

Oxy Exhibit 3

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

**AMENDED APPLICATION OF OIL CONSERVATION
DIVISION TO ADOPT 19.15.41, 19.15.42, and
19.15.43 NMAC; STATEWIDE**

CASE NO. 25875

REBUTTAL TESTIMONY OF CAROLINE WACHTMAN

1. My name is Caroline Wachtman. I am employed by OXY USA Inc. (“Oxy”). I am officed in Houston, Texas, and my current duties include managing CO2 storage projects in Texas.

2. I am familiar with the application filed in this matter, Oxy’s proposed modifications to the proposed rule, and the other parties’ proposed modifications to the proposed rule.

BACKGROUND

3. I am a licensed Professional Geologist with over 20 years of experience. I have a bachelor’s degree of science in Geology from the College of William & Mary. I have a master’s degree of science in Geology from the University of Wisconsin-Madison.

4. A resume covering my education and experience is included in Oxy Exhibit 4.

PURPOSE OF TESTIMONY

5. The purpose of testimony is to respond to proposals advanced by the Conservation Groups (through witnesses Peter Morgan and Dr. Charles Harvey) and the Center for Biological Diversity (“CBD”) (through witness Dr. Catherine Helm-Clark) that would impose requirements exceeding the federal Class VI framework without commensurate benefit to the protection of underground sources of drinking water (“USDWs”), would render Class VI permitting in New Mexico unworkable, and would place New Mexico out of alignment with the federal program and other primacy states.

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6. My rebuttal testimony is organized by rule section: minimum criteria for siting (19.15.43.9.D); area of review definition, modeling, well identification, and reevaluation (19.15.43.9.E); financial responsibility (19.15.43.9.F); logging, sampling, and testing (19.15.43.9.H); injection well operating requirements (19.15.43.9.I); testing and monitoring requirements (19.15.43.9.K); reporting requirements (19.15.43.9.L); and emergency and remedial response (19.15.43.9.O).

MINIMUM CRITERIA FOR SITING (19.15.43.9.D)**Mandatory Setbacks**

7. Dr. Helm-Clark proposes a mandatory half-mile setback prohibiting the siting of any new Class VI injection well within one-half mile of a school, library, community center, residential-zoned area, civic building, or other high-occupancy or highly trafficked public space. She further proposes that no new oil, gas, or injection well—including a Class VI well—shall be sited within one-half mile of any such structure if that well would fall within a 10-mile radius of an existing Class VI injection well.

8. Oxy does not support a fixed-distance setback requirement for Class VI wells. The federal Class VI program is risk-based and site-specific: EPA's 2010 rulemaking considered and rejected fixed-distance buffers in favor of modeled AoRs because geology—not surface land use—determines subsurface risk. No primacy state has adopted a setback requirement for Class VI wells.

9. More fundamentally, this proposal extends far beyond Class VI wells. It would prohibit siting any new oil, gas, or injection well within half a mile of a school or residence if within a 10-mile radius of a Class VI well. In the Permian Basin, where hundreds of wells lie within 10 miles of potential sequestration sites, this would eliminate significant areas from development.

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10. CBD's proposal also conflates surface and subsurface risks. Setbacks in other contexts address air-quality and nuisance concerns from surface operations. CO₂ sequestration wells do not emit during normal operation; the relevant subsurface risk to USDWs is already adequately addressed through the AoR framework.

10-Mile Site Characterization Area

11. Dr. Helm-Clark also proposes a mandatory site-characterization area extending 10 miles from any new Class VI injection well to investigate transmissive fractures and faults.

12. Oxy does not support a mandatory 10-mile site-characterization radius. A 10-mile radius encompasses approximately 314 square miles per well—which is larger than most AoR for Class VI wells and, most importantly, not based on site-specific criterion or data. No federal rule, EPA guidance, or state regulation requires site characterization at this scale. Moreover, the 10-mile figure is arbitrary and not based on science; it should be site-specific depending on the geology and characteristics of the project.

Corrective Action of Additional Wells

13. CBD also proposes that operators identify and perform corrective action on all wells within half a mile of public buildings and residential-zoned areas located within a 10-mile radius of a proposed Class VI project, regardless of whether those wells are within the AoR.

14. Oxy does not support this proposal. Corrective action should be directed at wells within the zone of potential endangerment—the AoR—not at wells near a public building that have no hydraulic connection to the project. The AoR framework delineates where regulatory action is necessary. Extending corrective-action obligations beyond it based solely on surface proximity untethers those obligations from actual subsurface risk.

Oxy Exhibit 3**AREA OF REVIEW AND MODELING (19.15.43.9.E)****Redefining Area of Review**

15. Dr. Harvey proposes to redefine the Area of Review as the "union" of the modeled pressure front and the CO₂ plume extent and to require mandatory ensemble modeling.

16. Oxy opposes redefining the AoR as the union of the pressure front and plume extent. The existing federal AoR definition at 40 C.F.R. § 146.81(d)—"the region surrounding the geologic sequestration project where USDWs may be endangered by the injection activity"—already encompasses both plume and pressure-driven endangerment. No primacy jurisdiction has codified a mandatory pressure-front boundary because, as Dr. Harvey acknowledges, pressure can propagate 100+ km while plumes extend only approximately 10 km. Defining the AoR at the pressure-front scale would make monitoring and corrective-action obligations impossibly large and is unworkable for any commercial project. Oxy's own EPA Region 6-permitted projects demonstrate that AoR delineations appropriately account for pressure effects under the existing framework without a mandatory pressure-front boundary.

Intensive Corrective Action Area

17. Dr. Harvey proposes to define an "Intensive Corrective Action Area" based on the maximum plume boundary extent across all model simulations, with an additional buffer of half the distance of the maximum plume boundary extent.

18. Oxy does not support the creation of an "Intensive Corrective Action Area." No federal rule, EPA guidance, or state regulation establishes an Intensive Corrective Action Area. Furthermore, the 50% figure is arbitrary—Dr. Harvey cites prediction uncertainty but offers no quantitative basis for this margin. Periodic AoR reevaluation, which updates the model against real

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monitoring data, is the appropriate mechanism for managing prediction uncertainty rather than an inflated static boundary set at the outset.

Mandatory 3D Seismic Characterization

19. Dr. Harvey proposes mandatory 3D seismic characterization of the full AoR.

20. Oxy does not support mandatory 3D seismic coverage of the full AoR. If the AoR includes a pressure-front as proposed by Dr. Harvey, 3D seismic coverage would cover hundreds of miles and be prohibitively expensive. Conditioning all Class VI permits on full-AoR 3D seismic is unnecessarily restrictive. EPA “strongly encourages” it but frames this as a recommendation, not a requirement—an appropriate judgment reflecting that 3D seismic is not necessary or cost-effective at every site and scale.

Independent Third-Party Verification

21. Dr. Harvey proposes mandatory independent, certified third-party verification of the modeling ensemble used to delineate the AoR.

22. Oxy does not support a mandatory third-party verification requirement. The Oil Conservation Division will already review and approve the AoR model. They have the technical capacity and resources to perform this review and analysis. An additional “independent, certified third-party” layer—with undefined qualifications and certification standards—introduces a regulatory bottleneck. No primacy state imposes such a requirement and adding it would create more costs and uncertainty. OCD's existing review process provides adequate scrutiny.

Oxy Exhibit 3**AREA OF REVIEW REEVALUATION FREQUENCY AND AUTOMATIC TRIGGERS****(19.15.43.9.E.(5))**

23. Dr. Harvey proposes that the initial AoR reevaluation occur no later than two years following commencement of injection, with subsequent reevaluations at a maximum of four years, and proposes an extensive list of mandatory automatic triggers for reevaluation—including 20% pressure deviation, 50 kPa pressure exceedance, M 2.0 seismicity, plume detection in an unexpected well, discovery of a previously unidentified penetration, and commencement of injection by another operator in the same formation. Dr. Helm-Clark similarly recommends minimum conditions requiring mandatory reevaluation.

24. Oxy does not support these proposals and maintains that the reevaluation frequency should match the federal five-year standard at 40 C.F.R. § 146.84(b)(2)(i). This interval was established by EPA after notice-and-comment rulemaking with full consideration of the data-collection, modeling, and analysis timelines involved.

25. The proposed rules already appropriately address this issue. Section 19.15.43.9.E(2)(b)(ii) requires each operator to describe in its AoR plan "the monitoring and operational conditions that would warrant a reevaluation of the area of review prior to the next scheduled reevaluation." This site-specific approach—reviewed and approved by the Director before injection begins—is more protective than a one-size-fits-all list because it is calibrated to the actual geology, injection rates, and monitoring program of each project. Operational parameters that could trigger an early reevaluation should be identified during permitting on a site-specific basis in consultation with the Director.

26. Projects permitted by EPA—including Oxy's Region 6 permits—operate successfully at five-year intervals. Transitioning those projects to shorter intervals or automatic

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triggers upon New Mexico assuming primacy would create regulatory inconsistency, impose retroactive costs, and undermine the permitting certainty that primacy is intended to provide

27. Dr. Harvey's proposed automatic triggers—20% pressure deviation, 50 kPa, M 2.0 seismicity—are arbitrary and ignore site-specific variability. Converting discretionary review into rigid automatic triggers will generate unnecessary reevaluations that consume regulator and operator resources without providing additional USDW protection.

COMPREHENSIVE WELL IDENTIFICATION (19.15.43.9.E.(3))

28. CBD proposes that operators locate every well in the AoR through both non-physical review and geophysical investigation. The Conservation Groups propose cross-referencing multiple databases and field-testing wells with incomplete plugging records.

29. Oxy supports robust well identification using appropriate site-specific tools but opposes a blanket geophysical-investigation mandate across the entire AoR. Permian Basin AoRs may encompass tens of square miles with hundreds of legacy wells; geophysical surveying that entire area is prohibitively expensive and, critically, will not work in all cases—where casing has been pulled from an abandoned well, magnetic surveys cannot detect the wellbore.

30. Wells are appropriately identified using desktop tools (state databases, historical records, county records) and on-site methods that may include geophysical surveys where site conditions warrant. The proposed rule's existing framework—identification using “methods approved by the director”—provides the flexibility to deploy the right tools for each site.

FINANCIAL RESPONSIBILITY (19.15.43.9.F)

31. Mr. Morgan opposes self-insurance and proposes eliminating it from the proposed rules.

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32. Oxy opposes eliminating self-insurance. Eliminating self-insurance would place New Mexico out of step with the federal program and most primacy states. EPA expressly authorizes self-insurance at 40 C.F.R. § 146.85. North Dakota, Wyoming, and Texas include self-bonding in their primacy programs. Eliminating it could deter Class VI investment, contrary to the Geologic Carbon Stewardship Act (HB 458).

33. Oxy recommends that the Commission adopt the financial test set forth in U.S. EPA's hazardous waste regulations implementing the Resource Conservation and Recovery Act ("RCRA") found at 40 C.F.R. § 261.143(e)(1). RCRA governs hazardous-waste facilities with comparable or longer post-closure obligations and has functioned reliably for decades.

34. Tangible net worth, rather than net working capital, is a better measure of long-term solvency. Requiring six-times net working capital penalizes efficient capital management and may force well-capitalized companies to obtain lower-rated third-party instruments, increasing rather than decreasing state risk. Working capital is a short-term liquidity metric that creates a temporal mismatch with long-duration Class VI liabilities.

35. Mr. Morgan's proposal to delete "any other instrument(s) satisfactory to the Director" is contrary to the federal regulations and the Director's need for flexibility. Furthermore, it precludes the Director from utilizing future financial assurance products.

LOGGING, SAMPLING, AND TESTING (19.15.43.9.H)**Logging Requirements**

36. Dr. Helm-Clark proposes adding sonic, density, and porosity logging requirements to better identify USDWs.

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37. Oxy does not support prescriptive logging requirements. The rules should be performance-based—specifying the data to be obtained, not the tools—to allow for evolving technology and site-specific programs, subject to Director approval.

Interference Tests

38. Dr. Helm-Clark also proposes that “no operator shall use interference tests or any other injectivity test that requires more than one borehole to penetrate the injection zone.”

39. Oxy does not support this prohibition. It is unclear whether this targets the test methodology or the second borehole. If the concern is an additional conduit, that risk is already addressed by Class VI well-construction and mechanical-integrity requirements. Categorically prohibiting a class of hydrogeologic tests limits tools for characterization and may result in less information available to the Director—the opposite of the stated goal.

INJECTION WELL OPERATING REQUIREMENTS(19.15.43.9.I)

40. Dr. Helm-Clark proposes reducing the maximum injection pressure from 90% to 80% of the fracture pressure of the injection zone.

41. Oxy does not support reducing the injection pressure limit to 80%. The 90% limit is the federal standard at 40 C.F.R. § 146.88(a) under which every existing Class VI permit operates. Dr. Helm-Clark provides no quantitative justification for 80%; her cited incidents involved uncharacterized faults or Class II operations, not the percentage threshold itself.

42. An additional 10% pressure reduction directly reduces injectivity, requiring additional wells or extended timelines and increasing surface disturbance and cost without demonstrated safety benefit. The 90% limit, combined with continuous pressure monitoring, automatic shut-off systems, and mechanical integrity testing, already provides adequate protection.

Oxy Exhibit 3**TESTING AND MONITORING REQUIREMENTS (19.15.43.9.K)****Mandatory Minimum**

43. Dr. Harvey proposes a mandatory minimum of four site-specific data locations (monitoring wells) for all Class VI projects.

44. Oxy does not support a mandatory minimum number of monitoring wells. The appropriate number and placement of monitoring wells is site-specific—driven by formation heterogeneity, injection rates, AoR geometry, and hydrogeology. A blanket minimum of four substitutes an arbitrary number for the Director's expert judgment. Some sites may warrant more; others fewer. The rule should preserve Director discretion over the monitoring network.

Surface Air Monitoring

45. Dr. Harvey proposes that surface air monitoring be mandatory, rather than discretionary.

46. Oxy does not support mandatory surface air monitoring. Surface air monitoring is effective only over a very small area near the wellbore; it cannot cover large AoR surface areas. Moreover, ambient atmospheric CO₂ creates significant background-noise challenges for leakage detection. The proposed rules already authorize the Director to require surface air monitoring where warranted, such as in high-density legacy-wellbore areas. A blanket mandate adds cost without meaningful protective value.

Seismic Threshold Metric

47. Dr. Harvey proposes that the seismic threshold metric “must use Peak Ground Velocity or Peak Ground Acceleration.”

48. Oxy does not support codifying specific seismic threshold metrics in rule. Peak Ground Velocity and Peak Ground Acceleration are valid metrics but not the only defensible

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approaches. What is appropriate depends on depth to basement, geology, proximity to faults, and regional context—and seismic methodologies are evolving rapidly. The rule should preserve flexibility to select the methodology suited to each site rather than locking in a single metric that may not fit all basins or may be superseded.

Diagnostic Fracture Injection Tests

49. Dr. Harvey proposes mandatory on-site diagnostic fracture injection tests ("DFIT") run to completion.

50. Oxy does not support mandating DFIT tests in rule. The proposed rules already require fracture-gradient data—the relevant performance objective. Mandating a specific methodology is contrary to sound regulatory practice; technology evolves, and operators should be free to use the best available method. The rule should specify the data to be obtained, not the tool to be used.

Periodic Material-Compatibility Re-Certification

51. Dr. Harvey proposes periodic material-compatibility re-certification of monitoring well construction against current CO₂-corrosion knowledge.

52. Oxy does not support this requirement as proposed. Rather than “re-certification” the rule should refer to Mechanical Integrity Testing of monitoring wells. Further, this requirement should only apply to monitoring wells that are drilled in the same injection zone. Monitoring wells completed in overlying formations above the confining zone do not face the same corrosion environment and should not be subject to the same re-certification regime. Finally, the rules should ensure they are consistent with existing requirements and regulations for mechanical integrity testing for monitoring wells, there does not need to be a separate standard under these regulations.

Oxy Exhibit 3**REPORTING REQUIREMENTS (19.15.43.9.L)**

53. Dr. Harvey proposes mandatory reporting of all gauge malfunctions and instrumentation failures within 30 days.

54. Oxy does not support mandatory reporting of all gauge malfunctions and instrumentation failures. This proposal is overbroad. Routine instrumentation issues—sensor drift, telemetry interruptions, calibration events—do not indicate mechanical integrity loss or USDW endangerment.

EMERGENCY AND REMEDIAL RESPONSE (19.15.43.9.O)**Continuous On-site Staffing**

55. Dr. Harvey proposes that at least one employee must be on premises or otherwise available at all times to carry out emergency response.

56. Oxy does not support a continuous on-site staffing requirement. Class VI wells are monitored remotely via continuous recording devices, alarm systems, and automated shut-off controls. Personnel visit periodically for visual inspections, but no federal regulation mandates continuous on-site presence. Remote monitoring with automated shutdowns provides real-time response at remote locations where 24/7 staffing is impractical.

57. The proposed rules already require automatic shut-off systems integrated with alarms, 24-hour Director notification, and implementation of the approved emergency plan. This framework provides rapid automated response without mandating continuous physical presence—an extraordinary cost for multi-well projects with no incremental safety benefit.

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Gauge Malfunctions

58. Dr. Harvey proposes requiring 24-hour reporting and shutdown for every gauge malfunction lasting longer than a week.

59. Oxy does not support this rule change. Requiring 24-hour reporting and shutdown for every gauge anomaly would generate immaterial notifications that obscure significant events and unnecessary shutdowns.

60. The rule should align with 40 C.F.R. § 146.91(c), which requires 24-hour reporting of: (1) evidence of USDW endangerment from the CO₂ stream or pressure front; (2) noncompliance or injection-system malfunction that may cause fluid migration into USDWs; (3) shut-off system triggering; (4) mechanical integrity failure; or (5) detected atmospheric CO₂ release. These triggers are scoped to safety-significant events. New Mexico should adopt the same materiality threshold—reporting malfunctions associated with mechanical integrity loss or USDW endangerment—not all instrumentation events.

CONCLUSION

61. The proposals addressed in this testimony share a common deficiency: they exceed the federal Class VI framework without commensurate USDW protection and would render permitting unworkable or prohibitively expensive, placing New Mexico at a competitive disadvantage and deterring investment contrary to the Geologic Carbon Stewardship Act.

62. Oxy holds the first EPA Region 6 Class VI permits and five approved MRV plans. Our operational experience demonstrates the federal framework works: AoRs are managed at five-year intervals and that monitoring will verify and ensure USDW protection. New Mexico should build on this proven framework rather than imposing untested requirements no other jurisdiction has adopted.

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63. I affirm under penalty of perjury under the laws of the State of New Mexico that the foregoing statements are true and correct. I understand that this self-affirmed statement will be used as written testimony in this case. This statement is made on the date next to my signature below.

/s/ Caroline Wachtman

Caroline Wachtman

July 13, 2026

Date

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