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CO<sub>2</sub>地质埋存渗漏风险及补救对策 [点此下载全文](#)

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摘要:

目前, 将CO<sub>2</sub>埋存于地下深部地质构造(如油气藏、煤层、地下含水层及岩溶盐腔)的减排方案能有效地减缓温室效应而备受关注。无论什么储集体, 我们都希望CO<sub>2</sub>在地下埋存的时间越长越好。然而, 对于一项具体工程的实施, 必然存在一些客观和主观因素造成CO<sub>2</sub>渗漏, 比如废弃井的不完善或不合理处理、地层断裂系统和水动力系统以及地震所造成的渗漏等等。存在渗漏可能会对周围人和生态环境造成危害。因此, 进行CO<sub>2</sub>地质埋存的风险评估是相当有必要的, 是我们能长期有效安全地进行该项减排方案必不可少的基础和保证。本文即想从建立一套完整的风险评估、管理和监测体系的角度并以加拿大Weyburn油田为例, 深入分析CO<sub>2</sub>地质埋存中可能存在的渗漏风险和途径, 建立CO<sub>2</sub>渗漏风险评估机制, 并针对具体的渗漏可能性提出相应的补救对策, 为全球范围内, 尤其对我国刚刚开展CO<sub>2</sub>地质埋存研究工作提供一些有益的思路。

关键词: [CO<sub>2</sub>](#) [地质埋存](#) [渗漏风险](#) [补救对策](#)

Leakage Risk Assessment and Remediation Options of CO<sub>2</sub> Geological Storage [Download Fulltext](#)

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Abstract:

At present, injecting CO<sub>2</sub> into the subsurface oil and gas reservoirs, deep saline aquifers, disused coal beds and salt caverns, to store CO<sub>2</sub> in subsurface is the most valid and economic choice in reducing the CO<sub>2</sub> emission into the atmosphere. No matter what reservoirs will be chosen to the subsurface geological storage of CO<sub>2</sub>, we all wish the time scale of CO<sub>2</sub> geologic storage will be longer and longer. However, due to some objective and subjective factors during the engineer operation, such as the abandoned wells without any confined treating, the fault fractured system and the hydrodynamic system and induced seismic, the leakage risks are inevitable. They might be harm to the human and local environment. Thus, it is necessary to the leakage risk assessment of CO<sub>2</sub> geologic storage, which is the indispensable basis and guarantee to safely and effectively geological storage CO<sub>2</sub> for a long term. This paper aims to establish a series of integrated leakage risk assessment system through deeply analyzing the possibilities of releasing risk and pathways during the geological storage of CO<sub>2</sub>, and provides some relevant remediation options according to different leakage risks and pathways, which will promote the global development of CO<sub>2</sub> geological storage, especially in our country.

Keywords: [CO<sub>2</sub>](#) [Geological storage](#) [Leakage risk assessment](#) [Remediation options](#)

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