

New API Standards for Shale Development

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API Standards

API standards are the most widely cited industry standards by Federal and State regulators

- **130 standards cited 460 times in Federal Regulations**
- **216 standards cited 4035 times in State Regulations**
- **23 API standards in Colorado Drilling, Safety, and Waste Management Regulations**



API Standards

- **API is accredited by the American National Standards Institute (ANSI)**
 - **Transparent process**
 - **Openness, balance, consensus, due process**
 - **Program audited by ANSI every five years**

- **Over 7000 active volunteers representing over 50 countries**

- **API corporate membership is not a requirement for participation on API standards committees**



Value of API Standards

- **Improves safety and reliability**
- **Improves equipment interchangeability**
- **Reduces compliance costs**
- **Reduces procurement costs**
- **Foundation for company standards**



API RP 100 Series

Hydraulic Fracturing—Well Integrity and Fracture Containment

ANSI/API RECOMMENDED PRACTICE 100-1
FIRST EDITION, OCTOBER 2015



Managing Environmental Aspects Associated with Exploration and Production Operations Including Hydraulic Fracturing

ANSI/API RECOMMENDED PRACTICE 100-2
FIRST EDITION, AUGUST 2015



Community Engagement Guidelines

ANSI/API BULLETIN 100-3
FIRST EDITION, JULY 2014





API 100-series Standards

- **RP 100-1: Well Integrity and Fracture Containment**
- **RP 100-2: Managing Environmental Aspects Associated with Exploration & Production Operations Including Hydraulic Fracturing**
- **RP 100-3: Community Engagement Guidelines**



API RP 100-1

Hydraulic Fracturing—Well Integrity and Fracture Containment

ANSI/API RECOMMENDED PRACTICE 100-1
FIRST EDITION, OCTOBER 2015



Well Integrity – The quality or condition of a well in being structurally sound with competent pressure seals (barriers) by application of technical, operational, and organizational solutions that reduce the risk of unintended subsurface movement or uncontrolled release of formation fluid

Fracture Containment – The design and execution to contain the fracture within a prescribed geologic interval



API RP 100–1 Focus Areas

Well Integrity

- Protects and isolates usable quality groundwater
- Delivers and executes a hydraulic fracture treatment safely
- Contains and isolates the produced fluids

Fracture Containment

- Existing: formation variables and range of uncertainties
- Established: well barriers and integrity created during well construction
- Controllable parameters: fracture design and execution variables



API RP 100-1

- Not a well construction or fracture design manual.
- While industry-wide practices concerning well construction are similar, there are considerable variations in the details of individual well design and construction due to varying geologic, environmental, regulatory, and operation requirements.
- Proven practices are the result of operators gaining localized and specific knowledge based on experience, coupled with the development and improvements associated with technology.

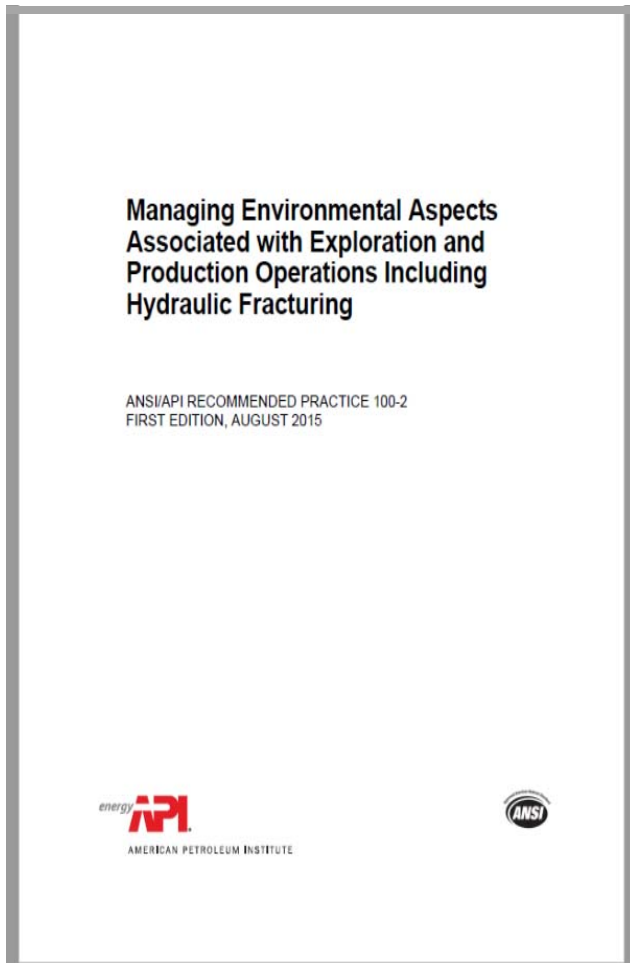


API RP 100-2

Provides recommended practices applicable to the planning and operation of wells, and hydraulically fractured wells.

Topics include

- recommendations for managing environmental aspects during planning
- site selection
- logistics
- mobilization
- rig-up and demobilization
- stimulation operations





API RP 100-2

- **Puts hydraulic fracturing into perspective relative to drilling, completions, and production lifecycle**
- **Aspects are independent of the well stimulation practice used to improve production**
- **Describes baseline practices**
- **Establishes consistent terminology**
- **Practices are site-specific and can vary over the lifecycle of the well**



Community Engagement Guidelines

ANSI/API BULLETIN 100-3
FIRST EDITION, JULY 2014



API Bull 100-3

- Written to promote the safe and responsible development of the nation's oil and natural gas resources by engaging and respecting the communities where these operations occur.
- Provides flexible and adaptable strategies, recognizing that application will vary from operator to operator and community to community.
- Designed to acknowledge challenges and impacts that occur during the industry's presence in a given region.



API RP 100-3

- **Guidance for “good neighbor” policies to help maintain an operator social license to operate**
- **Manage expectations for stakeholders**
- **For use by stakeholders and industry—operators, contractors, service companies, local communities and officials**
- **Assist operators in developing adaptable and evergreen engagement plans**
- **Application of the concepts builds long-lasting, successful relationships within the communities where the industry operates**



Bull 100-3 Guiding Principals

- **Integrity** – “Companies operating with integrity strive to build positive and constructive relationships within the community and accumulate long-term sustainable relationships.”

- **Safety & Environmental Responsibility** – “Operate daily in a manner that protects the safety, environment and health of communities, employees and contractors during the complete lifecycle of the project.”

- **Communicating Effectively** – “Communication is a two-way process of giving and receiving information through a number of channels.... following basic communication principles to build credibility and improve dialogue and understanding.”



Overview

- **Articulates industry-developed proven practices**
- **Standards are a mix of prescriptive and performance-based provisions**
- **Not technical procedures or “check lists”**
- **All wells are not treated the same and results will vary across projects**
- **Adaptable and ‘evergreen’**



Questions?