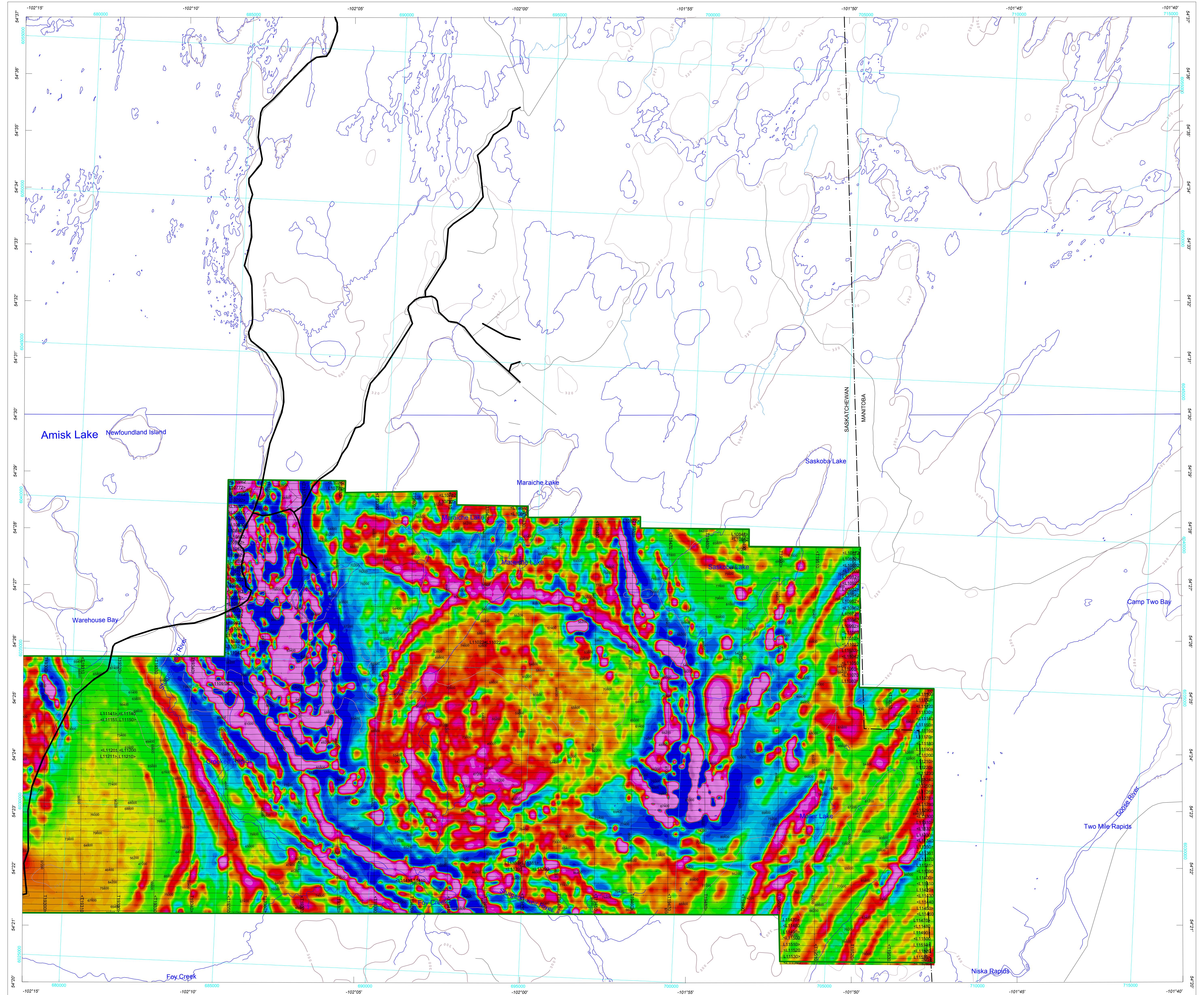




#### FIRST VERTICAL DERIVATIVE OF THE MAGNETIC FIELD



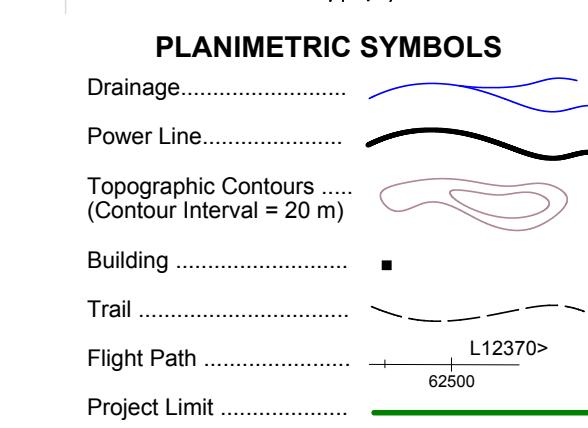
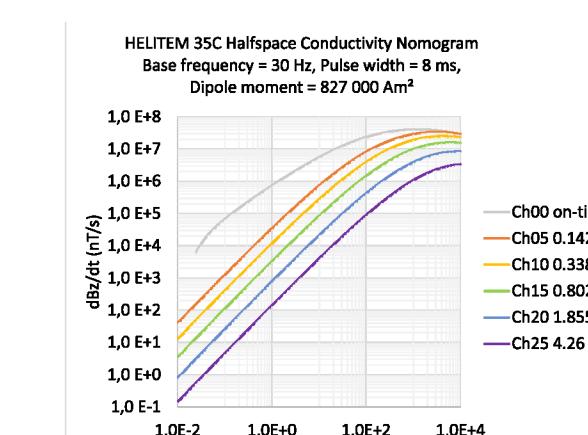
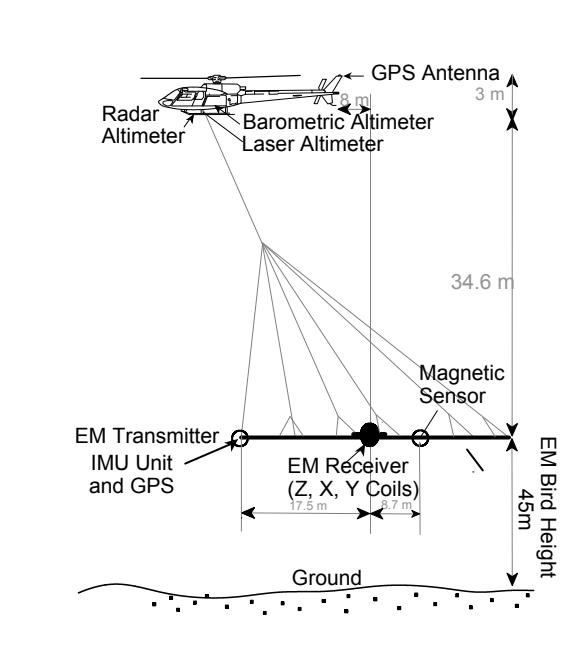
**Technical Information**  
This map was compiled from data acquired during an airborne electromagnetic/magnetic survey carried out by CGG Canada Inc. utilizing CCG's HELITEM 35C Time-Domain Electromagnetic (TDEM) system. The system is a modified EuroTEM AS350 system. The receiver (regional) C GEM and tie surveys were carried out between May 20 and June 13, 2018. The helicopter flight altitude was maintained at an average ground clearance of 80 m with an average speed of 90 km/h. Aircraft navigation used a dual-channel Novatel dual frequency GPS system. Post-flight differential corrections were applied to the survey data. The aircraft attitude information was used to record images of the ground. The radar height was recorded ten times per second using a Honeywell altimeter and the barometric altitude was recorded five times per second using a Motorola precision pressure transducer. The survey data were recorded 10 times per second using a Sonstex CS-3A cesium magnetometer.

#### Survey Area Parameters:

Traverse line azimuth	N88°E
Traverse line spacing	200 m
Tie line azimuth	N28°E
Tie line spacing	1200 m
Aircraft average clearance	80 m
EM transmitter nominal clearance	45 m
Magnetic sensor nominal clearance	45 m
EM receiver nominal clearance	45 m

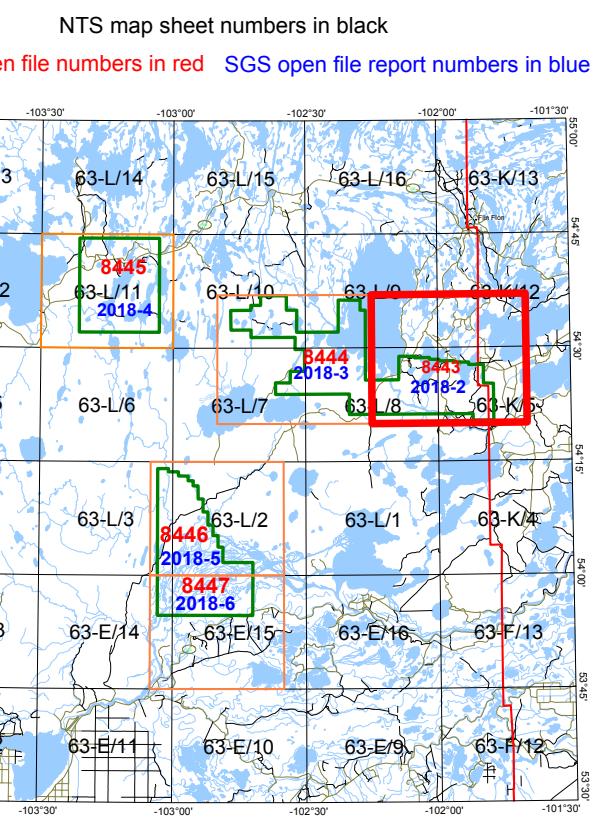
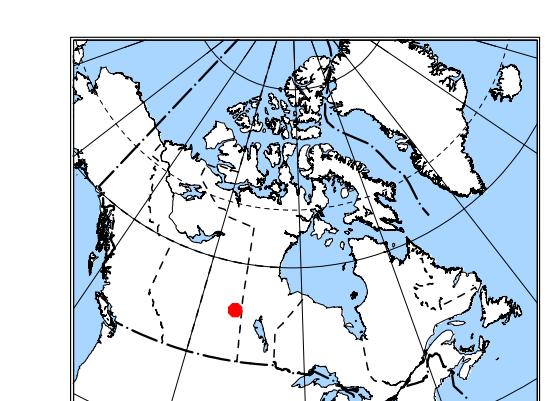
#### Electromagnetic System Specifications:

Base frequency	30 Hz
Waveform	Half sinusoid
Transmitter pulse width	8 ms
Transmitter area	862 m <sup>2</sup>
Transmitter off-time	6.9 ms
Transmitter loop diameter	35 m
Transmitter current	215 A
Dipole moment (approximately)	627 000 Am <sup>2</sup> (4 turns)
Receiver	3-component induction coil (Z, X, Y)
Measured response	Voltage (dB/dt)
Digital recording	Z, X, Y: 5-30 channels
1 <sup>st</sup> off-time 2 channel	Channel 5 at ~8 ms after pulse turn off
Tx-Rx configuration	In-loop concentric



Sheet 1: Time Decay Constant ( $\tau_{0-Z}$ ) - Early Channels (6 to 10)
Sheet 2: Time Decay Constant ( $\tau_{0-Z}$ ) - Mid Channels (15 to 19)
Sheet 3: Apparent Conductivity - Early Channel 6 (0.118 ms)
Sheet 4: Apparent Conductivity - Early Channel 15 (0.802 ms)
Sheet 5: Apparent Conductivity - Mid Channel 16 (0.802 ms)
Sheet 6: Apparent Conductivity - Late Channel 19 (0.272 ms)
Sheet 7: Residual Total Magnetic Field
Sheet 8: First Vertical Derivative of the Magnetic Field
Sheet 9: Interpretation

Authors: O. Boulaniger, F. Kiss, M. Coyle and O. Mahmoodi  
Data acquisition and data compilation by CGG Canada Limited, Toronto, Ontario.  
Contract, project management and map production by the Geological Survey of Canada, Ottawa, Ontario  
Permanent link: <https://doi.org/10.4095/308432>



#### GEOLOGICAL SURVEY OF CANADA OPEN FILE 8443 SASKATCHEWAN GEOLOGICAL SURVEY OPEN FILE REPORT 2018-2 ELECTROMAGNETIC SURVEY OF THE CREIGHTON AREA

SASKATCHEWAN  
Parts of NTS 63-L/8 and 63-K/5

nT/m  
Scale 1:50 000  
(metres)  
Map projection: Universal Transverse Mercator, zone 13N, World Geodetic System 1984  
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GEOLOGICAL SURVEY OF CANADA  
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