

# Marquis Class VI Permit Appeal—Summary of the 11 Issues

*Petition filed by Eco-Justice Collaborative with the U.S. EPA Environmental Appeals Board, May 7, 2026*

On April 10, 2026, EPA Region 5 issued UIC Class VI Permit IL-155-6A-0001, authorizing Marquis Carbon Sequestration to inject 9 million metric tons of CO<sub>2</sub>—the largest single-project Class VI volume in the Illinois Basin—over six years into the Mt. Simon Sandstone in Putnam County, Illinois. EJC’s petition, prepared by Pam Richart, Eco-Justice Collaborative, and Lindsey Gulden, Ph.D., Leg Up Data, raises eleven issues, grouped below.

## Modeling defects

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### **1. The model ignored 276 million gallons of hazardous waste already in the same formation.**

ArcelorMittal injected acidic, metal-laden steelmaking waste (chromium roughly 12,000× the drinking-water limit) just 1.25 miles from Marquis’s planned injection well. Illinois EPA warned Marquis’s CO<sub>2</sub> injection could re-pressurize the formation and mobilize that waste toward drinking water. Region 5 issued the permit anyway and deferred verification to post-permit testing.

**2. Marquis’s type of model has already failed in this formation.** At the nearby Illinois Basin–Decatur Project, seismic monitoring showed CO<sub>2</sub> migrating upward along undetected faults, contrary to predictions made at “90% confidence.” Marquis used the same deterministic approach in similarly complex geology and Region 5 accepted it—without requiring the probability-based methods EPA’s own Class VI guidance recommends.

## Monitoring and well-integrity inadequacies

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**3. The 12-year post-injection monitoring period lacks supporting evidence.** Region 5 cut monitoring from the 50-year default to 12 years—a fourfold reduction—without the “substantial evidence” the rule requires. No Class VI project has yet completed post-injection monitoring, so the only support is Marquis’s model (defective per Issues 1 and 2). The shortened window also falls inside the 7–13-year range when ADM Decatur’s Illinois Industrial Sources Carbon Capture and Storage Project’s monitoring wells failed.

**4. Injection wells are built for only 18 years—shorter than the project itself.** Federal rules require casing and cement to last the project’s life, and the UIC program director may extend monitoring past 12 years. Marquis’s wells are engineered for 6 years of injection plus 12 of monitoring—so any extension is illusory because the wells aren’t engineered to last beyond 18 years.

**5. Monitoring wells are not positioned to detect what matters.** Marquis’s two deep monitoring wells sit outside the modeled CO<sub>2</sub> plume path, and none sit between Marquis’s well and the hazardous waste well. Between the draft and final permit, Region 5 reassigned the deep-zone monitoring role to a different well without re-notice, so the public could not evaluate the placement.

## Hazardous-waste interaction and caprock

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**6. The “no corrective action” determination for WPL-1 skipped the pressure analysis.** WPL-1 is the only well in the 14.5-mile pressure front that fully penetrates the Eau Claire caprock—yet Region 5 did no quantitative analysis of how decades of CO<sub>2</sub>-acidified brine and elevated pressure would affect its plugs, casing, or the residual chromium and sulfuric acid. It relied on stale 2007 modeling and declined to defer to the Illinois EPA, the state authority over that well.

**9. The caprock finding mischaracterizes the rock at the site.** Federal rules require a confining zone strong enough to contain the CO<sub>2</sub>. Illinois State Geological Survey Bulletin 95 describes the Eau Claire in the area of the project as predominantly dolomitic sandstone held together by carbonate cement—not shale.

Peer-reviewed work (Neufelder et al. 2012) found much of this formation behaves as a fluid conduit rather than a seal and stated that CO<sub>2</sub>-acidified brine can dissolve the cement. Marquis based the entire 661-square-mile site characterization on a single test well plus two analogs roughly 100 miles away. Region 5 accepted that characterization without addressing either study.

## Seismic risk underanalyzed

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**7. 3D seismic monitoring was cut to about 1.1% of the Area of Review on cost grounds.** Between draft and final, Region 5 shrank 3D seismic from AoR-wide to 3.72 mi<sup>2</sup> and microseismic to a ~1-mile radius—citing applicant cost. The Safe Drinking Water Act does not allow cost to justify weaker monitoring, and the public had no chance to comment on the cuts.

**8. The “seismically stable” finding ignores documented quakes and the unprecedented injection volume.** The AoR has had at least two recorded earthquakes inside it, including a 2023 M3.6 on the Peru Monocline—which two peer-reviewed studies suggest may be reactivating—yet Region 5 required no fault-stability analysis.

Marquis’s deepest perforation sits only 63 feet above the Precambrian basement, about a quarter of the buffer ADM built in after its first Decatur project caused microseismicity. Plus, no one analyzed whether 9 million tons (a record volume) could itself trigger quakes, despite recent research finding that total injected volume is the best predictor of induced quakes.

## Public-process failures

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**10. Five monitoring reductions were not re-noticed.** Between draft and final, Region 5 accepted five weakening changes at Marquis’s request: CO<sub>2</sub> stream purity dropped from 99.86% to 99.0%; 3D seismic shrank to 3.72 mi<sup>2</sup>; microseismic shrank to a ~1-mile radius; PNC logging dropped from continuous to annual; and isotope analysis dropped from continuous to annual. EPA’s procedural rule (40 C.F.R. § 124.14(b)) required a new draft or reopened comment period. Region 5 did neither and never addressed the cumulative effect.

**11. Key application materials were heavily redacted for most of the comment period.** Over half of the AoR & Corrective Action Plan and the Project Narrative—the documents containing the geologic, modeling, and site-characterization data underlying Region 5’s safety finding—were redacted. Unredacted versions were released only five weeks into the 56-day comment period, one day before EPA’s availability session and 15 days before the public hearing. Region 5 treats unredacted release as a discretionary courtesy, which conflicts with federal public-participation rules.

## Relief requested

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EJC asks the Board to stay all contested permit conditions, vacate or remand the Final Permit with instructions for Region 5 to correct each defect, and require a new opportunity for public comment on any revised determinations.