Fluvial channels and paleo-tributary junctions in the Lower Cretaceous McMurray Formation, Alberta, as defined from detrital zircon signatures and subsurface mapping

Christine Benyon, Andrew Leier, Steve Hubbard, and Dale Lockie

Abstract

The McMurray Formation is the principal petroleum reservoir of the Alberta Oil Sands deposits. The McMurray is the largest oilbearing formation in the world, and is critical to the future energy production of Western Canada. The McMurray contains both fluvial and lacustrine sedimentary facies, and the McMurray is overlain by the Overlying Siltstone, which contains marine deposits. The McMurray Formation is typically characterized by a large fluvial system that extends through the overlying siltstone. The McMurray Formation is typically characterized by a large fluvial system that extends through the overlying siltstone. The McMurray Formation is typically characterized by a large fluvial system that extends through the overlying siltstone. The McMurray Formation is typically characterized by a large fluvial system that extends through the overlying siltstone. The McMurray Formation is typically characterized by a large fluvial system that extends through the overlying siltstone.

Introduction

The McMurray Formation fluvial channels are preserved in the Lower Cretaceous McMurray Formation in Alberta, Canada. The McMurray Formation fluvial channels are preserved in the Lower Cretaceous McMurray Formation in Alberta, Canada. The McMurray Formation fluvial channels are preserved in the Lower Cretaceous McMurray Formation in Alberta, Canada. The McMurray Formation fluvial channels are preserved in the Lower Cretaceous McMurray Formation in Alberta, Canada. The McMurray Formation fluvial channels are preserved in the Lower Cretaceous McMurray Formation in Alberta, Canada. The McMurray Formation fluvial channels are preserved in the Lower Cretaceous McMurray Formation in Alberta, Canada. The McMurray Formation fluvial channels are preserved in the Lower Cretaceous McMurray Formation in Alberta, Canada.

Methods

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Results

Different channel sizes - Different drainage basins - Different detrital zircons

Detrital Zircons and McMurray Valleys

Tributaries introducing different detrital zircon populations

Acknowledgements

Acknowledgements

For related information, please see:

Mike Blum

Department of Earth and Ocean Sciences
University of British Columbia

References


3. Davidson and North (2009), the drainage area is calculated to be 33,000–137,000 km² for the Lower McMurray Formation.


5. We would like to thank Nexen Inc. for financial support and providing the samples. In particular, we would like to thank Nexen Inc. for financial support and providing the samples. In particular, we would like to thank Nexen Inc. for financial support and providing the samples. In particular, we would like to thank Nexen Inc. for financial support and providing the samples. In particular, we would like to thank Nexen Inc. for financial support and providing the samples. In particular.

6. Acknowledgements


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