

Strategic Saltwater Disposal Performance Assessments are Improved with Quality Assurance of Texas Regulatory Data

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Abstract

Strategic planning for produced water disposal depends upon selection of high-performance zones for new wells and the treatment of existing low performance wells. The selection of new disposal well locations and service opportunities for inhibited performers requires accurate interpretations of current well performance. To assess potential targets in Texas, many companies rely on raw reported values from the Texas Railroad Commission (RRC) regulatory agency. Performance analyses based upon permitted and raw values can skew the interpreted rate and total volume performance of existing and potential wellbores and disposal zones, resulting in lost investment costs. Therefore, it is imperative to ensure that the parameters affecting performance assessments are quality assured. These parameters include injection rate, depth, and disposal zone. Here we present the difference in raw RRC regulatory values versus quality assured values of injection rates, pressures, depth intervals, and stratigraphic zones. To characterize and quality assure reported values, we perform a custom-designed method of iterative quality assurance on a per-well-basis of all active disposal wells in Texas. Significant effects on well performance are displayed on wellbore, regional, and statewide scales. Results show application of quality control results in decreased injection rates and pressures, decreased disposal interval length, and increased stratigraphic zone performance. The interpretation environment was found to be far more complex than anticipated, requiring merge and collapse of multiple datasets into a single relational database, upon which interpretations were based. Automation of the process is in development. Once

complete, the automated process will enable the incorporation of secondary recovery wells in Texas, with future applications to all Underground Injection Control wells in the US. The results signify the importance of using quality assured data for the strategic selection of new high-performance prospects and identification of low-performance wells in need of servicing, ultimately realizing substantial cost savings per company endeavor.