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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 24504-2025

Replacing GB/T 24504-2009

Method of injection/falloff well test for coalbed methane well

煤层气井注入/压降试井方法

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 24504-2009 "Coalbed Methane Well Injection/Drawdown Test Method". Compared with GB/T 24504-2009, In addition to structural adjustments and editorial changes, the main technical changes are as follows.

a) Added terms and definitions (see Chapter 3);

b) added a summary of methods (see Chapter 4);

c) The requirements for instruments and equipment have been changed (see 5.3, 5.4, and 3.3, 3.4 of the 2009 edition);

d) The requirements for preparation of basic design data have been changed (see 6.1.1, 5.1 of the 2009 edition);

e) Added well test types (see 6.2);

f) The preparation requirements for test wells have been modified (see 7.1.1, 5.2.1 of the 2009 edition);

g) Added the placement position of the sieve tube in the test (see 7.1.3);

h) Added the requirement for replacement of drilling fluid (see 7.2.4).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Coal Industry Association.

This document is under the jurisdiction of the National Coal Standardization Technical Committee (SAC/TC42).

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This document was first published in 2009 and this is the first revision.

1 Scope

This document specifies the method summary, instrumentation, well test design, construction procedures, data recording and sampling of coalbed methane well

injection/pressure drawdown test.

Well test data collection, interpretation and well test report and other technical contents.

This document applies to well testing conducted during the drilling process or after completion of coalbed methane wells.

2 Normative references

GB/T 17745

GB/T 31537

3 Terms and Definitions

The terms and definitions defined in GB/T 31537 and the following apply to this document.

3.1 Shut down

Close the test valve or device to make the formation pressure system an independent system.

3.2 Shut-in time

The duration of time required to close the test valve or device to allow formation pressure to recover.

3.3 shut-in device

A valve or device used to shut down a well underground or at the wellhead.

3.4 Openwell

Open the test valve or device to connect the formation pressure system with the test pressure system.

4 Method Summary

Working principle of injection/pressure drop test. follow the basic principle of unstable well test, use oil pipe or drill pipe to send the test equipment into the well to make the test more stable.

Water is injected into the well at a fixed displacement and an injection pressure lower than the coal seam fracture pressure, creating a pressure distribution around the wellbore that is higher than the original reservoir pressure.

The well is then shut in, the pressure drops, and the bottom hole pressure gradually

approaches equilibrium with the original reservoir pressure. The data of the bottom hole pressure changing with time are recorded throughout the process.

Through comprehensive analysis, the coal reservoir permeability (K), reservoir pressure (Pi), skin coefficient (S), detection radius (Ri), reservoir temperature (R) and other parameters are obtained. (T) etc.