IN RE MUSKEGON DEVELOPMENT COMPANY

UIC Appeal No. 19-02

ORDER DENYING REVIEW

Decided March 26, 2020

Syllabus

Mr. Emerson Joseph Addison III petitions the Environmental Appeals Board ("Board") to review an Underground Injection Control ("UIC") permit that Region 5 ("Region") of the U.S. Environmental Protection Agency reissued to Muskegon Development Company ("Muskegon"). The reissued permit authorizes Muskegon to convert an existing oil production well in Clare County, Michigan, called the "Holcomb 1-22" well, for injection of fresh water to enhance oil recovery from Muskegon's other nearby production wells.

The Region reissued the permit following a partial remand by the Board in *In re Muskegon Development Co.*, 17 E.A.D. 740 (EAB 2019) ("*Muskegon I*"). In *Muskegon I*, the Board remanded for the Region to address listed comments 24, 25, and 26 and to take further action, if appropriate. The Board also held that, based on the record at the time, it was unable to determine whether the Region had appropriately evaluated the environmental justice implications raised in comment 20 and therefore remanded for the Region to further respond to that comment and take further action, if appropriate. On remand, the Region prepared a revised response-to-comments document in which the Region amplified its original response to comment 20 and environmental justice concerns and provided detailed responses to comments 24, 25, and 26.

Mr. Addison now challenges the Region's final decision to reissue the permit following the Board's remand. He argues that each of the Region's new responses to the comments in question is inadequate.

Mr. Addison's petition for review cites the revised response-to-comments document, but it does not reference a final permit decision by the Region. The Board therefore issued an order to show cause why the petition should not be dismissed for lack of jurisdiction. The Region's reply clarified that it had, in fact, reissued the final permit following the Board's remand. The Region nonetheless urged the Board to dismiss Mr. Addison's petition for lack of jurisdiction because he failed to reference or attach the Region's final permit decision.

Held: The Board denies the Region's request that Mr. Addison's petition be dismissed for lack of jurisdiction. The Board then denies the petition for review because Petitioner did not demonstrate clear error or other basis for review.

On the jurisdictional question, the Board concludes that the basis for the Board's jurisdiction became certain when the Region filed its reply on the order to show cause, clarifying that the Region had reissued a final UIC permit following the Board's remand in *Muskegon I*. The Board rejects the Region's argument that Petitioner's failure to attach or refer to the reissued permit should result in dismissal, given the substantial ambiguity about the public availability of the reissued permit and the fact that Muskegon and the Region were the only entities that had access to the document that unambiguously established the Board's jurisdiction.

On the merits, the Board holds that Mr. Addison failed to demonstrate clear error or other basis for review with respect to the Region's amplified responses to comments 20, 24, 25, and 26. With respect to comment 20 (environmental justice), comment 24 (risk of well casing failure), and comment 25 (risk of internal structural failure), the Board defers to the Region's well-explained and well-supported judgments, ruling that Mr. Addison failed to present sufficient evidence to rebut the Region's judgments. For comment 26 (protection of water supplies), the Board finds that it has no jurisdiction to adjudicate Mr. Addison's challenge to the Region's oversight of UIC wells.

Finally, the Board addresses the Region's assertion that Mr. Addison's "real challenge" in this petition for review is to the sufficiency of the UIC permit regulations to prevent endangerment of underground sources of drinking water ("USDWs"). The Board notes that Mr. Addison clarified that he is not challenging the sufficiency of the UIC regulations. Instead, Mr. Addison maintains that he is pointing out an "inconsistency" between the Region's efforts to provide enhanced public participation opportunities and its decision to reissue a permit that will require the local community to spend money for additional drinking well water testing. Consistent with Board precedent, the Board denies review. The Board rejects the argument that any contradiction exists and concludes that Mr. Addison failed to demonstrate that the Region clearly erred in declining to add a permit condition that offsets local residents' drinking well testing costs, or similar non-USDW-specific remedy.

Before Environmental Appeals Judges Aaron P. Avila, Mary Kay Lynch, and Kathie A. Stein.

Opinion of the Board by Judge Avila:

I. *STATEMENT OF THE CASE*

In October 2019, Mr. Emerson Joseph Addison III petitioned the Environmental Appeals Board ("Board") to review a Class II Underground Injection Control ("UIC") permit reissued by Region 5 ("Region") of the

U.S. Environmental Protection Agency ("EPA" or "Agency"). The reissued permit authorizes Muskegon Development Company ("Muskegon") to convert an existing oil production well in Clare County, Michigan, called the "Holcomb 1-22" well, for injection of fresh water to enhance oil recovery from Muskegon's other nearby production wells. The Region reissued the permit following a partial remand by the Board in *In re Muskegon Development Co.*, 17 E.A.D. 740, 751-52, 756 (EAB 2019) ("*Muskegon I*"). The Board directed the Region to further respond to certain public comments and take further action, if appropriate. *Id.* at 756. Mr. Addison now challenges the Region's final decision to reissue the permit following the Board's remand. The Board takes seriously the issues Mr. Addison raises. For the reasons discussed below, however, the Board denies review.

II. *PRINCIPLES GOVERNING BOARD REVIEW*

As noted in *Muskegon I*, Board review of UIC permit decisions is governed by the Agency's permitting regulations at 40 C.F.R. § 124.19. 17 E.A.D. at 741. In promulgating these regulations, EPA stated that the Board's power to grant review of a permit decision "should be only sparingly exercised," emphasizing that "most permit conditions should be finally determined at the [permit issuer's] level." *See* Consolidated Permit Regulations, 45 Fed. Reg. 33,290, 33,412 (May 19, 1980). In any appeal from a permit decision issued under part 124, the petitioner bears the burden of demonstrating that review is warranted. 17 E.A.D. at 742; 40 C.F.R. § 124.19(a)(4). In the case of self-represented petitioners such as Mr. Addison, the Board endeavors to liberally construe the petition to fairly identify the substance of the arguments being raised. *E.g.*, *In re Archer Daniels Midland Co.*, 17 E.A.D. 380, 383 (EAB 2017); *In re Sutter Power Plant*, 8 E.A.D. 680, 687 (EAB 1999).

Under the standard of review set forth in the Agency's regulations, the Board has discretion to grant or deny review of a permit decision, and the Board ordinarily denies a petition for review of a permit decision (and thus does not remand it) unless the petitioner demonstrates that the permit decision is based on a clearly erroneous finding of fact or conclusion of law, or involves a matter of policy or exercise of discretion that warrants review. 40 C.F.R. § 124.19(a)(4)(i)(A)-(B); *accord Muskegon I*, 17 E.A.D. at 742. "On matters that are fundamentally technical or scientific in nature, the Board typically defers to a permit issuer's technical expertise and experience, as long as the permit issuer adequately explains its rationale and supports its reasoning in the administrative record." *In re Jordan Dev. Co.*, 18 E.A.D. 1, 5 (EAB 2019).

III. *LEGAL FRAMEWORK*

A. *The UIC Program and Class II Wells*

The Safe Drinking Water Act ("SDWA") requires EPA to promulgate regulations for state UIC programs to protect underground sources of drinking water ("USDWs"). SDWA § 1421, 42 U.S.C. § 300h. EPA has promulgated such regulations, including minimum requirements for UIC permits. *See* 40 C.F.R. pts. 144-148. EPA administers the UIC program in a state such as Michigan that is not authorized to administer its own UIC program. *See* 40 C.F.R. §§ 144.1(e), 147.1151.

The UIC program focuses on the protection of underground water that "supplies or can reasonably be expected to supply any public water system" from "any contaminant" that may be present as a result of underground injection activities. SDWA § 1421(d)(2), 42 U.S.C. § 300h(d)(2); *see also* 40 C.F.R. § 144.12(a). The purpose of the UIC regulations is to prevent the movement of fluids containing contaminants into USDWs if the presence of those contaminants may cause a violation of a primary drinking water regulation or otherwise adversely affect human health. *See* 40 C.F.R. § 144.12(a). "[A]ll injection activities including construction of an injection well are prohibited until the owner or operator is authorized by permit." *Id.* § 144.31(a).

Injection wells fall into six classes. *Id.* §§ 144.6, 146.5. Class II wells are used to inject fluids for three different purposes: disposal of fluids from oil or gas production; storage of hydrocarbons; or, like the Holcomb 1-22 well at issue here, enhanced recovery of oil or natural gas. *Id.* § 144.6(b)(1)-(3).

B. *Executive Order on Environmental Justice*

Executive Order 12,898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" ("Executive Order on Environmental Justice" or "Executive Order"), provides that federal agencies "make achieving environmental justice part of [their] mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of [their] programs, policies, and activities on minority populations and low-income populations." Exec. Order No. 12,898 § 1-101, 59 Fed. Reg. 7629, 7629 (Feb. 16, 1994). Federal agencies are to implement this Executive Order "consistent with, and to the extent permitted by, existing law." *Id.* § 6-608, 59 Fed. Reg. at 7632. While the Executive Order gives permitting authorities discretion to determine how best to implement its mandate within the confines of existing law, the Executive Order does not dictate any particular

outcome in a permit decision. *See id.* § 1-103, 59 Fed. Reg. at 7630 (directing agencies to develop their own agency-specific strategies for incorporating environmental justice goals into their programs, policies, and activities); *see also In re Energy Answers Arecibo, L.L.C.*, 16 E.A.D. 294, 325-26, 337 (EAB 2014), *pet. for review dismissed as untimely sub nom. Sierra Club de P.R. v. EPA*, 815 F.3d 22 (D.C. Cir. 2016); *In re Pio Pico Energy Ctr.*, 16 E.A.D. 56, 91-92 n.30 (EAB 2013).

IV. *PROCEDURAL AND FACTUAL HISTORY*

As recounted in *Muskegon I*, Mr. Addison originally petitioned the Board in August 2018 for review of the Region's first final permit decision (issued in July 2018) authorizing Muskegon to convert the Holcomb 1-22 well for injection of fresh water to enhance oil recovery from Muskegon's other nearby production wells. 17 E.A.D. at 744-45. The Board denied review of most of the issues raised by Mr. Addison but remanded the permit for the Region to address two issues.

First, the Board held that "the current state of the Region's response to comments document substantially impedes a determination as to whether the Region considered and meaningfully responded to the listed 'in scope' comments 24, 25, and 26." *Id.* at 749. The Board therefore remanded "for the Region to address listed 'in scope' comments 24, 25, and 26 and to take further action, if appropriate." *Id.* at 752. Second, based on the record at that time, the Board held that it was unable to determine whether the Region had appropriately evaluated the environmental justice implications, raised in comment 20, of the permitting action. *Id.* at 754-56. The Board directed the Region to explain, in response to comment 20, "whether it considered the fact that 56% of the [local] population is low income in its permitting action and whether and how [the Region] chose to exercise its discretion under the UIC permitting program through enhanced public participation and use of its UIC regulatory omnibus authority." *Id*. at 756. In both instances, the Board ordered the Region to take further action, if appropriate. *Id*. at 752, 756. The Board provided that, to exhaust administrative remedies, anyone wishing to challenge the permit decision following remand would be required to file a petition seeking Board review. *Id.* at 762 n.11.

In September 2019, the Region issued a revised response-to-comments document containing the new responses to comments 20, 24, 25, and 26. Region 5, U.S. EPA, *Revised Response to Comments on Draft Class II Permit in Clare County, Michigan, Issued to Muskegon Dev. Co. (Permit No. MI-035-2R-0034), Holcomb 1-22 Well* 13-16, 18-22 (Sept. 26, 2019) (Amended Administrative Record No. ("A.A.R.") 97) ("Rev'd RTC"). The Region amplified its original

response to comment 20 and environmental justice concerns, explaining that it had considered the circumstances of the low-income community living near the well site and provided enhanced public participation opportunities for those residents and others. *Id*. at 13-15. The Region also explained that it had determined that no threat to drinking water sources existed, and therefore it declined to exercise its UIC regulatory omnibus authority to impose additional permit conditions. *Id*. at 15-16. In addition, the Region provided detailed responses to comments 24, 25, and 26, dealing with well casing and structural failures and drinking water protection issues. *Id*. at 18-22.

On the same day it issued the revised response to comments, the Region also sent a letter to "Commenters." Letter from Joan M. Tanaka, Acting Dir., Water Div., EPA Region 5, to Commenters (Sept. 26, 2019) ("Tanaka Letter"). The letter notified the recipients that "[t]his action constitutes issuance of a Class II permit" and specified that the permit would be effective on November 17, 2019, unless it were timely appealed to the Board. *Id.* at 1. The Tanaka Letter referenced "Enclosures" and discussed "[t]he enclosed 'Revised Response to Comments.'" *Id*. at 1-2. The Tanaka Letter mentioned no other enclosed documents and did not include a list of enclosures. *See id.*

In October 2019, Mr. Addison filed a petition for review containing several citations to a "Revised RTC on draft," but his filing did not reference a final permit decision by the Region following the remand. *See generally* Petition for Review & Petitioner Response to EPA Revised Response to Comments on Draft Class II Permit No. MI-035-2R-0034 (Oct. 25, 2019) ("Pet."). Because the existence of a final permit decision is a predicate for the Board's jurisdiction in these circumstances, the Board issued an order directing Mr. Addison to show cause why his petition should not be dismissed for lack of jurisdiction and providing the Region an opportunity to file a reply to any response filed by Mr. Addison. *See* Order to Show Cause Why Petition Should Not Be Dismissed for Lack of Jurisdiction, and Regarding Service Via Electronic Mail 2 (Nov. 4, 2019) ("Order to Show Cause").

The Region's reply clarified that the Region had, in fact, issued a final UIC permit in September 2019, in conjunction with the revised response to comments and amended administrative record. EPA Region 5 Reply to Petitioner Response to Order to Show Cause Why Petition Should Not be Dismissed for Lack of Jurisdiction 1 (Nov. 20, 2019) ("Reg. 5 Show Cause Reply"). Mr. Addison's filings on the Order to Show Cause indicate that he was unaware of the final permit's issuance, though he was aware of a statement in the revised response to comments that the Region had not changed the final permit's terms and conditions

from the draft UIC permit. *See* Petitioner Surreply to EPA Region 5 Reply to Petitioner Response to Order to Show Cause 5, 9-13 (Dec. 2, 2019).

The Region urged the Board to dismiss Mr. Addison's petition for lack of jurisdiction because he failed to "reference or attach" the Region's new permit decision. Reg. 5 Show Cause Reply at 1. The Board subsequently issued an order seeking clarification from the Region on the permitting proceedings on remand. *See* Order Directing Clarification (Feb. 11, 2020). Mindful that this permitting action involves an environmental justice community and a self-represented petitioner, the Board ordered the Region to provide a brief explanation (and any appropriate supporting documentation) of: (1) to whom and by what method(s) the Region sent the Tanaka Letter; (2) all the enclosures that accompanied the Tanaka Letter, including whether the final reissued permit was an enclosure to the Tanaka Letter;[1] and (3) if the final reissued permit was not an enclosure to the Tanaka Letter, how the public could have accessed the final reissued permit. *Id*. at 3.

In its response to that order, the Region stated that, in accordance with the Region's Standard Operating Procedures, it had transmitted the final permit only to Muskegon. EPA Region 5 Response to Order Directing Clarification 6-7 (Feb. 21, 2020) ("Reg. 5 Clarification Resp."). The Region nonetheless asserted that the final permit *was* available to the public on the website because the proposed 2017 and final 2018 permits were posted there, and because commenters were "specifically informed" that the reissued 2019 permit was "identical" to those two earlier permits. *Id*. at 7 (citing Rev'd RTC at 22).

V. *ANALYSIS*

A. *The Board Denies the Region's Request That the Petition Be Dismissed for Lack of Jurisdiction*

The Board adjudicates appeals from final UIC permit decisions under 40 C.F.R. part 124. *See, e.g.*, *In re Envtl. Disposal Sys.*, 12 E.A.D. 254, 266-67 (EAB 2005) (citing cases); *accord In re Archer Daniels Midland Co.*, 17 E.A.D. 380, 383 (EAB 2017). The regulations specify the elements an entity challenging

[1] When the Region filed its response to Mr. Addison's petition, the Region also filed a certified index to the Amended Administrative Record (dated September 26, 2019). Neither the Tanaka Letter nor its "Enclosures" are specified in the certified index to the Amended Administrative Record. A reissued final permit (dated September 26, 2019) is, however, listed in the Amended Administrative Record index as Document #98.

a final UIC permit decision must include in its petition for review filed with the Board. 40 C.F.R. § 124.19(a)(4).

The Region argues that the Board should dismiss Mr. Addison's petition for lack of jurisdiction because his response to the Order to Show Cause "failed to 'reference or attach' any new permit decision made by the Region, despite the Board's clear direction to do so." Reg. 5 Show Cause Reply at 1. The Board rejects the Region's argument.

First, the basis for the Board's jurisdiction became certain when the Region filed its reply on the Order to Show Cause, clarifying that the Region had, in fact, issued a new permit decision. In that filing, the Region explained that, in response to the Board's partial remand in *Muskegon I*, the Region reissued the permit to Muskegon on September 26, 2019. Reg. 5 Show Cause Reply at 1. Second, contrary to the Region's characterization, the Board's Order to Show Cause merely mentioned as a factual matter that Mr. Addison's petition did not reference or attach a new permit decision. *See* Order to Show Cause at 2.

Moreover, when asked to explain how a commenter or the public could have accessed the final reissued permit, the Region acknowledged that it did not send the final reissued permit to all commenters, but only to Muskegon as the permittee. Reg. 5 Clarification Resp. at 6-7. The Region maintained, however, that the final reissued permit "was available to the public on Region 5's website." *Id.* at 7. Apparently, the Region's position is that the final reissued permit (dated September 26, 2019) was available to the public because the proposed 2017 and final 2018 permits were posted on the website, and the revised response to comments "specifically informed" commenters that the reissued 2019 permit was "identical" to those two earlier permits. *Id*. (citing Rev'd RTC at 22). The Region emphasizes that "commenters (including [Mr. Addison]) were on notice that the final 2018 permit provided on the website constituted the final reissued 2019 Permit." *Id.* But the Amended Administrative Record and certified index subsequently filed by the Region in this matter specifically include a final reissued permit dated September 26, 2019. *See* A.A.R. 98. That final permit was not posted on the Region's website, otherwise provided to Mr. Addison, or even available to the Board until the Region's filings in this matter. As noted, once the Region submitted that document to the Board, any questions about the Board's jurisdiction over this matter were resolved.

Given the substantial ambiguity about the public availability of the reissued permit, along with the public's inability to review and compare the 2017 draft,

2018 final, and 2019 final permits, the Region's argument that Mr. Addison's failure to attach or refer to the reissued permit should result in dismissal is a significant overreach.[2] Indeed, it is not clear why the Region would argue that the Board should dismiss Mr. Addison's petition in this case for lack of jurisdiction when Muskegon and the Region were the only entities that had access to the document that unambiguously established the Board's jurisdiction.

The Board denies the Region's request to dismiss Mr. Addison's petition for lack of jurisdiction and now proceeds to address the arguments presented in this petition for review.

B. *Mr. Addison Fails to Demonstrate Clear Error by the Region or That Review Is Otherwise Warranted with Respect to the Region's Revised Responses to Comments Number 20, 24, 25, and 26*

Mr. Addison argues that each of the Region's revised responses to the four comments on remand is inadequate and therefore review is warranted. For the reasons set forth below, the Board disagrees.

1. *Environmental Justice Issues (Response to Comment 20)*

In *Muskegon I*, the Board recognized that, in responding to a comment that the low-income population of the well area should be factored into the permit decision, the Region needed to do more than simply state that it had performed an environmental justice screen identifying that 56% of the local population were in the low-income level. 17 E.A.D. at 756. Instead, the Region should have explained whether it actually considered the low-income community in making its permitting decision and whether and how the Region chose to exercise its discretion under the UIC permitting program through enhanced public participation and use of its UIC regulatory omnibus authority. *Id*. The Board ordered the Region to do that on remand and to take further action, if appropriate, in light of that explanation. *Id*.

a. *The Region's Response to Comment 20 on Remand*

With respect to enhanced public participation, in its revised response to comments, the Region stated that its efforts to ensure public participation in the UIC permit decisionmaking process went well beyond the regulatory requirements

[2] Although the Region is not required by the regulations to post the reissued final permit on its website, the public availability of the permit at an earlier time would have expedited resolution of this case.

of 40 C.F.R. part 124 and "well beyond its mandatory duty to engage and interact with the public." Rev'd RTC at 15. The Region explained that it provided two comment periods and extended the second comment period's deadline, so that the public had a total of ninety-three days to submit comments on the draft UIC permit. *See id.* The Region also hosted an evening public meeting and hearing at a local high school, at which further public comments were submitted orally. *See id*.

As for its UIC regulatory omnibus authority, the Region has authority to impose, on a case-by-case basis, conditions necessary to prevent the migration of fluids into USDWs. 40 C.F.R. § 144.52(a)(9); *accord Muskegon I*, 17 E.A.D. at 755. The Region explained that it considered whether to exercise this authority by examining the permit application and conditions pertaining to well design and construction, plugging and abandonment, and geological suitability of confining rock formations associated with the Holcomb 1-22 well. Rev'd RTC at 15-16. In so doing, the Region concluded that the final permit "will effectively protect the USDWs upon which the low-income portion of the community relies." *Id*. at 15. The Region specifically highlighted three points, noting that the proposed well: (1) will be injecting fresh water (ground water) rather than brine or other substances; (2) is designed with multiple barriers, including multiple steel well casings, cement between casings, injection through steel tubing, and annulus fluid to monitor and contain any future tubing leaks; and (3) is situated among multiple formations of impermeable rock that will prevent upward migration of any fluid leaks. *Id*. The Region therefore assessed the likelihood of the Muskegon well causing an impact to local residents (low-income and otherwise) as "extremely low" and concluded that it had no need to exercise its omnibus authority to incorporate additional protective conditions into the permit. *Id*. at 15-16.

b. *Arguments on Appeal*

On appeal, Mr. Addison does not object to the Region's statements that it provided "enhanced public participation" for this permit. Instead, he focuses on the science underlying the Region's determination that the risks presented to USDWs by the proposed well are "extremely low." Pet. at 10. Relying on a 2013 literature review by Dr. Anthony Ingraffea, Ph.D., Mr. Addison argues that the phenomenon of fluid migration upward along a wellbore is poorly understood. *Id*. at 10 (citing Anthony R. Ingraffea, *Fluid Migration Mechanisms Due to Faulty Well Design and/or Construction: An Overview and Recent Experiences in the Pennsylvania Marcellus Play*, Physicians, Scientists & Eng'rs for Healthy Energy (Jan. 2013) (A.A.R. 93) ("Ingraffea Paper")).

Mr. Addison points to the paper's finding that casing layers, cementing, and other common structural elements do not eliminate upward fluid migration but rather may increase the likelihood of well failure. *Id*. This finding, he asserts, is drawn from experiences at many different types of wells in different states under different geological conditions, and not just from hydraulic fracturing wells in Pennsylvania's Marcellus Shale region, as the Region had contended in its revised response to comment 24. *Id.*; *see* Rev'd RTC at 19. Accordingly, Mr. Addison challenges the Region's risk determination, arguing that "every single safety measure used in the construction and operation of the [Holcomb 1-22] well * * * brings questionable levels of protection," and some "could even be counterproductive." Pet. at 10.

Based on Dr. Ingraffea's analysis, Mr. Addison contends that the Region's revised response to comment 20 is inadequate because the Region lacks sufficient information to make a "safe" decision, whereas "there is significant reason to believe there is a significant risk to the community." *Id*. He asserts that Dr. Ingraffea's paper and "numerous other studies" establish that "[t]hese wells eventually leak," and he urges the Board to deny the UIC permit on this basis.[3] *Id*.

In response, the Region presents a lengthy list of technical determinations discussed in the revised response to comments and permit conditions to protect against endangerment of USDWs. EPA Reg. 5 Resp. to Pet. for Review 9-11 (Nov. 25, 2019) ("Resp."). These determinations/conditions include analyzing geologic siting and well design/construction requirements, establishing a safe maximum injection pressure, evaluating area seismicity, requiring mechanical integrity testing, monitoring, recording, and reporting, and many other requirements. *See id*. The Region argues that Mr. Addison's reliance on Dr. Ingraffea's paper and "numerous other [unidentified] studies" to claim that UIC wells leak does not suffice to overcome the heavy burden a petitioner must bear to show that the permit issuer clearly erred in this technical area. *Id*. at 11.

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[3] Mr. Addison also claims that the Region "shied away" from responding to the idea, expressed in comment 20, that unlimited use by the proposed well of fresh water from the water table is a concern. Pet. at 10. The Board previously held in *Muskegon I* that this issue is outside the scope of the UIC program, and no further response was required from the Region. *See* 17 E.A.D. at 761. As noted there, "'[t]he State of Michigan regulates ground water and the volume or rate of ground water withdrawal.'" *Id*. (quoting original response-to-comments document).

c. *Analysis*

The Board agrees with the Region. Mr. Addison's claims are quite broad: he states, based on Dr. Ingraffea's paper and "numerous other studies" that are not identified, that all wells "eventually leak." Pet. at 10. Dr. Ingraffea's paper and unidentified studies, however, are not dispositive here. As the Region points out, it considered Dr. Ingraffea's paper, and the Region explained that many of the wells examined in that paper apply high-pressure hydraulic fracturing stresses that are not present at the Holcomb 1-22 well, inject chemical-laden fracturing fluid or other types of injectate that differ substantially from the fresh water injectate in the instant case, and have significantly different geological factors in play. *See* Resp. at 11; *see also* Rev'd RTC at 19 (response to comment 24); Ingraffea Paper at 4-8.

These differences are substantial and cannot be overcome by vague claims that other types of wells similar to the Holcomb 1-22 well *are* included in Dr. Ingraffea's paper. No such purportedly similar wells are identified by name, type, or location/geology, and none are shown to be similar to the Holcomb 1-22 well in ways that would be meaningful for this permit decision. *See* Pet. at 10 (discussing Dr. Ingraffea's paper but not identifying any specific wells addressed therein that are similar to Muskegon's well); Petitioner Reply Brief to EPA Region 5 Response to Petition for Review 14, 16-17 (Dec. 10, 2019) ("Reply") (same). The Board defers to the Region in this highly technical area, as Mr. Addison has failed to present sufficient evidence to rebut the Region's judgments. *See In re Jordan Dev. Co.*, 18 E.A.D. 1, 21-22 (EAB 2019). Accordingly, Mr. Addison's contentions fail to establish any clear error by the Region or any other basis for review.

In *Jordan Development*, the permit issuer (also Region 5) expressly stated how it addressed potential environmental justice concerns by focusing on enhanced public participation. *See id.* at 16. The permit issuer also separately made adequate technical determinations that the permit conditions were otherwise sufficient to protect USDWs without additional protections, regardless of the composition of the community surrounding the well site. *See id*. at 16-17. In those circumstances, the Board denied review. *Id.* at 17. The Board finds the record here analogous to that in *Jordan Development* and therefore denies review.

In sum, Mr. Addison fails to demonstrate that the Region clearly erred in its technical analyses pertaining to the Holcomb 1-22 well or that review is otherwise warranted. The Board denies the petition for review on this issue.

2. *Risk of Well Casing Failure (Response to Comment 24)*

In *Muskegon I*, the Board held that the original response to comments substantially impeded a determination as to whether the Region exercised its considered judgment in responding to comment 24.[4] 17 E.A.D. at 749-51. That comment urged EPA to "reject the permit well because of the known rates of well-casing failures." Rev'd RTC at 18. Specifically, the comment asserted that "all well casings of injection wells (and [hydraulic fracturing] wells) eventually fail," purportedly "guarantee[ing] that the toxic waste in the injection well will eventually endanger drinking water and aquifers." *Id*.

In its revised response to comments, the Region began by pointing out that the permit for the Holcomb 1-22 well does not allow the injection of any "toxic wastes" into the well. *Id*. at 19. Instead, the permit authorizes only the injection of fresh water into the Holcomb 1-22 well; the "injection of any other substances or waste for disposal is prohibited." *Id*. The Region then discussed the many mechanical integrity testing, monitoring, reporting, and restoration requirements included as terms and conditions in the permit. *Id.* (citing Permit pt. I.E.17). The Region explained that the only physical changes to the existing well are the installation of injection tubing and a packer device that seals off the space between the tubing and innermost well casing, creating a space called the "annulus" that is filled with fluid. *Id*. The annulus fluid pressure must be monitored to determine whether any leaks (i.e., losses of mechanical integrity) have occurred in the well. *Id.* According to the Region, a properly constructed UIC well "with multiple concentric steel well casings with cement between casings, with a well packer and annulus fluid[,] provide[s] a system with multiple, redundant barriers to prevent any leak from reaching underground sources of drinking water." *Id.* at 19-20. The Region concluded that its review of Muskegon's application and all supporting documentation indicate that the Holcomb 1-22 well will perform properly. *Id.* at 20.

On appeal, Mr. Addison repeats his claim that the Region's response is inadequate because it inappropriately disregards well failure data summarized in Dr. Ingraffea's paper, which purportedly shows that well construction problems are endemic, migration from UIC wells is not well understood, and oil and gas operators self-report poorly. Pet. at 11-12; Reply at 17-18. In large measure,

[4] The Board noted that the Region's original response to comments lacked "a discernable articulation of comments 24, 25, and 26 and the Region's responses thereto." *Muskegon I*, 17 E.A.D. at 750.

Mr. Addison repeats many of the arguments addressed in the prior section of this decision.

The Region responds by explaining that it considered Dr. Ingraffea's paper and concluded that the injection activity discussed therein is distinguishable from this case (i.e., injection of fresh water versus high-pressure injection of hydraulic fracturing fluid), and also that the Holcomb 1-22 well permit conditions are consistent with regulatory requirements to prevent against endangerment of USDWs due to well casing failure. Resp. at 14. The Region argues further that it exercised considered technical judgment based on site-specific geology and information, including the "extremely rare" incidents of casing leaks in Michigan (0% to 0.28% per year). *Id*. Given these facts, the Region contends that the Board should defer to the Region's considered technical judgment in this area. *Id*. at 14-15. As for the oil and gas operators' alleged self-reporting deficiencies, the Region cites the Board's recent *Jordan Development* decision to support its argument that this issue falls outside the bounds of the UIC regulatory permitting program. *Id*. at 15 (citing *Jordan*, 18 E.A.D. at 26).

For many of the reasons set forth in the comment 20 analysis above, the Board denies review on this issue. The broad claims presented are not focused enough to raise concerns about precise issues with this permit, and the Region's judgment in its response to comments is well explained and supported by relevant authorities and data. As previously explained, the Region considered Dr. Ingraffea's paper and did not find it relevant or persuasive in this context. The Region also determined that the Holcomb 1-22 well permit conditions are consistent with regulatory requirements to prevent against risk of endangerment of USDWs due to well casing failures. The Board defers to the Region in this highly technical area as Mr. Addison has failed to present sufficient evidence to rebut those judgments. *See Jordan*, 18 E.A.D. at 21-22. As to Mr. Addison's argument based on alleged self-reporting deficiencies, that argument falls outside the bounds of the UIC permitting program and thus the Board lacks jurisdiction to consider that claim. *See id.* at 26 (holding that disputes about sufficiency of well failure reporting and EPA's UIC program oversight fall outside bounds of UIC permit program, so Board lacks jurisdiction to adjudicate those matters).

In sum, Mr. Addison fails to demonstrate that the Region clearly erred in its technical analyses pertaining to the Holcomb 1-22 well permit or that review is otherwise warranted. The Board denies the petition for review on this issue.

3. *Risk of Structural Failure Inside Well (Response to Comment 25)*

In *Muskegon I*, the Board held that the original response to comments substantially impeded a determination as to whether the Region exercised its considered judgment in responding to comment 25. 17 E.A.D. at 749-51. That comment argued that structural failures inside wells are "routine," based on data compiled during a ProPublica review of over 220,000 well inspections from October 2007 to October 2010. Rev'd RTC at 20. Those data purportedly revealed one well integrity violation for every six UIC wells examined (in other words, a failure rate of approximately 16.7%), more than 17,000 violations nationally, and more than 7,000 wells that showed signs their walls were leaking. *See id.* The comment further noted that the records also showed wells "are frequently operated in violation of safety regulations and under conditions that greatly increase the risk of fluid leakage and the threat of water contamination." *Id*.

In its revised response to comments, the Region discounted these various "statistics." *Id*. The Region explained that its review of all active Class II wells in Michigan over the past five years showed that "the failure rate has been no higher than 5% [or one in twenty wells] in any given year"; thus, the Region concluded that the ProPublica findings of one in six well failures do not reflect EPA's experience in Michigan. *Id*. at 20-21. Further, the Region noted that, of these very few failures, virtually all are annulus fluid leaks into tubing and then into the injection zone; they are not injectate leaks through the casing into areas outside the injection zone. *Id*. The Region stated that the latter type of casing leaks is "extremely rare" in Michigan, at a rate of only 0.0%-0.28% per year in the past five years. *Id.* The Region explained:

> Injection wells must be constructed and operated to prevent the injection fluid from contaminating [a USDW]. The proposed injection will take place through steel tubing that is set within the innermost casing. The fluid approved for injection (fresh water for this well) will only be permitted to flow through the inside of this tubing. A device called a packer will be set at the bottom of the tubing to seal off the space between the innermost casing and tubing. This space, called the annulus, will be filled with a liquid mixture containing a corrosion inhibitor, and the permittee must monitor the pressure of the annulus liquid to detect any changes in pressure that could indicate a leak in either the tubing, packer, or casing. This pressure will be tested initially after the conversion of the injection well to ensure that the well has mechanical integrity and then monitored weekly thereafter to ensure that the well maintains

> mechanical integrity. The permit does not allow injecting fluids through this monitored annulus space. Because injection fluids will only be injected through the tubing, they will not be in contact with the well casing.
>
> If monitoring indicates a leak in the annulus or if the well should fail a mechanical integrity demonstration, then the permit requires the well to be shut down immediately and the failure reported to EPA within 24 hours. This is what EPA considers a well "failure."

Id. at 20-21.

On appeal, Mr. Addison argues that the Region's response is inadequate. Pet. at 13. He points to Dr. Ingraffea's paper as providing evidence that well failure rates are "widely under-reported." *Id.* (citing Ingraffea Paper at 8). He criticizes the Region's decision to discount the ProPublica data as inconsistent with EPA's Michigan data, pointing out that it is "impossible to verify" the Michigan figures because the Region cites no authority to support those data. *Id.* at 14. He also questions the definition of what the Region considers to be a "well failure"—i.e., a leak in the annulus or a failed mechanical integrity test—as "very narrow." *Id.*; *see* Rev'd RTC at 21.

The Region argues, and the Board agrees, that these arguments do not suffice to demonstrate clear error or other basis for review, for many of the reasons already set forth in the analysis above. *See* Parts V.B.1.c, V.B.2, above; Resp. at 16-17. Mr. Addison's broad, generalized claims about well failures based on the Ingraffea and ProPublica papers are not sufficiently specific to overcome the Region's detailed, site-specific analyses of the technical issues presented by this permit application. The Board defers to the Region's technical expertise in such circumstances. *See, e.g.*, *Jordan*, 18 E.A.D. at 37 (deferring, in absence of countervailing arguments or evidence submitted by petitioner, to Region's technical determinations pertaining to injection well failure rates in Michigan). And as previously explained, arguments about alleged underreporting of well failure rates are outside the bounds of the UIC regulatory permitting program and, thus, the Board lacks jurisdiction to adjudicate such disputes. *Id.* at 26.

In sum, Mr. Addison fails to demonstrate that the Region clearly erred in its technical analyses pertaining to the Holcomb 1-22 well or that review is otherwise warranted. The Board denies the petition for review on this issue.

4. *Protection of Water Supply (Response to Comment 26)*

In *Muskegon I*, the Board held that the original response to comments substantially impeded a determination as to whether the Region exercised its considered judgment in responding to comment 26. 17 E.A.D. at 749-51. That comment expressed concern about protecting drinking water "first and foremost." Rev'd RTC at 21.

In its revised response to comments, the Region explained the USDW protections provided by the UIC program. *Id*. at 21-22. The Region noted that the UIC regulations "specify the geological siting, engineering, construction, and operation and monitoring requirements [that] injection wells must meet in order to prevent contamination of USDWs." *Id*. at 21 (citing 40 C.F.R. pts. 144, 146). In light of those requirements, the Region reviewed Muskegon's permit application "for technical adequacy to ensure the well design has sufficiently redundant barriers against any future leaks, and geological data confirms the absence of known faults and fractures in underground rock formations, and the presence of confining rock layers overlying the injection zone." *Id.* If leaks are detected, EPA must be notified, injection must cease, and the well must be shut-in, repaired, and successfully tested for mechanical integrity prior to resuming injection. *Id*. The Region further pointed out that EPA inspections and oversight are employed to verify the accuracy of UIC well facilities' self-monitoring and reporting, and that penalties and sanctions may be imposed for lack of compliance with these requirements. *Id.* at 22. The Region reported that, in Fiscal Year 2017, EPA inspected 518 wells, witnessed 226 mechanical integrity tests, reviewed 13,560 monitoring reports and 32 mechanical integrity or geologic reservoir test reports, and issued 4 information collection orders. *Id.*

On appeal, Mr. Addison challenges the Region's underlying assumptions that the regulations are adequate, the monitoring done correctly and in good faith, and the reporting honest. Pet. at 14. He also argues that the inspection/review list reveals that a vanishingly small number of injection wells receive EPA scrutiny, heightening the doubt that EPA can adequately monitor and regulate UIC wells. *Id.* at 14-15. Mr. Addison maintains that the Region merely summarized the inspection/review activities and did not provide supporting documentation, which prevented independent verification. *Id*. at 15. In his view, the "alarmingly low oversight statistics" and "lack of documentation" provide "ample reason to deny this permit." *Id.*

To the extent Mr. Addison is challenging whether the UIC "regulations are adequate," Pet. at 14, it is well settled that the Board generally does not consider

challenges to EPA regulations. *See, e.g., In re FutureGen Indus. All., Inc.*, 16 E.A.D. 717, 724 (EAB 2015) (denying review because Board is not appropriate forum to decide challenges to structure of UIC regulations and policies underlying them), *pet. for review dismissed as moot sub nom. DJL Farm L.L.C. v. EPA*, 813 F.3d 1048 (7th Cir. 2016); *accord Jordan*, 18 E.A.D. at 12. With respect to Mr. Addison's arguments pertaining to the Region's oversight of Class II wells, as discussed above, those fall outside the bounds of the UIC regulatory permitting program and the Board lacks jurisdiction to adjudicate such disputes. *See* Part V.B.2, above; *see also* Resp. at 18.

In sum, Mr. Addison fails to demonstrate that the Region clearly erred in its technical analyses pertaining to the Holcomb 1-22 well permit or that review is otherwise warranted. The Board denies the petition for review on this issue.

C. *Mr. Addison Fails to Demonstrate That an Inconsistency Exists Between Environmental Justice Policy and Practice*

Finally, the Region asserts, in each of the four remanded comment discussions addressed above, that Mr. Addison's "real challenge" in this appeal is to the sufficiency of the UIC permit regulations to prevent endangerment of USDWs. Resp. at 11-12, 16-18. According to the Region, Mr. Addison is not arguing that the permit conditions fail to meet the regulatory requirements, or that the Region failed to appropriately exercise its discretion under the regulations. *See id*. at 11. The Region construes various statements by Mr. Addison[5] as a regulatory challenge and responds by citing well-established Board precedent that holds regulations cannot be challenged in a permit appeal. Resp. at 12 (citing cases). The Region argues that the same ruling should hold true here.

In his reply brief, Mr. Addison clarifies that he is *not* challenging the sufficiency of the UIC regulations. Reply at 15, 18-21. Instead, he points out that "[b]ecause unexpected problems [with wells] do occur," both EPA and Michigan recommend additional testing for drinking water wells situated near new oil/gas operations. *Id.* at 13. In Mr. Addison's view, the Region displays "considerable inconsistency" and "flaw[ed] * * * logic" by acknowledging that the community is poor, "ben[ding] over backwards to accommodate this community under its

[5] As one example, Mr. Addison asserts that "EPA claims it has guidelines and regulations to protect this community, but as I will demonstrate, these rules are wildly insufficient, ambiguous, * * * nearly impossible to enforce," and "based on questionable science." Pet. at 8.

[e]nvironmental [j]ustice policies" to provide public participation opportunities, and nonetheless still approving a UIC permit that will require the community to spend money for additional testing. *Id.* at 13, 15. Mr. Addison maintains that the issue here is that the Region's actions in "go[ing] out of its way" to accommodate this impoverished community and yet still pressing ahead with permit issuance, which will impose well testing costs that the community cannot bear, demonstrate clear error or an exercise of discretion or important policy consideration that warrant review. *Id.* at 15-16.

Mr. Addison's argument is similar to one he raised in *Jordan Development*, in which he argued that the Region "inadequately addressed" environmental justice issues and failed to apply any "meaningful" environmental justice guidelines. *Jordan*, 18 E.A.D. at 12. In *Jordan*, he identified an "apparent contradiction" between the Board's decision in *In re Envotech, L.P.*, 6 E.A.D. 260 (EAB 1996), which seems to forbid use of environmental justice concerns to modify permit decisions, and basic principles of environmental justice, which he argued allow and even mandate such modification. *Jordan*, 18 E.A.D. at 13.

The Board rejected the notion that such a contradiction exists, reasoning as follows. First, the Executive Order self-limits its applicability in any given situation to what existing law allows. *Id.* (citing Exec. Order No. 12,898 § 6-608, 59 Fed. Reg. at 7632). Second, a permit issuer may not deny or condition a permit in a situation where a permittee has demonstrated full compliance with all statutory and regulatory requirements (which define what existing law allows). *Id*. (citing *Envotech*, 6 E.A.D. at 280); *accord Muskegon I,* 17 E.A.D. at 756. Third, a permit issuer may exercise its discretion in two areas to address environmental justice: (1) public participation; and (2) UIC regulatory omnibus authority. *Jordan*, 18 E.A.D. at 13-14. With respect to the omnibus authority, permit issuers may add permit conditions needed to ensure USDW protection, but they may not add permit conditions to alleviate other types of impacts—such as drinking well testing costs—that are not specifically related to USDW protection. *Id*. (citing *Envotech*, 6 E.A.D. at 281-82).

Based on the above analysis, Mr. Addison fails to demonstrate that the Region clearly erred in declining to exercise its omnibus authority to add a permit condition that offsets local residents' drinking well testing costs, or similar non-USDW-specific remedy. The Board denies the petition for review on this issue.

VI. *CONCLUSION*

For the foregoing reasons, the Board denies the petition for review.

So ordered.