

地质勘探

中西部含油气盆地喜山期强烈隆升剥蚀与大气田的成藏效应

李伟, 朱智鹏, 张海杰

1. 中国石油勘探开发研究院; 2. 提高石油采收率国家重点实验室; 3. 西南石油大学资源与环境学院; 4. 中国石油西南油气田公司重庆气矿

摘要:

地层强烈隆升与天然气成藏效应的关系一直是地质学界关心的重要问题之一, 但对于中国中西部含油气盆地喜山期的强烈隆升剥蚀与大气田的成藏效应之间关系的系统研究却很少。为此, 通过对我国中西部地区不同盆地不同区带喜山期的强烈隆升剥蚀及其与大气田成藏效应关系的分析, 认为这种强烈隆升与剥蚀对大规模天然气的聚集成藏, 不仅具有重要作用, 而且还会因所处地质条件的不同而产生较大的成藏效应差异, 主要表现在3个方面: ①膏盐发育区的挤压冲断与快速隆升剥蚀, 产生流体高效抽吸效应; ②大规模储集体发育区持续隆升剥蚀, 产生大面积水溶气的减压脱溶效应; ③高泥地比与高热演化区持续隆升剥蚀, 产生大面积地层减压吸水效应。之所以会产生上述3种不同的成藏效应, 是其成藏地质条件差异大所造成的。结论认为: 流体高效抽吸效应, 主要形成于有膏岩与盐岩封盖很好的冲断构造带; 大面积水溶气脱溶效应主要发生在储集体巨大、天然气充注不足的地层; 大面积泥岩吸水效应, 主要发育于气源较充足且烃源岩热演化程度高、泥岩含量高的地层。

关键词: [中国](#) [中西部含油气盆地](#) [喜山期](#) [隆升](#) [剥蚀](#) [天然气成藏效应](#) [抽吸效应](#) [脱溶效应](#) [吸水效应](#)

Relationship between strong uplifting and denudation during the Himalayan epoch and hydrocarbon accumulation effects of large gas fields in the central western petroliferous basins of China

Li Wei, Zhu Zhipeng, Zhang Haijie

1. Petroleum Exploration and Development Research Institute, PetroChina, Beijing 100083, China; 2. State Key Laboratory of Enhanced Oil Recovery, Beijing 100083, China; 3. School of Resources and Environmental Engineering, Southwest Petroleum University, Chengdu, Sichuan 610500, China; 4. Chongqing Branch of Southwest Oil & Gasfield Company, PetroChina, Chongqing 400021, China

Abstract:

The relation between gas accumulation effects and strong uplifting is always a hot topic in the academic circle of petroleum geology. However, no systematic study has been carried out on the relationship between strong uplifting and denudation during the Himalayan epoch and hydrocarbon accumulation effects of large gas fields in the central western petroliferous basins of China. Based on the analysis of the strong uplifting and denudation during the Himalayan epoch at different zones of different basins in central western China and their correlations with hydrocarbon accumulation effects of large gas fields, it is believed that the strong uplifting and denudation are critical to large scale gas accumulation and can cause relatively large differences in hydrocarbon accumulation effects due to different geological conditions. They mainly include the following three aspects. (1) In the areas with well developed salt layers, compressional thrusting and rapid uplifting and denudation can generate highly efficient fluid suction effects; (2) In areas with large scale reservoirs, continuous uplifting and denudation can cause large scale depressurization and ex solution effects of water soluble gas; (3) In the areas with high shale content and high thermal maturity, continuous uplifting and denudation can result in depressurization and water adsorption. A huge difference in geological conditions of hydrocarbon accumulation is the major cause of the above hydrocarbon accumulation effects. The highly efficient fluid suction effects mainly occur in thrust belts with high quality gypsolith and salt seals; the large scale exsolution effects of the water soluble gas mainly occur in large reservoirs without full charging of gas; the large scale water adsorption effects of mudrocks mainly occur in the formations with high thermal maturity, high shale content and abundant gas sources.

Keywords:

收稿日期 修回日期 网络版发布日期

DOI: 10.3787/j.issn.1000-0976.2012.08.011

基金项目:

扩展功能

本文信息

[Supporting info](#)

[PDF 2972KB](#)

[CEB \(456 KB\)](#)

[\[HTML全文\]](#)

[参考文献\[PDF\]](#)

[参考文献](#)

服务与反馈

[把本文推荐给朋友](#)

[加入我的书架](#)

[加入引用管理器](#)

[引用本文](#)

[Email Alert](#)

[文章反馈](#)

[浏览反馈信息](#)

本文关键词相关文章

[中国](#)

[中西部含油气盆地](#)

[喜山期](#)

[隆升](#)

[剥蚀](#)

[天然气成藏效应](#)

[抽吸效应](#)

[脱溶效应](#)

[吸水效应](#)

本文作者相关文章

PubMed

通讯作者:

作者简介:

作者Email:

参考文献:

本刊中的类似文章

1. 邱中建,方辉.中国天然气大发展——中国石油工业的二次创业[J]. 天然气工业, 2009,29(10): 1-4
 2. 张宝生,彭贤强,罗东坤.中国煤层气含气带资源条件评价与排序分析[J]. 天然气工业, 2009,29(10): 10-13
 3. 肖开华.中国南方志留系油气地质特征与勘探方向[J]. 天然气工业, 2009,29(11): 1-4
 4. 杨凤玲.欧盟天然气市场自由化发展及对我国的启示[J]. 天然气工业, 2010,30(5): 116-118
 5. 张淑英, 杨国玲, 彭海东.中国天然气消费市场定位探讨[J]. 天然气工业, 2004,24(12): 152-154
 6. 庞崇友, 张淑英, 秦启荣.21世纪初中国大中型天然气田的勘探方向[J]. 天然气工业, 2004,24(11): 1-7
 7. 雷群, 管保山.BJ公司压裂技术思路分析[J]. 天然气工业, 2004,24(10): 68-70
 8. 杨筱蘅, 严大凡.逐步实施我国油气管道的完整性管理[J]. 天然气工业, 2004,24(11): 120-123
 9. 赵庆波.中国煤层气地质特征及勘探新领域[J]. 天然气工业, 2004,24(5): 4-7
 10. 张淑英, 杨国玲.当代我国天然气市场研究[J]. 天然气工业, 2004,24(8): 117-119
-

Copyright by 天然气工业