

# **API Best Practices and Standards**

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# Topics

- API History
- API Standards and Standards Development
- API HF related standards and publications
- Use of API Standards
- Conclusions

# API History

- 1919: API founded as non-profit national trade association, New York City
  - Three initial priorities – taxes, statistics, and equipment and operational standards
- 1969: API relocates to Washington, DC
  - Heightened interest in public policy issues

# Background on API Standards Program

- The API Standardization Department was formed in 1923, and the first API standard was published the following year on drilling threads.
- All industry segments now active in standardization:
  - Exploration and Production
  - Refining
  - Marketing
  - Pipeline Transportation & Measurement

# Standards Development Process

- API is accredited by the American National Standards Institute (ANSI)
  - Openness, Balance, Consensus, Due Process
  - Standards undergo regular review
- Regular program audits (conducted by ANSI)
- Transparent process (anyone can comment on any document – [www.api.org/standards](http://www.api.org/standards))
  - All comments must be considered

# API Standards

- ~600 technical standards covering all aspects of the oil and natural gas industry
- Foundation of Self Supporting Programs
- Basis for Worldwide Operations
- Core of Institute's Technical Authority

# Use of API Standards

- National Technology Transfer and Advancement Act
  - NTTAA requires Federal Agencies to use voluntary consensus standards, encourages participation
    - API standards are cited in regulations by agencies including OSHA, EPA, DOT and BSEE
    - 100 API standards are cited over 270 times in the U.S. Code of Federal Regulations
  - API Standards also widely cited by States
    - 184 API standards are cited over 3300 times in state regulations

# Use of API Standards

- API has certification programs:
  - API Spec Q1, the Monogram Program, covers equipment and materials and was established in 1924
    - API's Monogram Program certifies manufacturers to API standards for products such as casing, tubing, valves, cement
  - API Spec Q2 covers services
    - Published December 2011, API will be accepting Q2 applications Fall 2012



# Use of API Standards

- Future Actions:
  - API has begun work on a “stray gas migration” standard (RP 90 Part 2)
  - HF1, HF2, and HF3 included on the 2012 Standards Plan
  - HF4, “Community Engagement”, is in planning stages
  - API has provided training on its standards to state regulators

# API Standards Training

- During 2011 – 2012, API held a series of roll out presentations highlighting HF and wellbore isolation standards.
- Sessions held in:

Pennsylvania	Ohio	New York
West Virginia	Maryland	North Dakota
Colorado	Wyoming	Arkansas
South Carolina	Washington DC	

# **API standards address best practices for E & P operations:**

Proper well construction and integrity

Zonal isolation through casing, cementing and mechanical barriers

Water management and disposal

Mitigating surface impacts

Overall site management

Good neighbor performance

## HF Related Documents And Standards

- HF1, *Hydraulic Fracturing Operations – Well Construction and Integrity Guidelines*, 1<sup>st</sup> Edition, October 2009
- HF2, *Water Management Associated with Hydraulic Fracturing*, 1<sup>st</sup> Edition, June 2010
- HF3, *Practices for Mitigating Surface Impacts Associated with Hydraulic Fracturing*, 1<sup>st</sup> Edition, January 2011

## HF Related Documents and Standards

- 51R, *Environmental Protection for Onshore Oil and Gas Production Operations and Leases*, 1<sup>st</sup> Edition, July 2009
- 65-2, *Isolating Potential Flow Zones During Well Construction*, 2<sup>nd</sup> Edition, December 2010

The goal of the documents is to present development plans and programs for overall operations from site development, drilling and well construction, completion and production and finally abandonment.

The documents attempt to identify risks and application of industry best practices to mitigate those risks.

# Conclusions

- API standards represent industry's collective wisdom on operational practices, developed and refined over many years
- All API HF standards are available for free on-line

<http://publications.api.org>