



GULF OF

MAINE

AIRBORNE GAMMA-RAY SPECTROMETRIC MAP

Airborne gamma-ray spectrometry data collected in Nova Scotia during the summer of 1958, are presented:

- (1) as contour maps of the 100-ft contour, the potential, equivalent uranium and potassium contour concentrations, and the 100-ft, 200-ft and 300-ft contours;
- (2) as stacked profiles of the same radiometric parameters plotted for each of the 100-ft flight lines.

The airborne measurements were made using a four window spectrometer, with lead and 200 µm Al in the NaI(Tl) detector. The data were stored on magnetic tape and the various flight lines were printed on each of the contour maps.

Calculations in measured directly from the 1.46 MeV gamma-ray spectrum corrected for background, where necessary and observed are indicated by a check mark. The error in the equivalent uranium and potassium concentrations is approximately 1.5% for the 100-ft contour, and 2.0% for the 200-ft and 300-ft contours. The error ranges used are as follows:

Unit Count	1.46-MeV Peak	40K-1460 KeV Peak
Potassium	6-42	1.35-1.57 MeV
Uranium	30-218	3.45-3.68 MeV
Thorium	17-230	2.12-2.33 MeV

Details, methods and procedures used are explained under 0-C contour intervals, total counts and 5-second intervals. The data base was constructed for 100-ft lines, and the 100-ft contour interval was used for the 100-ft contour interval. The contour interval used to produce the contour maps and profiles was derived by A.L. Smith (1957) "Composite Gamma Spectrometry Data Processing Manual", G.S.C. Open File 773a, p. 108.

The values for the radiometric concentrations shown on the contour maps are based on the concentrations that they are assumed to be over the ground surface by the spectrometer, an area which may contain varying amounts of surface moisture and surface vegetation. As a result the concentrations shown on the contour maps are not necessarily true but the concentrations in the vicinity. Hence, the radiometric distribution shown above is for the ground near the distribution of the elements in the vicinity.

Factors for converting airborne measurements to ground concentrations are given in the table below. The values are based on the data from the 100-ft flight line in the Ottawa area in the same ground radiometric concentrations (U, K, and Th) as in the table below. For more information see the table in the table below, G.S.C. Paper 18-20, pp. 38-77.

The conversion factors are an approximately same listed below.	Total Count	1.46 MeV Peak	40K-1460 KeV Peak
	1.00	1.00	1.00
	1.00	1.00	1.00
	1.00	1.00	1.00
	1.00	1.00	1.00

Total count measurements are presented as sets of radiometric concentration (U, K, and Th) in the table below. The values are based on the data from the 100-ft flight line in the Ottawa area in the same ground radiometric concentrations (U, K, and Th) as in the table below. For more information see the table in the table below, G.S.C. Paper 18-20, pp. 38-77.

In order to produce the contour maps, data along the flight lines were averaged into segments of 5-second intervals. The values are based on the data from the 100-ft flight line in the Ottawa area in the same ground radiometric concentrations (U, K, and Th) as in the table below. For more information see the table in the table below, G.S.C. Paper 18-20, pp. 38-77.

(1) The 100-ft contour interval is based on the 100-ft contour interval. The values are based on the data from the 100-ft flight line in the Ottawa area in the same ground radiometric concentrations (U, K, and Th) as in the table below. For more information see the table in the table below, G.S.C. Paper 18-20, pp. 38-77.

Corrections between (1) and (2) results in a rectangular grid (approximately 100 ft by 100 ft) in the same units as the data. As a result of these corrections the radiometric contour lines can now be drawn in the direction perpendicular to the flight lines, which may be desirable in some cases. The values are based on the data from the 100-ft flight line in the Ottawa area in the same ground radiometric concentrations (U, K, and Th) as in the table below. For more information see the table in the table below, G.S.C. Paper 18-20, pp. 38-77.

The project was carried out according to the standard specifications of the National Radiometric Laboratory Program.

Source: Statistics and Geophysics Division
 Geological Survey of Canada
 Map not material supplied by Statistics and Geophysics Branch.
 Cartography by Geological Survey of Canada.

EQUIVALENT URANIUM / POTASSIUM 10⁴
ANNAPOLIS-SHELburnE
 NOVA SCOTIA
 PARTS OF 21 A, B, 20 D
 Scale 1:25000

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