

# Brine Well Authority Update

## *Status of Carlsbad Brine Well Remediation*

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# Current Status of Carlsbad Brine Well Remediation

- **Backfilling operations were concluded in the first half of 2022.**
  - In total, 5,600 cubic yards of grout and 170,000 cubic yards of sand were injected.
- **Following the conclusion of injection activities:**
  - **We have been steadily depressurizing the cavity; and**
    - There have been eight successful depressurization events - 7/6/22, 7/18/22, 8/9/22, 10/12/22, 10/26/22, 11/1/22, 1/25/23, and 9/15/23.
  - **Reclaiming the site.**
    - 10 of the 14 original injection wells have been plugged.
    - The remaining wells are being used to monitor pressure and for depressurization.
    - Traffic flow patterns have been returned to former configuration.
    - Leased properties have been restored and returned to their respective owners.



# Status of Operational Restrictions

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- During the remediation phase, OCD imposed restrictions on oil and gas development within 5 miles of the cavity to ensure any induced seismicity would not negatively impact reclamation.
- The initial restrictions included:
  1. Operator shall provide written notice to OCD at least 14 days prior to the start of any drilling or completion activities.
  2. Prior to the commencement of any drilling or completion activities within 5 miles the operator must first receive written confirmation that OCD had no concerns with such activities proceeding.
- Following completion of injection activities, the OCD eased those restrictions as follows:
  1. Drilling and completion activities within 1 – 5 miles were automatically approved.
  2. Operators must continue to notify OCD of any planned drilling or completions.
  3. Activity within 1-mile was not approved by OCD.
- Now that depressurization is nearing completion, OCD intends to remove the 1-mile limitation, subject to the following conditions:
  1. Operators must continue to notify OCD of any planned drilling or completions within 5 miles.
  2. The vertical portions of wells may not advance within  $\frac{1}{4}$ -mile of the cavern.
  3. OCD may require additional safeguards for drilling operations progressing through the shallow Salado Formation where the cavern is located.
  4. The lateral portion of any well occurring within 1 mile must be at a depth greater than 5,000 feet.
  5. Completion activities (fracking) may not occur simultaneously across multiple laterals.
  6. OCD may require operators to modify their completion schedules if multiple completions are planned to occur simultaneously.

# Budget Overview

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**Total Appropriations/Contributions to Brine Well Effort: \$72,098,800**

**Total Expenditures to Date: \$68,455,682.48**

- **Remaining Funding Available: \$3,643,117.52**
- **Anticipated Spend on Post-Remediation Monitoring: \$2,481,000.00**
- **Contingency Reserve: ~\$1,160,000**

## **Key Aspects of Post-Remediation Monitoring:**

OCD is maintaining a group of 10 micro seismic monitoring arrays and 14 borehole tiltmeters to verify the effectiveness of the backfilling program.

- All data available to date indicates that:
  - the small remaining void is reasonably stable; and,
  - no unusual ground movement has been observed at the surface.
- Going forward we expect to see small failures in the void roof.
  - We can detect these events but have not seen issues with overall stability or at the surface because of such failures.
  - We are monitoring groundwater in the area to confirm no leakage of brine from the cavity.

# Thank You & Questions

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