NASEM Orphaned and Abandoned Wells Report
And
NPC Produced Water Study

Tom Kropatsch

Technologies and Practices for Plugging and Remediating Orphan Oil and Gas Wells

Committee on Technologies and Practices for Plugging and Remediating Orphan Oil and Gas Wells

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Study Statement of Task

- Examine current and emerging plugging and abandonment technologies, best practices, equipment, and materials for well characterization, wellbore plugging and barrier placement, wellbore integrity and verification, and durability and lifespan.
- Evaluate unexpected or unique circumstances that necessitate varying criteria and standards, including engineering design, cost, logistics, or technical management.
- Assess available data on potential causes, frequency, consequences, and remediation of plug failures.
- Examine post-plugging monitoring techniques, approaches, and technology that are or will be important for the long-term protection of the environment and public health and safety.
- Identify technology, materials, or policies that warrant further research and that may contribute to the success of well-plugging and abandonment efforts carried out by industry, states, tribes, and federal agencies.

Activities Informing the Consensus Study

- *White Paper: In Support of Practices and Standards for Plugging Orphaned and Abandoned Hydrocarbon Wells Workshop* (2024)
- *Practices and Standards for Plugging Orphaned and Abandoned Hydrocarbon Wells: A Workshop (*July 18-19, 2024)
- During the consensus study period, the committee and staff held public information-gathering sessions with experts from industry, academia, and state governments
- Committee generated questionnaire

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Key Takeaways



Plugging orphan wells is the first and most reliable line of defense against leaks and emissions when operations follow best practices and accepted industry standards.



Root cause analyses of plugged well failures necessitate further data collection; in part, the committee recommends on-site witnessing and verification of plugging operations.



Monitoring all wells post-plug is not necessary; the committee suggests monitoring wells post-plug based on a risk factors associated with each well.



Orphan well site reclamation should focus on containing and preventing current leaks per state regulatory requirements and the type, location, and quantity of contaminants at a specific site.



Widespread adoption of new technologies is hampered by a complex network of financial, institutional, regulatory, and public perceptions barriers.

NPC Produced Water Study

- *Release in late 2026*

Thank You

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