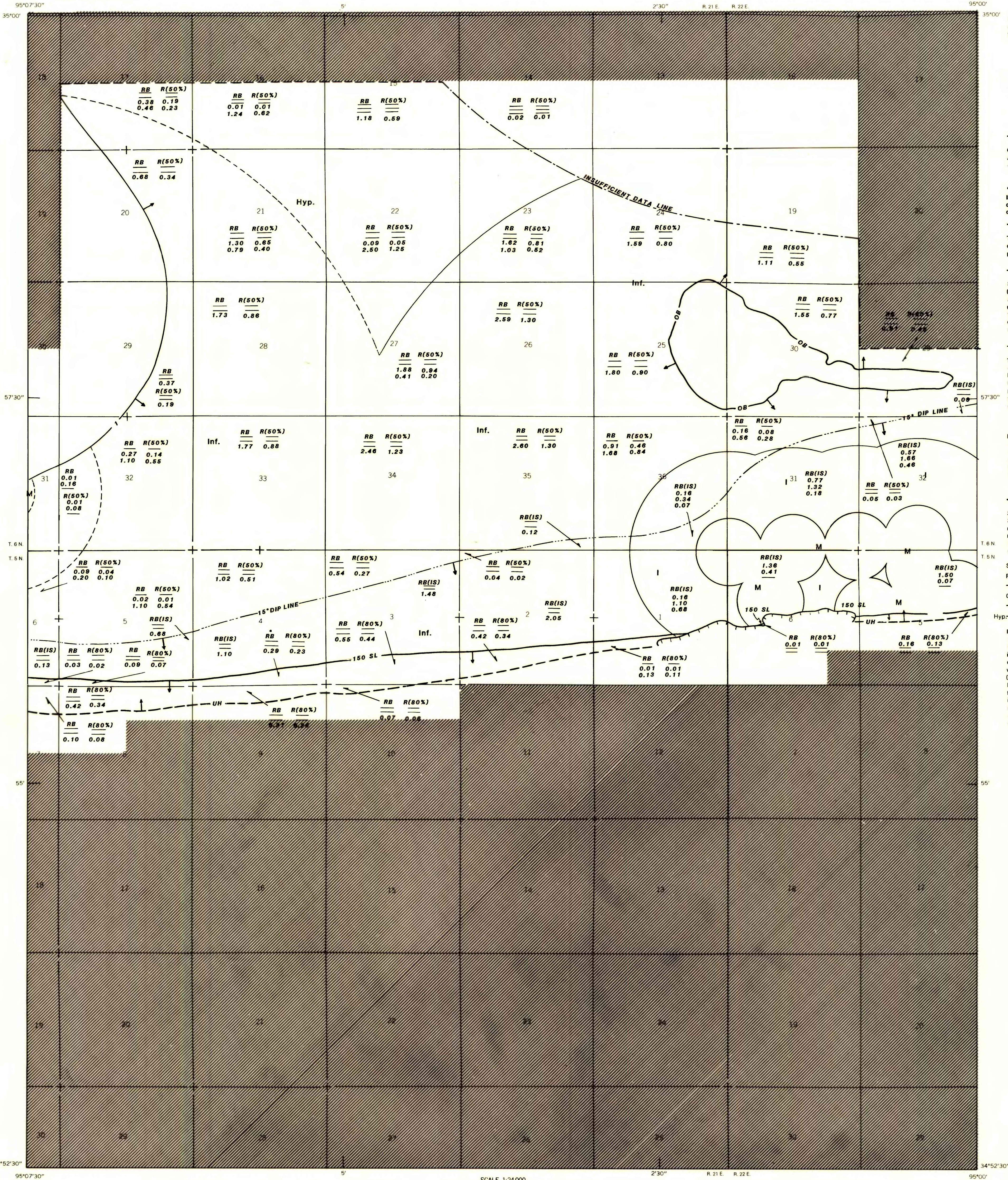
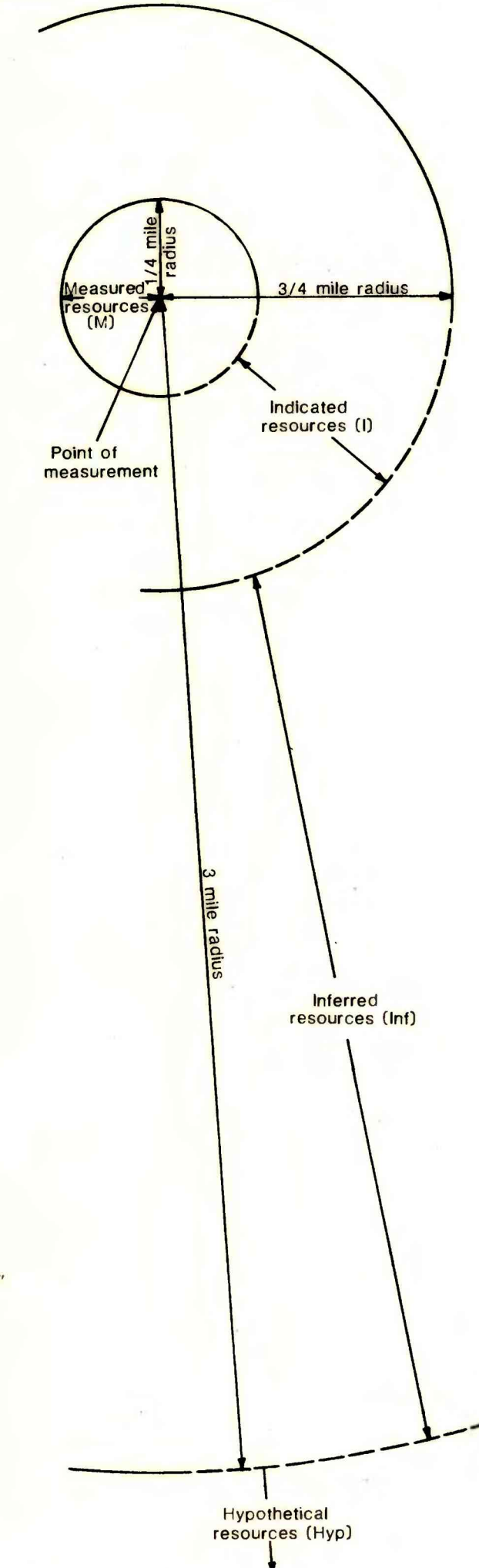


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



NOTE: The explanation has been compiled to depict all possible combinations of data and does not intentionally represent any particular data point.

- EXPLANATION
- NON-FEDERAL COAL LAND--Land for which the Federal Government does not own the coal rights.
- COAL ISOPACH--Showing thickness of coal, in feet. Arrow points towards area where coal bed is 1 foot or more thick.
- INSUFFICIENT DATA LINE--Coal thickness was not determined beyond line shown because of insufficient data.
- TRACE OF COAL BED OUTCROP--Showing symbol of name of coal bed (as shown on Plate 1). Arrow points toward coalbearing area.
- STRIPPING-LIMIT LINE--Boundary for surface mining (in this quadrangle, the 150-foot overburden isopach). Arrow points toward the area suitable for surface mining where the recovery factor is 80 % and away from the area suitable for subsurface mining (down dip to the 3,000-foot-overburden isopach) where the recovery factor is 50%.
- 15° DIP LINE--Boundary between areas where dip of coal bed is greater than 15° and where dip is less than 15°. Reserve Base tonnages are calculated beyond limit; Reserve tonnages are not. Arrow points toward area where coal bed dip is greater than 15°. This area is considered suitable for in-situ gasification only.
- MINE WORKINGS AND STRIPPED AREAS--Showing mined-out areas. Hachures are inside mined-out areas. Narrow strips between mines where undisturbed coal is less than 75 meters from the nearest mine are considered to have no reserves and are included within mined-out areas.
- 3000-FOOT OVERBURDEN LINE--Line showing 3000 feet (914.4 meters) of overburden. Coal resources (Reserve Base and Hypothetical) were not calculated in areas having more than 3,000 feet of overburden. Arrow points toward area with less than 3,000 feet of overburden.
- | Surface | | Subsurface | | In-situ | |
|---------|--------|------------|--------|---------|--------|
| RB | R(80%) | RB | R(50%) | RB(IS) | RB(IS) |
| — | — | 0.78 | 0.39 | — | — |
| 0.01 | 0.01 | 3.03 | 1.51 | — | — |
| — | — | 0.61 | 0.30 | 0.45 | — |
| Hyp. | — | Hyp. | 0.00 | — | — |
- IDENTIFIED AND HYPOTHETICAL COAL RESOURCES--Showing totals for Reserve Base (RB), Reserve (R), and Hypothetical (Hyp) resources in millions of short tons, for each section or part of section of non-leased Federal coal land, both within and beyond the stripping-limit line. Reserve (R) tonnage is calculated by multiplying the Reserve Base (RB) tonnage by the appropriate recovery factor. Reserve tonnages are not calculated from in-situ Reserve Base tonnages. Dash indicates no resource in that category. 0.00 indicates that there are resources less than 10,000 short tons, in that category.



BOUNDARY LINES--Enclosing areas of measured (M), indicated (I), inferred (Inf) parts of identified coal resources. Dashed where projected from adjacent quadrangles. Hypothetical (Hyp) coal resources are located beyond the inferred part of identified coal resources (more than 3 miles from a measurement point).

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

To convert feet to meters, multiply feet by 0.3048.

To convert miles to kilometers, multiply miles by 1.6093.

This report was prepared under contract to the U.S. Geological Survey, and has not been edited for conformity with Geological Survey editorial standards or stratigraphic nomenclature. Opinions expressed herein do not necessarily represent those of the Geological Survey.

FEDERAL COAL RESOURCE OCCURRENCE MAP OF THE NORTHEAST QUARTER OF THE RED OAK
15-MINUTE QUADRANGLE, LATIMER COUNTY, OKLAHOMA

COMPILED IN 1980

This map intended for land
use planning purposes only.

BY GEOLOGICAL SERVICES OF TULSA, INC., AND B. T. BRADY, USGS

PLATE 16

AREAL DISTRIBUTION AND IDENTIFIED RESOURCES

MAP OF THE UPPER HARTSHORNE COAL BED