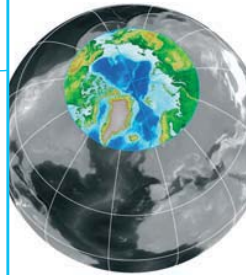


STUDIES

geodynamics and petroleum geology of the circum arctic



- GRAVITY AND MAGNETIC DATA INTERPRETATION
- STRUCTURES AND PLATE TECTONIC MODELLING
- DRAINAGE ANALYSIS AND PALAEO DRAINAGE
- PALAEOCLIMATOLOGY AND PALAEOCEANOGRAPHY
- PALAEOGEOGRAPHIC RECONSTRUCTIONS
- PETROLEUM GEOCHEMISTRY
- PETROLEUM SYSTEMS



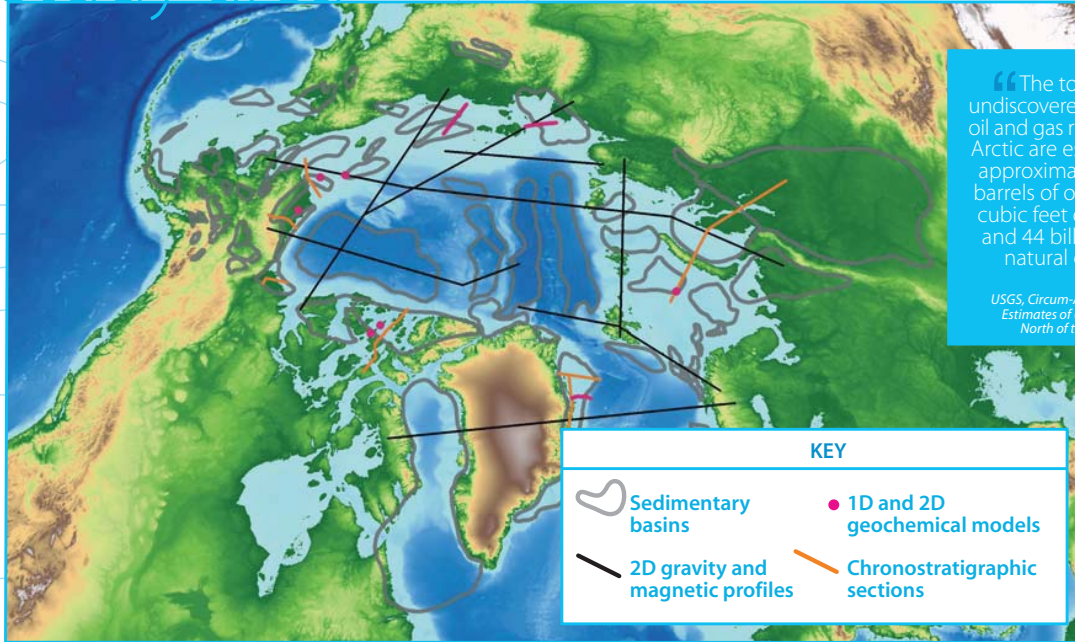
GETECH

summary

The USGS predicts that the circum-Arctic region contains over 400 billion BOE of undiscovered hydrocarbon resources (see text box below). GETECH's Geodynamics and Petroleum Geology of the Circum-Arctic Study will assist explorers in this exciting emergent area to understand the influence of tectonic activity on the landscape evolution of the circum-Arctic region; the subsequent expression in the tectonostratigraphy and the effect on hydrocarbon prospectivity. The study covers all basins north of the 65° N parallel.

study area

COVERING THE BASINS OF
 Chukchi Sea
 North Slope Alaska
 Beaufort Sea
 Canadian Arctic (including MacKenzie Delta and Sverdup-Basin)
 West and East Greenland
 Norwegian Arctic
 Barents Sea/Timan
 Pechora
 Kara Sea/West Siberia
 Laptev Sea
 East Siberian Sea



“The total mean undiscovered conventional oil and gas resources of the Arctic are estimated to be approximately 90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids.”

USGS, Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle, May 2008

project rationale and objectives

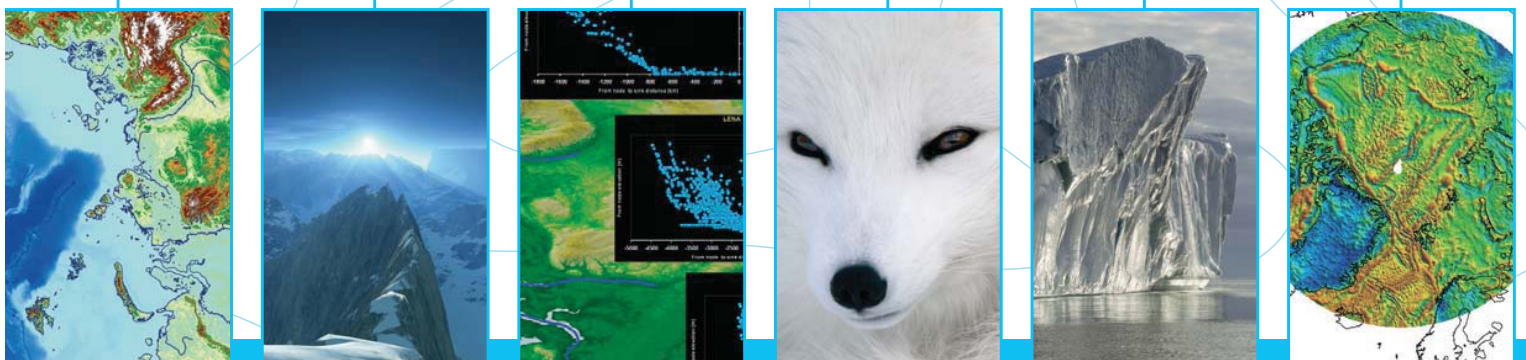
The study builds on GETECH re-processed public domain gravity and magnetic data to underpin a re-evaluation of the structural development of the region and implications for the opening history of the Arctic Ocean. This, and rigorously tested plate tectonic modelling, forms the basis for the mapping of six critical palaeogeographic and palaeolandscapes timeslice reconstructions. Aided by an analysis of the modern day drainage, the study reviews the landscape evolution and likely effects on sediment dispersal. It also contains a review of the geochemical literature, new geochemical modelling, a synthesis of the stratigraphic framework and palaeoclimatology and palaeoceanography. All these have been utilised to generate new insights into the petroleum systems of the circum-Arctic region.

Some critical issues addressed in the study include:

How differing tectonic models for the Arctic influence our understanding of the petroleum systems.

Within the context of its currently recognised petroleum provinces, what is the petroleum potential of the underexplored basins of the circum-Arctic.

How changes in the hinterland evolution of the large Siberian drainage systems affect source and reservoir facies on the Arctic Margin, especially the development of deltaic systems.



deliverables

The study is delivered as:

**A multi-volume A3 Report, with accompanying A0 enclosures (hardcopy and PDF)
GIS Project (ArcGIS 9.x)**

the report

Executive Summary and Introduction

Geophysical Interpretation

Images of the gravity and magnetic data to illustrate key features
Eight regional 2D modelled gravity and magnetic profiles across the principal basins
Depth-to-basement analysis

Structure and Tectonics

Structural interpretation of the gravity and magnetic data
Re-evaluation and testing of published structures

Plate Modelling

Plate tectonic modelling and review of opening history of the Arctic Ocean

Drainage and Landscape Analysis

Palaeoclimatology and Palaeoceanography

Palaeogeography and Palaeolandscape

Six palaeogeographic reconstructions
(maps of rotated data locating palaeoenvironments, tectonophysiographic terrains and lithologies)

Palaeoelevation interpretation and derived palaeo-digital elevation models

Palaeodrainage reconstruction
(including drainage basin geometry and evolution through time)

Petroleum Geochemistry

Source rock characterisation and evaluation
Burial history modelling
Correlation of available source rock and oil data

Petroleum Systems Identification and Evaluation

Conclusion, References and Appendices

Sixteen A0 Enclosures

the GIS project

A series of .mxds illustrating:

Potential Field Data

Gravity and magnetic data and derivatives (grids and images)

Structural Framework

Structures and tectonic boundaries

Palaeogeographies

A series of maps:

- Palaeoenvironments and tectonophysiographic terranes
- Palaeotopography/
Palaeo-digital elevation models
- Palaeodrainage

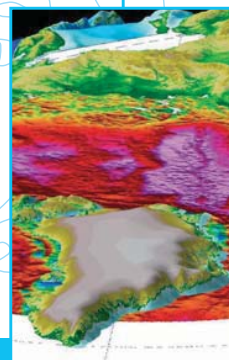
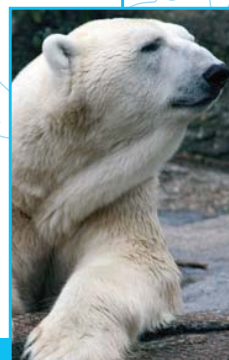
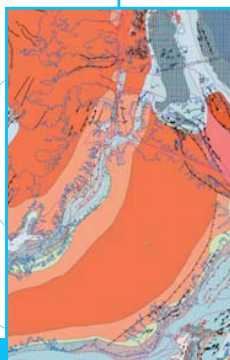
For each of six timeslices:

Carnian
Kimmeridgian
Aptian
Turonian
Ypresian
Last Glacial Minimum

Modern Day Drainage

Landscape analysis grids and shapefiles

This non-exclusive study is licensed to companies under GETECH's standard Licence Agreement.



other products

russian arctic aeromagnetic data

GETECH is now making available for the first time, line profile and high resolution grids of aeromagnetic data on the Russian Arctic continental shelf and the deep Arctic. These data cover the key petroleum basins of the Barents, Kara, Laptev and East Siberian & Chukchi Seas.

petroleum geochemical data

Over 200 oils, cores, cuttings and outcrop samples, along with maps of TOC and maturity for the main source rock horizons, are available in an exclusive package covering onshore Timan Pechora.

environmental baseline study

This exclusive environmental baseline study is a 2007 snapshot of the background levels of anthropogenic and naturally occurring hydrocarbons, TOC and biological distribution covering the Barents, Pechora, Kara, Laptev and East Siberian Seas.



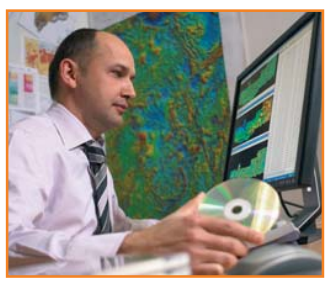
SERVICES

Multi-disciplinary teams of technical experts




DATA

Including the world's largest gravity and magnetic library




STUDIES

A global portfolio of focussed exploration reports



further information

For further details please contact GETECH:

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