the proposed rule in the Federal Register contained 12 supporting documents: 1) EPA's letter to state governors on environmental justice; 2) Louisiana's AG Statement; 3) Louisiana's Summary Report of Public Comment signed August 17, 2021; 4) Louisiana's Class VI Rules; 5) Louisiana's Class VI Program Description; 6) a content restricted document entitled Office of Conservation, Injection & Mining Division; 7) Louisiana's Public Hearing Transcript; 8) the MOA Addendum signed March of 2023; 9) Louisiana's Public Hearing and Rule Docket; 10) Memorandum from EDF and Wessler on Class VI primacy and liability; 11) Louisiana's Governor's Letter; and 12) Louisiana's Summary Report of Public Comment signed April 21, 2021. The Federal Register Notice has not been updated, and the statutory provisions that became effective June 14, 2023 are not included in the Federal Register notice nor in any of the supporting documents.

House Bill 571 contains amendments to the statutory provision on cessation of storage operations and limited liability release at LA Rev. Stat § 30:1109. This liability waiver is a significant concern to the citizens of Louisiana, and a large portion of the Federal Register Notice is directed toward addressing it. While House Bill 571 contains a number of changes to the State's post-site closure requirements, it maintains the long-term liability waiver that is in conflict with the Federal rules and the SDWA.[57] Altogether, House Bill 571's changes to this provision constitute a change to LDNR's statutes and regulations governing Class VI UIC wells that requires an updated Application and another review by EPA and the public.

House Bill 571 also contains other provisions related to Class VI wells, including adding an "Environmental analysis" to Class VI injection well permitting to be "used to satisfy the public trustee requirements of Article IX, Section 1 of the Constitution of Louisiana…."[58] Notably, this "Environmental Analysis" does not include any environmental justice factors. This appears to conflict with how the amended Program Description discusses the Constitutional public trustee factors. In any event, House Bill 571 is a significant change to the permitting of Class VI wells in the state that requires an updated application and an additional review by EPA and the public.

On June 20, 2023, Earthjustice submitted a Request for an extension of the comment period to allow the public time to review these significant changes to the State's Class VI well permitting program.[59] The Request noted the significant public interest in EPA's Proposed Approval and how thousands of requests for extension had already been submitted. EPA did not act on the Request, leaving the public very little time to learn about and comment on House Bill 571's significant changes. Because the Application and the Federal Register Notice is incomplete, EPA cannot properly approve Louisiana's Application for primacy. EPA must allow both itself and the public time to consider all statutes and regulations Louisiana has adopted governing Class VI wells.

[57] House Bill 571 at p. 5, §1104.1.
[58] *Id*. at §1104.1.B.
[59] *See* Earthjustice Request for Extension of Public Comment Period, **Exhibit 11**.

III. EPA Must Deny Louisiana's Application for Class VI Primacy Because the State's Program Does Not Meet the Minimum Requirements in the Federal Regulations.

A state's regulations must be at least as stringent as the Federal Class VI regulations, and the state must demonstrate it can implement requirements for the permitting, siting, construction, operation, monitoring, plugging, post-injection site care and site closure of Class VI injection wells to ensure that Class VI well projects are properly managed and do not endanger USDWs.[60] EPA cannot authorize, and therefore must reject, a primacy application absent these showings.

EPA must reject LDNR's Application because its regulations and the State's program are less protective than the Federal Class VI program and UIC rules. Louisiana has not shown it can implement the Class VI well program because: A) it waives post-site closure operator liability, leaving the people of Louisiana on the hook for post-closure leakage or migration of CO_2; B) LDNR has not shown it can effectively enforce the Class VI well program; C) LDNR cannot ensure financial responsibility standards are met; D) LDNR's rules do not require that all Class II wells requiring Class VI permits timely obtain them; E) LDNR's rules do not require consideration of pressure increases on faults and fracture networks or provide methods to ensure producing and abandoned wells will be identified and addressed in the Area of Review; F) the program does not contain adequate site characterization standards to ensure unsuitable formations and sites are avoided; and G) LDNR does not have the staff, expertise, or track record to safely implement the Class VI program, particularly in light of the unprecedented buildout of carbon sequestration planned for Louisiana.

A. LDNR's Program Fails to Comply with the Minimum Post-Injection Site Care and Site Closure Requirements Critical to Long-Term Protection of USDWs and Human Health.

Louisiana statutory law is less protective than EPA's minimum requirements on post-injection site care and closure because it contains a complete liability waiver where the Federal program maintains long-term liability even after site closure.

EPA's minimum regulations require that following injection activities, owners or operators monitor and comply with a post-injection site care plan for at least 50 years, or some other time if demonstrations are made that the project no longer endangers USDWs.[61] In order to meet the non-endangerment determination required for site closure, the operator must submit a detailed report that contains, at a minimum, operational and post-injection phase monitoring data and information, an updated area of review evaluation, and the status of potential conduits for fluid movement within the area of review.[62] Once a non-endangerment demonstration is made, the operator is no longer required to monitor the site pursuant to the post-injection site care plan, but there is no release of long-term liability on the operator contained in the Federal rules.[63]

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[60] Class VI Primacy Manual, at 1, **Exhibit 10**.
[61] 40 C.F.R. § 146.93(b).
[62] EPA, Geologic Sequestration of Carbon Dioxide: Underground Injection Control (UIC) Program Class VI Well Plugging, Post-Injection Site Care, and Site Closure Guidance, at 45-46 (Dec. 2016), attached hereto as **Exhibit 12**.
[63] *See* 40 C.F.R. § 146.93.

1. Louisiana law releases operators from long-term liability.

While LDNR's regulations contain similar language as the federal minimal regulations, the liability waiver in Louisiana statute at Section 30.1109 of Title 30 makes Louisiana's post-site closure requirements less stringent. When a statute conflicts with an agency's regulation or administration of the law, the statute trumps the regulation.[64] The Louisiana statute currently provides that 50 years after cessation of operations, the commissioner must issue a "certificate of completion of injection operations" when a non-endangerment showing is made. However, once a "certificate of completion" is issued it carries two legal consequences that are not in the federal program: First, the operator "shall be released from any and all future duties or obligations under this Chapter and any and all liability associated with or related to that storage facility which arises after the issuance of the certificate of completion of injection operations."[65] Second, ownership of the Class VI well project transfers to the state.[66] The only exemptions to this broad liability waiver apply to situations where the prior operator was in noncompliance with UIC laws and regulations prior to issuance of the certificate, or where the prior operator intentionally and knowingly concealed or misrepresented material facts related to the facility's mechanical integrity or the composition of the injectate.[67]

EPA explained in the preamble to the Class VI rule, and again in its guidance on post-injection site care and closure requirements, that "site closure does not eliminate any potential responsibility or liability of the owner or operator under other provisions of law."[68] EPA clarified that even after site closure is approved under the Class VI regulations and the operator is released from the post injection site care plan, the operator remains subject to a response order under the SDWA, liable for tort or other remedies, and "potentially liable under other federal statutes "including, but not limited to the Clean Air Act (CAA), 42 U.S.C. 7401-7671; the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601-9675; and the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901-6992."[69] Thus, EPA's program does not allow for a liability waiver like the one in Louisiana's statute, and EPA cannot approve the program while this conflicting law is in place.

2. Carbon sequestration poses uncertainty and risks that require long-term liability.

Long-term liability is particularly important because very little is known about the long-term viability of high-volume CO_2 storage. Regulation of CO_2 wells by EPA is supposed to address a

[64] *See Bd. of Trustees of State Emps. Grp. Benefits Program v. St. Landry Par. Bd*., 2002-0393 (La. App. 1 Cir. 2/14/03), 844 So. 2d 90, 100, *writ denied sub nom. Bd. of Trustees of State Grp. Benefits Program v. The St. Landry Par. Sch. Bd.*, 2003-0770 (La. 5/9/03), 843 So. 2d 404 ("holding that an administrative interpretation cannot be contrary to the legislative will as expressed in those statutes…."); *Boyd v. Louisiana Real Est. Comm'n*, 581 So. 2d 304, 306 (La. Ct. App. 1991); *Jurisich v. Jenkins*, 99-0076 (La. 10/19/99), 749 So. 2d 597, 602.
[65] House Bill 571 at p. 8; La. Stat. Ann. § 30:1109A.(3).
[66] *Id*.; La. Stat. Ann. § 30:1109A(2).
[67] *Id*. § 30:1109A.(3),
[68] UIC Program Class VI Well Plugging, Post-Injection Site Care, and Site Closure Guidance, at 56, attached as **Exhibit 12**.
[69] *Id*. at 56-57.

number of long-term risks related to sequestration, including 1) the large volumes of CO_2 expected to be injected; 2) the relative buoyancy of CO_2 in underground geologic formations; 3) the mobility of CO_2 in subsurface formations; 4) the corrosive properties of CO_2 in the presence of water that can affect well materials; and 5) the potential presence of impurities in the CO_2 stream.[70] How these risks will manifest themselves long-term is unknown, primarily due to the fact that long-term carbon storage is a relatively new and untested proposal. The only operating Class VI well projects are connected to an ethanol plant in Illinois, and they are very different from the proposals related to fossil fuels and hydrogen proposed in Louisiana.[71]

A recent report by the Institute for Energy Economics and Financial Analysis ("IEEFA") confirms these risks and unknowns.[72] The report looked at two of the most cited projects for successful carbon sequestration but notes the uncertainty of the practice "given the very limited practical, long-term experience of permanently keeping CO_2 in the ground."[73] Even in these two well-studied examples "the security and stability" of the confining geology proved difficult to predict.[74] Three years into one operation, CO_2 had risen from the injection formation to a previously unidentified shallow layer of the formation.[75] The other well-studied site "demonstrated acute signs of rejecting the CO_2" just 18 months into injection operations.[76]

The study concluded that the:

> projects demonstrate that each CCS project has unique geology; that geologic storage performance for each site can change over time; and that a high-quality monitoring and engineering response is a constant, ongoing requirement. Every proposed project needs to budget and equip itself for contingencies both during and long after operations have ceased.[77]

Ultimately, the study calls "into question the long-term technical and financial viability of the concept of reliable underground storage."[78]
The storage capacity of the saline aquifers proposed for injection in Louisiana is particularly unclear.[79] Studies for the region conclude that estimates of storage capacity vary considerably and note a need for better data and methods to estimate capacity.[80] Moreover, there is a lack of

[70] Injection and Geologic Sequestration of Carbon Dioxide: Federal Role and Issues for Congress, at 14, **Exhibit 2**.
[71] *See id*. at Summary.
[72] Hauber, G., *Norway's Sleipner and Snøhvit CCS: Industry models or cautionary tales?*, Institute for Energy Economics and Financial Analysis (June 2023), attached hereto as **Exhibit 13**.
[73] *Id*. at 5.
[74] *Id.* at 6.
[75] *Id.* at 6.
[76] *Id.*
[77] *Id*.
[78] *Id*. at 7.
[79] Klaus, H. & Schmitt, K., *Uncertainties and Gaps in Research on Carbon Capture and Storage in Louisiana*, Center for Progressive Reform, at 6 (June 2023), attached hereto as **Exhibit 14**.
[80] *Id*.

knowledge on leakage risk factors due to potential faults and vertical migration by dissolution in storage sites in Louisiana.[81]

Altogether, due to the risks and uncertainty surrounding long-term carbon storage, EPA must carefully evaluate primacy applications and reject those that limit liability post-injection.

3. An MOA cannot be used to override state statutes and regulations.

In EPA's evaluation of the Application, EPA states that the concerns raised about the liability conflict are quelled because "LDNR agreed in the MOA addendum that LDNR will not issue a certificate of completion pursuant to LA R.S. 30:1109 until the owner or operator submits a site closure report pursuant to 40 C.F.R. 146.93(f) and Louisiana Code (LAC) 43:XVII.3633.A.6 and otherwise fully complies with the site closure requirements in 40 C.F.R. 146.93 and LAC 43:XVII.3633."

EPA's reliance on Louisiana's regulatory provision on post injection site care and site closure at Section 3633 is misplaced because that Louisiana regulation will not override the conflicting Louisiana statute. Again, the state statute trumps the state regulation.[82] Thus, regardless of the regulation adopted by LDNR, operators will be able to utilize the statute at Section 30.1109 of Title 30 to be released from liability.

An MOA also cannot correct this statutory conflict. The MOA is an agreement between the state agency and the EPA, and details the relationship between EPA and the state agency, including EPA's oversight responsibilities.[83] The United States Supreme Court has held that agreements or contracts are not "standards" and are not entitled to federal preemption.[84] Indeed, courts have held that MOAs themselves are not regulatory "standards."[85] Thus, EPA's attempt to correct the conflicting statute with an MOA is misplaced and will not have the effect of doing so.

Finally, the recent statutory changes to Section 1109 in House Bill 571 evidence the State's intent to implement the liability waiver. Knowing EPA's stated concerns about the liability waiver and the inconsistency with the federal program, Louisiana maintained the liability waiver

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[81] *Id*. at 10-11.

[82] *See Bd. of Trustees of State Emps. Grp. Benefits Program v. St. Landry Par. Bd*., 2002-0393 (La. App. 1 Cir. 2/14/03), 844 So. 2d 90, 100, *writ denied sub nom. Bd. of Trustees of State Grp. Benefits Program v. The St. Landry Par. Sch. Bd*., 2003-0770 (La. 5/9/03), 843 So. 2d 404 ("holding that an administrative interpretation cannot be contrary to the legislative will as expressed in those statutes…."); *Boyd v. Louisiana Real Est. Comm'n*, 581 So. 2d 304, 306 (La. Ct. App. 1991); *Jurisich v. Jenkins*, 99-0076 (La. 10/19/99), 749 So. 2d 597, 602.

[83] *See* 40 C.F.R. 145.25(b)(1)-(6) (requiring, among other things, provisions specifying the frequency of reporting to U.S. EPA, coordinating compliance monitoring activities, and to assure coordination of enforcement activities).

[84] *Assn. of Intern. Auto. Mfrs., Inc. v. Commr., Mass. Dept. of Environmental Protection*, 208 F.3d 1, 7 (1st Cir.2000); at 7 *(*citing *American Airlines, Inc. v. Wolens,* 513 U.S. 219, 228–29, 115 S.Ct. 817, 130 L.Ed.2d 715 (1995) *and American Airlines, Inc. v. Wolens,* 513 U.S. 219, 228–29, 115 S.Ct. 817, 130 L.Ed.2d 715 (1995).

[85] *Assn. of Intern. Auto. Mfrs., Inc. v. Commr., Mass. Dept. of Environmental Protection*, 208 F.3d 1, 8 (1st Cir.2000);

with House Bill 571. Specifically, as described in Part II., *supra*, the State recently amended Section 1109 to include a number of requirements consistent with the federal minimum regulations, but purposefully left the broad liability waiver and transfer of ownership to the state in place. Thus, it is clear that Louisiana intends to carry out the program implementing the liability waiver.

B. LDNR's Application Does Not Meet EPA's Minimum Enforcement Regulations and LDNR Has Not Shown It Can Implement Enforcement of the Class VI Program.

1. LDNR's statutory liability waiver conflicts with EPA's minimum enforcement standards.

To meet minimum requirements for state enforcement authority, among other things, a state "shall have available" the ability to "enjoin any threatened or continuing violation of any program requirement…."[86]

As the Gupta/Wessler Memorandum in EPA's supporting documents aptly states:

> Louisiana's liability-release statute contravenes the SDWA's goal of prioritizing the protection of public health. That is because it undermines, rather than advances, the state's ability to protect drinking water by insulating from enforcement action the individuals who make critical decisions about wells (e.g., construction, operation, and plugging decisions)—decisions that could later impact drinking water and cause harm. And that problem is magnified when one considers the regulations EPA passed to implement the SDWA's public health purposes.[87]

The Memorandum describes that the reference to "any program requirement" at 40 C.F.R. § 145.13 refers also to post-closure enforcement because a number of program requirements for Class VI wells apply post-closure, including requirements to obtain records post-site closure.[88]

Further, EPA has stated that in establishing the minimum regulations, it wanted to ensure "an owner or operator may always be subject to an order the Administrator deems necessary to protect the health of persons under section 1431 of the SDWA after site closure if there is fluid migration that causes or threatens imminent and substantial endangerment to a USDW."[89] Similarly, "an owner or operator may be held liable for regulatory noncompliance . . . even after the site closure is approved under section 146.93, under section 1423 of the SDWA for violating section 144.12, such as where the owner or operator provided erroneous data to support approval

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[86] 40 C.F.R. § 145.13(a)(2).
[87] Gupta/Wessler Memorandum Re Legal analysis of EPA's UIC program and primacy requirements under the Safe Drinking Water Act, (March 2, 2023) at 5.
[88] *Id*. at 6.
[89] Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO_2) Geologic Sequestration (GS) Wells, 75 Fed. Reg. 77272.

of site closure."[90]

Louisiana's statute would undermine the agency's ability to hold an operator liable for post-closure noncompliance that occurs after "the issuance of the certificate of completion of injection operations."[91] This erases liability for violations such as fluid migration that causes or threatens imminent and substantial endangerment to a USDW. The post-closure liability waiver is thus in conflict with EPA's post-site closure regulations and is less stringent than the federal program.

EPA seems to recognize a potential conflict but suggests that the MOA somehow addresses the problem.[92] However, even if the MOA addendum could override the plain language in the statute, the MOA addendum does not address the liability waiver at all. The Addendum only addresses how and when a certificate of completion can be issued and says nothing about liability after a certificate is issued.[93]

EPA cannot approve the program until it has concrete legal assurance that the liability waiver is not part of the state's program, and because the statute will trump the state's regulations, this likely must come in the form of a repeal of the provision. In the Federal Register Notice, EPA admits it does not yet have such assurance stating, "EPA will also confirm that specific aspects of LA R.S. 30:1109 are consistent with EPA's interpretation."[94] EPA must confirm the consistency *before* it approves the program. Tellingly, as explained in Section II., *supra*, the State recently reaffirmed the liability waiver when it amended LA R.S. 30:1109 and maintained the waiver in House Bill 571. As it stands, EPA must find that the liability waiver makes Louisiana's program less stringent than the federal regulations.

2. LDNR's enforcement program would not immediately and effectively restrain violations that could endanger or damage public health or the environment.

A state agency administering a Class VI program must be able to "immediately and effectively" restrain any person engaging in unauthorized activity that is endangering or causing damage to public health or the environment.[95] This includes carrying out necessary administrative, civil, and criminal penalty remedies.[96] Civil penalties are a vital tool in obtaining "immediate compliance by limiting the [violator's] economic incentive to delay its attainment of permit" terms and in "deter[ing] future violations."[97] LDNR's enforcement program does not

[90] *Id*.
[91] La. Stat. Ann. § 30:1109A.(3).
[92] *See* State of Louisiana Underground Injection Control Program; Class VI Program Revision Application, 88 Fed.Reg. 28453.
[93] MOA Addendum 3 at 4.
[94] *See* State of Louisiana Underground Injection Control Program; Class VI Program Revision Application, 88 Fed.Reg. 28453.
[95] 40 C.F.R. § 145.13
[96] EPA, Class VI Primacy Manual, at 8, **Exhibit 10**.
[97] *Friends of the Earth, Inc. v. Laidlaw Env't Servs. (TOC), Inc.*, 528 U.S. 167, 185, 120 S. Ct. 693, 706, 145 L. Ed. 2d 610 (2000).

meet the federal minimal regulations because it requires the agency to take multiple onerous steps before it can issue any penalty, and the penalty amount is capped at an amount too low to deter ongoing violations.

For violations "that may endanger USDWs" the Program Description describes a compliance order process in which LDNR may issue a civil penalty of just up to $5,000 per day, per violation.[98] First, LDNR must issue a compliance order without a civil penalty for all violations.[99] If the violator does not comply with this order, then LDNR can issue a compliance order with a civil penalty as the "final enforcement stage."[100] This unreasonable delay prevents immediate and effective enforcement of activity that could impact public health and the environment.

In addition, the penalty amount capped at a maximum of $5,000 is too low to deter violations. Congress has recognized the need to "establish a mechanism that shall ... allow for regular adjustment of monetary penalties" in order to "maintain the deterrent effect of civil monetary penalties and promote compliance with the law."[101] Accordingly, EPA has currently set civil penalties under the SDWA at a maximum of $67,544 per day, per violation, and at $27,018 per day, per violation for administrative penalty orders.[102] Particularly given the uncertainty of the efficacy of underground carbon storage and the scale of planned storage in the State, EPA should not turn over enforcement of the Class VI program to LDNR while the agency has an ineffective civil penalty program and a penalty amount capped at an amount much lower than what EPA has deemed appropriate.

3. LDNR has a demonstrated history of failed enforcement within its programs and has not shown they can implement an effective Class VI UIC well enforcement program.

The minimum federal regulations require compliance evaluation programs to be capable of making comprehensive surveys of all facilities subject to regulation and identifying and enforcing violations.[103] The State's Legislative Audit Reports spotlight LDNR's lack of compliance monitoring, enforcement, and general oversight of more established and less complicated well programs. In its application, LDNR recites the minimum requirement provided to it, but given LDNR's Office of Conservation's history of failed enforcement, the agency provides no basis to satisfy the Administrator that it can successfully implement and enforce its

[98] Program Description at p. 9. The State's UIC penalty statute provides that a civil penalty of just $5,000 per day for each violation may be issued only after a "compliance order" is issued, and only if the operator fails to take corrective action in the time specified in the compliance order. La. Stat. Ann. § 30:1106D.(1).
[99] *Id*.
[100] *Id*.
[101] 28 U.S.C.§ 2461 note, § 2(b).
[102] *See* 40 C.F.R. § 19.4, Table 1.
[103] *See* 40 C.F.R. §145.12(b).

Class VI injection well regulations. EPA cannot approve this rulemaking without such a showing.

The Louisiana Legislative Auditor's 2014 audit of LDNR's Office of Conservation oil and gas well program illustrates the agency's failures. The Auditor concluded that the Office of Conservation did not effectively regulate oil and gas wells to ensure compliance with the relevant regulations,[104] because, among other things, the Office failed to conduct inspections on a quarter of active wells, and for more than half the wells, they failed to conduct inspections within required timeframes.[105] Where the agency found violations, it consistently failed to issue penalties, even for operators that already had compliance orders in place.[106] In addition, the Office failed to re-inspect more than 6,000 wells that already had compliance orders issued to ensure violations were corrected.[107] Ultimately, the report concluded that the Office of Conservation "has not developed an effective enforcement process that sufficiently and consistently addresses noncompliance and deters operators from committing subsequent violations."[108]

The Legislative Auditor's 2018 financial audit further illuminates the Office of Conservation's lack of penalty enforcement. The Audit found that the Office had no criteria for waiving civil penalties, and confirmed numerous instances where the Office waived or incorrectly assessed penalties.[109] The agency reduced 50% of penalties assessed, waived 32% of penalties, incorrectly assessed 21% of penalties, and failed to timely follow up on 68% of penalties that required corrective action.[110] The Audit further noted that the Office of Conservation failed to consistently take action against well operators that failed to maintain wells, likely resulting, it said, in an increased number of abandoned wells.[111]

While there has not been auditing of LDNR's oversight of its UIC well programs, disastrous incidents occurring from UIC injection wells highlight the lack of compliance oversight from the State. In August of 2022, a large subsidence event occurred near a wooded swamp in the Bayou Corne area of Louisiana, resulting in a sinkhole approximately 26 acres in size and an evacuation of the town's 350 residents.[112] This likely occurred because LDNR allowed solution mining

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[104] La. Legis. Auditor, Regulation of Oil and Gas Wells and Management of Orphaned Wells: Office of Conservation – Department of Natural Resources 2 (May 28, 2014), attached hereto as **Exhibit 15**.
[105] *Id*.
[106] *Id*. at 4.
[107] *Id*. at 12.
[108] *Id*. at 3.
[109] La. Legis. Auditor, Department of Natural Resources State of Louisiana Financial Audit Services Procedural Report (August 22, 2018), attached hereto as **Exhibit 16**.
[110] *Id.* at 1-2.
[111] *Id.* at 1 ("In addition, the Office of Conservation does not take timely and consistent action against operators of wells that are abandoned and not maintained, which could result in an increased number of wells that are abandoned.").
[112] McKeithen, M. & Venn, B., *Recent Changes to Louisiana's Underground Injection Control Program*, Jones Walker, at 2, attached hereto as **Exhibit 17;** Murphy, Tim, *Meet the Town That's Being Swallowed by a Sinkhole*, MotherJones (August 7, 2013), attached hereto as **Exhibit 18.**

through Class III UIC wells to operate too close to a salt dome.[113] The mismanagement of oil and gas waste in Grand Bois involving, among other things, Class II UIC wells, is another example of poor oversight and enforcement by LDNR.[114] There, the siting of injection wells and waste pits in an environmental justice community has had an ongoing negative impact on air and water quality for decades.[115]

Therefore, EPA must take a deeper look into LDNR's history of compliance and enforcement and deny primary enforcement authority of the Class VI program unless and until LDNR demonstrates its intent and ability to meet the program's minimum requirements for compliance evaluation and enforcement.[116]

C. LDNR Has Not Demonstrated It Can Implement the Financial Responsibility Requirements the Minimum Regulations Mandate.

Under EPA's minimum regulations, the implementing agency must be able to determine financial responsibility demonstrations for performing corrective actions on injection well plugging, site closure activities, emergency and remedial response, and improperly abandoned wells in the Area of Review ("AoR").[117] The financial responsibility amounts must also be sufficient to address endangerment to USDWs.[118] LDNR's program would give LDNR's Office of Conservation discretion in determining financial responsibility amounts and instruments,[119] a discretion that Louisiana's own Legislative Auditor has found LDNR unwilling or unable to exercise properly for other well programs. Hence, LDNR has not made a showing that it can implement its regulations regarding financial responsibility. Consequently, EPA must not approve primacy unless LDNR's Office of Conservation shows it can evaluate and implement the technical requirements for financial responsibility.

EPA established financial responsibility requirements to prevent the general public from bearing the costs of abandoned Class VI well projects.[120] EPA has stated that "determination of financial coverage needs will be made in consideration of the specific nature of a Class VI project" and the costs "must be based on the specific risks associated with a particular project site and operational activity (*e.g.*, the construction of the injection and monitoring wells, the size of the AoR, and

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[113] *Id.*
[114] Solet, Kimberly, *Grand Bois case changed the landscape of environmental battles,* Houma Today (April 19, 2005), attached hereto as **Exhibit 19.**
[115] *Id*.
[116] Recent audits were highlighted in these comments, but it should be noted that the Louisiana Legislative Auditor has been consistently finding that LDNR has been deficient in its oversight and performance duties for decades. *See* La. Legis. Auditor, Department of Natural Resources: Analysis of Program Authority and Performance Data (Oct. 1997), attached hereto as **Exhibit 20.**
[117] 40 C.F.R. § 146.85(a)(2).
[118] *Id*. § 146.85(a)(3).
[119] *See* La. Admin. Code tit. 43, pt. XVII, § 609.C.
[120] EPA, UIC Program Class VI Financial Responsibility Guidance, at 1 (July 2011), attached hereto as **Exhibit 21**.

whether USDWs are present near the project)."[121] In order to implement the financial responsibility requirements, the UIC Program Director must be able to evaluate the cost estimates submitted by an operator to meet financial responsibility obligations.[122]

Importantly, the Office of Conservation has shown an inability to carry out financial responsibility requirements for less complicated well programs. In 2014, the Louisiana Legislative Auditor found for oil and gas wells that the Office of Conservation's "financial security amounts are not sufficient to cover the cost to plug all wells."[123] The Audit explained that the Office of Conservation's calculations grossly underestimated the actual costs of plugging a well,[124] that the security amount only accounted for plugging activity and failed to account for costs associated with the complete remediation of the well site,[125] and that the Office of Conservation only required 25% of oil and gas wells to be covered by financial security.[126] The Audit concluded that the Office of Conservation's financial security implementation actually incentivized "operators to abandon wells since forfeiting the financial security may be more economical than paying plugging costs."[127]

The Legislative Auditor published a Progress Report to the 2014 Audit in 2020.[128] The Progress Report notes that, in the 6 years since the Audit, nearly 45% of wells in the state were still not covered by financial security requirements.[129] In addition, although the Office of Conservation amended its regulations to change the financial security amounts in response to the Audit, the Progress Report found that the revised amounts were "still not sufficient to cover the cost of plugging most wells."[130] The Progress Report again concluded that the Office of Conservation's financial security requirements "provide an incentive for operators to abandon wells instead of plug them."[131]

Given LDNR's demonstrated inability to implement financial security requirements, EPA should deny the Application and avoid handing over its discretion on financial security for the public welfare to that agency. If EPA does not deny the Application at this time, it must require additional measures in the Application and regulations to ensure that LDNR meets the technical requirements for financial responsibility, and that its Office of Conservation has the methods and

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[121] EPA Report to Congress: Class VI Permitting, at 26, **Exhibit 1**.
[122] UIC Program Class VI Financial Responsibility Guidance, at App. C-1, **Exhibit 21**.
[123] Regulation of Oil and Gas Wells and Orphaned Wells, Office of Conservation – Department of Natural Resources, at 7, **Exhibit 15**.
[124] *Id*. at 7.
[125] *Id*.
[126] *Id*. at 5.
[127] *Id*. at 3, 8.
[128] La. Legis. Auditor, Progress Report: Regulation of Oil and Gas Wells and Management of Orphaned Wells, Office of Conservation – Department of Natural Resources (March 2020), attached hereto as **Exhibit 22**.
[129] *Id*. at 2.
[130] *Id*.
[131] *Id*. at 2, 6.

expertise necessary to evaluate the costs unique to Class VI wells, including costs of closure activities, emergency and remedial response, and endangerment to USDWs.

D. Louisiana's Class II EOR Well Conversion Process Does Not Comply with the Federal Class VI Rule Permitting Requirements.

Louisiana's Application for converting Class II wells to Class VI wells violates EPA's minimum regulations and the federal Class VI program in two ways. First, Louisiana's program provides a schedule for converting Class II permits to Class VI permits within four years, which is double the minimum federal standard of two years. In addition, the Louisiana program does not require Class VI permitting for all Class II EOR wells that would inject carbon for long-term storage, contrary to the minimum rules and the purpose of the Class VI program.

1. Louisiana's schedule for transitioning Class II wells to Class VI violates EPA's regulations.

The minimum federal regulations require that a state provide a schedule for issuing permits for all wells that need a Class VI permit within two years. Specifically, the minimum regulations provide that a State UIC program description must include:

> A schedule for issuing permits within five years after program approval to all injection wells within the State which are required to have permits under this part and 40 CFR part 144. For Class VI programs, a schedule for issuing permits within two years after program approval.[132]

However, Louisiana sets forth a four-year schedule in its application. As its program description states:

> The agency will evaluate information about Class II enhanced oil recovery wells (e.g., carbon dioxide injection and production data or information related to the other factors at LAC 43:XVII.3603.G.2) and identify whether any projects are approaching risk thresholds **within four years of receiving Class VI primacy** in accordance with 40 CFR 145.23(f). Because LOC has primacy for both the 1422 and 1425 programs, no inter-agency cooperation will be required to convert a Class II well to a Class VI well.

The federal minimum regulations provide no exceptions for Class II EOR wells that need Class VI permits. Thus, Louisiana's application does not meet the two-year deadline for Class VI permitting in the federal regulation. Furthermore, by expanding the period from two years to four, Louisiana's program is less stringent than the Federal regulation and therefore must be denied.

[132] 40 C.F.R. § 145.23(f)(1).

2. Louisiana's regulations would allow Class II wells to inject CO_2 for long-term storage without a Class VI permit.

The federal Class VI regulations state that the Class VI rules apply to "any wells used to inject carbon dioxide specifically for the purpose of geologic sequestration, *i.e.,* the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations."[133] However, LDNR's regulations set forth a more narrow metric, providing that operators using Class II wells for the purpose of long-term storage of carbon need to apply for and obtain a Class VI permit only when "there is an increased risk to USDWs compared to Class II operations."[134] LDNR's less stringent regulations for CO_2 injected for the primary purpose of long-term storage do not meet EPA's minimum regulations and EPA must reject them.[135] Moreover, because long-term storage of CO_2 would virtually always increase risks to USDWs compared to Class II EOR operations, EPA should not approve Louisiana's program until it completely prohibits the injection of CO_2 for the purpose of permanent storage in Class II wells without exception.

While Class II wells may inject carbon for EOR, most of the CO_2 injected underground for EOR is pumped back up to the surface and captured either for continued use in the same ER project or for use in another ER project.[136] Some amount CO_2 may be left behind and stored in the formation, but the primary purpose of EOR is not geologic sequestration of CO_2. Thus, while EPA states that some storage of CO_2 in Class II wells is a common occurrence, the purpose of the injection is still for oil and gas related recovery.[137] The risks and uncertainties of long-term, high-volume storage are not accounted for in Class II permitting.

Some of the differing and more rigorous technical requirements for Class VI wells as compared to Class II wells include (1) intensified site characterization to demonstrate the receiving reservoir can safely accommodate the planned injected CO_2 volume,[138] (2) use of a

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[133] 40 C.F.R. § 146.81(b).

[134] 43 La. Admin. Code Pt XVII, 3603.G.1.

[135] A separate regulation states that "operators that are injecting carbon dioxide for the primary purpose of long-term storage into an oil and gas reservoir must apply for and obtain a Class VI geologic sequestration permit when there is an increased risk to USDWs compared to Class II operations." 40 C.F.R. § 144.19(a). While LDNR's rule parrots this language, this is insufficient to meet the mandate that the Class VI rules apply to any well "used to inject carbon dioxide specifically for the purpose of geologic sequestration…." EPA should not read out the mandate that "any" well injecting CO_2 for long-term storage comply with the Class VI rule requirements. Rather, the transition rule clarifies that it also applies where there is an increased risk to USDWs.

[136] Congressional Research Service, *Injection and Geologic Sequestration of Carbon Dioxide: Federal Role and Issues for Congress*, (Updated Sept. 22, 2022), at 5, **Exhibit 2**.

[137] *See* EPA Memorandum, Key Principles in EPA's Underground Injection Control Program Class VI Rule Related to Transition of Class II Enhanced Oil or Gas Recovery or Gas Recovery Wells to Class VI, at 1, (April 23, 2015), attached hereto as **Exhibit 23**.

[138] *See CO_2 Leakage During EOR Operations* at 34, **Exhibit 4**, "Demonstrate wells will be sited in areas with suitable geologic system comprising injection zone(s) of sufficient areal extent, thickness, porosity, and permeability to receive total anticipated volume of CO_2 stream and confining zone(s) free of transmissive faults or fractures and of sufficient areal extent and integrity to contain injected CO_2 stream

computational model to determine the AoR,[139] (3) numerous well construction requirements that specifically address compatibility with the CO_2 stream and prevention of corrosion,[140] and (4) continuous monitoring of the CO_2 plume and reservoir pressure, among other factors.[141] In addition, Class VI post-injection well site closure requirements involving long-term monitoring do not apply to Class II EOR wells.[142] Allowing long-term storage of CO_2 in a Class II well loses these protections in contravention of the purpose and language of the federal Class VI rule.

In any event, in virtually all scenarios, using Class II wells to attempt to dispose of or permanently store CO_2 poses an increased risk to USDWs in Louisiana. EPA acknowledged this when promulgating the 2010 Class VI well rules, stating, "if the business model for ER changes to focus on maximizing CO_2 injection volumes and permanent storage, then the risk of endangerment to USDWs is likely to increase."[143] EPA explained that this risk comes from:

> … reservoir pressure within the injection zone will increase as CO_2 injection volumes increase. Elevated reservoir pressure is a significant risk driver at GS sites, as it may cause unintended fluid movement and leakage into USDWs that may cause endangerment. Additionally, increasing reservoir pressure within the injection zone as a result of GS will stress the primary confining zone (i.e., geologic caprock) and well plugs to a greater degree than during traditional ER (e.g., Klusman, 2003). Finally, active and abandoned well bores are much more numerous in oil and gas fields than other potential GS sites, and under certain circumstances could serve as potential leakage pathways. For example, in typical productive oil and gas fields, a CO_2 plume with a radius of about 5 km (3.1 miles) may come into contact with several hundred producing or abandoned wells (Celia *et al.*, 2004).[144]

The U.S. Geological Survey has noted that "[g]roundwater is one of the most valuable and abundant natural resources of Louisiana" and approximately 61 percent of residents use groundwater as a source of drinking water.[145] Thus, any use of a Class II well for the

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and displaced formation fluids and allow injection at proposed maximum pressures and volumes without initiating or propagating fractures in confining zone(s)."

[139] *Id*. "Determine AoR by computational model, which accounts for the physical and chemical properties of all phases of the injected CO_2 stream. This modeling is based on available site characterization, monitoring, and operational data."

[140] *Id*. at 35. "Determine cement and cement additives are compatible with CO_2 stream and formation fluids and are of sufficient quality and quantity."

[141] *Id*. at 36. "Use continuous recording devices to monitor the injection pressure, rate, volume and/or mass, and temperature of CO_2 stream; pressure on the annulus between the tubing and long string casing, and annulus fluid volume …. Test and monitor to track extent of CO_2 plume and presence of elevated pressure by using direct or indirect methods."

[142] Key Principles in EPA's Underground Injection Control Program Class VI Rule Related to Transition of Class II Enhanced Oil or Gas Recovery Wells to Class VI, **Exhibit 23**.

[143] Federal Requirements Under the Underground Injection Control (UIC) Program for Carbon Dioxide (CO_2) Geologic Sequestration (GS) Wells, 75 Fed. Reg. at 77244.

[144] *Id*.

[145] Stuart, C.G. *et al.*, Guide to Louisiana's Ground-Water Resources, U.S. Geological Survey, at 1 (1994), attached hereto as **Exhibit 24**.

purpose of CO_2 storage or disposal poses increased risks to USDWs in the State. Therefore, consistent with EPA's Class VI rules and the purpose of the SDWA, EPA should not approve of Louisiana's primacy program until and unless it requires all wells injecting CO_2 for long-term storage to apply for and obtain a Class VI permit.

3. In the alternative, EPA should wait until it creates guidance or updates its rules for Class II to Class VI conversion before it hands over primacy.

If EPA's position is that Class II wells may inject CO_2 for the purpose of long-term storage if it can be demonstrated that there will not be an increased risk to USDWs, EPA must update its regulations or publish guidance on how such a demonstration is to be made. Currently, the transition regulations state nine factors to be considered in such a demonstration, including pressure and rate increases, the suitability of the Class II AoR delineation, the plan for recovery of CO_2 at the cessation of injection, the source and properties of the CO_2, and a catch-all of any additional factors as determined by the Director.[146] However, there is no published guidance or elaboration on how these factors are to be determined or weighed.

In 2015, EPA issued a two-page memorandum discussing the transition from Class II EOR wells to Class VI wells.[147] The memo offers no further elaboration on how the factors should be weighed but states that EPA was working with other agencies "to finalize technical guidance focused on risk factors discussed at 40 CF.R. 144.19."[148] If EPA takes the position that the Class VI rules require Class II wells to transition to Class VI wells only when there is an increased risk to USDWs, EPA should develop these guidance documents on determining such a risk before it hands over primacy to Louisiana.

Louisiana's regulations do nothing more than regurgitate the nine factors in EPA's regulations without any indication on how the factors will be determined or considered.[149] Without developing the guidance EPA states it is working on, and without knowing if Louisiana's regulations will be consistent with that guidance, EPA should not approve of Louisiana's program as it relates to transitioning Class II wells to Class VI wells.

E. LDNR's Area of Review Rules Fail to Meet EPA's Minimum Technical Requirements for Permitting.

The area of review ("AoR") evaluation process determines the region around an injection well where the potential to impact USDWs exists, and the corrective action measures that address all risks identified within the AoR. [150] During this process, owners and operators must identify potential conduits for fluid movement (including abandoned wells), assess the integrity of

[146] 40 C.F.R. § 144.19(b).
[147] Key Principles in EPA's Underground Injection Control Program Class VI Rule Related to Transition of Class II Enhanced Oil or Gas Recovery Wells to Class VI, **Exhibit 23**.
[148] *Id*.
[149] 43 La. Admin. Code Pt XVII, 3603.G.2.
[150] EPA, UIC Program Class VI Well Area of Review Evaluation and Corrective Action Guidance, at 1, (May 2013), attached as **Exhibit 25**.

potential conduits, and perform actions necessary to prevent fluid movement into USDWs.[151] LDNR's regulations fail to meet the minimum technical requirements for AoR that EPA outlines in its regulations and interpretive guidance because it does not 1) account for all subsurface pressure increases from CO_2 injection that could impact USDWs or the environment in determining the region to be reviewed; and 2) ensure that all abandoned wells will be identified and appropriate corrective action will be taken.

EPA defines "Area of review" in its minimum regulations for Class VI wells as the "region surrounding the geologic sequestration project where USDWs may be endangered by the injection activity."[152] For other UIC programs, the EPA allows a fixed radius or "relatively simple" radial calculation to determine the AoR.[153] However, EPA recognized the need for "enhanced AoR and corrective action requirements for Class VI injection wells that are tailored to the unique circumstances of geologic sequestration . . . of carbon dioxide projects. . . . "[154] Unique to Class VI permitting, the AoR minimum regulations for Class VI wells require computational modeling using advanced methods to ensure that "the areas potentially impacted by a proposed [Class VI well] are delineated, all wells that need corrective action receive it, and that this process is updated throughout the injection project."[155]

To assist with evaluating whether Louisiana's Application contains protections necessary to protect the environment and human health, Dr. Alex Kolker prepared a Report (hereinafter "Dr. Kolker Report") that reviewed LDNR's Application and geologic risks within the state associated with CCS. The Report noted a number of serious risks to USDWs and the environment that are not addressed by LDNR's AoR and site characterization regulations.[156] Dr. Kolker concluded that CCS contains a number of risks and potential impacts on land movement, the migration of CO_2 out of the injection zone and up to the surface, and the potential for CO_2 to contaminate groundwater, and that LDNR's rules do not adequately consider these risks.[157]

1. *The Area of Review rules do not account for subsurface pressure increases, endangering USDWs and the environment.*

The lack of consideration of subsurface pressure increases in the AoR regulations is particularly dangerous for Louisiana and can lead to a number of catastrophic consequences. High pressure CO_2 injection can change the pressure characteristics in the subsurface, and these pressure increases—or variations and fluctuations in pressure—can cause the ground to crumble, shift, subside, uplift, or induce faulting.[158] Large pressure increases from CO_2 injection can "create

[151] *Id.*
[152] 40 C.F.R. § 146.81.
[153] *Id*.; UIC Program Class VI Well Area of Review Evaluation and Corrective Action Guidance, at 1, **Exhibit 25**.
[154] *Id*. (citing 40 C.F.R. § 146.84).
[155] *Id*. at 2.
[156] The Kolker Report is attached hereto as **Exhibit 26**.
[157] *See id*.
[158] Kolker Report, at 6, **Exhibit 26**, (citing Catherine Callas *et al*., *Criteria and Workflow for Selecting Depleted Hydrocarbon Reservoirs For Carbon Storage*, 324 Applied Energy 119668 (Oct. 15, 2022);

new fractures or reactivate preexisting fractures with the associated risk of induced seismicity or leakage…..”[159] Dr. Kolker describes how pressure increases can induce faulting and earthquakes, and that there is heightened risk in Louisiana where faulting is relatively common.[160] In addition, pressure increases can compromise the containment of CO_2, endangering groundwater and potentially allowing CO_2 to reach the surface.[161]

Dr. Kolker notes that the area impacted by CCS-induced pressure changes and their impacts can extend well beyond the CO_2 plume itself, with ranges up to 100 to 200 km from the injection well.[162] LDNR’s application fails to ensure that the AoR does not endanger USDWs and the environment because it does not require that pressure changes from injection be properly calculated beyond the CO_2 plume, and thereby avoid risks beyond the plume.[163] The computational modeling establishing the AoR should account for physical and chemical properties of all phases of injection of the CO_2 stream, based on the site characterization described in Section 146.84 of the minimum regulations.[164] Serious impacts such as faulting, seismic activity, and subsidence are all “physical” properties that occur during the injection phases, and therefore should be considered when modeling to delineate the AoR.

EPA recognized these risks and required consideration of pressure differentials in delineating the area of review beyond just the extent of the CO_2 plume in approving the Wyoming and North Dakota Class VI Well programs. Wyoming regulations require owners and operators of Class VI wells to predict pressure differentials beyond the CO_2 plume, stating that AoR modeling must include a demonstration that “pressure differentials sufficient to cause the movement of injected fluids or formation fluids into USDW or otherwise threaten human health, safety, or the environment will not be present. . . . ”[165] North Dakota’s program defines “geologic sequestration project to include not only “the subsurface three-dimensional extent of the carbon dioxide plume,” but also “the associated pressure front.”[166] North Dakota thus requires an AoR based on both the projected migration of the CO_2 plume and the “associated pressure front.”[167] Both approved primacy programs include specific language to ensure that the area of review examines pressure differentials to protect USDWs and the environment.

LDNR’s Application acknowledges subsurface pressure changes associated with CO_2 injection but omits any requirement to evaluate pressure changes that could compromise the integrity of either the well project or the surrounding environment. LDNR’s program would arbitrarily limit

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Sam S. Hashemi & Mark D. Zoback, *Permeability Evolution of Fractures in Shale in the Presence of Supercritical CO_2*. 126 JGR Solid Earth, no. 8 (July 23, 2021); Mark D. Zoback & Steven M. Gorelick, *Earthquake Triggering and Large-Scale Geologic Storage of Carbon Dioxide*., 109 Proc. Nat’l Acad. Sciences, no. 26, 10164–10168 (June 18, 2012); Nat’l Petroleum Council, Meeting the Dual Challenge: A Roadmap to At-Scale Deployment of Carbon Capture, Use, and Storage 7-26 (March 12, 2021)).

[159] *Id*. at 7.

[160] *Id*. at 5.

[161] *Id*. at 6.

[162] *Id*.

[163] *See* 43 La. Admin. Code Pt XVII, 3615.B.3.

[164] 40 C.F.R. § 146.81.

[165] 11 24 Wyo. Code R. §13(b)(i)(B).

[166] N.D. Admin. Code 43-05-01-01.24.

[167] *Id*. at 43-05-01-05.1.2.a.

the AoR and potentially endanger USDWs and the environment through its inadequate consideration of pressure changes to injected fluids and the injection reservoir. Because pressure changes can cause faulting and other serious impacts far outside of the modeled injection fluid plume, LDNR must consider those potential risks and impacts in its AoR delineation.

2. The Application fails to ensure that all potentially impacted abandoned wells will be identified and addressed.

EPA's minimum regulations require owners and operators of Class VI wells to identify all active and abandoned wells in the AoR, as well as all other "penetrations" that might penetrate the confining zones.[168] EPA guidance explains that while all oil and gas wells pose risks, older wells pose the greatest risks because they may be drilled relatively deep and contain little to no casing.[169] Because Louisiana likely has tens of thousands of old abandoned wells, and the regulations do not identify methods that would be required to identify those wells, EPA should require methods for identifying and correcting abandoned wells in order to determine LDNR can implement this program consistent with the federal regulations.

Dr. Kolker's Report concludes that because of Louisiana's extensive history of oil and gas development, "any effort to permit CCS should have a rigorous plan in place to identify all existing and abandoned wells in the area…."[170] Dr. Kolker found that "there is no information on how the commissioner should locate all abandoned wells, nor is there enough information on the engineering standard or technical criteria that should be used to determine the quality of the plugs of abandoned wells."[171]

LDNR estimates that over 200,000 wells have been drilled in Louisiana since 1956.[172] The state has identified 4,600 abandoned or "orphaned" wells, meaning that they are unplugged and have no owner or responsible party. [173] Unfortunately, LDNR has not estimated the total number of unknown abandoned wells, but given the large amount of historical well activity in the state, the total number of abandoned wells is likely much higher. States with similar historical oil and gas well activity, such as Oklahoma, Ohio, and Pennsylvania, have estimated tens of thousands to 100,000 abandoned wells each.[174] Unplugged or improperly plugged wells can serve as conduits for CO_2 to interact with groundwater or flow to the surface, leaking into the atmosphere.[175] They also pose serious safety risks: CO_2 escaping from the subsurface could result in blow-outs or

[168] 40 C.F.R. § 146.84(c)(2); UIC Program Class VI Well Area of Review Evaluation and Corrective Action Guidance, at 51, **Exhibit 25**.
[169] UIC Program Class VI Well Area of Review Evaluation and Corrective Action Guidance, at 51, **Exhibit 25**.
[170] Kolker Report at 12, **Exhibit 26**.
[171] *Id*.
[172] LDNR, Table 22: Louisiana State Oil and Gas Drilling Permits Issued by Type (2022), attached hereto as **Exhibit 27**.
[173] Tristan Baurick, *Feds Sending Louisiana $111 Million to Plug Hundreds of 'Orphan' Oil and Gas Wells*, Nola.com (Feb. 1, 2022), attached hereto as **Exhibit 28**.
[174] Interstate Oil & Gas Compact Comm'n, Idle and Orphan Gas Wells, State and Provincial Regulatory Strategies, at 28, (2021), attached hereto as **Exhibit 29**.
[175] Kolker Report at 11, **Exhibit 26**.

explosions.[176]

Detecting abandoned wells "can be very challenging."[177] Therefore, EPA's guidance recommends a number of methods, including site reconnaissance, geophysical surveys, and magnetic methods to detect them.[178] Yet, LDNR's Application provides little detail about how the Office of Conservation will ensure that operators identify all abandoned wells in an area of review, stating simply that operators are required to locate abandoned wells by "using methods approved by the commissioner. . . ."[179] It does not identify any method for detecting these wells despite the vast number of historical wells in the state.

Because Louisiana has an enormous quantity of potential conduits, including abandoned and producing wells, EPA must require LDNR to commit to a rigorous plan to locate and address these risks to protect USDWs. At a minimum, any Class VI program in the State should require field surveys within the AoR to locate unknown abandoned wells.[180]

F. The Application Fails to Contain Site Characterization Requirements Necessary to Select Viable Geologic Sequestration Sites.

EPA considers site characterization essential to ensuring USDW protection, and "a necessary element of selecting viable [geologic sequestration] sites."[181] EPA's minimum regulations require Class VI well owners and operators to demonstrate that wells are sited in areas with a suitable geologic system.[182] They must show that the injection zone is sufficient to receive the total volume of the CO_2 stream, and that the confining zone is free of faults or fractures and of sufficient extent and integrity to contain the CO_2 and displaced formation fluids.[183] Pressures and volumes must not initiate or propagate fractures in the confining zone.[184] Louisiana's regulations fail to ensure that these minimum requirements are met because they do not prohibit injection into known unsuitable areas of the state or describe how LDNR will ensure that a confining zone is free of faults or fractures.

Louisiana's geology contains faults, fissures, and fractures in regions throughout the state, impacting the surface in many ways.[185] Underground CO_2 injection reduces geological stresses in these rocks and sediments, activating those faults and fissures, which then serve as pathways by which injected CO_2 can leak from a targeted injection zone.[186] Consequently, to avoid

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[176] *Id*.
[177] UIC Program Class VI Well Area of Review Evaluation and Corrective Action Guidance, at 51, **Exhibit 25**.
[178] *Id*. at 53-56.
[179] 43 La. Admin. Code Pt XVII, 3615.B.3.b.
[180] *See* Kolker Report at 12, **Exhibit 26**.
[181] EPA, UIC Program Class VI Well Site Characterization Guidance, EPA 816-R-13-004 1 (May 2013), attached hereto as **Exhibit 30**.
[182] 40 C.F.R. § 146.83(a).
[183] *Id*. § 146.83(a).
[184] *Id*. § 146.83(a)(2).
[185] Sherwood M. Gagliano, *et al*., *Executive Summary: Active Geological Faults and Land Change In Southeastern Louisiana* (Aug. 14, 2003), attached hereto as **Exhibit 31**.
[186] Kolker Report at 5, **Exhibit 26.**

inviable sequestration sites, Louisiana's site characterization rules should prohibit CO_2 injection in areas where faults and fractures are common.

A USGS report on CO_2 storage raises serious concerns about whether CO_2 storage in Louisiana is appropriate at all, given the vast amount of oil and gas activity in the state.[187] Indeed, the extensive extraction of oil and gas in Louisiana has been linked to geological faulting.[188] The report found that oil and gas development in large portions of the state potentially compromises the seal of the formations for CO_2 storage by opening up fractures and pathways for out-of-formation migration.[189] LDNR acknowledged in a presentation on CO_2 injection that Northwest Louisiana presents particular challenges to applicants "due to some concerns around some formations. . . . "[190] Likewise, Dr. Kolker notes that oil and gas fields in the state where rocks have been hydraulically fractured could increase the size and number of pathways where CO_2 can flow.[191] Dr. Kolker concludes that "effort should be taken to ensure that fracking has not impacted the geology of a reservoir that would increase flow paths by which CO_2 can migrate."[192]

Despite the gravity of these risks, Louisiana's regulations do not prohibit injection into known unsuitable areas of the state, and provides no details on how LDNR will ensure that a confining zone is free of faults or fractures. The SDWA anticipates that program regulations will have to be tailored to the unique "geological, hydrological, and historical conditions" of each state.[193] In its Manual for State Directors, EPA noted that the Class VI minimum regulations for states are designed to allow states to address unique characteristics within the state.[194] Given the unique risks the State of Louisiana faces, and the fact that large portions of the state may be unsuitable for injection, the Application must provide more detail on how LDNR will ensure, and the operator will demonstrate, that wells will be sited in areas with a suitable geologic system, and how LDNR will prohibit injection into unsuitable formations.

Altogether, Louisiana's program fails to ensure that wells are sited in suitable geologic formations and comply with the minimum regulations requiring assurance that the confining zone is free of faults or fractures, and that pressures and volumes will not initiate or propagate fractures.[195]

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[187] Tina L. Roberts-Ashby *et al*., *Geologic Framework for the National Assessment of Carbon Dioxide Storage—US Gulf Coast*, at 11, 14 (2014), attached hereto as **Exhibit 32**.
[188] Alvin W. Chan & Mark D. Zoback*, The Role of Hydrocarbon Production on Land Subsidence and Fault Reactivation in the Louisiana Coastal Zone*, 23 J. Coastal Rsch., no. 3, at 771–786, (May 2007), attached hereto as **Exhibit 33**.
[189] Geologic Framework for the National Assessment of Carbon Dioxide Storage at 14, **Exhibit 32**.
[190] *See* Corey Schircliff & Laura Sorey, LDNR Office of Conservation – Injection & Mining Division, Carbon Sequestration at the Louisiana Office of Conservation, Presentation at Pipeline Safety Conference, at 25, (July 21, 2022), attached hereto as **Exhibit 34**.
[191] Kolker Report, at 12, **Exhibit 26.**
[192] *Id.*
[193] 42 U.S.C. § 300h(b)(3).
[194] Class VI Primacy Manual, at 12, **Exhibit 10**.
[195] *See* 40 C.F.R. § 146.83(a)(2).

IV. EPA Must Retain Primary Enforcement Authority Over the Class VI Well Program Because Louisiana Has Not Provided Appropriate Staffing and Expertise to Ensure It Can Implement the Program

Due to the highly technical nature of Class VI wells, and"[b]ecause of the extent and complexity of the information that must be reviewed in response to Class VI permit applications and evaluated throughout the operational and post-injection phases of a Class VI project," states must demonstrate, in their primacy application, expertise to evaluate all phases of a Class VI well project.[196] They must have geologists, hydrogeologists, and geochemists, qualified to evaluate site characterization data submitted both during permitting and throughout the duration of the project.[197] The state applying for primacy should also demonstrate that they have modeling expertise on staff to evaluate the AoR modeling assessments.[198] Staff should have well construction expertise specific to Class VI wells, policy and regulatory expertise to evaluate compliance with Class VI rule requirements, and demonstrated expertise adequate to review financial responsibility information during both permitting and annual evaluations.[199] Accordingly, the regulations for primacy applications require a description of the state agency staff who will carry out the program, including the number of staff, occupations, and general duties.[200] Adequate and appropriate staffing to review applications and to permit and monitor these highly complex and unique injection wells is vital to obtaining primary enforcement authority and ensuring protection of human health and USDWs.

LDNR concedes that it does not have the staff necessary to oversee a Class VI program, and this alone makes EPA's proposed approval both troubling and unlawful. LDNR states that its staff in the Office of Conservation have the skills and experience with "most" of the technical and policy areas relevant to evaluating Class VI permit applications, including evaluating and issuing Class VI permits, onsite inspection, compliance monitoring, and overseeing geologic sequestration projects throughout their life span.[201] This acknowledgment that staff can only evaluate "most" Class VI permit application requirements runs contrary to EPA's directive that State directors should have staff capable of evaluating all phases of a Class VI well project.[202]

In any event, the Application does not describe what expertise LDNR has on staff to evaluate Class VI permit applications, conduct inspections, monitor compliance, or to oversee projects throughout their lifespan. A simple personnel organizational chart is the only sparse detail on the Office of Conservation's expertise. The chart appears to contain new professional positions specific to Class VI wells in the geology section and in the engineering section.[203] However, there is no information provided about these positions, including whether the agency has filled these positions or their qualifications. Without this information, the Application fails to contain the requirements for staff listed at 40 C.F.R. § 145.23(b)(1).

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[196] Class VI Primacy Manual, at 11, **Exhibit 10**.
[197] *Id*. at 10.
[198] *Id*.
[199] *Id*.
[200] 40 C.F.R. § § 145.22(a)(2), 145.23(b)(1).
[201] Program Description at 2.
[202] Class VI Primacy Manual, at 11, **Exhibit 10**.
[203] Program Description at 13 (App. I).

LDNR also acknowledges that it lacks expertise in risk analysis: "[The Office of Conservation] does not currently have expertise in this area and it is uncertain whether they will obtain it in the future."[204] EPA considers site-specific risk-based permitting "essential for ensuring underground injection occurs without contaminating USDWs, thereby protecting public health and the environment."[205] Given the importance placed on risk analysis, EPA should be concerned that the Office of Conservation does not have any staff expertise on hand. Moreover, while EPA does allow a state to use contractor support, EPA still requires the state to "demonstrate" the expertise and the access to contractor support.[206] LDNR's Application fails to provide any detail on how LDNR has access to contractor support in this area, including identification of the contractors and their qualifications. Knowing that the Office of Conservation does not have the expertise to evaluate risk analysis, has no plans to obtain such expertise, and provides no information pertaining to third-party expertise, EPA must deny the Application.

Louisiana has also eliminated license requirements for state geoscientists, calling into question the expertise of the geoscientists on staff and the qualifications of potential new hires. In general, the state requires any person engaged in the practice of geoscience to hold a professional license.[207] However, Louisiana has codified that employees of the state are exempt from the license requirements.[208] Given this exemption, EPA should carefully evaluate the staff at the Office of Conservation to ensure they hold the expertise necessary to carry out the Class VI well program. The application LDNR submitted does not provide enough detail for EPA to evaluate whether the staff on hand are qualified engineers and geologists.

The amount of project proposals and LDNR's stated rate of permitting makes it imperative that EPA carefully evaluate whether LDNR has demonstrated expertise. EPA has only overseen two Class VI wells in operation.[209] In its Application, LDNR states that it plans to issue "at least six permits" in the first two years of being granted primacy, tripling EPA's total output since the start of the program.[210] There are more than 30 permit applications on file with EPA, and even more large CCS projects planned for Louisiana than when the application was submitted in March.[211] Moreover, LDNR states that it is relying on permitting injection wells and collecting tonnage fees from injection in order for the program to be self-sufficient, creating an incentive to quickly approve permits rather than carefully review applications and ensure the protection of USDWs.[212]

It cannot be assumed that the state can easily obtain the expertise it needs. Some of the general requirements apply consistently across UIC programs, but long-term CO_2 sequestration is new,

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[204] *Id*. at 2-3.
[205] EPA Class VI Permitting: Report to Congress, at 26, **Exhibit 1**.
[206] Class VI Primacy Manual, at 11, **Exhibit 10**.
[207] La. Stat. Ann. § 37:711.12(A).
[208] La. Stat. Ann. § 37:711.12(D)(2).
[209] *See* EPA, *Class VI Wells Permitted by EPA* (Jan. 25, 2023), https://www.epa.gov/uic/class-vi-wells-permitted-epa.
[210] Program Description at 10.
[211] *See* Empower LLC, Carbon Capture & Sequestration In Louisiana, Part 1: Permitting for rapid expansion, **Exhibit 7**; *See also* Part I.B. *supra,* of this Comment.
[212] Program Description at 4.

complex, and presents unique dangers. For instance, CO_2 is highly corrosive, and it is maintained at higher pressures and moves differently than injected liquids for other types of wells because it has a different density. Class VI permits require site specific modeling unique from any other injection well program. Consequently, the field holds limited expertise such that expertise within a state agency cannot be presumed. Before issuing primacy, EPA has a duty to ensure that the states taking hold of the reigns have the expertise to do so. LDNR has failed to meet the thresholds set in EPA's regulations and guidance to state directors to demonstrate the expertise necessary to carry out the program.

As described throughout this Comment, LDNR's Office of Conservation has a troubled history of managing its programs that suggests LDNR is not fit to operate a more complex Class VI injection well program. The Office of Conservation has been unable to regulate other injection well programs in a way that protects USDWs—as other waste disposal wells have leaked near USDWs.[213] Given the Office of Conservation's poor track record, and the massive CCS buildout planned for the State, EPA should deny the Application until LDNR demonstrates that the Office of Conservation has the expertise to carry out the program safely.

V. Louisiana's Class VI Program Would Violate Environmental Justice Mandates and Guidance under Federal Civil Rights Law

Louisiana has taken a public position that fundamental environmental justice factors such as disparate and cumulative impacts should not be part of state permit reviews, and LDNR has a demonstrated history of not conducting environmental justice reviews in permitting. Allowing Louisiana to obtain primacy over Class VI wells would relinquish environmental justice review over a massive carbon storage buildout to a State that has just sued EPA, calling environmental justice reviews in permitting "unlawful policies."[214] At a minimum, EPA should not approve Louisiana's application for primary enforcement authority unless the State adopts express procedures in its Class VI statutes and regulations to secure environmental justice.

EPA defines environmental justice as "the ***fair treatment*** and ***meaningful involvement*** of all people regardless of race, color, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies."[215] Fair treatment means that "no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental and commercial operations or programs and policies."[216] Meaningful involvement means that:

> (1) potentially affected populations have an appropriate opportunity to participate

[213] *See e.g.,* Abrahm Lustargen, *680,000 Wells Hold Waste Across US—With Unknown Risks*, ProPublica (June 21, 2012), attached hereto as **Exhibit 35**; Julie Dermansky & Sharon Kelly, *Industry Insiders Question Louisiana Regulators Over Cleanup on ExxonMobil Land, Amid Corruption Claims and Pollution Fears*, DeSmog (June 29, 2022), attached hereto as **Exhibit 36**.
[214] Complaint, *State of Louisiana v. EPA et al.*, Case No 23-cv-00692 (W.D. LA), attached hereto as **Exhibit 37**.
[215] EPA, Guidance on Considering Environmental Justice During the Development of Regulatory Actions, at 4, (2015), 4 (emphasis in original), attached hereto as **Exhibit 38**.
[216] *Id.*

> in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory Agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the rule-writers and decision-makers seek out and facilitate the involvement of those potentially affected.[217]

As described below, Class VI infrastructure in Louisiana will disproportionately impact environmental justice communities. Louisiana has not demonstrated a commitment to addressing these environmental injustices. To the contrary, Louisiana incorrectly believes it lacks the authority to address environmental justice concerns in permitting and that disparate impact analyses are unlawful. Moreover, LDNR has consistently failed to carry out environmental justice review as part of its public trust duties in environmental permitting. LDNR has not adopted regulations that expressly require environmental justice considerations and meaningful involvement of impacted communities; therefore, EPA must assume that Louisiana's open hostility towards environmental justice review will continue. Finally, the general descriptions of environmental justice screening and public participation opportunities in the Program Description and MOA Addendum fall far short of EPA's stated expectations for obtaining primacy over Class VI wells.

A. EPA Must Deny Applications for Class VI Primacy that Do Not "Achieve," "Secure," and "Prioritize" Environmental Justice.

Title VI of the Civil Rights Act of 1964 prohibits the use of federal funds in a manner that is discriminatory "on the ground of race, color, or national origin."[218] EPA's implementing regulations also prohibit discrimination, including in regulatory activities such as the Class VI UIC program.[219] Executive Order 12898, issued under the authority of the Title VI, requires that:

> To the greatest extent practicable and permitted by law … each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States . . .[220]

Executive Order 14008, issued by President Biden in 2021, states that "[a]gencies shall make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities . . ."[221] It makes "securing environmental justice" the policy of the Administration.[222] Executive Order 13390, also signed in 2021, states that it is the policy of the executive branch to prioritize environmental

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[217] *Id.*
[218] 42 USC § 2000d.
[219] *See, e.g.*, 40 C.F.R. §§ 7.30, 7.35.
[220] Exec. Order No. 12898, 59 Fed. Reg. 7629, 7629 (Feb. 11, 1994).
[221] Exec. Order No. 14008, 86 Fed. Reg. 7619, 7629 (Jan. 27, 2021).
[222] *Id*.

justice.[223]

President Biden recently reaffirmed and solidified these principles in Executive Order 14096, which requires every federal agency to make achieving environmental justice a part of its mission and requires each federal agency to submit an environmental justice strategic plan.[224] Executive Order 14096 declares that "Our Nation needs an ambitious approach to environmental justice," recognizing that all people must have the right to "an environment that is healthy, sustainable, climate-resilient, and free from harmful pollution and chemical exposure," and that "[c]ommunities with environmental justice concerns face entrenched disparities that are often the legacy of racial discrimination and segregation, redlining, exclusionary zoning, and other discriminatory land use decisions and patterns."[225]

As a federal agency, EPA is obligated to enforce these executive orders.[226] To achieve environmental justice directives, EPA has the authority to conduct an environmental justice analysis and center environmental justice issues in permitting decisions.[227] EPA must ensure that states also have this authority when it delegates permitting authority to states.[228] Delegating primary enforcement authority to states that lack the authority or willingness to make decisions based on environmental justice considerations inevitably leads to permitting decisions that fail to account for environmental justice impacts.

EPA's guidance documents for Class VI programs align with these executive orders. EPA's UIC Class VI Program Priority Activities include "[d]evelop[ing] and implement[ing] ways to improve Environmental Justice considerations in EPA reviews of permit applications," and "[d]evelop[ing] and implement[ing] ways to improve Environmental Justice considerations in

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[223] Exec. Order No. 13990, 86 Fed. Reg. 7037, 7037 (Jan. 20, 2021).
[224] Exec. Order No. 14096, 88 Fed. Reg. 2551, 25253, 25256 (Apr. 26, 2023).
[225] *Id*. at 25252.
[226] *See, e.g.*, *Sherley v. Sebelius*, 689 F.3d 776, 784 (D.C. Cir. 2012) ("NIH may not simply disregard an Executive Order. To the contrary, as an agency under the direction of the executive branch, it must implement the President's policy directives to the extent permitted by law."); *Am. Fed'n of Gov't Emps., AFL-CIO (AFGE), Council 147 v. Fed. Lab. Rels. Auth.*, 204 F.3d 1272, 1275 (9th Cir. 2000) ("There is also no question that the Order is mandatory and that agencies failing to obey the Order are answerable to the President."); Elena Kagan, *Presidential Administration*, 114 Harv. L. Rev. 2245, 2384 (2001) ("Presidential administration as most recently practiced--including, most controversially, the use of directive authority over executive branch agencies—comports with law . . . because, contrary to prevailing wisdom, Congress generally has declined to preclude the President from controlling administration in this manner.").
[227] *See, e.g.*, EPA, *Plan EJ 2014: Considering Environmental Justice in Permitting* (Nov. 28, 2022), https://www.epa.gov/environmentaljustice/plan-ej-2014-considering-environmental-justice-permitting ("EPA has completed its commitments under Plan EJ 2014 to create a foundation for considering environmental justice concerns in the permitting process.")
[228] *See In re Prairie State Generating Company*, 13 E.A.D. 1, 123 (EAB 2006) (stating that environmental justice issues must be considered in connection with a federal permitting program "by both regions and states acting under delegated authority."), *citing In re Knauf Fiber Glass GmbH*, 8 E.A.D. 121, at 174-75 (EAB 1999).

EPA reviews of state primacy applications."[229] Further, EPA's December 9, 2022 Letter to Governors ("Letter to Governors") regarding Class VI primacy states that environmental justice should be "a core element in implementing . . . Class VI programs."[230] In particular, the Letter provides that "in their review of permit applications, states should evaluate whether the siting of a Class VI project … will create any new risks or exacerbate any existing impacts on lower-income people and communities of color."[231] The Letter also focuses on the "meaningful involvement" of environmental justice communities in Class VI permitting decisions, providing that states seeking Class VI primacy should "fully incorporate robust and ongoing opportunities for public participation, especially for lower-income people and communities of color."[232]

The Letter to Governors also centers environmental justice in EPA's process for approving Class VI primacy programs. The Letter focuses on the need to protect communities, especially those most vulnerable, from the environmental burden associated with Class VI well projects.[233] The Letter sets forth four approaches critical to protecting communities and underground sources of drinking water that the agency will look for in assessing primacy applications:[234]

1. Implement an Inclusive Public Participation Process.
2. Consider Environmental Justice Impacts on Communities.
3. Enforce Class VI Regulatory Protections.
4. Incorporate Other Mitigation Measures.

To make environmental justice a part of EPA's mission "to the greatest extent practicable,"[235] EPA must, at a minimum, disapprove a state primacy program that will disproportionately impact environmental justice communities or that does not comply with EPA's own environmental justice approaches.

B. Carbon Sequestration Projects Will Disproportionately Impact Environmental Justice Communities in Louisiana.

The number of Class VI wells, the scope of related CCS infrastructure projects, and their proposed locations in Louisiana, show that these projects will have environmental justice impacts. However, in the Federal Register Notice proposing to approve Louisiana's Class VI well program, EPA claims:

> [I]t is not practicable to assess whether the human health or environmental

[229] EPA, *Class VI – Wells Used for Geologic Sequestration of Carbon Dioxide* (Dec. 9, 2022), https://www.epa.gov/uic/class-vi-wells-used-geologic-sequestration-carbon-dioxide; *see also* EPA, Geologic Sequestration of Carbon Dioxide – UIC Quick Reference Guide: Additional Tools for UIC Program Directors Incorporating Environmental Justice Considerations into the Class VI Six Injection Well Permitting Process, at 1, (2011), attached hereto as **Exhibit 39**.
[230] EPA, Letter to Governors, at 2.
[231] *Id*.
[232] *Id*.
[233] *Id*.
[234] *Id*.
[235] Exec. Order No. 12898, 59 Fed. Reg. at 7629.

> conditions that exist [prior to approving Louisiana's Class VI Primacy Application] result in disproportionate and adverse effects on people of color, low-income populations and/or Indigenous peoples because there currently are no Class VI wells permitted in Louisiana and because this is a procedural action.[236]

In fact, it is practicable to assess environmental justice impacts based on the locations of currently proposed Class VI injection wells. Both the EPA and LDNR have access to the location information of many proposed Class VI wells in Louisiana and, thus have the ability to conduct a preliminary environmental justice analysis to understand whether the proposed siting of these wells would result in "disproportionate adverse effects on people of color, low-income populations, and/or Indigenous peoples." At a very minimum, EPA or LDNR can conduct a preliminary environmental justice analysis based on the 31 Class VI well permit applications currently on EPA's desk using both EPA's own EJScreen tool and the Council on Environmental Quality's ("CEQ") Climate and Economic Justice Screening Tool ("CEJST") and share these findings with the public.[237] EPA and LDNR can use similar tools to assess whether formations targeted for injection impact environmental justice communities. Finally, the existing footprint of Class II injection wells in Louisiana that inject CO_2 for EOR provide a clear route to assess environmental justice concerns. Based on our own application of these means of assessment, the proposed Class VI well projects will disproportionately impact environmental justice communities. To "secure environmental justice," EPA must therefore deny Louisiana's application.

1. Proposed Class VI wells and accompanying infrastructure will disproportionately impact Environmental Justice communities.

According to their webpage, EPA currently has 31 applications for Class VI well permits pending in Louisiana in the following parishes: Allen, Ascension, Assumption, Calcasieu, Caldwell, Cameron, Pointe Coupee, Rapides, Sabine, St. Helena, and Vernon.[238] Each of these permit applications include proposed well locations, allowing the agency to conduct, at minimum, a preliminary environmental justice analysis using EJScreen[239] and CEJST.[240] The CEJST uses data sets that are indicators of burdens in eight categories: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development.[241]

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[236] State of Louisiana Underground Injection Control Program; Class VI Program Revision Application, 88 Fed. Reg. at 28455.
[237] *Explore the Map*, Climate and Economic Justice Screening Tool https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5 (last visited June 23, 2023).
[238] US EPA, *Class VI Wells Permitted by EPA*, https://www.epa.gov/uic/class-vi-wells-permitted-epa, (last visited June 23, 2023).
[239] EPA EJScreen, https://www.epa.gov/ejscreen, Technical Guidance Documents and Updates: https://www.epa.gov/ejscreen/technical-information-about-ejscreen.
[240] https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5.
[241] CEQ, Instructions to Federal Agencies on Using the Climate and Economic Justice Screening Tool (Jan. 2023), attached hereto as **Exhibit 40**.

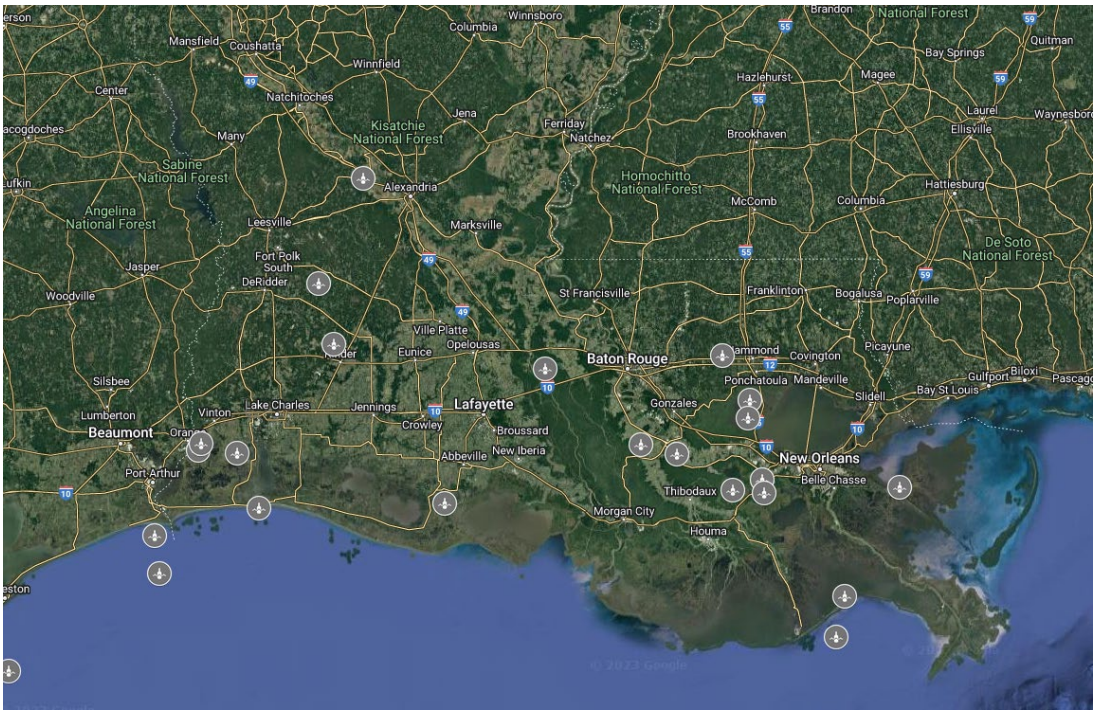

Figure 2. *Informal tracking map produced by Healthy Gulf indicating the approximate locations of proposed CO_2 injection wells for deep geological storage (gray circles) in Louisiana where proposed well location information was publicly available.*

The assessment of environmental justice impacts from proposed Class VI wells needs to account for the potential disproportionate harms that communities may face in two areas: (1) immediately near the proposed well(s) and (2) near the construction of new infrastructure that the permitting of new Class VI well(s) enables. The environmental justice impacts from the construction and operation of an entire CCS project—the proposed facility, the new CO_2 pipelines that would carry the waste CO_2 emissions from the facility to the well, in addition to the well(s)—all together need to be included in a comprehensive environmental justice review.

To illustrate, as part of the Louisiana Clean Energy Complex, Air Products proposes to construct a blue hydrogen/blue ammonia plant in Ascension Parish, near the communities of Darrow and Burnside. The Burnside complex is the former Orange Grove Plantation that once enslaved over 750 people.[242] The graves of these enslaved people have not been fully accounted for.[243] The Burnside complex is also in an area of Louisiana known as Cancer Alley, where a high concentration of fossil fuel and petrochemical infrastructure has created some of the worst air quality in the country for the Black communities who live there.[244]

This region is also surrounded by several wildlife management areas, including the Manchac Wildlife Management Area to the west, the Joyce Wildlife Management Area to the north/northwest, and the Maurepas Swamp Wildlife Management Area to the south. As part of

[242] Air Products Site, Formerly Orange Grove Plantation, Fact Sheet, attached hereto as **Exhibit 41**.
[243] *Id.*
[244] *Id.*

the blue hydrogen/blue ammonia plant, CO_2 waste would be transported via not-yet-developed CO_2 pipelines, through several communities and a fragile swamp that is the Maurepas Swamp Wildlife Management Area, and underneath Lake Maurepas, where the waste would be injected for long term geological storage.[245]

According to the CEJST, the proposed location of Class VI wells beneath Lake Maurepas in southeast Louisiana that would serve the Louisiana Clean Energy Complex is in a "disadvantaged community" (Figure 3).[246] The CEJST lists several burden thresholds that this area exceeds, listed in Table 1. The Lake Maurepas community is actively fighting to protect their lake, which they depend on for recreation and commercial fishing.[247]

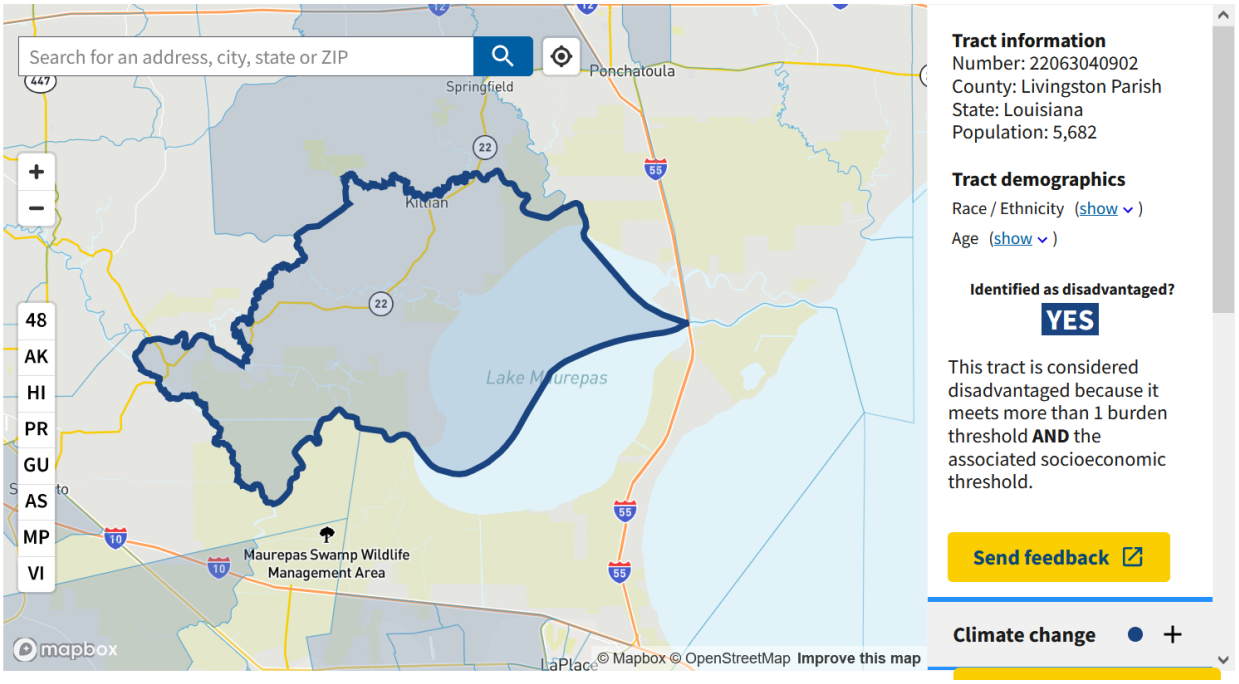

Figure 3. *Screenshot from the CEJST illustrating that the community closest to the proposed CO_2 injection and deep storage site in Lake Maurepas, Louisiana, are identified as "disadvantaged" according to the CEQ's tool (screenshot taken June 2023).*

[245] Air Products, *Louisiana Clean Energy*, https://www.airproducts.com/louisiana-clean-energy, (last visited June 23, 2023).
[246] CEJST, https://screeningtool.geoplatform.gov/en/#9.65/30.2766/-90.5591, (last visited June 23, 2023) ("This tract is considered disadvantaged because it meets more than 1 burden threshold AND the associated socioeconomic threshold.").
[247] Julie Dermansky, *The Battle to Stop Air Products' Carbon Capture Project at Lake Maurepas Grows*, DeSmog (Feb. 17, 2023), attached hereto as **Exhibit 42**.

CEJST burden	Percentile (percentile that threshold burden must meet)[248]
Expected agriculture loss rate	97th (above 90th)
Expected building loss rate	98th (above 90th)
Expected population loss rate	97th (above 90th)
Projected flood risk	98th (above 90th)
Low income	68th (above 65th)

Table 1. *Summary of CEJST burden thresholds for the community near the proposed Lake Maurepas Class VI wells for the Louisiana Clean Energy Complex.*

EJScreen results with a 2- and 5-mile buffer radius from the center of the proposed blue hydrogen/blue ammonia facility site (Figures 4 and 5) indicate that ambient air fine particulate matter ("PM2.5") is around the 80th percentile, while the air toxics cancer risk and the respiratory hazard index are well above the 90th percentile[249] in the state and in the 95-100th percentile in the nation (Tables 2 and 3). In both buffer rings, the environmental justice indices are above the 50th percentile, which is supported by census data that shows that communities surrounding the proposed facility are above the 50th percentile for the people of color indicator (Tables 2 and 3).

This preliminary analysis using EJScreen suggests that Air Products proposes to build a CCS facility with a CCS well near communities that are already disproportionately harmed from air pollution. The permitting of a Class VI well would aggravate the health and hazard risks associated with the entire project.

[248] Climate and Economic Justice Screening Tool, *Methodology*, https://screeningtool.geoplatform.gov/en/methodology#3/33.47/-97.5 (last visited June 23, 2023). "Communities are identified as disadvantaged if they are in census tracts that: ARE at or above the 90th percentile for expected agriculture loss rate OR expected building loss rate OR expected population loss rate OR projected flood risk OR projected wildfire risk AND are at or above the 65th percentile for low income." *Id*.

[249] A "percentile" is a relative term, indicating in this case that the air toxics cancer risk is higher than more than 90% of the state. *See* EPA, *How to Interpret a Standard Report in EJScreen*, https://www.epa.gov/ejscreen/how-interpret-standard-report-ejscreen (Jan. 30, 2023).

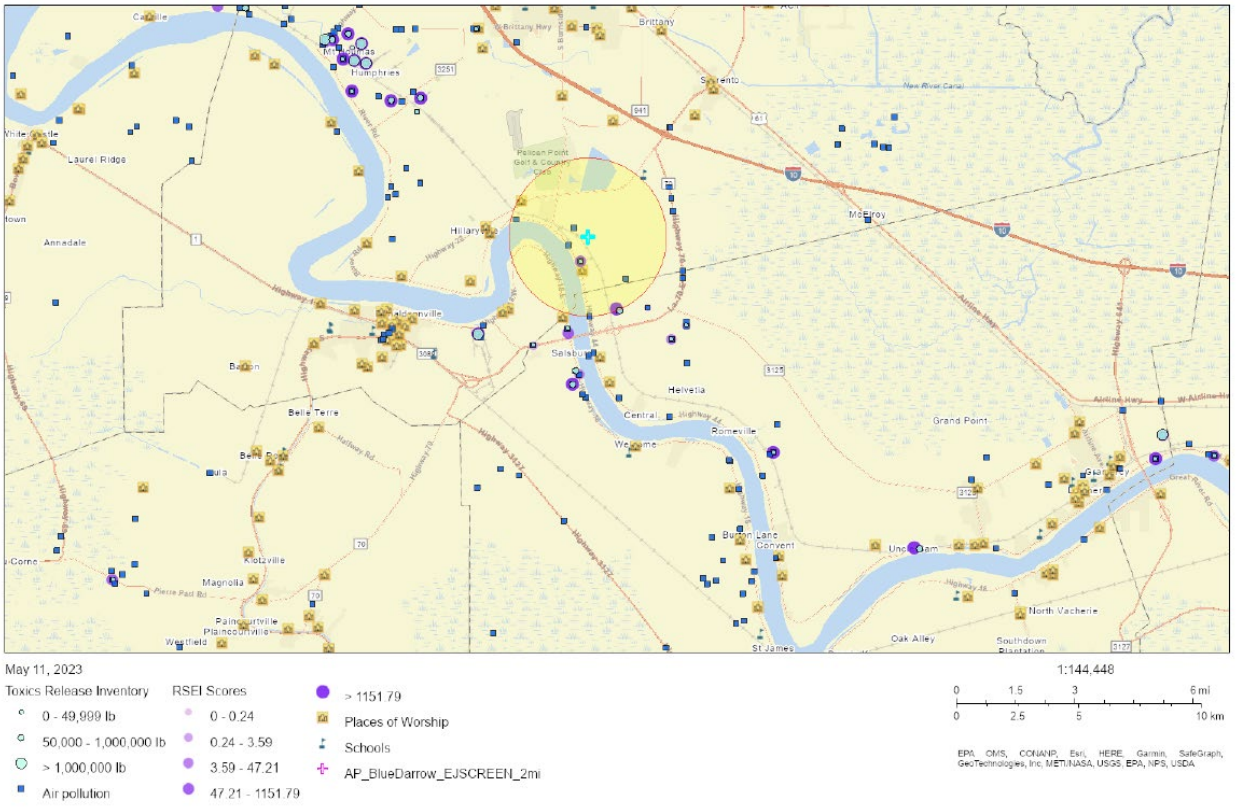

Figure 4. *EJSCREEN (Version 2.11) report map from a* ***2-mile radius*** *buffer ring around the center of the proposed Darrow complex site. This 2-mile buffer ring represents an approximate population of 3,700 and an area of 12.56 square miles.*

EJSCREEN Category	EJSCREEN Variable	State Percentile	US Percentile
EJ Index	Particulate Matter 2.5 µg/m^3	68	70
EJ Index	Air Toxics Cancer Risk	58	65
EJ Index	Air Toxics Respiratory Hazard Index	52	66
Pollution and Sources	Particulate Matter 2.5 µg/m^3	82	81
Pollution and Sources	Air Toxics Cancer Risk	99	95-100
Pollution and Sources	Air Toxics Respiratory Hazard Index	91	95-100
Socioeconomic Indicator	People of Color	54	60
Socioeconomic Indicator	Low Income	17	28

Table 2. *EJSCREEN (Version 2.11) report results from a **2-mile radius** buffer ring around the center of the proposed Darrow complex site, This 2-mile buffer ring represents an approximate population of 3,700 and an area of 12.56 square miles.*

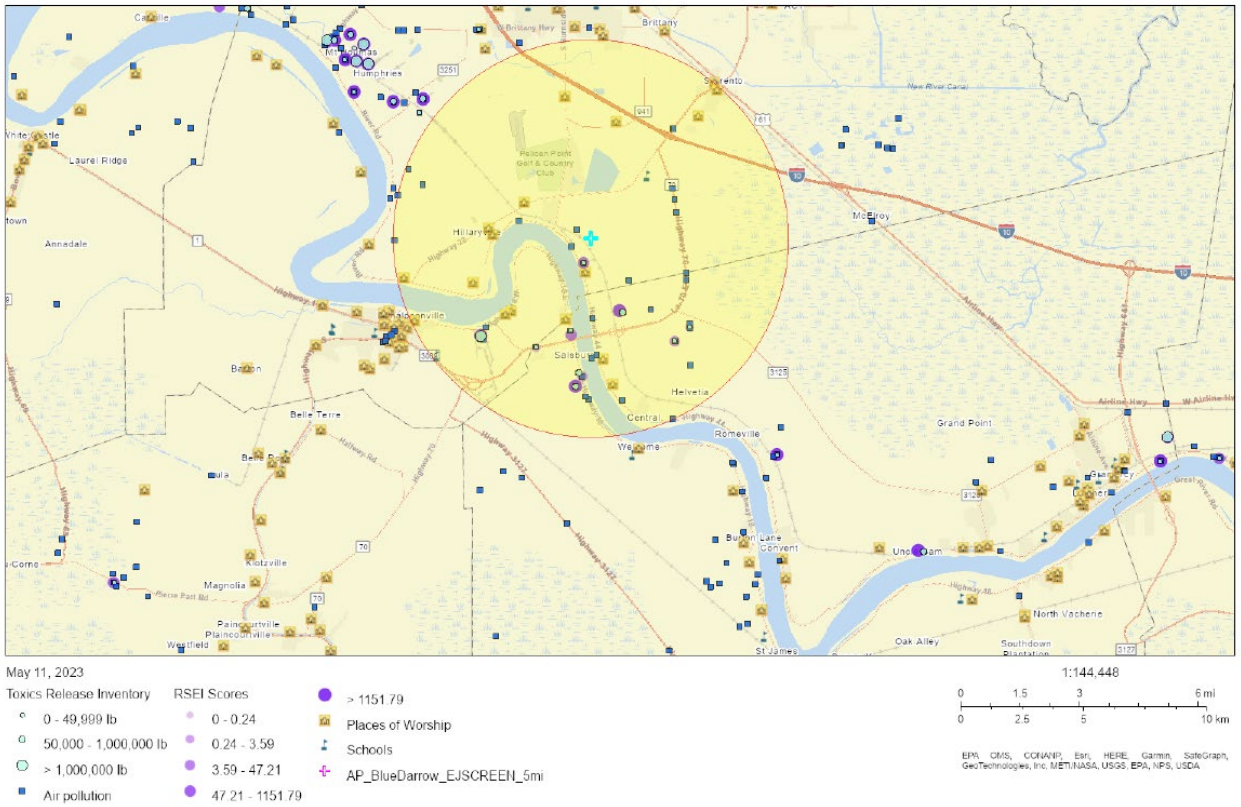

Figure 5. *EJSCREEN (Version 2.11) report map from a **5-mile** radius buffer ring around the center of the proposed Darrow complex site. This 5-mile buffer ring represents an approximate population of 13,269 and an area of 78.53 square miles.*

EJSCREEN Category	EJSCREEN Variable	State Percentile	US Percentile
EJ Index	Particulate Matter 2.5 µg/m^3	70	73
EJ Index	Air Toxics Cancer Risk	63	70
EJ Index	Air Toxics Respiratory Hazard Index	57	71
Pollution and Sources	Particulate Matter 2.5 µg/m^3	80	79
Pollution and Sources	Air Toxics Cancer Risk	98	95-100
Pollution and Sources	Air Toxics Respiratory Hazard Index	91	95-100
Socioeconomic Indicator	People of Color	57	62
Socioeconomic Indicator	Low Income	24	37

Table 3. *EJSCREEN (Version 2.11) report results from a* ***5-mile*** *radius buffer ring around the center of the proposed Darrow complex site. This 5-mile buffer ring represents an approximate population of 13,269 and an area of 78.53 square miles.*

2. *Class II wells that inject carbon for enhanced oil recovery disproportionately impact Environmental Justice communities.*

As discussed above in Section III.D., LDNR's rules allow Class II wells to be used for permanent CO_2 sequestration unless a finding is made that injection endangers USDWs, skirting Class VI permitting requirements necessary to ensure CO_2 is safely stored. As carbon capture is initially implemented, the ease and financial incentives of storing CO_2 in Class II wells as compared to Class VI wells likely means that most early CO_2 storage projects will attempt to utilize Class II wells.[250] Given the significant differences between the detailed regulatory requirements of the Class VI program and the far laxer Class II requirements, decisions by agencies regarding whether risks warrant requiring Class II wells to convert to Class VI raise environmental justice issues.

Data from EJScreen suggest that all the Class II injection wells used for enhanced oil recovery ("EOR") in Louisiana are located next to communities with environmental justice concerns. Not only are these communities exposed to relatively high air toxics for cancer risk and respiratory hazards, but they also share some combination of characteristics commonly attributed to environmental justice communities, such as higher percentiles of the following relative to the state and/or nation: people of color, low income, unemployment rate, and less than a high school education (Table 1).

Figure 6 is a map of CO_2 injection wells for EOR (CO_2-EOR) in Louisiana, according to

[250] *See* BTU Analytics, *How to Store CO_2 via Class II Wells*, (Dec. 15, 2022), https://btuanalytics.com/energy-transition/how-to-store-co2-via-class-ii-wells/.

LDNR's database.[251] There are three clusters of CO_2-EOR wells in Louisiana: (1) 12 wells in northwest Livingston Parish that span about 2.5 miles (Figure 7), (2) 51 wells in northeast LA, where 48 are in southeast Richland Parish and three are in northern Franklin Parish that together span about 8.6 miles (Figure 8), and (3) one well in central Tensas Parish (Figure 6).

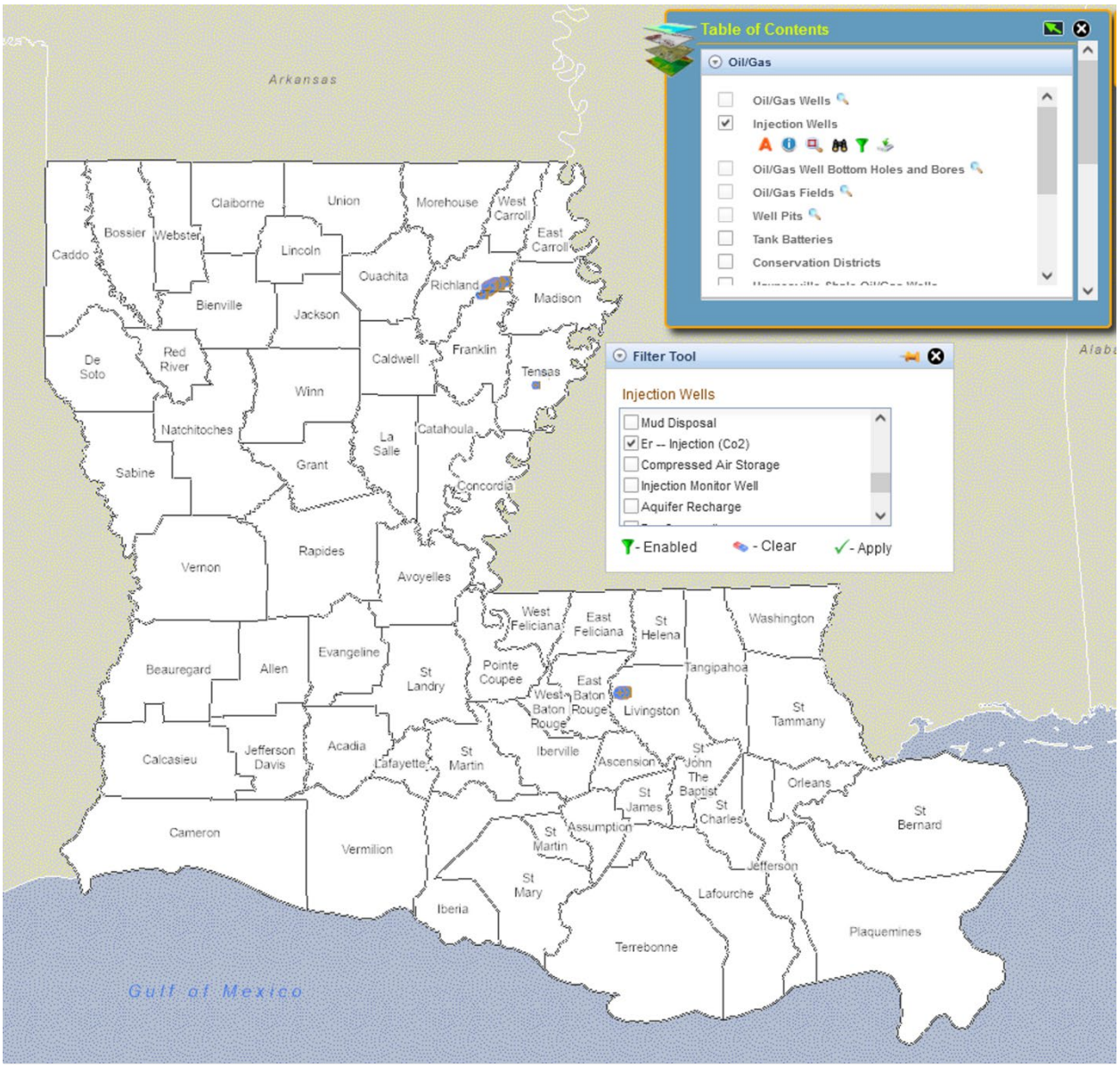

Figure 6. *Map of location of CO_2 injection wells used for Enhanced Oil Recovery (blue-brown circles) in Louisiana (screenshot taken from LDNR's SONRIS GIS Access tool, June 2023).*

[251] LDNR, *SONRIS GIS Access for Oil and Gas*, http://sonris-www.dnr.state.la.us/gis/agsweb/IE/JSViewer/index.html?TemplateID=181 (last visited June 23, 2023).

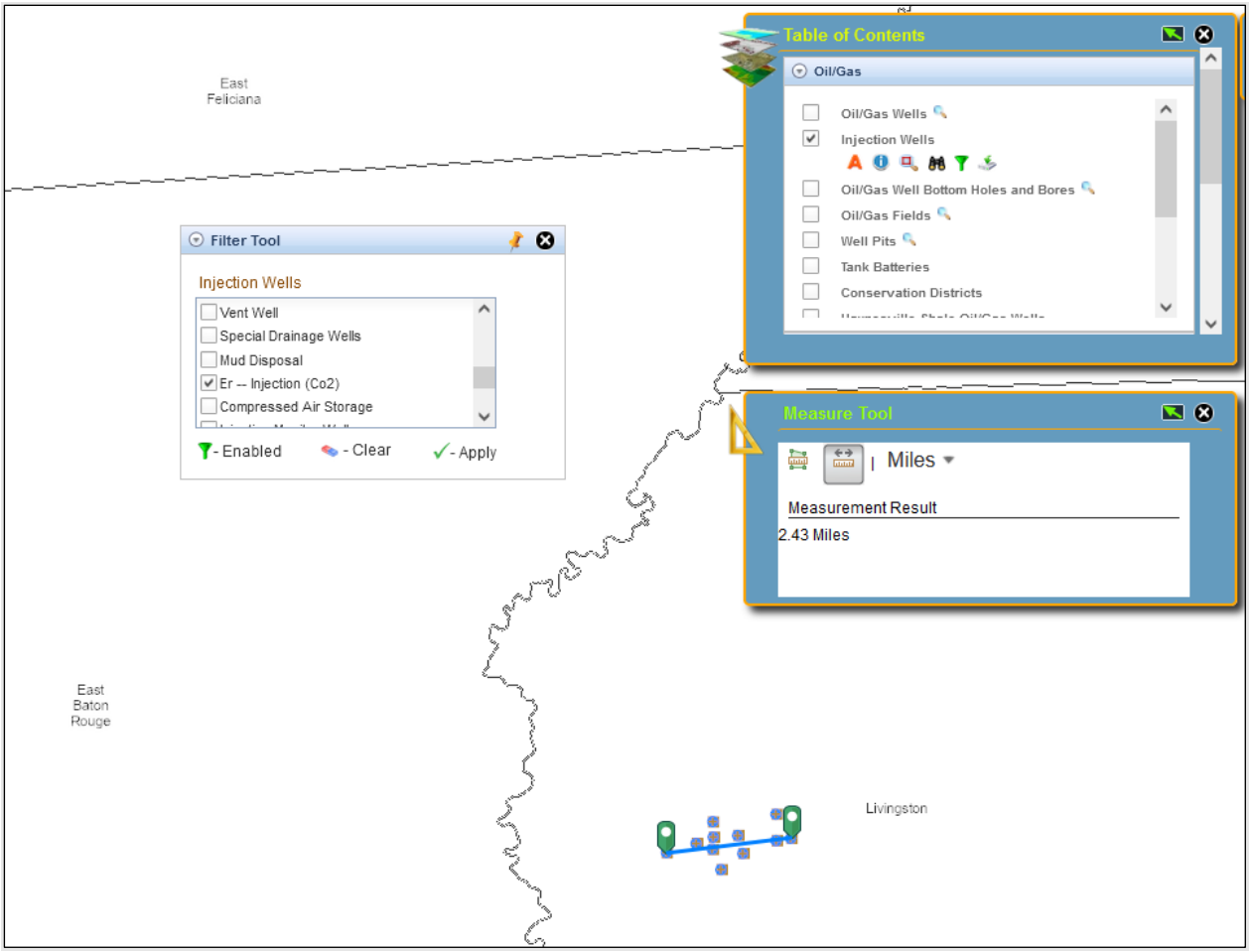

Figure 7. *Cluster of 12 CO_2-EOR wells in Livingston Parish, where the cluster spans approximately 2.5 miles (screenshot taken from LDNR's SONRIS GIS Access tool).*

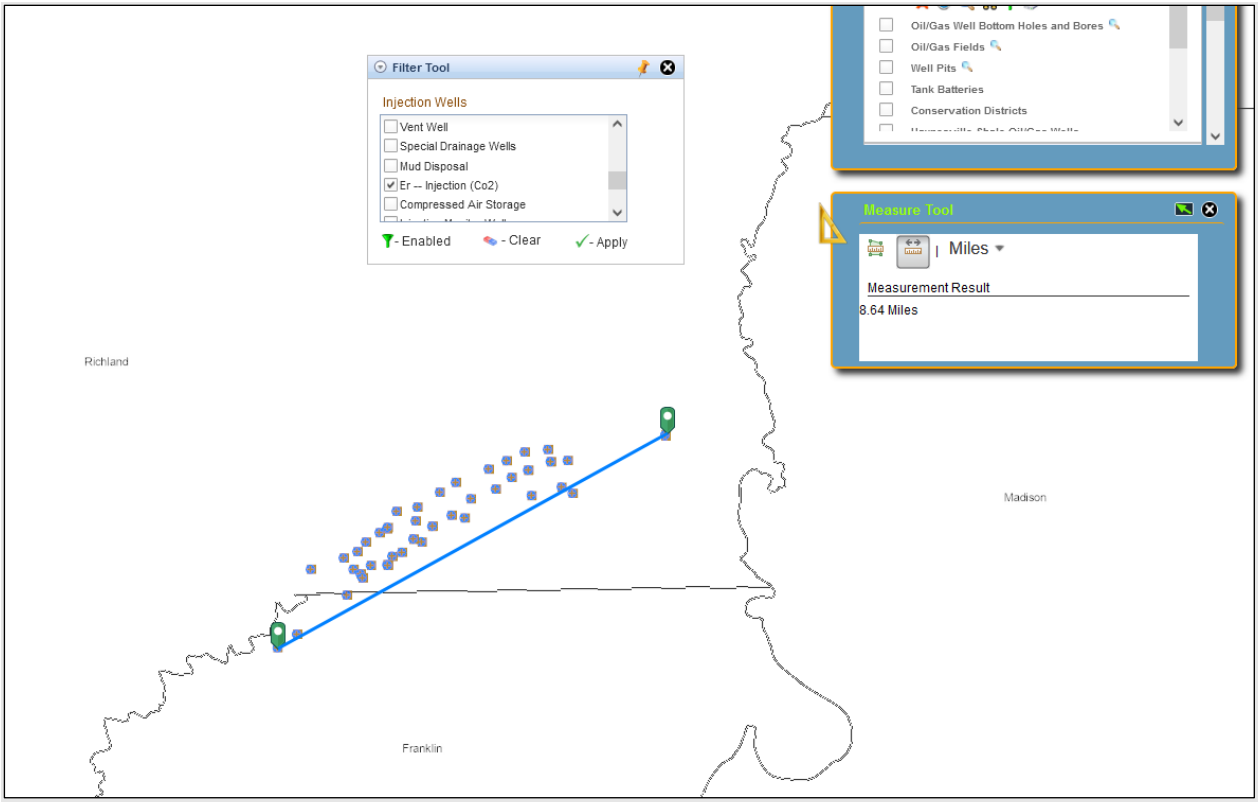

Figure 8. *Cluster of 51 CO_2-EOR wells in Franklin and Richland parishes, where the cluster spans approximately 8.6 miles (screenshot taken from LDNR's SONRIS GIS Access tool).*

We retrieved standard reports from EPA's EJScreen tool[252] for a radius of 2 miles and 5 miles from the center well at the Livingston and Richland Parish clusters (summarized in Table 4).[253] In every report, the unemployment rate is comparatively higher (consistently above the 60th percentile, and in Livingston and Tensas above the 90th percentile) than the rest of the state and nation. In the screening for Richland and Tensas, the CO_2-EOR wells are surrounded by higher percentiles of people of color, low-income people, and people with less than a high school education relative to the rest of the state and nation. In every report, the Air Toxics indicators for both Cancer Risk and Respiratory Hazard Index (HI) rank above the 80th percentile relative to the nation.

[252] EPA, *EJScreen*, https://ejscreen.epa.gov/mapper/ (last accessed June 23, 2023).
[253] EJ Screen Reports are attached hereto as **Exhibit 43**. Coordinates of the well in the center of each cluster were retrieved from the LDNR SONRIS GIS database.

Indicator	2-mi Livingston	5-mi Livingston	2-mi Richland	5-mi Richland	5-mi Tensas
Air Toxics Cancer Risk	86, 95-100th	87, 95-100th	52, 80-90th	52, 80-90th	52, 80-90th
Air Toxics Respiratory HI	86, 90-95th	87, 90-95th	62, 80-90th	62, 80-90th	62, 80-90th
People of Color	22, 26	18, 21	56, 61	44, 50	53, 59
Low Income	29, 43	32, 48	70, 83	74, 85	77, 87
Unemployment Rate	69, 75	90, 95	62, 67	66, 72	83, 90
Less Than High School Education	38, 52	27, 39	75, 84	78, 85	83, 89

Table 4. *Summary of EJSCREEN results in percentiles (state, nation) for the three CO_2-EOR well clusters in Louisiana.*

Overall, EPA has the information that it needs to preliminarily assess the environmental justice impacts of approving Louisiana's Class VI program and opening the flood gates of underground carbon injection. Our preliminary analysis demonstrates that carbon storage projects and their infrastructure will worsen environmental injustices in Louisiana.

C. EPA Must Reject Louisiana's Application Because LDNR Believes It Lacks Authority to Incorporate Environmental Justice in Permitting and Does Not Expressly Adopt Environmental Justice Standards in Its Permitting Program.

On December 9, 2022, after Louisiana had submitted its application for primacy, EPA's Letter to Governors informed every governor of a state seeking primacy that "[i]f your state decides to move forward with a Class VI primacy application, it is important for environmental justice and equity considerations to be fully integrated into a UIC Class Program, **including in permitting**."[254] Louisiana and LDNR have repeatedly expressed their wrongly-held belief that they lack authority to incorporate environmental justice into permitting decisions, and that any federal requirement that they do so is unlawful.[255] Given this position, Louisiana's failure to include any express requirements related to environmental justice review in their Class VI statutes and regulations makes clear that Louisiana would not integrate environmental justice and equity considerations in Class VI permitting. EPA cannot rely on Louisiana's MOA or Program Description to cure this fundamental deficiency.

1. LDNR wrongly believes it lacks authority to incorporate environmental justice into permitting decisions and that federal requirements for them to do so are unlawful.

Statements and actions by both LDNR and the state of Louisiana make clear that LDNR will not implement federal environmental justice procedures and standards in Louisiana's Class VI

[254] EPA, Letter to Governors, at 3 (emphasis added).
[255] *See e.g.*, Compl., *State of Louisiana v. EPA et al.*, **Exhibit 37**.

permitting program. LDNR believes it "currently lacks statutory authority to make the results of an [environmental justice] review part of the actual permit decision."[256] This wrongly held position clarifies that LDNR would not carry out federal environmental justice standards or its Constitutional public trust duty to perform environmental justice analysis when permitting Class VI wells.

Louisiana also wrongly believes federal environmental justice standards are unlawful, as evidenced by the State's recent lawsuit against EPA. In response to EPA's initial finding that Louisiana's permitting actions under the Clean Air Act "have an adverse disparate impact on the basis of race," Louisiana sued EPA for enforcing federal environmental justice requirements, arguing EPA cannot impose these requirements on the state and that they are outside of the agency's environmental regulations.[257]

Louisiana's litigation specifically "objects" to disparate impacts environmental justice standards. This position is in direct conflict with EPA guidance stating that disparate impacts must be a part of permitting decisions, which explains:

> Discrimination may also occur under Title VI and EPA's implementing regulation when a recipient's permitting decision has an adverse and disproportionate impact based on race, color, or national origin (including LEP status). The focus in a "disparate impact" case of discrimination is on whether the consequences of the recipient's permitting policies, decisions, and actions, or failure to act, has had or will have the effect of subjecting persons to discrimination, regardless of the recipient's intent.[258]

Louisiana's objection to disparate impact analysis also directly conflicts with EPA's Letter to Governors, which states that programs should evaluate "whether the siting of a Class VI project will … exacerbate any existing impacts on lower-income people and communities of color." [259]

In its lawsuit, Louisiana mocks EPA's environmental justice requirements, calling them a "warped vision" carried out by an agency that has "decided to moonlight as social justice warriors fixed on race." [260] Louisiana also belittles Administrator Regan's environmental justice tour and insults environmental justice organizations operating within the state.[261]

Without specific requirements adopted in LDNR's regulations, EPA cannot ensure that LDNR will implement environmental justice procedures in its permitting decisions. As explained *infra*, Louisiana's regulations for Class VI wells lack such express requirements. EPA cannot hand

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[256] LDNR Office of Conservation – Injection & Mining Division, Carbon Sequestration at the Louisiana Office of Conservation, Presentation at Pipeline Safety Conference, at 24, (July 21, 2022), **Exhibit 34**.
[257] *See* Compl., *State of Louisiana v. EPA et al.*, **Exhibit 37**; EPA, Letter of Concern at 2 (Oct. 12, 2022), attached hereto as **Exhibit 44**.
[258] EPA, Interim Environmental Justice and Civil Rights in Permitting Frequently Asked Questions, at 7, (Aug. 2022), attached hereto as **Exhibit 45**.
[259] EPA, Letter to Governors. at 2.
[260] *Id*. at 2.
[261] *See* Compl., *State of Louisiana v. EPA et al.*, **Exhibit 37**.

over primacy to Louisiana while the state is fighting and mocking the very environmental justice procedures EPA is mandated to implement under federal law and requires states to implement in its Letter to Governors.

2. EPA cannot rely on LDNR to follow its public trustee duties in implementing federal environmental justice review requirements.

The amended Program Description states that the Constitutional considerations in *Save Ourselves, Inc., et al v. the Louisiana Environmental Control Commission***,** 452 So. 2d 1152 (1984), provide for a review of factors relevant to siting, but it does not explicitly state LDNR will conduct an environmental justice review in this analysis.[262] Importantly, despite a Constitutional public trust duty to perform an environmental justice analysis, rooted in La. Const. Art. VI § 1 (1921), and reinforced in *Save Ourselves,* LDNR has not once, to our knowledge, performed an environmental justice analysis for its permit decisions**.** Indeed, one judge reviewing LDNR's performance of its public trustee duty noted that LDNR "gave virtually no consideration to the impact on the human lives in that area."[263]

Thus, EPA cannot rely on Louisiana's Constitutional public trust duty to assume or ensure that LDNR will perform an environmental justice review for each permit decision. To the contrary, based on LDNR's record of decision making, EPA must assume that LDNR will not perform such a review. At a minimum, any such reliance would require EPA to first assess whether and how LDNR performs analyses pursuant to *Save Ourselves.*

Moreover, during the pendency of this comment period (and contrary to the legal requirement that Louisiana submit a copy of all laws and regulations with its application), Louisiana passed a new law outlining the public trustee review requirements for Class VI well permitting. The law provides that an environmental analysis "shall be used to satisfy the public trustee requirements of Article IX, Section 1 of the Constitution of Louisiana" and address the following questions "regarding the proposed permit activity":[264]

A. Have the potential and real adverse environmental effects of the proposed permit activity been avoided to the maximum extent possible?
B. Does a cost-benefit analysis of the environmental impact costs versus the social and economic benefits of the proposed activities demonstrate that the latter outweighs the former?
C. Are there alternative activities which would offer more protection to the environment than the proposed activity without unduly curtailing non-environmental benefits?
D. Are there alternative sites which would offer more protection to the environment than the proposed site without unduly curtailing non-

[262] *See* Program Description, at 6.
[263] *Joseph v. Sec'y, Louisiana Dep't of Nat. Res.*, 18-414 (La. App. 5 Cir. 1/30/19), 265 So. 3d 945, 957 (Johnson, J., dissenting).
[264] House Bill No. 571, at 5, **Exhibit 11** Attachment.

environmental benefits?

E. Are there mitigating measures which would offer more protection to the environment than the proposed activity without unduly curtailing non-environmental benefits?

Notably, the new statute does not expressly require applicants to conduct an environmental justice analysis. Moreover, since this new law omits the savings clause that a similar statute governing permit applications before LDEQ incorporated to make it clear that the constitutional duties may extend beyond these specific questions,[265] LDNR or permit applicants may rely on this statute to attempt to limit the legal extent of LDNR's public trustee duties. Such an outcome seems likely given that LDNR already must consider these and more factors under its Constitutional public trust duty,[266] yet does not conduct environmental justice reviews or fully consider project impacts on communities.

Again, given LDNR's consistent aversion to any environmental justice review in permitting and the lack of express provision for such review in the new statute, EPA cannot reasonably rely on Louisiana's Constitutional public trust duty referenced in its program description to meet environmental justice mandates.

3. Louisiana's Class VI statutes and regulations lack express requirements for environmental justice review in permitting.

Given Louisiana's aggressive and blatant rejection of environmental justice analysis in environmental permitting, Louisiana's Class VI statutes and regulations must expressly include environmental justice standards and practices for Louisiana's program to meet federal environmental justice requirements. Without such requirements in the regulations themselves, EPA cannot ensure LDNR will follow federal environmental justice requirements.

Louisiana's Class VI statutes and regulations lack express requirements for environmental justice review, including provisions for meaningful public participation. Accordingly, they fail to cure LDNR's position that it lacks authority to consider the results of environmental justice review in permitting decisions or to provide a course-correction for the agency's longstanding practice of not conducting environmental justice reviews. This glaring omission in the context of Louisiana and LDNR's open hostility to federal environmental justice requirements necessitates that EPA reject Louisiana's application for primacy.

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[265] *See* La R.S. 30:2018.H (requiring applicants to perform an environmental assessment and stating "Nothing in this Section shall relieve permit applicants or the department from the public trustee requirements set forth in Article IX, Section 1 of the Constitution of Louisiana and by the Supreme Court of Louisiana in *Save Ourselves v. Louisiana Environmental Control Commission*, 452 So.2d 1152 (La. 1984). Subsequent case law and laws interpreting said decisions and the rules and regulations adopted by the department in accordance with those decisions may be used to implement these requirements.)."

[266] *E.g., Save Ourselves v. Louisiana Environmental Control Commission*, 452 So.2d 1152, 1157 (La. 1984) ("Environmental amenities will often be in conflict with economic and social considerations. To consider the former along with the latter must involve a balancing process.")

4. *The MOA Addendum and Amended Program Description do not cure LDNR's position that it lacks authority to implement environmental justice analysis in permitting, the State's failure to include express environmental justice requirements in Class VI statutes and regulations, or Louisiana and LDNR's hostility to federal environmental justice mandates.*

EPA seemed to acknowledge that Louisiana's application was lacking environmental justice requirements and attempted to cure this deficiency by adding an addendum to the MOA and requiring additional language in the Program Description. According to the Federal Register Notice, EPA reviewed LDNR's MOA Addendum and Program Description and concluded that Louisiana addressed all environmental justice elements discussed in its Letter to Governors.[267] However, as discussed above in Section III.A.3., an MOA outlines the relationship and oversight responsibilities between EPA and the state; it does not contain "standards" or regulations that can be enforced in a permitting program. Similarly, the Program Description is not an enforceable standard or regulation. Thus, neither the MOA nor the Program Description can cure LDNR's position that it lacks authority to implement environmental justice analysis in permitting, Louisiana's failure to include express environmental justice requirements in its Class VI statutes and regulations, or Louisiana and LDNR's hostility to federal environmental justice mandates. *See supra,* Section V.C.1-3.

Including the environmental justice requirements in an MOA also cuts the environmental justice communities themselves out of the enforcement of any of those requirements. For example, if LDNR approves a Class VI well permit without implementing any environmental justice standards or reviews, there would be no basis in the Class VI regulations themselves for a community member to appeal that permit to obtain adequate environmental justice review. Altogether, this undercuts the entire purpose of providing those communities with "meaningful involvement."

Similarly, the Program Description cannot cure the environmental justice deficiencies in laws or regulations because the Program Description is not a law or regulation itself. The Program Description only **describes** the applicable state permitting procedures;[268] it does not create them. For example, although the Program Description states that the agency will require the operator to conduct an environmental justice review and submit a report,[269] there is nothing in the Class VI regulations or statutes that would require an operator to do so. Communities cannot rely on measures described in the Program Description since they lack the effect of law. EPA cannot use an empty description without any basis in actual statutes or regulations to overcome the environmental justice considerations that are entirely absent from Louisiana's proposed Class VI program.

[267] State of Louisiana Underground Injection Control Program; Class VI Program Revision Application, 88 Fed. Reg. at 28452.
[268] 40 C.F.R. § 145.23(c).
[269] Program Description at 6.

D. The Program Description and MOA are Inadequate to Meet Federal Environmental Justice Standards and Procedures.

Even if EPA could rely on Louisiana's representations about environmental justice requirements in its MOA or Program Description, the MOA and Program Description are inadequate. Taken together, they fail to demonstrate any of the four approaches described in the Letter to Governors:[270]

1. Implement an Inclusive Public Participation Process.
2. Consider Environmental Justice Impacts on Communities.
3. Enforce Class VI Regulatory Protections.
4. Incorporate Other Mitigation Measures.

The MOA addendum merely regurgitates the above four approaches. [271] Similarly, the Program Description only describes a screening process and discretionary actions depending on what impacts the limited screening shows, in no way incorporating the four approaches.

1. The MOA and Program Description do not implement inclusive public participation processes.

Meaningful involvement is a central tenet of environmental justice, as EPA highlights in its definition of the term. EPA's Letter to Governors describes an engaged public participation process that targets opportunities for lower-income people and communities of color, provides early notice, tailors public participation related to scheduling, and supports the development of community benefits agreements.[272] By contrast, the MOA and Program Description allow, but fail to require, LDNR to apply a more tailored approach to public participation. LDNR *may* consider extending a public comment period, *may* provide more inclusive public participation processes based on the location of the site as determined by EJScreen, or *may* obtain help from a consultant if the review is especially complex if, after the *applicant* produces an environmental justice impact report, the EJScreen reveals that the proposed site is located in (not near) communities with high environmental justice risk factors.[273] In this way, LDNR uses EJScreen to limit, rather than meaningfully inform, public participation processes.

By leaving critical public participation processes to LDNR's discretion, rather than requiring them for all Class VI well applications, and by applying EJScreen as a limiting factor, Louisiana's application is inapposite to EPA's directive that environmental justice should be a "core element" of Class VI programs. [274] LDNR has not committed to meaningful public participation measures in its proposed Class VI program. It is critical that EPA secure such a commitment before handing primacy over to the State, as it will not have a later opportunity to do so.

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[270] EPA, Letter to Governors, at 2.
[271] *See* MOA Addendum 3, at 5.
[272] *Id*.
[273] Program Description, at 6; MOA Addendum 3, at 5.
[274] EPA, Letter to Governors, at 2.

2. The MOA and Program Description do not require consideration of environmental justice impacts on communities.

In considering environmental justice impacts, the Letter to Governors provides that states should evaluate whether "the siting of a Class VI project at the proposed location will create any new risks or exacerbate any existing impact on lower-income people and communities of color."[275] EPA's requirement that state's integrate environmental justice into its permitting program includes not only "robust and ongoing opportunities" for public participation for low income communities and communities of color, but also consideration of environmental justice impacts that include the presence of environmental hazards, potential exposure pathways, and impacts to susceptible populations.[276] Consideration of cumulative impacts is also central to this analysis. EPA defines cumulative impacts as "the totality of exposures to combinations of chemical and non-chemical stressors and their effects on health, well-being, and quality of life outcomes."[277] EPA and President Biden express that addressing cumulative impacts is essential to achieving environmental justice.[278]

The MOA and Program Description do not incorporate any of these substantive review requirements. The Program Description states, "at a minimum, the state will require the [environmental justice] report to consider the data and factors available in the EPA-developed EJScreen tool to evaluate the location of the project."[279] Louisiana will review the report to "ensure that it is thorough, contextualized, and agrees with the data from the EJScreen tool."[280] EJScreen is the only tool LDNR will require applicants to use related to environmental justice. This is a misuse of the tool. EPA describes EJScreen as a tool that "may help users identify" geographic areas with "people of color and/or low-income populations," "potential environmental quality issues," and "a combination of environmental and demographic indicators that is greater than usual," among other factors. However, EPA makes clear that EJScreen is a "screening tool," "a useful first step" in assessing a new project, rather than the full extent of all environmental justice considerations for a new project. EPA adds that "screening-level results … do not, by themselves, determine the existence or absence of environmental justice concerns in a given location," "do not provide a risk assessment, and . . . have other significant limitations."

LDNR's parroting of the "Consider Environmental Justice Impacts on Communities" approach in its MOA does not cure this deficiency. The MOA only cites the deficient Program Description for its contention that Louisiana makes environmental justice a "core element" of its program. Neither the MOA nor the Program Description identify any process for evaluating impacts from Class VI injection wells, cumulative impacts, or potential exposure pathways as part of its permitting process. Accordingly, the MOA and Program Description are inadequate to comply with the Letter to Governors or environmental justice mandates for implementing federal programs.

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[275] *Id*.
[276] *Id.*
[277] EPA, Cumulative Impacts Research, Recommendations for EPA's Office of Research and Development (Sept. 30, 2022), attached hereto as **Exhibit 46**.
[278] *See id*.; Exec. Order No. 14008, 86 Fed. Reg. at 7629; Exec. Order No. 14096, 88 Fed. Reg. at 25253.
[279] Program Description, at 5-6.
[280] *Id*. at 3.

3. The MOA and Program Description do not sufficiently enforce Class VI regulatory protections.

federal Class VI regulations require protections such as site characterization, long-term project management, and leakage prevention to avoid potential harms to environmental justice communities.[281] The MOA and Program Description fail to provide such protections.

As discussed above in Section III.B., Louisiana's application does not meet EPA's minimum regulations for enforcement of a Class VI program, let alone provide robust drinking water and other safety protections for communities already burdened by environmental injustices. As described in Sections III.A. and F., LDNR's regulations fail to meet the minimum EPA regulations on site characterization, long-term project management, and post injection site closure. Moreover, Section IV outlines how Louisiana failed to provide for the expertise necessary to carry out the program in its application. Instead of utilizing the Class VI regulations to "to protect communities from potential harms associated with injection wells,"[282] the State plans to swiftly permit at least three times the amount of projects EPA has permitted to operate since the inception of the Class VI well program in 2010, showing that the state is prioritizing approving projects over protecting communities.

LDNR's conclusory statement in its MOA that it will "properly implement and enforce [SDWA] requirements" and "post regular reports of enforcement activities" is inadequate to cure these deficiencies.[283] Moreover, Louisiana's position in its lawsuit against EPA evinces that the State will not enforce Class VI protections in a way that meets environmental justice goals. In that lawsuit, Louisiana claims EPA's request that it "process complaints [from environmental justice communities] in a timely manner" is an unlawful attempt "to micro-manage LDEQ and other state agencies."[284] The MOA and Program Description fail to show that Louisiana will enforce regulatory protections in a way that will protect environmental justice communities at a time when Louisiana has publicly belittled and dismissed the complaints of these very communities.

4. The MOA and Program Description do not incorporate mitigation measures for environmental justice harms.

EPA's Letter to Governors states that in reviewing Class VI applications, the Agency will consider the state's approaches for mitigating environmental impacts in already overburdened communities. In highlighting the "range of mitigation measures that states could incorporate to ensure that Class VI projects do not increase environmental impacts and public health risks in already overburdened communities," EPA provides a sample list of recommendations. These include measures such as CO_2 monitoring, notification networks, enhanced pollution control, and resources for clean-up. The MOA and Program Description do not ensure any of these recommendations will be adopted. Moreover, Louisiana's track record of environmental injustice should call for heightened scrutiny of LDNR's program.

[281] EPA, Letter to Governors, at 2.
[282] *See Id*.
[283] MOA Addendum 3, at 5.
[284] Compl., *State of Louisiana v. EPA et al.*, at 18, **Exhibit 37**.

In addition to its parroting of the "Incorporating Other Mitigation Measures" factor in its Letter to Governors, the MOA provides that "[t]he [S]tate agrees to examine the potential risks of a proposed Class VI well within his or her jurisdiction to identify and address any particular impacts on minority and low-income populations."[285] However, the MOA and Program Description do not specify how Louisiana will "identify and address" impacts on environmental justice communities, or how it will require applicants to do the same. This is particularly concerning given that, as described above, LDNR has never taken such mitigation actions and has evinced an intent not to do so. *See supra,* Subsection C.

Louisiana's deplorable record of environmental injustice makes it critical for the State to undertake affirmative mitigation. Louisiana, one of the most heavily industrialized states in the nation,[286] has allowed polluting facilities to pack into historically Black and low-income communities, who are perpetually excluded from the governance decisions that lead to the siting and permit approval for these facilities.[287] Just last year, EPA investigated Louisiana for civil rights violations and made preliminary findings that the permitting practices of LDEQ and the Louisiana Department of Health subject Black Louisianans to disproportionate levels of air pollution and fail to provide Black Louisianans with meaningful involvement in air permitting decisions.[288] Rather than comply with EPA's investigation, Louisiana filed its lawsuit against EPA, referring to EPA's environmental justice policies as a "dystopian nightmare" and characterizing EPA's work to prevent new and cumulative impacts in historically polluted communities as discrimination (presumably, against white Louisianans).[289] Given this abrasiveness to addressing environmental justice impacts, EPA cannot reasonably find that Louisiana will implement the Class VI permitting program in accord with EPA's environmental justice mission.

As described in Section V.B. above, Louisiana's Class VI program would worsen Louisiana's historic and ongoing environmental injustices. The general assurances in the MOA and Program Description do not require any of EPA's recommended mitigation measures, and EPA must retain primacy to ensure environmental justice impacts from Class VI well projects are mitigated and addressed.

For these reasons, EPA must deny Louisiana's application for Class VI primacy. Approving Louisiana's application would deny Louisianians environmental justice protections under federal law.

VI. Conclusion

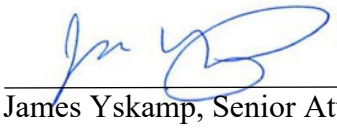
For the reasons outlined in this Comment, it is imperative that EPA deny Louisiana's Application for Primary Enforcement Authority over the Class VI UIC well program because the State's program would endanger human health and the environment. Louisiana's proposed program is not as stringent as EPA's minimum technical requirements in a number of key areas, and the

[285] MOA Addendum 3, at 4.
[286] EPA Letter of Concern, **Exhibit 44**.
[287] *Id*. at 8-10.
[288] *See id*. at 2-5.
[289] Compl., *State of Louisiana v. EPA et al.*, at ¶ 6, **Exhibit 37**.

State has not shown it has the expertise and the track record to safely implement the complex Class VI injection well program. Louisiana's implementation of the Class VI program would risk massive CCS infrastructure buildouts without consideration of environmental justice impacts in permitting, further exacerbating environmental injustices in Louisiana's most vulnerable communities.

Turning over primary enforcement authority to LDNR would be a dangerous and rushed experiment on the geology and communities of Louisiana in the hands of an agency that has failed in its enforcement and regulatory duties on other well programs, and to a State that is actively resisting EPA's environmental justice mandates. EPA must retain primacy over the Class VI program in Louisiana due to the failures outlined in these comments.

Sincerely,



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INDEX OF EXHIBITS

Exhibit No.	Document Description
1	EPA, EPA Report to Congress: Class VI Permitting (Oct. 2022)
2	Angela C. Jones, Cong. Rsch. Serv., R46192, Injection and Geologic Sequestration of CO_2: Federal Role and Issues for Congress (2022)
3	White, J. & Foxall, W., *Assessing induced seismicity risk at CO_2 storage projects: Recent progress and remaining challenges*, Int'l. Journal of Greenhouse Gas Control (2016)
4	Derek Vikara *et al*., *CO_2 Leakage During EOR Operations - Analog Studies to Geologic Storage Of CO_2* (2019)
5	IEA, *Storing CO_2 Though Enhanced Oil Recovery: Combining EOR with CO_2 Storage (EOR+) for Profit* (2015)
6	Derek Vikara & Allison Guinan, *NETL's Analog Studies to Geologic Storage of CO_2 – Overview,* DOE (2019)
7	Empower LLC, Carbon Capture & Sequestration In Louisiana, Part 1: Permitting for rapid expansion (June 7, 2023)
8	EEA, *Air pollution impacts from carbon capture and storage (CCS)* (2011)
9	Klaus, H. & Schmitt, K. *Uncertainties and gaps in research on carbon capture and storage in Louisiana* (2023)
10	EPA, Geologic Sequestration of Carbon Dioxide: Underground Injection Control (UIC) Program Class VI Primacy Manual for State Directors (Apr. 2014)
11	Earthjustice Request for Extension of Public Comment Period (Jun. 20, 2023)
12	EPA, Geologic Sequestration of Carbon Dioxide: Underground Injection Control (UIC) Program Class VI Well Plugging, Post-Injection Site Care, and Site Closure Guidance (Dec. 2016)
13	Hauber, G., *Norway's Sleipner and Snøhvit CCS: Industry models or cautionary tales?*, Institute for Energy Economics and Financial Analysis (June 2023)
14	Klaus, H. & Schmitt, K., *Uncertainties and Gaps in Research on Carbon Capture and Storage in Louisiana*, Center for Progressive Reform (June 2023)
15	La. Legis. Auditor, Regulation of Oil and Gas Wells and Management of Orphaned Wells: Office of Conservation – Department of Natural Resources (May 28, 2014)
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17	McKeithen, M. & Venn, B., *Recent Changes to Louisiana's Underground Injection Control Program*, Jones Walker
18	Murphy, Tim, *Meet the Town That's Being Swallowed by a Sinkhole*, MotherJones (August 7, 2013)
19	Solet, Kimberly, *Grand Bois case changed the landscape of environmental battles,* Houma Today (April 19, 2005)
20	La. Legis. Auditor, Department of Natural Resources: Analysis of Program Authority and Performance Data (Oct. 1997)

21	EPA, UIC Program Class VI Financial Responsibility Guidance 1 (July 2011)
22	La. Legis. Auditor, Progress Report: Regulation of Oil and Gas Wells and Management of Orphaned Wells, Office of Conservation – Department of Natural Resources (March 2020)
23	EPA Memorandum, Key Principles in EPA's Underground Injection Control Program Class VI Rule Related to Transition of Class II Enhanced Oil or Gas Recovery or Gas Recovery Wells to Class VI (April 23, 2015)
24	Stuart, C.G. *et al.*, Guide to Louisiana's Ground-Water Resources, U.S. Geological Survey (1994)
25	EPA, UIC Program Class VI Well Area of Review Evaluation and Corrective Action Guidance (May 2013)
26	The Kolker Report
27	LDNR, Table 22: Louisiana State Oil and Gas Drilling Permits Issued by Type (2022)
28	Tristan Baurick, *Feds Sending Louisiana $111 Million to Plug Hundreds of 'Orphan' Oil and Gas Wells*, Nola.com (Feb. 1, 2022)
29	Interstate Oil & Gas Compact Comm'n, Idle and Orphan Gas Wells, State and Provincial Regulatory Strategies (2021)
30	EPA, UIC Program Class VI Well Site Characterization Guidance, EPA 816-R-13-004 1 (May 2013)
31	Sherwood M. Gagliano, *et al*., *Executive Summary: Active Geological Faults and Land Change In Southeastern Louisiana* (Aug. 14, 2003)
32	Tina L. Roberts-Ashby *et al*., *Geologic Framework for the National Assessment of Carbon Dioxide Storage—US Gulf Coast* (2014)
33	Alvin W. Chan & Mark D. Zoback*, The Role of Hydrocarbon Production on Land Subsidence and Fault Reactivation in the Louisiana Coastal Zone*, 23 J. Coastal Rsch., no. 3 (May 2007)
34	Corey Schircliff & Laura Sorey, LDNR Office of Conservation – Injection & Mining Division, Carbon Sequestration at the Louisiana Office of Conservation, Presentation at Pipeline Safety Conference (July 21, 2022)
35	Abrahm Lustargen, *680,000 Wells Hold Waste Across US—With Unknown Risks*, ProPublica (June 21, 2012)
36	Julie Dermansky & Sharon Kelly, *Industry Insiders Question Louisiana Regulators Over Cleanup on ExxonMobil Land, Amid Corruption Claims and Pollution Fears*, DeSmog (June 29, 2022)
37	Complaint, *State of Louisiana v. EPA et al.*, Case No 23-cv-00692 (W.D. LA)
38	EPA, Guidance on Considering Environmental Justice During the Development of Regulatory Actions (2015)
39	EPA, Geologic Sequestration of Carbon Dioxide – UIC Quick Reference Guide: Additional Tools for UIC Program Directors Incorporating Environmental Justice Considerations into the Class VI Six Injection Well Permitting Process (2011)
40	CEQ, Instructions to Federal Agencies on Using the Climate and Economic Justice Screening Tool (Jan. 2023)

41	Air Products Site, Formerly Orange Grove Plantation, Fact Sheet
42	Julie Dermansky, *The Battle to Stop Air Products' Carbon Capture Project at Lake Maurepas Grows*, DeSmog (Feb. 17, 2023)
43	EJ Screen Reports
44	EPA, Letter of Concern at 2 (Oct. 12, 2022)
45	EPA, Interim Environmental Justice and Civil Rights in Permitting Frequently Asked Questions, (Aug. 2022)
46	EPA, Cumulative Impacts Research, Recommendations for EPA's Office of Research and Development (Sept. 30, 2022)