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Technology of Using Abandoned Salt Caverns for Underground Gas Storage and First Application in Jintan Area

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Abstract

The solution mining in rock salt was only for producing brine in China over ten years ago, and for long time salt caverns were not used after creation. Due to the urgent needs for natural gas storage, it is worth trying to use abandoned salt caverns for underground gas storage.

By using abandoned salt caverns, time and costs for cavern leaching can be saved, which is advantageous. However, there are also some difficulties such as irregular cavern shapes, casing corrosion and inferior tightness. To solve the problems, this presentation proposes a technology which includes old caverns selection and old wells treatment. The old caverns selection is guided by corresponding criteria. By comparison, a better scheme is adopted for old wells treatment. Moreover, integrity testing can be conducted to check the validity.

The technology has been successfully applied in Jintan salt mine. In view of the numerous abandoned salt caverns in China, the technology can provide references and bring large economic benefits.

Key words: rock salt, gas storage, old caverns, old wells, integrity

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