
API Recommended Practice 100-1

Hydraulic Fracturing—Well Integrity and Fracture Containment

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This document contains recommended practices for onshore well construction and fracture stimulation design and execution as it relates to well integrity and fracture containment. The provisions in this document relate to the following two areas.

- a) Well integrity: the design and installation of well equipment to a standard that
 - protects and isolates useable quality groundwater,
 - delivers and executes a hydraulic fracture treatment, and
 - contains and isolates the produced fluids.
- b) Fracture containment: the design and execution of hydraulic fracturing treatments to contain the resulting fracture within a prescribed geologic interval. Fracture containment combines those parameters that are existing, those that can be established at installation, and those that can be controlled during execution:
 - existing—formation parameters with associated range of uncertainties;
 - established—well barriers and integrity as created during well construction;
 - controllable—fracture design and execution parameters.

The guidance from this document covers recommendations for pressure containment barrier design and well construction practices for onshore wells that will undergo hydraulic fracture stimulation. This document is specifically for wells drilled and completed onshore, although many of the provisions are applicable to wells in coastal waters.

This document does not attempt to address the full well life cycle of well operations although a brief paragraph on fracture stimulation for re-entries is included in 5.10. This document is not a detailed well construction or fracture design manual. This document does not apply to continuous injection operations such as water disposal, water-flooding or cuttings re-injection wells, or any other continuous injection operation.

API 100-2, *Managing Environmental Aspects Associated with Exploration and Production Operations Including Hydraulic Fracturing*, is a companion document that also contains recommended practices applicable to the planning and operation of hydraulically fractured wells. This document includes recommendations for managing environmental aspects during well planning, construction, and execution.

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