# Can mudstone be used as a reservoir

What is mudstone used for?

Abstract. Mudstone is the most abundant sedimentary rock and variously acts as sources,seals,and shale gas reservoirs in petroleum systems. Many

Is mudstone a shale gas reservoir?

AAPG Bulletin (2011) 95 (12): 2031-2059. Mudstone is the most abundant sedimentary rock and variously acts as sources, seals, and shale gas reservoirs in petroleum systems.

What is mudstone diversity?

Download Citation |Mudstone diversity: Origin and implications for source,seal,and reservoir properties in petroleum systems |Mudstone is the most abundant sedimentary rockand variously acts as sources,seals,and shale gas reservoirs in petroleum systems.

How do mudstone reservoirs work?

Some of these methods employ reflected beams while others utilize energy transmitted through the rock. Mudstone reservoirs comprise fine-grained sedimentary rocks,also known as shales or mudrocks,that are typically rich in organic matter and have other properties conducive to storage and extraction of hydrocarbons.

Where are mudstones found?

Mudstones are the most abundant sedimentary rock and are commonly found in low-energy environments such as deep sea or quiet lake or river basins. They are important in the petroleum industry as source rocks and reservoir seals,and have become important unconventional shale gas and oil reservoirs (Aplin and Macquaker 2011).

Are mudstone and shale a single lithology?

Gas-bearing mudstones and shale have similar reservoir characteristics,and many shale gas production areas in China are often interbedded with mudstone and shale rather than single lithology of shale. Therefore,many chinese scholars have studied them as integration and defined them as mud-shale or mudstone-shale reservoirs 20,21,22,23,24.

reservoir characteristics of fluvial distributary channels have been confused with fluvial channels in the past. ... mudstone, can occasionally be found within a channel (Table 1, Fig. 2).

This is because the mudstone can gradually form a rigid touching framework at ~60 vol% to 74 vol% silt content as suggested by Paxton et al. (2022). In such a scenario with primary rigid particles (mostly composed of quartz) content higher than the above threshold, the influence of diagenetic microquartz cement on rock strength may be ...

Six sandstone and mudstone reservoir physical models were established on the basis of information from

outcrops, drill cores and well logging. The fracture propagation and parameters of the six models were obtained through numerical simulation of hydraulic pressure fracturing. The aim of this study was to identify the best parameters for the ...

Key stratigraphic surfaces become obvious when employing ichnology and can be used in sequence stratigraphic analysis (Taylor et al., 2003; ... The impact of Zoophycos-bioturbation on reservoir quality. A lagoonal mudstone unit is commonly tight if not bioturbated (upper image, image width is 9.8 cm).

You can use mudstone gravels with appropriate treatments to make walkways smooth and sober even for barefoot walking. Mudstone as Roof Tiles. Slate is a kind of ...

The gas sealing capacity of caprock (SCC) is one of the key factors that determine whether aquifer trap can be constructed into underground gas storage (UGS). However, no standard protocol for evaluating SCC of candidate aquifers has been proposed. Based on the core observation, laboratory experiment, and well logging data, the sealing capacity of the ...

microporous mudstone-dominated lithologies. By analogy with the widespread adoption of 3-D seismic as a fundamental risk management tool, an argument can be made that a reservoir characterization workflow incorporating technologies designed to image the unique scale and geometry of mudstone reservoirs has the

They are important in the petroleum industry as source rocks and reservoir seals, and have become important unconventional shale gas and oil reservoirs (Aplin and Macquaker 2011). ...

Chalks of the North Sea almost exclusively have mudstone or wackestone texture. Microfossils may have retained their porosity where degree of diagenesis is low, or be partly or fully cemented where diagenesis is more pronounced. ... The relatively high porosity in hydrocarbon reservoirs can be a result of hydrocarbon emplacement quenching ...

Quaternary mudstone biogas reservoirs in the Qaidam Basin have shown great potential. However, complex pore structures with high clay contents and high heterogeneity ...

Here, we recommend the use of "mudstone" as a class name for all FGRs based on their key attribute of grain size, in direct analogy with other sedimentary rock names such as "sandstone" and "limestone." ... J. Markello, ...

The geological complexity of the Duvernay Formation in the subsurface identified in this study can be used as an analogue for other organic-rich mudstone plays which are still in their exploration stage and lack the well control necessary to perform a ...

As unconventional oil and gas exploration and development have developed, the abnormally high total hydrocarbon values in Carboniferous bauxite-rich mudstone, which potentially acts as a reservoir, have

attracted great interest from geologists (Guo and Wang, 2013; Glavnova et al., 2015).Through the identification and evaluation of well logging data in the ...

Due to their high surface area and microporous nature, organic-rich mudstones can adsorb significant quantities of gas, particularly methane, through physical and chemical ...

"Mathematical simulation of reservoir behavior may be used to help understand reservoir processes and predict reservoir behavior ... in addition simulation can be used as a tool for reservoir description to learn more about the physical nature of the reservoir ... this use is essential in most reservoir studies and represents one of the more ...

SPE 162777 3 charge from deeper source rocks. This is not a typical mudstone section but is a fractured brittle reservoir that happens to be a

Gas-bearing mudstones and shale have similar reservoir characteristics, and many shale gas production areas in China are often interbedded with mudstone and shale rather than single lithology...

Mudstone reservoirs comprise fine-grained sedimentary rocks, also known as shales or mudrocks, that are typically rich in organic matter and have other properties conducive to storage and extraction of hydrocarbons. ... describe 32 petrographic methods that can be used to examine sedimentary rocks. This entry presents the basics of the common ...

Gas-bearing mudstones and shale have similar reservoir character-istics, and many shale gas production areas in China are often interbedded with mudstone and shale rather ...

Mudstone is widely used as the host rock medium in oil and gas reservoir. The creep behavior is extremely complex and directly influences the failure of casing under high temperature and high ...

microporous mudstone-dominated lithologies. By analogy with the widespread adoption of 3-D seismic as a fundamental risk management tool, an argument can be made ...

According to the drilling pressure gradient analysis in the oil and gas area of the Xikula, the distribution of the abnormal high-pressure zone on the profile shows that the Upper Pliocene mudstone is an overpressure layer with a pressure gradient of 16.40-23.09 kPa/m. The aforementioned can be used as a cap rock for underlying reservoirs.

Key questions about pore systems, composition, fabric, and reservoir development can be addressed to promote understanding of controls on mudstone reservoir ...

Significant diachroneity is associated with the lithological transitions at sandstone-mudstone member boundaries and although lithostratigraphic surfaces can be used as timelines over short distances (e.g. within a

field), they should not be assumed to represent timelines over longer correlation lengths.

The average porosity of the TIII oil formation of Karamay Formation is 15.80 %, and the maximum permeability is 3.785 um 2, which can be used as a good reservoir. The TOC content of the upper part of the "binary structure" is very high, and the average TOC is 3.8 % in Huangshanjie Formation, which is a very good source rock.

Claystone vs. Mudstone: Generalization: The terms "claystone" and "mudstone" are sometimes used interchangeably. However, mudstone is a broader term that includes rocks with a mix of clay, silt, and other fine-grained particles. Claystone is a specific type of mudstone dominated by clay-sized particles. Claystone vs. Schist:

Lithology identification is an important basis for research on petroleum geoscience and geophysics, as well as oil reservoir description [1].Presently, the most commonly used lithology identification method is to determine the lithology based on the observation of drilling detritus or coring using methods such as thin-section analysis under a microscope, X-ray ...

Hydraulic fracturing of low-permeability continental reservoirs that possess argillaceous interlayers between single sand bodies is poorly understood. In this study, the ...

Fine-grained clastic sediments, mud and its lithified counterparts mudstone and shale, fill around 70% of the world"s sedimentary basins. Since the permeability of mudstones is several orders of magnitude lower than that of coarser grained lithologies such as sand, mudstones control the rate at which fluids, including water, petroleum and CO 2, move through ...

Coal-bearing source rocks refer to coal and associated carbonaceous mudstone and dark mudstone that can generate hydrocarbon. Organic matter in coal-bearing source rocks, which is mainly terrigenous higher plants, is oxidized during transport and sedimentation and is generally gas-prone. ... Grading evaluation of deep reservoir in Xihu ...

Mudstone is the most abundant sedimentary rock and variously acts as sources, seals, and shale gas reservoirs in petroleum systems.

Indeed, mudstone is commonly considered as the caprock for reservoirs due to its inherent self-healing capability (Zeng et al., 2014), which allows for micro-cracks within the mudstone to spontaneously mend, ensuring the stability and integrity of the caprock.The high content of clay minerals in the mudstone is primarily responsible for this phenomenon (Huang ...

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