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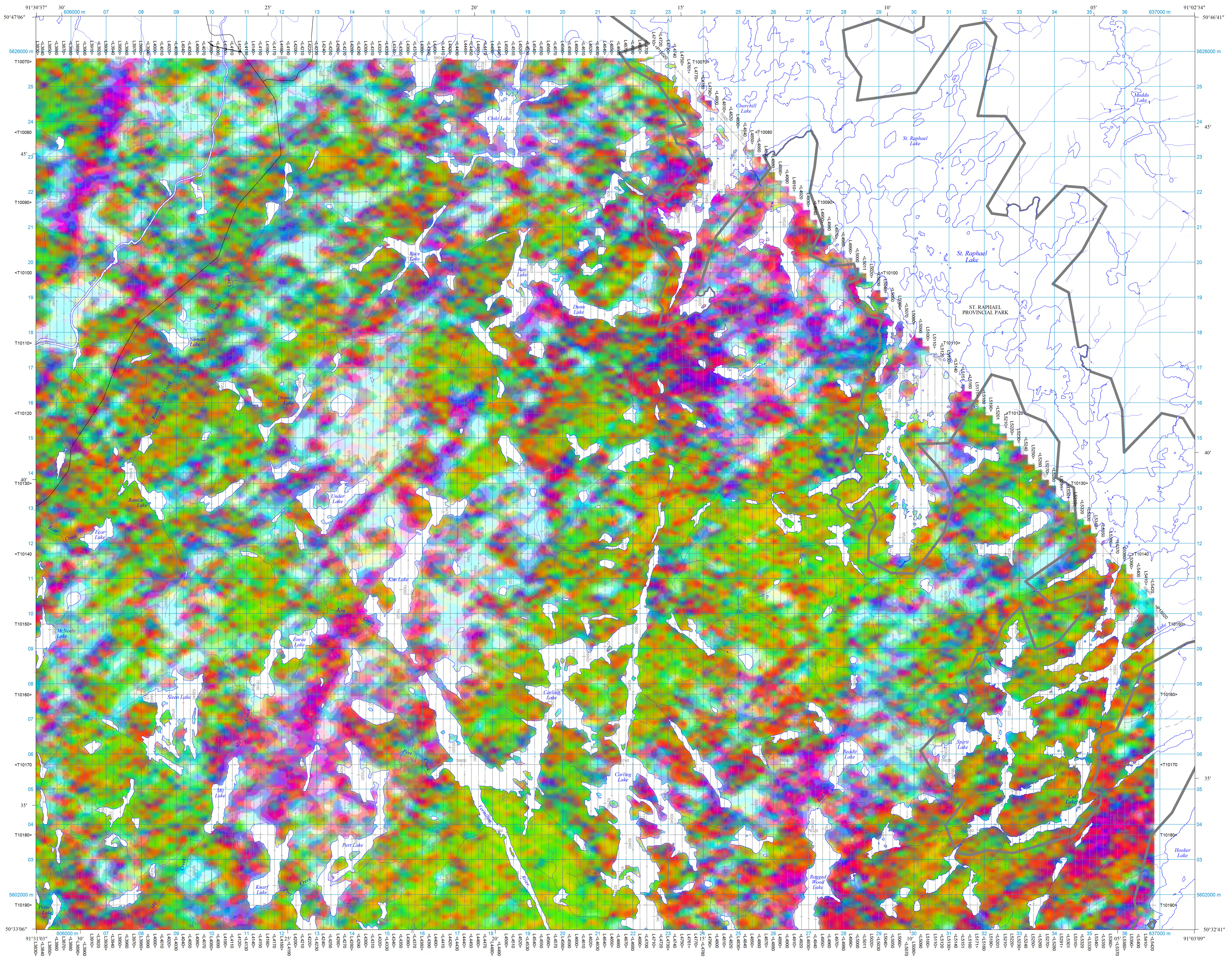
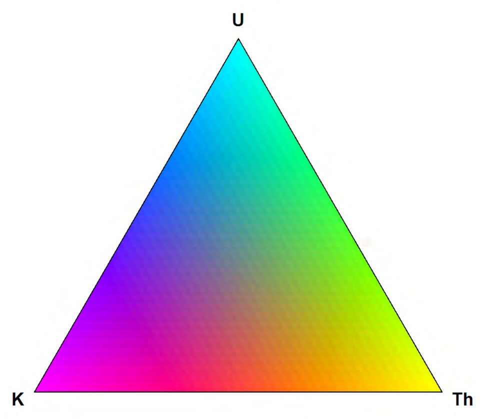


LEGEND

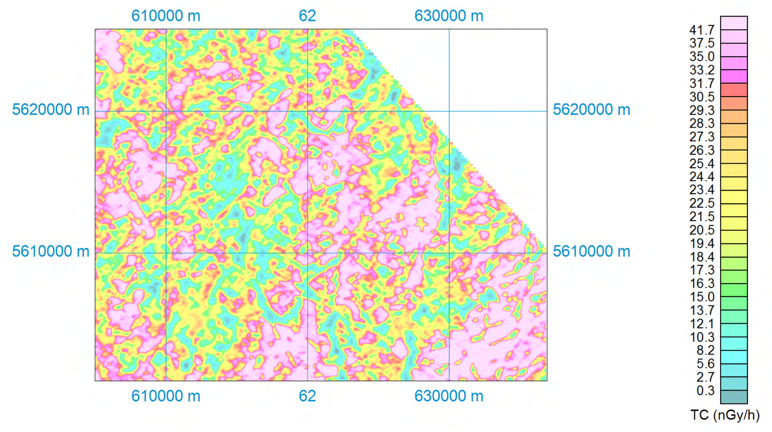
FLIGHT LINE INFORMATION

Line number
Line direction
Fiducial

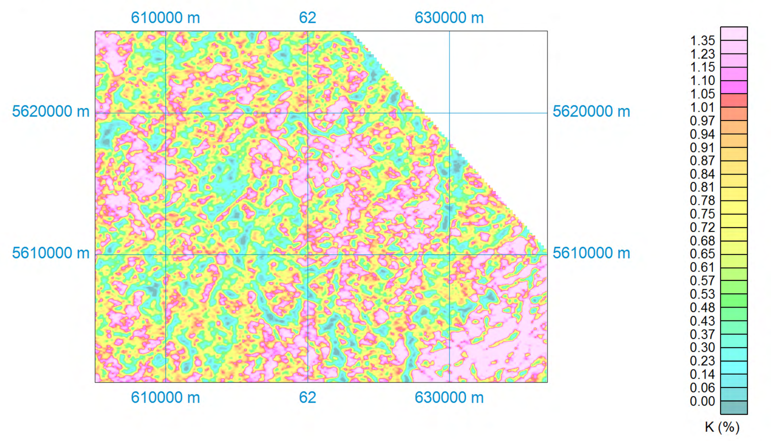
TERNARY RADIOELEMENT IMAGE



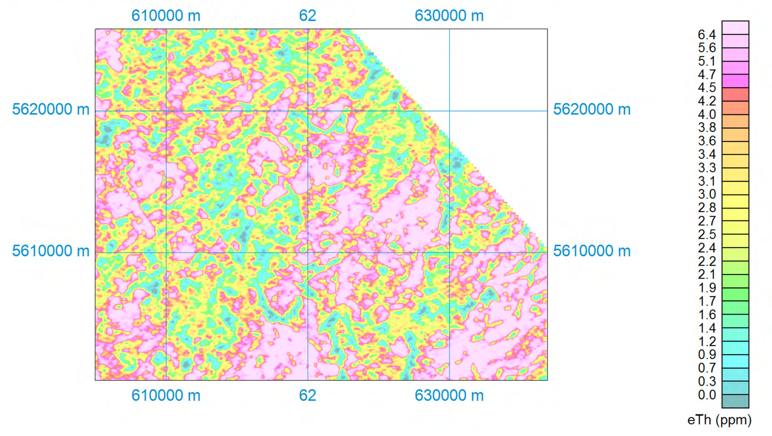
TOTAL COUNT (natural air absorbed dose rate, nGy per hour)



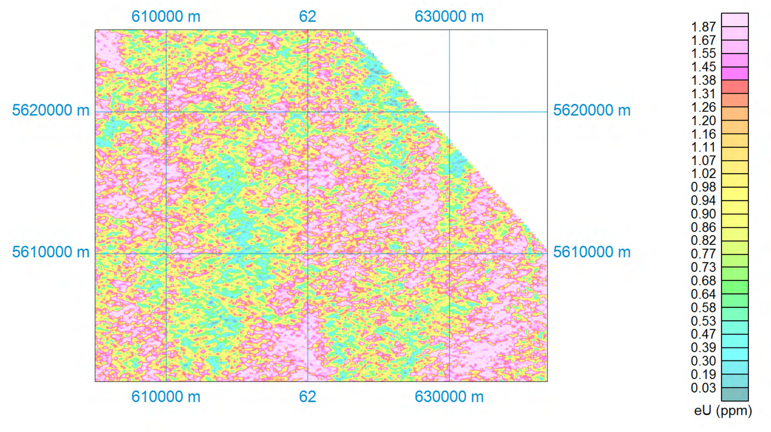
K (potassium concentration, %)



eTh (equivalent thorium, ppm)



eU (equivalent uranium, ppm)



DESCRIPTIVE NOTES

INTRODUCTION

The data comprising this map are derived from the results of an airborne magnetic gradiometer and gamma-ray spectrometric survey carried out by Terraquest Ltd. The survey was flown using 1 Piper PA-31 Navajo aircraft and 1 King Air C-90 aircraft. The aircraft were equipped with 3 Scintrex and 1 Geometrics magnetic sensors, Radiation Solutions and Pico Envirotec gamma-ray spectrometers, GPS navigation system and digital data acquisition systems.

TERNARY RADIOELEMENT MAP

The ternary radioelement image was prepared by modulating the red, green and blue (RGB) components of the colour spectrum using the normalized radioelement counts of potassium (K), equivalent thorium (eTh) and equivalent uranium (eU), respectively. Color intensity of each component was then scaled by a nonlinear quantization of the component sum to obtain discrete brightness levels. Brighter areas display zones of higher total count. The total count tends to outline unit boundaries and structure.

The gamma-ray spectrometer response represents radioactivity emanating from the upper 30 cm of the earth's surface. The surface concentrations are influenced by varying amounts of outcrop, overburden, vegetation cover, soil moisture and surface water.

SURVEY PARAMETERS

AIRCRAFT
- Type: Piper Navajo PA-31-325, Beechcraft King Air C90
- Registration: C-GXKS, C-GCFZ

MAGNETOMETER
- Type: Single cell cesium vapour Scintrex CS-2 and CS-L (C-GXKS), Geometrics G-822A and in tail Scintrex CS-3 (C-GCFZ)
- Sensitivity: 0.005 nT
- Noise level: 0.1 nT
- Sample interval: 10 readings per second
- Sensor locations:
  - Piper PA-31-325 -wingtips (transverse separation: 14.6 m)
    -tail stinger (longitudinal separation: 9.2 m)
  - King Air C90 -wingtips (transverse separation: 17.63 m)
    -tail stinger (longitudinal separation: 10.86 m)
- Compensation: RMS DAARC500 (both aircraft)
- Data acquisition: RMS DAARC500 (both aircraft)

GAMMA-RAY SPECTROMETER SYSTEM
- Type: Radiation Solution RS-500, console RS-501 with crystal detector packs RSX-5 (C-GXKS); Pico Envirotec gamma-ray spectrometer GRS5 with crystal detector packs (C-GCFZ)
- Data Acquisition: RMS DAARC (C-GXKS), Laptop (C-GCFZ)
- Downward-looking crystal volume: 33.6 L
- Upward-looking crystal volume: 8.4 L
- Number of channels: 256 (both aircraft)
- Sample interval: 1 reading per second
- Sensor location: near centre of aircraft
- Potassium window: 1370 to 1570 keV
- Uranium window: 1660 to 1860 keV
- Thorium window: 2410 to 2810 keV
- Total count window: 410 to 2810 keV

NAVIGATION SYSTEM
- Survey navigation: Ag-Nav Inc. Guia P151 (both aircraft)
- GPS receiver: Trimble Ag132 (both aircraft)
- GPS sample interval: 10 readings per second
- Radar altimeter: King KRA-10A (both aircraft)
- Radar sample interval: 10 readings per second
- Barometric altimeter: Honeywell PPT0020AWN2VA-C (both aircraft)
- Barometric sample interval: 10 readings per second
- Video flight path camera: Allied Vision Technology, Prosilica GT2450C (C-GXKS); Allied Vision Technology, Manta MG201C (C-GCFZ)
- Navigation-acquisition: RMS DAARC500 (both aircraft)

BASE STATION
- Type: Scintrex CS-2/3 single cell cesium vapour
- Magnetometer sample interval: 1 reading per second
- GPS sample interval: 1 reading per second

SURVEY SPECIFICATIONS
- Survey date: July 28 to November 2, 2016
- Nominal aircraft terrain clearance: 100 m
- Traverse line spacing: 200 m
- Control line spacing: 2000 m
- Traverse line direction: North-south
- Control line direction: East-west

CO-ORDINATE SYSTEM
- Projection: Universal Transverse Mercator
- Datum: NAD83
- Central meridian: 93°W (UTM zone 15N)
- Central scale factor: 0.9996
- False easting: 500 000 m
- False northing: 0 m

Ontario

Ontario Geological Survey

MAP 82 910

AIRBORNE MAGNETIC GRADIOMETER AND GAMMA-RAY SPECTROMETRIC SURVEYS

Ternary radioelement image

LAC SEUL EAST AREA

Scale 1:50 000

1 km 0 1 2 km

NTS References: 52 J/11, 14

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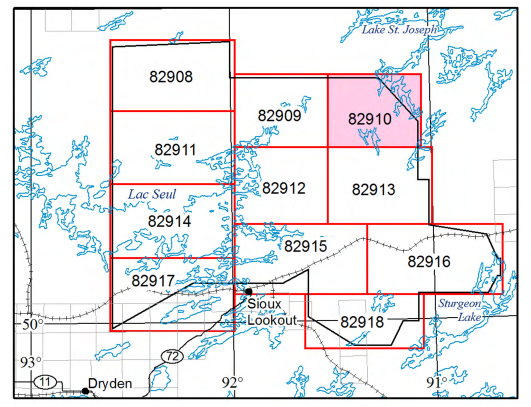

Location map 1 cm equals 20 km

SOURCES OF INFORMATION

Base map information derived from the Land Information Ontario Data Warehouse, Land Information Ontario, Ministry of Natural Resources and Forestry, scale 1:50 000.

Magnetic declination for the centre of the map area was approximately 2°28'W in 2017.

CREDITS

Data acquisition, data compilation and map production by Terraquest Ltd., Markham, Ontario.

Project management and quality assurance by Paterson, Grant and Watson Limited, Toronto, Ontario.

Contract management, base maps and map surrounds by the Ministry of Northern Development and Mines, Sudbury, Ontario.

Corresponding digital data for this survey are available from the following Ontario Geological Survey publication:

Ontario Geological Survey 2017. Ontario airborne geophysical surveys, magnetic gradiometer and gamma-ray spectrometric data, grid and profile data (ASCII format) and vector data, Lac Seul east area; Ontario Geological Survey, Geophysical Data Set 1084a.

Ontario Geological Survey 2017. Ontario airborne geophysical surveys, magnetic gradiometer and gamma-ray spectrometric data, grid and profile data (Geosoft® format) and vector data, Lac Seul east area; Ontario Geological Survey, Geophysical Data Set 1084b.

Every possible effort has been made to ensure the accuracy of the information presented on this map; however, the Ministry of Northern Development and Mines does not assume liability for any errors that may occur. Users should verify critical information.

Issued 2017.

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Users of OGS products are encouraged to contact those Aboriginal communites whose traditional territories may be located in the mineral exploration area to discuss their project.