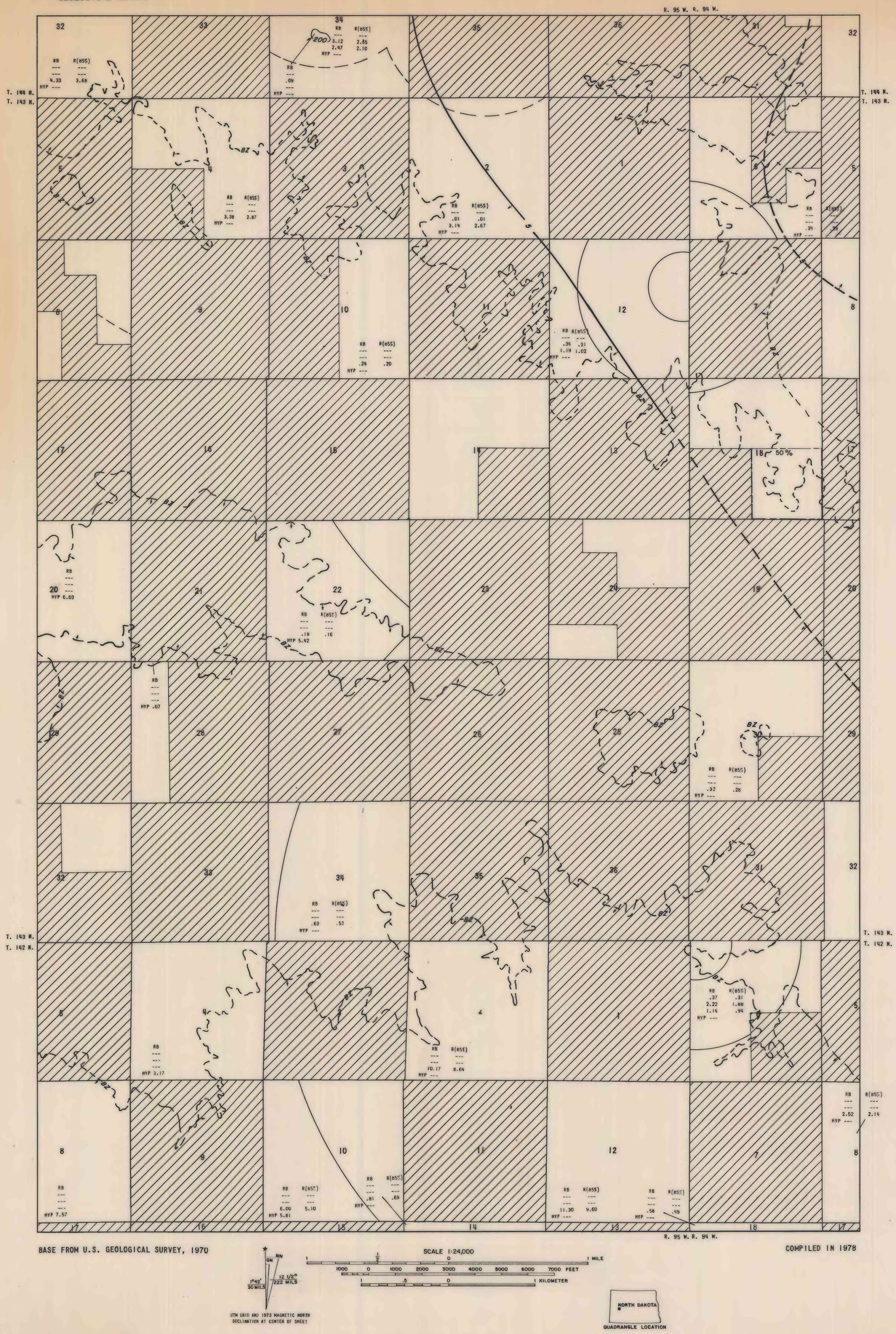
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

OPEN FILE REPORT 78-069

PLATE 12 OF 13

This report has not been edited for conformity with U.S. Geological Survey editorial standards or stratigraphic nomenclature.



EXPLANATION

NON-FEDERAL COAL LAND - Land for which the Federal Government does not own the coal rights.

50%

RESTRICTED FEDERAL COAL RIGHTS - Showing the percentage of Federal Government ownership.

BZ

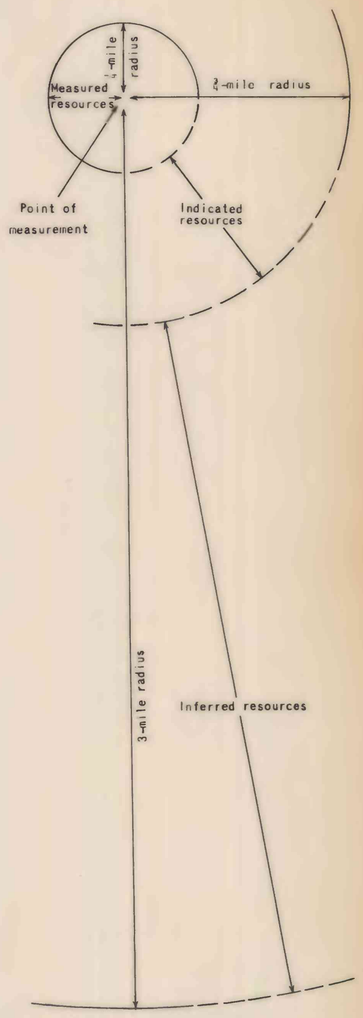
TRACE OF INFERRED COAL BED OUTCROP--Arrow points toward coal bearing area.

200

200 FOOT OVERBURDEN ISOPACH-- Used as boundary for surface mining. Arrows point toward area suitable for surface mining.

5

LIMIT OF RESERVE BASE COAL----5 foot coal isopach. Arrow points toward reserve base coal. Dashed where projected through noncoal-bearing area.



BOUNDARY LINES--Showing areas of measured. indicated. inferred. and hypothetical coal reserves. Dashed where projected from adjacent quadrangles.

RB	R(85%)	
4.8	4.1	(Measured resources)
42.4	36.0	(Indicated resources)
65.5	55.7	(Inferred resources)
HYP 1.3		(Hypothetical resources)

IDENTIFIED AND HYPOTHETICAL COAL RESOURCES—Showing totals for Reserve Base (RB) and, in areas suitable for surface mining, Reserves (R), in millions of short tons by section. Dash indicated no resources in that category. Reserve Base (RB) x Recovery Factor (85%) = Reserves (R).

Recovery factors have not been established for underground development of the coal in this quadrangle. Therefore, Reserves (R) were not calculated in areas where the overburden thickness exceeds 200 feet.

To convert short tons to metric tons, multiply short tons by 0.9072.

BASE FROM U.S. GEOLOGICAL SURVEY, 1970

COMPILED IN 1978

UTM GRID AND 1973 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24,000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

QUADRANGLE LOCATION

COAL RESOURCE OCCURRENCE MAP OF THE EMERSON QUADRANGLE
DUNN COUNTY, NORTH DAKOTA

BY

WOODWARD-CLYDE CONSULTANTS

1978

PLATE 12

AREAL DISTRIBUTION AND IDENTIFIED AND HYPOTHETICAL RESOURCES OF THE BEULAH-ZAP COAL BED