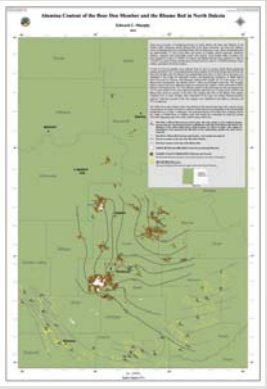
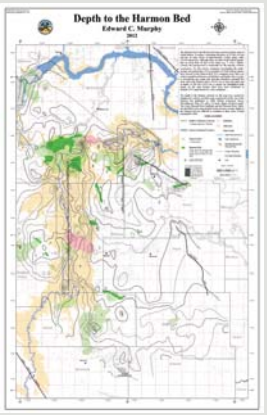
# NEW PUBLICATIONS

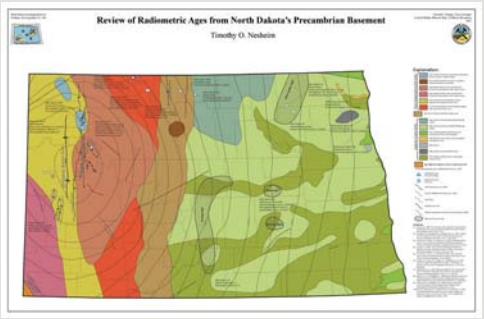
**Geologic Investigations**



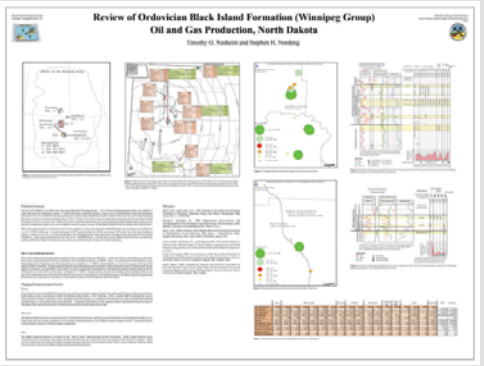
Murphy, E.C., 2012, Alumina Content of the Bear Den Member and the Rhame Bed in North Dakota: North Dakota Geological Survey, Geologic Investigations No. 158. The Bear Den Member of the Golden Valley Formation and the Rhame Bed of the Slope Formation (both Paleocene) are 15-foot-thick, kaolinite-rich layers (claystone, mudstone, siltstone, and sandstone) in western North Dakota. A total of 232 rock samples were collected from both beds at 61 localities. Weighted alumina content ranged from 13 to 25% for individual sampling localities. Scale 1:500,000. Price: $15.00 for traditional paper format and $5 on CD.



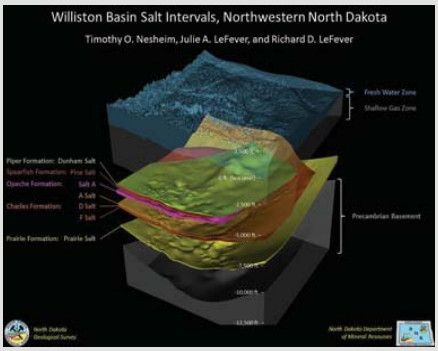

Murphy, E.C., 2012, Depth to the Harmon Bed: North Dakota Geological Survey, Geologic Investigations No. 159. The Harmon lignite is the thickest (53 ft.) and most extensive (13,000 square miles) in North Dakota. It ranges from surface outcrop in Bowman and Slope counties to depths of more than 1,000 feet in Billings and Dunn counties. As such, it has generally been viewed as the prime candidate for underground coal gasification in North Dakota. Scale 1:300,000. Price: $20.00 for traditional paper format and $5 on CD.



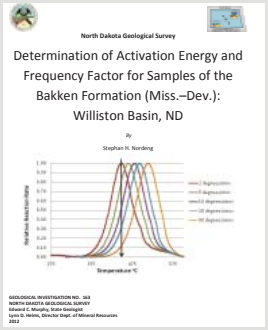

Nesheim, T.O., 2012, Review of Radiometric Ages from North Dakota's Precambrian Basement: North Dakota Geological Survey, Geological Investigations No. 160. GI-160 is a compilation of over thirty previously reported radiometric dates completed by various other studies on core and drill cutting samples from North Dakota's Precambrian Basement. This publication also includes a revised Precambrian Basement map for North Dakota. Price: $10.00 for traditional paper map format and $5.00 on CD.




Nesheim, T.O., and Nordeng, S.H., 2012, Review of Ordovician Black Island Formation (Winnipeg Group) Oil and Gas Production, North Dakota: North Dakota Geological Survey, Geological Investigations No. 161. GI-161 provides an overview of the oil and gas production history and related information for the Black Island Formation in North Dakota's portion of the Williston Basin. This publication includes figures depicting well distribution in relation to significant structures, oil and gas analysis data, and an examination of perforated pay zone intervals. Price: $10.00 for traditional paper map format and $5.00 on CD.




Nesheim, T.O., LeFever, J.A., and LeFever, R.D., 2012, Three Dimensional Model of Subsurface Salt Intervals, Northwestern North Dakota: North Dakota Geological Survey, Geological Investigations No. 162. GI-162 is a 3-D model that focuses on displaying the approximate depth, extent, structure, and thickness of several significant salt intervals within the subsurface of northwestern North Dakota. This model is a modification of GI-137.
Price: $25.00 on CD with pdf, extended PowerPoint, and Petra database.




Nordeng, S.H., 2012, Determination of Activation Energy and Frequency Factor for Samples of the Bakken Formation (Miss.–Dev.): Williston Basin, ND: North Dakota Geological Survey, Geologic Investigations No. 163. This investigation presents the experimental results of a study that determines the activation energy and frequency factor for six samples of the Bakken Formation in North Dakota. These data partially fill the need for information that is used to evaluate the level of organic maturation within the Bakken Formation.

**Landslide Maps**


Murphy, E.C., 2012, Areas of Landslides, Banks Quadrangle, ND: North Dakota Geological Survey 24K:Bnks-1. Ninety-two landslides were mapped in this quadrangle. These landslides occupy an area of 263 acres (1,063,950 square meters) or approximately 1% of the entire Belden SE quadrangle. The largest landslide or landslide complex mapped in this quadrangle was 11 acres (46,000 square meters) and the smallest was less than one acre (2,000 square meters). Landslides were mapped from 1:20,000 scale aerial photographs.
Price: $5.00 for traditional paper map and $25 for 100K shape files on CD.

Murphy, E.C., 2012, Areas of Landslides, Blacktail Lake Quadrangle, ND: North Dakota Geological Survey 24K:BlkL-1.
Murphy, E.C., 2012, Areas of Landslides, Blacktail Lake SE Quadrangle, ND: North Dakota Geological Survey 24K:BlkL SE-1.
Murphy, E.C., 2012, Areas of Landslides, Bonetraill Quadrangle, ND: North Dakota Geological Survey 24K:Bntl-1.
Murphy, E.C., 2012, Areas of Landslides, Bonetraill SE Quadrangle, ND: North Dakota Geological Survey 24K:Bntl SE-1.
Murphy, E.C., 2012, Areas of Landslides, Bonetraill SW Quadrangle, ND: North Dakota Geological Survey 24K:Bntl SW-1.
Murphy, E.C., 2012, Areas of Landslides, Bull Butte Quadrangle, ND: North Dakota Geological Survey 24K:BllB-1.
Murphy, E.C., 2012, Areas of Landslides, Chris Creek Quadrangle, ND: North Dakota Geological Survey 24K:ChrC-1.
Murphy, E.C., 2012, Areas of Landslides, Epping NE Quadrangle, ND: North Dakota Geological Survey 24K:Eppg NE-1.
Murphy, E.C., 2012, Areas of Landslides, Epping NW Quadrangle, ND: North Dakota Geological Survey 24k:Eppg NW-1.
Murphy, E.C., 2012, Areas of Landslides, Gamache Creek Quadrangle, ND: North Dakota Geological Survey 24K:GmhC-1.
Murphy, E.C., 2012, Areas of Landslides, Lake Jessie Quadrangle, ND: North Dakota Geological Survey 24K:LkJs-1.
Murphy, E.C., 2012, Areas of Landslides, Otter Tail Creek Quadrangle, ND: North Dakota Geological Survey 24K:OtTC-l.
Murphy, E.C., 2012, Areas of Landslides, Ray Quadrangle, ND: North Dakota Geological Survey 24K:Ray-1.
Murphy, E.C., 2012, Areas of Landslides, Red Bank Creek Quadrangle, ND: North Dakota Geological Survey 24K:RdBC-1.
Murphy, E.C., 2012, Areas of Landslides, Red Mike Hill Quadrangle, ND: North Dakota Geological Survey 24K:RdMH-1.
Murphy, E.C., 2012, Areas of Landslides, Spring Brook Quadrangle, ND: North Dakota Geological Survey 24K:SprB-1.
Murphy, E.C., 2012, Areas of Landslides, Stockyard Creek Quadrangle, ND: North Dakota Geological Survey 24K:StkC-1.
Murphy, E.C., 2012, Areas of Landslides, Tobacco Garden Bay Quadrangle, ND: North Dakota Geological Survey 24K:TbGB-1.
Murphy, E.C., 2012, Areas of Landslides, Trenton Quadrangle, ND: North Dakota Geological Survey 24K:Trnt-1.
Murphy, E.C., 2012, Areas of Landslides, Trenton NE Quadrangle, ND: North Dakota Geological Survey 24K:Trnt NE-1.
Murphy, E.C., 2012, Areas of Landslides, Trenton NW Quadrangle, ND: North Dakota Geological Survey 24K:Trnt NW-1.
Murphy, E.C., 2012, Areas of Landslides, Trenton SW Quadrangle, ND: North Dakota Geological Survey 24K:Trnt SW-1.
Murphy, E.C., 2012, Areas of Landslides, Twin Lakes Quadrangle, ND: North Dakota Geological Survey 24K:TwnL-1.

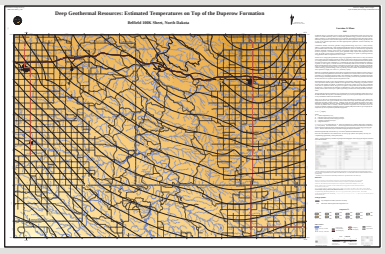
Murphy, E.C., 2012, Areas of Landslides, West Bonetraill Quadrangle, ND: North Dakota Geological Survey 24K:WsBt-1.
Murphy, E.C., 2012, Areas of Landslides, Williston East Quadrangle, ND: North Dakota Geological Survey 24K:Wlst E-1.
Murphy, E.C., 2012, Areas of Landslides, Williston West Quadrangle, ND: North Dakota Geological Survey 24K:Wlst W-1.


Murphy, E.C., 2012, Areas of Landslides, Williston SE Quadrangle. ND: North Dakota Geological Survey 24K:Wlst SE-1. A total of 184 landslides were mapped in this quadrangle. These landslides occupy an area of 835 acres (3,380,000 square meters) or approximately 3% of the Williston SE quadrangle. The largest landslide or landslide complex mapped in this quadrangle was 49 acres (196,000 square meters) and the smallest was a fraction of an acre (19 square meters). Landslides were mapped from 1:20,000 scale aerial photographs. Price: $5.00 for traditional paper map and $25 for 100K shape files on CD.

Murphy, E.C., 2012, Areas of Landslides, Williston SW Quadrangle, ND: North Dakota Geological Survey 24K:Wlst SW-1.

**100K Mineral Maps**

Manz, L.A., 2012, Deep geothermal resources - estimated temperatures on top of the Lodgepole Formation, Belfield 100K sheet, ND: North Dakota Geological Survey 100K Map Series No. Blfd-g-Ml. Price: $5.00 (paper).




Manz, L.A., 2012, Deep geothermal resources - estimated temperatures on top of the Duperow Formation, Belfield 100K sheet, ND: North Dakota Geological Survey 100K Map Series No. Blfd-g-Dd. This map is one of a series of three that show temperature gradients for geothermal aquifers in the Belfield 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 (paper).

Manz, L.A., 2012, Deep geothermal resources - estimated temperatures on top of the Red River Formation, Belfield 100K sheet, ND: North Dakota Geological Survey 100K Map Series, No. Blfd-g-Orr. Price: $5.00 (paper).

**Outside Publications**

Nesheim, T.O. and Nordeng, S.H., 2012, Reevaluation of the Tyler Petroleum Systems, North Dakota: American Institute of Professional Geologists 2012 Conference, Rapid City, South Dakota.

Stidham, T.A., Hoganson, J.W., and Person, J.J., 2012, New middle Paleocene (Tiffanian NALMA) birds from North Dakota: Journal of Vertebrate Paleontology Program and Abstracts, p. 179.

Wilson, G.P., Ekdale, E.G., and Hoganson, J.W., 2012, A partial skull of *Didelphodon vorax* from the Lancian-Age Hell Creek Formation of southwestern North Dakota, U.S.A.: Journal of Vertebrate Paleontology Program and Abstracts, p. 194.

Weaver, P.G., Lawver, D.R., Christopher, T.R., Everhart, M.J., Hatcher, J., and Hoganson, J.W., 2012, Postmortem mineralogy of gladii of the Coniacian-Companian (Late Cretaceous) "squid" *Tusoteuthis longa* (Cephalopoda: Coleoidea), North America: A key to their original composition: Geological Society of America Abstracts and Program, v. 44, no. 7, p. 397.

LeFever, J.L, 2012, Lessons Learned in Bakken Optimize Drilling, Completion for Increase Oil Recovery: American Oil and Gas Reporter, vol. 55, no. 9, p. 81-87.

Nordeng, S.H., 2012, Application of the Kissinger Equation to the Problem of Evaluating Reaction Kinetics Using $T_{max}$ and Formation Temperature Data from the Tyler (Penn.) and Bakken (Miss.-Dev.) Formations of North Dakota: *AAPG Search and Discovery Article #90156©2012 AAPG Rocky Mountain Section Meeting, Grand Junction, Colorado.* http://www.searchanddiscovery.com/abstracts/html/2012/90156rms/abstracts/nord.htm