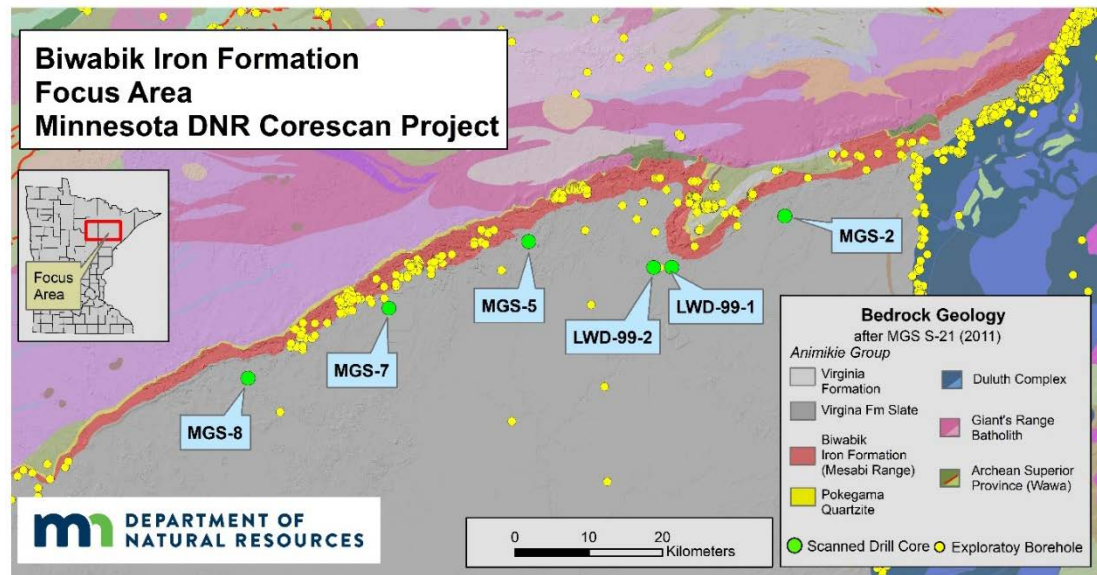


Biwabik Iron Formation/Mesabi Range Focus Area

Six archived drill cores from the Biwabik Iron Formation/Mesabi Range Focus Area were selected for hyperspectral imaging. The Biwabik Iron Formation is the geological name of the iron-rich sedimentary rocks that have been mined on the Mesabi Range since 1892. This region is the home to Minnesota's taconite industry, with six active open-pit mines and operations that produce about 40 million tons of high-grade iron ore pellets annually.



The six drill holes were located in unmined areas where the Biwabik Iron Formation is located deep beneath the surface, providing complete or near-complete transects of the iron-bearing bedrock. Scanned core intervals included portions of the overlying Virginia Formation, and older, underlying Pokegama Quartzite. A combined total of 4,911 feet (1,497 meters) of drill core was scanned in this Focus Area.

Focus Area Goals

- This iron formation is actively surface mined. Hyperspectral imaging of ore and deleterious minerals within different layers of the ore zone may highlight the potential benefits of this tool for the taconite industry in areas such as ore grade control, mineral processing, and pellet production.
- A stratigraphic system linking all of the mined ore zones and waste submembers of the Biwabik Iron Formation was developed in 2009. Corescan analysis may correlate this stratigraphy with distinct mineralogy or geochemistry, which may assist in mineral processing.
- This work may better define the contact between the iron formation and overlying Virginia Formation, and potentially identify hyperspectral markers for the Sudbury Impact event that has been petrographically identified in a few of these drill cores. This may lead to a better understanding of how this vital mineral resource formed.

DDH	DNR_ID	Core Start	Core End	Scan Start	Scan End	Total Feet	Total Meters
MGS-2	13596	103	2270	1574	2270	696	212
MGS-5	13843	152	1252	474	1252	772	235
MGS-7	11950	213	1428	741	1428	678	207
MGS-8	11947	214	2044	1125	2044	1674	510
LWD99-1	12031	129	1344	347	1344	868	265
LWD99-2	12032	130	1414	580	1414	827	252
					Total	4911	1497

For more information, visit: [DNR Corescan Project Home Page](http://mndnr.gov/corescan) (mndnr.gov/corescan)