UNITED STATES DEPARTMENT OF THE INTERIOR
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TRACE ELEMENTS MEMORANDUM
REPORT 606

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AIRBORNE RADIOACTIVITY SURVEY OF THE MILLER HILL AREA, CARBON COUNTY, WYOMING

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The accompanying map shows the results of an airborne radioactivity survey of 65 square miles in the vicinity of Miller Hill, Carbon County, Wyoming. The survey was made by the U. S. Geological Survey as part of a cooperative program with the U. S. Atomic Energy Commission.

At 500 feet above the ground, the width of the zone from which anomalous radioactivity is measured varies with the intensity of radiation of the source and, for strong sources, the width would be as much as 1,400 feet. Quarter-mile spacing of the flight paths of the aircraft should be adequate to detect anomalies from strong sources of radioactivity. However, small areas of considerable radioactivity midway between flight paths may not be noted.

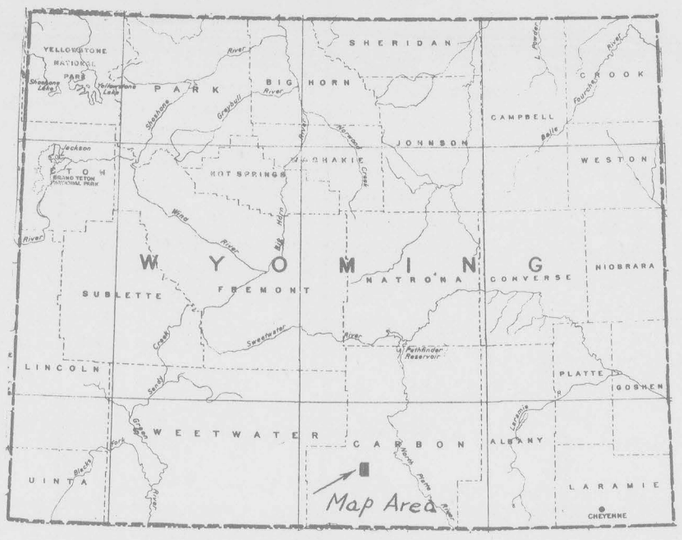
The approximate location of each radioactivity anomaly is shown on the accompanying map. The plotted position of an anomaly may be in error by as much as a quarter of a mile owing to errors in the available base maps or to the existence of areas on the base maps up to several square miles in which it is impossible to find and plot recognizable landmarks.

The radioactivity anomalies shown on the accompanying map cannot be interpreted in terms of either the radioactive content or the extent of the source materials. The present technique of airborne radioactivity measurement does not permit distinguishing between activity due to thorium and that due to uranium. An anomaly, therefore, may represent radioactivity due entirely to uranium, or to thorium, or to a combination of uranium and thorium.

A radioactivity anomaly that is recorded by airborne measurements at 500 feet above the ground can be caused by:

1. A moderately large area in which the rocks and soils are slightly more radioactive than the rocks and soils of the surrounding area.
2. A smaller area in which the rocks and soils are considerably more radioactive than rocks and soils in the surrounding area.
3. A very small area in which the rocks and soils are much more radioactive than the rocks and soils of the surrounding area.

Any particular anomaly, therefore, may represent either slightly greater-than-average radioactivity over an area of a few thousand square feet, or high radioactivity over an area of a few hundred square feet. The radioactivity anomalies shown on the accompanying map indicate localities of more-than-average radioactivity and, therefore, suggest areas in which uranium or thorium deposits are more likely to occur.



INDEX MAP OF WYOMING SHOWING
LOCATION OF MAP AREA

AIRBORNE RADIOACTIVITY SURVEY OF THE MILLER HILL AREA, CARBON COUNTY, WYOMING

1 0 1 2 3 4 Miles

2000 0 2000 4000 6000 8000 10000 12000 14000 16000 18000 20000 Feet

34713

FEBRUARY 1953

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