

Recommended Practice for Field Testing Water-based Drilling Fluids

**API Recommended Practice 13B-1
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ISO 10414:2001 (Modified)
Petroleum and natural gas industries—
Field testing of drilling fluids—
Part I—Water based fluids



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API Foreword

This standard is under the jurisdiction of the API Subcommittee 13, Drilling and Completion Fluids. This API standard is a modified adoption of the English version of ISO 10414-1:2001. ISO 10414-1:2001 was prepared by Technical Committee ISO/TC 67, Materials, equipment and offshore structures for petroleum and natural gas industries, Subcommittee SC3, Drilling and completion fluids, and well cement.

In this standard certain modifications have been made. New annexes J, K and L are added as shown in Annex I. This standard shall become effective on the date printed on the cover but may be used voluntarily from the date of distribution.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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International Standard ISO 10414-1 was prepared by Technical Committee ISO/TC 17, *Materials, equipment and offshore structures for petroleum and natural gas industries*, Subcommittee SC 3, *Drilling and completion fluids, and well cements*.

ISO 10414 consists of the following parts, under the general title *Petroleum and natural gas industries — Field testing of drilling fluids*:

- *Part 1: Water-based fluids*
- *Part 2: Oil-based fluids*

Annexes A to H of this part of ISO 10414 are for information only.

Introduction

This part of ISO 10414 is based on API RP 13B-1, second edition, September 1997 [2].

As with any laboratory procedure requiring the use of potentially hazardous chemicals, the user is expected to have proper knowledge and received training in the use and disposal of these chemicals. The user is responsible for compliance with all applicable local, regional and national requirements for worker and local health, safety and environmental liability.

In this part of ISO 10414, where practical, U.S. customary units are included in brackets for information.

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Petroleum and natural gas industries — Field testing of drilling fluids —

Part 1: Water-based fluids

1 Scope

This part of ISO 10414 provides standard procedures for the determining following characteristics of water-based drilling fluids:

- a) drilling fluid density (mud weight);
- b) viscosity and gel strength;
- c) filtration;
- d) water, oil and solids contents;
- e) sand content;
- f) methylene blue capacity;
- g) pH;
- h) alkalinity and lime content;
- i) chloride content;
- j) total hardness as calcium.

Annexes A, B, C and E provide additional test methods which may be used for

- k) chemical analysis for calcium, magnesium, calcium sulfate, sulfide, carbonate, potassium;
- l) determination of shear strength;
- m) determination of resistivity;
- n) drilling pipe corrosion monitoring.

Annexes D, F, G and H provide procedures that may be used for

- o) removal of air;
- p) sampling, inspection and rejection;
- q) rig-site sampling;
- r) calibration and verification of glassware, thermometers, viscometers, retort kit cup and drilling fluid balances.