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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 33296-2025

Quality requirements and test methods for shale gas products

页岩气产品质量要求和试验方法

Issued on: April 25, 2025 **Implemented on: November 1, 2025**

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Standardization Administration of the PRC

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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 33296-2016 "Technical requirements and test methods for shale gas". In addition to structural adjustments and editorial changes, the main technical changes are as follows:

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

b) Changed the total sulfur index requirements for Class I shale gas products and the water dew point requirements (see Chapter 4,.2016 Edition). Chapter 3);

c) Changed the sampling method, calorific value determination method, composition determination method, total sulfur content determination method and arbitration method of shale gas products Method for determination of hydrogen sulfide content, method for determination of carbon dioxide content, and method for determination of water dew point and water content (see Chapter 5, Chapter 4 in the.2016 edition);

d) Added requirements for the interchangeability of shale gas as fuel gas and the particle size requirements for solid particles in shale gas entering long-distance pipelines. Changed the description of odorization requirements and engineering design requirements for shale gas transportation and use (see Chapter 6,.2016 Edition Chapter 5). 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 is proposed and coordinated by the National Natural Gas Standardization Technical

Committee (SAC/TC244). This document was drafted by: Natural Gas Research Institute of Southwest Oil and Gas Field Company of China National Petroleum Corporation, China National Petroleum Corporation Sinopec Southwest Oil and Gas Field Company, Sinopec East China Oil and Gas Company, Sinopec The company's Petroleum Exploration and Development Research Institute, Southwest Petroleum University, China National Petroleum Corporation Great Wall Drilling Engineering Co., Ltd., China Petrochemical Corporation The Exploration and Development Research Institute of Jianghan Oilfield Branch of CNOOC Limited and the Engineering Technology Branch of CNOOC Energy Technology & Development Co., Ltd. The main drafters of this document are. Zhou Li, Wang Weijie, Zhu Jin, Zeng Wenping, Luo Qin, Zhang Piao, Zhu Huadong, Shen Lin, Zhang Peiying, Chen Xuefeng, Zhang Haoqian, Ding Anxu, Wu Yanyan, Lun Zengmin, Zhao Chunpeng, Zhao Yulong, Wei Bin, Li Yucheng, Yang Wenxin, Shui Leilei, and Li Yangbing. This document was first published in.2016 and this is the first revision. Quality requirements and test methods for shale gas products

1 Scope

China's national standard for the product quality of shale gas. It specifies the terms and definitions, the product quality requirements, the test methods and the delivery and use provisions, and it replaces GB/T 33296-2016. Shale gas is natural gas that never left the rock it formed in. Conventional gas is generated in a source rock, migrates upward and collects in a porous reservoir under a seal, and a well drilled into that reservoir produces it; shale gas stays where it was made, held in a rock with almost no permeability, and is produced by drilling horizontally through the shale and fracturing it to create the flow paths that nature did not. That difference in production method is what shapes the product specification, because it determines what arrives with the gas. This edition changes the total sulfur and water dew point requirements for Class I product, changes the methods for sampling, calorific value, composition, total sulfur, hydrogen sulfide, carbon dioxide, and water dew point and water content, and adds an arbitration method. It also adds two requirements of a different kind: the interchangeability of shale gas used as a fuel gas, and a particle size limit for solid particles in gas entering long-distance pipelines. Interchangeability matters because a burner tuned for one gas composition misbehaves on another, and shale gas composition varies between plays. The particle limit matters because fractured wells produce fines, and fines destroy compressors and valve seats. Issued on 25 April 2025 and in force since 1 November 2025.

This document specifies the quality requirements and analytical test methods for shale gas products. This document applies to the quality testing, transportation and use of processed shale gas products.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 11060.1 Determination of sulfur compounds in natural gas Part

4 Determination of total sulfur content by oxidation microcoulometry

GB/T 11060.5 Determination of sulfur compounds in natural gas Part

5.Determination of total sulfur content by hydrogenolysis-rate meter colorimetric method

GB/T 11060.8 Determination of sulfur compounds in natural gas Part

8.Determination of total sulfur content by ultraviolet fluorescence spectrophotometry

GB/T 11060.10 Determination of sulfur compounds in natural gas Part

10 Determination of sulfur compounds by gas chromatography

GB/T 11060.12 Determination of sulfur compounds in natural gas Part

12 Determination of hydrogen sulfide content by laser absorption spectroscopy

GB/T 11060.13 Determination of sulfur compounds in natural gas Part

13 Determination of hydrogen sulfide content by ultraviolet absorption method

GB/T 11062 Calculation method for calorific value, density, relative density and Wobbe index of natural gas

GB/T 13609 Guidelines for Natural Gas Sampling

GB/T 13610 Composition analysis of natural gas - Gas chromatography

GB/T 17283 Determination of water dew point of natural gas - Cooled mirror condensate hygrometer method

GB/T 18619.1 Determination of water content in natural gas - Karl Fischer-Coulometric method

GB/T 20604 Natural Gas Vocabulary

GB/T 21069 Determination of water content in natural gas under high pressure

GB/T 22634 Conversion between water content and water dew point of natural gas

GB/T 27894 (all parts) Determination of composition and calculation of associated uncertainties of natural gas by gas chromatography

GB/T 27896 Determination of water content in natural gas - Electronic analysis method

GB/T 30490 Automatic sampling method for natural gas

GB/T 33440 General requirements for interchangeability of natural gas

GB/T 35211 Measurement of calorific value of natural gas - Continuous combustion method

GB/T 39540 Rapid analysis of shale gas components by laser Raman spectroscopy