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Terms and definitions of shale gas

页岩气术语和定义

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part

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1 Scope

China's national terminology for shale gas. Shale gas arrived as an industry faster than its vocabulary settled, and it borrowed terms from conventional petroleum geology that do not quite fit. A conventional reservoir has porosity, permeability, a trap and a seal, and the gas sits in pore space; shale has porosity that is largely disconnected, permeability measured in nanodarcies, no trap because the source rock is the reservoir, and a substantial fraction of its gas adsorbed onto organic matter rather than free in pores. Terms like reserves, recovery factor and decline behave differently in consequence, and the operations have their own vocabulary - the fracturing stages, the proppant, the flowback, the sweet spot, the estimated ultimate recovery of a well that declines steeply and then produces at a low rate

for decades. Fixing all of it in a national standard is what allows resource assessments and regulatory filings to be compared.

This document defines the general foundation of shale gas, gas reservoir geology, gas reservoir engineering, drilling engineering, gas production engineering, surface engineering, safety and environmental protection, etc. Aspects Terms and Definitions. This document applies to the exploration, development, scientific research and teaching of shale gas.

2 Normative references

There are no normative references in this document.

3 General Basics

3.1 shale gas The natural gas in the organic-rich shale interval (3.5) is mainly in free state and adsorbed state, with a small amount of dissolved state.

Note. Generally, it has self-generation and self-storage, large-area continuous distribution, low porosity and low permeability of the reservoir, no natural productivity or low production in a single well, and it needs to be stimulated to obtain industrial gas. flow, etc. [Source: GB/T 31483-2015, 3.1, with modifications]

3.2 shale shale The main body is a fine-grained sedimentary rock composed of particles with a particle size of less than 0.0625mm and developed in laminations (4.1.5).

Note. The rock composition is mainly clay, quartz, feldspar, carbonate, organic matter, etc. There are differences in the composition and proportion of rocks under different depositional conditions, resulting in the formation of different the same shale type. [Source: GB/T 31483-2015, 3.2, with modifications]

3.3 organic-rich shale Dark shale (3.2) with high organic matter abundance and total organic carbon content (4.3.1) generally greater than 1.0%. [Source: GB/T 31483-2015, 3.3, with modifications]

3.4 shale interval shaleinterval All are shale (3.2), or mainly shale (3.2), with a small amount of siltstone, carbonate rocks and other interlayers, and the thickness of shale (3.2) accounts for the total thickness of the interval. The proportion of the degree of not less than 60% of the rock interval. [Source: DZ/T 0254-2020, 3.2, with modifications]

3.5 organic-rich shale interval All organic-rich shale (3.3), or mainly organic-rich shale (3.3), containing a small amount of non-organic-rich shale or siltstone, carbonic acid Shale interval (3.4) with interlayers such as salt rock. [Source: GB/T 31483-2015, 3.4, with modifications]

3.6 gas-bearing shale interval A shale interval containing a certain amount of natural gas

(3.4).

3.7 shale reservoir shalereservoir Shale interval (3.4) capable of storing gas and allowing gas to flow under pressure.

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