

Figure 1. Generalized surface geology map of Sabine Peninsula (after Harrison, 1994) displaying sedimentary stratigraphic divisions.

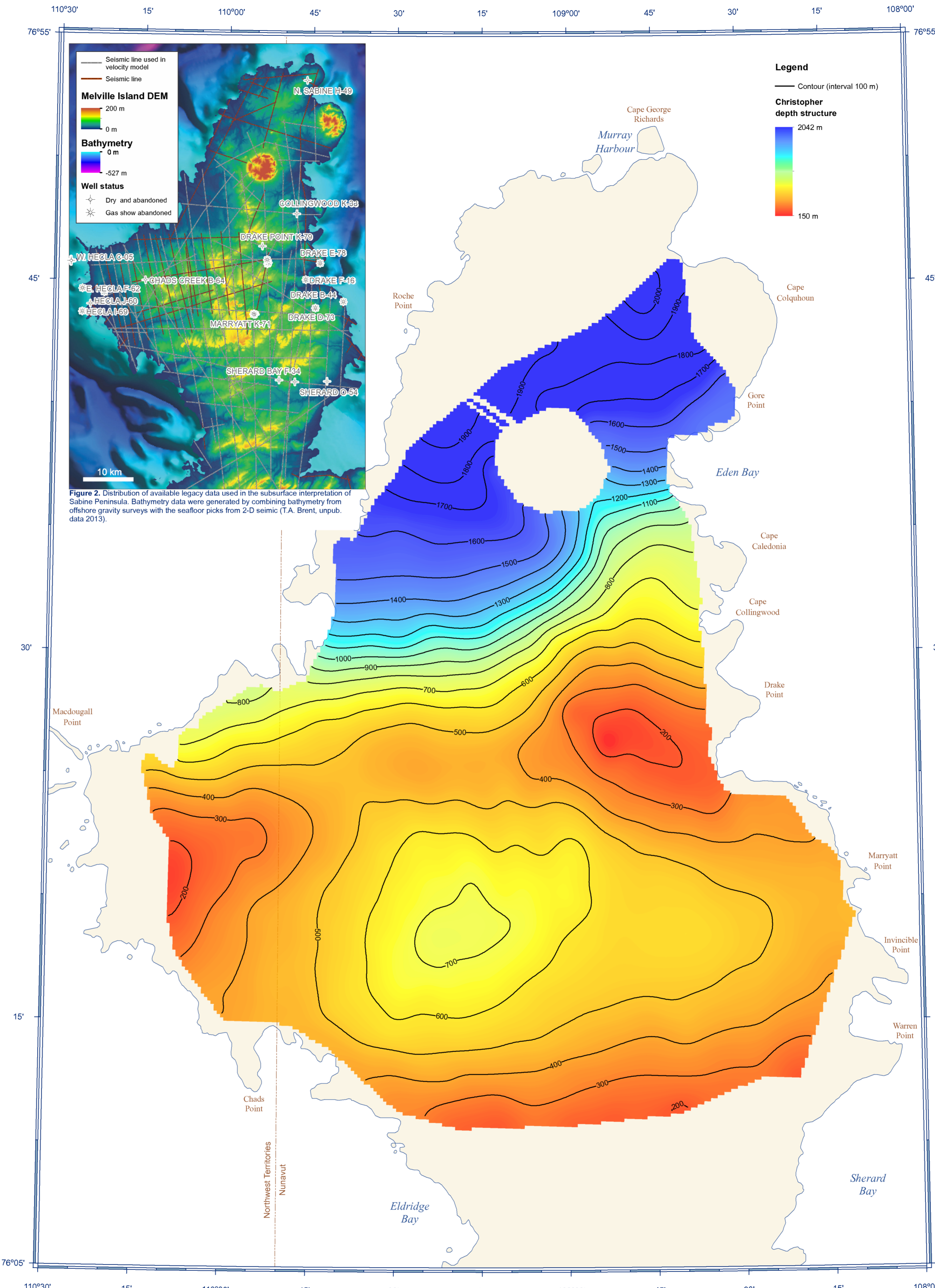
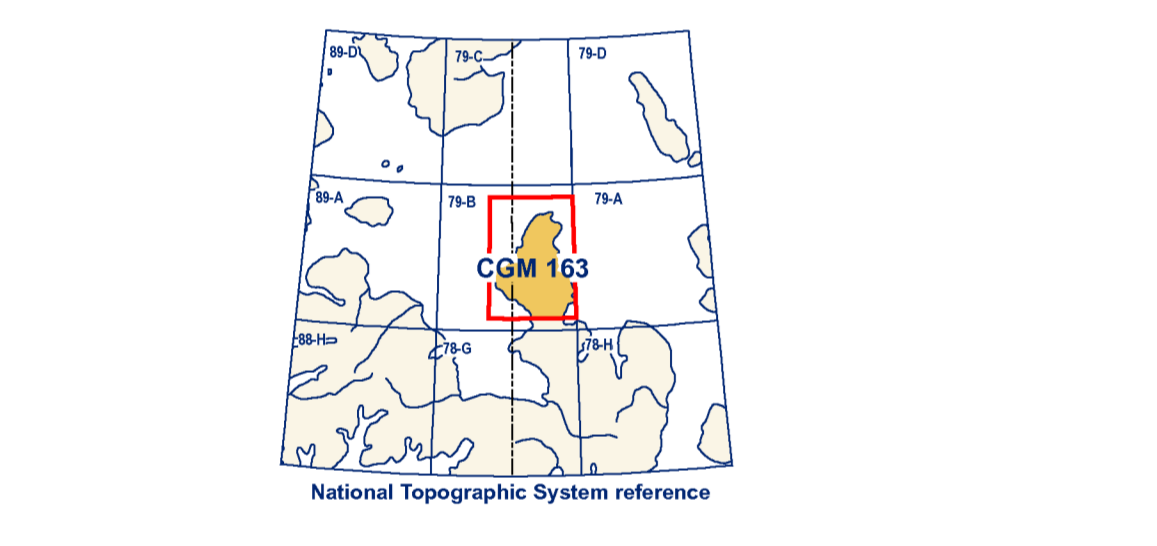


Figure 2. Distribution of available legacy data used in the subsurface interpretation of Sabine Peninsula. Bathymetry data were generated by combining bathymetry from offshore gravity surveys with the seafloor picks from 2-D seismic (T.A. Brent, unpub. data 2013).

INTRODUCTION
The time- and depth-structure maps presented herein are part of an eight-map series of the subsurface of Sabine Peninsula spanning the Early Permian through Early Cretaceous interval.
These maps are the product of the application of modern geoscientific methods of processing and interpretation to a suite of legacy seismic-reflection data from onshore Sabine Peninsula (Melville Island, Western Arctic Islands). The resultant processed seismic lines were interpreted using the existing regional geological framework (see Harrison, 1995) by integrating existing regional well data, geological settings, age control, and lithological information through synthetic seismograms.

REGIONAL SETTINGS
The Sabine Peninsula is located within the Sverdrup Basin in the Queen Elizabeth Islands of the western Arctic. The Sverdrup Basin extends for about 1300 km in a north-south-southwest direction and is up to 350 km wide. The basin contains up to 10 km of sedimentary strata (Embry and Beauchamp, 2008). The Sverdrup Basin is separated from the Franklinian Basin by an unconformity at the base of the Carboniferous strata. The Franklinian Basin was generally widespread following Late Devonian-earliest Carboniferous Eiseismitian Orogeny. The resulting rift-related structural depression acted as a major depocentre from the Carboniferous through the Paleogene (Embry and Beauchamp, 2008). The Sverdrup Basin succession was uplifted and deformed during the early Cenozoic Eurasian Orogeny.

Abstract
Sabine Peninsula of Melville Island was the subject of an oil and gas exploration boom from 1981 to 1985, during which time seismic-reflection data were collected and wells were drilled. As a result, the two largest conventional natural gas fields in Canada were discovered.



Cover Illustration
Permian sandstone hoodoos, Sabine Peninsula, Melville Island, Nunavut. Photograph by T.A. Brent, 2013-242.

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CANADIAN GEOSCIENCE MAP 163
TIME- AND DEPTH-STRUCTURE MAP
CHRISTOPHER FORMATION
Sabine Peninsula, Melville Island
Nunavut-Northwest Territories
1:200 000

