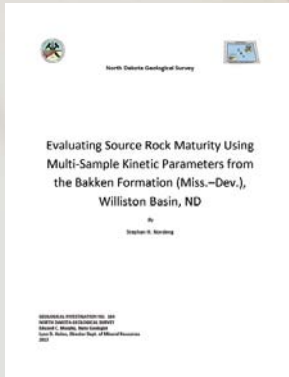
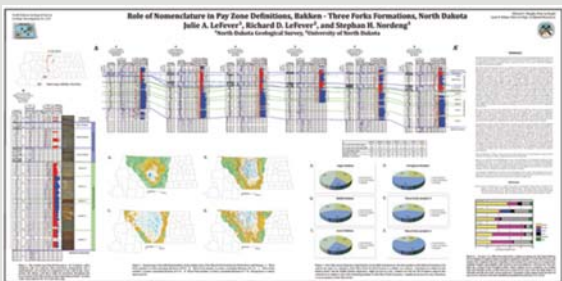


NEW PUBLICATIONS

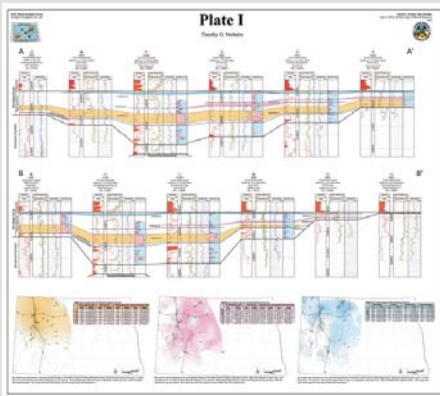
Geologic Investigations



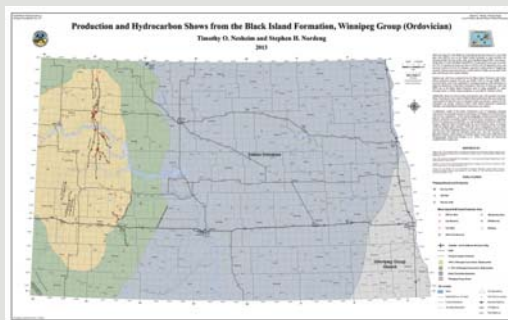
Nordeng, S.H., 2013, Evaluating Source Rock Maturity Using Multi-Sample Kinetic Parameters from the Bakken Formation (Miss.-Dev.), Williston Basin, North Dakota: North Dakota Geological Survey, Geological Investigations No. 164. This study includes pyrolysis data and interpretations that suggest a way to determine source rock maturity using the kinetic parameters of activation energy and frequency factor obtained from pyrolysis experiments using several heating rates. These data indicate that the kinetic parameters determined in this way are capable of distinguishing between samples of the Bakken core taken from the most mature and least mature portions of the Williston Basin in North Dakota. Price: \$5.00 on CD with log data and program data.



LeFever, J.A., LeFever, R.D., and Nordeng, S.H., 2013, Role of Nomenclature in Pay Zone Definitions, Bakken - Three Forks Formations, North Dakota: North Dakota Geological Survey, Geological Investigations No. 165. GI-165 examines the potential productive intervals of the Pronghorn Member and the Three Forks Formation based on available data. Comparison of water saturations, distribution, porosity, and XRD mineralogy is discussed. An Excel spreadsheet is included with the summary statistics from core data for the intervals analyzed. Price: \$25.00 for traditional paper map and \$5.00 pdf on CD or \$25.00 with core analysis data.

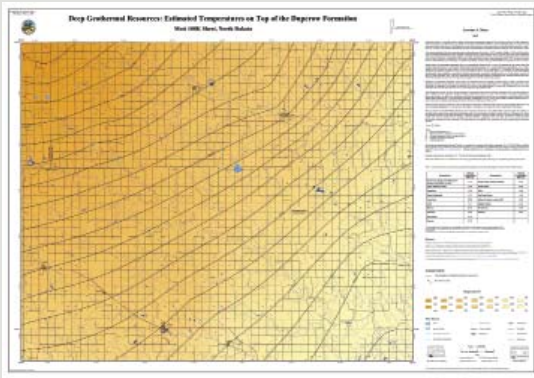


Nesheim, T.O., 2013, Examination of Hydrocarbon Saturation within the upper Black Island Formation (Garland Member), Winnipeg Group: North Dakota Geological Survey, Geological Investigations No. 166. GI-166 examines hydrocarbon saturations within the Black Island Formation calculated from log analysis in combination with compiled core analysis data. Price: \$25.00 on CD which includes shape files, a geologic tops database, and compiled core analysis data.

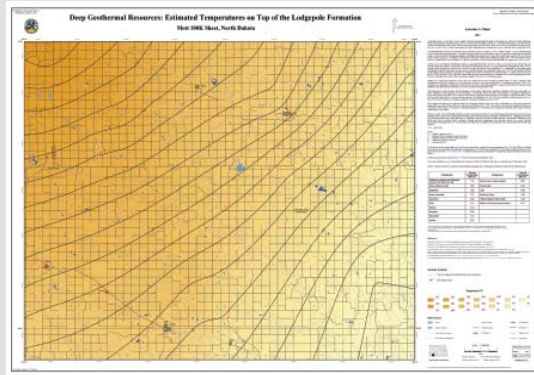


Nesheim, T.O., and Nordeng, S.H., 2013, Production and Hydrocarbon Shows from the Black Island Formation, Winnipeg Group (Ordovician): North Dakota Geological Survey, Geological Investigations No. 167. GI-167 displays the locations, with summarized results, of oil and gas production tests run on the Black Island Formation across North Dakota. Price: \$10.00 for traditional paper map format and \$25.00 on CD. CD includes shape files and the compiled drill stem test and production test reports.

100K Mineral Maps



Manz, L.A., 2013, Deep geothermal resources – estimated temperature on top of the Duperow Formation, Mott 100K sheet, ND: North Dakota Geological Survey 100K Map Series Mott-g-Dd. This map is one of a series of three that show temperature gradients for geothermal aquifers in the Mott area on a 1:100,000 scale. The map shows temperatures (in degrees Celsius) on top of the Duperow Formation, the second-deepest of the Williston Basin's four principal geothermal aquifers. Temperatures were calculated using stratigraphic data from the Oil and Gas Division's well log database, and estimated values for rock thermal conductivities and regional heat flow. The elevation of the top of the Duperow Formation is depicted in feet above mean sea level. A brief discussion includes background information on North Dakota's deep geothermal resources, and a description of the temperature calculation method. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for 100K shape files on CD.

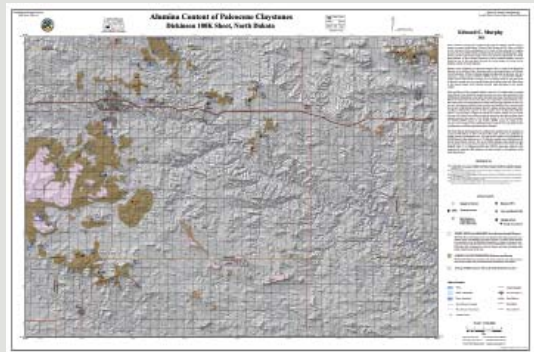


Manz, L.A., 2013, Deep geothermal resources – estimated temperature on top of the Lodgepole Formation, Mott 100K sheet, ND: North Dakota Geological Survey 100K Map Series Mott-g-Ml. This map is one of a series of three that show temperature gradients for geothermal aquifers in the Mott area on a 1:100,000 scale. The map shows temperatures (in degrees Celsius) on top of the Lodgepole Formation, a source of hot, low-salinity waters that are co-produced with oil and gas. Temperatures were calculated using stratigraphic data from the Oil and Gas Division's well log database, and estimated values for rock thermal conductivities and regional heat flow. Depth to formation surface is measured in feet. A brief discussion includes background information on North Dakota's deep geothermal resources, and a description of the temperature calculation method. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for 100K shape files on CD.

Manz, L.A., 2013, Deep geothermal resources – estimated temperature on top of the Red River Formation, Mott 100K sheet, ND: North Dakota Geological Survey 100K Map Series Mott-g-Orr. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for shape files on CD.

Murphy, E.C., 2013, Alumina content of Paleocene claystones, Belfield 100K sheet, ND: North Dakota Geological Survey 100K Map Series Blfd – al. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for 100K shape files on CD.

Murphy, E.C., 2013, Alumina content of Paleocene claystones, Bowman 100K sheet, ND: North Dakota Geological Survey 100K Map Series Bwmn – al. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for 100K shape files on CD.



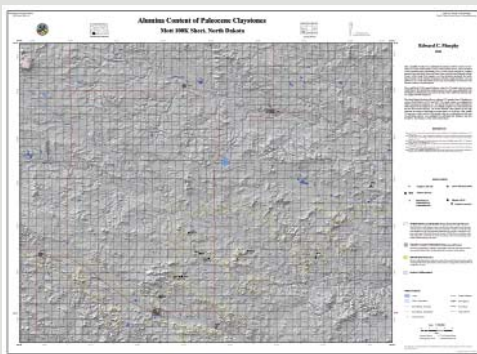
Murphy, E.C., 2013, Alumina content of Paleocene claystones, Dickinson 100K sheet, ND: North Dakota Geological Survey 100K Map Series Dckn – al. Seven NDGS claystone sample sites are plotted on this map sheet along with average alumina values and unit thicknesses. Samples were collected from five additional sample sites on this sheet that were not analyzed. Hansen collected claystones from eight sample sites in 1959 and Boyd and Chew collected from an additional 31 sites for alumina analysis. Alumina values for the Bear Den Member of the Golden Valley Formation ranged from 13% to 24%. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for 100K shape files on CD.

Murphy, E.C., 2013, Alumina content of Paleocene claystones, Elgin 100K sheet, ND: North Dakota Geological Survey 100K Map Series Elgn – al. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for 100K shape files on CD.

Murphy, E.C., 2013, Alumina content of Paleocene claystones, Glen Ullin 100K sheet, ND: North Dakota Geological Survey 100K Map Series GUln – al. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for 100K shape files on CD.

Murphy, E.C., 2013, Alumina content of Paleocene claystones, Grassy Butte 100K sheet, ND: North Dakota Geological Survey 100K Map Series GyBt – al. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for 100K shape files on CD.

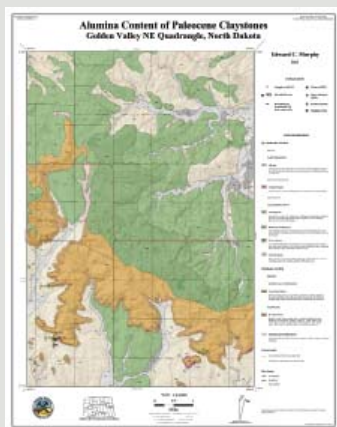
Murphy, E.C., 2013, Alumina content of Paleocene claystones, Killdeer 100K sheet, ND: North Dakota Geological Survey 100K Map Series KlDr – al. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for 100K shape files on CD.



Murphy, E.C., 2013, Alumina content of Paleocene claystones, Mott 100K sheet, ND: North Dakota Geological Survey 100K Map Series Mott – al. Nine of the NDGS claystone sample sites are plotted on this map sheet along with their average alumina values and unit thicknesses. The locations of four additional sites that were collected but not analyzed are also shown. An additional clay site that was collected and analyzed by Chew and Boyd in 1960 is also plotted on this map. The average alumina values for the Rhame Bed in this area range from 16% to 25%. Price: \$5.00 for paper map, \$5.00 for pdf on CD, or \$25.00 for 100K shape files on CD.

24K Mineral Maps

Murphy, E.C., 2013, Alumina Content of Paleocene Claystones, Golden Valley Quadrangle, ND: North Dakota Geological Survey 24K:GldV-al.



Murphy, E.C., 2013, Alumina Content of Paleocene Claystones, Golden Valley NE Quadrangle, ND: North Dakota Geological Survey 24K:GldV NE-al. The members of the Golden Valley Formation were mapped separately so that industry could more effectively evaluate overburden thickness covering the Bear Den Member. One NDGS claystone sample site and two other sampling sites from other studies are plotted on this map. Alumina in the Bear Den Member ranged from 20% to 26% in this area. Price \$5.00 (paper).

Murphy, E.C., 2013, Alumina Content of Paleocene Claystones, Golden Valley NW Quadrangle, ND: North Dakota Geological Survey 24K:GldV NW-al. Price \$5.00 (paper).

Murphy, E.C., 2013, Alumina Content of Paleocene Claystones, Halliday NW Quadrangle, ND: North Dakota Geological Survey 24K:Hldy NW-al. Price \$5.00 (paper).

Murphy, E.C., 2013, Alumina Content of Paleocene Claystones, Hirschville SW Quadrangle, ND: North Dakota Geological Survey 24K:Hrvl SW-al. Price \$5.00 (paper).



Murphy, E.C., 2013, Alumina Content of Paleocene Claystones, Marshall Quadrangle, ND: North Dakota Geological Survey 24K:Mrsl-al. The members of the Golden Valley Formation were mapped separately so that industry could more effectively evaluate overburden thickness covering the Bear Den Member. The Bear Den Member crops out in this area along the edge of the uplands and along the valley sides of Coyote Creek. There is one NDGS claystone sample site within this quadrangle and it contains an average of 16% alumina. Price \$5.00 (paper).

Murphy, E.C., 2013, Alumina Content of Paleocene Claystones, New Hradec North Quadrangle, ND: North Dakota Geological Survey 24K:NwHr N-al. Price \$5.00 (paper).

Murphy, E.C., 2013, Alumina Content of Paleocene Claystones, Schaffner Creek Quadrangle, ND: North Dakota Geological Survey 24K:SfnC-al. Price \$5.00 (paper).