

Training and Qualification of Drilling Fluid Technologists

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Introduction

The professional discipline of Petroleum Engineering is divided into subdisciplines in which technical expertise is required. One subdiscipline deals with fluids that are essential to many petroleum and natural gas exploration and production operations—the subject of this recommended practice. For the purpose of this document, fluids include:

- drilling fluids,
- completion fluids, and
- solids control applications.

Fluids expertise requires knowledge and skills in both engineering and chemistry. These specialized operations may not always be covered in depth by the colleges and universities that have petroleum engineering curricula. Individuals with technical degrees or degrees in science or engineering are well suited to be fluids professionals, although required knowledge can be gained by industry classroom and/or on-the-job training. Whether entering the subdiscipline without a formal degree as a drilling fluids technologist, or with a formal degree as a drilling fluids engineer, the skills necessary to perform duties at the rig site are gained by a combination of formal training and practical experience.

This recommended practice is set out in two parts. The first part addresses the core skills that a fluids technologist or drilling fluids engineer should possess. The second part addresses more advanced skills that are required to work on complex wells.

This recommended practice is not intended to establish certification procedures for drilling fluids personnel, but is to be used for general guidance in evaluating training processes and evaluating the professional acceptability of drilling fluid technologists. API publications may be used by anyone desiring to do so. Every effort has been made by the Institute to assure the accuracy and reliability of the data contained in them; however, the Institute makes no representation, warranty, or guarantee in connection with this publication and hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use or for the violation of any federal, state, or municipal regulation with which this publication may conflict.

Training and Qualification of Drilling Fluid Technologists

1 Scope

This standard is written in two parts. The first part is a summary of basic training and knowledge that an employee or contractor shall possess in order to be identified as a rig site drilling fluids technologist or rig site drilling fluids engineer. The first part covers basic skills as would be taught in an entry-level fluids school program. The second part covers a set of advanced skills that will be required in order to support complex wells at the rig site. Levels of understanding for both core and advanced skills have been generally outlined but not totally defined.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Specification 13A, *Specification for Drilling Fluid Materials*

API Recommended Practice 13B-1, *Recommended Practice for Field Testing of Water-based Drilling Fluids*

API Recommended Practice 13B-2, *Recommended Practice for Field Testing of Oil-based Drilling Fluids*

3 Terms, Definitions, and Abbreviations

3.1 Terms and Definitions

3.1.1 breadth

The basic knowledge common to all areas of drilling fluids technology needed by all drilling fluids technologists to demonstrate minimum competency.

3.1.2 drilling fluids engineer

A drilling fluids technologist with an engineering, geoscience, or other appropriate science discipline degree from an accredited university.

3.1.3 drilling fluids technologist

An individual with specialized knowledge of the application of drilling fluids during the drilling operation.

3.1.4 drilling fluids technician

An individual skilled in the art of testing drilling fluids in the field or the laboratory.

3.2 Abbreviated Terms

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