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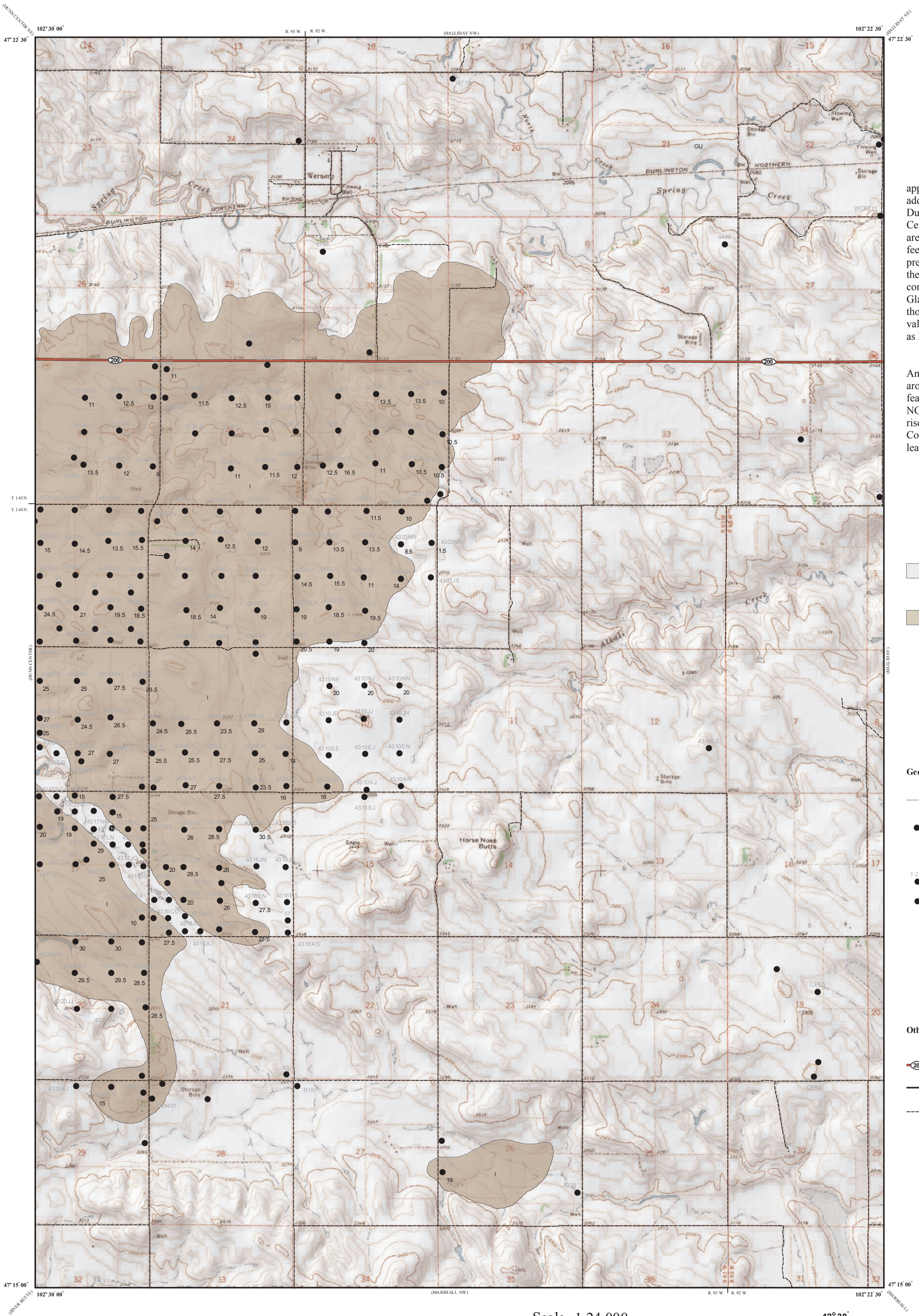
North Dakota Geological Survey
Edward C. Murphy, Acting State Geologist

Lignite Reserves

Werner Quadrangle, North Dakota



Edward C. Murphy

2004

The Dunn Center coal deposit underlies approximately 28,000 acres in central Dunn County. In addition to the Werner quad, the deposit extends into Dunn Center NW, Dunn Center NE, Lake Ilo, and Dunn Center. The Dunn Center bed is 10 to 21 feet thick in this area. A five to ten foot coal is generally present 20 to 50 feet above the Dunn Center bed. Coal thicknesses presented on the map are often cumulative thicknesses of these two mineable beds. The Dunn Center deposit contains approximately 900 million tons of mineable coal. Glacial meltwater flowed through this area tens of thousands of years ago removing these coals and creating valleys now occupied by Spring and Slow creeks as well as Boe and Moffet sloughs.

In 1975, the Natural Gas Pipeline Company of America (NGPCA) drilled over 1,800 test holes in and around the Dunn Center deposit to determine the feasibility of establishing a gasification plant in the area. NGPCA abandoned the project when gas prices failed to rise to projected levels in the early 1980s. The Nokota Company took over the project and still holds some coal leases in the area.

UNIT DESCRIPTIONS

Geology Undifferentiated

I Economic Coal Deposits

Economic coal deposits are those that meet the minimum criteria established by coal companies operating surface mines in North Dakota. These economic criteria include a minimum cumulative coal thickness of ten feet-typically occuring in less than two beds, a minimum individual bed thickness of at least 2.5 feet, a ratio of overburden to coal thickness of not more than 10:1, a minimum of 25 feet of overburden, and a maximum depth to coal of approximately 150 feet.

Geologic Symbols

Extent of Local Lignite Reserves

Data Points

Includes Coal Exploration NDGS/USGS drill holes, Sub-surface Mineral drill holes, Oil & Gas drill holes, and NDSWC drill holes.

T-207 Drill Hole Numbers

11 Thickness (in feet) of Mineable Lignite

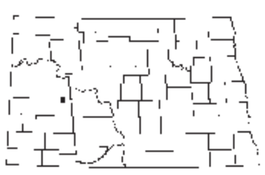
Coal thicknesses were determined by interpretation of electric logs from individual drill holes. Gamma and density logs were typically available for coal exploration holes but, oil wells were often limited to a gamma log run through surface casing.

Other Features

200 State Highway

Paved Road

Unpaved Road

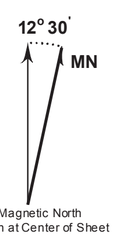


Scale 1:24,000

0 0.5 1

Miles

Lambert Conformal Conic Projection
1927 North American Datum
Standard Parallels 47° 15' 00" and 47° 22' 30"



1973 Magnetic North
Declination at Center of Sheet

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Cartographic Compilation: Elroy L. Kadrmas