



STRATUM
RESERVOIR

WELL ABANDONMENT & WELL INTEGRITY

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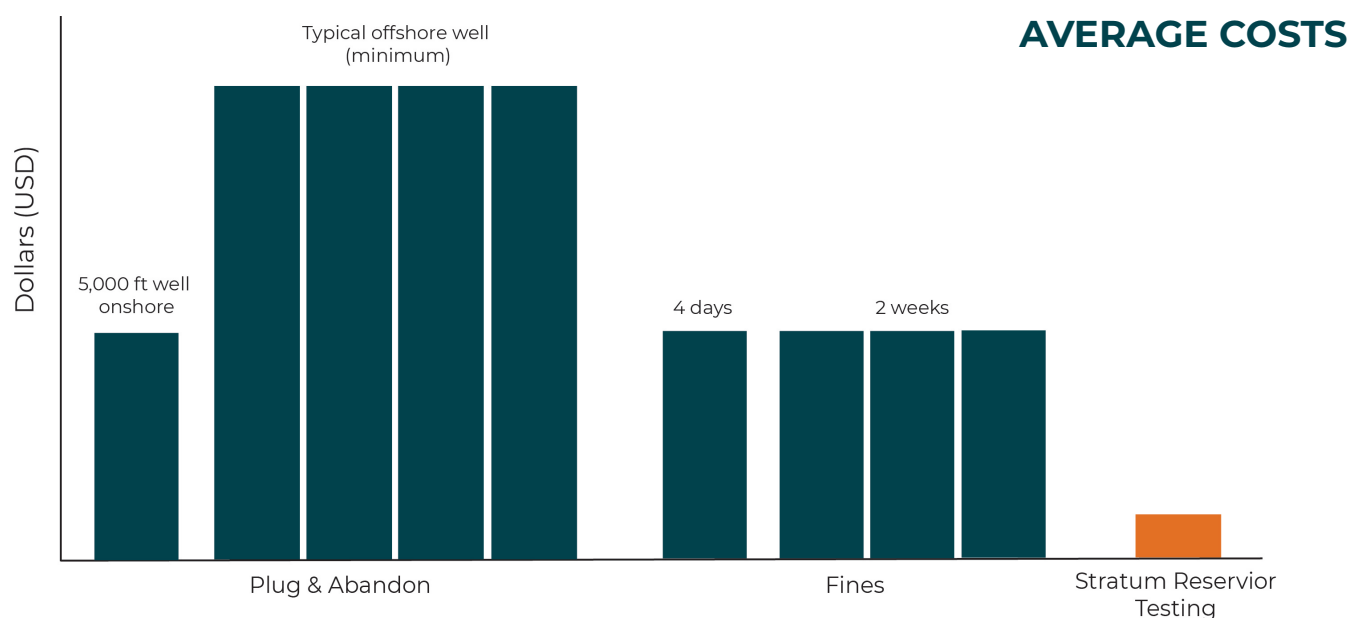
AVOID ENVIRONMENTAL DAMAGE, COSTLY FINES, AND LITIGATION BY IDENTIFYING STRAY GAS AND INTEGRITY FAILURES

Approximately one in five abandoned wells have integrity failures, issues, or uncertainties and 10% of operating wells are shut in due to integrity issues. Potential fines for environmental contamination can add up and related legal claims could cost much more.

Sampling up front can resolve potential problems, avoid environmental issues, and mitigate excessive costs down the road. Isotech Laboratories, a Stratum Reservoir company, samples potential gas sources prior to P&A, allowing early and efficient remediation of any well integrity issues that may surface.

WHY GEOCHEMISTRY?

- When gas is found at the surface, gas geochemistry can determine its origin, ruling out confounding sources (e.g., bacterial methane or methane from petroleum).
- Corrective actions can quickly and economically be defined by identifying the source of stray gas.
- Monitoring for integrity failures is a nominal expense relative to potential emergency repairs, fines, and litigation.



PRIMARY EVALUATIONS

- Molecular compositional analysis determines the commercial value of the gas.
- Stable isotope ratios (i.e. non-radioactive) are a geochemical “fingerprint” of the gas. This can be used to distinguish different sources of gas.

SOLUTION STRATEGIES

- Many isotopic instruments lack the precision to correctly identify the source of stray gas.
- Isotech Laboratories is the ONLY commercial laboratory with the precision of Dual Inlet Isotope Ratio Mass Spectrometry (± 0.1 ‰ of $\delta^{13}\text{C}$).

