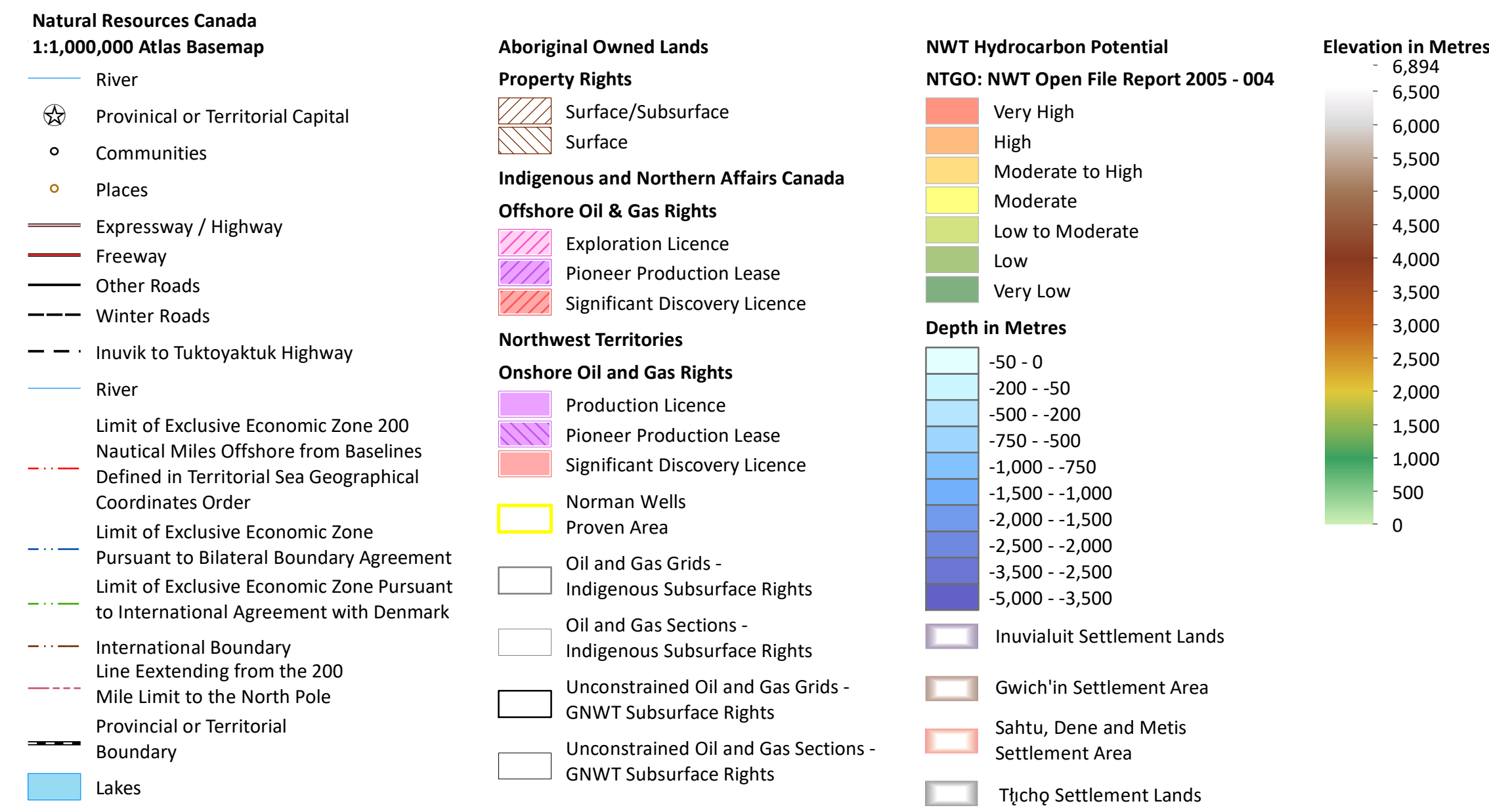


[illegible]

The following introduction and methodology are taken directly from the NTGD: NWT Open File Report 2005 - 004, for the purposes of clarity and preservation of the contextual material. Hydrocarbon potential map data are also directly taken from the original publication.

Introduction

This is a qualitative map of comparative hydrocarbon potential in the Northwest Territories. It is not meant to be, nor should it be interpreted rigorously, detailed, or quantitative resource assessment of hydrocarbon. The main purpose of this map is to complement ecological-themed map scale planning for, and identification of, potential protected areas (North Territories Protected Areas Strategy, 2003). Industry users and community groups may also find it generally informative.

Methodology

The basic methodology used in this study is similar to Gal and Jones (2001). It is entirely qualitative and, because it is knowledge-based, is somewhat subjective in nature. Established and conceptual hydrocarbon plays were identified from existing literature. A hydrocarbon play is defined as a family of hydrocarbon pools and/or prospects that share common geological characteristics and/or hydrocarbon generation, migration, reservoir development, and trap (Reinson et al., 1993). Established plays are demonstrated to exist by verified discoveries plus established reserves. Conceptual plays do not yet have associated discoveries, but geological analyses indicate the possibility of their existence (Reinson et al., 1993).

In this study, the identified plays are represented by and mapped across the subsurface extent of possible reservoir rock. The reservoir rock is the proxy for the entire petroleum system. It is recognized that this is an oversimplification. However, mapping possible reservoir strata allows for regional-scale comparison, using a relatively reliable proxy for a region that is largely under-explored, and in which few petroleum systems are fully understood. The play areas are bounded by (near) horizontal planes (planes coincident with stratigraphic boundaries) and vertical boundaries are due to faults, facies changes, erosional, or depositional submergence limits. In map view, the plays are two-dimensional polygons. Individual play polygons are like overlapping polygons, and the polygons are interpreted to represent sedimentary rock succession at a particular location. The overlaps and intersections of play polygons are then used to define smaller polygons. These will include a number of (overlapped) plays. The number of plays (play established or conceptual) included in a given polygon area is the number of conceptual plays included in that area. The area of an area with three conceptual plays has more potential than an area with one conceptual play. Established plays are given a higher weighting than conceptual plays.

The assessment criteria partly follow those of the Mineral and Energy Resources Assessment (MERA) process used by the Geological Survey of Canada (Scoates et al., 1986; Jones et al., 1992). These criteria are based on the geological favourability for the presence of oil and/or natural gas; the occurrence of established and conceptual hydrocarbon plays, indications of hydrocarbon (shows), and known accumulations. The presence or proof of mapped structural closures or other trapping features is accounted for only in a general sense in this broad based study. Equal weighting is given both oil and gas. For a reconnaissance-scale study such as this, it is the oil and type of plays present that dominantly contribute to the assignment of hydrocarbon potential. The criteria for rankings of very low to very high (Table 1) follow Gal and Jones (2003) and Gal and Larivière (2004).

Table 1. Potential Ranking Criteria

[illegible]

The Map

The map illustrates the locations within the Northwest Territories where expressions of interest will be accepted for the purposes of oil and gas exploration. Current oil and gas rights, including mineral rights, and applications are shown in the context of hydrocarbon potential. The specific areas where expressions of interest will be accepted are illustrated by the oil and gas grid, sections and units. The unit areas are the smallest divisions that may show the smallest divisible area of a land where a piece of land can be licensed for oil and gas exploration leading to a significant commercial discovery. The map shows an expression of interest for any particular section does not fully contain all the units within the section, or sections within a grid, the grid, section and units must be referenced must all be used to provide a full and detailed description of the parcel to the government of the Northwest Territories.

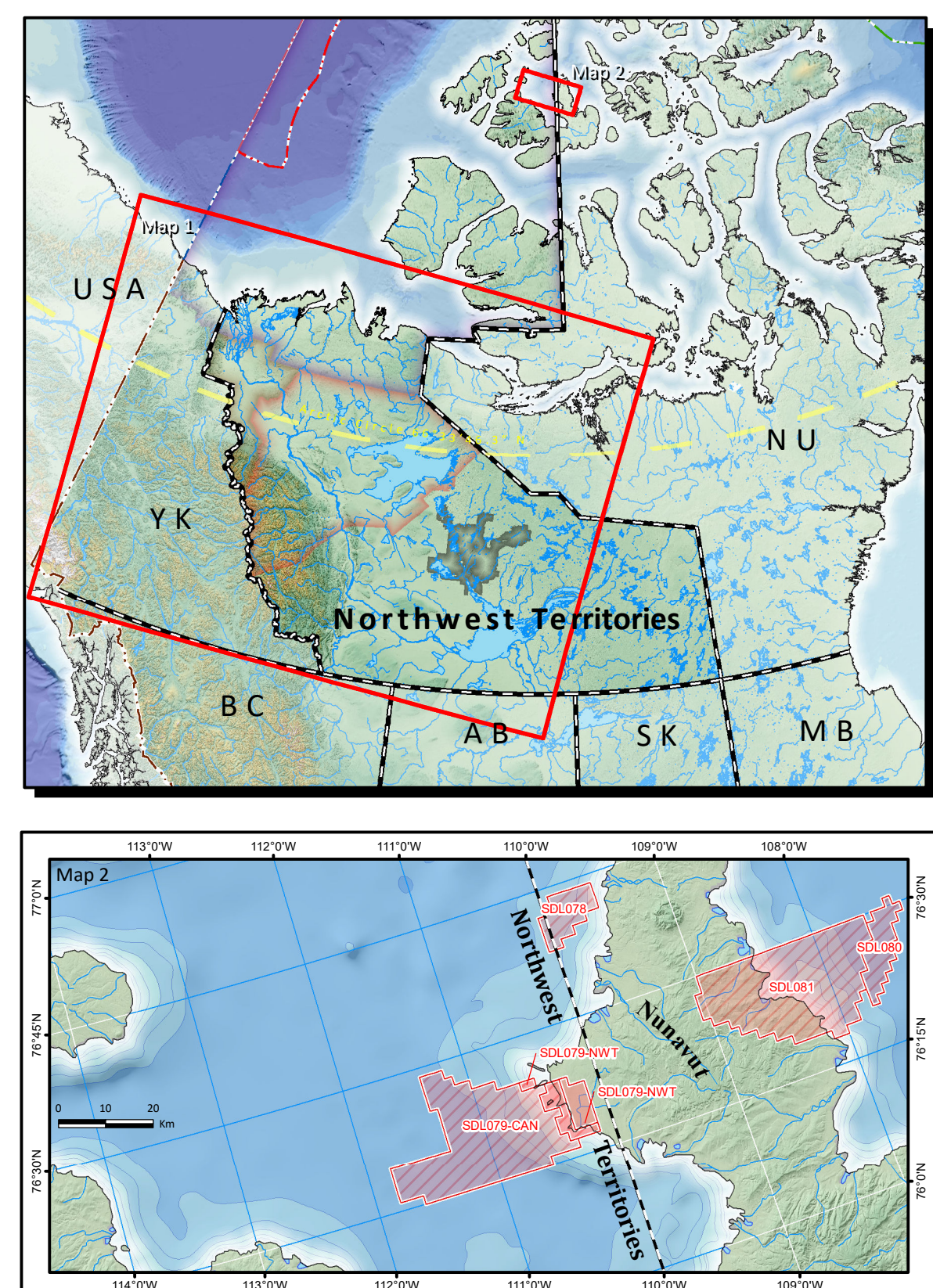
When referencing parcels of land the grid and section must be given. If only portions of a section, i.e. the units, are wanted for an expression of interest or bid then those units within the section must be specifically identified. The units to be described will be the grid, section and the units in the following table:

grid	65-10 N.W. 126-00 W.	sections: 55, 61, 62 (A, B, C), 71, 72 (A, B, C, D, E, F, J)
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This expression is a reference only and does not reflect any suggestion by the government of the Northwest Territories of where to express interest in other areas that are open for an expression of interest.

Date: NAD 27

If you have questions, comments, or feedback, please contact:
Mineral and Petroleum Resources Division
12 Floor Semmler Building, Inuvik NT
Email: petroleum@gov.nt.ca
Website: www.inuvik.ca
Phone: (867) 767-7477



Oil and Gas Rights and Grid References:
A reproduction of the original 1980s representative figure illustrating a Grid system in the Northwest Territories has been created for inclusion in the map. The original illustration can be found via the following URL:
http://www.aadnc-aand.gc.ca/DAM/DAM-INTER-HQ-NOG/STAGING/rm/ri_sd_oggrid_fig_1361197570920_fra.pdf
At the time of the creation of the original graphic the Northwest Territories and Nunavut were one territory.

The Northwest Territories oil and gas rights GIS data can be found via the following URL: <http://www.itti.gov.nt.ca/en/services/oil-and-gas-data>

Hydrocarbon Potential Map Citation:
Gal, L.P., 2005. Hydrocarbon Potential Ranking Map of the Sahtu and Gwich'in Settlement Areas, Map 1 of 2; Northwest Territories Geoscience Office, NWT Open File 2005-04, 2 maps, scale 1:1,000,000.

Original NTGO Hydrocarbon Potential Map Reference Citations:
Fischbuch, N.R., 1984. Facies and reservoir analysis, Kee Scarp Formation, Norman Wells area, Northwest Territories; Geological Survey of Canada, Open File 1116.

Gal, L.P. and Jones, A.L., 2003. Evaluation of oil and gas potential in the Deh Cho territory; C.S. Lord Northern Geoscience Center, Yellowknife, NWT. NWT Open File 2003-03, 88 p.

protected area non-renewable resource assessment (Phase I), Northwest Territories; C.S. Lord Northern Geoscience Centre., Yellowknife, NWT. NWT Open File 2004-01, 125 p.

International Frontier Resources Corporation, 2004.

Janicki, E.P., 2004. Hydrocarbon pool studies of the Colville Hills; Northwest Territories Geoscience Office. NWT Open Report 2004-005.

Jones, T.A., Jefferson, C.W., and Morrell, G.R., 1992.
Assessment of mineral and energy resource potential
in the Brock Inlier-Bluenose Lake area, N.W.T.;
Geological Survey of Canada, Open File 2434.
200 pages. Available at: <http://www.srcc.ca/geology/geology.html>

Mackenzie Valley Five-Year Action Plan (2004-2009).
Conservation planning for pipeline development. Report
prepared by NWT Protected Areas Strategy Secretariat.
Paramount Resources Ltd., 2004. Paramount Resources Ltd.

Reinson, G.E., Lee, P.J., Wafers, W., Osadetz, K.G., Bell, L.L., Price, P.R., Trollope, F., Campbell, R.I., and Barclay, J.E., 1993. Devonian gas resources of the Western Canada Sedimentary

Scoates, R.F.J., Jefferson, C.W., and Findlay, D.C., 1986. Northern Canada mineral resource assessment; in *Prospects for mineral*

Unocal Corporation, 2005. Unocal announces discovery in Northwest Territories, Canada. News Release dated March 30, 2005.

Danielson, J.J., and Gesch, D.B., 2011, Global multi-resolution terrain elevation data 2010 (GMTED2010): U.S. Geological Survey Open-File Report 2011-1023, 26 p. <http://pubs.usgs.gov/of/2011/>

Amante, C. and B.W. Eakins, 2009. ETOPO1 1 Arc-Minute Global Relief Model: Procedures, Data Sources and Analysis. NOAA Technical Memorandum NESDIS NGDC-24. National Geophysical Data Center, NOAA. doi:10.7289/V5C8276M [access date].

Jakobsson, M., L. A. Mayer, B. Coakley, J. A. Dowdeswell, S. Forbes, B. Fridman, H. Hodnesdal, R. Noormets, R. Pedersen, M. Rebesco, H.-W. Schenke, Y. Zarayskaya A., D. Accettella, A. Jakobsson, M., L. A. Mayer, B. Coakley, J. A. Dowdeswell, S. Forbes, B. Fridman.

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Y. Zarayskaya, A. D. Accettella, A. Armstrong, R. M. Anderson, P. Bie
A. Camerlinghi, I. Church, M. Edwards, J. V. Gardner, J. K. Hall, B. H.
O. B. Hestvik, Y. Kristoffersen, C. Marcussen, R. Mohammad, D. Mo
S. M. Nishim, M. T. Pedersen, D. C. Thompson, and D. W. Wetherill

The International Bathymetric Chart of the Arctic Ocean (IBCAO)
Version 3.0, Geophysical Research Letters, doi: 10.1029/2012GL0522
<https://www.ngdc.noaa.gov/mgg/bathymetry/arctic/2012GL0522>
Auxiliary Material:

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 Archuleta, C.M., Constance, E.W., Arundel, S.T., Lowe, A.J., Mantey, K.S.

U.S. Geological Survey, The National Map, 2016, 3DEP products and services, <https://www.nationalmap.gov/3DEP/>.

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If you have questions, comments, or feedback, please contact

1st Floor Semmler Building, Inuvik NT
Email: petroleum@gov.nt.ca
Website: www.nwtpetroleum.com
Phone: (867) 777-7477

