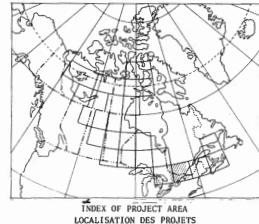
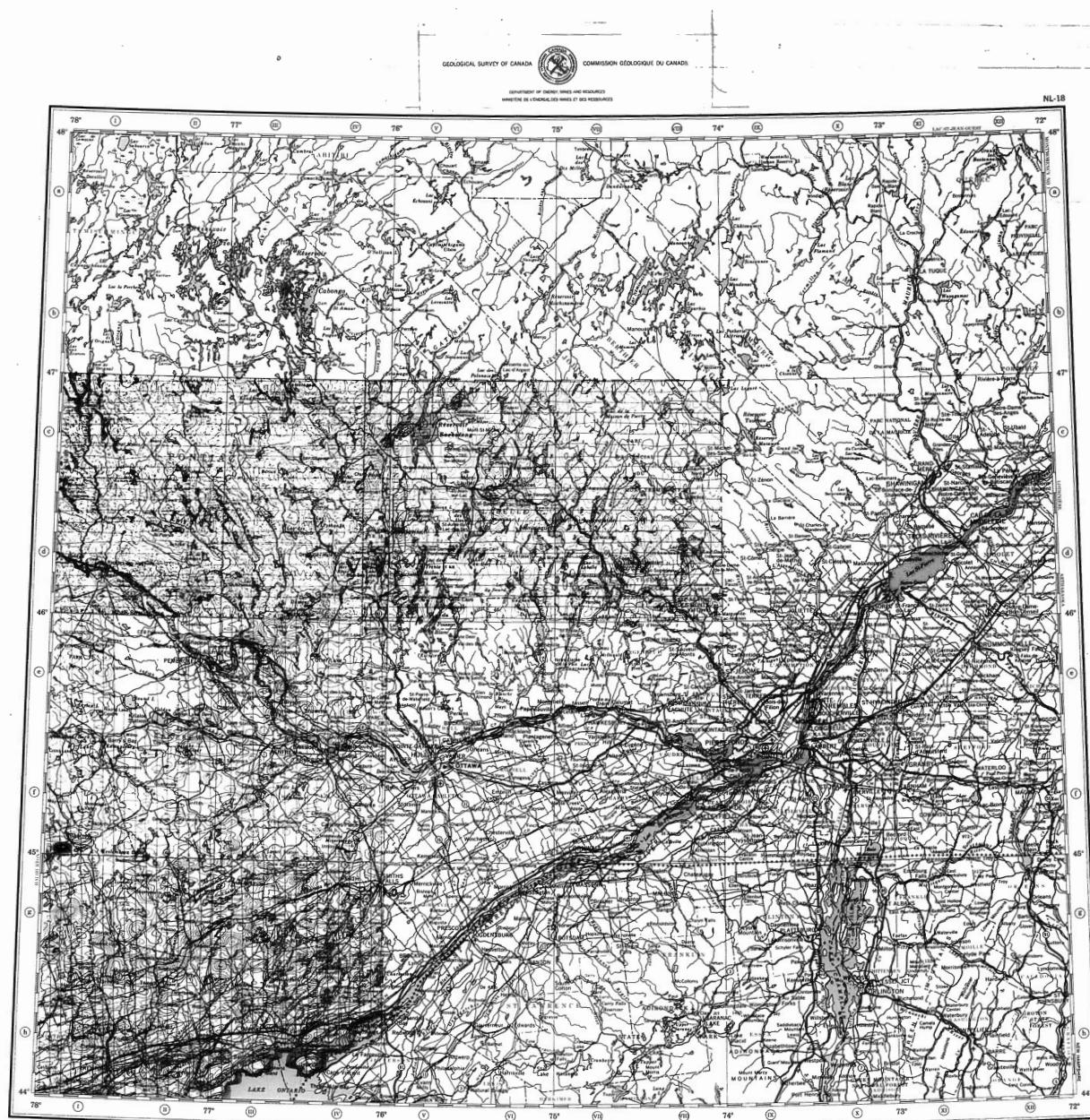


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by scanning the original publication.

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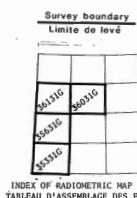


RADIOACTIVITY MAP - CARTE DE LA RADIOACTIVITÉ
TOTAL COUNT (Ur) - COMpte TOTAL (Ur)
OTTAWA

Scale 1:1 000 000 Échelle
Kilomètres 25 50 75 Kilomètres

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OPEN FILE
DOSSIER PUBLIC
1072
1972
GEOLOGICAL SURVEY
COMMISSION GÉOLOGIQUE
OTTAWA



INDEX OF RADIOMETRIC MAP SHEETS
TABLEAU D'ASSEMBLAGE DES FEUILLES

LEGEND

This map represents a preliminary 1:1 000 000 compilation of radiometric survey data originally published at 1:250 000. The published surveys have been photographically reduced on the International 1:1 000 000 grid. No attempt has been made to fit contours along survey boundaries or to level survey blocks. The 1:1 000 000 scale is convenient for comparison with other types of geophysical, geochemical and geological data available for large areas.

This map was compiled from airborne gamma ray spectrometric data recorded digitally along the flight lines shown. The surveys were conducted by various contractors following Geological Survey specifications. The spectrometers, with 50 l of sodium iodide (NaI(Tl)) detectors, recorded gamma radiation in four windows, with the following energy ranges:

Energy Window	Element Analyzed	Nuclide Measured	Gamma Ray (MeV)
1.37 - 1.57	Potassium	40K	1.46
1.66 - 1.86	Uranium	214Po	1.76
2.41 - 2.81	Thorium	232Th	2.62
0.41 - 2.81	Total Count		

The survey aircraft were flown at a 5 km line spacing, at a planned survey altitude of 120 m above ground level, at a ground speed of 190 m/s and 240 m/h. The data were corrected for background radiation, spectral scattering and deviations from the planned survey altitude. The corrected count rates were converted to concentrations in picocuries equivalent uranium, equivalent thorium and their ratios, using the same factors as obtained from flights over a test strip near Ottawa, Ontario. Count rates from the total count channel were converted to units of radio-element concentration (Ur) as recommended in TARA Technical Report Series No. 174, 1976.

Data were then smoothed along the flight lines (rejecting values over water), gridded, and contoured. Because of this averaging, actual terrain profiles which accompany the full-scale 1:250 000 survey must be examined to localize sharp features which may not be apparent on the contoured maps.

The contoured values represent average surface radioelement concentrations. The areas sampled generally include some outcrop, overburden, swamps and small bodies of water. Consequently the concentrations shown on the contoured map are generally lower than the concentrations in bedrock. However, the radioelement distribution patterns shown by the contour maps reflect the distribution of the elements in the bedrock and are useful to outline the rock bodies. High radioelement levels usually relate to acid igneous rocks. Abnormal radioelement ratios may indicate unusual geochemical processes.

LÉGENDE

La présente carte est une compilation préliminaire au millionième de données radiométriques qui ont déjà été publiées à l'échelle de 1/250 000. Ces dernières ont été réduites par voie photographique sur un fond international 1:1 000 000. La carte n'a pas été établie en tenant compte des limites des lignes du niveau ni de l'ajustement des contours le long des lignes de vol. L'échelle du millionième est pratique pour établir des comparaisons avec d'autres types de données géophysiques, géochimiques et géologiques disponibles sur de grandes surfaces.

La carte a été établie à partir de données obtenues de spectro-métrie par rayons gamma qui avaient été enregistrées numériquement le long des lignes de vol indiquées. Les levés ont été exécutés par la Commission géologique du Canada ou par des entrepreneurs qui se sont conformés aux spécifications de l'organisme. Les spectromètres, équipés de 50 l de détecteurs à iodure de sodium (NaI(Tl)), ont enregistré le rayonnement gamma dans quatre intervalles d'énergie:

Intervalle d'énergie	Élément analysé	Nucléide mesuré	Energie gamma (MeV)
1,37 - 1,57	Potassium	40K	1,46
1,66 - 1,86	Uranium	214Po	1,76
2,41 - 2,81	Thorium	232Th	2,62
0,41 - 2,81	Compte total		

L'avion utilisé a volé le long de lignes espacées de 5 km, à une altitude de 120 m, et à une vitesse par rapport au sol comprise entre 190 et 240 m/s. Les levés ont été effectués en tenant compte de la diffusion spectrale et les facteurs par rapport à l'altitude prévue. Les taux de comptage corrigés ont été convertis en concentrations en picocuries équivalent uran-40, équivalent thorium et équivalent de thorium, et leurs rapports respectifs, établis à l'aide de facteurs de conversion déduits des résultats de vols au dessus d'une aire d'essai près d'Ottawa, en Ontario. Les taux de comptage obtenus par rapport à l'aire d'essai ont été convertis en unités de concentration de radioélément (Ur), comme le recommande le Rapport technique de l'AITEA, série n° 174, 1976.

Les données ont été égales le long des lignes de vol, sans tenir compte des valeurs mesurées au-dessus de l'eau, puis quadrillées et contournées. Il est nécessaire d'examiner les profils de sommation qui accompagnent le levé à 1:250 000, afin de localiser les détails transversaux. Les anomalies de ces données, n'apparaissent pas sur les cartes de contours.

Les valeurs attribuées aux contours représentent des concentrations moyennes de radioéléments en surface. Les surfaces échantillonnées comprennent des affleurements, des morts-terrains, des marécages et de petites étendues d'eau. C'est pourquoi les concentrations indiquées par la carte de contours peuvent être nettement inférieures aux concentrations prévues dans la roche en place. Cependant, les distributions qui y sont données rendent compte fidèlement de la répartition des éléments dans la roche en place et permettent de déterminer les corps rocheux. Une forte concentration de radioéléments correspond habituellement à la présence de roches ignées acides. Un rapport异常 peut révéler l'existence de processus géochimiques inhabituels.

GAMMA RAY SPECTROMETRIC SPECIFICATIONS FOR SURVEYS CONDUCTED IN CANADA

Les spécifications ci-dessous sont destinées à servir de guide pour les sondages effectués au Canada. Elles sont destinées à faciliter la comparaison entre les résultats des sondages effectués dans le système de coordonnées internationales.

TG: 100% (équivalent uran-40)
UR: 80% (équivalent uran-40)
TH: 70% (équivalent thorium-232)

Si plusieurs sondages sont effectués dans une même zone, il est recommandé que les sondages soient effectués dans des directions différentes.

On ne doit pas faire de sondage dans une zone où il existe une forte concentration de radioéléments dans la roche en place.

Il faut éviter de faire des sondages dans les zones industrielles, dans les zones urbaines et dans les zones où il existe une forte concentration de radioéléments dans la roche en place.

Il faut éviter de faire des sondages dans les zones industrielles, dans les zones urbaines et dans les zones où il existe une forte concentration de radioéléments dans la roche en place.

LEGEND

This map represents a preliminary 1:100 000 scale compilation of radiometric survey data originally published at 1:250 000. The published surveys have been geographically reorganized into the index areas of the world (1:100 000 scale). There has been no attempt to fit contours along survey boundaries or to level survey blocks. The 1:100 000 scale is convenient for comparison with other types of geophysical, geochemical and geological data available for large areas.

This map was compiled from airborne gamma ray spectrometric data recorded during flight lines shown. The surveys were carried out by the Geological Survey of Canada, by contractors following Geological Survey techniques. The spectrometers, with 50 g of sodium iodide [NaI(Tl)] detectors, recorded gamma radiation in four windows, with the following energy ranges:

Energy Window	Element Analyzed	Nuclide Measured	Gamma Ray Energy (MeV)
1.37 - 1.57	Potassium	40K	1.46
1.66 - 1.86	Uranium	214Bi	1.76
2.41 - 2.81	Thorium	208Tl	2.62
0.41 - 2.81	Total Count		

The survey aircraft flew at a 5 km line spacing, at a planned survey altitude of 120 m, and at a ground speed between 190 km/h and 210 km/h. The aircraft had no leaded radiation shield, spectral scattering and deviations from the planned survey altitude. The corrected count rates were converted to concentrations of potassium, equivalent uranium, equivalent thorium and total counts using conversion factors derived from flights over a test strip near Ottawa, Ontario. Count rates from the total count channel were converted to units of radio-element concentration (ppm) as recommended in IAEA Technical Report Series No. 174, 1976.

Data were then smoothed along the flight lines (rejecting values over water), gridded and contoured. Because of this averaging, small-scale radio-element patterns which encompass a full cell 1:250 000 survey must be examined to localize shallow features which may not be apparent on the contoured maps.

The contoured values represent average surface radioelement concentrations. The areas sampled generally include some outcrop, overburden, swamps and small bodies of water. Consequently the concentrations indicated on the contour map are generally lower than the concentrations in the bedrock. Bedrock radioelement distribution patterns shown by the contour maps reflect the distribution of the elements in the bedrock and are useful to outline various rock bodies. High radioelement levels usually relate to acid igneous rocks. Abnormal radioelement ratios may indicate unusual geochemical processes.

LÉGENDE

La présente carte est une compilation préliminaire au millionième de données radioélémentaires qui ont déjà été publiées à l'échelle de 1:250 000. Ces dernières ont été réduites par voie photographique sur le fond de cette carte. La carte intitulée "radiométrie" n° 1 pour l'ensemble des régions du monde à l'échelle des levés de niveau des blocs. L'échelle du millionième est pratique pour établir des comparaisons avec d'autres types de données géophysiques, géochimiques et géologiques disponibles sur de grandes surfaces.

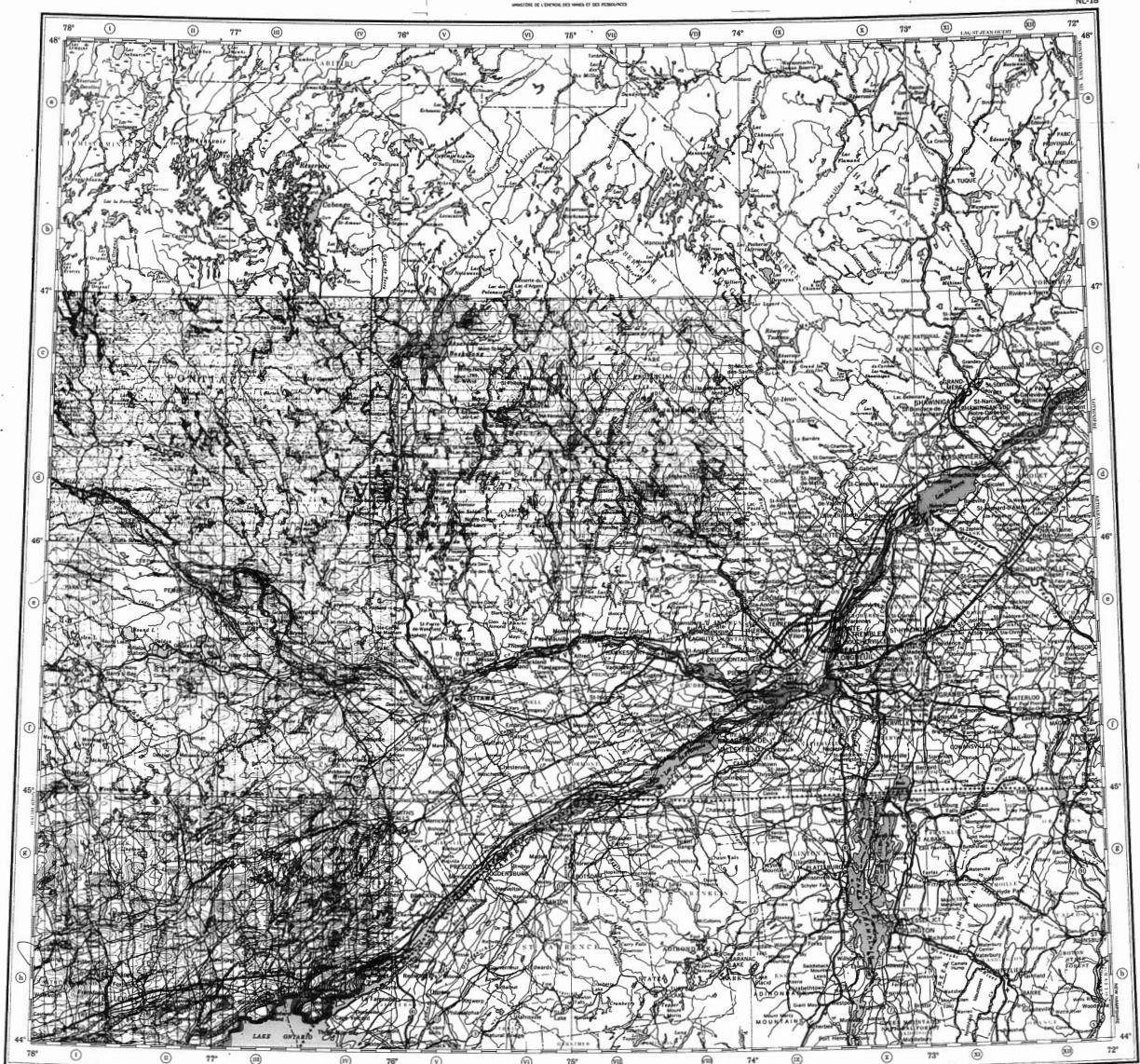
La carte a été établie à partir de données obtenues de spectro-métrie par avion qui avaient été enregistrées numériquement le long des lignes de vol indiquées. Les levés ont été exécutés par la Commission géologique du Canada ou par des entrepreneurs qui se sont conformés aux spécifications de l'organisme fédéral. Les détecteurs utilisés étaient à l'aide de sodium [NaI(Tl)], qui enregistrait le rayonnement gamma dans quatre intervalles d'énergie:

Interval d'énergie (MeV)	Élément analysé	Nucléide mesuré	Energie gamma (MeV)
1.37 - 1.57	Potassium	40K	1,46
1.66 - 1.86	Uranium	214Bi	1,76
2.41 - 2.81	Thorium	208Tl	2,62
0.41 - 2.81	Compte total		

L'avion utilisé a volé le long des lignes espacées de 5 km, à une altitude de 120 m, et à une vitesse par rapport au sol comprise entre 190 et 210 km/h. L'avion n'avait pas de bouclier blindé au rayonnement gamma, ni de diffuseur spectral, et les écarts par rapport à l'altitude prévue. Les taux de comptage corrigés ont été convertis en concentrations de potassium, d'équivalent uranium et d'équivalent thorium, et ont été rapportés à des facteurs fiables à l'aide de facteurs de conversion déduits des résultats de vols au dessus d'une aire d'essai près d'Ottawa, en Ontario. Les taux de comptage donné par le canal du compte total ont été convertis en unités de concentration radioélémentaire comme le recommande le Rapport technique de l'IAEA, série n° 174, 1976.

Les données ont été égaleées le long des lignes de vol, sans toutefois dépasser des intervalles au-dessus de l'eau, puis quadrillées et contournées. Il est nécessaire d'examiner les profils de sommation qui accompagnent le levé à 1:250 000, afin de localiser des détails tranchants qui, à cause de l'égrossissement des données, n'apparaissent peut-être pas sur cette carte.

Les valeurs attribuées aux contours correspondent aux concentrations de radioéléments à la surface. Les surfaces schématisées comprennent des affleurements, des morts-terrains, des marécages et de petites étendues d'eau. C'est pourquoi les concentrations indiquées par la carte sont comparables avec celles indiquées par les distributions qui y sont données devant cerner fidèlement la répartition des éléments dans la roche en place et permettent la délimitation des différentes masses rocheuses. Une forte concentration radioélémentaire indique généralement la présence de roches ignées acides. Un rapport normal peut révéler l'existence de processus géochimiques inhabituels.

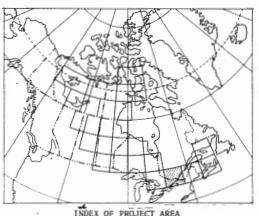
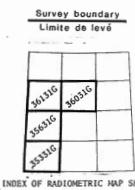
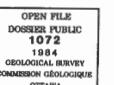


RADIOACTIVITY MAP - CARTE DE LA RADIOACTIVITÉ (%)

OTTAWA

Scale 1:1 000 000 Échelle

Kilometres 25 50 75 Kilomètres
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GAMMA RAY SPECTROMETRIC SURVEY FOR SAMPLES PUBLISHED IN 1:250 000

Survey published prior to 1973 were combined to create a total of 1000 surveys.

100 surveys were combined to create a total of 100 surveys.

10 surveys were combined to create a total of 10 surveys.

1 survey was combined to create a total of 1 survey.

Where possible, individual surveys were used to create a survey series for each project. Where possible, individual surveys were used to create a survey series for each project.

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~~LEGEND~~

~~s-a-p~~ represents a preliminary 1:100,000 compilation of aerometric survey data originally reduced at 1:250,000. The published surveys have been photographically reduced to the International Map of the World (I.M.W.) base. There has been no attempt to fit contours along survey boundaries or to level surveys. The 1:100,000 scale is convenient for comparison with other types of geophysical, geochemical and geological data available for large areas.

A map was compiled from airborne gamma ray spectrometric data recorded digitally along the flight lines shown. The surveys were carried out by the Geological Survey of Canada or by contractors following Geological Survey specifications. The spectrometers, using 50 l of sodium iodide [NaI(Tl)] detectors, recorded gamma radiation in four windows, with the following energy ranges:

Energy Window	Element Analyzed	Nuclide Measured	Gamma Ray Energy (MeV)
7 - 1.57	Potassium	40K	1.46
5 - 1.86	Uranium	214Bi	1.76
2 - 2.81	Thorium	208Tl	2.62
2 - 2.81	Total Count		

survey aircraft were flown at a 5 km line spacing, at a mean survey altitude of 120 m, and at a ground speed between 110 km/h and 240 km/h. The data were corrected for background radiation, spectral scattering and deviations from the planned trajectory. Total count rates were converted to concentrations of potassium equivalents, radon equivalents, and their ratios using conversion factors derived from flights over a test strip near Ottawa, Ontario. Count rates in the total count channel were converted to units of radioactive concentration (Ur) as recommended in IAEA Technical Report Series No. 174, 1976.

were then smoothed along the flight lines (rejecting values over water), gridded, and contoured. Because of this averaging, check radioclement profiles which accompany the full scale 1:250,000 survey must be examined to localize sharp features which may not be apparent on the contoured maps.

The contoured values represent average surface radiocesium concentrations. The areas sampled generally include some outcrop, talus, scree, and small bodies of water. Consequently the concentrations indicated by the contour map are generally lower than the concentrations in bedrock. However, the radiocesium distribution patterns shown by the contour maps reflect the distribution of the elements in the bedrock and are useful to outline various rock bodies. High radiocesium levels usually indicate to acid igneous rocks. Anomalous radiocesium ratios indicate unusual geochemical processes.

LÉGENDE

Présente carte est une compilation préliminaire au millionième des données radiométriques qui ont déjà été publiées à l'échelle de 1:50 000. Ces dernières ont été réduites par voie photographique sur le fond de carte de la Carte internationale du monde. Il n'y a pas d'ajustement des coordonnées et les limites sont tracées uniquement pour servir de repères. L'échelle du millionième est utilisée pour établir des comparaisons avec d'autres types de données physiques, géochimiques et géologiques disponibles sur de petites surfaces.

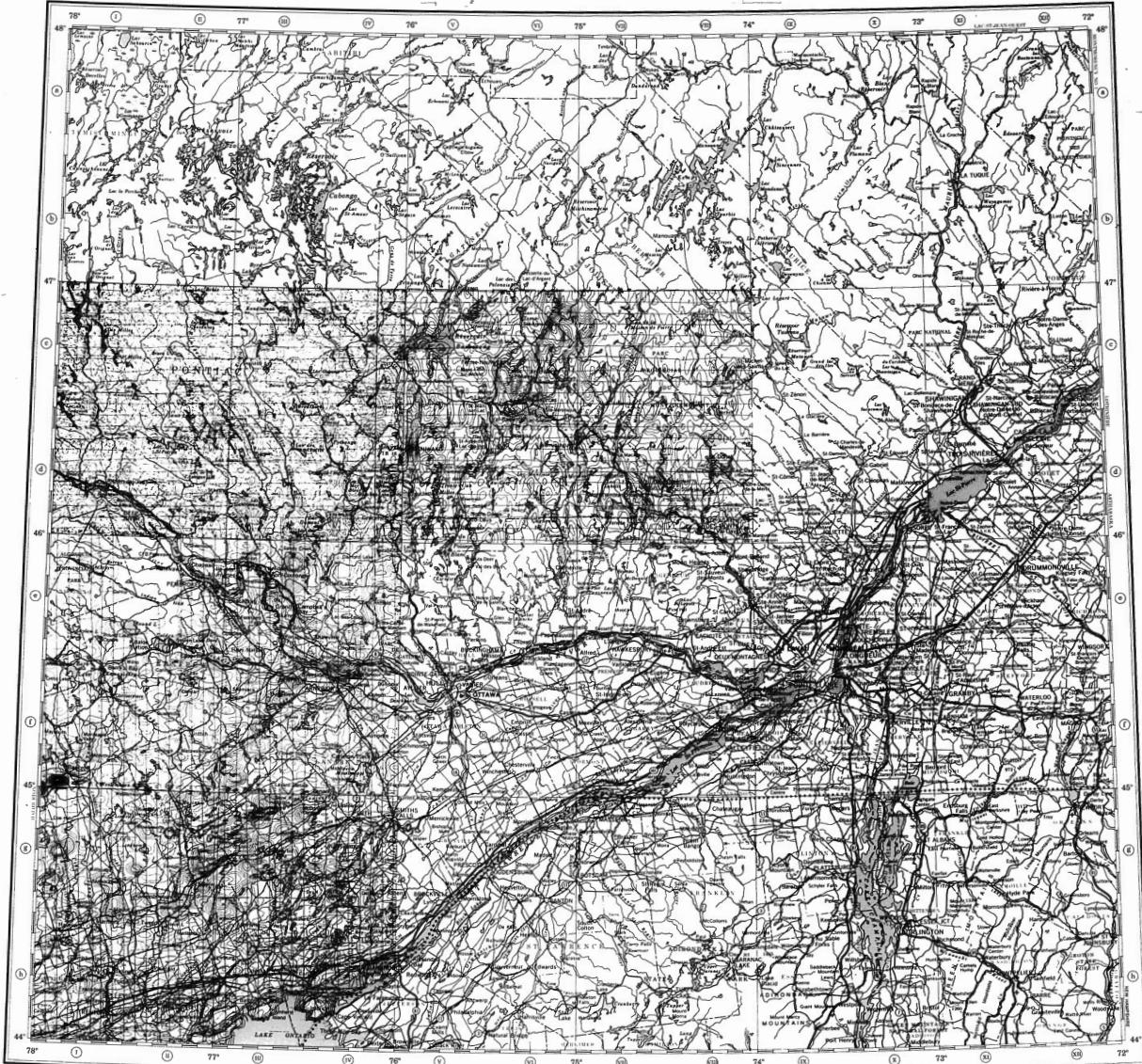
partie a été réalisée à partir de données afréniennes de spectro-métrie par rayonnement gamma qui avaient été enregistrées numériquement long des lignes du vol indiquées. Les levés ont été exécutés par la Commission géologique du Canada ou par des entrepreneurs qui sont conformes aux spécifications de l'organisme fédéral. Les spectromètres, équipés de 50 l de détecteurs à iodure de sodium (TlI), ont enregistré le rayonnement gamma dans quatre intervalles d'énergie:

Énergie d'énergie (MeV)	Élément analysé	Nucléide mesuré	Energie gamma (MeV)
- 1,57	Potassium	40K	1,46
- 1,86	Uranium	235U	1,76
- 2,81	Thorium	208Tl	2,62
- 2,81	Compte total		

romat utilisé à la long de lignes équipées de 5 km, à une vitesse de 120 m., et à une vitesse par rapport au sol comprise entre 190 et 240 km/h. Les données ont été corrigées pour le effet de fond, la diffusion spectrale et les écarts par rapport à l'absorption primaire. Des rapports corrigés sont obtenus pour différentes concentrations de potassium et d'uranium équivalents de thorium, et leurs rapports respectifs, établis à de facteurs de conversion déduits des résultats de voies desservies d'autre part par l'Ontario Hydro. Les taux moyens d'absorption de ces deux types de terrain ont été convertis en concentrations de radioélément (UR), comme le recommande le rapport technique de l'AIEA, série n° 174, 1976.

données ont été égalisées le long des lignes de voie, sans tenir compte des valeurs mesurées au-dessus de l'eau, puis quadrillées etournées. Il est nécessaire d'examiner les profils de sommation accompagnant le levé à 1/250 000, afin de localiser des détails chanta qui, à cause de l'égalisation des données, n'apparaissent pas sur les cartes de contours.

valeurs attribuées aux contours représentent des concentrations massiques de radioisotopes en surface. Les surfaces échantillonnières sont des affleurements, des mors-terrains, des marécages et éventuellement d'eau. C'est pourquoi les concentrations indiquées par la carte de contours sont généralement plus élevées aux endroits où l'affleurement est placé. Ces concentrations attribuées qui y sont données rendent compte fidèlement de la répartition des éléments dans la roche en place et permettent la caractérisation de différentes masses rocheuses. Une forte concentration de radioisotopes peut également être à la présence de gisements hydrocarburés. Un rapport normal peut révéler l'existence de processus géochimiques inhabituels.



RADIOACTIVITY MAP - CARTE DE LA RADIOACTIVITÉ
 EQUIVALENT URANIUM (ppm) - ÉQUIVALENT D'URANIUM (ppm)

OTTAWA

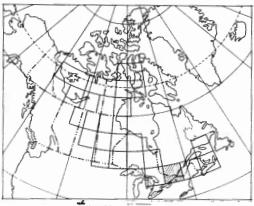
A horizontal scale bar at the bottom of the map. It features a central vertical tick mark labeled '0' and two horizontal tick marks labeled '25' and '50'. Above the scale bar, the text 'Scale 1:1 000 000 Échelle' is centered. To the left of the scale bar, the word 'Kilomètres' is written above a numerical value '25'. To the right, another 'Kilomètres' label is placed below a numerical value '75'.

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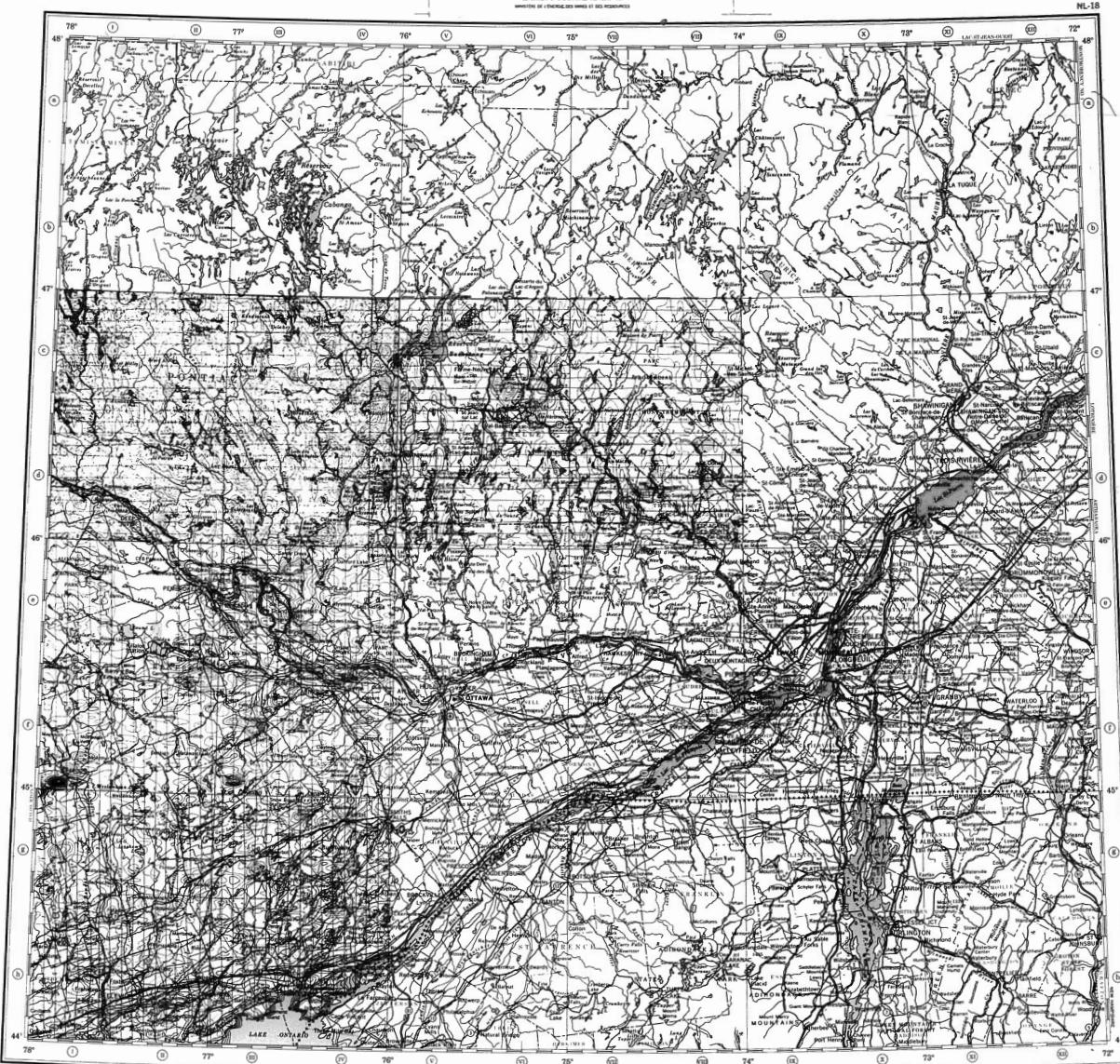
OPEN FILE
DOSSIER PUBLIC
1072
1984
GEOLOGICAL SURVEY
COMMISSION GÉOLOGIQUE
OTTAWA

A survey boundary map featuring a 3x3 grid. The grid contains the following labels:

- Top-left cell: 36131G
- Top-right cell: 36031G
- Middle-left cell: 35831G
- Bottom-left cell: 35331G
- All other cells are empty.



LEGEND

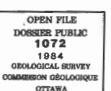
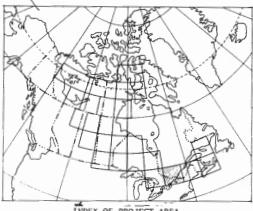


RADIOACTIVITY MAP - CARTE DE LA RADIOACTIVITÉ
 EQUIVALENT THORIUM (ppm) - ÉQUIVALENCE DE THORIUM (ppm)

OTTAWA

Scale 1:1 000 000 Échelle

5 0 25 50 75 Kilometers



INDEX OF RADIOMETRIC MAP SHEETS

This map represents a preliminary 1:1 000 000 compilation of aeromagnetic survey data originally published at 1:250 000. The international surveys have been photographically reduced on the International Map of the World (I.M.W.) base. There has been no attempt to fit contours along survey boundaries or to level survey blocks. The 1:1 000 000 scale is convenient for comparison with other types of geophysical, geochemical and geological data available for large areas.

This map was compiled from airborne gamma ray spectrometric data recorded digitally along the flight lines shown. The surveys were carried out by the Geological Survey of Canada or by contractors following Geological Survey specifications. The spectrometers, with 50 l of sodium iodide [NaI(Tl)] detectors, recorded gamma radiation in four windows, with the following energy ranges:

Energy Window	Element Analyzed	Nuclide Measured	Gamma Ray Energy (MeV)
.37 - 1.57	Potassium	40K	1.46
.66 - 1.86	Uranium	232 ^U	1.76
.41 - 2.81	Thorium	208 ^{Tl}	2.62
.41 - 2.81	Total Count		

The survey aircraft were flown at a 5 km line spacing, at a planned survey altitude of 120 m, and at a ground speed between 90 km/h and 240 km/h. The data were corrected for background radiation, spectral scattering, and deviations from the planned survey altitude. The corrected count rates were converted to concentrations of potassium-40 by dividing the measured count rates by their ratios using conversion factors derived from flights over a test strip near Ottawa, Ontario. Count rates from the total count channel were converted to units of radioactive element concentration (Bq/c) as recommended in IAEA Technical Report Series No. 174, 1976.

nts were then smoothed along the flight lines (rejecting values over water), gridded, and contoured. Because of this averaging, stacked radioclock profiles which accompany the full scale 1:250 000 survey must be examined to localize sharp features which may not be apparent on the contoured maps.

The contoured values represent average surface radioelement concentrations. The areas sampled generally include some outcrop, overburden, swamps and small bodies of water. Consequently the concentrations indicated by the contour map are generally lower than the concentrations in bedrock. However, the radioelement distribution patterns shown by the contour maps reflect the distribution of the elements in the bedrock and are useful to outline the various rock bodies. High radioelement levels usually relate to acid igneous rocks. Anomalous radioelement ratios may indicate unusual geochemical processes.

LÉGENDE

La présente carte est une compilation préliminaire au millionième des données radiométriques qui ont déjà été publiées à l'échelle de 1/250 000. Ces dernières ont été réduites par voie photographique sur le fond de carte de la Carte internationale du monde. Il n'y a pas eu d'ajustement des contours le long des limites du niveau ni des diverses zones en blocs. L'échelle du millionième est pratiquement stable pour établir des comparaisons avec d'autres types de données physiques, géochimiques et géologiques disponibles sur de grandes surfaces.

La carte a été établie à partir de données sériesennes de spectroscopie par rayons gamma qui avaient été enregistrées numériquement le long des lignes de vol indiquées. Les levés ont été exécutés pour la Commission géologique du Canada ou par des entrepreneurs qui se sont conformés aux spécifications de l'organisme fédéral. Les spectromètres, équipés de 50 I de détecteurs à iodure de sodium (NaI(Tl)), ont enregistré le rayonnement gamma dans quatre intervalles d'énergie:

Intervalle d'énergie (MeV)	Élément analysé	Nucléide mesuré	Energie gamma (MeV)
37 - 1,57	Potassium	^{40}K	1,46
66 - 1,86	Uranium	^{234}Bi	1,76
41 - 2,81	Thorium	^{208}Tl	1,76
41 - 2,81	Compte total		2,62

aéronautique a volé à une longueur de ligne espacées de 5 km., à une altitude de 120 m., et à une vitesse par rapport au sol comprises entre 190 et 240 km./h. Les données ont été corrigées pour le yonement de fond, la diffusion spectrale et les écarts par rapport à la vitesse prévue. Les résultats sont comparés, dans l'ensemble, à ceux obtenus par conversion de potassium-40-d'équivalent d'uranium-235 convertis en thorium, et leurs rapports respectifs, établis à l'aide de facteurs de conversion déduits des résultats de vol, sont comparés avec ceux obtenus par conversion en Uranium-235. Les taux comparés donnent un indice du contenu en thorium qui doit être convertie en unités de concentration de radioisotopes (Urc), comme la recommande Rapport technique de l'AIEA, série n° 174, 1976.

des données ont été réalisées le long des lignes de vol, sans tenir compte des valeurs mesurées au-dessus de l'eau, puis quadrillées et entourées. Il est nécessaire d'examiner les profils de sommation et accompagnement le levé à 1/250 000, afin de localiser des détails anachars qui, à cause de l'égalisation des données, n'apparaissent qu'avec des sur-ou sous-pressions.

Les valeurs attribuées aux contours représentent des concentrations de radonissimes en surface. Les surfaces schallentonnées apprennent des affleurements, des morts-terrains, des marécages et quelques étendues d'eau. C'est pourquoi les concentrations indiquées par la carte de densité sont plus élevées aux affleurements qui présentent la roche à la place. Ces attributions qui sont rendues compte fidèlement de la partition des éléments dans la roche en place et permettent la illustrate de différentes masses rocheuses. Une forte concentration de radonissimes résultant à la présence de certaines grottes ou cavités. Un rapport normal peut révéler l'existence de processus géochimiques inhabituels.

LEGEND

This map represents a preliminary 1:100 000 compilation of radiometric survey data originally published 1:250 000. The radiometric surveys have been photographically reduced on the International 1:100 000 scale. The original 1:250 000 scale has been no attempt to fit contours along survey boundaries or to level survey blocks. The 1:100 000 scale is convenient for comparing with other types of geophysical, geochemical and geological data available for large areas.

This map was compiled from aircraft gamma ray spectrometric data collected along the flight lines shown. The surveys were carried out by the Geological Survey of Canada or by contractors following Geological Survey specifications. The spectrometers, with 50 l of sodium iodide [NaI(Tl)] detectors, recorded gamma radiation in four windows, with the following energy ranges:

Energy Window	Element Analyzed	Nuclide Measured	Gamma Ray Energy (MeV)
1.37 - 1.57	Potassium	40K	1.46
1.66 - 1.86	Uranium	232U	1.76
2.41 - 2.81	Thorium	230Th	2.62
0.41 - 2.81	Total Count		

The survey aircraft were flown at a 5 km line spacing, at a planned survey altitude of 120 m, and at a ground speed between 190 and 240 km/h. The data were corrected for background radiation, spectral scattering and deviations from the planned survey altitude. The corrected count rates were converted to concentrations of potassium, equivalent uranium and equivalent thorium, using conversion factors obtained from flights over a test strip near Ottawa, Ontario. Count rates from the total count channel were converted to units of radio-element concentration (Nrc) as recommended in IAEA Technical Report Series No. 174, 1976.

Data were then smoothed along the flight lines (representing values over 5 km grid), and contour lines were drawn. Because of this averaging, standard radiometric features which appear on the full-scale 1:250 000 survey must be examined to localize sharp features which may not be apparent on the contoured maps.

The contoured values represent average surface radioelement concentrations. The areas sampled generally include some outcrop, alluvium, sand and bodies of water. Concentrations indicated by the contour lines are generally lower than the concentrations in bedrock. However, the radioelement distribution patterns shown by the contour maps reflect the distribution of the elements in the bedrock and are useful to outline various terranes. High radioelement levels usually relate to acid igneous rocks. Anomalous radioelement ratios may indicate unusual geochemical processes.

LÉGENDE

La présente carte est une compilation préliminaire au millionième de données radioélémentaires qui ont déjà été publiées à l'échelle de 1:250 000 et dérivées et réduites par voie photographique sur le fond de la carte de la Commission géologique du Canada. Il y a peu d'ajustement des contours le long des limites du niveau ni de nivellement des blocs. L'échelle du millionième est pratique pour étudier des comparaisons avec d'autres types de données géophysiques, géochimiques et géologiques disponibles sur de grandes surfaces.

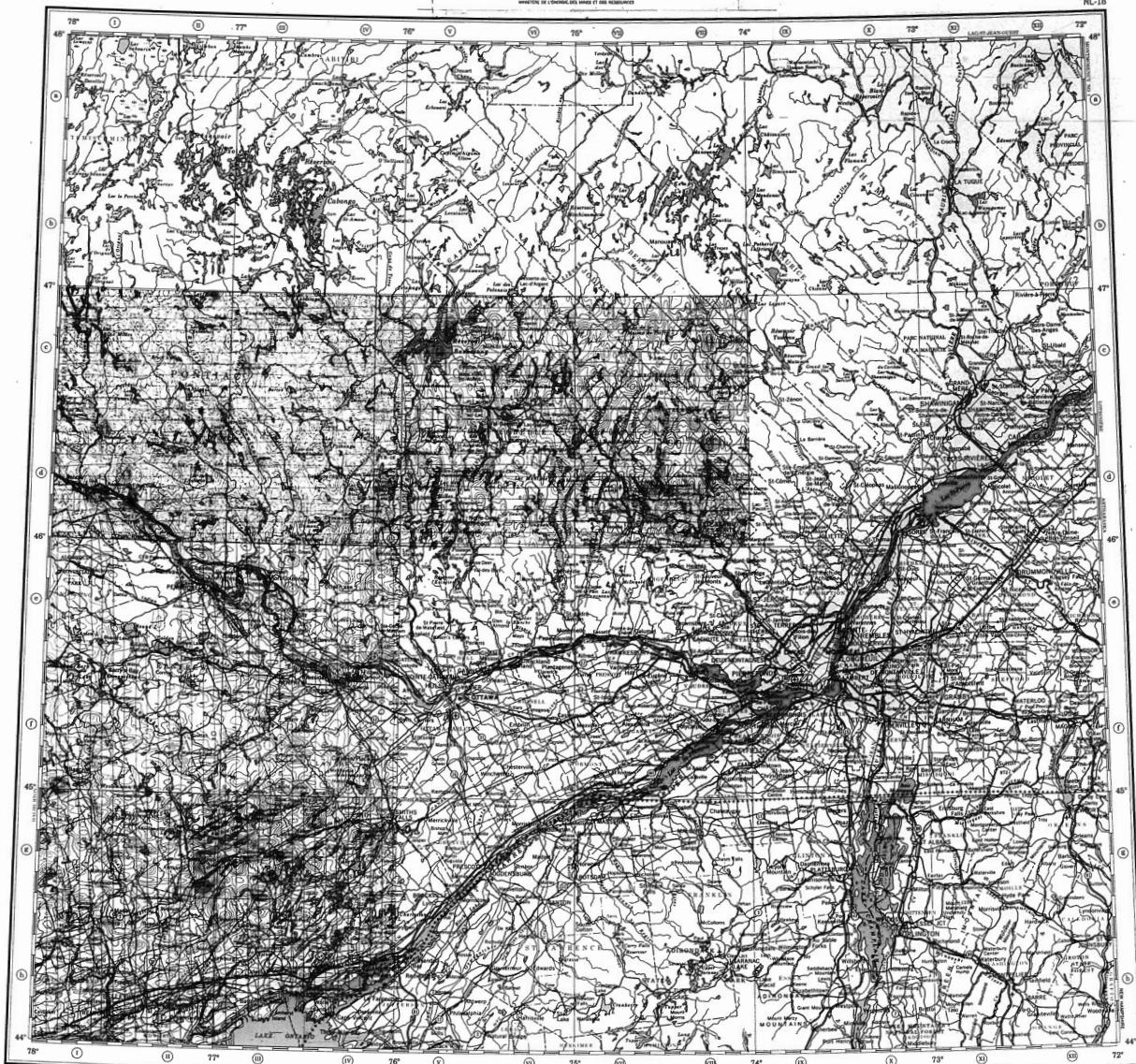
La carte a été établie à partir de données aériennes de spectroscopie par rayons gama qui avaient été enregistrées le long des lignes de vol indiquées. Les levés ont été exécutés par la Commission géologique du Canada ou par des entreprises qui ont suivi les spécifications de la Commission géologique. Les spectromètres, équipés de 50 l de détecteurs à iodure de sodium [NaI(Tl)], ont enregistré le rayonnement gamma dans quatre intervalles d'énergie:

Intervalle d'énergie (MeV)	Élément analysé	Nucléide mesuré	Energie gamma (MeV)
1,37 - 1,57	Potassium	40K	1,46
1,66 - 1,86	Uranium	232U	1,76
2,41 - 2,81	Thorium	230Th	2,62
0,41 - 2,81	Compte total		

L'avion utilisé a volé le long des lignes espacées de 5 km, à une altitude de 120 m, et à une vitesse de vol comprise entre 190 et 240 km/h. Les données ont été corrigées pour le rayonnement de fond, la diffusion spectrale et les écarts par rapport à l'altitude prévue. Les taux de comptage corrigés ont été convertis en concentrations de potassium, d'uranium et d'équivalent de thorium, et les rapports respectifs établis à l'aide de facteurs de conversion déduits des résultats de vol au dessus d'une aire d'essai près d'Ottawa, en Ontario. Les taux de comptage sont ensuite convertis en unités de radioélément (Nrc) comme le recommande le rapport technique de l'IAEA, série n° 174, 1976.

Les données ont été égalisées le long des lignes de vol, sans tenir compte des valeurs mesurées au-dessus de l'eau, puis quadrillées et contournées. Il est nécessaire d'examiner les profils de sommation qui accompagnent le levé à 1:250 000 afin de localiser les détails transversaux qui sont perdus lors de la compilation des données, s'espacent peut-être sur les cartes de contours.

Les valeurs attribuées aux contours représentent des concentrations moyennes de radioéléments en surface. Les surfaces échantillonées comprennent des affleurements, des worts-terrains, des marécages et de petites étendues d'eau. C'est pourquoi les concentrations indiquées par les contours sont généralement plus faibles que les concentrations présentes dans la roche en place. Cependant, les distributions qui y sont données rendent compte fidèlement de la répartition des éléments dans la roche en place et permettent la délimitation des terranes. Une forte concentration de radioéléments correspond habituellement à la présence de roches ignées acides. Un rapport anormal peut révéler l'existence de processus géochimiques inhabituels.



RADIOACTIVITY MAP - CARTE DE LA RADIOACTIVITÉ

RAPPORT eU/eTh RATIO

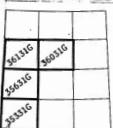
OTTAWA

Scale 1:1 000 000 Échelle

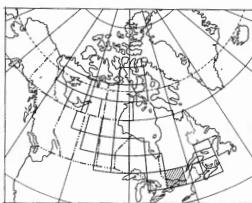
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COMMISSION GÉOLOGIQUE
OTTAWA

Survey boundary
Limite de levé



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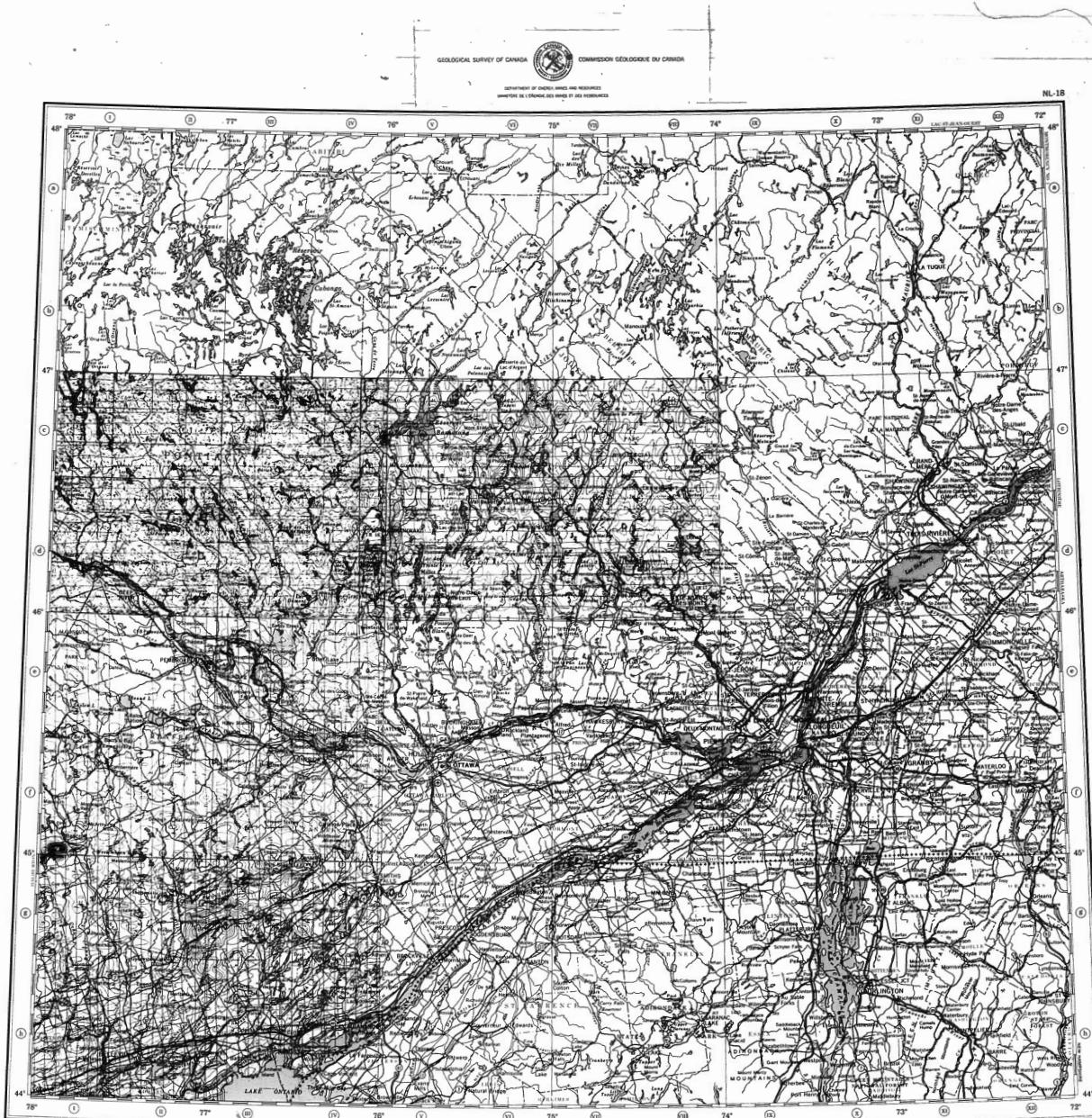
1:100 000 SURVEY DATA FOR JEWELL SURVEY

1:250 000 SURVEY DATA FOR JEWELL SURVEY

1:100 000 SURVEY DATA FOR JEWELL SURVEY

— LEGEND —

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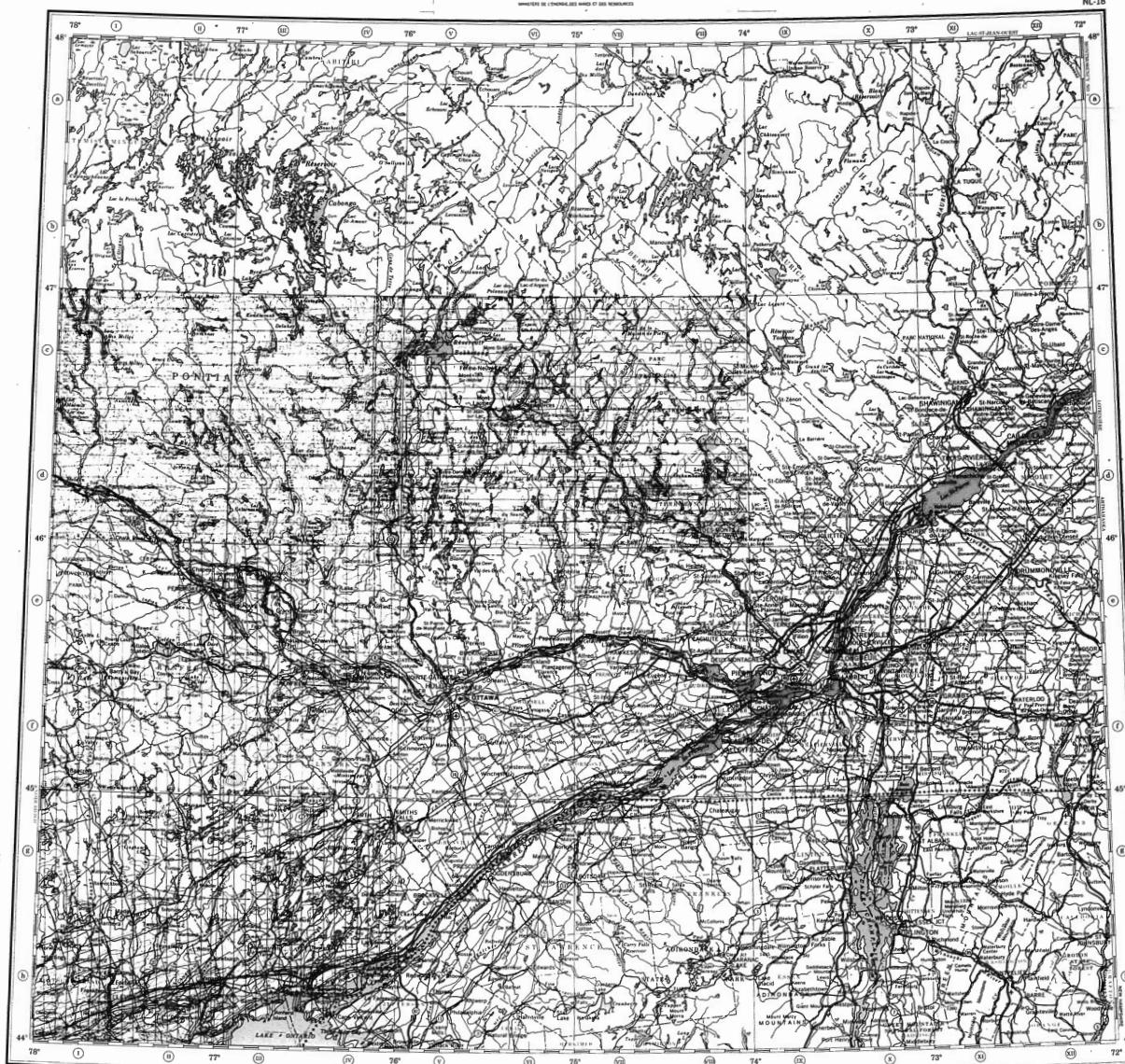
RADIOACTIVITY MAP - CARTE DE LA RADIOACTIVITÉ
RAPPORT eU/K RATIO
OTTAWA

Scale 1:1 000 000 Échelle
 Kilometres 25 0 25 50 75 Kilometres
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1984
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COMMISSION GÉOLOGIQUE
OTTAWA

36131G	36031G	
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35331G		

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TABLEAU D'ASSEMBLAGE DES FEUILLES

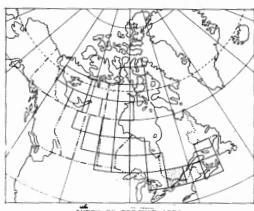


RADIOACTIVITY MAP - CARTE DE LA RADIOACTIVITÉ
RAPPORT eTh/K RATIO

OTTAWA

Scale 1:1 000 000 Échelle
Kilometres 0 25 50 75 Kilomètres

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GEOLOGICAL SURVEY
COMMISSION GÉOLOGIQUE
OTTAWA



INDEX OF RADIONOMIC MAP SHEETS
TABLEAU D'ASSEMBLAGE DES FEUILLES

LEGEND

This map represents a preliminary 1:1 000 000 compilation of radioactivity survey data originally published at 1:250 000. The radioactivity surveys have been originally recorded at the International Map of the World (I.M.W.) base. There has been no attempt to fit contours along survey boundaries or to level survey lines. The 1:1 000 000 scale is convenient for comparison with other types of geophysical, geochemical and geological data available for large areas.

This map was compiled from airborne gamma ray spectrometric data recorded digitally along the flight lines shown. The surveys were carried out by the Geological Survey of Canada or by contractors following Geological Survey specifications. The spectrometers, with their associated electronics, were designed to record gamma radiation in four windows, with the following energy ranges:

Energy Window	Element Analyzed	Métal/méride Mesuré	Gamma Ray Energy (MeV)
1,37 - 1,57	Potassium	40g	1,46
1,66 - 1,86	Uranium	21481	1,76
2,41 - 2,61	Thorium	20871	2,62
0,41 - 2,81	Total Count		

The survey aircraft were flown at a 5 km line spacing, at a planned survey altitude of 120 m, and at a ground speed between 190 km/h and 240 km/h. The data were corrected for background radiation, spectral scattering and deviations from the planned survey altitude. The corrected count rates were converted to concentrations of potassium, uranium and thorium, and their ratios using conversion factors derived from flights over a test strip near Ottawa, Ontario. Count rates from the total count channel were converted to units of radioactivity per second (Ci) as recommended in IAEA Technical Report Series No. 174, 1976.

Data were then smoothed along the flight lines (rejecting values over water), gridded, and contoured. Because of this averaging, stacked radioluminescence profiles which accompany the full scale 1: 250 000 survey must be examined to localize sharp features which may not be apparent on the contoured maps.

The contoured values represent average surface radioactivity concentrations. The areas sampled generally include some outcrop, overwash, and alluvium. The values indicated by the contours are the concentrations indicated by the contour map are generally lower than the concentrations in bedrock. However, the radioelement distribution patterns shown on the contour maps reflect the distribution of these elements in the bedrock. The distribution of various rock bodies. High radioactivity levels usually relate to acid igneous rocks. Anomalous radioactivity ratios may indicate unusual geochemical processes.

LEGENDE

La présente carte est une compilation préliminaire au millionième de données aériennes gamma qui est défilé et préparée à l'échelle de 1/250 000. Ces dernières sont établies en utilisant les données sur le fond de carte de la Carte internationale du monde. Il n'y a pas eu d'ajustement des contours le long des limites du levé ni de nivellement des blocs. L'échelle du millionième est pratique pour l'interprétation et l'analyse d'autres types de données géophysiques, géochimiques et géologiques disponibles sur de grandes surfaces.

La carte a été établie à partir de données aériennes de spectro-métrie par rayons gamma qui avaient été enregistrées numériquement le long des lignes de vol indiquées. Les levés ont été exécutés par la Commission géologique du Canada, avec l'aide de l'organisme qui était alors conforme aux spécifications de l'organisme fédéral. Les spectromètres, équipés de 50 1 de détecteurs à iodure de sodium [NaI(Tl)], ont enregistré le rayonnement gamma dans quatre intervalles d'énergie:

Intervalle d'énergie (MeV)	Élément analysé	Métal/méride mesuré	Energie gamma (MeV)
1,37 - 1,57	Potassium	40g	1,46
1,66 - 1,86	Uranium	21481	1,76
2,41 - 2,61	Thorium	20871	2,62
0,41 - 2,81	Total Count		

L'avion utilisé a volé le long de lignes espacées de 5 km, à une altitude de 120 m, et à une vitesse par rapport au sol comprise entre 190 et 240 km/h. Les données ont été corrigées pour le rayonnement du fond, la diffusion spectrale et les écarts par rapport à l'altitude prévue. Tous les contours ont été corrigés de la concentration en potassium, d'équivalents d'uranium et d'équivalents de thorium, et leurs rapports respectifs, établis à l'aide de facteurs de conversion déduits des résultats de vol. Les données d'énergie totale, ou totales, ont été converties en unités de concentration de radioélément (UR), comme le recommande le Rapport technique de l'AIEA, série n° 174, 1976.

Les données ont été égalisées le long des lignes de vol, sans tenir compte des valeurs mesurées au-dessus de l'eau, puis quadrillées et contournées. Il est nécessaire d'examiner les profils de formation qui sont associés à la carte de contours pour déterminer les failles tranchantes qui, à cause de l'égalisation des données, n'apparaissent peut-être pas sur leur carte de contours.

Les valeurs attribuées aux contours représentent des concentrations moyennes de radioéléments en surface. Les surfaces échantillonées comprennent des affleurements, des morts-terrains, des marécages et de petites zones d'humidité. C'est pourquoi les données indiquées sur la carte de contours sont généralement inférieures aux concentrations présentes dans la roche en place. Cependant, les distributions qui y sont données rendent compte fidèlement de la répartition des radioéléments dans la roche et de la séparation de différentes masses rocheuses. Une forte concentration de radioéléments correspond habituellement à la présence de roches ignées acides. Un rapport normal peut révéler l'existence de processus géochimiques inhabituels.

LEGEND

Surveys published prior to 1971 were corrected to stated or ratio of counts. They were not necessarily the same as the original data. The following application note should be applied to the data:

- A: No correction
- B: 20% increase
- C: 10% increase
- D: 5% increase
- E: 2% increase
- F: 1% increase
- G: 0.5% increase
- H: 0.2% increase
- I: 0.1% increase
- J: 0.05% increase

When plotting these corrections should be checked to ensure adequate survey coverage. It is also important to note that the survey boundary is determined by the survey lines and not the individual profile lines themselves.

On the other hand, some older data sets may not contain enough information to allow the application of these corrections. In such cases, the survey boundary will be determined by the individual profile lines.

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