It is recommended that reference to the Content be made in the following form:

Houlé, M.G. and Hall, L.A.F. 2007. Geological compilation of the Shaw Dome area, northeastern Ontario; Ontario Geological Survey, Preliminary Map P.3595, scale 1:50 000.

Marginal Notes

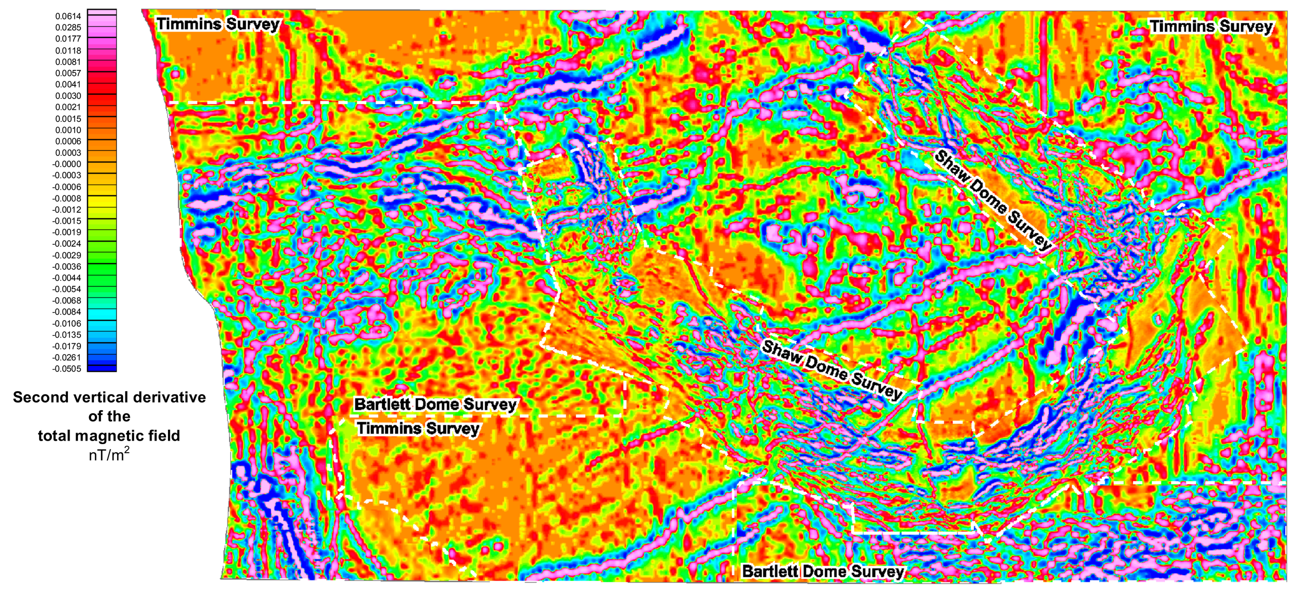


Figure 1. An image of the second vertical derivative of the total magnetic field data merged from several airborne geophysical surveys covering the Shaw Dome area.

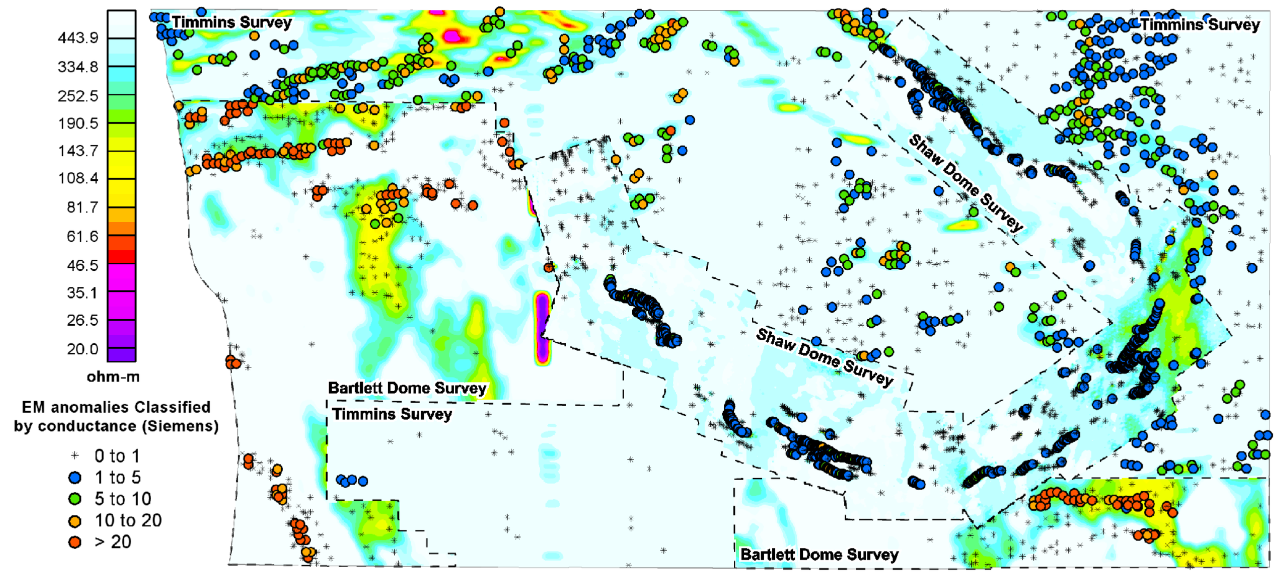


Figure 2. An image of the electromagnetic (EM) and the resistivity field data merged from several airborne geophysical surveys covering the Shaw Dome area.

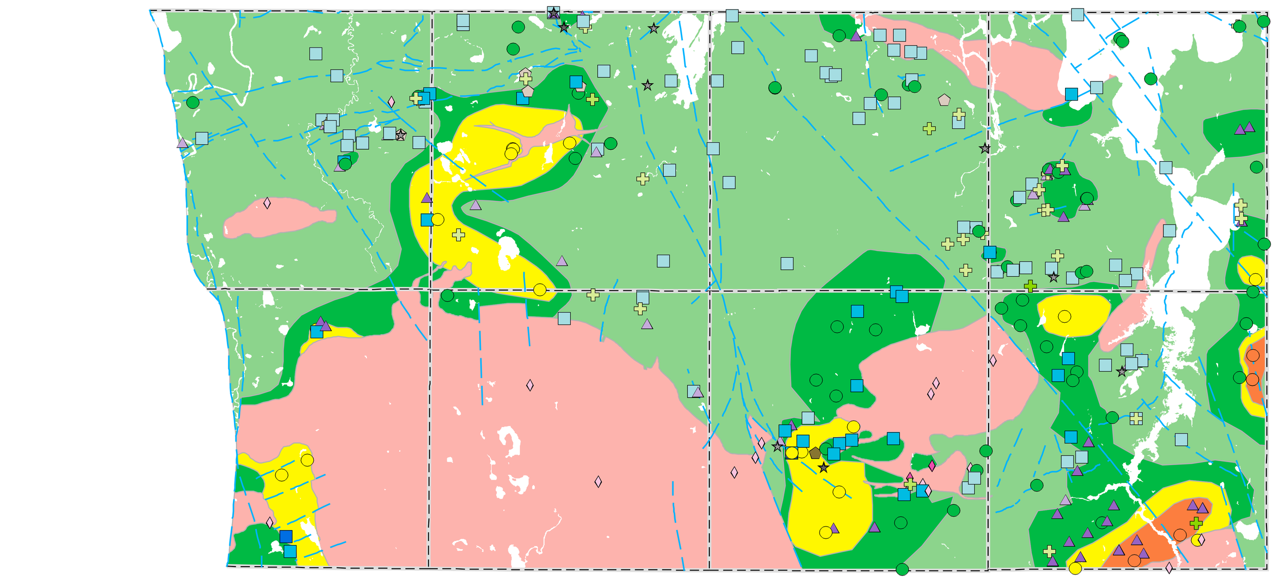


Figure 3. Metamorphic map of the Shaw Dome area, western Abitibi greenstone belt (*modified from* Thompson 2005); colours used in figure follow those shown in accompanying chart. Lower greenschist zone is the dominant metamorphic zone in the Shaw Dome area. However, significant higher metamorphic zones are also present in the area. Those zones are generally associated with intrusions, faults, fold hinges or a combination of these events. Diagnostic mineral assemblages (point data) are the basis for the definition of metamorphic grade in each metamorphic zone. Metamorphic zones on this figure are derived from the grade in one or more rock associations. The relative positions of the boundaries in rock associations 2 to 7 that correspond approximately to the lower/upper greenschist zone boundary on the map are inferred. The precise positions of these boundaries relative to each other have yet to be calibrated. Mineral name abbreviations: ab - albite, act - actinolite, am - amphibole undifferentiated, and - andalusite, bt - biotite, cb - carbonate (ankerite, calcite, dolomite, magnesite, siderite), cht - chlorite, crd - cordierite, ctd - chloritoid, cum - cummingtonite, diop - diopside, epg - epidote group, fp - feldspar, grt - garnet, gru - grünerite, hn - hornblende, kf - potassium-feldspar, qtz - quartz, mt - magnetite, oam - orthoamphibole, plg - plagioclase, prn - prehnite, pu - pumpellyite, se - serpentine, sil - sillimanite, st - staurolite, tlc - talc, trm - tremolite, wm - white mica (muscovite, paragonite, talc).

Archean Metamorphic Grade on Figure	Subgreenschist Zone	Lower Greenschist Zone	Upper Greenschist Zone	Transition Zone	Amphibolite Zone
Rock Association/Metamorphic Grade of Samples					
1) Metabasites: metabasalt/gabbro/andesite, greenstone, amphibolite	pu-prn	act-cht-epg-ab		act-hn	hn-calcic plg
2) Metaquartzofeldspathic Rocks: metarhyolite/dacite, qtz-fp metaporphyry, felsic metavolcanoclastite, metasandstone, psammite	pu-prn	cht-wm/kf	biotite	bt-hn	
3) Metaultramafites: metaperidotite/dunite, metakomatiite		cht-tlc-se-cb	clinoamphibole		
4) Metamorphosed Aluminum-rich Rocks: metamudstone/siltstone, meta-hydrothermal alteration		cht/ctd-wm	bt-cht, bt-grt-cht	crd-and/sil-bt st-and/sil-bt, crd-oam	
5) Metamorphosed Chemical Sedimentary Rocks: meta-iron formation, chert		qtz-cht cb-cht mt-qtz	clinoamphibole-grt two amphiboles		
6) Metamorphosed Granitoid: metagranite to metatonalite	pu-prn	cht-wm/kf	biotite bt-epg am(act/crossite)		
7) Metamorphosed Carbonate-rich Rocks: carbonate metasediments, metamorphosed interpillow rock/ breccia/hydrothermal alteration, synmetamorphic cb alteration		cht-cb-qtz cht-cb-wm-qtz	bt-cht-cb epg-act-cb-cht	diop-am-grt hn-bt	
8) Unmetamorphosed Granitoids: granite to tonalite	no metamorphic minerals				
Metamorphic Facies	*Subgreenschist*	*Greenschist*		*Amphibolite*	

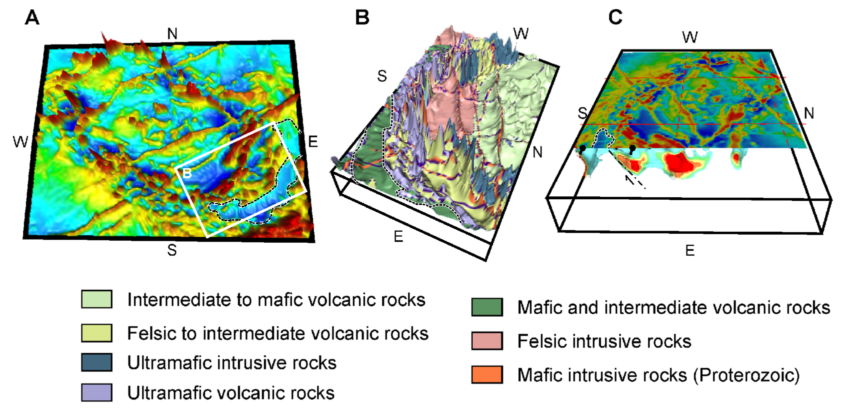
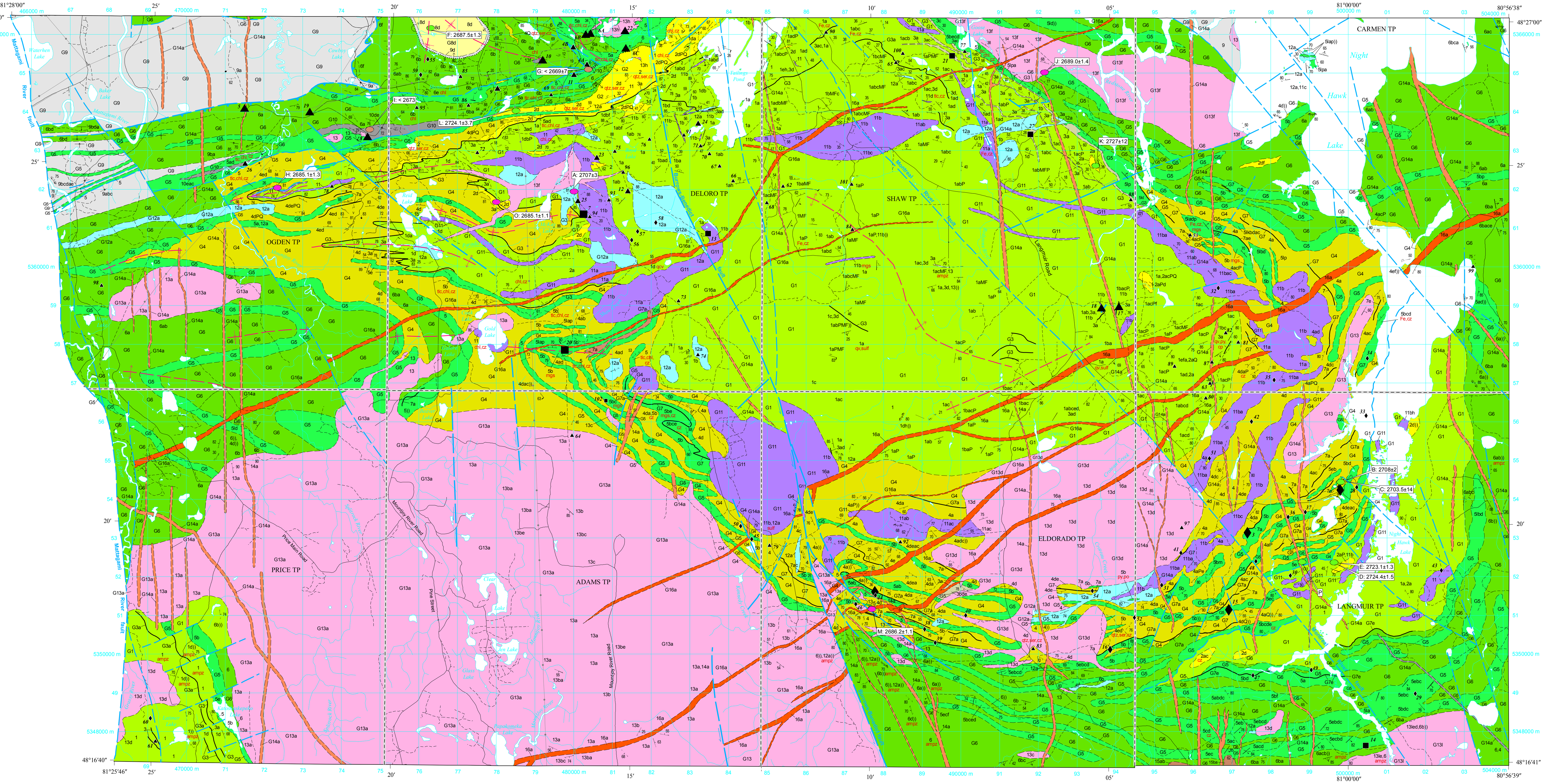


Figure 4. Magnetic three-dimensional (3D) modelling (*modified from* Reed 2005). A) View of amplitude-enhanced magnetic image for the Shaw Dome area. B) Image showing the geology of Langmuir Township draped on amplitude-enhanced magnetic data (rotated ~120°). C) North to south slice through the inversion isosurfaces under the flat magnetic data. Dashed line = low magnetic signature within the southeastern corner of the Shaw Dome area. Dash-dot line = north-dipping fault; ⚲ = approximate dip indicator for the geological strata.

Table 1. Summary of geochronological data in the Shaw Dome area.

Map ID	Sample Number	UTM Co-ordinates Easting (m)	UTM Co-ordinates Northing (m)	Rock Type	Primary Age (Ma)	Inheritance or Provenance Age(s) (Ma)	Assemblage/Intrusion	Method	Source
A	DD, N77-21	480005	5361948	Gabbro	2707±3		Mafic to ultramafic intrusion (Tisdale)	TIMS	1
B	96TB0079	499802	5354448	Felsic volcaniclastic	2708±2		Tisdale	TIMS	2
C	96TB0079	499802	5354448	Felsic volcaniclastic	2703.5±14	2767 to 2725	Tisdale	SHRIMP	5
D	96TB0099	499632	5352373	Felsic volcaniclastic	2724.4±1.5		Deloro	TIMS	2
E	96TB0099	499633	5352374	Felsic volcaniclastic	2723.1±1.3	2725.8±0.8	Deloro	TIMS	5
F	99JAA-0061	476307	5366168	Felsic tuff	2687.5±1.3		Porcupine (Krist formation)	TIMS	3
G	BNB-01-T-02	480377	5365098	Conglomerate	< 2669±7	2682	Timiskaming	TIMS	4
H	02JAA-009	472346	5362046	Quartz-felspar sericite schist	2685.1±1.3		Porphyry	TIMS	4,5
I	02JAA-010	474733	5363546	Sediment	< 2673	2689 to 2722	Timiskaming	TIMS	4
J	03-LAH-0627	492156	5365021	Quartz porphyry	2689.0±1.4	2692.3±1.7	Mt Logano	TIMS	5
K	03-LAH-0161	493476	5362615	Felsic flow	2727±12		Deloro	TIMS	5
L	04-PCT-0062	478510	5364034	Felsic lapilli tuff	2724.1±3.7		Deloro	TIMS	5
M	04-MGH-0283	487699	5351167	Quartz-felspar porphyry	2686.2±1.1		Porphyry dike	TIMS	5
O	02-LAH-0048	477999	5361677	Quartz-felspar porphyry	2685.1±1.1	2700 to 2730	Porphyry dike	TIMS	6
P	04-MGH-0523	498804	5352384	Felsic epiclastic	Absence of minerals suitable for analysis.				

Abbreviations: SHRIMP = sensitive high-resolution ion microprobe; TIMS = thermal ionization mass spectrometry.
Sources: 1 = Corfu et al. (1989); 2 = Barrie and Corfu (1999); 3 = Ayer et al. (2002); 4 = Ayer et al. (2003); 5 = Ayer et al. (2005); 6 = J.A. Ayer, unpublished data, 2005. The reader is strongly referred to Ayer et al. (2005) concerning the SHRIMP data obtained on the sample 96TB-0079. The "primary age" in the table is the minimum age obtained in that sample with Pacaud- and Deloro-age zircon xenocrysts. All UTM co-ordinates are provided in NAD83, Zone 17.



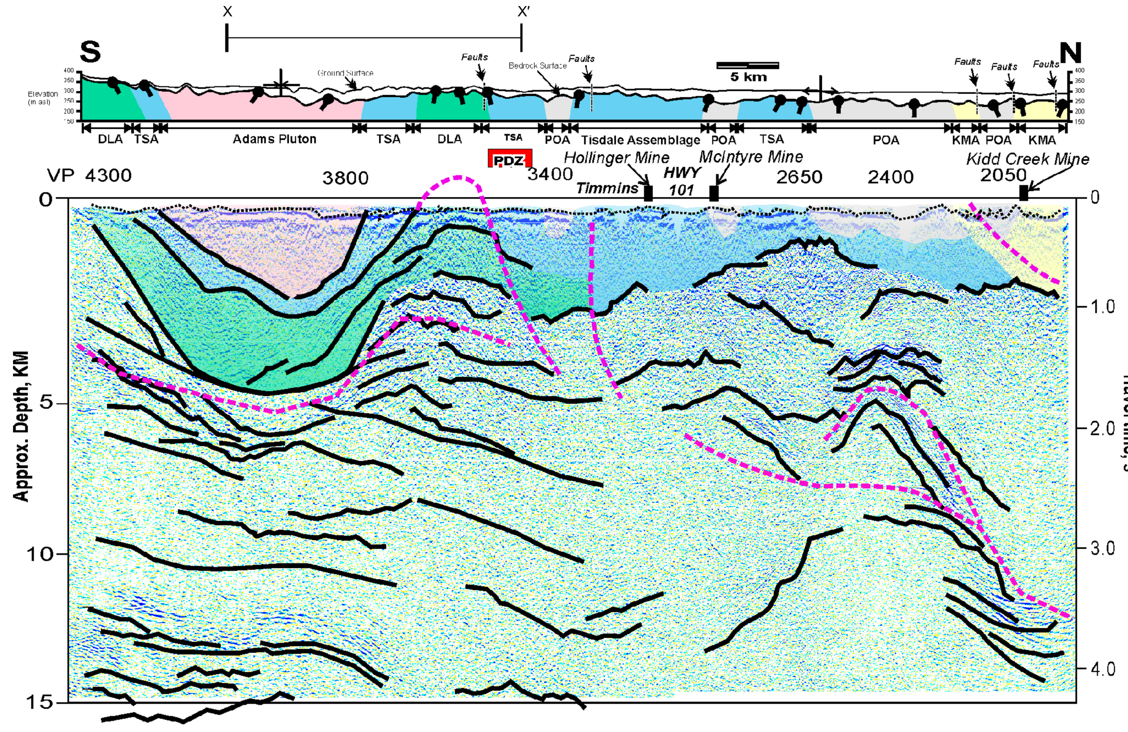


Figure 5. Reflection profile section of the South Timmins Line and its interpretation.

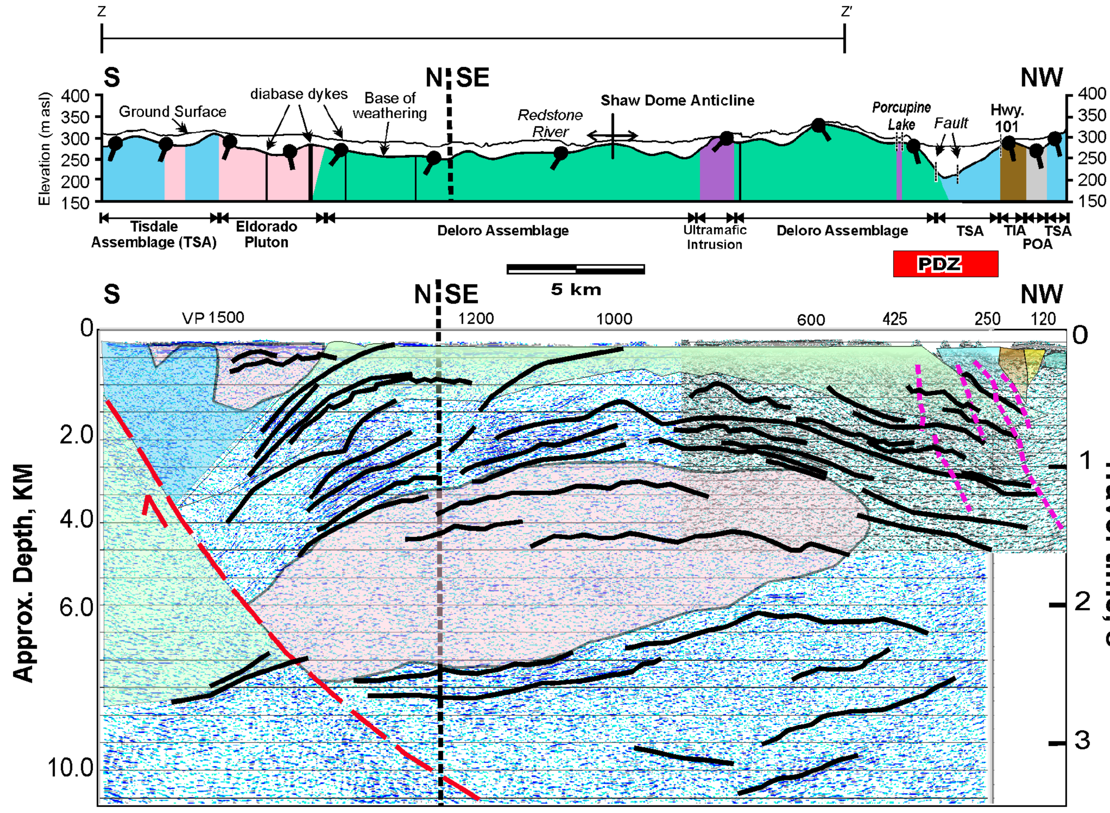


Figure 6. Reflection profile section of the South Porcupine Line.

LEGEND

PHANEROZOIC

CENOZOIC

QUATERNARY

PLEISTOCENE AND RECENT

PRECAMBRIAN

MESOPROTEROZOIC

PALEOPROTEROZOIC

ARCHEAN

NEOARCHEAN

ABBREVIATIONS

PROPERTIES

MODIFIERS

SOURCES OF INFORMATION

Ontario

Ontario Geological Survey

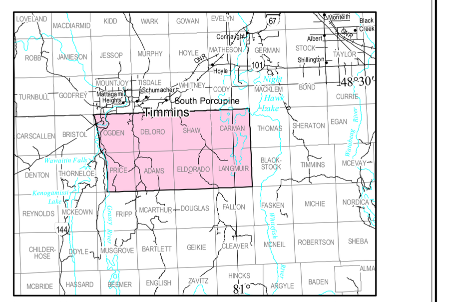
MAP P.3595

PRECAMBRIAN GEOLOGY

GEOLOGICAL COMPILATION OF THE SHAW DOME AREA

NORTHEASTERN ONTARIO

Scale 1:50 000



Location Map

SYMBOLS

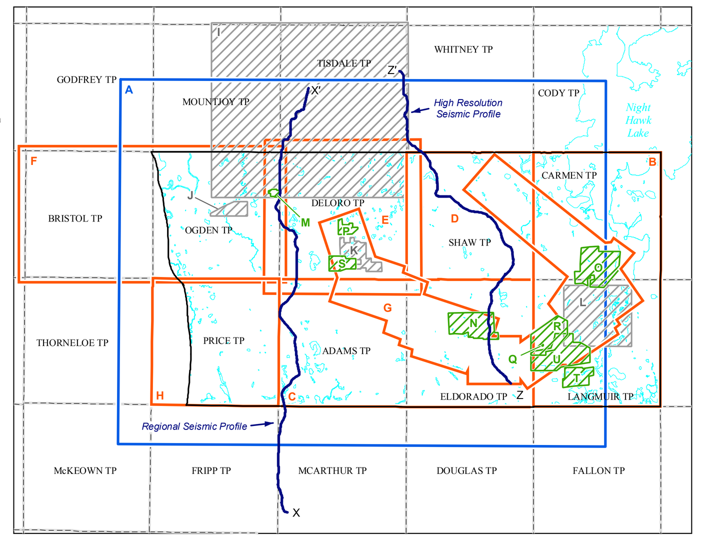


Figure 7. Lithological reliability diagram.

CREDITS