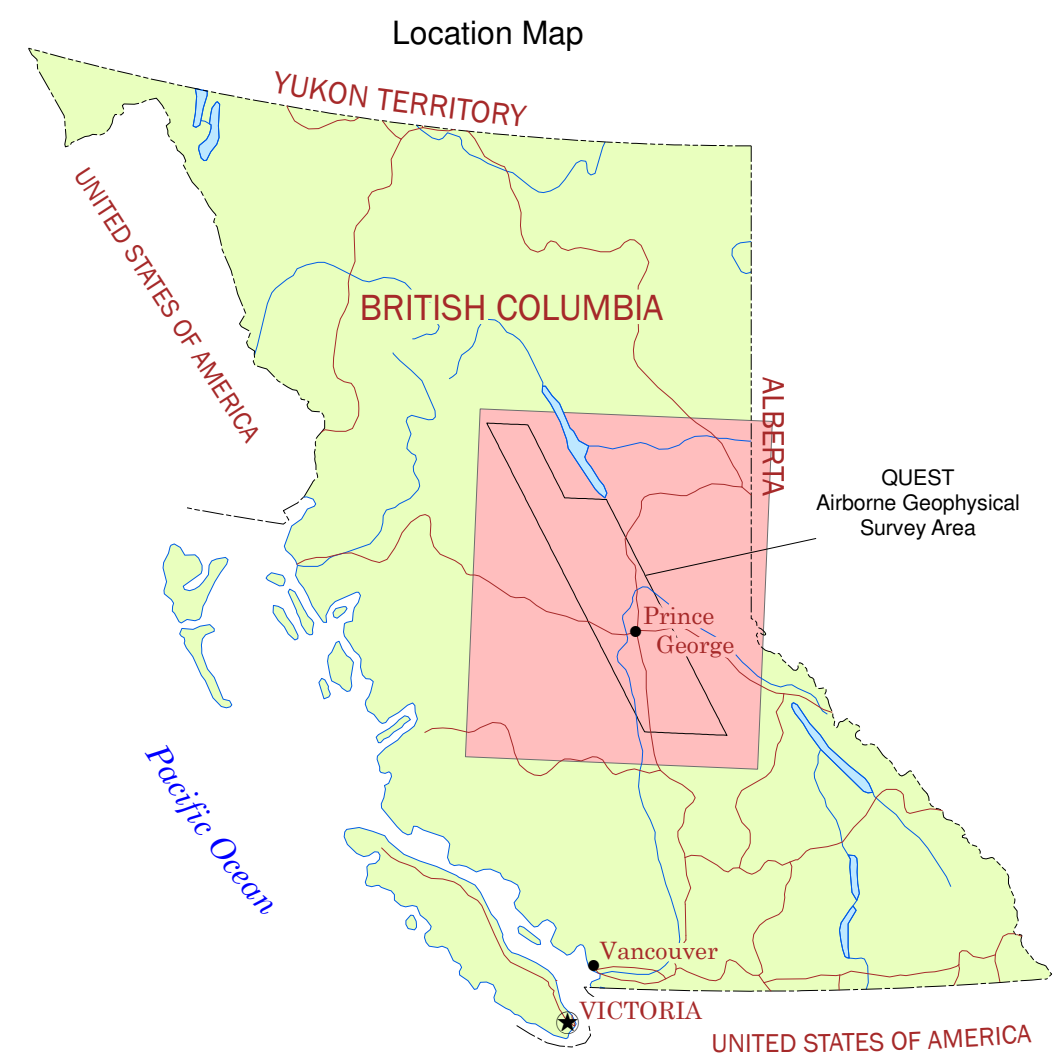


Disclaimer: While every effort has been taken to ensure the accuracy of the information in this map, the data are provided on an "as is" basis, without any warranty, guarantee or representation of any kind, whether expressed or implied. It is the responsibility of the user to check the facts before entering any financial or other commitment based upon this information.



National Topographic System Index

15M SPATCO RIVER	08M DOUGLASS LAKE	09M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE
15M SPATCO RIVER	08M DOUGLASS LAKE	09M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE
15M SPATCO RIVER	08M DOUGLASS LAKE	09M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE
15M SPATCO RIVER	08M DOUGLASS LAKE	09M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE
15M SPATCO RIVER	08M DOUGLASS LAKE	09M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE
15M SPATCO RIVER	08M DOUGLASS LAKE	09M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE
15M SPATCO RIVER	08M DOUGLASS LAKE	09M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE	08M DOUGLASS LAKE

Arborne Geophysical Survey Area	
Provincial boundary	
Railroad (unclassified)	
Road (unclassified)	
Mineral deposit (selected)	
Populated place (unclassified)	

1	5	9	13	17	21	25
2	6	10	14	18	22	26
3	7	11	15	19	23	27
4	8	12	16	20	24	

**QUEST Geophysics 3D Inversion Analysis - Surface Density, Magnetic Susceptibility, and Conductivity Domains**

The QUEST Airborne Gravity and Aeromagnetic data were inverted by Mira Geoscience for Geoscience BC using the USC-MAG3D and GRAV3D smooth model inversion algorithms. 3D density and magnetic susceptibility block models were made. The QUEST VTEM airborne electromagnetic data was inverted using the USC Layered Earth Inversion. A plan map of the bedrock or deep overburden conductivity values was produced.

This map presents the surface layer of the 3D density and susceptibility models intersected with the plan map of the bedrock or deep overburden conductivity. The results were divided into 27 different domains of similar rock properties.

A matrix of low, medium, and high susceptibilities and low, medium, and high density rocks has been used to define domains. Similarly the bedrock or deep overburden conductivity from the VTEM inversion results was divided into areas of low, medium and high conductivities.

These sets combined together have produced 27 (3 x 3 x 3) distinct domains. Note that the domain number does not define any ranking or hierarchy of the rock properties, rather the map can be used to recognize areas of similar rocks and to follow a geological unit under covered areas.

The domain numbers relate to the input classes of Low (L), Medium (M) and High (H) density, susceptibility and conductivity values according to the following table.

domain	Density	Susceptibility	Conductivity
1	L	L	L
2	M	L	L
3	H	L	L
4	L	M	L
5	M	M	L
6	H	M	L
7	L	H	L
8	M	H	L
9	H	H	L
10	L	L	M
11	M	L	M
12	H	L	M
13	L	M	M
14	M	M	M
15	H	M	M
16	L	H	M
17	M	H	M
18	H	H	M
19	L	L	H
20	M	L	H
21	H	L	H
22	L	M	H
23	M	M	H
24	H	M	H
25	L	H	H
26	M	H	H
27	H	H	H

	Density, g/cm <sup>3</sup>	Susceptibility, S.I.	Conductivity, S/m
Low (L)	< 0.05	< 0.01	< 0.002
Medium (M)	0.05 to 0.05	0.01 to 0.05	0.002 to 0.0033
High (H)	> 0.05	> 0.05	> 0.0033

A full 3D block model of these domains is available on the Geoscience BC website. From this a user can extract any depth slice or vertical section of interest directly from the block model.

**Data Analysis**

Mira Geoscience Ltd (2009), QUEST Project: 3D inversion modelling, integration, and visualization of airborne gravity, magnetic, and electromagnetic data, BC, Canada: Geoscience BC Report 2009-15, 87p.

**Airborne Gravity Data**

GBC QUEST Project Team (2009): QUEST Project Gravity Data and Report, Geoscience BC, 2009-8

**VTEM Data**

GBC QUEST Project Team (2009): QUEST Project VTEM Data and Report, Geoscience BC, 2009-4

**Aeromagnetic Data**

Canadian Aeromagnetic Data Base, Regional Geophysics Section, GSC - Central Canada Division, Geological Survey of Canada, Earth Sciences Sector, Natural Resources Canada, 2005

**Topographic Data**

Massey, N.W.D., Mackinnon, D.G., Desjardins, P.J., and Cooney, R.T. (2005): Digital Geology Map of British Columbia: Whole Province, B.C. Ministry of Energy and Mines, Gazette 2005-1.

**Data Sources**

Geoscience BC: [www.geosciencebc.ca](http://www.geosciencebc.ca)  
Natural Resources Canada: [www.nrc.ca](http://www.nrc.ca)  
Ministry of Energy, Mines and Petroleum Resources: [www.empr.gov.bc.ca/mining/geoscience](http://www.empr.gov.bc.ca/mining/geoscience)

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Geophysical 3D inversion analysis by Mira Geophysics Ltd. - [www.mirageophysics.com](http://www.mirageophysics.com)  
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Geoscience BC is an industry-led, industry-focused not for profit society that works to attract mineral and oil and gas investment to British Columbia through collection and marketing of geoscience data.

[www.geosciencebc.ca](http://www.geosciencebc.ca)

MAP 2009-15-5  
GEOPHYSICS - 3D INVERSION ANALYSIS  
Surface Density, Magnetic Susceptibility, and Conductivity Domains  
**QUEST PROJECT**  
1:250 000 NTS SHEETS 93A,B,C,F,G,H,I,J,K,N,O,P  
PART OF 1:250 000 NTS SHEETS 82M, 83D,E,L,M, 84D, 92M,N,O,P, 93D,E,L,M AND 94A,B,C,D  
1 : 500,000  
0 5 10 15 20 25 30 kms  
Universal Transverse Mercator Projection, Zone 10  
Horizontal Datum: North American Datum 1983  
Mean magnetic declination 2009: 10°18' E, decreasing 14.6' annually. Readings vary from 17°42' E in the southeast corner to 20°42' E in the northwest corner of the map.  
September 16, 2009

**Citation:**  
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