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A ROCK PROPERTY DATABASE FOR THE LACHLAN FOLD BELT OF NEW SOUTH WALES

by

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ABSTRACT

A program of geological observation, rock sampling, and physical property measurement was undertaken as the initial phase of a regional geophysical study of the Lachlan Fold Belt in New South Wales. The objectives of this work were :

- (a) to familiarise the geoscientists employed in the study with the regional geology,
- (b) to ascertain the physical properties of different geological units in order to assist geophysical modelling studies, and
- (c) to directly investigate sources of magnetic and gravity anomalies.

The results of this work have been entered into a computerised database. This report provides a microform copy of data therein and indicates the scope for usage of the database. These data are the locations of sites (AMG grid reference, and latitude and longitude in decimal degrees); brief notes on topography and geology at sites; field physical property measurement, including in-situ magnetic susceptibility measurements at most sites, and gamma-ray spectrometer measurements; laboratory physical property measurements, including dry density, grain density, porosity, magnetic susceptibility, and remanence; geochemistry (major elements and 23 trace elements) of most granitoids, acid volcanics, and a few other rock types; and brief descriptions of thin sections of samples collected at each site.

1. INTRODUCTION

The initial phase of BMR's Lachlan Fold Belt (LFB) Geophysical Project in New South Wales involved a program of geological observation, rock sampling, and physical property measurement. The objectives were:

- (a) to familiarise the authors with the regional geology of the area,
- (b) to obtain physical properties of different geological units in order to assist geophysical modelling studies, and
- (c) to directly investigate sources of magnetic and gravity anomalies.

The fieldwork took 13 weeks between March and November, 1979. Transport was by road, except for three and a half weeks when a helicopter was used, mainly for more remote and less accessible localities.

Stations were located after available 1:250 000 geological and metallogenic maps, 1:80 000 airphotos, and excursion guides had been examined. All observations and measurements were recorded in a form designed to be easily added to a computerised database. This approach was adopted because of the flexibility offered for updating, searching, retrieval, sorting, analysis, plotting, reporting, and reproducing the data. Stations were chosen so that they would sample most of the rock types, composite rock units, and typical magnetic anomaly sources, and provide data on spatial variations within the more extensive units.

The field measurements and descriptions were made by A.Yeates, B.Wyatt, and D.Tucker. The petrology was described by A.Yeates, and checked in part by U.Vetter.

After completion of the fieldwork, 403 samples were sent to the Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) (Federal Institute for Geosciences and Natural Resources) West Germany, for chemical analysis as part of a joint project between BMR and BGR. Sample preparation was done by U.Vetter.

The database was designed and implemented by B.Wyatt using BMR's computer system. Final corrections, editing, and preparation of this report were carried out using Data Science's computing facilities. Arrangements can be made with BMR for the supply of a copy of the database in digital form.

2. THE DATABASE

2.1 STRUCTURE AND IMPLEMENTATION

All data were stored on BMR's HEWLETT-PACKARD (HP) 1000 Computer System and can be accessed by the HP Database Management System, IMAGE/1000, and also by FORTRAN, ASSEMBLER, or BASIC applications programs. IMAGE/1000 Database structures are described in the HP IMAGE/1000 Reference Manual.

The database, called LFB, contains five detail sets (SLOCT, SGEOL, SPHYS, SPETR, and SCHEM) describing locations, geology, physical properties, petrography, and chemical analyses respectively (Appendix A). Some items within detail sets are also stored as key items within master sets. Master sets allow rapid retrieval of commonly accessed items. Key items of the LFB Database include station number, State, sheet names, station type, rock name, fabric, topography, structure, age, and unit. Lists of the key items, together with their frequency of occurrence are given in Appendix C. These lists are useful for determining content and search and retrieval criteria. Appendix B is a collection of indexes (to station number) for all different key items within the STATE, STATION TYPE, SHEET NAME, AGE, and ROCKNAME master sets.

Entries can be selectively retrieved using the operators "IS" (equals), "ISNOT" (is not equal to), "ILT" (is less than), "INLT" (is not less than), "IGT" (is greater than), "INGT" (is not greater than), and "CO" (contains the string); e.g. FIND SHEET IS "COBAR" AND AGE CO "Ordovic".

All entries which fulfil a particular set of FIND conditions can then be sorted on the value of any item or items. For example it may be convenient to output data sorted by rock type and also sorted by age or latitude within each rock type class.

Reports can contain any items from entries retrieved and sorted as indicated above. Appendices B, C, D, E, and F are examples of reports generated using different retrieve, sort, and report specifications.

2.2 LOCATION

All stations were located on airphotos, and their positions transferred to 1:250 000 maps and digitised. Errors in position are estimated to be less than 50 metres on the airphotos and less than 100 metres in latitude, longitude, easting, and northing. All station locations are shown at 1:1 000 000 scale on map number 22/N/11 which is available from the Australian Government Printer Copy Service, Kingston, ACT. Related maps show : total magnetic intensity contours

of the area at the same scale (22/N/15); Bouguer anomalies (22/N/14); second derivative gravity contours (22/N/13); a 1:1 000 000 map of Ordovician, Silurian, and Devonian sedimentary and volcanic facies (Yeates, 1982); and geophysical profiles, source depth estimates, and schematic geological cross sections along latitudes 34.05 and 35.05 degrees south (22/N/12). These maps and diagrams are also available from the above source; the facies map is available from BMR as well.

The geophysical domain item (GDOM) indicates the location of each station with reference to the geophysical domains described by Wyatt, Yeates, & Tucker (1980). Of the 894 localities, 588 were in domain 1, 294 were in domain 2, 11 were in domain 3, and 1 was in domain 4.

2.3 GEOLOGY

The geology data set was compiled from the exposed geology at each field locality. The ages and names of stratigraphic units have been taken from available 1:250 000 and 1:100 000 geological maps. Where names differ, they conform to approved revisions lodged in the Central Register of Stratigraphic Names, BMR, Canberra. The granitoids have not been assigned ages. Strike and dip values are considered to be accurate to five degrees. Strike has not been corrected for declination, which varies from 9.5 degrees east at Cobar to 12.0 degrees east at the coastline. It has, however, been corrected where shown on the geological compilation of Yeates (1982).

The lithology description (LITH1, LITH2, LITH3, LITH4) refers to the whole outcrop while the item, ROCKH, refers to the hand specimen which was collected for laboratory study.

2.4 PHYSICAL PROPERTIES

In situ measurements of radioactivity and susceptibility were made wherever possible. Most of the first 143 locations lack gamma-ray measurements. Radioactivity was measured with a Geometrics DISA 40/A four-channel spectrometer with 347 ml of sodium iodide crystal. Measurements were taken for a six minute period with the crystal suspended sixty centimetres above flat outcrop (ideally).

The spectrometer data have been corrected as follows :

- (a) Background subtraction of 514, 20, 10, and 9 counts/minute from channels 1, 2, 3, and 4 respectively.
- (b) Spectral stripping and radioelement conversion using the equations :

$$\text{Th (ppm)} = \frac{\text{channel 4}}{S(\text{Th})}$$

$$\text{U (ppm)} = \frac{\text{channel 3} - (a * \text{channel 4})}{S(\text{U})}$$

$$\text{K2O (X)} = \frac{\text{channel 2} - (b * \text{channel 4}) - (c * S(\text{U}) * S(\text{Th}))}{S(\text{K2O})}$$

where the spectral stripping coefficients a, b, c, and sensitivity constants S(Th), S(U), S(K2O) are:

$$a = 0.75, \quad b = 1.18, \quad c = 0.95$$

$$S(\text{Th}) = 117., \quad S(\text{U}) = 10.6, \quad S(\text{K2O}) = 8.5$$

The constants in the above equations have been determined from a statistical analysis of the field readings and corresponding chemical data from 312 samples analysed by BGR. The channel 2 data have been converted to potassium oxide (K2O) rather than elemental potassium, to allow a direct comparison with the chemical analyses.

In-situ magnetic susceptibility was measured with a BISON 3101A meter and flat plate. The database contains the minimum, maximum, mean, and standard deviation of all (up to 15) readings at each locality in SI units * 0.000001.

Laboratory measurements were made on the freshest available sample from each locality. Whole-rock density was calculated by the water immersion method. All other measurements were made on 25 mm * 25 mm cores in BMR's Physical Property and Petroleum Technology Laboratories or in the BMR/ANU Black Mountain Magnetic Laboratory. Porosity, dry density, and grain density were measured using a mercury porosimeter. Remanence is indicated by the Koenigsberger ratio (Q), and was determined for a field of 60 000 nanoteslas.

Nearly all the density and susceptibility data refer to outcropping or near-outcropping rocks, of which many are weathered. While this is not considered too serious for magnetic susceptibility measurements, the density measurements must be expected to be significantly less than the densities of equivalent rocks at depth. (This is commonly illustrated by downhole density profiles.) Most samples from the Cobarr region are weathered and are not expected to be of much value.

Of the various densities measured for the database the grain density is expected to be the most useful for modelling. An alternative approach would be to calculate theoretical densities from the chemical analyses or from the mineralogy estimated from thin sections.

2.5 PETROGRAPHY

The petrography set (SPETR) is derived from 788 unpolished or polished thin sections prepared from the samples collected at most localities. The petrographic descriptions are based on about twenty minutes observation per slide, and without the assistance of a microprobe.

No elaborate schemes of rock nomenclature have been used. Most rock names are common field names. Nockolds's (1954) classification has been used for igneous rocks, supplemented by suggestions of Hatch, Wells, & Wells (1961) for rare oddities. The plutonic members could easily be adapted to Streckeisen's (1976) scheme, though he has recommended rejection of the term 'adamellite', a name in common use in eastern Australia.

In thin section, basalts are arbitrarily distinguished from andesites by having more than 10% clinopyroxene, or former traces of it in altered rocks. Dacites are arbitrarily distinguished from highly felsic andesites by having visible quartz. The term 'ignimbrite', synonymous with ash-flow tuff (Ross & Smith, 1961), is restricted to pyroclastic rocks, or to altered rocks interpreted as having had a pyroclastic origin.

Nomenclature for clastic sedimentary rocks is according to Pettijohn (1957). No special scheme has been adopted for chemical sedimentary rocks, such as the few limestones and siliceous rocks reported. Siliceous rocks with cryptocrystalline silica are named cherts. Where they are coarser-grained, but lacking a detrital framework, they are termed quartzites.

Terms such as phyllite, slate, and semi-slate are terms of character selected arbitrarily to describe the relative degrees of cleavage in pelitic rocks. Similarly, gneiss and schist refer to felsic and micaceous foliated rocks, respectively, in which mineralogical layering is clearly visible.

All minerals recognised in thin section are listed in the compound item MINRL, and their percentages are listed in the same order in the compound item MINPC. Appendix C contains a list of all used rock names and fabrics.

Percentages of minerals and other rock constituents have been determined visually and are estimated to be accurate to between 1% and 10% depending on the amount. Percentages less than 1% are shown as decimals (e.g. .2, .1, .01, .001). These are not to be taken as accurate estimates - they are meant to indicate the presence of a particular mineral in trace amounts only.

2.6 CHEMISTRY

Chemical analyses were carried out by BGR on 403 hand specimens, comprising mainly granitoids and acid volcanics, but also a few mafic rocks and sediments. Analyses of two ultramafic rocks were determined in BMR.

The samples were not initially collected for analytical purposes, and some required extensive sample preparation to get rid of lichen, soil, weathered surface, marker ink, and paint. The small size of the samples is a limiting factor in the accuracy of the analyses, particularly in the case of trace-element determinations.

Samples of from 50 to 500 g were crushed below 4 mm in a jaw-crusher, divided, and ground to less than .06 mm with a disc mill in an agate grinding barrel.

Loss on ignition was determined separately by heating a sample dried at 50 degrees C. to 1050 degrees C.

XRF analyses used glass tablets composed of 1 g of rock powder and 3 g of lithium tetraborate flux. All major elements were analysed with a chromium tube ; trace elements Bi, Cu, Mo, Nb, Ni, Pb, Rb, Sn, Sr, Ta, Th, U, W, Y, Zn, and Zr with a rhodium tube ; and trace elements Ba, Ce, Co, Cr, La, Sc, and V with a tungsten tube.

The Phillips PH1450 sequential spectrometer was interfaced to a computer for automatic matrix correction. The equipment was calibrated with international standards.

Major-element analyses are given in weight % as oxides, and total iron is shown as Fe2O3.

Detection limit for major elements is 0.01 weight %. All values below this limit have been set to .01 for calculation purposes. Trace-element concentrations are given in parts per million (ppm). Detection limits for trace elements are tabulated below. Values below these limits are set to a negative number with amplitude equal to the detection limit.

Element	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr	
Detect Limit (ppm)	1	6	1	1	1	5	1	3	3	5	5	3	1	5	3	5	5	3	1	5	3	5	5	5

The detection limit for Sn is 5 ppm for all granites and for the following 20 volcanics : 0030, 0088, 0222, 0249, 0281, 0282, 0302, 0414, 0481, 0482, 0538, 0557, 0792, 0859, 0869, 0901, 0903, 0910, 0911, 0974. The detection limit for all other Sn analyses is 20 ppm.

3. USES AND EXAMPLES

The database was originally intended mainly as a source of density and susceptibility measurements, and a record of field geology notes. Other types of data were added as the opportunity arose.

Many uses for this database are apparent. Some of these are listed here along with examples ; many others will be found for specific problems.

- (a) Determination of physical property values and limits to be used in geophysical modelling studies.
- (b) Determination of possible sources of magnetic and gravity anomalies (e.g. find all stations within particular latitude and longitude limits and with susceptibility greater than say 200 ; then list the unit names and rock types).
- (c) Analysis of regional variations in particular parameters.
For example, variation of :
 - (i) strike vs longitude
(Wyatt & others, 1980, fig.8)
 - (ii) U,Th vs geophysically defined areas
(Yeates & others, 1982)
 - (iii) Ordovician sediment parameters vs longitude
 - (iv) granitoid characteristics.
- (d) Contouring the density data, which can be compared with Bouguer anomaly maps as a possible means of discriminating between local and regional anomaly sources.

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A. DATABASE A.1 SUMMARY

A.1 SUMMARY OF DETAIL SETS

"SLOCT"		"SGEOL"		"SPHYS"		"SPETR"		"SCHEM"	
*STN1 X4		*STN2 X4		*STN3 X4		*STN4 X4		*STN5 X4	
*CODE X4		*TOPOG X50		*ROCKF X16		*ROCKT X30		SIO2 X6	BA X6
*STATE X4		*STRUC X72		SUSHIN X1		*FABRIC X72		TIO2 X6	B1 X6
*SHEET X20		*AGE X32		SUSMAX X1		MINRL, 14 X14		AL2O3 X6	CE X6
*ILLUS X30		*UNIT X32		SUSAV X1		MINPL, 14 X5		FE2O3 X6	CO X6
*GDOM X2		*COMDY X30		SUSNO X2		THIN1 X72		MNO X6	CR X6
*STNTP X12		STRIKE X4		SUSSD X8		THIN2 X72		MGO X6	CU X6
HUNMAP X12		DIP X4		SUSLAB X2		THIN3 X72		CAO X6	LA X6
PHOTO X8		ROCKH X72		MAGREM X8		THIN4 X72		NA2O X6	MO X6
LONG X8		LITH1 X72		OKOEN X8		THIN5 X72		K2O X6	NB X6
LAT X8		LITH2 X72		POROS X8		THIN6 X72		P2O5 X6	NI X6
EAST X8		LITH3 X72		DENROC X8		THIN7 X72		S03 X6	PB X6
NORTH X8		LITH4 X72		DENDRY X8		THIN8 X72		LOI X6	RB X6
NTEBK X24				DENGRN X8		THIN9 X72		SUM X6	SC X6
LOCCOM X72				DENCAL X8		THIN10 X72			SN X6
				RAD1 X8		THIN11 X72			SR X6
				RAD2 X8					TA X6
				RAD3 X8					TH X6
				RAD4 X8					U X6
				RADK X8					V X6
				RADU X8					W X6
				RADTH X8					Y X6
				U/TH X8					ZN X6
				TH/U X8					ZR X6
				U/K X8					LI X6
				TH/K X8					F X6
				HGU X6					

NOTES: "*" indicates the item is a KEY ITEM.
 : "X4", "X72", etc. indicates the size (characters) of each item.

A.2 EXPLANATION OF ITEMS OF DETAIL SETS

```

DATABASE SCHEMA
$CONTROL:FIELD.TABLE,ROOT,SET:<< CONTROL COMMAND FOR PROGRAM DBDS >>
BEGIN DATA BASE:LFB:8095:062:<< NAME:SECURITY CODE:DISC CARTRIDGE >>
LEVELS:<< PRIVACY LEVELS:>>
  4 RDACC:<< READ ONLY ACCESS >>
  15 WTACC:<< WRITE ACCESS >>
ITEMS: <<-----FIRST: KEY ITEMS FROM MASTER SETS----->>
  KSTN, X4:<< KEY STATION NUMBER >>
  KCODE, X4:<< KEY CODE >>
  KSTATE, X4:<< KEY STATE >>
  KSHEET, X20:<< KEY 1:250000 MAP SHEET NAME >>
  KILLUS, X30:<< KEY ILLUSTRATION >>
  KGDOM, X2:<< KEY GEOPHYSICAL DOMAIN NUMBER >>
  KSTNTP, X12:<< KEY STATION TYPE >>
  KTOPOG, X50:<< KEY TOPOGRAPHY >>
  KSTRUC, X72:<< KEY STRUCTURE >>
  KAGE, X32:<< KEY AGE >>
  KUNIT, X32:<< KEY GROUP,UNIT,FORMATION >>
  KCOMDY, X30:<< KEY COMMODITY >>
  KRCKCF, X16:<< KEY ROCKTYPE:--FIELD >>
  KRCKCT, X30:<< KEY ROCKTYPE:--THIN SECTION >>
  KFABRI, X72:<< KEY TEXTURE:--THIN SECTION >>
  <<-----ITEMS FROM "SLOCT" SET----->>
  STN1, X4:<<STATION NUMBER >>
  CODE, X4:<<CODE PREFIX FOR STATION NUMBER >>
  STATE, X4:<<STATE >>
  SHEET, X20:<<1:250000 MAP SHEET NAME >>
  ILLUS, X30:<<ILLUSTRATIONS (SLIDES,PHOTOS,ETC) >>
  GDOM, X2:<<GEOPHYSICAL DOMAIN NO. >>
  STNTP, X12:<<STATION TYPE >>
  HUNMAP, X12:<<1:100000 MAP SHEET NAME >>
  PHOTO, X8:<<AIRPHOTO REFERENCE >>
  LONG, X8:<<LONGITUDE >>
  LAT, X8:<<LATITUDE >>
  EAST, X8:<<EASTING METRIC GRID >>
  NORTH, X8:<<NORTHING METRIC GRID >>
  NTEBK, X24:<<FIELD NOTEBOOK REFERENCE >>
  LOCCOM, X72:<<LOCATION COMMENTS >>
  <<-----ITEMS FROM "SGEOL" SET----->>
  STN2, X4:<<STATION NUMBER >>
  TOPOG, X50:<<TOPOGRAPHY >>
  STRUC, X72:<<STRUCTURE >>
  AGE, X32:<<GEOLOGICAL AGE >>
  UNIT, X32:<<GROUP,UNIT,OR FORMATION >>
  COMDY, X30:<<COMMODITY MINED,TRACES,OR PROSPECTIVE >>
  STRIKE, X4:<<STRIKE >>
  DIP, X4:<<DIP >>
  ROCKH, X72:<<ROCKTYPE OF HAND SPECIMEN >>
  LITH1, X72:<<DESCRIPTION OF GEOLOGY >>
  LITH2, X72:<< >>
  LITH3, X72:<< >>
  LITH4, X72:<< >>

```

```

          <<-----ITEMS FROM "SPHYS" SET----->>
STN3,      X4:      <<STATION NUMBER                >>
ROCKF,     X16:     <<ROCKTYPE:-FIELD NAME                >>
SUSMIN,    X8:      <<IN-SITU SUSCEPTIBILITY SI UNITS MIN. >>
SUSMAX,    X8:      << - - - - - MAX. >>
SUSAV,     X8:      << - - - - - AVERAGE >>
SUSNO,     X2:      << - - - - - NUMBER >>
SUSSD,     X8:      << - - - - - STD.DEV. >>
SUSLAB,    X8:      <<LABORATORY SUSCEPTIBILITY S.I. UNITS >>
MAGREM,    X8:      <<REMNANT MAGNETIC INTENSITY >>
OKOEN,     X8:      <<KOENIGSBERGER RATIO >>
POROS,     X8:      <<POROSITY >>
DENROC,    X8:      <<WHOLE ROCK DENSITY >>
DENDRY,    X8:      <<DRY DENSITY >>
DENGRN,    X8:      <<GRAIN DENSITY >>
DENCAL,    X8:      <<CALCULATED DENSITY FROM CHEM.& MINERALS >>
RAD1,      X8:      <<FIELD GAMMA-RAY SPECTROMETRY CH. 1 >>
RAD2,      X8:      << - - - - - CH. 2 >>
RAD3,      X8:      << - - - - - CH. 3 >>
RAD4,      X8:      << - - - - - CH. 4 >>
RADK,      X8:      <<% K20 CALC. FROM SPECTROMETRY >>
RADU,      X8:      <<PPM URANIUM CALC. FROM SPECTROMETRY >>
RADTH,     X8:      <<PPM THORIUM CALC. FROM SPECTROMETRY >>
U/TH,      X8:      <<URANIUM TO THORIUM RATIO >>
TH/U,      X8:      <<THORIUM TO URANIUM RATIO >>
U/K,       X8:      <<URANIUM TO POTASSIUM RATIO >>
TH/K,      X8:      <<THORIUM TO POTASSIUM RATIO >>
HGU,       X6:      <<HEAT GENERATION UNITS >>
          <<-----ITEMS FROM "SPETR" SET----->>
STN4,      X4:      <<STATION NUMBER                >>
ROCKT,     X30:     <<ROCKTYPE FROM THIN SECTION >>
FABRIC,    X72:     <<FABRIC FROM THIN SECTION >>
MINRL,14   X14:     <<MINERALS IN THIN SECTION >>
MINPC,14   X6:      <<% OF EACH MINERAL IN COMPOUND ITEM "MINRL" >>
THIN1,     X72:     <<DESCRIPTION OF THIN OR POLISHED THIN SECTION >>
THIN2,     X72:     << - - - - - " >>
THIN3,     X72:     << - - - - - " >>
THIN4,     X72:     << - - - - - " >>
THIN5,     X72:     << - - - - - " >>
THIN6,     X72:     << - - - - - " >>
THIN7,     X72:     << - - - - - " >>
THIN8,     X72:     << - - - - - " >>
THIN9,     X72:     << - - - - - " >>
THIN10,    X72:     << - - - - - " >>
THIN11,    X72:     << - - - - - " >>

```

```

<<-----ITEMS FROM "SCHEM" SET----->>
STN5, X4: <<STATION NUMBER >>
SI02, X6: <<CHEMICAL ANALYSIS BY X.R.F. X >>
TI02, X6: << " " " " " " " " >>
AL2O3, X6: << " " " " " " " " >>
FE2O3, X6: << " " " " " " " " >>
MNO, X6: << " " " " " " " " >>
MGO, X6: << " " " " " " " " >>
CAO, X6: << " " " " " " " " >>
NA2O, X6: << " " " " " " " " >>
K2O, X6: << " " " " " " " " >>
P2O5, X6: << " " " " " " " " >>
SO3, X6: << " " " " " " " " >>
LOI, X6: << LOSS ON IGNITION >>
SUM, X6: <<TOTAL % FROM ANALYSIS >>
BA, X6: <<TRACE ELEMENT ANALYSIS BY X.R.F. :PPM>>
BI, X6: << " " " " " " " " >>
CE, X6: << " " " " " " " " >>
CO, X6: << " " " " " " " " >>
CR, X6: << " " " " " " " " >>
CU, X6: << " " " " " " " " >>
LA, X6: << " " " " " " " " >>
MO, X6: << " " " " " " " " >>
NB, X6: << " " " " " " " " >>
NI, X6: << " " " " " " " " >>
PB, X6: << " " " " " " " " >>
RB, X6: << " " " " " " " " >>
SC, X6: << " " " " " " " " >>
SN, X6: << " " " " " " " " >>
SR, X6: << " " " " " " " " >>
TA, X6: << " " " " " " " " >>
TH, X6: << " " " " " " " " >>
U, X6: << " " " " " " " " >>
V, X6: << " " " " " " " " >>
W, X6: << " " " " " " " " >>
Y, X6: << " " " " " " " " >>
ZN, X6: << " " " " " " " " >>
ZR, X6: << " " " " " " " " >>
LI, X6: << " " " " " " " " >>
F, X6: << " " " " " " " " >>

```

```

SETS:
NAME: MSTN::62,A;          <<MASTER SET  STATION NUMBER  >>
ENTRY:KSTN(5);
CAPACITY: 997;
NAME: MKODE::62,A;        <<MASTER SET  CODE    (e.g. 7962)  >>
ENTRY:KCODE(1);
CAPACITY: 5;
NAME: MSTATE::62,A;       <<MASTER SET  STATE      >>
ENTRY:KSTATE(1);
CAPACITY: 11;
NAME: MSHEET::62,A;       <<MASTER SET  1:250000 SHEET NAME  >>
ENTRY:KSHEET(1);
CAPACITY: 59;
NAME: MILLUS::62,A;       <<MASTER SET  ILLUSTRATIONS  >>
ENTRY:KILLUS(1);
CAPACITY: 59;
NAME: MGDOM::62,A;        <<MASTER SET  GEOPHYSICAL DOMAIN  >>
ENTRY:KGDOM(1);
CAPACITY: 5;
NAME: MSTNTP::62,A;       <<MASTER SET  STATION TYPE  >>
ENTRY:KSTNTP(1);
CAPACITY: 37;
NAME: MTOPOG::62,A;       <<MASTER SET  TOPOGRAPHY     >>
ENTRY:KTOPOG(1);
CAPACITY: 701;
NAME: MSTRUC::62,A;       <<MASTER SET  STRUCTURE      >>
ENTRY:KSTRUC(1);
CAPACITY: 499;
NAME: MAGE::62,A;         <<MASTER SET  GEOLOGICAL AGE   >>
ENTRY:KAGE(1);
CAPACITY: 79;
NAME: MUNIT::62,A;        <<MASTER SET  GROUP,UNIT,FORMATION ETC >>
ENTRY:KUNIT(1);
CAPACITY: 349;
NAME: MCOMDY::62,A;       <<MASTER SET  COMMODITY      >>
ENTRY:KCOMDY(1);
CAPACITY: 41;
NAME: MROCKF::62,A;       <<MASTER SET  ROCKTYPE (FIELD NAME)  >>
ENTRY:KROCKF(1);
CAPACITY: 67;
NAME: MROCKT::62,A;       <<MASTER SET  ROCKTYPE (THIN SECTION ) >>
ENTRY:KROCKT(1);
CAPACITY: 349;
NAME: MFABRI::62,A;       <<MASTER SET  TEXTURE OF THIN SECTION  >>
ENTRY:KFABRI(1);
CAPACITY: 499;

```

NAME: SLOCT::62,D; << >>
ENTRY: STN1(MSTN), <<DETAIL SET LOCATION >>
 CODE(MKODE),
 STATE(MSTATE),
 SHEET(MSHEET),
 ILLUS(MILLUS),
 GDOM(MGDOM),
 STNTP(MSTNTP),
 HUNMAP,
 PHOTO,
 LONG,
 LAT,
 EAST,
 NORTH,
 NTEBK,
 LOCCOM;
CAPACITY: 900;

NAME: SGEOL::62,D; << >>
ENTRY: STN2(MSTN), <<DETAIL SET GEOLOGY AT OUTCROP >>
 TOPOG(MTOPOG),
 STRUC(MSTRUC),
 AGE(MAGE),
 UNIT(MUNIT),
 COMDY(MCOMDY),
 STRIKE,
 DIP,
 ROCKH,
 LITH1,
 LITH2,
 LITH3,
 LITH4;
CAPACITY: 900;

NAME: SPHYS::62,D;
ENTRY: STN3(MSTN),

<<DETAIL SET PHYSICAL PROPERTIES >>

>>

ROCKF(MROCKF),
SUSMIN,
SUSMAX,
SUSAV,
SUSNO,
SUSSD,
SUSLAB,
MAGREM,
OKDEN,
POROS,
DENROC,
DENDRY,
DENGRN,
DENCAL,
RAD1,
RAD2,
RAD3,
RAD4,
RADK,
RADU,
RADTH,
U/TH,
TH/U,
U/K,
TH/K,
HGU;

CAPACITY: 900;

<<DETAIL SET THIN SECTION DESCRIPTION >>

>>

NAME: SPETR::62,D;

ENTRY: STN4(MSTN),
ROCKT(MROCKT),
FABRIC(MFABR1),
MINRL,
MINPC,
THIN1,
THIN2,
THIN3,
THIN4,
THIN5,
THIN6,
THIN7,
THIN8,
THIN9,
THIN10,
THIN11;

CAPACITY: 900;

NAME: SCHEM::62,D;
ENTRY: STN5 (MSTN),

<< >>
<<DETAIL SET CHEMICAL ANALYSIS >>
>>

SiO2,
TiO2,
Al2O3,
Fe2O3,
MnO,
MgO,
CaO,
Na2O,
K2O,
P2O5,
SO3,
LOI,
SUM,
BA,
BI,
CE,
CO,
CR,
CU,
LA,
HO,
NB,
NI,
PB,
RB,
SC,
SN,
SR,
TA,
TH,
U,
V,
W,
Y,
ZN,
ZR,
LI,
F,

CAPACITY: 500;
END.

B. SELECTED KEY INDEXES

B.1 STATE INDEX

ACT			(20)				
0142	0143	0862	0863	0864	0865	0866	
0867	0868	0869	0872	0904	0905	0906	
0907	0908	0956	0957	0958	0959		

NSW (875)
All the rest !

B.2 STATION TYPE INDEX

Creek			(6)			
0088	0893	0899	0918	0920	0924	
Dozer scrape			(33)			
0254	0439	0510	0513	0536	0537	0541
0550	0558	0695	0723	0727	0730	0732
0740	0760	0761	0783	0784	0791	0792
0819	0820	0821	0832	0833	0837	0882
0883	0889	0900	0901	0932		
Drillhole			(2)			
0804	0805					
Float			(2)			
0393	0440					
Mag traverse			(10)			
0038	0163	0443	0468	0497	0549	0551
0566	0674	0826				
No outcrop			(3)			
0396	0442	0471				
Old workings			(8)			
0517	0785	0828	0829	0910	0911	0912
0913						
Opencut mine			(4)			
0794	0795	0796	0797			
Outcrop			(583)			
0001	0002	0008	0009	0010	0013	0014
0015	0016	0017	0018	0019	0020	0021
0022	0023	0024	0025	0026	0027	0029
0032	0035	0036	0044	0045	0046	0047
0048	0049	0052	0053	0054	0055	0061
0062	0064	0065	0066	0067	0068	0069
0070	0071	0072	0073	0074	0075	0076
0077	0078	0079	0080	0081	0083	0084

0085	0090	0091	0097	0101	G102	0104
0109	0110	0112	0113	0114	0115	0116
0117	0118	0119	0120	0121	0122	0123
0124	0125	0126	0127	0128	0129	0130
0131	0132	0134	0136	0137	0138	0139
0140	0141	0147	0148	0149	0150	0151
0152	0153	0154	0155	0156	0157	0158
0159	0162	0164	0165	0166	0167	0168
0169	0170	0171	0172	0173	0174	0175
0176	0177	0178	0179	0180	0181	0182
0183	0184	0185	0186	0187	0188	0189
0190	0191	0192	0193	0194	0195	0196
0197	0198	0199	0200	0201	0202	0203
0204	0205	0206	0207	0208	0209	0210
0211	0212	0213	0214	0215	0216	0217
0218	0219	0220	0221	0222	0223	0224
0225	0226	0227	0228	0229	0230	0231
0232	0233	0234	0235	0237	0238	0239
0239	0240	0241	0242	0243	0244	0245
0246	0247	0248	0249	0250	0251	0252
0253	0255	0256	0257	0258	0259	
0260	0261	0265	0266	0267	0268	0269
0270	0271	0272	0273	0274	0275	0276
0277	0278	0279	0280	0281	0282	0283
0284	0285	0286	0287	0288	0289	0290
0291	0292	0293	0294	0295	0296	0297
0298	0299	0300	0301	0302	0303	0304
0305	0306	0307	0308	0309	0310	0311
0312	0313	0314	0315	0316	0317	0318
0319	0320	0321	0322	0323	0324	0325
0326	0327	0328	0329	0330	0331	0332
0333	0334	0335	0336	0337	0338	0339
0340	0341	0342	0343	0344	0345	0346
0347	0348	0349	0350	0351	0352	0353
0354	0355	0356	0357	0358	0359	0360
0361	0362	0363	0364	0365	0366	0367
0368	0369	0370	0371	0372	0373	0374
0375	0376	0377	0378	0379	0380	0381
0382	0383	0384	0385	0386	0387	0388
0389	0390	0391	0392	0394	0395	0397
0398	0399	0400	0401	0402	0403	0404
0405	0406	0407	0408	0409	0410	0411
0412	0413	0415	0416	0417	0418	0419
0420	0421	0422	0423	0424	0425	0426
0427	0428	0429	0430	0431	0432	0433
0434	0435	0436	0437	0438	0441	0444
0445	0446	0451	0454	0455	0456	0457
0458	0461	0462	0463	0464	0465	0466
0467	0469	0470	0472	0473	0474	0475
0476	0477	0478	0480	0481	0482	0483
0484	0485	0486	0487	0488	0489	0490
0491	0492	0493	0494	0495	0496	0498
0499	0500	0501	0502	0503	0504	0505
0506	0507	0508	0514	0515	0523	0530

0531	0534	0535	0538	0539	0540	0542
0543	0544	0546	0547	0548	0552	0553
0556	0557	0559	0560	0652	0653	0656
0658	0659	0660	0661	0662	0663	0664
0668	0669	0670	0671	0681	0684	0685
0686	0687	0688	0690	0694	0699	0701
0702	0704	0709	0710	0711	0712	0713
0714	0716	0717	0720	0721	0722	0724
0726	0728	0729	0734	0737	0738	0741
0742	0745	0746	0747	0748	0749	0751
0755	0756	0758	0763	0764	0765	0771
0772	0773	0776	0777	0786	0787	0788
0789	0790	0793	0800	0801	0816	0817
0818	0830	0831	0834	0835	0836	0838
0839	0841	0842	0843	0845	0846	0847
0848	0849	0850	0851	0852	0853	0857
0858	0859	0860	0880	0884	0892	0894
0895	0896	0903	0904	0905	0906	0908
0919	0921	0922	0923	0924	0935	0936
0938	0940	0946	0947	0948	0949	0953
0954	0955	0957	0958	0959	0961	0962
0963	0966	0972				

Quarry

0003	0004	0030	(44)	0056	0057	0058
0059	0060	0037	0031	0135	0144	0145
0146	0262	0263	0264	0414	0447	0448
0449	0452	0453	0459	0460	0479	0509
0518	0519	0520	0521	0522	0532	0545
0561	0565	0725	0869	0872	0873	0939
0941	0975					

Rail cutting

0050	0051	0063	(9)	0526	0527	0528
0529	0682		0516			

Road cutting

0005	0006	0007	(191)	0012	0028	0033
0034	0037	0039	0011	0040	0041	0042
0082	0086	0089	0040	0092	0093	0094
0096	0098	0099	0092	0100	0103	0106
0108	0111	0133	0100	0142	0143	0160
0450	0511	0512	0142	0524	0525	0533
0555	0562	0563	0524	0564	0651	0654
0657	0665	0666	0564	0667	0672	0673
0676	0677	0678	0667	0679	0680	0683
0691	0692	0693	0679	0696	0697	0698
0703	0705	0706	0693	0707	0708	0715
0719	0731	0733	0706	0735	0736	0739
0744	0750	0752	0733	0753	0754	0757
0762	0766	0767	0752	0768	0769	0770
0775	0778	0779	0767	0780	0781	0782
0799	0802	0803	0780	0806	0807	0808
0810	0811	0812	0803	0813	0814	0815
0823	0824	0825	0812	0827	0840	0844
0855	0856	0861	0825	0862	0863	0864
0866	0867	0868	0861	0870	0871	0874
0876	0877	0878	0868	0879	0881	0885
0887	0888	0890	0878	0891	0897	0893
0907	0909	0914	0890	0915	0916	0917
0926	0927	0928	0891	0929	0930	0931
0937	0942	0943	0914	0944	0945	0950
0952	0956	0960	0928	0964	0965	0967
0969	0970	0971	0943	0973	0976	0977
0978	0979		0960			

B.3 HEIGHT NAME INDEX

BARNATO (10)
 0234 0235 0236 0237 0238 0239 0240
 0241 0242 0522

BATHURST (74)
 0294 0295 0296 0297 0298 0299 0300
 0301 0302 0303 0304 0305 0306 0307
 0308 0309 0310 0311 0312 0313 0314
 0315 0316 0317 0318 0319 0320 0321
 0322 0323 0324 0325 0326 0327 0328
 0329 0330 0331 0332 0333 0334 0335
 0336 0339 0340 0341 0342 0343 0651
 0652 0653 0654 0655 0656 0657 0658
 0659 0660 0661 0662 0663 0664 0665
 0666 0667 0668 0669 0670 0671 0672
 0673 0674 0675 0692

BEGA (19)
 0943 0944 0945 0946 0947 0948 0949
 0950 0951 0952 0953 0954 0955 0960
 0961 0962 0963 0964 0965

BOURKE (9)
 0229 0230 0231 0541 0544 0545 0546
 0547 0548

CANBERRA (107)
 0077 0078 0079 0080 0081 0082 0083
 0084 0085 0086 0087 0088 0110 0111
 0112 0113 0114 0115 0116 0117 0118
 0119 0120 0121 0122 0123 0124 0125
 0126 0127 0128 0129 0130 0131 0132
 0133 0134 0135 0136 0137 0138 0139
 0140 0141 0142 0143 0862 0863 0864
 0865 0866 0867 0868 0869 0870 0871
 0872 0873 0881 0882 0883 0884 0885
 0886 0887 0888 0889 0890 0891 0892
 0893 0894 0895 0896 0897 0898 0899
 0900 0901 0902 0903 0904 0905 0906
 0907 0908 0909 0910 0911 0912 0913
 0914 0915 0916 0917 0923 0924 0925
 0926 0927 0928 0939 0956 0957 0958
 0959 0974

CARGELLIGO

0173	0174	0176	(40)	0179	0180	0181	0182
0183	0184	0185		0186	0195	0196	0197
0198	0455	0456		0457	0458	0459	0460
0461	0462	0463		0464	0465	0466	0467
0468	0469	0470		0471	0472	0473	0474
0475	0476	0477		0478	0479		

COBAR

0200	0213	0214	(58)	0215	0225	0226	0227
0228	0232	0233		0251	0252	0253	0254
0255	0256	0257		0258	0259	0439	0440
0441	0512	0513		0514	0515	0516	0517
0518	0519	0520		0521	0524	0525	0526
0527	0528	0529		0530	0531	0532	0533
0534	0535	0536		0537	0538	0539	0540
0542	0543	0549		0550	0551	0552	0553
0554	0555						

COOTAMUNDRA

0001	0002	0603	(71)	0004	0034	0035	0036
0049	0050	0051		0052	0053	0054	0055
0061	0062	0063		0064	0065	0066	0067
0068	0069	0070		0071	0072	0073	0074
0075	0076	0144		0145	0146	0147	0155
0156	0157	0158		0159	0160	0161	0162
0163	0164	0165		0166	0167	0168	0169
0386	0387	0388		0389	0390	0391	0392
0393	0394	0395		0396	0442	0443	0444
0808	0809	0810		0811	0812	0813	0814
0815							

DUBBO

0676	0677	0678	(75)	0679	0680	0681	0682
0683	0684	0685		0686	0687	0688	0689
0690	0691	0693		0694	0695	0696	0697
0698	0699	0700		0701	0702	0703	0704
0705	0706	0707		0708	0709	0710	0711
0712	0713	0714		0715	0716	0717	0718
0719	0720	0721		0722	0723	0724	0725
0726	0727	0728		0729	0730	0731	0732
0733	0734	0735		0736	0737	0738	0739
0740	0741	0742		0743	0744	0745	0748
0749	0755	0763		0764	0765		

FORBES

0148	0149	0150	(65)	0151	0152	0153	0154
0170	0171	0172		0187	0188	0189	0190
0191	0192	0193		0194	0284	0285	0286
0287	0288	0289		0290	0291	0292	0293
0445	0446	0447		0448	0449	0450	0451
0452	0453	0454		0558	0559	0560	0561
0562	0563	0564		0565	0762	0816	0817
0842	0843	0844		0845	0846	0847	0848
0849	0850	0851		0852	0853	0854	0855
0856	0857						

GILGANDRA

0746	0747	0750	(7)	0751	0752	0753	0754
------	------	------	-----	------	------	------	------

GOULBURN

0089	0090	0091	(60)	0092	0093	0094	0095
0096	0097	0098		0099	0100	0101	0102
0103	0104	0105		0106	0107	0108	0109
0352	0353	0354		0355	0356	0357	0358
0359	0360	0361		0362	0363	0364	0365
0366	0367	0368		0369	0370	0371	0372
0373	0377	0379		0380	0381	0382	0383
0384	0385	0388		0389	0860	0861	0918
0919	0920	0921		0922			

JERILDERIE

0056	0057	0058	(20)	0059	0060	0397	0398
0399	0400	0401		0402	0403	0404	0405
0406	0407	0408		0409	0410	0415	

LOUTH

0243	0523		(2)				
------	------	--	-----	--	--	--	--

NARRANDERA

0175	0177	0178	(24)	0787	0788	0789	0790
0791	0792	0793		0794	0795	0796	0797
0798	0799	0800		0801	0802	0803	0804
0805	0806	0807					

NARROMINE

0261	0262	0263	(54)	0264	0265	0266	0267
0268	0269	0270		0271	0272	0273	0274
0275	0276	0277		0278	0279	0280	0281
0282	0283	0566		0756	0757	0758	0759
0760	0761	0818		0819	0820	0821	0822
0823	0824	0825		0826	0827	0828	0829
0830	0831	0832		0833	0834	0835	0836
0837	0838	0839		0840	0841		

NYMAGEE		(63)				
0199	0201	0202	0203	0204	0205	0206
0207	0208	0209	0210	0211	0212	0216
0217	0218	0219	0220	0221	0222	0223
0224	0244	0245	0246	0247	0248	0249
0250	0480	0481	0482	0483	0484	0485
0486	0487	0488	0489	0490	0491	0492
0493	0494	0495	0496	0497	0498	0499
0500	0501	0502	0503	0504	0505	0506
0507	0508	0509	0510	0511	0556	0557

NYNGAN		(1)				
0260						

SYDNEY		(5)				
0337	0338	0344	0345	0346		

TALLANGATTA		(7)				
0966	0967	0968	0969	0970	0971	0972

ULLADULLA		(13)				
0929	0930	0931	0932	0933	0934	0935
0936	0937	0938	0940	0941	0942	

WAGGA WAGGA		(102)				
0005	0006	0007	0008	0009	0010	0011
0012	0013	0014	0015	0016	0017	0018
0019	0020	0021	0022	0023	0024	0025
0026	0027	0028	0029	0030	0031	0032
0033	0037	0038	0039	0040	0041	0042
0043	0044	0045	0046	0047	0048	0411
0412	0413	0414	0416	0417	0418	0419
0420	0421	0422	0423	0424	0425	0426
0427	0428	0429	0430	0431	0432	0433
0434	0435	0436	0437	0438	0766	0767
0768	0769	0770	0771	0772	0773	0774
0775	0776	0777	0778	0779	0780	0781
0782	0783	0784	0785	0786	0874	0875
0876	0877	0878	0879	0880	0973	0975
0976	0977	0978	0979			

WOLLONGONG		(9)				
0347	0348	0349	0350	0351	0374	0375
0376	0378					

B.4 GEOLOGICAL AGE INDEX

Carboniferous			(2)				
0679	0687						
Carboniferous?			(5)				
0686	0687	0690	0694	0722			
Cretaceous			(2)				
0945	0949						
Jurassic			(2)				
0261	0752						
Jurassic?			(1)				
0441							
Lower Carboniferous			(4)				
0344	0345	0346	0348				
Lower Devonian			(101)				
0063	0086	0087	0088	0189	0190	0200	
0201	0202	0213	0214	0218	0219	0225	
0226	0227	0228	0232	0233	0238	0239	
0240	0243	0252	0253	0254	0255	0256	
0274	0275	0286	0287	0298	0308	0358	
0368	0382	0383	0384	0400	0401	0415	
0488	0489	0490	0505	0506	0507	0508	
0509	0510	0511	0512	0513	0515	0516	
0517	0518	0519	0520	0521	0522	0523	
0524	0525	0531	0532	0533	0538	0540	
0541	0543	0550	0552	0562	0563	0564	
0680	0693	0696	0697	0698	0834	0835	
0838	0839	0845	0846	0847	0848	0849	
0850	0851	0852	0853	0854	0859	0860	
0906	0907	0976					
Lower Ordovician			(3)				
0318	0322	0675					

Lower Silurian			(7)			
0017	0730	0731	0732	0735	0877	0878
Lower-Middle Carboniferous			(9)			
0303	0307	0316	0317	0327	0332	0333
0336	0665					
Lower-Middle Devonian			(11)			
0108	0299	0347	0373	0694	0695	0703
0708	0740	0741	0742			
Lower-Middle Silurian			(2)			
C175	0685					
Mesozoic			(3)			
0688	0933	0934				
Middle Devonian			(11)			
0079	0084	0085	0235	0236	0237	0241
0242	0244	0682	0830			
Middle Devonian?			(5)			
0295	0311	0313	0503	0504		
Middle Ordovician			(9)			
0140	0280	0281	0283	0758	0760	0761
0904	0905					
Middle Silurian			(16)			
0032	0082	0083	0141	0301	0309	0670
0684	0729	0739	0800	0892	0893	0902
0903	0974					
Middle Silurian-Lower Devonian			(4)			
0165	0195	0196	0197			
Middle-Upper Ordovician			(2)			
0300	0692					

Middle-Upper Silurian	(9)					
0089 0091 0359 0370 0385 0681 0861						
0920 0921						

Ordovician	(159)					
0007 0012 0037 0039 0040 0041 0042						
0043 0045 0050 0092 0093 0094 0095						
0096 0098 0101 0102 0107 0128 0137						
0139 0144 0145 0146 0147 0162 0173						
0187 0188 0221 0222 0229 0260 0262						
0263 0264 0271 0272 0279 0310 0312						
0314 0320 0329 0330 0331 0350 0356						
0371 0372 0375 0376 0398 0405 0406						
0407 0408 0420 0421 0425 0426 0433						
0450 0451 0452 0453 0454 0455 0458						
0459 0460 0461 0478 0479 0526 0527						
0528 0529 0536 0537 0539 0547 0551						
0553 0555 0558 0559 0651 0652						
0653 0654 0660 0661 0662 0669 0676						
0677 0678 0705 0706 0715 0725 0762						
0767 0768 0772 0774 0775 0780 0785						
0799 0804 0806 0809 0810 0818 0819						
0820 0821 0822 0823 0824 0825 0826						
0827 0828 0829 0841 0844 0865 0866						
0879 0880 0881 0883 0885 0886 0890						
0891 0900 0901 0917 0925 0930 0932						
0935 0937 0943 0946 0947 0948 0958						
0960 0961 0964 0967 0968 0970						

Ordovician?	(9)					
0181 0191 0192 0193 0194 0222 0230						
0273 0411						

Quaternary	(3)					
0056 0462 0463						

Recent	(1)					
0514						

Silurian	(30)					
0112 0115 0116 0129 0130 0132 0133						
0135 0136 0142 0143 0251 0480 0481						
0530 0534 0535 0727 0759 0862 0868						
0869 0870 0871 0872 0873 0894 0895						
0897 0975						

Silurian-Devonian			(21)			
0113	0231	0269	0270	0282	0704	0707
0712	0719	0721	0723	0724	0726	0737
0744	0747	0748	0751	0832	0833	0908
Silurian-Lower Devonian			(8)			
0444	0447	0448	0449	0484	0485	0560
0746						
Silurian?			(34)			
	0182	0183	0184	0199	0206	0209
0210	0211	0212	0217	0220	0246	0248
0249	0464	0465	0466	0467	0469	0470
0473	0474	0475	0476	0477	0482	0486
0487	0491	0493	0494	0495	0496	0557
0944						
Tertiary			(18)			
0080	0198	0296	0341	0342	0355	0361
0387	0431	0545	0701	0702	0750	0753
0754	0755	0875	0953			
Tertiary?			(3)			
0057	0763	0764				
Upper Devonian			(31)			
0048	0105	0111	0153	0157	0169	0174
0177	0178	0179	0180	0234	0288	0354
0483	0502	0561	0671	0743	0789	0790
0793	0807	0840	0896	0924	0926	0927
0928	0929	0939				
Upper Ordovician			(18)			
0149	0152	0284	0285	0289	0290	0291
0292	0297	0367	0666	0667	0672	0673
0689	0691	0842	0843			
Upper Ordovician?			(1)			
0154						
Upper Ordovician-Lower Silurian			(2)			
0855	0856					
Upper Silurian-Lower Devonian			(12)			
0054	0055	0061	0062	0294	0304	0305
0306	0326	0388	0658	0749		

Upper Silurian

0001	0005	0006	(40)	0030	0031	0033	0034
0036	0064	0065		0068	0069	0072	0090
0103	0106	0160		0302	0334	0335	0379
0389	0413	0414		0565	0700	0718	0720
0736	0857	0887		0888	0909	0910	0911
0912	0913	0914		0916	0978		

(Age Unclassified)

0002	0003	0004	(297)	0009	0010	0011	
0013	0014	0015		0018	0019	0020	
0021	0022	0023		0024	0025	0026	0027
0028	0029	0035		0038	0044	0046	0047
0049	0051	0052		0053	0058	0059	0060
0066	0067	0070		0071	0073	0074	
0075	0076	0077		0078	0081	0097	0099
0100	0104	0109		0110	0114	0117	0118
0119	0120	0121		0122	0123	0124	0125
0126	0127	0131		0134	0138	0148	0150
0151	0155	0156		0158	0159	0161	0163
0164	0166	0167		0168	0170	0171	0172
0176	0185	0186		0203	0204	0205	0207
0208	0215	0216		0223	0224	0245	0247
0250	0257	0258		0259	0265	0266	0267
0268	0276	0277		0278	0293	0315	0319
0321	0323	0324		0325	0328	0337	0338
0339	0340	0343		0349	0351	0352	0353
0357	0359	0360		0362	0363	0364	0365
0366	0374	0377		0378	0380	0381	0386
0390	0391	0392		0393	0394	0395	0396
0397	0399	0402		0403	0404	0409	0410
0412	0416	0417		0418	0419	0422	0423
0424	0427	0428		0429	0430	0432	0434
0435	0436	0437		0438	0439	0440	0442
0443	0445	0446		0456	0457	0468	0471
0472	0492	0497		0498	0499	0500	0501
0542	0544	0546		0548	0549	0554	0556
0566	0655	0656		0657	0659	0663	0664
0668	0674	0709		0710	0711	0713	0714
0716	0717	0728		0733	0734	0738	0745
0756	0757	0765		0766	0769	0770	0771
0773	0776	0777		0778	0779	0781	0782
0783	0784	0786		0787	0788	0791	0792
0794	0795	0796		0797	0798	0801	0802
0803	0805	0808		0811	0812	0813	0814
0815	0816	0817		0831	0836	0837	0858
0863	0864	0867		0874	0876	0882	0884
0889	0898	0899		0915	0918	0919	0922
0923	0931	0936		0938	0940	0941	0942
0944	0950	0951		0952	0954	0955	0956
0957	0959	0962		0963	0965	0966	0969
0971	0972	0973		0977	0979		

C. KEY SUMMARIES C.1 SHEET

database LFB:8095:21 master-set MSHEET page 1

SLOCT

BARNATO	10
BATHURST	74
BEGA	19
BOURKE	9
CANBERRA	107
CARGELLIGO	40
COBAR	58
COOTAMUNDRA	71
DUBBO	75
FORBES	65
GILGANDRA	7
GOULBURN	60
JERILDERIE	20
LOUTH	2
NARRANDERA	24
NARROMINE	54
NYMAGEE	63
NYNGAN	1
SYDNEY	5
TALLANGATTA	7
ULLADULLA	7
HAGGA HAGGA	12
WOLLONGONG	9

totals 895

total number of unique items = 23

C.2 ILLUSTRATIONS

database LFB:8095:21

master-set MILLUS

page 1

SLOCT

	800
1 B&W photo	1
1 Colour slide	16
1 Colour slide, 1 B&W photo	8
1 slide, Photomicrograph	1
2 Colour slides	2
2 Colour slides, 1 B&W photo	2
2 Colour slides, 1 Polaroid	2
2 Colour slides, 2 B&W photos	2
2 photos; Photomicrograph	1
2 slides, Photomicrograph	1
3 Colour slides	2
3 Photos; Photomicrograph	1
5 Colour slides	3
5 slides; Photomicrograph	1
Many Colour slides & B&W photo	1
Photomicrograph	49
Several photos	2
totals	895
total number of unique items =	18

C.3 STATION TYPE

database LFB:8095:21

master-set MSTNTP

page 1

SLOCT

Creek	6
Dozer scrape	33
Drillhole	2
Float	2
Mag traverse	10
No outcrop	3
Old workings	8
Opencut mine	4
Outcrop	583
Quarry	44
Rail cutting	9
Road cutting	191

totals 895

total number of unique items = 12

C-4 GEOLOGICAL AGE

database LFB:8095:21

master-set MAGE

page 1

SGEOL

Carboniferous	297
Carboniferous?	2
Carboniferous?	5
Cretaceous	2
Jurassic	2
Jurassic?	1
Lower Carboniferous	4
Lower Devonian	101
Lower Ordovician	3
Lower Silurian	7
Lower-Middle Carboniferous	9
Lower-Middle Devonian	11
Lower-Middle Silurian	2
Mesozoic	3
Middle Devonian	11
Middle Devonian?	5
Middle Ordovician	9
Middle Silurian	16
Middle Silurian-Lower Devonian	4
Middle-Upper Ordovician	2
Middle-Upper Silurian	9
Ordovician	159
Ordovician?	9
Quaternary	3
Recent	1
Silurian	30
Silurian-Devonian	21
Silurian-Lower Devonian	8
Silurian?	34
Tertiary	18
Tertiary?	3
Upper Devonian	31
Upper Ordovician	18
Upper Ordovician-Lower Silurian	2
Upper Ordovician?	1
Upper Silurian	40
Upper Silurian-Lower Devonian	12
totals	895
total number of unique items =	39

C.5 GEOLOGICAL UNIT

database 'FB:8095:21 master-set MUNIT page 1

SGEOL

	291
?GULGONG GRANITE	1
?LONG FLAT VOLCANICS	1
AARONS PASS GRANITE	1
AINSLIE VOLCANICS	2
ALBURY GNEISS	1
AMPHITHEATRE GROUP	15
ANGULLONG TUFF	5
ARDLETHAN GRANITE	7
BABINDA VOLCANICS	15
BARRAT CONGLOMERATE	1
BARROW RANGE BEDS	11
BARRY GRANITE	1
BATHURST GRANITE	9
BEARGAMIL SUBGROUP	1
BEGA BATHOLITH	3
BELLS CREEK VOLCANICS	1
BELMORE GRANITE	1
BERRIDALE BATHOLITH	1
BERRIGAN GRANITE	1
BETHUNGRA FORMATION	1
BINDOOK PORPHYRY	3
BLACK ROCK SUB GROUP	2
BLACK SPRINGS GRANODIORITE	1
BLANDE DIORITE	1
BLOWERING BEDS	5
BODALLA ADAMELLITE	1
BOGALONG GRANITE	2
BOGGY PLAIN ADAMELLITE	1
BOGONG GRANITE	2
BOMBAY VOLCANICS	1
BOOGLEDIE FORMATION	1
BOOLABONE GRANITE	1
BOONA SANDSTONE	1
BOOTHUMBLE BEDS	1
BORRAIG GROUP	1
BORO GRANITE	6
BOTOBOLOAR GRANITE	1
BOURNEWOOD FORMATION	1
BOWAN PARK LIMESTONE	1
BOX RIDGE FORMATION	1
BRAIDWOOD GRANODIORITE	12
BRUINBUN GRANITE	1
BUCKENBOWRA GRANODIORITE	1
BUCKINBAH VOLCANICS	1
BUCKLEYS LAKE ADAMELLITE	1
BUMBOLEE CREEK BEDS	1
BURRAGA GROUP	2
BURRANAH FORMATION	1
CADDIGAT DYKES	1
CADUMBLE FORMATION	1
CANOWINDRA PORPHYRY	2
CAPTAINS FLAT FORMATION	9

SJEOL

CARCOAR GRANITE	1
CARGO ANDESITE	2
CARINYA FORMATION	1
CHESLEIGH FORMATION	6
CLEAR RANGE GRANODIORITE	1
COBAR GROUP	28
COLINTON VOLCANICS	2
COMERONG VOLCANICS	4
COOKMAN FORMATION	1
COOLAC SERPENTINITE	8
CORRYONG GRANITE	2
COWRA GRANODIORITE	1
CRUDINE GROUP	6
CSA SILTSTONE	1
CUGA BURGA VOLCANICS	2
CUNNINGHAM FORMATION	3
DALGETY ADAMELLITE	1
DAVIES CREEK GRANITE	1
DE DRACK FORMATION	1
DERRINGULLEN FORMATION	1
DERRIWONG BEDS	2
DOURO GROUP	9
DROMEDARY IGNEOUS COMPLEX	2
DULLADERRY RHYOLITE	3
DUNGREE VOLCANICS	1
DUNMOOGIN FORMATION	1
ELLEDEW GRANITE	1
ERIMERAN GRANITE	11
EUGOWRA GRANITE	1
FAIRBURN GROUP	1
FOREST LODGE GRANITE	1
FRAMPTON VOLCANICS	8
GARRA FORMATION	1
GARRAWILLA VOLCANICS	1
GILGUNNIA GRANITE	1
GINGERA GRANITE	1
GIRILAMBONE BEDS	28
GIRILAMBONE BEDS?	1
GOBONDERY GRANITE	3
GOOBARRAGANDRA VOLCANICS	3
GOODRADIGBEE LIMESTONE	2
GOONUMBLA ANDESITE	8
GOWAN GREEN GROUP	1
GRASS FLAT GRANITE	1
GREEN HILLS GRANITE	4
GREYMARE GRANITE	1
GRONG GRONG GRANITE	1
GULGAMREE BEDS	2
GULGONG GRANITE	4
GUMBLE AND YOUNG GRANITE	1
GUNDAGAI SERPENTINITE	4
HATCHERY CREEK CONGLOMERATE	1
HAVILAH GRANITE	1

SGECL

HONEYSUCKLE BEDS	1
HOSKINS FORMATION	1
ILLUNIE RHYOLITE	3
ISABELLA GRANODIORITE	1
JERANGLE GRANITE COMPLEX	1
JIMBEROO MEMBER	1
JINDABYNE TONALITE	1
JINDALEE BEDS	5
JINDERA GRANITE	4
KENYU FORMATION	1
KIANDRA BEDS	2
KIKOIRA GRANITE	4
KIRAHIN SHALE	1
KOETONG GRANITE	12
KOHINOOR VOLCANICS	4
KOSCIUSKO BATHOLITH	1
KYEAMBA ADAMELLITE	3
LAMBIE GROUP	2
LANA FORMATION	2
LOCKYERSLEIGH ADAMELLITE	1
LONG FLAT VOLCANICS	3
LOOMBAH FORMATION	1
LUE BEDS	2
MALACHIS HILL FORMATION	2
MANNUS CREEK GRANITE	1
MARULAN GRANITE	2
MEADOWS TANK FORMATION	2
METIMBULA FORMATION	2
MERRERE CONGLOMERATE	1
MERRIONS TUFF	3
MILPOSE VOLCANICS	15
MILTON MONZONITE	1
MINUMA BEDS	1
MOGENDOURA GRANODIORITE	1
MORUYA TONALITE	2
MOUNT DIJOU VOLCANICS	1
MOUNT FAIREY BEDS	5
MOUNT HOPE VOLCANICS	5
MOUNT PAINTER PORPHYRY	2
MOUNTAIN CREEK VOLCANICS	6
MUDGEE GRANITE	1
MUGGA MUGGA PORPHYRY	3
MULGA DOWNS GROUP	5
MULLIONS RANGE VOLCANICS	1
NELLIGEN GRANODIORITE	1
NINE MILE VOLCANICS	1
NORTH MOONIE COMPLEX	1
NYMAGEE GRANITE	4
ORERON GRANITE	1
OTHA GROUP	4
PANUARA FORMATION	1
PARKES ANDESITE	2
PILLIGA SANDSTONE	1

SGEOL

PITTMAN FORMATION	3
POLLWOMERA GRANODIORITE	1
RANKIN FORMATION	1
ROCKLEY VOLCANICS	8
RYE PARK GRANITE	3
RYLESTONE TUFF	2
SHANNONS FLAT ADAMELLITE	4
SOFALA VOLCANICS	6
SQUARE HEAD BEDS	1
SUGARLOAF CREEK TUFF	1
SUTTON GRANITE	1
TANTITHA ULTRABASICS	2
TARA GRANODIORITE	1
TERMEIL ESSEXITE	1
THARWA ADAMELLITE	1
THULE GRANITE	1
TOCUMWAL GRANITE	2
TOMINGLY BEDS	1
TOONGI GROUP	1
TOWRANG BEDS	1
TRIANGLE GROUP	4
TRUNDLE BEDS	2
TUCKLAN BEDS	2
TUMUT PONDS GROUP	2
TUMUT PONDS SERPENTINITE	1
URAL VOLCANICS	15
WALLI ANDESITE	2
WANTABADGERY GRAWITE	8
WARRATRA FORMATION	1
WEEDALLION GRANDOPHYRE	2
WELLUMBA GRANITE	1
WIAGDONG GRANITE	1
WILMATHA GRANITE	1
WINDBURN TUFF	1
WOLOGORONG GRANITE	3
WONDALGA GRANITE	7
WUULUMAN GRANITE	2
WYALONG GRANODIORITE	3
WYANGALA BATHOLITH	12
YELLOW MOUNT GRANITE	2
YEOVAL GRANITE	9
YOUNG GRANODIORITE	14
YULLUNDRY FORMATION	2

totals 895

total number of unique items = 201

C.6 GENERAL ROCKTYPE

database LFB:2095:21

master-set MROCK.F

page 1

SPHYS

	48
ACTINOLITE ROCK	1
ADAMELLITE	78
ALTERED BASALT	7
ALTERED DACITE	2
AMPHIBOLITE	2
ANDESITE	32
APLITE	5
ARGILLITE	3
ARKOSE	2
BASALT	41
BIOTITITE	1
BOJITE	1
BRECCIA	21
CALC SILTSTONE	1
CHERT	6
CHERTY QUARTZITE	1
CHLORITE	1
CLAY	1
CONGLOMERATE	15
DACITE	14
DIORITE	10
DOLERITE	10
EPIDOTE ROCK	1
FELSIC ANDESITE	1
GABBRO	7
GNEISS	4
GOSSAN	2
GRANITE	65
GRANODIORITE	38
GRANOPHYRE	15
GREENSTONE	1
GREISEN	6
GREYHACKE	23
HARZBURGITE	1
HORNFELS	1
IGNIMBRITE	90
KERATOPHYRE	2
KIMBERLITE	1
LAMPROPHYRE	6
LATITE	1
LEUCITITE	1
LIMESTONE	4
MAGHEMITE	1
MAGNESICRETE	1
MAGNETITE	1
MICRODIORITE	2
MICROGRANITE	4
MICROTALITE	1
MONZONITE	4
MUDSTONE	14
MYLONITE	2
PHYLLITE	9

SPHYS

PORPHYRY	2
PYROXENITE	2
QUARTZITE	69
RHYODACITE	1
RHYOLITE	21
SANDSTONE	58
SCHIST	1
SERPENTINITE	16
SHALE	7
SILTSTONE	36
SKARN	1
SLATE	40
SCIL	1
TRACHYANDESITE	1
TRACHYTE	3
TUFF	19
TUFFSITE	1
ULTRAMAFIC ? IAVA	1
VEIN QUARTZ	2
VOLCANIC	1

totals 895

total number of unique items = 73

C.7 THIN SECTION ROCKTYPE

database LFB:8095:21

master-set MROCKT

page 1

?Magnesite	1
Actinolite rock	1
Adamellite	75
Albitised granite	1
Albitised granophyre	1
Alkali feldspar aplite	1
Altered ?dacite	1
Altered ?ultramafic rock	1
Altered Basalt	1
Altered andesite	4
Altered basalt	12
Altered basaltic breccia	1
Altered dacite	1
Altered granite	2
Altered ignimbrite	3
Altered microdiorite	1
Altered rhyodacite	3
Altered rhyolite	1
Altered serpentinite	1
Amphibolite	3
Andalusite slate	1
Andalusite-graphite quartzite	1
Andesite	16
Aplite	5
Aplitic microadamellite	1
Argillaceous Chert	1
Arkose	4
Ash-fall tuff	3
Basalt	33
Basaltic breccia	1
Bioclastic limestone	1
Biotite quartzite	9
Biotite-chlorite quartzite	1
Biotite-muscovite quartzite	1
Biotitite	1
Black shale	2
Bojite	1
Breccia	9
Brecciated chert	1
Calcareous sandstone	1
Calcareous siltstone	1
Calcareous volcanic breccia	1
Chert	4
Cherty mudstone	1
Cherty quartzite	1
Chlorite quartzite	3
Chlorite-muscovite quartzite	1
Chlorite-sericite quartzite	1
Chloritite	1
Conglomerate	-
Consolidated soil	-
Dacite	16
Dacite breccia	1
Dacitic ignimbrite	1
Dacitic microgranite	1

Diorite	7
Dolerite	8
Doleritic basalt	1
Doleritic gabbro	2
Feldspathic biotite quartzite	1
Feldspathic quartzite	1
Feldspathic sandstone	2
Feldspathic siltstone	1
Felsic andesite	4
Ferruginised siltstone	2
Gabbro	4
Gneissic adamellite	1
Gneissic granite	2
Gneissic granodiorite	2
Gneissic ignimbrite	1
Gossan	1
Granite	46
Granite gneiss	1
Granitic breccia	3
Granodiorite	31
Granophyre	14
Graphitic quartzite	3
Greisen	8
Greywacke	16
Highly-altered tuff	1
Hornblende Gabbro	1
Hornblende andesite	1
Hornblende gabbro	1
Hornblende lamprophyre	1
Hornfels	1
Ignimbrite	64
Ignimbritic quartzite	1
Keratophyre	2
Kimberlite	1
Knotted slate	1
Lamprophyre	5
Latite	1
Leucitite	1
Limestone	3
Lithic sandstone	11
Magnesicrete	1
Mangerite	1
Micaceous quartzite	7
Microadamellite	7
Microdiorite	2
Monzodiorite	1
Monzonite	3
Mudstone	13
Muscovite quartzite	1
Mylonitised granodiorite	2
Pebbly quartzite	8
Pebbly quartzose sandstone	4
Phyllite	6
Phyllitic greywacke	1
Porphyritic microdiorite	1

Porphyritic microtonalite	1
Pyrite-chlorite quartzite	1
Pyritic mudstone	1
Pyritic quartzite	1
Pyroxenite	1
Quartz greywacke	1
Quartz-epidote rock	1
Quartz-eye porphyry	1
Quartzite	23
Quartzite breccia	2
Quartzite pebble quartzite	1
Quartzose sandstone	43
Rhodonite rock	1
Rhyodacite	13
Rhyodacitic ignimbrite	1
Rhyodacitic microadamellite	2
Rhyolite	10
Rhyolitic breccia	1
Rhyolitic microgranite	5
Sericite quartzite	7
Sericite-chlorite quartzite	1
Serpentinised harzburgite	1
Serpentinised ultramafic ?lava	1
Serpentinite	12
Serpentinite breccia	1
Shale	1
Siliceous granophyre breccia	2
Siliceous greywacke	2
Siliceous siltstone	2
Siltstone	25
Silty sandstone	2
Skarn	1
Slate	30
Slatey mudstone	1
Slatey quartzite	1
Slatey siltstone	1
Tonalite	6
Topaz rhyolite	1
Trachyandesite	5
Trachyte	3
Tremolite-epidote-plag rock	1
Troctolite	1
Tuffaceous andesitic breccia	1
Tuffaceous siltstone	1
Tuffisite	2
Tuffisite breccia	1
Two-phase andesite	1
Vein quartz	5
Volcanic breccia	1
totals	790
total number of unique items =	159

Allotriomorphic granular	1
Altered	1
Altered ?vitrophyric	2
Altered vitrophyric	3
Aplitic	2
Aplitic tending slightly granophyric	7
Aplitic to slightly gabbroic	4
Aplitic, layered	1
Aplitic; sparsely porphyritic	1
Brecciated; clasts have subophitic texture	1
Chaotic; slumped	1
Crenulated	1
Decussate	2
Decussate to granoblastic	1
Delicately laminated to thin bedded	1
Delicately laminated, though variably sorted within laminae	1
Densely fragmentary	2
Densely porphyritic	1
Devitrified eutaxitic	12
Devitrified eutaxitic; flow banded; porphyritic; slightly spherulitic	2
Devitrified eutaxitic; porphyritic; flow banded	1
Devitrified vitrophyric	10
Devitrified vitrophyric tending slightly eutaxitic	1
Entirely vesicular & spherulitic	1
Eutaxitic	1
Eutaxitic; variably spherulitic	1
Fine grained; massive	1
Finely layered; rarely microporphyritic	1
Foliated	1
Fragmental	3
Fragmental to massive with weak flow foliation	1
Fragmental with flow foliation	1
Fragmental with microveinlets	1
Fragmental; sparsely porphyritic	1
Fragmental; unsorted	2
Fragmental; unsupported framework	1
Gabbroic	1
Gabbroic; porphyritic	1
Gabbroic; slightly monzonitic	1
Gneissose; porphyroblastic	3
Gossanous; uneven grained	1
Granoblastic	3
Granophyric	9
Granophyric to slightly aplitic	1
Granophyric; porphyritic	2
Holocrystalline; granoblastic	1
Hypidiomorphic granular	114
Hypidiomorphic granular tending aplitic	2
Hypidiomorphic granular tending gabbroic	1
Hypidiomorphic granular tending slightly foliated	1
Hypidiomorphic granular tending slightly gabbroic	1
Hypidiomorphic granular tending slightly granophyric	10
Hypidiomorphic granular tending slightly layered	1
Hypidiomorphic granular to banded	1

Hypidiomorphic granular to slightly foliated; weakly porphyroblastic	1
Hypidiomorphic granular to slightly gneissic	1
Hypidiomorphic granular with late magmatic cataclasis superimposed	1
Hypidiomorphic granular with microxenoliths	1
Hypidiomorphic granular with slightly micrographic interstitial matter.	1
Hypidiomorphic granular, tending slightly aplitic	1
Hypidiomorphic granular, tending slightly aplitic & granophyric	1
Hypidiomorphic granular, tending slightly foliated due to flow	1
Hypidiomorphic granular, tending slightly gneissic.	1
Hypidiomorphic granular, tending slightly granophyric	1
Hypidiomorphic granular, tending very slightly granophyric	1
Hypidiomorphic granular, with rare granophyric patches.	1
Hypidiomorphic granular; porphyritic	3
Hypidiomorphic granular; slightly monzonitic	1
Hypidiomorphic granular; slightly porphyritic	1
Hypidiomorphic granular; sparingly glomeroporphyritic	1
Hypidiomorphic granular; incipient interstitial granophyric texture	1
Intergranular	3
Intergranular; sparingly vesicular; non porphyritic	1
Laminated	9
Laminated to thin bedded	4
Laminated to thin bedded, poorly sorted.	1
Laminated to thin bedded; microfaulted	1
Laminated to thin bedded; microporphyroblastic	1
Laminated to thin bedded; minor soft-sediment micro-slumping	1
Laminated to thin bedded; mottled; microporphyroblastic	1
Laminated to thin bedded; porphyroblastic.	1
Laminated; cross-laminated	1
Laminated; ghosted porphyroblasts	1
Laminated; non foliated; relict microporphyroblastic	1
Layered	2
Layered; microporphyroblastic	1
Layered; porphyroblastic with flow foliation	1
Layered; slightly gneissic appearance	1
Layered; with immiscible droplets	1
Lenticular layered; porphyroblastic, with flow foliation.	1
Massive	41
Massive to faintly laminated & thin bedded	1
Massive to laminated	1
Massive to poorly bedded with uneven contacts.	1
Massive to slightly bedded; microslumping; weakly graded	1
Massive to weakly layered	1
Massive with flow foliation	3
Massive with microveinlets	1
Massive with microveinlets; rare microstylolites	1
Massive with randomly scattered porphyroblasts	1
Massive with veinlets	2
Massive with wavy microfoliation	1
Massive, uncleaved	1
Massive, with cavities	1
Massive, with discontinuous wavy lenticular microlayering	1
Massive, with discontinuous wavy microlayering around pseudoboudins	1
Massive, with flow foliation	5
Massive, with lenticular micro-lamination	1
Massive; altered	1

Massive; colloidal texture	1
Massive; fragmental; unsorted	2
Massive; granoblastic	1
Massive; microbrecciated; laminated	1
Massive; microporphyroblast	4
Massive; microporphyroblastic; poorly sorted	1
Massive; microslumping present	1
Massive; minor quartz veinlets	1
Massive; poorly sorted	9
Massive; poorly sorted; rarely porphyroblastic	1
Massive; poorly sorted; tightly compacted; slightly cleaved	1
Massive; poorly sorted; weak flow foliation	1
Massive; porphyroblastic	5
Massive; porphyroblastic with flow foliation	2
Massive; porphyroblastic; slightly pebbly; wavy flow foliation	1
Massive; pseudobrecciated, with flow foliation	1
Massive; recrystallised; stylolitic	1
Massive; slightly microporphyroblastic	1
Massive; sparingly porphyroblastic	1
Massive; sutured granoblastic	1
Massive; tightly folded	1
Massive; uncleaved	1
Massive; unsorted	5
Massive; unsorted; pebbly	1
Massive; unsorted; porphyroblastic with flow foliation	1
Massive; veined	2
Massive; veined	1
Megacrystic, porphyritic, coarsened by grain growth	1
Microcrenulated; laminated	1
Microcrystalline	1
Microcrystalline to slightly granular	1
Microcrystalline with secondary cavities	1
Microcrystalline, with numerous veinlets; stylolitic	1
Microfolding in flow foliation	1
Microporphyritic	1
Microporphyroblastic	1
Microporphyroblastic; flow foliation	1
Microporphyroblastic; laminated	1
Microporphyroblastic; massive	1
Moderately sorted	27
Moderately sorted; slightly silicified by weathering	1
Moderately sorted; tightly compacted	1
Moderately sorted; tightly packed grains	1
Moderately sorted; angular to rounded	1
Moderately well sorted	7
Moderately well sorted; weakly microstylolitic	1
Monzonitic	1
Mylonitic	1
Mylonitic, porphyroblastic, brecciated	1
Ophitic	1
Ophitic to subophitic; porphyritic	1
Orthopyritic tending slightly pilotaxitic	1
Pebbly; massive with flow foliation	1
Pegmatic; porphyroblastic	1
Pilotaxitic	12

Pilotaxitic; sparsely porphyritic	1
Planar flow banding; slightly gneissic	1
Planar laminated & thin bedded	1
Planar layered	1
Planar layered to wavy layered	1
Poikilitic	1
Poorly sorted	35
Poorly sorted to weakly porphyroblastic	1
Poorly sorted with flow foliation	1
Poorly sorted with pre-consolidation flow fabric	1
Poorly sorted with soft-sediment flow foliation	1
Poorly sorted, slightly veined by tiny quartz veinlets, massive.	1
Poorly sorted, with matrix flow foliation	1
Poorly sorted, with micro, pinch-and-swell quartz concentrations.	1
Poorly sorted, with wavy flow banding; massive	1
Poorly sorted; Uncleaved.	1
Poorly sorted; laminated to thin bedded	1
Poorly sorted; massive	6
Poorly sorted; massive with flow foliation	1
Poorly sorted; massive; porphyroblastic; flow foliation	1
Poorly sorted; medium grained	1
Poorly sorted; moderately open framework	1
Poorly sorted; open framework	1
Poorly sorted; tightly compacted	1
Poorly sorted; quartz grains randomly dispersed; matrix flow foliation	1
Poorly sorted; slightly cleaved	1
Poorly to moderately sorted	1
Porphyritic; orthophyric	1
Porphyritic	50
Porphyritic & gneissose	1
Porphyritic and glomeroporphyritic	1
Porphyritic tending porphyroblastic; flow-banded	1
Porphyritic texture, but phenocrysts are secondary	1
Porphyritic with flow structure	1
Porphyritic with slightly micrographic groundmass	1
Porphyritic, foliated with slightly gneissose appearance	1
Porphyritic, with abundant cognate xenoliths	1
Porphyritic, with interstitial granophyric patches.	1
Porphyritic, with reconstituted altered groundmass	1
Porphyritic, xenolithic	1
Porphyritic; flow foliation	1
Porphyritic; altered; vesicular	1
Porphyritic; aplitic groundmass	1
Porphyritic; considerably altered	2
Porphyritic; considerably devitrified	1
Porphyritic; devitrified vitrophyric	1
Porphyritic; devitrified & altered vitrophyric	1
Porphyritic; devitrified eutaxitic	7
Porphyritic; devitrified glassy	1
Porphyritic; devitrified glassy with confined shrinkage cracks	1
Porphyritic; devitrified microspherulitic	1
Porphyritic; devitrified vitrophyric	12
Porphyritic; flow banded	1
Porphyritic; flow banded microstylolitic	1
Porphyritic; flow banded, tending slightly trachytic.	1

Porphyritic; flow banded; microvesicular	1
Porphyritic; flow banded; porphyroblastic	2
Porphyritic; flow banded; vesicular	1
Porphyritic; flow-banded	1
Porphyritic; foliated	1
Porphyritic; gabbroic	1
Porphyritic; glomeroporphyritic in places	2
Porphyritic; granophyric	1
Porphyritic; hypidiomorphic granular	9
Porphyritic; hypidiomorphic granular tending slightly granophyric	2
Porphyritic; hypidiomorphic granular to slightly aplitic	1
Porphyritic; intergranular	1
Porphyritic; lamprophyric	1
Porphyritic; layered	1
Porphyritic; massive	1
Porphyritic; massive, fragmental with flow foliation; porphyroblastic	1
Porphyritic; microgranophyric	1
Porphyritic; microstylolitic	1
Porphyritic; microstylolitic; shrinkage cracks present	1
Porphyritic; microvesicular	1
Porphyritic; orthophyric	2
Porphyritic; orthophyric; sparingly microstylolitic	1
Porphyritic; perlitic cracking in groundmass	1
Porphyritic; pilotaxitic	1
Porphyritic; pilotaxitic; layered; sparingly microstylolitic	1
Porphyritic; porphyroblastic; flow banded	1
Porphyritic; relict eutaxitic	1
Porphyritic; slightly altered	1
Porphyritic; slightly altered, pilotaxitic	1
Porphyritic; slightly altered; flow banded.	1
Porphyritic; slightly brecciated	1
Porphyritic; slightly vesicular	1
Porphyritic; sparingly microstylolitic	2
Porphyritic; sparsely vesicular; altered vitrophyric	1
Porphyritic; spherulitic	1
Porphyritic; trachytic	5
Porphyritic; vesicular; weakly trachytic	1
Porphyritic; foliated	1
Porphyritic; granophyric	1
Porphyroblastic	9
Porphyroblastic & porphyritic; gneissic	1
Porphyroblastic to well bedded.	1
Porphyroblastic with flow foliation	4
Porphyroblastic; gneissose	1
Porphyroblastic; gneissose with mylonite veinlets	1
Porphyroblastic; laminated	2
Porphyroblastic; layered	1
Porphyroblastic; massive with flow foliation	1
Porphyroblastic; microstylolitic	1
Porphyroblastic; microveined; microstylolitic	1
Porphyroblastic; schistose	1
Recrystallised	1
Recrystallised with coarsening due to grain growth	1
Recrystallised; exhibits grain growth	1
Recrystallised; exhibits moderate grain growth	1

Relict hyalopilitic; flow banded	1
Relict hypidiomorphic granular	5
Relict micrographic; porphyritic	1
Relict pilotaxitic	1
Relict porphyritic	3
Relict sub-ophitic	2
Schistose	1
Schistose; tightly folded at microscopic scale	2
Slightly gabbroic	1
Slightly porphyritic	1
Slightly porphyritic; flow banded	1
Sparsely porphyritic; devitrified glassy; sparingly microstylolitic	1
Stylolitic, recrystallised	1
Stylolitic; laminated; microveinlets	1
Sub-angular grains; moderately sorted.	1
Sub-ophitic	4
Subophitic	7
Subophitic; sparingly vesicular; porphyritic	1
Trachytic	3
Uneven grained; hypidiomorphic granular; tending slightly greisenous	1
Uneven-grained, poorly sorted	1
Unsorted	1
Unsorted; massive; microporphyroblastic	1
Variably porphyritic tending porphyroblastic	1
Veined	1
Veined, with minor microbrecciation	1
Very slightly layered; hypidiomorphic granular; igneous texture	1
Vesicular	1
Vesicular, with sub-ophitic groundmass	1
Vesicular;	1
Vesicular; densely microporphyritic; highly-altered	1
Vesicular; non porphyritic; subophitic	1
Vesicular; porphyritic	1
Vesicular; slightly orthophyric	1
Vesicular; slightly trachytic.	1
Vitroclastic	3
Vitrophoric	4
Vitrophoric; microvesicular with relict pilotaxitic patches.	1
Vuggy	1
Weakly orthophyric	1
Well bedded with flattened clots of garnet	1
Well bedded; porphyroblastic	1
Well sorted	10
Xenomorphic granular tending "sub-ophitic"-like	1
 totals	 790

total number of unique items = 319

D. PHYSICAL PROPERTIES

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro sity %	Densities			Remanence S.I.	Susceptibilities				In-situ Gamma-ray Spectrometry						Rockname						
		tonnes/cubic m				S.I.*.000001				counts/6 min.--												
		Whole	Dry	Grain		Lab	In-situ	(from	to	SD)	Ch.1	Ch.2	Ch.3	Ch.4	K20		U	Th	U/Th	Heat gen.		
001	.2	2.81	2.68	2.69	20.00				130										TUFF			
002	1.5	2.74	2.61	2.65	.10				100										GRANITE			
003	13.8	2.71	2.54	2.91	.10				30										GRANITE			
004	.3	3.16	2.96	2.97	900.00	30300	21854	3116	60569	15894									KIMBERLITE			
005	1.4	2.79	2.76	2.80	200.00	22600	0												ARGILLITE			
006	.3	2.86	2.76	2.77	130.00	21500	0												ARGILLITE			
007		2.82			.00	0						41428	3239	708	707	2.67	2.79	13.64	.2	4.66	PHYLLITE	
008	1.8	2.79	2.65	2.70	1.00	40															GRANODIORITE	
009	3.5	2.75	2.61	2.71	.00	100															MYLONITE	
010	2.4	2.62	2.58	2.64	4.00	600															GRANITE	
011	2.1	2.95	2.70	2.76	.00	120	0														GRANODIORITE	
012	2.9	2.67	2.64	2.72	.10	80															QUARTZITE	
013	2.5	2.81	2.74	2.80	140.00	46400															DIORITE	
014	.0	2.78	2.80	2.80	600.00	26500															DIORITE	
015	1.5	2.96	2.76	2.75	50.00	35500															DIORITE	
016	1.2	3.10	2.92	2.95	23.00	1100															ACTINOLITE ROCK	
017	4.6	2.63	2.52	2.63	.10	210															BRECCIA	
018	3.1	2.80	2.64	2.73	.10	160																
019	2.5	3.17	.65	2.72	.10	110																
020	1.8	2.64	2.39	2.43	600.00	25000	56314	33803	93632	22012											MYLONITE	
021	1.2	2.81	2.61	2.64	300.00	33500															SERPENTINITE	
022	2.1	3.04	3.03	3.10	4.00	500															SERPENTINITE	
023	.4	2.52	2.50	2.50	1500.00	34000															SERPENTINITE	
024	2.9	2.41	2.38	2.46	1300.00	29500															SERPENTINITE	
025	.6	2.76	2.76	2.78	9000.00	28900	37612	27168	45678	6407											HARZBURGITE	
026	.3	3.00	2.88	2.89	450.00	41800	31034	13508	69680	16706											SERPENTINITE	
027	1.6	2.75	2.72	2.77	70.00	3700	20734														SERPENTINITE	
028					.00	0	52590	19854	85011	26185											SERPENTINITE	
029	.4	2.90	2.74	2.75	1100.00	*****	51380	18849	81178	20015											SERPENTINITE	
030	1.2	2.82	2.67	2.71	20.00	100															IGNIMBRITE	
031	.0	2.69	2.68	2.68	15.00	100															IGNIMBRITE	
032	16.8	2.36	2.25	2.70	5.00	160															SHALE	
033	.1	2.76	2.73	2.73	250.00	16500	28668	21362	37573	4350											BRECCIA	
034	.1	3.00	2.96	2.96	1500.00	*****	9896	6597	13194	4665											BASALT	
035					.00	0																
036	1.8	2.65	2.54	2.59	152000.0	27600																ULTRAMAFIC ?LAVA
037	5.2	2.67	2.55	2.69	.10	70															PHYLLITE	
038					.00	0																
039	11.5	2.46	2.44	2.75	.00	24	0				71868	5599	1229	1350	4.52	3.40	26.20	.1	7.60		SLATE	
040	3.8	2.56	2.51	2.67	.20	30	0				42413	3307	738	696	2.72	3.40	13.38	.2	5.01		QUARTZITE	
041	8.7	2.75	2.61	2.86	.20	0																QUARTZITE
042	8.4	2.65	2.54	2.78	.00	80																SILTSTONE
043		2.56			.00	0																SILTSTONE
044	1.4	2.65	2.66	2.70	2.00	50	236	62	477	158											GRANITE	

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Porosity %	Densities				Remanence S.I.	Susceptibilities		In-situ Gamma-ray Spectrometry								Rock name	
		tonnes/cubic m	Whole	Dry	Grain		S.I.*	Lab	In-situ (from to SD)	counts/6 min.				% ppm ppm Heat				
									Ch.1	Ch.2	Ch.3	Ch.4	K20	U	Th	U/Th	gen.	
045	14.0	2.36	2.38	2.76	5.00		46											SILTSTONE
046	1.1	2.72	2.60	2.63	.00		100	0										GRANITE
047	2.4	2.67	2.57	2.63	.20		58											GRANITE
048		2.53			.00		0											SANDSTONE
049	1.0	2.69	2.68	2.71	.35		190											GRANITE
050					.00		0											SILTSTONE
051					.00		0											
052					.00		0											
053	6.4	2.51	2.46	2.63	2.50		35											GRANITE
054		2.46			.00		0											
055					.00		0											
056	32.2	1.86	1.79	2.64	.10		30		67794	3454	1622	1919	1.22	2.87	37.40	.0	8.42	CLAY
057	35.6	1.78	1.70	2.64	.20		65											SOIL
058	.2	2.62	2.62	2.62	71.06		4000		60773	5342	1032	1154	4.54	2.62	22.42	.1	6.48	GRANITE
059	1.3	2.62	2.59	2.61	.60		95		65251	5836	1213	910	5.10	8.34	17.18	.4	9.26	GRANITE
060	.2	2.65	2.61	2.61	.10		90											GRANITE
061	.7	2.60	2.58	2.60	.00		0	219	0	1068	419							QUARTZITE
062					.00		0											
063					.00		0											
064	.5	2.66	2.65	2.66	135.00		3600											TUFF
065	.7	2.70	2.67	2.69	.30		240											IGNIMBRITE
066	2.4	2.60	2.52	2.58	.30		60											GRANOPHYRE
067	4.4	2.71	2.70	2.82	1.90		830											BIOTITITE
068					.00		0											IGNIMBRITE
069					.00		0											IGNIMBRITE
070	14.9	2.7	2.70	2.69	1300.00		51000	33381	15456	81681	17941							SERPENTINITE
071	4.5	2.6	2.58	2.69	2250.00		43000											SERPENTINITE
072	.3	2.70	2.67	2.68	.30		200											IGNIMBRITE
073	2.2	2.88	2.65	2.71	1.60		210											GRANODIORITE
074	.0	2.96	2.94	2.94	41.00		430											DOLERITE
075	.2	3.00	2.84	2.85	3.20		260											DOLERITE
076	.4	2.60	2.82	2.84	1.00		200											BASALT
077	.2	2.72	2.69	2.70	1000.00		33000	40322	35814	49008	6119							MICRODIORITE
078					.00		0	13747	12943	15079	807							GRANITE
079					.00		0											
080	.2	3.06	2.90	2.91	15000.00		22500	27630	24944	31415	2853							BASALT
081	.3	2.62	2.62	2.62	.00		160	0										GRANITE
082	.4	2.70	2.67	2.68	20.00		5600	5822	5529	6031	261							IGNIMBRITE
083	.4	2.62	2.59	2.60	10.00		1250	907	0	1872	1049							DACITE
084	.1	2.75	2.70	2.70	1.60		70											LIMESTONE
085					.00		0											
086	5.5	2.42	2.42	2.56	.00		150	370	0	1256	436							SILTSTONE
087	21.	2.16	2.14	2.70	.20		125	0										SHALE
088	.0	2.82	2.64	2.64	1.00		100	298	0	628	345							LATITE

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Porosity %	---Densities---				Remanence S.I.	-----Susceptibilities-----				-----In-situ Gamma-ray Spectrometry-----							Rockname		
		sity tonnes/cubic m					-S.I.*.000001-				counts/6 min.--									
		Whole Dry Grain					Lab	In-situ (from	to	SD)	Ch.1	Ch.2	Ch.3	Ch.4	K20	U	ppm ppm ppm		Th U/Th	Heat gen.
089					.00	0														
090					.00	0	267	0	753	356									ARGILLITE	
091					.00	0	62	0	188	88									IGNIMBRITE	
092					.00	0														
093	5.3		2.74	2.75	.00	0	100	0	376	163									SILTSTONE	
094	.01	2.71	2.68	2.68	.10	110													GREYWACKE	
095	.01		2.65	2.65	.00	C													CHERTY QUARTZITE	
096					.00	0														
097	.1	2.65	2.63	2.63	63.00	70													GRANITE	
098		2.60			.00	0														
099	.01	2.76	2.74	2.74	.00	2500	2272	1884	2513	229									GRANODIORITE	
100					.00	0	1528	376	2764	858									GRANITE	
101					.00	0														
102					.00	0														
103					.00	0														
104	.3	2.96	2.94	2.95	1000.00	17900	13969	691	25069	6905									DOLERITE	
105	.4	3.00	2.61	2.62	.20	0													SANDSTONE	
106	.1	2.91	2.92	2.92	.00	0	4174	628	6911	2565									BASALT	
107					.00	0														
108	.5	2.75	2.71	2.72	650.00	13000	15431	13194	18221	1902									IGNIMBRITE	
109	.4	3.09	2.86	2.87	2000.00	11400	12597	7539	17404	3697									GRANITE	
110					.00	0														
111					.00	0														
112					.00	0														
113	.01	2.85	2.61	2.61	700.00	8000	3015	879	5906	2022									IGNIMBRITE	
114					.00	0														
115					.00	0														
116	1.0	2.67	2.63	2.66	.00	16	78	7	188	73									PORPHYRY	
117	.01	2.74	2.71	2.71	120.00	24000	26060	18221	39835	5930									GRANODIORITE	
118	.2	2.69	2.66	2.67	8500.00	20000	25239	20860	30536	2495									GRANODIORITE	
119	.4	2.70	2.68	2.69	1400.00	31000	37923	28902	47375	4278									GRANODIORITE	
120	.7	2.70	2.70	2.72	11500.00	33600	41754	36442	48443	3923									GRANODIORITE	
121	1.1	2.73	2.71	2.74	20.00	24200	28467	16461	45741	7772									MICROTALITE	
122	.3	2.77	2.78	2.79	190.00	18500													IGNIMBRITE	
123	.4	2.74	2.72	2.73	100.00	23500	25572	19289	30284	3244									GRANODIORITE	
124	.2	2.79	2.76	2.76	1100.00	23300	26326	22116	30724	2425									GRANODIORITE	
125	.3	2.74	2.74	2.74	150.00	33000	34100	28211	39207	3402									GRANODIORITE	
126	1.		2.75	2.77	.00	0	30184	3392	38955	8169									GRANODIORITE	
127	7.5	3.05	2.49	2.70	200.00	35000	16089	1382	26138	9124									GRANODIORITE	
128					.00	0														
129	.2	2.78	2.74	2.74	300.00	0	3957.7	19540	69806	17653	43380	2673	769	586	2.01	5.18	11.08	.4	5.56	IGNIMBRITE
130		2.58			.00	0	520	376	753	139	36608	1623	614	501	.98	3.75	9.52	.3	4.17	IGNIMBRITE
131	.2	3.11	2.71	2.71	120.00	6700	442	0	1068	315										ADAMELLITE
132	8.7	2.48	2.46	2.69	.10	75														CALC SILTSTONE

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Porosity %	---Densities---			Remanence S.I.	-----Susceptibilities-----				-----In-situ Gamma-ray Spectrometry-----							Rockname				
		tonnes/cubic m	Whole	Dry		Grain	Lab	In-situ (from to	SD)	Ch.1	Ch.2	Ch.3	Ch.4	K20	U ppm	Th ppm		U/Th	Heat gen.		
133	.2	2.65	2.63	2.63	.10	20													SANDSTONE		
134	.0	2.73	2.63	2.63	1.00	100	0												GRANITE		
135	.01	2.97	2.72	2.72	.00	200	0												SILTSTONE		
136	.4	2.73			1.00	30													IGNIMBRITE		
137					.00	0													SLATE		
138	.4	2.81	2.62	2.63	.00	0	206	0	942	339									GRANITE		
139	.8	3.00	2.76	2.79	.00	280	439	0	691	328									QUARTZITE		
140					.00	0															
141					.00	0															
142	.4	2.87	2.68	2.69	5.00	230	1162	502	1947	530									IGNIMBRITE		
143	.6	2.83	2.66	2.68	.30	20													TUFF		
144		2.94			.00	0	9676	9550	9927	217	9244	410	201	182	.17	1.01	3.49	.2	1.26	SERPENTINITE	
145	.0	3.02	3.01	3.01	.10	301	0					1925	40	43	36	.00	.25	.69	.3	.27	AMPHIBOLITE
146		2.48			.00	0	559	0	1118	790											GOSSAN
147	1.6	2.55	2.52	2.56	500000.0	49511	34567	29028	38201	3380	4234	130	67	35	.06	.64	.64	.0	.52	SERPENTINITE	
148	.0	2.57	2.59	2.61	.20	276	69	0	175	67	61105	5603	1102	831	4.99	7.53	15.69	.4	8.48	GRANITE	
149	.0	3.00	2.97	2.99	600.00	45125	28467	9110	49511	13583	6790	346	139	118	.19	.79	2.25	.3	.92	BASALT	
150	.0	3.19	3.53	3.53	4.00	3166	7885	5340	12189	3068											QUARTZITE
151					.00	0	686	0	1130	376	72894	5478	1539	1170	4.18	10.40	22.11	.4	11.17	ADAMELLITE	
152	.0	3.03	3.01	3.04	450.00	4385	5410	2701	7602	1765	5908	281	95	60	.20	.79	1.11	.7	.72	BASALT	
153					.00	0	452	125	879	342	45230	3577	813	992	2.78	.08	19.36	.0	4.60	SILTSTONE	
154	.0	2.67	2.67	2.67	2.00	0	109	0	251	129	39675	2473	849	841	1.53	.43	16.22	.2	5.24	TUFF	
155	9.4		2.4	2.65	50.00	150	376	0	691	299	57867	4648	962	975	3.90	7.63	18.83	.1	6.35	GNEISS	
156					.00	0															
157	1.0	2.81	2.75	2.78	16000.00	6810	6770	5026	8293	1319	5035	154	84	37	.0	.88	.65	.3	.68	DIORITE	
158	5.6	2.53	2.53	2.68	5.00	50	649	376	1256	331	57033	5530	1011	620	5.13	8.58	11.47	.7	8.45	GRANITE	
159					.50	163	412	314	628	107	51831	4805	906	544	4.42	7.83	10.04	.7	7.58	GRANITE	
160	2.0	2.72	2.66	2.71	.20	402															IGNIMBRITE
161		2.58			.00	0															SERPENTINITE
162		2.79			.00	0															SILTSTONE
163					.00	0															
164	2.2	2.75	2.70	2.77	.40	314	305	0	628	236											ADAMELLITE
165					.00	0	635	0	3392	1058	29357	2135	550	577	1.60	1.84	11.17	.1	3.41	CONGLOMERATE	
166	.0	2.83	2.80	2.82	25.00	791	805	502	1193	220	12178	847	222	171	.67	1.47	3.24	.4	1.62	BOJITE	
167	1.1	2.60	2.60	2.63	1650.00	10216	5997	3392	9801	1745	62218	4755	1179	996	3.80	6.79	18.99	.3	8.31	ADAMELLITE	
168	3.4	2.56	2.53	2.62	8.00	314	289	0	1130	406	57598	4787	822	735	4.36	4.26	14.07	.3	6.04	GRANITE	
169					.00	0	596	314	879	220	34284	2359	773	710	1.56	3.78	13.62	.2	5.02		
170	.1	2.92	2.91	2.92	700.00	27859	24755	18221	31415	4932	8519	322	156	124	.14	.99	2.35	.4	7.58	ANDESITE	
171		2.66			.00	0	456	62	691	211	24924	1817	405	458	1.45	.97	8.90	.1	1.05	GRANDDIORITE	
172	1.7	2.81	2.76	2.81	.60	351	383	62	628	178	37482	2473	805	896	1.54	2.09	17.40	.1	4.61	APLITE	
173					.00	0	541	0	1256	428	35637	2741	549	692	2.25	.47	13.53	.0	3.11	SLATE	
174	7.3	2.55	2.51	2.71	190.00	175	0			19497	1429	350	335	1.12	1.55	6.44	.2	2.32	CONGLOMERATE		
175	1.0	2.64	2.63	2.66	3400.00	5089	3614	753	6534	1722	62134	5844	1207	538	5.35	12.63	9.54	.3	10.69	IGNIMBRITE	
176	2.9	2.59	2.54	2.62	2.00	0	0			36639	3407	618	331	3.20	5.81	6.03	.9	5.36	APLITE		

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro %	Densities				Remanence S.I.	Susceptibilities				In-situ Gamma-ray Spectrometry							Rockname		
		tonnes/cubic m					S.I. x 0.00001				counts/6 min.				ppm				Heat gen.	
		Whole	Dry	Grain		Lab	In-situ	(from	to	SD)	Ch.1	Ch.2	Ch.3	Ch.4	K20	U	Th	U/Th		
177	3.9	2.54	2.53	2.63	50.00	75	0				13677	836	215	238	.62	.57	4.62	.1	1.28	SANDSTONE
178	9.1		2.38	2.61	3.00	37	0				10039	436	209	224	.16	.64	4.34	.1	1.17	SANDSTONE
179	7.6	2.52	2.47	2.67	1.00	188	0				29110	1921	532	589	1.36	1.42	11.44	.1	3.14	SANDSTONE
180	6.0	2.52	2.50	2.66	.20	263	0				16984	981	312	437	.57	.00	8.59	.0	1.44	SANDSTONE
181					.00	0	125	0	251	125	46666	3106	828	982	2.21	1.44	19.14	.0	4.65	SHALE
182	1.2	2.64	2.61	2.64	2.00	75	0				69596	4841	1351	1422	3.45	4.47	27.53	.1	8.25	IGNIMBRITE
183	.0	2.68	2.65	2.66	22000.00	16612	8733	8293	9173	622										IGNIMBRITE
184					.00	0	356	0	1005	376										TUFF
185					.00	0	339	0	879	309										QUARTZITE
186					.00	0	314	0	628	261										TUFF
187	3.4	2.59	2.57	2.66	.80	0	412	0	691	266	16617	1234	310	283	.97	1.54	5.43	.2	2.10	CONGLOMERATE
188					.00	0	1256	1005	1507	251	38410	3673	629	566	3.35	3.22	10.84	.3	4.61	SHALE
189	4.6	2.57	2.56	2.68	9.00	0	134	0	376	160	24048	1609	430	382	1.23	2.26	7.31	.3	2.92	CONGLOMERATE
190	5.0	2.59	2.56	2.70	.00	138	172	0	439	209	32851	1930	660	638	1.21	2.85	12.28	.2	4.14	SANDSTONE
191					.00	0	0				34891	2969	566	591	2.56	1.93	11.43	.1	3.73	SANDSTONE
192	2.7	2.52	2.59	2.66	2.00	238	0													QUARTZITE
193	5.7	2.56	2.55	2.71	.10	188	439	0	691	233	46093	4154	637	737	3.80	1.32	14.35	.0	4.13	SILTSTONE
194	1.1	2.71	2.68	2.71	5.00	175	251	0	502	213	28327	1949	464	576	1.47	.50	11.25	.0	2.56	GREYHACKE
195	1.4	2.69	2.68	2.72	.40	125	634	125	2136	558	32018	2240	589	646	1.64	1.64	12.54	.1	3.53	DACITE
196	1.0	2.74	2.71	2.74	10.00	113														DACITE
197	2.9	2.69	2.65	2.74	1000.00	15821	9424													DACITE
198	.0	3.01	3.03	3.04	29000.00	7539	13899	9550	16776	2355	22591	1541	419	419	1.13	1.65	8.08	.2	2.66	LAMPORPHYRE
199	2.3	2.65	2.63	2.69	180.00	314	0				33557	2460	631	616	1.88	2.66	11.87	.2	4.10	CONGLOMERATE
200					.00	0					18794	1071	379	433	.61	.85	8.42	.1	2.10	SANDSTONE
201		2.60			.00	0	1144	0	4523	1459	29723	1160	364	374	.77	1.31	7.23	.1	2.22	VEIN QUARTZ
202	2.2	2.63	2.58	2.64	.10	0														VEIN QUARTZ
203	3.0	2.53	2.53	2.60	120.00	251	474	0	1822	636	73700	5973	1149	1014	5.26	6.11	19.39	.3	8.29	IGNIMBRITE
204	1.3	2.64	2.60	2.63	2.00	188														IGNIMBRITE
205	.0	2.61	2.62	2.63	1400.00	2048														IGNIMBRITE
206					.00	0	157	0	376	185	18749	1118	400	392	.67	1.67	7.55	.2	2.47	QUARTZITE
207	.0	2.63	2.63	2.65	.30	75	98	0	439	177	52348	4960	999	366	4.63	11.39	6.27	.8	9.19	GRANITE
208	2.4	2.68	2.65	2.71	1.00	163														GREISEN
209	.0	2.67	2.67	2.67	.40	12	104	0	376	140	45473	5813	758	751	5.63	3.06	14.48	.2	5.66	IGNIMBRITE
210		2.55			.00	0	0				30367	5339	1285	1419	4.11	3.47	27.55	.1	7.78	IGNIMBRITE
211	1.0	2.65	2.63	2.65	7.00	0														GNEISS
212					.00	0	62	0	251	125	51747	3943	859	969	3.18	2.08	18.83	.1	5.22	IGNIMBRITE
213					.00	0	376	314	439	88	37964	3082	696	675	2.51	2.98	13.00	.2	4.64	CONGLOMERATE
214	7.7	2.49	2.48	2.69	2.00	0	314	62	502	226	33244	2835	569	594	2.40	1.94	11.49	.1	3.71	QUARTZITE
215	1.4	2.62	2.61	2.65	.10	25	196	0	376	169	61612	5381	1086	429	5.00	12.02	7.45	.6	9.87	MICROGRANITE
216	1.4	2.62	2.60	2.64	.40	0	0				60912	5415	1008	688	4.95	7.74	12.87	.6	8.12	GRANITE
217	2.6	2.56	2.55	2.62	.10	37	0				64390	4333	1234	1179	3.13	5.50	22.68	.2	7.96	IGNIMBRITE
218	.0	2.67	2.66	2.66	.30	175	515	0	1130	390	39732	3178	687	751	2.59	1.95	14.57	.1	4.28	QUARTZITE
219		2.54																		SILTSTONE
220	0	2.24	2.62	2.62	.50	201	25	0	125	56	69101	5608	1224	1341	4.54	3.43	26.02	.1	7.60	IGNIMBRITE

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro [%	---Densities---		Remanence S.I.	-----Susceptibilities-----					-----In-situ Gamma-ray Spectrometry-----							Rockname					
		tonnes/cubic m Whole	tonnes/cubic m Dry Grain		S.I.	Lab	In-situ (from to)	S.I. x 100001	Ch.1	Ch.2	Ch.3	Ch.4	counts/6 min.	% K2O	ppm U	ppm Th		U/Th	Heat gen.			
221	1.4	2.64	2.60	2.63	.30	150															QUARTZITE	
222		2.31			.00	0	12566														SLATE	
223	.5	2.58	2.63	2.64	80.00	10744	10555														IGNIMBRITE	
224	2.6	2.62	2.58	2.64	10500.00	6911															MICROGRANITE	
225		2.49			.00	0	366	0	628	208	22876	1375	424	473	.90	1.09	9.19	.1	2.44		QUARTZITE	
226		2.43			.00	0	644	0	1005	287	27516	1915	515	586	1.37	1.19	11.40	.1	2.99		QUARTZITE - BRECCIA	
227	10.2	2.46	2.44	2.72	.70	62															SILTSTONE	
228		2.75			.00	0															QUARTZITE	
229	1.2	2.64	2.59	2.62	.40	0	0				11955	473	282	228	.13	1.75	4.33	.4	1.85		QUARTZITE	
230	.0	2.80	2.77	2.78	61000.00	35575	42449	14451	86896	18679	32123	3153	459	278	3.09	3.94	5.14	.7	4.03		BASALT	
231	8.4	2.52	2.49	2.72	1.00	0	342	0	753	291	34408	2339	606	672	1.73	1.60	13.05	.1	3.61		QUARTZITE	
232		2.41			.00	0	182	0	816	270	39203	2591	763	806	1.78	2.49	15.61	.1	4.61		SANDSTONE	
233		2.42			.00	0															CONGLOMERATE	
234		2.54			.00	0	0				10629	475	221	276	.16	.22	5.39	.0	1.09		CONGLOMERATE	
235	4.0	2.65	2.49	2.60	50.00	0	0				10844	534	299	255	.17	1.69	4.86	.3	1.92		QUARTZITE	
236																					SANDSTONE	
237	5.0	2.54	2.52	2.65	2.00	0	0				13516	700	296	290	.34	1.23	5.59	.2	1.79		SANDSTONE	
238	18.1	2.13	2.15	2.63	.60	0	387	314	565	100	28038	1743	588	605	1.08	2.11	11.69	.1	3.55		SANDSTONE	
239		2.28			.00	0																
240	8.0	2.40	2.38	2.59	4.00	62	118	0	439	164	22233	1093	559	577	.38	1.67	11.18	.1	3.02		QUARTZITE	
241		2.44			.00	0	0				9396	305	239	290	.00	.34	5.66	.0	1.16		SANDSTONE	
242	6.3	2.52	2.48	2.64	10.00	0																
243	11.2	2.31	2.32	2.61	3.00	0	416	188	691	175	10711	483	281	256	.12	1.40	4.91	.2	1.73		QUARTZITE	
244	5.7	2.47	2.47	2.62	.80	0	0				9951	548	200	172	.34	1.12	3.28	.3	1.33		SANDSTONE	
245	2.1	2.61	2.61	2.66	2.00	62	0				66872	4989	1224	406	4.41	14.46	6.81	.1	11.13		GRANITE	
246	.0		2.56	2.65	5.00	163	0				58373	4462	968	1069	3.62	2.61	20.75	.1	5.98		IGNIMBRITE	
247	.0	2.61	2.59	2.60	16000.00	5478	2585	0	4523	1490	72926	5471	1274	1413	4.28	3.37	27.44	.1	7.74		GRANOPHYRE	
248	1.0	2.72	2.70	2.73	30.00	301	0				50308	3573	1041	1103	2.47	3.36	21.36	.1	6.28		IGNIMBRITE	
249	.0	2.60	2.63	2.64	2.00	150	0				69540	5394	1317	1175	4.30	6.85	22.49	.3	9.06		TUFF	
250	2.5	2.67	2.63	2.69	6.00	75	0				63287	4178	1099	1189	3.07	3.26	23.05	.1	6.65		GRANOPHYRE	
251					.00	0	565	0	942	498	40575	2432	785	794	1.58	2.98	15.33	.1	4.82		SILTSTONE	
252		2.52			.00	0					27451	1510	524	580	.89	1.40	11.26	.1	2.99		SANDSTONE	
253	12.0	2.25	2.31	2.63	.30	37	0				28736	1374	646	784	.47	.91	15.30	.0	3.28		SANDSTONE	
254	10.0	2.42	2.38	2.64	.20	150	0				33817	2139	664	777	1.36	1.28	15.13	.0	3.68		SANDSTONE	
255					.00	0	0				16148	842	356	261	.47	2.52	4.92	.5	2.51		SANDSTONE	
256	7.4	2.51	2.51	2.71	.60	188	251	0	1005	299	32035	2131	622	681	1.46	1.75	13.21	.1	3.67		QUARTZITE	
257	1.2	2.90	2.86	2.89	1500.00	13182	15945	9676	28023	5788	13474	803	275	214	.54	1.80	4.05	.4	1.93		GABBRO	
258	1.7	3.05	3.59	3.65	2000.00	2990	4429	2387	7037	1993	9442	464	233	133	.23	2.10	2.44	.8	1.77		GOSSAN	
259	.0	2.61	2.59	2.59	7500.00	38578	23951	11309	45490	10740	5869	260	129	74	.13	1.16	1.36	.8	.98		SERPENTINITE	
260					.00	0	263	0	565	205	13010	623	321	305	.22	1.45	5.86	.2	1.95		SLATE	
261	12.5	2.50	2.76	3.16	250.00	0															SANDSTONE	
262		2.71			.00	0	138	62	188	52	42967	3214	754	819	2.52	2.20	15.88	.1	4.64		SILTSTONE	
263	.0	2.69	2.68	2.69	.20	37															QUARTZITE	
264	.0	2.73	2.71	2.71	.50	163															QUARTZITE	

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro sity %	---Densities---			Remanence S.I.	-----Susceptibilities-----					-----In-situ Gamma-ray Spectrometry-----							Rockname		
		tonnes/cubic m	Whole	Dry		Grain	Lab	In-situ	(from	to	SD)	Ch.1	Ch.2	Ch.3	Ch.4	counts/6 min.	%		ppm	ppm
265	.3	2.57	2.58	2.58	700.00	1269	1089	0	3330	1266	7059	328	115	144	.18	.11	2.81	.0	.59	RHYOLITE
266		2.53			.00	0	63083													RHYOLITE
267	3.9	2.50	2.51	2.62	4000.00	17756	16388	7916	23310	4717	39130	3026	722	610	2.46	4.16	11.63	.3	5.12	GRANODIORITE
268					.00	0	0				34907	4095	420	250	4.26	3.66	4.61	.7	4.03	PORPHYRY
269	7.0	2.53	2.58	2.69	30.00	452	634	314	1130	283	24272	1342	487	495	.78	1.82	9.56	.1	2.93	SANDSTONE
270					.00	0														BRECCIA
271	0	2.99	3.01	3.01	7000.00	53909	58974	44736	95881	12399	16876	1395	136	120	1.44	.72	2.30	.3	1.17	GABBRO
272	.0	3.06	3.11	3.14	4100.00	6408	4125	3392	5026	829										GABBRO
273	.0	3.15	3.13	3.16	100.00	779	2796	1884	4021	1027										PYROXENITE
274	.0	2.83	3.13	2.82	10000.00	70723	44840	221161	115861	29830	24175	2243	300	334	2.14	.78	6.49	.1	2.08	BASALT
275		2.90			.00	0														BASALT
276	2.2	2.56	2.57	2.63	.20	113	205	62	314	93	51224	2714	1174	1398	1.13	1.97	27.25	.0	6.12	GRANOPHYRE
277	.0	2.61	2.60	2.61	150.00	6697	6111	3518	8230	1352	47924	3517	853	879	2.74	3.05	16.99	.1	5.41	ADAMELLITE
278	1.4	2.60	2.59	2.63	6000.00	5441	6572	4523	8356	1207	62605	4905	1141	1076	3.96	5.25	20.68	.2	7.68	ADAMELLITE
279	.0	2.72	2.73	2.73	8000.00	29405	23603	3267	43856	11281	10446	568	176	164	.39	.83	3.15	.2	1.14	BASALT
280	.0	2.75	2.79	2.81	8.00	477	1347	0	2638	856										BASALT
281	11.7	2.42	2.40	2.71	3.00	100					73724	4225	1679	1898	2.09	4.02	36.90	.1	9.24	IGNIMBRITE
282	.0	2.64	2.65	2.65	350.00	11548	4754	3141	7414	1232	66125	4228	1368	1221	2.84	7.11	23.37	.3	9.04	RHYOLITE
283	.0	2.94	2.95	2.96	12000.00	43102	48811	39144	55292	4356	28492	1728	606	527	1.10	3.31	10.07	.3	4.02	BASALT
284	.0	2.76	2.73	2.74	2600.00	43630	38601	23184	46998	7393	22977	2053	240	139	2.10	2.13	2.56	.8	2.24	ANDESITE
285	.0	2.74	2.76	2.76	1700.00	52326	24818													ANDESITE
286	2.2	2.57	2.51	2.57	.50	0	0			25790	2374	484	364	2.09	3.32	6.87	.4	3.71	DACITE	
287	.2	2.54	2.56	2.57	2.00	12														RHYOLITE
288	10.3	2.42	2.36	2.63	.20	75	0			15950	842	375	304	.42	2.31	5.78	.4	2.51	SANDSTONE	
289	.0	2.72	2.78	2.78	23000.00	42901	40258	29907	45176	4597	33124	3511	384	209	3.63	3.57	3.81	.9	3.70	BASALT
290	.0	2.74	2.69	2.70	2500.00	10932	4750	0	25509	7979	5420	246	85	76	.16	.44	1.46	.3	.56	QUARTZITE
291					.00	0	1709	753	3141	1105	22862	1813	249	161	1.79	2.02	3.00	.6	2.17	SLATE
292					.00	0	14953	3267	25509	6830	13277	795	239	157	.60	1.91	2.93	.6	1.82	ANDESITE
293	.0	2.62	2.61	2.62	100.00	3493	2282	565	3895	849	43019	3448	731	682	2.91	3.45	13.10	.2	5.03	GRANITE
294	1.8	2.60	2.53	2.57	4500.00	3267	1076	188	2450	722	84351	7822	1408	1215	7.06	7.81	23.20	.3	10.41	RHYOLITE
295	2.0	2.58	2.53	2.58	2.00	0	0			84275	6079	1708	1643	4.42	7.48	31.62	.2	11.03	GRANITE	
296	2.7	2.58	2.76	2.84	1000.00	28839	21597	16461	25572	2897	23782	2172	418	378	1.91	2.11	7.24	.2	2.98	BASALT
297	.0	2.77	2.78	2.80	1000.00	7929	9839	4775	14576	2989	13828	1090	240	161	.94	1.88	3.01	.6	1.89	SANDSTONE
298	1.2	2.67	2.62	2.65	3500.00	7577	0			31202	2244	606	520	1.71	3.40	9.93	.3	4.19	DACITE	
299	14.8	2.39	2.33	2.74	10.00	0	0			41660	2876	725	799	2.16	1.98	15.51	.1	4.36	TUFF	
300	5.5	2.54	2.50	2.65	20.00	0	37	0	251	84	8868	518	140	117	.40	.82	2.23	.3	.98	BRECCIA
301	14.8	2.34	2.34	2.74	5.00	75	467	188	879	228	39519	2847	662	761	2.21	1.43	14.81	.1	3.92	MUDSTONE
302	1.7		2.58	2.63	20.00	12	329	0	1256	425	33257	3890	396	298	4.01	2.71	5.63	.4	3.56	QUARTZITE
303	3.1		2.64	2.73	5.00	163	213	0	402	122	41214	2960	693	621	2.41	3.57	11.89	.3	4.79	GRANODIORITE
304	1.0	2.68	2.72	2.75	30.00	75	119	0	376	133	38827	3601	749	613	3.11	4.55	11.66	.3	5.52	QUARTZITE
305	6.3	2.53	2.54	2.72	4.00	25	418	376	502	72										GREYWACKE
306	.8	2.73	2.71	2.74	30.00	100	41	0	376	111	27356	1608	652	418	.98	5.32	7.77	.6	4.85	GREYWACKE
307	.0		2.58	2.60	700.00	5466	6769	4838	11058	1544	71386	5657	1535	1081	4.45	11.39	20.29	.5	11.53	GRANITE
308					.00	0	0				48283	4263	816	838	3.68	2.95	16.20	.1	5.43	SILTSTONE

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Strn	Poro %	---Densities---				Remanence S.I.	-----Susceptibilities-----				-----In-situ Gamma-ray Spectrometry-----							Rockname		
		sity tonnes/cubic m					---S.I. x 000001---				counts/6 min.--									
		Whole Dry Grain					Lab	In-situ (from	to	SD)	Ch.1	Ln.2	Ch.3	Ch.4	K20	ppm U	ppm Th		U/Th	Heat gen.
309	8.0	2.49	2.45	2.67	.50	188	955	439	2261	598	50470	4233	819	885	3.61	2.44	17.16	.1	5.26	QUARTZITE
310	.0	2.94	2.92	2.92	260.00	678	707	314	1068	207	22176	2345	141	98	2.57	1.06	1.84	.5	1.56	ANDESITE
311	.6	2.72	2.71	2.73	340.00	10166	175	0	376	161	27975	2449	490	421	2.13	2.74	8.04	.3	3.56	GRANODIORITE
312	1.3	2.72	2.69	2.73	2200.00	35349	28927	17592	42599	7275	41351	5017	426	239	5.35	3.88	4.38	.8	4.38	ANDESITE
313	0	2.81	2.82	2.82	12000.00	59476	52292	30913	71942	11612	19247	2499	140	120	2.74	.79	2.29	.3	1.51	BASALT
314	2.1	2.81	2.78	2.84	14000.00	16147	11773	5843	18472	3515	25201	2091	475	409	1.73	2.65	7.81	.3	3.37	ANDESITE
315	1.4	2.75	2.71	2.75	2100.00	7904	9837	8293	11749	1355	40507	3223	769	682	2.60	4.05	13.05	.3	5.33	GRANOPHYRE
316	.0	2.60	2.61	2.63	950.00	7301	6668	5654	7791	562	60213	5040	1152	1054	4.13	5.68	20.21	.2	7.91	ADAMELLITE
317	2.6	2.53	2.55	2.62	5.00	100	91	0	376	126	78544	6149	1414	1770	4.71	1.36	34.60	.0	7.81	GRANITE
318	0	2.93	2.91	2.91	1700.00	1482	1002	188	1734	425	12923	1137	171	105	1.11	1.45	1.94	.7	1.48	ANDESITE
319	.0	2.73	2.70	2.73	2.00	226	0	0	0	45988	3673	751	936	2.99	.77	18.29	.0	4.27	GRANODIORITE	
320	.0	2.78	2.78	2.80	12000.00	10379	14107	4209	31038	7008	17697	1108	346	308	.76	1.81	5.89	.3	2.30	ANDESITE
321	1.4	2.68	2.69	2.73	3.00	213	192	0	439	119	45632	3846	755	868	3.23	1.64	16.89	.1	4.63	ADAMELLITE
322	.0	2.88	2.85	2.85	4000.00	452	364	188	565	121	21684	1654	450	231	1.36	4.35	4.18	.0	3.72	ANDESITE
323	3.4	2.62	2.62	2.71	550.00	1080	2932	1319	3707	710	49603	3053	372	302	3.04	2.29	5.74	.4	3.09	ADAMELLITE
324	.0	2.65	2.66	2.68	80.00	175	286	125	439	110	32321	2767	489	516	2.45	1.60	9.99	.1	3.26	GRANODIORITE
325	1.9	2.72	2.70	2.75	10.00	100	160	62	314	69	25881	2089	412	426	1.78	1.45	8.24	.1	2.71	GRANODIORITE
326	1.4	2.72	2.70	2.73	3.00	213	0	0	0	38562	2962	753	742	2.27	3.09	14.30	.2	4.87	IGNIMBRITE	
327	.0	2.68	2.70	2.71	1000.00	21098	14913	12252	16776	1250	43631	3642	645	584	3.28	3.25	11.19	.2	4.68	ADAMELLITE
328	1.7	2.60	2.59	2.64	2.00	540	0	0	0	46673	3914	751	753	3.39	2.93	14.53	.2	5.07	ADAMELLITE	
329	0	2.97	3.04	3.04	4000.00	25798	28307	8168	50139	14682	10202	977	94	50	1.03	.89	.91	.9	.94	ALTERED BASALT
330		2.58			.00	0	0	0	0	25387	2593	287	241	2.62	1.67	4.59	.3	2.42	QUARTZITE	
331	2.2	2.58	2.60	2.66	.50	565														QUARTZITE
332	3.7	2.51	2.51	2.61	50.00	3681	2638	376	3895	1080	81473	5892	1720	1496	4.28	9.40	28.58	.3	11.67	ADAMELLITE
333	2.5	2.58	2.54	2.60	20.00	289	0	0	0	73217	4985	1354	1353	3.67	5.33	26.10	.2	8.59	ADAMELLITE	
334	0	2.66	2.62	2.62	2.00	37	272	125	565	253	23866	1364	471	429	.86	2.35	8.22	.2	3.05	QUARTZITE
335	3.5		2.64	2.74	.60	75	125	125	125	0										MUDSTONE
336	2.2	2.51	2.55	2.61	200.00	1507	1072	351	2890	720	77161	5149	1179	1562	3.90	.12	30.62	.0	6.18	GRANITE
337	.0	2.76	2.78	2.79	730.00	42147	30889	26389	42474	4212	25023	1901	396	410	1.59	1.39	7.93	.1	2.58	DACITE
338	0	2.73	2.77	2.77	160.00	9047	14526	6785	19477	3897	30311	2237	475	478	1.86	1.83	9.23	.2	3.13	ANDESITE
339	.0	2.69	2.69	2.70	220.00	17090	23578	19603	29342	2492	42535	3830	725	632	3.39	3.95	12.08	.3	5.28	ADAMELLITE
340	0	2.72	2.68	2.68	.20	201	20	0	188	62	27140	2096	488	439	1.71	2.50	8.41	.3	3.37	GRANOPHYRE
341	7.0	2.44	2.45	2.64	2600.00	3179	3681	2513	5277	772	51364	6001	585	646	6.09	1.58	12.54	.1	4.51	TRACHYTE
342	.0	2.49	2.53	2.55	3300.00	8532	7435	5026	9424	1260	34910	4406	287	314	4.72	.81	6.09	.1	2.62	TRACHYTE
343	.0	2.86	2.86	2.86	3100.00	37133	35307	13069	55292	13484	23062	2608	188	139	2.81	1.32	2.62	.5	1.91	GRANOPHYRE
344	1.2	3.14	2.63	2.66	350.00	33401	24638	18786	30159	3209	51476	4480	809	1033	3.82	.54	20.21	.0	4.65	ADAMELLITE
345	0	2.99	3.00	3.00	12000.00	*****	94863	56799	124281	18628	2699	158	56	36	.11	.46	.67	.6	.42	GABBRO
346	1.6	3.25	2.55	2.59	280.00	3970	2852	942	4335	1018	47970	4184	666	803	3.76	1.00	15.67	.0	4.15	GRANITE
347	0	2.69	2.73	2.73	170.00	12478	13521	8670	16461	2086	34841	3006	522	501	2.71	2.30	9.64	.2	3.69	IGNIMBRITE
348	.0	2.67	2.65	2.67	2350.00	12176	11184	6408	14639	2241	43003	3393	629	626	2.98	2.51	12.07	.2	4.29	ADAMELLITE
349	.0	2.65	2.65	2.67	3.00	138	311	0	691	199	41935	3681	714	672	3.20	3.30	12.91	.2	4.98	ADAMELLITE
350	5.7	2.57	2.49	2.64	1.00	113	111	0	628	200	34736	2555	597	617	2.03	2.11	11.93	.1	3.80	SANDSTONE
351	1.4	2.65	2.62	2.66	370.00	8670	10128	3895	19792	3869	35870	3075	532	642	2.69	.79	12.52	.0	3.24	ADAMELLITE
352	.0	2.67	2.64	2.65	330.00	27306	27356	23184	29091	1724	49012	3765	904	866	2.99	4.00	16.66	.2	6.00	ADAMELLITE

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro %	Densities			Remanence S.I.	Susceptibilities				In-situ Gamma-ray Spectrometry							Rockname				
		tonnes/cubic m	Whole	Dry		Grain	S.I.	Lab	In-situ	(from	to	SD)	Ch.1	Ch.2	Ch.3	Ch.4		K20	ppm U	ppm Th	U/Th
353	.0	2.78	2.80	2.82	140.00	1759	2902	1005	6346	1542	32654	2824	416	473	2.62	.94	9.24	.1	2.75	GRANOPHYRE	
354	3.3	2.60	2.61	2.70	.70	238	0				24387	1520	414	545	1.03	.08	10.68	.0	2.10	SANDSTONE	
355	1.0	2.93	2.96	2.98	5000.00	11347	10325	4523	15456	2981	13895	1323	348	305	1.02	1.88	5.83	.3	2.39	BASALT	
356	2.3	2.68	2.69	2.76	.40	37	188	0	502	162	48109	3938	847	904	3.23	2.66	17.51	.1	5.37	SILTSTONE	
357		2.53			.00	0	0				56311	5029	863	1049	4.41	1.20	20.47	.0	5.24	GRANITE	
358	1.3	2.66	2.61	2.64	1300.00	23486	13655	6094	31792	7904	20647	1818	269	240	1.73	1.40	4.59	.3	2.05	KERATOPHYRE	
359	3.5	2.74	2.60	2.69	40.00	854	1013	125	2827	771	39917	3645	574	647	3.32	1.40	12.57	.1	3.77	MONZONITE	
360	3.6	2.68	2.66	2.76	.20	25	0				48346	3652	882	880	2.87	3.49	16.98	.2	5.71	ADAMELLITE	
361	2.9	2.54	2.93	3.02	3400.00	3744	5642	3832	8922	1384	16123	1102	281	238	.87	1.61	4.54	.3	1.97	BASALT	
362	1.3	2.69	2.74	2.77	15.00	402	0				50521	3652	919	1027	2.74	2.34	19.95	.1	5.47	ADAMELLITE	
363		2.61			.00	0	10	0	62	24	6410	277	170	62	.06	1.94	1.06	.8		QUARTZITE	
364	.0	2.66	2.66	2.68	.30	25	68	0	251	76	50488	3873	878	907	3.12	3.11	17.54	.1	5.63	ADAMELLITE	
365	2.6	2.94	3.00	3.08	1.00	502	1053	314	1633	421	22130	1248	492	292	.79	4.29	5.38	.8	3.76	LAMPROPHYRE	
366	2.5	2.59	2.55	2.62	.30	0	0				85241	5548	1881	679	4.23	21.57	11.59	.8	16.32	ADAMELLITE	
367	8.4	2.46	2.53	2.76	3.00	175	698	0	4021	1284	32578	2412	518	465	2.03	2.66	8.91	.3	3.63	MUDSTONE	
368	5.7	2.51	2.50	2.66	2.00	163	175	0	251	63	26109	1715	474	518	1.22	1.34	10.05	.1	2.82	RHYODACITE	
369	2.0	2.70	2.70	2.75	20000.00	33200	5244	565	27394	7448	50726	3452	902	852	2.63	4.14	16.38	.2	5.95	IGNIMBRITE	
370	1.1	2.72	2.73	2.76	1.00	150	230	125	314	67	33493	2155	584	789	1.46	.00	15.48	.0	2.89	IGNIMBRITE	
371		2.60			.00	0	10	0	62	24	34763	2396	713	680	1.68	3.19	13.08	.2	4.59	QUARTZITE	
372		2.57			.00	0														QUARTZITE	
373	2.9	2.48	2.57	2.65	1.00	0	222	0	942	246	37756	2424	630	642	1.82	2.33	12.40	.1	3.97	IGNIMBRITE	
374	2.5	2.76	2.74	2.81	2500.00	22192	20269	12440	24944	3488	29419	2592	455	399	2.35	2.45	7.63	.3	3.36	DIORITE	
375	.0	2.66	2.64	2.66	1.00	226	184	0	628	203	65447	5392	1208	1179	4.41	5.09	22.71	.2	8.03	SANDSTONE	
376	2.1	2.74	2.69	2.75	10.00	226														SILTSTONE	
377	1.1	2.69	2.67	2.70	1000.00	28990	26372	15456	31667	4168	40529	3418	650	601	3.00	3.13	11.53	.2	4.59	ADAMELLITE	
378	1.0	2.79	2.77	2.79	2000.00	32886	33891	26829	39709	3788	43795	3588	783	659	3.03	4.54	12.56	.3	5.65	GRANODIORITE	
379	6.9	2.59	2.50	2.69	5.00	37	142	0	816	209	18187	999	252	403	.57	.78	7.84	.1	1.95	QUARTZITE	
380	1.3	2.64	2.63	2.66	.10	0	0				41580	3623	647	660	3.21	2.39	12.75	.1	4.39	ADAMELLITE	
381	4.7	2.57	2.56	2.69	.80	75														ADAMELLITE	
382	.0	2.71	2.72	2.75	800.00	2990	8821	5717	10867	1404	47164	3994	847	747	3.39	4.51	14.29	.3	6.00	ALTERED BASALT	
383	.8	2.65	2.67	2.70	6500.00	30410	18795	10053	29907	6894	44125	3742	576	612	3.45	1.84	11.85	.1	3.95	ANDESITE	
384	.1	2.68	2.66	2.67	100.00	502	251													ANDESITE	
385	.0	2.71	2.71	2.72	130.00	301	0				50289	3171	985	903	2.18	4.84	17.32	.2	6.45	IGNIMBRITE	
386	1.5	2.69	2.66	2.70	.30	351	627	0	2199	720	58350	4742	1062	1054	3.86	4.27	20.33	.2	6.99	ADAMELLITE	
387	3.8	2.77	2.77	2.88	3500.00	17416	17178	14639	21488	1843	26135	1265	594	504	.58	3.40	9.61	.3	3.87	BASALT	
388	1.5	2.81	2.81	2.86	2.00	351	4569	188	13006	4871	24201	2169	420	297	1.95	3.10	5.58	.5	3.32	ANDESITE	
389	2.0	2.75	2.71	2.76	20.00	163	0				46770	3852	802	800	3.24	3.18	15.43	.2	5.34	IGNIMBRITE	
390	2.1	2.45	2.60	2.65	15.00	603	770	314	1947	423	60494	5156	971	903	4.54	4.62	17.34	.2	6.86	IGNIMBRITE	
391	1.6	2.68	2.68	2.73	.70	75	50	0	188	60	59990	4972	999	969	4.25	4.28	18.66	.2	6.80	ADAMELLITE	
392	2.4	2.71	2.68	2.74	.60	100	17	C	125	40	48202	3817	866	914	3.06	2.84	17.70	.1	5.47	GRANODIORITE	
393	.0	2.82	2.82	2.84	6.00	25	628													EPIDOTE ROCK	
394	8.1	2.83	2.88	3.14	6500.00	27030														LAMPROPHYRE	
395	14.2	2.84	2.80	3.36	900.00	15243														LAMPROPHYRE	
396					.00	0															

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro sity %	Densities				Remanence S.I.	Susceptibilities				In-situ Gamma-ray Spectrometry							Rockname		
		tonnes/cubic m Whole	tonnes/cubic m Dry	tonnes/cubic m Grain	tonnes/cubic m Grain		S.I.	Lab	In-situ (from to)	SD)	counts/6 min.	Ch.1	Ch.2	Ch.3	Ch.4	K20	ppm U		ppm Th	Heat U/Th gen.
397	4.3	2.56	2.53	2.64	.30	50	0			50921	5654	785	343	5.68	8.30	6.06	.3	7.48	GRANITE	
398		2.12			.00	0	0			52638	3758	1026	1191	2.65	2.09	23.19	.0	5.84	SILTSTONE	
399	1.7	2.58	2.57	2.61	3.00	188	0			78566	5657	1661	1286	4.20	10.95	24.34	.4	11.89	GRANITE	
400	0	2.70	2.71	2.71	600.00	502				40826	3473	748	673	2.92	3.82	12.89	.3	5.24	IGNIMBRITE	
401	1.1	2.70	2.69	2.72	25.00	490													IGNIMBRITE	
402	2.5	2.57	2.56	2.61	20.00	0	17	0	62	30	71732	5863	1491	1047	4.76	11.10	19.64	.5	11.31	GRANITE
403	3.8	2.57	2.54	2.64	7.00	0	0				47683	5228	708	381	5.23	6.64	6.94	.9	6.50	GRANITE
404	2.9	2.70	2.56	2.64	.10	0					47004	5077	792	170	5.10	10.45	2.50	.1	8.08	GRANITE
405	1.0	2.67	2.66	2.69	1.00	113	0				43515	2863	844	933	1.94	2.27	18.11	.1	4.93	SANDSTONE
406	14.8	2.44	2.41	2.83	.50	389													MUDSTONE	
407	6.1	2.61	2.61	2.78	1.00	389					46674	2790	889	1053	1.73	1.56	20.52	.0	4.85	QUARTZITE
408	2.4	2.77	2.80	2.87	.50	150					50335	3510	856	913	2.70	2.69	17.69	.1	5.30	SLATE
409	1.3	2.59	2.57	2.61	50.00	1457	2010	0	6157	1771	99580	6346	2015	1870	4.28	9.63	35.90	.2	13.06	APLITE
410	8.4	2.66	2.66	2.68	30.00	4398													ADAMELLITE	
411					.00	0	8	0	62	23	52686	2591	1175	1402	.98	1.94	27.34	.0	6.08	
412	3.6	2.58	2.67	2.76	2.00	0	23	0	125	46	70507	6331	1093	945	5.78	6.04	18.05	.3	8.14	GNEISS
413	5.9	2.66	2.71	2.72	760.00	16223	17773	10053	20734	2840	43683	3109	941	836	2.19	4.94	16.00	.3	6.29	IGNIMBRITE
414	1.5		2.03	2.68	10.00	376	0				64875	5205	1202	1238	4.15	4.30	23.93	.1	7.69	IGNIMBRITE
415	1.8	3.00	2.70	2.75	39000.00	14941	14279	7791	19854	2918	43562	3112	867	754	2.32	4.74	14.41	.3	5.92	IGNIMBRITE
416	3.8	2.56	2.56	2.66	.50	87	0				47260	4012	903	295	3.65	10.72	4.93	.1	8.32	BRECCIA
417		2.46			.30	37	0				58910	5375	1095	392	5.00	12.59	6.68	.8	10.10	GRANITE
418	2.0	2.67	2.66	2.71	.30	0	0				57227	5219	918	751	4.77	5.58	14.28	.3	6.98	ADAMELLITE
419	1.0	2.68	2.60	2.63	.10	100	0				47468	3755	882	774	3.06	4.74	14.80	.3	6.16	GRANODIORITE
420	8.5	2.48	2.50	2.73	.60	201	2591	0	13446	4649	46667	4110	732	762	3.64	2.52	14.74	.1	4.91	GREYWACKE
421		2.49			.00	0	6157												SLATE	
422	5.8	2.48	2.47	2.62	.20	0	31	0	125	62	56849	5675	1020	383	5.44	11.52	6.59	.7	9.51	GRANITE
423	2.7	2.62	2.59	2.65	7.00	50	0				53420	4962	928	766	4.44	5.56	14.58	.3	6.95	ADAMELLITE
424	8.7	2.50	2.40	2.63	.20	414	0												GRANITE	
425	9.1	2.88	2.90	3.19	800.00	439	251	0	1507	615	37765	2643	790	839	1.79	2.33	16.25	.1	4.74	SLATE
426	19.7	2.98	3.02	3.76	20.00	251	4021												SLATE	
427	3.0	2.54	2.56	2.64	.40	0	0				60222	5332	1088	835	4.68	7.26	15.79	.4	8.26	APLITE
428	7.0	2.59	2.57	2.76	.40	201	11	0	125	37	43503	3504	799	842	2.80	2.63	16.30	.1	5.05	GREISEN
429	1.7	2.58	2.57	2.62	.40	0	0				58609	5699	1092	572	5.27	10.42	10.38	.0	9.44	GRANITE
430	1.6	2.43	2.68	2.73	.30	263	573	125	1256	392	50781	4041	966	930	3.21	4.22	17.90	.2	6.40	GRANODIORITE
431	1.3	2.95	2.93	2.97	80000.00	31239	28936	25283	35499	3109	20243	1485	398	323	1.15	2.45	6.14	.4	2.83	BASALT
432	1.1	2.62	2.63	2.66	3.00	213	691	0	2136	549	46816	4692	769	651	4.36	4.41	12.41	.3	5.85	ADAMELLITE
433		2.67			.50	100	401	113	691	156	40703	5324	753	739	2.70	3.13	14.24	.2	4.98	QUARTZITE
434	0	2.62	2.63	2.64	1.00	0	251	125	376	78	55080	4910	906	764	4.41	5.24	14.56	.3	6.74	ADAMELLITE
435	3.3	2.58	2.58	2.67	.10	0	134	0	251	79	56924	5792	1039	575	5.44	9.56	10.51	.9	8.96	ADAMELLITE
436	2.3	2.56	2.55	2.61	2.00	75	0				81923	6181	1627	1591	4.65	6.82	30.65	.2	10.51	GRANITE
437	2.7	2.64	2.63	2.70	.20	263	107	0	376	129	44828	3744	743	851	3.13	1.65	16.55	.1	4.56	ADAMELLITE
438	0	2.59	2.62	2.63	.50	87	83	0	314	121	61593	5458	1164	910	4.70	7.57	17.24	.4	8.71	ADAMELLITE
439	15.2	2.30	2.29	2.70	4.00	12														
440		1.17			190.00	502														GRANITE

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Porosity %	Densities			Remanence S.I.	Susceptibilities				In-situ Gamma-ray Spectrometry							Rockname				
		tonnes/cubic m	Whole	Dry		Grain	S.I. x 0.00001	Lab	In-situ (from to)	SD)	Ch.1	Ch.2	Ch.3	Ch.4	K20	ppm U		ppm Th	U/Th	Heat gen.	
441	15.3	2.29	2.25	2.66	.70		0												SANDSTONE		
442					.00		0														
443					.00		0														
444	1.0	2.92	2.89	2.92	200.00	13823	11446	1357	23687	6613	19121	1781	343	257	1.60	2.36	4.85	.4	2.66	ANDESITE	
445	.4	2.81	2.79	2.80	1100.00	5893	2289	251	6534	1903	15521	1224	249	281	1.02	.60	5.46	.1	1.54	DIORITE	
446	1.5	2.97	2.94	2.99	1650.00	16009	9186	779	23687	7341	9226	627	193	208	.41	.58	4.03	.1	1.14	AMPHIBOLITE	
447	1.0	2.99	2.99	3.02	.20	439	15854	1231	42599	16206	6034	557	78	40	.55	.75	.72	.0	.72	ANDESITE	
448		2.84			.00		0													CHLORITE	
449	3.4	2.72	2.70	2.79	1200.00	728	667	314	1332	267	18650	1050	295	315	.74	.92	6.10	.1	1.78	ANDESITE	
450		2.65			.00	0	135	0	276	93	36990	2256	805	814	1.34	3.06	15.72	.1	4.88	CHERT	
451	17.3	2.14	2.12	2.52	.50	0	50	0	188	74	48392	2621	1087	1261	1.20	2.22	24.55	.0	5.83	SANDSTONE	
452	20.8	2.28	2.18	2.76	6.00	87	83	0	213	73	52203	3534	1035	1025	2.50	4.19	19.76	.2	6.53	TUFF	
453	15.6	2.33	2.33	2.35	30.00	263														TUFF	
454		1.98			.00	0	353	62	653	170	51509	3152	1025	1317	1.85	.59	25.78	.0	5.17	SLATE	
455	9.3	2.54	2.52	2.78	2.00	125	106	0	251	94	46491	3758	835	934	3.01	2.11	18.14	.1	5.09	SLATE	
456	.0	2.67	2.65	2.67	.30	113	162	0	251	94	55362	4819	991	946	4.10	4.43	18.20	.2	6.78	GRANITE	
457	2.5	2.67	2.65	2.71	.40	0	37	0	125	58	57661	5015	1004	936	4.32	4.75	17.97	.2	6.99	GRANITE	
458		2.30			.00	0	183	25	251	91	52052	3575	950	1070	2.59	2.32	20.80	.1	5.57	SLATE	
459	13.6	2.32	2.32	2.69	.30	0	386	0	1193	417	42612	2815	756	844	2.03	1.93	16.39	.1	4.45	SLATE	
460	14.3	2.64	2.81	3.28	240.00	1181															
461	7.4	2.57	2.58	2.78	2.00	251	482	276	816	191	46307	3708	869	913	2.93	2.90	17.67	.1	5.47	SLATE	
462	12.4	2.58	2.31	2.37	35.00	0	7	0	25	11	34813	1762	552	622	1.13	1.34	12.09	.1	3.15	MAGNESI CRETE	
463	15.9	2.26	2.21	2.63	2.00	12	960	816	1068	97	27745	1584	505	621	.97	.62	12.13	.0	2.67	GREYHACKE	
464		2.56			.00	0	64	0	226	80	55553	2971	1082	1421	1.51	.26	27.84	.0	5.24	TUFF	
465		2.35			.00	0														TUFF	
466	1.4	3.04	2.63	2.67	.40	0	32	0	100	46	70625	6180	1193	1228	5.32	4.28	23.74	.1	7.91	IGNIMBRITE	
467	.0	2.65	2.62	2.62	1.00	452	62	0	188	81	63880	5161	1148	882	4.38	7.65	16.68	.4	8.59	RHYOLITE	
468					.00	0															
469	.0	2.66	2.70	2.71	10.00	113															IGNIMBRITE
470	1.7	2.63	2.57	2.61	2.00	87															BRECCIA
471					.00	0															
472					.00	0															
473	.0	2.65	2.65	2.67	.70	163	0			62807	4816	1288	1284	3.58	5.11	24.77	.2	8.20	IGNIMBRITE		
474	.0	2.62	2.62	2.62	10.00	213	1325	0	4523	1417											IGNIMBRITE
475	1.0	2.89	2.91	2.94	.00	27700	9477	1130	22971	6018											GABBRO
476	.0	2.63	2.58	2.60	20.00	150															IGNIMBRITE
477	.0	2.65	2.65	2.67	1.00	163	89	0	314	153	73058	5365	1399	1493	3.98	4.39	28.92	.1	8.55	RHYOLITE	
478		2.30			.00	0	10	0	62	25	59153	5265	956	1141	4.53	1.58	22.25	.0	5.80	MUDSTONE	
479					.00	0															SLATE
480	11.1	2.34	2.38	2.68	.70	150	234	0	691	187	45488	3058	871	992	2.10	2.00	19.29	.1	5.00	GREYHACKE	
481	3.3	2.70	2.57	2.67	.20	100	0			53610	3794	975	1100	2.80	2.36	21.38	.1	5.74	TUFF		
482	1.1		2.62	2.64	10.00	50	71	0	376	142	84153	5459	1667	1987	3.51	2.78	38.74	.0	9.11	RHYOLITE	
483	7.1	2.51	2.51	2.71	5.00	37	0			34233	2543	689	584	1.94	3.95	11.14	.3	4.79	SANDSTONE		
484	4.6	2.64	2.64	2.77	.70	188	159	0	502	171	49830	3662	926	797	2.89	5.16	15.22	.3	6.45	BRECCIA	

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Str	Porosity			Densities		Remanence S.I.	Susceptibilities				In-situ Gamma-ray Spectrometry							Rockname						
	%	Whole	Dry	tonnes/cubic m	Grain		Lab	In-situ	(from	to	SD)	Ch.1	Ch.2	Ch.3	Ch.4	% K20	ppm U		ppm Th	U/Th	Heat gen.			
485			2.65			.00				0										BRECCIA				
486	.0	2.64	2.63	2.64	560.00	163			0			53900	2931	1158	1066	1.62	5.64	20.45	.2	7.34	IGNIMBRITE			
487	.6	2.65	2.64	2.65	.80	150			0	188		75	65390	5096	1138	1063	4.20	5.36	20.42	.2	7.76	ANDESITE		
488	21.3	2.19	2.16	2.75	5.00	75			25	351		134	38448	2063	740	785	1.19	2.38	15.20	.1	4.33	GREYWACKE		
489	24.8	2.15	2.08	2.77	.20	0			0	238		85	44147	3759	714	847	3.18	1.24	16.51	.0	4.31	QUARTZITE		
490	4.8	2.58	2.54	2.67	10.00	37			175	0	326	93	19682	1255	392	373	.85	1.76	7.17	.2	2.51	GREYWACKE		
491	1.0	2.61	2.61	2.64	.90	0			0	0			50293	3616	734	780	3.04	2.34	15.11	.1	4.72	BRECCIA		
492	2.8	2.64	2.56	2.64	65.00	791			296	0	1105	352	61618	5364	895	1075	4.75	1.40	20.97	.0	5.52	BRECCIA		
493	3.9	2.66	2.64	2.75	.30	150			0	0			24572	1886	473	427	1.48	2.40	8.18	.2	3.22	QUARTZITE		
494	2.7	2.64	2.65	2.72	.20	150			62	0	188	72	54216	4435	830	1062	3.73	.53	20.78	.0	4.72	IGNIMBRITE		
495	4.4	2.67	2.60	2.72	.50	37																	QUARTZITE	
496	3.5	2.65	2.64	2.73	.50	12																	IGNIMBRITE	
497					.00	0																		
498	1.4	2.64	2.64	2.67	450.00	10002			8143	3895	14576	3291	67779	5960	1053	1281	5.17	1.45	25.60	.0	6.34	BRECCIA		
499	3.2	2.62	2.58	2.67	1.00	37			148	0	439	135											GRANITE	
500		2.61			.00	0			10	0	150	38	24245	1510	551	311	1.03	5.00	5.70	.8	4.30	QUARTZITE		
501	.0	2.60	2.63	2.64	520.00	25			75	0	251	82	75475	8188	953	1161	7.98	1.29	22.66	.0	6.49	IGNIMBRITE		
502	8.6	2.43	2.43	2.66	15.00	0			0	0			18574	1235	333	295	.94	1.76	5.64	.3	2.26	SANDSTONE		
503	1.1	2.56	2.55	2.58	6.00	12			53	0	188	72	30886	2014	595	638	1.37	1.83	12.36	.1	3.55	SANDSTONE		
504	4.5	2.47	2.55	2.55	4.00	0			0	0			17263	1022	339	330	.66	1.44	6.36	.2	2.12	SANDSTONE		
505	4.4	2.52	2.53	2.65	2.00	62			0	0			16711	973	333	380	.57	.75	7.39	.1	1.86	SANDSTONE		
506	13.1	2.36	2.36	2.72	.40	175			37	0	125	56	33933	2996	516	599	2.64	1.05	11.66	.0	3.24	TUFF		
507	17.8	2.22	2.24	2.72	2.00	12			64	0	276	106	35854	2693	640	840	2.00	.16	16.46	.0	3.36	GREYWACKE		
508	6.7	2.49	2.59	2.68	1.00	188																	GREYWACKE	
509	9.2	2.20	2.41	2.65	.50	87			89	0	188	75	22431	1572	439	452	1.13	1.57	8.74	.1	2.72	SANDSTONE		
510	23.2	2.17	2.14	2.78	25.00	12			165	0	565	201	39670	3184	702	744	2.58	2.26	14.41	.1	4.45	SILTSTONE		
511	17.3	2.23	2.22	2.68	2.00	0			71	0	251	91	38206	2855	630	726	2.28	1.34	14.13	.1	3.76	SILTSTONE		
512	20.4	2.19	2.17	2.72	2.00	251			20	0	188	62	53925	3862	880	1003	3.04	2.01	19.51	.1	5.26	SANDSTONE		
513					.00	0			260	0	816	344	45334	3457	784	841	2.76	2.41	16.30	.1	4.90	SILTSTONE		
514					.00	0108856			45238169646		47973													MAGNETITE
515	8.2	2.29	2.44	2.66	2.00	62			0	0			40732	3235	667	822	2.63	.79	16.05	.0	3.83	GREYWACKE		
516	10.3	2.44	2.43	2.71	4.00	37			331	25	955	252	60459	5387	922	1076	4.75	1.81	20.95	.0	5.78	SANDSTONE		
517	.0	2.77	2.75	2.76	.10	376																		SLATE
518	16.2	2.24	2.24	2.67	.20	0			3	0	25	9	41829	3550	711	761	3.00	2.21	14.75	.1	4.56	GREYWACKE		
519	21.1	2.11	2.13	2.71	.30	75																		SILTSTONE
520	17.4	2.17	2.19	2.65	.40	0			0	0			36754	2581	706	759	1.86	2.15	14.71	.1	4.26	SANDSTONE		
521		2.13			.00	0																		SILTSTONE
522	15.4	2.30	2.26	2.68	.20	37			0	0			26330	1824	468	536	1.34	1.04	10.43	.1	2.72	SANDSTONE		
523	2.9	2.45	2.45	2.52	1.00	0			0	0			16244	831	349	354	.40	1.31	6.84	.1	2.07	SANDSTONE		
524	24.8	2.12	2.07	2.75	1.00	163			259	0	628	216	39844	2591	717	835	1.81	1.43	16.26	.0	4.06	SILTSTONE		
525	11.7	2.40	2.44	2.77	3.00	113			87	0	251	78	43888	3249	752	917	2.50	1.01	17.90	.0	4.24	CONGLOMERATE		
526	10.9	2.38	2.34	2.63	9.00	25			0	0			39752	3479	623	712	3.03	1.40	13.85	.1	3.92	QUARTZITE		
527	.0	2.59	2.62	2.62	8.00	25			90	0	276	109	30483	2568	516	520	2.18	1.98	10.04	.2	3.44	CHERT		
528	10.9		2.42	2.72	1.00	100			22	0	251	75	44139	3515	725	785	2.92	2.14	15.22	.1	4.59	CONGLOMERATE		

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro sity %	---Densities---		Remanence S.I.	-----Susceptibilities-----				-----In-situ Gamma-ray Spectrometry-----							Rockname					
		tonnes/cubic m			S.I. x .000001				counts/6 min.---												
		Whole	Dry Grain		Lab	In-situ	(from	to	SD)	Ch.1	Ch.2	Ch.3	Ch.4	% K2O	ppm U		ppm Th	U/Th	Heat gen.		
529		2.57		.00		0												CONGLOMERATE			
530	.0	2.65	2.63	2.64	300.00	716	558	188	1193	319	79586	6745	1397	1546	5.58	3.73	30.02	-.1	8.70	IGNIMBRITE	
531	5.9	2.48	2.51	2.67	1.00	251	122	0	314	102	23893	1462	419	528	.97	.36	10.32	.0	2.20	QUARTZITE	
532					.00	0	0				43284	3474	807	859	2.75	2.56	16.64	.1	5.05	SANDSTONE	
533					.00	0	276	0	1231	338	38107	2909	777	769	2.17	3.15	14.83	.2	4.97	SHALE	
534	.0	2.67	2.66	2.68	3.00	0	98	0	226	70	60161	3783	1218	1198	2.48	5.02	23.09	.2	7.61	IGNIMBRITE	
535	1.0	2.67	2.61	2.64	15.00	0	75	0	276	91	66414	6420	1111	901	5.90	6.84	17.12	.4	8.51	IGNIMBRITE	
536	6.3	2.60	2.55	2.72	.50	87	0				35560	2809	621	692	2.25	1.60	13.44	.1	3.80	QUARTZITE	
537		2.48			.00	0	225	0	452	151	52763	5011	843	977	4.45	1.73	19.02	.0	5.33	PHYLLITE	
538	2.2	2.57	2.57	2.63	2.00	0	0				20387	1693	292	373	1.47	.19	7.30	.0	1.70	QUARTZITE	
539	6.6	2.56	2.53	2.71	2.00	100	0				36716	2098	601	277	1.70	6.18	4.94	.2	5.06	QUARTZITE	
540		2.60			.00	0	37	0	100	43	18281	777	473	414	.18	2.56	7.91	.3	2.97	BRECCIA	
541		2.34			.00	0	40	0	125	42	35343	2619	660	739	1.96	1.66	14.36	.1	3.92	SLATE	
542	1.9	2.62	2.60	2.65	.10	0	78	25	226	73	41905	4261	760	188	4.15	9.73	2.91	.3	7.48	ADAMELLITE	
543		2.57			.00	0	15	0	50	22	35537	2366	681	734	1.57	2.05	14.23	.1	4.05	CONGLOMERATE	
544	3.1	2.64	2.61	2.69	2.00	376	0				40163	3196	728	734	2.58	2.79	14.17	.2	4.73	ADAMELLITE	
545		2.91			.00	0	14880	5026	35964	8373	79342	6893	1261	1261	6.07	4.96	24.33	.2	8.61	LEUCITITE	
546	.0	2.62	2.60	2.62	5.00	201	276	0	691	204	73491	5009	1455	1487	3.51	5.34	28.73	.1	9.00	ADAMELLITE	
547		2.13			.00	0	28	0	226	79	27895	1961	529	493	1.47	2.50	9.47	.2	3.50	QUARTZITE	
543	1.7	2.73	2.68	2.72	1200.00	4310	7003	3707	9550	1807	29888	2228	421	530	1.87	.37	10.36	.0	2.42	GRANODIORITE	
549					.00	0															
550		2.65			.00	0	63	0	527	156	49198	2928	1071	1288	1.56	1.65	25.12	.0	5.65	SLATE	
551					.00	0															
552	5.3	2.58	2.54	2.69	.30	0															
553		2.56			.00	0	0				26320	1804	443	512	1.36	.93	9.97	.0	2.58	SANDSTONE	
554	3.1	2.64	2.65	2.66	.20	25	48	0	150	48	58591	5963	1028	534	5.68	9.87	9.68	.0	9.07	ADAMELLITE	
555	1.3	2.70	2.31	2.69	.10	25															
556	1.3	2.63	2.62	2.65	.20	37	27	0	276	87	65593	6611	992	867	6.26	5.37	16.57	.3	7.59	GRANITE	
557	2.4	2.65	2.62	2.69	8.00	188	0				56119	4273	990	1225	3.27	1.12	23.93	.0	5.52	IGNIMBRITE	
558	20.9	2.56	2.64	3.21	1.00	0	5	0	25	11	31051	1886	635	768	1.10	.93	14.98	.0	3.38	CONGLOMERATE	
559		2.32			.00	0	3	0	25	9	25271	1703	444	528	1.23	.75	10.29	.0	2.50	CONGLOMERATE	
560	.0	2.57	2.60	2.60	.20	75	0				64636	5398	1083	1123	4.57	3.79	21.72	.1	7.09	RHYOLITE	
561	1.8	2.60	2.61	2.65	45.00	226	0				46216	3679	838	996	2.87	1.43	19.42	.0	4.85	SANDSTONE	
562		2.69			.00	0	259	62	565	182	24145	1540	456	461	1.07	1.73	8.90	.1	2.83	ANDESITE	
563	.0	2.64	2.61	2.63	570.00	22292	20977	7791	36191	9077	47708	4110	787	686	3.63	4.28	13.11	.3	5.72	ANDESITE	
564	2.8	2.68	2.65	2.73	.10	389	113	0	565	182	39841	3503	617	771	3.03	.61	15.07	.0	3.64	SILTSTONE	
565	.0	2.60	2.58	2.59	1.00	125	0				58811	7375	611	377	7.87	5.16	6.98	.7	6.20	IGNIMBRITE	
566					.00	0															
651	.0	2.73	2.70	2.72	.40	464	1202	565	2136	454	29887	2902	229	252	3.04	.63	4.89	.1	1.92	BASALT	
652	2.3	2.87	2.83	2.92	2.00	565	653	188	1130	337	19535	1671	265	54	1.68	3.53	.78	.5	2.71	BASALT	
653	3.4	2.78	2.65	2.74	15.00	527	1294	502	2010	422	13252	913	220	185	.74	1.28	3.53	.3	1.56	GREENSTONE	
654	10.9	2.20	2.42	2.72	8.00	213	0				13761	875	266	207	.63	1.74	3.92	.4	1.89	CHERT	
655	4.6	2.58	2.54	2.67	2.00	87	0				50409	3442	945	962	2.50	3.51	18.58	.1	5.91	HORNFELS	
656	.0	2.77	2.73	2.73	850.00	20030	16084	13069	20231	2075	47443	3113	923	823	2.23	4.81	15.75	.3	6.17	DIORITE	

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro sity %	---Densities--- tonnes/cubic m Whole Dry Grain		Remanence S.I.	-----Susceptibilities----- S.I.*.000001				-----In-situ Gamma-ray Spectrometry----- counts/6 min.--- % ppm ppm Heat							Rockname					
		Lab	In-situ		(from	to	SD)	Ch.1	Ch.2	Ch.3	Ch.4	K20	U	Th	U/Th		gen.				
657	.0	2.69	2.66	2.68	.70	0	25	0	125	56	35796	2582	592	547	2.23	2.86	10.50	.2	4.07	QUARTZITE	
658	7.8	2.61	2.53	2.74	.80	113	25	0	125	56	34337	2519	587	563	2.03	2.59	10.83	.2	3.91	MUDSTONE	
659	1.4	2.72	2.73	2.78	30.00	314	94	0	251	95	37200	2473	653	648	1.85	2.63	12.50	.2	4.18	IGNIMBRITE	
660	4.3	2.54	2.54	2.65	1.00	163	0			22111	2087	252	134	2.13	2.38	2.44	.9	2.38	SLATE		
661	3.2	2.62	2.61	2.69	2.00	326														TUFF	
662	.0	2.89	2.87	2.87	.40	565	1340	1005	1759	247	15024	1707	100	81	1.87	.62	1.54	.4	1.07	ALTERED BASALT	
663	.0	2.82	2.83	2.83	.60	414														BASALT	
664	3.6	2.81	2.76	2.85	1200.00	52539	48569	22619	75398	18249										ALTERED BASALT	
665	1.7	2.75	2.75	2.75	150.00	50064	10461	6283	19452	2985	56109	3968	1025	825	3.13	6.39	15.67	.4	7.34	ADAMELLITE	
666	.0	2.72	2.69	2.69	130.00	314	536	314	691	110	36903	3663	372	278	3.78	2.57	5.25	.4	3.35	BRECCIA	
667	.0	2.72	2.69	2.69	8.00	113														BRECCIA	
668	.0	2.67	2.65	2.68	.40	0	35273	15079	53658	9080	1791	90	89	48	.00	.55	.87	.9	.66	BASALT	
669	.0	2.71	2.65	2.67	.40	0	0				10636	646	208	146	.46	1.55	2.74	.5	1.53	LIMESTONE	
670	.0	2.71	2.65	2.67	.40	0	0				9404	341	203	156	.10	1.35	2.95	.4	1.36	LIMESTONE	
671	12.3	2.54	2.31	2.63	3.00	12	15	0	125	44	20201	974	507	436	.36	2.83	8.32	.3	3.25	SANDSTONE	
672	.0	2.84	2.83	2.83	250.00	51207	32997	21614	63585	12353	14129	1131	250	251	.93	.97	4.84	.2	1.64	BASALT	
673	5.3	2.60	2.53	2.68	9.00	0														BASALT	
674	.0				.00	0															
675	.0	2.92	2.89	2.89	330.00	26276	35195	14576	48380	10388	21042	1786	318	283	1.61	1.66	5.42	.3	2.32	BASALT	
676	.0	2.86	2.81	2.82	80.00	27922	30265	628	73152	23898	5283	435	117	83	.34	.86	1.56	.5	.88	BASALT	
677	5.5	2.44	2.70	2.85	3.00	364	376													BASALT	
678	4.6	2.83	2.85	2.99	20.00	2463	2387													BRECCIA	
679	.0	2.68	2.65	2.66	200.00	20998	14870	9927	21362	2917	42129	3795	649	576	3.47	3.41	11.02	.3	4.79	ADAMELLITE	
680	7.3	2.53	2.50	2.70	10.00	75	41	0	125	62	52857	4641	879	919	4.02	2.98	17.78	.1	5.80	SILTSTONE	
681	10.3	2.50	2.48	2.76	2.00	314	169	0	502	167	40942	3589	673	628	3.16	3.18	12.06	.2	4.75	IGNIMBRITE	
682	2.6	2.69	2.65	2.72	1.00	0	0				43824	3272	803	737	2.59	3.93	14.14	.2	5.44	SHALE	
683	.0	2.65	2.60	2.61	30.00	5516	1072	188	5403	1376	62201	4354	1048	1037	3.43	4.25	19.99	.2	6.82	ADAMELLITE	
684	.0	2.61	2.64	2.64	15.00	201	0				33237	2411	485	460	2.07	2.20	8.84	.2	3.34	IGNIMBRITE	
685	1.6	2.90	2.89	3.50	1.00	502	389	251	628	172	21169	2146	140	131	2.31	.66	2.52	.2	1.37	BASALT	
686	16.2	2.27	2.17	2.59	500.00	75	188	125	251	62	49472	4162	739	795	3.67	2.24	15.41	.1	4.85	RHYOLITE	
687	4.2	2.65	2.53	2.64	4.00	0	31	0	125	58	33011	2025	757	440	1.35	6.71	8.09	.8	5.85	TUFF	
688	.0	2.85			.00	0	11393	5906	19100	4193	12182	927	174	143	.83	1.05	2.72	.3	1.30	DOLERITE	
689	1.6		2.62	2.66	1.00	163	351	125	879	205	69346	5170	939	1157	4.43	1.12	22.60	.0	5.55	IGNIMBRITE	
690	2.0	2.58	2.57	2.63	.60	138	0				54383	4595	814	1049	3.94	.43	20.53	.0	4.66	ADAMELLITE	
691	7.2	2.61	2.54	2.84	1.00	0	169	62	376	97	15990	1499	248	140	1.43	2.25	2.57	.8	2.16	QUARTZITE	
692	1.1	2.62	2.61	2.64	.20	226	83	0	251	112	20060	2271	148	89	2.48	1.28	1.64	.7	1.64	ARKOSE	
693	.0	2.61			.00	0	31	0	125	47	52263	4144	897	951	3.39	2.89	18.42	.1	5.70	SLATE	
694	4.6	2.54	2.51	2.63	.70	138	0				38524	2789	715	718	2.12	2.78	13.86	.2	4.56	GREYWACKE	
695	7.5	2.57	2.52	2.73	.10	150	0				39522	2998	632	711	2.45	1.55	13.82	.1	3.88	SLATE	
696	.0	2.69	2.71	2.71	6.00	138	0				37837	2545	698	707	1.85	2.64	13.65	.1	4.38	DACITE	
697	.0	2.73	2.65	2.65	.10	100														RHYOLITE	
698	.7	2.72	2.71	2.73	.70	351	62	0	251	106	32452	1809	668	588	1.09	3.57	11.24	.3	4.38	IGNIMBRITE	
699	1.4	2.71	2.67	2.70	70.00	6597	9173	2010	15582	4449	44906	4040	739	574	3.67	4.85	10.87	.4	5.70	ADAMELLITE	
700	2.9	2.68	2.64	2.72	.40	251	113	0	376	126	32070	2119	663	578	1.47	3.61	11.05	.3	4.45	IGNIMBRITE	

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro sity %	---Densities---				Remanence S.I.	-----Susceptibilities-----				-----In-situ Gamma-ray Spectrometry-----						Heat U/Th gen.	Rockname		
		tonnes/cubic m	Whole	Dry	Grain		Lab	In-situ	(from to	SD)	Ch.1	Ch.2	Ch.3	Ch.4	K20	U			Th	
701	1.7	2.94	2.90	2.96	32000.00	3078	5497	1633	11812	2947	15760	1416	191	213	1.35	.49	4.14	.1	1.32	DOLERITE
702	.0	2.67	2.94	2.95	2000.00	2349	1617	879	2890	606										DOLERITE
703		2.60			.00	0	0				55693	3667	992	1014	2.69	3.64	19.59	.1	6.21	SILTSTONE
704	1.0	2.59	2.56	2.59	1.00	113	0				71329	6741	971	849	6.45	5.26	16.23	.3	7.50	RHYOLITE
705	.6	2.76	2.82	2.84	400.00	11309	323	0	753	234	26720	1427	601	545	.73	3.02	10.45	.2	3.82	ALTERED BASALT
706	2.8	2.72	2.69	2.77	.20	150														BASALT
707	.0	2.78	2.75	2.81	1.00	201					14356	1038	219	193	.88	1.17	3.69	.3	1.55	BASALT
708	.6	2.74	2.72	2.74	1.00	188	26	0	125	49	49154	4983	496	320	5.19	4.03	5.95	.6	4.70	RHYOLITE
709		2.85					10210	4398	15330	5064	15276	559	347	365	.08	1.15	7.06	.1	1.93	MICRODIORITE
710	.1	2.32	2.67	2.67	450.00	34959	6212	0	17592	6877	42407	3654	616	582	3.33	2.82	11.19	.2	4.42	RHYOLITE
711	1.6	2.66	2.62	2.66	2500.00	15356	20872	10932	25886	4032	51649	3632	897	874	2.83	3.80	16.83	.2	5.87	ADAMELLITE
712	.0	2.88	2.88	2.88	2.00	289	435	251	628	124	16857	1034	272	258	.78	1.23	4.96	.2	1.79	ALTERED BASALT
713	.0	2.60	2.58	2.60	100.00	8859	9162	5654	12315	1905	57415	4311	1273	1162	3.07	6.31	22.28	.2	8.41	ADAMELLITE
714	.0	2.61	2.60	2.62	50.00	9374	8706	5026	12566	2061	64563	4462	976	794	3.79	5.98	15.09	.4	7.15	ADAMELLITE
715	3.4	2.64	2.62	2.72	.80	427	157	0	376	107	30589	2000	536	575	1.46	1.65	11.14	.1	3.25	BRECCIA
716	2.6	2.58	2.55	2.62	330.00	5202	4489	2136	5529	967	77791	5327	1497	1471	3.85	6.19	28.35	.2	9.54	GRANITE
717	1.1	2.52	2.52	2.55	3.00	0	33	0	125	57	88284	5188	1957	1917	2.94	8.16	36.94	.2	12.02	GRANOPHYRE
718	.0	2.78	2.74	2.74	40.00	364	561	251	879	206	37180	2368	806	700	1.54	4.42	13.37	.3	5.37	TUFF
719	.0	2.73	2.71	2.74	.40	590	188	125	251	62	39068	2725	745	669	2.04	3.82	12.81	.3	5.02	MUDSTONE
720	.0	2.72	2.71	2.71	30.00	376	106	0	251	103	30786	1920	560	501	1.39	2.90	9.59	.3	3.75	ARKOSE
721	.0		2.63	2.64	30.00	3669	2555	251	5780	1775	31365	1937	634	590	1.27	3.01	11.33	.2	4.09	QUARTZITE
722	2.6	2.65	2.59	2.66	100.00	17115	15934	12189	18975	1667	46196	4004	761	621	3.57	4.64	11.81	.3	5.71	ADAMELLITE
723	3.5	2.60	2.59	2.68	.20	125	0			47148	3278	879	998	2.35	2.05	19.40	.1	5.11	MUDSTONE	
724	5.2	2.63	2.54	2.68	350.00	4825	8545	0	32672	11197	35321	2159	714	722	1.37	2.71	13.94	.1	4.37	KERATOPHYRE
725	18.1	2.27	2.16	2.64	.10	0	0			32516	2666	685	151	2.37	8.99	2.24	.0	6.50	SILTSTONE	
726	.0	2.87	2.86	2.86	4000.00	11347	16803	5026	30033	8005	16227	1163	296	224	.93	2.01	4.23	.4	2.18	BASALT
727	11.3	2.56	2.56	2.87	10.00	1507	3652	0	19100	5222	24000	2211	295	329	2.11	.76	6.39	.1	2.04	VOLCANIC
728	.0	2.80	2.80	2.83	730.00	37372	17584	3267	27143	6995	26784	2809	283	192	2.91	2.19	3.59	.6	2.64	BASALT
729	.0	2.79	2.75	2.77	.20	351	202	0	439	136	49919	3614	922	891	2.78	3.99	17.15	.2	6.03	IGNIMBRITE
730	20.5	2.31	2.18	2.83	40.00	289	376	188	879	221	24571	2068	369	319	1.87	2.04	6.09	.3	2.73	SLATE
731	.6	2.83	2.83	2.85	200.00	791	647	376	1005	216	30433	2319	486	397	2.00	2.96	7.55	.3	5.88	GREYHACKE
732	8.5	2.44	2.40	2.63	3.00	175	11	0	62	25	42449	4652	431	405	4.81	2.00	7.78	.2	3.67	SILTSTONE
733		2.80			.00	0	56841	32044	82309	16474	28486	2215	541	385	1.83	3.97	7.23	.5	4.11	BRECCIA
734	1.2	2.68	2.61	2.64	1000.00	17241	23214	17592	35437	5415	25735	2256	421	316	2.04	2.89	5.97	.4	3.28	ADAMELLITE
735	4.5	2.72	2.70	2.97	.10	238	267	0	502	185	42403	3671	731	606	3.22	4.35	11.54	.3	5.40	SILTSTONE
736	.0	2.86	2.85	2.85	400.00	7992	21942	376	76277	23670	37398	2894	748	554	2.32	5.23	10.45	.5	5.55	SANDSTONE
737	.0	2.76	2.81	2.81	1.00	150	556	314	879	201	37477	2547	710	580	1.93	4.32	11.03	.3	5.00	BRECCIA
738	.0	2.62	2.61	2.61	40.00	10693	6040	1256	10053	2743	50088	4179	883	701	3.60	5.62	13.30	.4	6.57	ADAMELLITE
739	.0	2.69	2.69	2.69	.80	75	314	0	565	172	39103	2943	702	706	2.32	2.71	13.63	.2	4.53	IGNIMBRITE
740	5.1	2.60	2.50	2.63	2.00	351	0			44258	2706	906	841	1.75	4.33	16.14	.2	5.83	SILTSTONE	
741	1.7	2.69	2.63	2.67	1.00	0	0			13671	804	243	202	.58	1.44	3.85	.3	1.68	LIMESTONE	
742	1.0	2.85	2.79	2.82	41000.00	40639	30251	14702	44861	7773	17478	1232	319	312	.94	1.34	6.01	.2	2.07	BASALT
743	11.2	2.55	2.52	2.84	2.00	0	0			29016	1520	624	592	.79	2.83	11.38	.2	3.87	SANDSTONE	
744	1.4	2.82	2.77	2.81	6000.00	38440	28037	20797	36065	4589	15373	1177	245	198	1.02	1.52	3.76	.4	1.81	ANDESITE

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro % X	Densities--				Remanence S.I.	Susceptibilities				In-situ Gamma-ray Spectrometry				Heat U/Th gen.	Rockname				
		tonnes/cubi	m	Whole	Dry		Lab	S.I. x 1000001	In-situ (from to SD)	counts/6 min.	Ch.1	Ch.2	Ch.3	Ch.4			K20	ppm U	ppm Th	U/Th
745	6.4	2.65	2.68	2.86	700.00	25421	10941	5026	21488	5210	11982	726	263	154	.50	2.32	2.83	.8	2.03	ANDESITE
746	6.5	2.50	2.52	2.70	.00	0	439	0	1130	357	29001	2059	670	470	1.46	4.99	8.82	.5	4.93	RHYOLITE
747		2.32			.00	0	376	0	1507	380	17729	1056	410	198	.71	4.11	3.55	.1	3.32	CHELT
748	.0	2.65	2.64	2.64	1.00	0	17	0	125	47	42560	3015	698	706	2.41	2.65	13.63	.1	4.51	IGNIMBRITE
749	.0	2.79	2.75	2.75	3.00	9914	0			37150	2752	589	572	2.30	2.52	11.01	.2	3.96	IGNIMBRITE	
750	.0	2.96	2.96	2.96	2500.00	41142	28085	19603	37322	6111	23557	1392	534	464	.81	2.92	8.86	.3	3.51	LAMPROPHYRE
751	.9	2.61	2.60	2.60	7.00	50	211	0	628	223	34823	3151	596	520	2.79	3.24	9.94	.3	4.34	TUFF
752	.0	2.79	2.77	2.78	400.00	5943	5106	3644	7665	905	13363	1238	167	159	1.19	.75	3.06	.2	1.26	BASALT
753	1.4	2.62	2.59	2.62	50.00	10379	8704	6031	18221	2938	52064	5089	647	640	4.96	2.63	12.34	.2	4.87	TRACHYTE
754	1.3	2.85	2.82	2.85	2000.00	19138	13864	12063	15959	1327	14041	1242	207	163	1.16	1.33	3.09	.4	1.62	BASALT
755	6.2	2.48	2.45	2.61	100.00	12	586	251	1130	221	78089	4909	1867	1705	2.83	9.25	32.69	.2	11.94	TRACHYANDESITE
756	4.5	2.49	2.45	2.57	100.00	25	1348	251	10053	2908	46042	3766	743	765	3.22	2.66	14.79	.1	4.90	MICROGRANITE
757	2.1	2.59	2.55	2.66	2000.00	540	309	0	628	189	60823	4657	1097	1064	3.72	4.70	20.49	.2	7.25	ADAMELLITE
758	15.1	2.45	2.47	2.44	35.00	125	41	0	125	61	7664	534	214	139	.35	1.73	2.59	.6	1.59	QUARTZITE
759	7.4	2.52	2.47	2.67	6.00	75	0				40254	2819	727	837	2.07	1.56	16.29	.1	4.21	SLATE
760	1.1	2.81	2.79	2.82	4.00	578	454	125	1256	321	23638	2586	219	121	2.76	2.02	2.21	.9	2.26	ALTERED BASALT
761	.0	2.84	2.86	2.88	4.00	464														BASALT
762		2.31			.00	0	83	0	628	188	54080	3990	891	975	3.20	2.51	18.92	.1	5.51	SLATE
763	12.2	2.28	2.25	2.57	10.00	75														RHYOLITE
764	7.5	2.47	2.44	2.64	50.00	0														BRECCIA
765		2.49			.00	0														GRANOPHYRE
766	1.6	2.65	2.63	2.69	.10	0	9	0	62	20	60104	4326	1037	861	3.52	6.15	16.39	.3	7.41	ADAMELLITE
767	3.3	2.64	2.60	2.60	.40	0	347	125	691	149	59129	3574	1163	1190	2.29	4.25	22.99	.1	7.07	GREYWACKE
768	1.1	2.69	2.65	2.68	1.00	87	287	62	816	197	63381	4549	1178	1196	3.43	4.42	23.10	.1	7.45	MUDSTONE
769	.0	2.86	2.88	2.88	10.00	929	1074	753	1382	221	34977	2784	636	550	2.30	3.51	10.50	.3	4.49	DOLERITE
770	8.7	2.52	2.43	2.66	.30	0	14	0	62	20	61246	5022	978	536	4.61	9.06	9.79	.9	8.34	GRANITE
771	1.3	2.64	2.62	2.65	.80	25	0				70348	5211	1262	975	4.27	8.35	13.45	.4	9.29	GRANITE
772	10.7	2.49	2.52	2.82	.30	50	40	0	62	31	53899	4152	986	949	3.31	4.31	18.26	.2	6.54	SLATE
773	4.7	2.55	2.55	2.67	.20	125	0				63361	4927	1210	868	4.05	8.79	16.32	.5	9.16	GRANITE
774		2.24			.00	0	0				65959	4692	1516	1038	3.36	11.60	19.43	.6	11.26	SLATE
775	1.1	2.11	2.68	2.71	.20	150	0				61195	423	1223	1188	3.24	5.22	22.88	.2	7.87	QUARTZITE
776	2.6	2.57	2.66	2.66	.10	289	286	175	464	100	53751	4055	1096	844	3.15	7.28	15.97	.4	7.95	ADAMELLITE
777					.00	0	0				63660	6568	1757	1077	5.31	14.93	19.93	.7	13.86	GRANITE
778	.0	2.60	2.58	2.59	2.00	62	23	0	188	6612932	8438	7033	2229	5.50	21.40	42.00	.5	21.67	GRANOPHYRE	
779	2.5	2.56	2.53	2.59	1.00	0														GRANOPHYRE
780	4.2	2.63	2.61	2.72	.30	150	322	62	628	169	91661	7365	1673	1558	6.03	7.93	29.92	.2	11.39	SLATE
781	2.9	2.61	2.60	2.68	2.00	0														QUARTZITE
782	2.0		2.65	2.71	.30	50	459	314	816	145	57846	4371	1031	1063	3.45	3.68	20.55	.1	6.57	ADAMELLITE
783	.0	2.59	2.57	2.59	50.00	1130	263	0	691	282	92525	6118	1961	1741	4.15	10.30	33.31	.3	13.00	APLITE
784	4.7	2.53	2.50	2.62	.30	0														GRANITE
785		2.69			.00	0	99	25	188	58	45259	3141	866	865	2.29	3.42	16.69	.2	5.48	GREISEN
786	2.2	2.61	2.58	2.63	.90	0	0				57112	5005	945	812	4.45	5.28	15.50	.3	6.93	ADAMELLITE
787	.6	2.60	2.62	2.63	35.00	75	0				17801	664	474	340	.09	3.44	6.39	.5	3.24	IGNIMBRITE
788	9.7	2.48	2.42	2.67	3.00	238														IGNIMBRITE

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Poro %	---Densities--		Remanence S.I.	-----Susceptibilities-----				-----In-situ Gamma-ray Spectrometry-----								Rockname					
		tonnes/cubic m	Whole Dry Grain		S.I. * .000001		Lab In-situ (from to SD)		counts/6 min.--				%	ppm	ppm	Heat						
								Ch.1	Ch.2	Ch.3	Ch.4	K20	U	Th	U/Th	gen.						
789	10.5	2.42	2.36	2.64	.50	0	0					26714	1595	501	531	1.04	1.62	10.28	.1	2.99	SANDSTONE	
790	5.2	2.50	2.47	2.60	5.00	75	0					22052	531	238	233	.24	.99	4.49	.2	1.43	CONGLOMERATE	
791	4.1	2.61	2.54	2.67	7.00	0	129	0	314	101		93234	5951	2304	708	4.27	27.88	11.66	.3	20.25	GRANITE	
792	3.8		2.62	2.71	80.00	1043															GREISEN	
793	6.3	2.52	2.46	2.63	.50	150						17247	831	327	292	.47	1.70	5.59	.3	2.11	SANDSTONE	
794	1.5	2.78	2.74	2.78	6.00	502	177	0	565	168		75561	2001	2729	1648	1.43	23.47	30.44	.7	19.40	GRANITE	
795	3.3	2.75	2.81	2.90	.80	201	0					218731	10242	6243	4026	3.25	50.68	74.90	.6	44.90	IGNIMBRITE	
796	.0	2.67	2.62	2.64	.40	263	0					117247	8117	2286	1455	6.37	18.79	27.03	.6	17.71	GRANITE	
797	4.9	2.83	2.74	2.87	.50	163															GRANITE	
798	.0		2.61	2.63	.50	0	0					61626	4509	1251	532	3.73	13.40	9.36	.4	10.76	ADAMELLITE	
799		2.56			.40	0	12					21984	1331	457	435	.84	2.06	8.37	.2	2.89	QUARTZITE	
800	2.2	2.66	2.60	2.66	.00	0	496	251	1005	250		64303	4058	1128	1185	2.90	3.76	22.94	.1	6.90	IGNIMBRITE	
801	2.5	2.67	2.65	2.65	.60	314	0					62842	4449	1204	493	3.73	13.12	8.62	.5	10.46	GREISEN	
802	1.2	2.66	2.61	2.61	.10	201	0					87446	5648	1649	1452	4.09	8.81	27.77	.3	11.12	GRANOPHYRE	
803	.0	2.63	2.62	2.62	.60	12	65	12	125	33		47104	3745	612	393	3.56	4.99	7.31	.6	5.15	ADAMELLITE	
804					.00	0						44874	3533	857	783	2.81	4.24	15.01	.2	5.83	QUARTZITE	
805					.00	0						45157	4026	1103	520	3.32	11.21	9.30	.2	9.30	GRANITE	
806	17.8	2.28	2.28	2.78	5.00	100						61184	4710	1071	1098	3.79	3.89	21.22	.1	6.89	QUARTZITE	
807	12.2	2.46	2.39	2.72	1.00	100						22090	1354	412	452	.90	1.15	8.77	.1	2.41	SANDSTONE	
808	.2	2.69	2.66	2.67	100.00	27181	18367	7476	30661	7712		65774	4894	1202	1245	3.78	4.22	24.08	.1	7.58	IGNIMBRITE	
809	2.3	2.64	2.62	2.67	20.00	0						18749	1096	391	405	.64	1.37	7.83	.1	2.33	QUARTZITE	
810		1.98			.00	0						78451	5162	1625	1531	3.49	7.50	29.42	.2	10.45	SLATE	
811	1.0	2.70	2.66	2.67	1.00	289						51569	3591	994	997	2.61	3.87	19.24	.2	6.27	IGNIMBRITE	
812	6.9	2.50	2.49	2.67	.10	276	0					47643	3334	883	838	2.52	4.00	16.11	.2	5.80	GRANODIORITE	
813	4.6	2.64	2.57	2.69	1.00	50		0	0			52192	3367	1113	902	2.28	6.86	17.14	.4	7.69	QUARTZITE	
814	.0	2.71	2.71	2.73	.10	238															QUARTZITE	
815	3.9	2.57	2.52	2.62	5.00	0															QUARTZITE	
816	.0	2.73	2.72	2.72	1.00	351						48133	3111	1100	780	2.07	8.10	14.65	.5	7.99	GRANODIORITE	
817	1.6	2.75	2.73	2.73	2.00	289	0					39959	2730	841	740	1.91	4.50	14.15	.3	5.63	GRANODIORITE	
818	.0	2.66	2.68	2.70	2.00	741	0					38797	2760	722	809	2.02	1.81	15.72	.1	4.26	PHYLLITE	
819	6.1	2.55	2.50	2.50	.40	100	0					32864	2655	564	685	2.13	.79	13.37	.0	3.25	SLATE	
820	5.2	2.48	2.50	2.50	.20	339															QUARTZITE	
821	9.3	2.41	2.39	2.64	.20	150	0					29418	1749	633	695	.99	1.76	13.49	.1	3.61	QUARTZITE	
822	20.7	2.24	2.20	2.78	30.00	62	0					28682	1641	595	705	.89	1.04	13.74	.0	3.19	PHYLLITE	
823		2.47			.00	0						54525	3999	989	1076	3.04	2.86	20.87	.1	6.02	PHYLLITE	
824	2.5	2.70	2.68	2.75	.20	376	0					43756	3210	795	855	2.45	2.42	16.57	.1	4.88	PHYLLITE	
825	2.7	2.73	2.70	2.78	900.00	42725	29028					27115	1658	518	539	1.09	1.79	10.43	.1	3.13	DOLERITE	
826					.00	0																
827	5.8	2.57	2.55	2.70	6.00	50	224	125	314	53		36003	2119	702	761	1.31	2.06	14.76	.1	4.09	QUARTZITE	
828		2.54			.00	0	1440	62	14451	3634		31383	1900	727	475	1.21	5.83	8.85	.6	5.40	PHYLLITE	
829		2.76			.00	0																QUARTZITE
830	1.4		2.59	2.59	.20	125	0					10225	641	166	213	.45	.10	4.17	.0	.87	SANDSTONE	
831	.0	2.61	2.56	2.58	10.00	263	0					70385	4272	1663	1489	2.43	8.59	28.51	.3	10.73	GRANOPHYRE	
832	4.4	2.89	2.56	2.67	1.00	12	0					37297	2896	645	731	2.31	1.52	14.21	.1	3.89	GREYWACK	

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Densities				Remanence S.I.	Susceptibilities				In-situ Gamma-ray Spectrometry								Rockname			
	Porosity %	tonnes/cubic Whole	tonnes/cubic Dry	tonnes/cubic Grain		S.I.	Lab	In-situ (from to)	SD	Ch.1	Ch.2	Ch.3	Ch.4	K20	U	ppm Th	ppm U/Th		Heat gen.		
833	6.2	2.43	2.52	2.69	.50		100											GREYWACKE			
834	.0	2.71	2.70	2.72	2500.00	32056	39877	17844	57176	9801	30667	2170	564	483	1.69	3.17	9.22	.3	3.92	DIORITE	
835	.9	2.68	2.66	2.69	1200.00	24718	30042	15079	46746	8588	45994	2979	834	824	2.16	3.40	15.89	.2	5.30	ANDESITE	
836	.0	2.62	2.62	2.62	1000.00	15645	13722	3267	21237	4408	51081	3783	942	811	3.01	5.25	15.48	.3	6.58	MONZONITE	
837	.0	2.35	2.59	2.60	2000.00	4926	9881	6408	12817	1879	45464	3409	841	744	2.71	4.45	14.23	.3	5.80	GRANOPHYRE	
838	7.3	2.48	2.42	2.61	7.00	238	330	163	565	120	49670	3851	852	797	3.19	4.00	15.31	.2	5.81	RHYOLITE	
839	9.2	2.46	2.36	2.60	25.00	364	649	188	1130	252	35202	2528	658	631	1.92	2.90	12.14	.2	4.31	DACITE	
840	1.8	2.62	2.58	2.62	3.00		0				10221	567	214	229	.31	.66	4.44	.1	1.24	SANDSTONE	
841	.0	3.01	2.98	2.99	63000.00	*****	96828	59187149539	26953	4414		238	61	25	.20	.66	.44	.5	5.3	PYROXENITE	
842	.0	2.77	2.77	2.77	47000.00	27143	25551	12943	33175	5696	23820	1805	351	189	1.66	3.29	3.44	.9	3.01	GABBRO	
843	.0	2.71	2.76	2.76	22000.00	51484	30255	23373	42348	5279	27230	2401	244	164	2.49	1.90	3.06	.6	2.27	ANDESITE	
844	1.7	2.68	2.65	2.70	.30		37				0									SLATE	
845	.0	2.65	2.64	2.64	6500.00	24429	25668	17090	47249	6910	57150	2355	1102	616	1.28	10.06	11.28	.8	8.45	ANDESITE	
846	.0	2.79	2.77	2.77	3300.00	66187	61721	34683	81681	11633	31789	1195	555	347	.63	4.63	6.43	.7	4.11	ANDESITE	
847	2.2	2.62	2.61	2.67	300.00	4511	3300		62	6031	2164	59464	2505	1143	626	1.41	10.59	11.43	.9	8.83	ANDESITE
848	2.7	2.59	2.57	2.64	350.00		12428													ANDESITE	
849	1.2	2.64	2.63	2.66	170.00		2990													ANDESITE	
850	1.7	2.91	2.88	2.93	110000.00		18811													DOLERITE	
851	.0	2.65	2.63	2.65	800.00		13961													DACITE	
852	.0	2.50	2.59	2.61	5000.00		3606													BRECCIA	
853		2.60			.00		0													ANDESITE	
854	.0	2.62	2.60	2.62	350.00		14124													FELSIC ANDESITE	
855	4.3	2.71	2.69	2.81	.10		12	195	0	565	140	63024	2169	1329	1047	.56	8.55	19.85	.4	8.80	ALTERED DACITE
856	1.2	2.71	2.72	2.74	.20		251													TUFF	
857	1.7	2.76	2.74	2.79	2500.00	14237	12821	3267	18723	3456	44557	1557	976	618	.46	8.06	11.47	.7	7.05	ANDESITE	
858	1.2	2.74	2.73	2.76	450.00	23700	30569	18032	41720	7381	40070	1544	682	534	.80	4.43	10.12	.4	4.65	GRANODIORITE	
859	.0	2.69	2.69	2.71	35.00		188	0												IGNIMBRITE	
860	3.2	4.44	4.67	4.83	999000.0	18000009	70752667274255380247353													MAGNETITE	
861	1.0	2.69	2.67	2.69	1.00		75	0				34507	1206	657	690	.32	2.19	13.35	.1	3.70	DACITE
862	.0	2.65	2.67	2.68	2.00		402	8913	5403	13194	2319	46678	1839	878	797	.78	4.41	15.28	.2	5.51	IGNIMBRITE
863	1.5	2.63	2.59	2.59	.40		1030	167	0	376	125	79361	3248	1675	1234	1.37	11.78	23.26	.5	11.57	ADAMELLITE
864	.0	2.68	2.66	2.67	40.00		691	942	125	2638	674	63731	3462	1203	1022	2.23	6.86	19.49	.3	8.08	ADAMELLITE
865	.0	2.63	2.62	2.63	.50		138	94	0	376	118	37887	2103	764	661	1.29	4.22	12.62	.3	5.06	SANDSTONE
866		2.72			.00		0	106	0	376	115	79479	4382	1394	1215	3.00	7.59	23.22	.3	9.34	SLATE
867	1.5	2.69	2.67	2.71	.40		50	15	0	125	39	59464	2512	1261	878	1.14	9.47	16.46	.5	8.93	ADAMELLITE
868	.0	2.65	2.65	2.67	230.00	5303	3119	376	6031	2100	52475	2330	994	817	1.23	5.99	15.54	.3	6.64	IGNIMBRITE	
869	.0	2.64	2.66	2.66	.50		0	86	0	376	139	63274	2613	1358	1254	.92	6.56	24.06	.2	8.37	IGNIMBRITE
870	6.5	2.71	2.68	2.85	6.00		201	67	0	251	104	44208	1871	829	679	.94	5.03	12.91	.3	5.53	IGNIMBRITE
871	1.2	2.65	2.65	2.68	6.00		188	11	0	125	37	29870	915	828	720	.00	4.53	13.76	.3	5.10	IGNIMBRITE
872	3.0	2.69	2.64	2.72	9.00		351	259	0	1005	274	95784	5044	1645	1305	3.47	10.48	24.75	.4	11.50	IGNIMBRITE
873	.0	2.93	2.94	2.95	3.00		766													TUFFISITE	
874	3.4	2.57	2.58	2.67	3.00		213	0				56599	3114	1201	986	1.84	7.26	18.75	.3	8.11	GRANITE
875	1.1	2.88	2.90	2.93	880.00		4084	1843	628	2764	689	24907	905	608	478	.15	3.92	9.06	.4	4.01	BASALT
876	3.3	2.67	2.63	2.72	12500.00	*****	90402	37196129810	27112	2963		49	49	21	.00	.32	.37	.4	.39	SERPENTINITE	

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Porosity %	Densities			Remanence S.I.	Susceptibilities					In-situ Gamma-ray Spectrometry					Rockname					
		tonnes/cubic m	Whole	Dry		Grain	Lab	In-situ	(from	to	SD)	Ch.1	Ch.2	Ch.3	Ch.4		counts/6 min. X	ppm U	ppm Th	U/Th	Heat gen.
877		2.60			.00		0	259	0	1005	321	25675	1223	413	349	.81	2.38	6.65	.3	2.79	SLATE
878	4.4	2.57	2.55	2.66	-.60	289	20	0	125	48	51083	2940	979	868	1.94	5.16	16.61	.3	6.47	GREYWACKE	
879	.0	2.74	2.71	2.73	16500.00	427	77	0	502	158	25363	1384	518	227	.97	5.47	4.01	.3	4.30	SILTSTONE	
880	.0	2.70	2.68	2.64	22000.00	39257	7752	251	29656	8118	7836	377	120	104	.26	.66	1.99	.3	.81	ANDESITE	
881	2.7	2.62	2.59	2.64	-.80	540	20	0	62	31	40778	2175	705	693	1.42	2.91	13.36	.2	4.40	MUDSTONE	
882	.0	2.67	2.63	2.64	140.00	15230	12960	9927	15896	2259	49289	2546	988	949	1.41	4.34	18.26	.2	6.12	ADAMELLITE	
883	.0	2.63	2.64	2.65	-.10	427	0				42029	2252	870	735	1.32	5.01	14.01	.3	5.79	GREYWACKE	
884	.0	2.74	2.71	2.71	-.10	238	52	0	628	181	40437	2521	707	599	1.89	4.05	11.42	.3	4.89	GRANDIODORITE	
885	5.0	2.56	2.51	2.64	-.60	0	86	0	753	213	39819	2391	732	719	1.63	3.03	13.86	.2	4.61	SANDSTONE	
886		2.63			-.00	0	0														SILTSTONE
887		2.57			-.00	0	20	0	125	48	42495	1634	1075	922	.26	6.03	17.60	.3	6.79	SLATE	
888	.0	2.58	2.62	2.62	-.10	12															
889	6.4	2.58	2.57	2.75	-.20	779	932	0	4775	1288	39909	2383	750	702	1.61	3.51	13.48	.2	4.84	ADAMELLITE	
890	1.8	2.67	2.66	2.71	-.20	590	94	0	251	108	47616	2628	854	769	1.76	4.36	14.73	.3	5.61	QUARTZITE	
891	3.4	2.55	2.54	2.63	-.10	263															QUARTZITE
892	1.9	2.59	2.58	2.63	-.20	238	0				26727	1207	581	517	.51	3.04	9.89	.3	3.68	IGNIMBRITE	
893		2.65			.00	0	0				40591	2244	703	612	1.55	3.84	11.69	.3	4.72	SHALE	
894	3.5	2.61	2.62	2.72	3.00	0	0				27758	1303	442	370	.86	2.59	7.05	.3	3.00	IGNIMBRITE	
895	2.6	2.63	.60	2.67	3.00	0	0				41940	1973	764	664	1.14	4.18	12.69	.3	5.01	IGNIMBRITE	
896	5.6	2.75	2.48	2.63	2.00	138	0				28883	1120	599	539	.38	3.06	10.32	.3	3.74	SANDSTONE	
897	11.0	2.41	2.42	2.72	2.00	150	0				40622	1817	775	669	.94	4.30	12.77	.3	5.05	SANDSTONE	
898	1.8	2.98	2.95	3.00	550.00	21224	9286	1507	15079	4909	17929	864	283	222	.59	1.83	4.21	.4	1.99	DOLERITE	
899	.0	2.63	2.64	2.64	9.00	2211	1767	376	8796	2273	44248	2994	706	721	2.37	2.60	13.93	.1	4.52	ADAMELLITE	
900	1.6	2.70	2.70	2.74	2.00	150															QUARTZITE
901	6.4	2.63	2.63	2.81	1.00	314	0				59136	3510	1214	1094	2.23	6.19	20.96	.3	7.91	SLATE	
902		2.29			.00	0	0				30459	1354	659	478	.63	4.72	9.00	.5	4.60	SLATE	
903	.0	2.68	2.67	2.68	150.00	150	178	0	251	80	34295	1421	801	595	.49	5.58	11.22	.5	5.48	IGNIMBRITE	
904	3.7	2.58	2.56	2.66	-.20	100	0				47242	2145	1032	805	.98	6.73	15.25	.4	6.99	SANDSTONE	
905		2.65			.00	0															SLATE
906	1.1	2.77	2.69	2.72	100.00	502	12	0	125	39	21577	833	573	470	.10	3.40	9.06	.3	3.67	IGNIMBRITE	
907	1.1	2.75	2.70	2.75	20.00	188	137	0	628	190	46601	3107	562	513	2.78	2.79	9.84	.2	4.04	ALTERED DACITE	
908	.0	2.70	2.67	2.67	6.00	314	62	0	251	100	58182	4315	896	778	3.70	4.91	14.86	.3	6.42	IGNIMBRITE	
909		2.46			.00	0	0				53333	2711	998	820	1.68	6.02	15.60	.3	6.77	SLATE	
910	1.5	2.66	2.63	2.67	.30	25	34	0	125	51	50876	2707	1046	946	1.54	5.29	18.13	.2	6.72	DACITE	
911	3.9	2.60	2.58	2.69	1.00	50															DACITE
912	1.7	2.98	2.94	3.00	1.00	0	5026														QUARTZITE
913	7.3	2.58	2.57	2.77	100.00	113	14	0	125	37	33198	1599	733	569	.79	4.82	10.77	.4	5.00	SCHIST	
914	1.2	2.70	2.67	2.71	10.00	2123	0				43837	2568	847	653	1.77	5.62	12.36	.4	5.99	DACITE	
915	2.2	2.64	2.58	2.64	1.00	125	0														ADAMELLITE
916		2.31			.00	0	0				54489	3493	1164	787	2.46	9.02	14.71	.6	8.66	MUDSTONE	
917	4.3	2.58	2.57	2.68	-.60	150	0				46635	2846	902	833	1.92	4.36	15.99	.2	5.86	GREYWACKE	
918	2.8	2.44	2.53	2.60	15.00	150	0				60919	4001	1343	395	3.13	16.46	6.43	.5	12.02	GRANITE	
919	1.5	2.31	2.80	2.84	1.00	138	0				56074	2502	1346	391	1.35	16.55	6.35	.6	11.65	GREISEN	
920	1.2	2.72	2.70	2.73	.50	125	58	0	125	51	40771	1588	864	558	.65	7.00	10.38	.6	6.26	IGNIMBRITE	

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Porosity --- Densities --- Remanence				Susceptibilities				In-situ Gamma-ray Spectrometry							Rockname					
	sity tonnes/cubic m		S.I.		S.I. x 000001				counts/6 min. --- % ppm ppm								Heat				
	%	Whole	Dry	Grain	Lab	In-situ	(from	to	SD)	Ch.1	Ch.2	Ch.3	Ch.4	K20	U	Th	U/Th	gen.			
921	1.3	3.66	3.65	3.69	15000.00	*****	525709	1130207628478119	31024	1306	675	257	.70	7.58	4.43	.7	5.62	SKARN			
922	1.9	2.56	2.56	2.61	300.00		0		76271	3824	2008	420	2.23	26.62	6.11	.3	18.06	GRANITE			
923	1.7	2.72	2.71	2.75	90.00		4976	3476	1256	6408	1615	31919	2809	528	537	2.45	1.97	10.37			
924	1.6	2.63	2.61	2.65	600.00		1080	1352	879	1759	271	44544	3102	867	959	2.18	2.32	18.62			
925	7.7	2.52	2.40	2.60	4.00		276	389	0	565	200	53324	4633	908	994	3.93	2.56	19.29			
926	.0	2.96	2.88	2.88	100.00		7690	3367	0	6660	1870	13561	831	244	254	.57	.84	4.91			
927	.0	2.30	2.59	2.61	6.00		113	0		34821	2738	621	759	2.13	.81	14.82	.0	3.51	SANDSTONE		
928	13.8	2.38	2.34	2.71	4.00		138												SILTSTONE		
929	.0	2.59	2.57	2.59	35.00		87	1059	125	4523	1413	77646	6617	1353	1466	5.52	3.99	28.43			
930		2.43			.00		0	22	0	125	50	49125	2978	999	1151	1.78	2.13	22.40			
931	.0	2.61	2.62	2.62	20.00		4636	4359	1382	5529	1075	48495	4000	798	738	3.45	3.84	14.16			
932	8.9	2.47	2.44	2.68	.10		62	0		48759	4301	925	883	3.59	4.13	16.98	.2	6.27	GREYWACKE		
933	.0	2.97	2.94	2.95	1500.00		84144	82251	72005	93493	7398	16827	1824	199	192	1.83	.86	3.70	.2	1.59	GABBRO
934	1.5	2.74	2.67	2.71	680.00		40840	39223	27143	49008	6835	47731	4866	675	629	4.67	3.20	12.08	.2	5.11	MONZONITE
935	12.2	2.51	2.41	2.75	.10		12	0		49767	4308	899	935	3.59	3.11	18.09	.1	5.83	MUDSTONE		
936	1.8	2.70	2.65	2.70	100.00		14614	12261	9801	16336	1457	32986	2705	576	528	2.28	2.83	10.13	.2	4.00	ADAMELLITE
937		2.57			.00		0	54	0	251	78	54563	4050	903	953	3.27	2.96	18.45	.1	5.72	GREYWACKE
938	1.7	2.64	2.60	2.64	2.00		12	0		31045	2471	539	499	2.06	2.59	9.58	.2	3.71	GRANODIORITE		
939		2.63			.00		0	3585	1005	7665	1904	64027	5458	1162	1124	4.57	5.02	21.64	.2	7.84	RHYOLITE
940	1.0	2.69	2.65	2.68	2.00		314	0		27623	2183	479	450	1.81	2.22	8.65	.2	3.27	GRANODIORITE		
941	.0	2.72	2.69	2.70	2.00		741	929	0	3769	928	31262	2634	581	416	2.26	4.23	7.82	.5	4.47	GRANODIORITE
942	.8	2.76	2.73	2.75	300.00		14476	15282	11184	20106	3092	18206	1665	299	308	1.47	1.07	5.95	.1	2.01	GRANODIORITE
943	13.2	2.57	2.45	2.82	.70		439	114	0	251	88	44103	3729	752	837	3.12	1.95	16.26	.1	4.69	MUDSTONE
944	.0	2.67	2.64	2.66	2.00		326	19	0	125	47	30826	3286	429	376	3.21	2.31	7.19	.3	3.39	ADAMELLITE
945	1.0	2.85	2.79	2.82	1500.00		52791	45074	10807	57805	15509	43400	4799	557	519	4.78	2.64	9.97	.2	4.43	MONZONITE
946	1.9	2.82	2.79	2.84	.20		502	393	0	628	176	32994	3753	408	376	3.79	1.98	7.21	.2	3.33	BASALT
947	2.0	2.61	2.58	2.63	4.00		62	12	0	125	35	22435	1471	561	203	1.05	6.43	3.47	.8	4.81	CHERT
948	15.9	2.35	2.32	2.75	60.00		226	0		29413	2496	601	411	2.08	4.60	7.69	.6	4.64	PHYLLITE		
949	.0	1.66	2.77	2.77	170.00		2048	5853	879	45238	12179	28055	3296	301	208	3.46	2.28	3.90	.5	2.87	LAMPROPHYRE
950	1.0	2.04	2.67	2.70	55.00		37	10832	9424	12817	1047	46935	3578	856	839	2.83	3.57	16.17	.2	5.61	ADAMELLITE
951	.0	2.71	2.69	2.69	25.00		8645	8367	6031	10807	1593	49014	4027	873	863	3.33	3.55	16.64	.2	5.80	ADAMELLITE
952	.0	2.63	2.69	2.71	80.00		967	11857	10555	13446	867	39745	3404	672	769	2.86	1.50	14.96	.1	4.13	ADAMELLITE
953	.0	2.37	2.87	2.87	850.00		238	6266	1382	10053	2440	19923	1338	370	349	.99	1.70	6.71	.2	2.42	BASALT
954	.0	2.63	2.62	2.63	70.00		6333	2697	1256	4523	993	59885	4685	1071	1011	3.82	4.92	19.43	.2	7.23	GRANITE
955	.0	2.44	2.67	2.68	10.00		2463	1683	1005	2261	382	46297	3244	795	842	2.50	2.57	16.30	.1	4.94	ADAMELLITE
956	.0	2.73	2.70	2.70	8.00		301	214	125	314	62	65313	3707	1232	1215	2.37	5.04	23.42	.2	7.65	GRANODIORITE
957	1.4	2.65	2.63	2.67	30.00		766	523	0	1256	378	57388	4321	858	1124	3.53	.24	22.02	.0	4.70	ADAMELLITE
958	.0	2.64	2.62	2.62	.80		62	0		50172	3654	915	1000	2.76	2.59	19.40	.1	5.54	QUARTZITE		
959	2.6	2.64	2.58	2.48	16.00		1269	2165	879	3330	631	69233	4922	1201	1373	3.73	2.69	26.71	.1	7.07	ADAMELLITE
960	.0	2.74	2.73	2.73	.20		301	245	0	502	133	54848	4450	986	1128	3.55	2.20	21.94	.1	5.91	MUDSTONE
961	.0	2.72	2.69	2.69	.10		163	33	0	251	74	33328	1800	765	785	.86	2.77	15.17	.1	4.49	MICROGRANITE
962		2.64			.00		0	62	0	251	84	49460	4490	880	399	4.17	9.13	7.09	.2	7.83	ADAMELLITE
963	.0	2.40	2.69	2.70	230.00		12227	11686	7665	15707	2083	29932	2225	513	492	1.80	2.26	9.47	.2	3.43	GRANODIORITE
964	4.6	2.56	2.52	2.64	.60		50	0		42717	2446	1093	667	1.37	9.32	12.33	.7	8.19	QUARTZITE		

Rock Physical Properties LACHLAN FOLD BELT of New South WALES

Stn	Porosity %	Densities			Remanence S.I.	Susceptibilities				In-situ Gamma-ray Spectrometry							Rockname			
		tonnes/cubic m	g/cc	Whole Dry Grain		Lab	In-situ (from to)	SD	Ch.1	Ch.2	Ch.3	Ch.4	K20	U ppm	Th ppm	Heat gen. U/Th				
965		2.78			.00	0	15247	9299	24001	4242	53651	4566	1057	132	3.80	6.81	15.77	.4	7.78	ADAMELLITE
966	2.1	2.74	2.71	2.76	6.00	263	0				51436	3956	866	885	3.18	2.00	19.15	.1	5.23	GRANODIORITE
967	6.2		2.48	2.64	.10	0	25	0	125	56	49138	3232	1015	1187	2.10	3.14	21.06	.1	6.01	QUARTZITE
968	1.3	2.90	2.90	2.94	2500.00	51547	24931	2261	51899	18348										BASALT
969	1.0	2.70	2.65	2.67	3.00	201	154	0	1256	374	60412	4726	1070	1270	3.70	1.85	24.75	.0	6.20	GRANODIORITE
970	12.7	2.42	2.37	2.72	.50	50	0				49976	3697	914	939	2.85	3.30	18.15	.1	5.79	SILTSTONE
971	.0	2.60	2.56	2.57	4.00	75	0				64249	4696	1284	722	3.80	11.67	13.23	.8	10.36	GRANITE
972	1.5	2.74	2.71	2.76	5.00	100	0				43228	2889	818	837	2.06	2.99	16.17	.1	5.08	ADAMELLITE
973	1.2	2.69	2.63	2.67	.40	226	10	0	125	35	67113	6025	1207	1003	5.27	7.15	19.10	.3	8.89	ADAMELLITE
974	.0	2.68	2.67	2.68	3.00	150	0				55064	4306	981	1128	3.38	2.12	21.95	.1	5.83	IGNIMBRITE
975	.0	2.70	2.67	2.67	.20	816	309	0	628	215	53063	4846	881	952	4.23	2.63	18.46	.1	5.74	SILTSTONE
976	.3	2.58	2.56	2.57	2.00	0	0				49106	4018	929	1066	3.13	2.04	20.74	.1	5.51	RHYOLITE
977	.0	3.18	2.58	2.58	25.00	7213	1709	0	6660	1924	91445	7349	1822	1752	5.74	7.99	33.72	.2	12.00	GRANITE
978	.0	2.59	2.69	2.70	3.00	301	0				65904	5615	1114	1215	4.74	3.19	23.57	.1	7.07	IGNIMBRITE
979	.0	2.72	2.58	2.58	.10	0	0				51608	4494	772	1035	3.87	.07	20.30	.0	4.30	GRANITE

E. MAJOR ELEMENT ANALYSES

Geochemical Analyses (MAJOR ELEMENTS-Weight %) LACHLAN FOLD BELT OF New South Wales														
Station	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM	Station
0001	68.08	.66	14.18	4.47	.06	1.74	1.75	1.95	4.54	.17	.07	2.00	99.66	0001
0003	75.41	.04	14.08	.34	.01	.08	.46	3.30	4.98	.16	.06	.60	99.52	0003
0008	71.34	.37	13.89	3.42	.05	1.00	2.83	3.42	2.99	.09	.04	.20	99.62	0008
0009	72.36	.34	13.40	3.26	.04	.91	2.55	3.13	2.47	.08	.06	.90	99.49	0009
0010	74.70	.11	13.25	1.72	.04	.16	1.62	3.97	3.93	.03	.05	.01	99.59	0010
0011	66.77	.64	14.88	5.23	.07	2.30	4.58	2.65	2.02	.13	.03	.50	99.80	0011
0013	60.89	.94	16.23	7.33	.14	2.42	5.42	4.63	1.00	.24	.02	.30	99.61	0013
0015	62.67	.89	15.63	6.85	.12	2.34	4.27	4.39	1.67	.22	.08	.70	99.83	0015
0016	44.46	1.39	10.99	12.34	.20	15.65	8.85	.74	1.08	.24	.05	3.50	99.49	0016
0030	71.62	.42	12.80	2.43	.05	.55	2.34	1.55	5.09	.18	.05	2.50	99.58	0030
0033	64.31	.52	11.51	5.42	.10	2.08	6.16	2.09	1.84	.23	.06	5.50	99.84	0033
0036	48.85	.01	.20	6.35	.10	33.36	.05	.01	.01	.03	.02	10.30	99.26	0036
0044	70.27	.43	14.37	3.00	.05	1.17	1.44	1.79	5.75	.26	.03	.80	99.36	0044
0046	73.06	.14	14.98	1.28	.02	.29	.59	3.09	5.38	.31	.04	.60	99.77	0046
0047	74.96	.14	13.44	1.37	.04	.21	.73	3.21	4.93	.13	.04	.30	99.52	0047
0049	68.34	.66	15.06	4.42	.07	1.95	2.66	2.52	3.13	.16	.04	.60	99.62	0049
0052	76.29	.19	12.81	1.10	.03	.14	.27	3.91	4.52	.03	.03	.30	99.62	0052
0053	77.08	.16	12.43	.73	.01	.03	.20	4.03	4.64	.03	.02	.30	99.64	0053
0058	75.93	.23	12.03	1.70	.03	.29	1.23	3.29	4.19	.06	.05	.30	99.34	0058
0059	74.36	.30	13.35	2.28	.04	.39	1.50	3.30	4.15	.10	.06	.10	99.92	0059
0060	72.82	.30	13.79	2.31	.04	.39	1.49	3.39	4.58	.09	.05	.10	99.34	0060
0064	73.03	.38	13.44	2.45	.05	.55	.96	2.16	5.64	.14	.03	1.10	99.92	0064
0065	71.00	.59	13.89	3.66	.06	.93	1.78	2.50	4.35	.16	.03	.90	99.84	0065
0066	76.84	.12	12.20	.84	.01	.06	.28	2.94	5.58	.04	.06	.20	99.17	0066
0067	48.31	1.90	14.52	20.74	.13	4.35	.15	.01	3.50	.22	.02	6.00	99.84	0067
0072	69.77	.61	13.55	4.35	.08	1.65	2.06	3.30	3.02	.13	.08	1.30	99.88	0072
0073	66.80	.75	15.29	5.27	.06	1.96	3.22	2.49	3.21	.15	.02	.70	99.90	0073
0077	63.86	.97	16.06	5.19	.19	1.48	4.56	3.81	3.13	.26	.03	.01	99.54	0077
0081	76.17	.16	12.68	1.41	.03	.36	1.04	3.12	4.69	.06	.02	.20	99.93	0081
0082	76.37	.20	12.19	2.26	.18	.13	3.54	4.11	.29	.06	.08	.60	100.02	0082
0088	66.74	.52	17.43	2.71	.16	.59	.42	3.67	4.99	.09	.09	2.20	99.61	0088
0097	74.00	.10	13.96	1.14	.02	.15	2.31	3.14	4.45	.04	.02	.10	99.41	0097
0099	68.83	.42	13.91	4.80	.08	2.25	3.84	2.75	1.94	.10	.05	.80	99.77	0099
0100	72.27	.43	13.84	2.37	.06	.57	1.80	3.40	4.35	.10	.03	.10	99.32	0100
0108	65.50	.62	15.22	4.99	.13	1.99	4.32	2.35	2.72	.13	.07	1.60	99.65	0108
0109	33.39	.94	16.20	10.30	.17	5.39	9.02	1.75	1.34	.21	.04	1.10	99.86	0109
0113	75.70	.05	13.12	1.01	.01	.05	.27	4.84	4.57	.03	.06	.30	100.00	0113
0117	65.69	.61	14.83	4.72	.05	2.17	4.08	2.86	3.62	.16	.03	.90	99.72	0117
0118	66.90	.56	15.01	4.27	.09	1.50	3.92	2.72	3.52	.16	.02	1.10	99.76	0118
0119	65.63	.64	15.17	5.08	.09	1.87	3.83	2.80	3.32	.19	.02	1.00	99.64	0119
0120	66.52	.61	15.12	4.85	.09	1.72	4.21	2.61	3.10	.18	.04	.90	99.95	0120
0121	62.91	.67	14.78	5.72	.13	3.09	4.43	2.59	3.40	.20	.02	1.50	99.43	0121
0122	55.67	.71	13.48	8.38	.18	7.13	6.29	2.19	2.27	.25	.06	2.30	98.91	0122
0123	63.98	.66	15.17	5.68	.10	2.52	5.00	2.74	3.06	.19	.05	.60	99.74	0123
0124	60.38	.80	15.03	6.95	.12	3.47	6.08	2.73	2.88	.22	.05	.50	99.22	0124
0125	64.36	.69	15.22	5.44	.09	2.31	4.73	2.54	3.58	.20	.07	.50	99.73	0125
0126	62.20	.69	15.60	6.06	.09	2.72	5.93	2.65	2.45	.19	.04	.70	99.33	0126

Geochemical Analyses (MAJOR ELEMENTS-Weight %) LACHLAN FOLD BELT OF New South Wales

Station	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM	Station
0127	59.60	.80	15.63	7.50	.12	3.00	5.44	2.75	3.63	.20	.04	.50	99.22	0127
0129	63.96	.67	15.07	8.00	.07	2.23	3.62	2.55	1.95	.13	.06	1.50	99.81	0129
0130	70.58	.37	14.62	2.50	.03	.89	1.37	2.89	3.44	.23	.05	2.90	99.86	0130
0131	67.69	.48	14.50	4.26	.08	1.51	3.68	2.75	3.49	.11	.01	.80	99.36	0131
0134	74.37	.26	12.86	2.36	.02	.37	1.61	2.77	4.33	.08	.05	.50	99.57	0134
0138	74.52	.36	14.20	.76	.01	.76	4.06	4.69	.12	.10	.05	.30	99.94	0138
0142	64.01	.63	13.79	5.21	.07	2.76	2.91	.81	3.74	.16	.04	5.40	99.53	0142
0143	70.81	.68	12.22	5.24	.04	2.67	.67	.59	2.92	.13	.07	3.90	99.92	0143
0148	75.38	.11	13.01	1.30	.05	.16	.70	3.40	4.29	.09	.04	.40	98.92	0148
0150	50.09	.11	2.05	6.16	33.28	.65	6.06	.02	.11	.11	.04	.80	99.47	0150
0158	76.13	.08	12.86	1.75	.19	.05	.11	2.74	5.11	.08	.02	.90	100.03	0158
0159	75.74	.03	13.67	.82	.03	.01	.18	3.09	4.86	.10	.05	.80	99.37	0159
0160	68.71	.67	14.44	4.51	.04	2.01	1.79	2.15	4.02	.16	.06	1.40	99.97	0160
0164	66.69	.75	14.96	5.43	.08	2.31	2.61	2.00	3.64	.19	.02	.80	99.48	0164
0166	49.10	1.84	19.70	11.20	.20	2.42	8.79	4.12	.73	.25	.03	1.40	99.77	0166
0167	74.44	.23	12.87	2.03	.05	.24	.95	3.84	4.63	.07	.01	.01	99.36	0167
0168	75.83	.12	13.04	1.41	.03	.07	.34	3.46	4.90	.09	.01	.60	99.89	0168
0171	65.40	.69	15.19	5.38	.07	2.81	4.94	2.78	2.06	.15	.03	.50	100.00	0171
0175	75.12	.08	13.29	1.61	.04	.09	.49	3.05	5.19	.15	.06	.80	99.96	0175
0176	74.75	.06	14.50	.68	.05	.12	.33	3.77	4.19	.23	.03	.80	99.53	0176
0182	74.02	.25	12.76	2.23	.04	.61	.52	4.10	3.51	.15	.07	1.00	99.25	0182
0183	69.32	.43	13.42	5.08	.07	1.17	.80	3.36	4.23	.17	.07	1.30	99.40	0183
0192	86.74	.12	6.95	1.84	.01	.58	.03	2.03	.10	.04	.06	.90	99.40	0192
0194	73.44	.64	10.72	4.70	.08	2.09	2.36	1.87	1.97	.19	.08	1.40	99.52	0194
0196	66.18	.60	14.76	4.76	.08	2.86	3.65	1.65	3.26	.13	.07	.90	98.89	0196
0203	76.88	.14	12.41	.91	.04	.15	.16	3.24	5.49	.05	.05	.60	100.11	0203
0204	74.87	.12	13.15	1.66	.04	.16	.45	2.27	5.63	.21	.02	1.00	99.59	0204
0205	76.01	.19	12.72	1.08	.03	.30	.27	3.75	4.97	.05	.07	.50	99.93	0205
0207	75.57	.10	14.18	1.30	.04	.24	.23	.39	5.64	.23	.02	1.40	99.34	0207
0208	78.54	.05	12.89	1.62	.20	.08	.20	.01	4.16	.19	.03	1.60	99.57	0208
0209	72.09	.49	13.18	3.32	.03	.99	.79	3.00	4.76	.14	.08	.90	99.77	0209
0210	72.25	.49	13.06	3.27	.03	.94	.14	.84	7.19	.11	.11	1.40	99.82	0210
0211	73.72	.38	11.95	2.99	.03	.92	.97	1.89	4.99	.12	.09	.90	98.95	0211
0214	82.54	.51	9.66	.82	.01	.37	.01	.02	2.61	.05	.05	2.60	99.25	0214
0215	73.29	.15	15.05	1.30	.03	.33	.62	3.42	4.64	.33	.02	.70	99.87	0215
0216	72.73	.28	14.23	2.01	.04	.50	.45	2.51	5.17	.28	.03	1.00	99.28	0216
0217	75.10	.19	12.26	1.51	.01	.22	.08	3.76	5.09	.07	.13	1.10	99.53	0217
0220	71.68	.39	13.57	2.33	.03	1.01	.46	2.88	5.31	.12	.10	1.70	99.59	0220
0221	78.55	.53	8.99	2.87	.05	2.37	.27	2.60	.96	.15	.10	1.90	99.33	0221
0222	66.78	.76	13.34	9.44	.04	1.51	.05	.07	4.41	.07	.04	2.80	99.30	0222
0223	74.50	.20	12.60	1.92	.03	.37	.27	2.57	6.78	.03	.03	.60	99.91	0223
0224	74.30	.31	12.99	2.01	.02	.45	.52	2.77	5.10	.10	.05	.60	99.22	0224
0226	84.90	.38	8.78	.88	.01	.23	.01	.17	1.80	.04	.08	2.40	99.66	0226
0245	75.86	.07	13.66	.89	.02	.08	.32	3.38	4.52	.30	.03	.50	99.68	0245
0246	70.97	.61	13.67	2.91	.06	.97	.50	3.01	5.53	.21	.13	1.20	99.77	0246
0247	73.81	.33	12.89	2.73	.04	.18	.68	3.59	4.82	.06	.07	.60	99.80	0247
0248	71.86	.76	12.55	4.78	.07	1.78	1.58	1.99	2.96	.17	.09	1.30	99.70	0248

Geochemical Analyses (MAJOR ELEMENTS-Weight %) LACHLAN FOLD BELT OF New South Wales

Station	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM	Station
0249	75.03	.18	12.36	1.44	.03	.36	.74	3.69	4.64	.07	.16	.80	99.51	0249
0250	69.21	.81	14.09	4.74	.06	1.05	1.71	3.18	3.83	.21	.06	.90	99.86	0250
0265	98.03	.01	.21	.34	.01	.02	.01	.01	.02	.02	.07	.50	99.23	0265
0267	74.91	.27	12.87	2.72	.08	.06	.22	4.85	3.49	.04	.07	.20	99.79	0267
0276	77.34	.18	13.01	.91	.01	.17	.06	7.17	.21	.03	.03	.60	99.71	0276
0277	73.61	.27	13.39	1.78	.04	.34	1.00	4.11	2.50	.05	.04	.20	99.33	0277
0278	74.08	.28	13.27	1.83	.03	.29	1.09	3.93	4.64	.07	.03	.01	99.55	0278
0281	69.44	.16	16.66	3.21	.03	.44	.03	.01	4.95	.02	.15	4.10	99.20	0281
0282	77.02	.20	11.53	1.73	.03	.21	.32	2.92	4.62	.04	.02	.90	99.54	0282
0286	80.96	.15	10.65	.71	.02	.15	.13	5.32	.80	.02	.01	.90	99.81	0286
0287	75.22	.17	12.04	1.87	.04	.29	.14	2.41	5.37	.03	.04	1.70	99.30	0287
0293	74.07	.22	12.93	2.21	.04	.21	1.29	4.03	3.97	.05	.07	.40	99.49	0293
0294	72.00	.16	14.77	1.66	.03	.13	.09	5.14	5.54	.02	.02	.50	100.06	0294
0295	76.15	.08	12.34	1.11	.02	.03	.44	3.73	4.84	.03	.08	.50	99.34	0295
0298	68.24	.56	15.40	3.55	.04	1.07	1.25	6.30	2.06	.14	.04	1.10	99.75	0298
0299	69.05	.53	17.27	4.14	.01	.30	.03	.12	3.58	.05	.04	4.50	99.62	0299
0301	74.97	.64	12.39	3.55	.02	1.24	.02	.04	3.78	.07	.07	2.90	99.69	0301
0302	76.21	.21	11.93	2.64	.10	.52	.59	3.61	2.48	.06	.07	1.20	99.63	0302
0303	68.56	.48	14.99	3.37	.06	1.82	3.25	3.62	2.90	.17	.08	.50	99.79	0303
0306	66.17	.70	14.41	5.18	.09	1.71	3.83	4.09	1.49	.12	.06	1.60	99.46	0306
0307	73.82	.16	13.86	1.29	.07	.38	1.13	4.42	3.97	.06	.06	.30	99.54	0307
0311	65.82	.57	15.11	5.05	.08	2.38	3.98	2.97	2.53	.14	.05	1.20	99.39	0311
0316	70.79	.27	15.11	1.72	.04	.58	1.88	4.29	4.12	.11	.07	.30	99.28	0316
0317	75.22	.09	13.59	.83	.07	.16	.62	3.97	4.78	.04	.04	.30	99.70	0317
0319	62.16	.69	15.50	7.58	.12	3.58	4.59	1.90	2.32	.16	.05	.60	99.27	0319
0321	70.37	.50	14.64	3.47	.05	1.37	1.88	2.62	3.60	.21	.04	.60	99.35	0321
0323	70.87	.31	14.33	3.20	.08	.65	2.30	4.38	2.90	.11	.01	.30	99.44	0323
0324	70.38	.35	14.21	3.40	.06	.99	3.01	3.68	2.96	.09	.02	.30	99.45	0324
0325	69.67	.34	14.65	3.92	.07	.50	3.24	3.29	2.97	.12	.01	.60	99.38	0325
0326	69.74	.54	14.84	4.01	.06	.97	2.45	1.88	4.06	.21	.04	1.00	99.80	0326
0327	64.15	.53	16.52	3.93	.06	1.57	3.44	3.67	4.80	.21	.05	.30	99.22	0327
0328	75.80	.16	12.55	1.79	.01	.12	.72	3.47	4.29	.07	.05	.40	99.44	0328
0332	78.00	.09	12.32	.67	.03	.08	.53	3.31	4.54	.03	.02	.20	99.81	0332
0333	76.25	.12	12.84	.95	.02	.11	.78	3.24	5.17	.04	.03	.10	99.66	0333
0334	77.78	.50	11.52	2.01	.04	.33	2.26	3.32	1.29	.08	.02	.40	99.54	0334
0336	77.49	.07	12.73	.55	.03	.03	.41	3.33	4.84	.03	.02	.30	99.83	0336
0338	60.74	.75	15.58	5.99	.11	2.82	5.25	2.86	3.00	.25	.09	2.30	99.73	0338
0339	57.56	1.07	15.87	8.05	.15	4.36	5.17	3.59	2.94	.41	.03	.50	99.70	0339
0340	68.53	.58	13.80	5.19	.06	1.08	3.08	3.11	2.75	.14	.03	1.20	99.55	0340
0341	64.75	.35	15.70	5.30	.11	.03	.87	6.38	5.47	.05	.09	.50	99.60	0341
0342	62.31	.57	16.34	5.52	.09	.23	1.64	5.72	5.73	.14	.06	1.30	99.65	0342
0344	68.63	.51	15.21	3.23	.06	1.22	3.12	3.54	3.90	.17	.02	.30	99.90	0344
0346	74.08	.24	13.85	1.21	.06	.20	.64	3.50	5.25	.06	.02	.50	99.59	0346
0347	65.68	.62	15.36	5.01	.09	1.83	4.66	2.50	3.01	.14	.05	1.00	99.94	0347
0348	71.12	.34	14.44	2.52	.04	.66	3.15	3.18	3.52	.09	.02	.80	99.88	0348
0349	68.07	.63	15.00	4.10	.06	1.36	2.73	3.57	3.55	.19	.04	.30	99.60	0349
0351	70.40	.29	15.09	2.31	.04	.65	3.22	3.04	3.93	.08	.05	.30	99.40	0351

Geochemical Analyses (MAJOR ELEMENTS-Weight %) LACHLAN FOLD BELT OF New South Wales

Station	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM	Station
0352	67.61	.65	15.14	3.85	.07	1.75	2.91	3.43	3.92	.24	.04	.10	99.71	0352
0353	58.60	.70	14.41	6.65	.10	4.93	6.33	2.57	3.32	.20	.04	1.40	99.26	0353
0357	75.38	.12	12.27	1.90	.04	.07	1.01	3.43	4.30	.03	.05	.70	99.31	0357
0359	59.31	1.22	16.55	7.75	.15	1.16	3.69	4.87	4.17	.37	.05	.01	99.29	0359
0360	69.14	.57	14.79	4.27	.06	1.25	2.74	2.55	3.63	.14	.03	.70	99.87	0360
0362	72.32	.77	12.70	5.06	.07	1.93	.98	1.22	3.31	.20	.02	.60	99.24	0362
0364	72.60	.27	13.45	2.66	.06	.68	2.63	2.99	3.93	.07	.02	.20	99.55	0364
0366	75.01	.03	14.08	1.05	.05	.03	.13	3.95	4.21	.13	.05	.30	99.57	0366
0367	71.91	.60	13.23	5.55	.10	1.32	.04	.03	2.83	.10	.05	4.30	100.06	0367
0368	71.04	.36	14.73	3.03	.02	.65	.14	5.01	2.16	.07	.04	2.70	99.94	0368
0369	69.09	.60	14.32	3.91	.04	1.22	2.13	3.43	3.70	.14	.02	1.40	100.00	0369
0370	62.77	.79	15.62	6.84	.11	3.23	3.87	2.45	1.59	.14	.09	2.40	99.89	0370
0373	73.77	.11	13.89	1.29	.04	.17	1.29	3.07	4.36	.04	.05	1.40	99.47	0373
0374	60.36	.68	15.34	6.45	.11	3.06	5.95	2.51	2.49	.14	.06	1.40	99.05	0374
0377	68.42	.47	15.67	3.33	.07	.77	3.92	3.31	3.16	.11	.05	.70	99.98	0377
0378	53.63	1.40	15.69	7.27	.10	3.59	5.36	3.27	3.44	.50	.05	.40	99.69	0378
0380	73.95	.11	13.64	1.85	.05	.10	1.53	3.07	4.07	.08	.06	.70	99.22	0380
0381	74.00	.10	13.98	1.94	.05	.08	1.29	2.86	4.35	.08	.02	.90	99.66	0381
0385	65.56	.69	14.82	5.10	.08	2.18	2.03	2.71	3.98	.16	.04	2.00	99.35	0385
0386	68.08	.61	15.21	4.29	.06	1.73	2.03	2.53	3.85	.16	.04	1.40	100.00	0386
0389	66.71	.68	14.31	5.17	.06	2.80	1.85	2.10	3.91	.16	.04	1.80	99.59	0389
0390	76.05	.13	12.39	1.79	.02	.08	.84	2.51	5.20	.08	.07	.60	99.77	0390
0391	70.06	.66	14.52	4.10	.06	1.27	1.65	2.35	4.23	.23	.02	.60	99.74	0391
0392	68.73	.69	14.81	4.85	.07	2.18	2.16	2.18	3.26	.20	.01	.60	99.79	0392
0394	42.90	3.03	13.27	11.88	.20	7.25	8.49	3.85	2.84	1.07	.01	4.14	98.92	0394
0397	73.85	.16	14.48	.92	.01	.23	.61	2.66	5.75	.30	.01	.80	99.77	0397
0399	77.70	.04	12.50	.65	.02	.04	.38	3.54	4.52	.03	.02	.30	99.84	0399
0400	63.26	.80	15.15	5.76	.09	2.33	4.15	2.81	2.95	.18	.13	2.00	99.61	0400
0401	63.95	.77	15.08	5.58	.09	2.26	4.08	2.83	3.10	.18	.09	1.70	99.70	0401
0402	75.81	.03	13.25	.75	.07	.04	.41	4.28	4.48	.03	.03	.30	99.48	0402
0403	75.22	.14	14.34	.45	.01	.16	.22	2.99	4.63	.19	.01	1.00	99.38	0403
0404	74.41	.07	14.44	1.04	.06	.16	.47	3.45	4.09	.44	.01	.80	99.46	0404
0409	76.84	.07	12.60	.97	.01	.05	.37	2.35	6.29	.03	.01	.80	99.39	0409
0410	69.74	.56	14.05	3.59	.06	.97	2.16	3.48	4.05	.18	.02	.50	99.36	0410
0412	72.21	.29	14.47	2.12	.02	.46	.78	2.02	6.17	.35	.02	1.00	99.91	0412
0414	69.41	.45	14.48	3.31	.05	.74	2.26	2.95	4.37	.16	.08	1.40	99.68	0414
0415	64.86	.70	15.03	4.98	.08	2.24	4.20	2.64	3.22	.15	.05	1.50	99.67	0415
0416	90.69	.05	5.57	.55	.01	.10	.08	.01	1.74	.07	.05	1.10	100.00	0416
0417	73.58	.17	14.50	1.25	.02	.19	.40	2.36	5.75	.37	.03	1.00	99.63	0417
0418	71.97	.32	14.19	2.60	.06	.86	1.63	3.42	3.59	.14	.02	.60	99.41	0418
0419	66.17	.80	15.33	5.24	.07	2.36	3.12	2.60	3.16	.15	.04	.70	99.79	0419
0422	74.69	.2	14.45	2.67	.02	.22	.38	.01	5.34	.36	.04	1.00	99.35	0422
0423	73.23	.26	13.50	2.09	.06	.48	1.07	3.29	4.88	.12	.05	.50	99.52	0423
0424	74.08	.04	14.68	.93	.16	.01	.16	4.18	4.30	.13	.02	.80	99.48	0424
0427	75.27	.04	14.53	.92	.02	.07	.18	3.01	3.76	.14	.01	1.40	99.35	0427
0428	66.49	.76	16.59	5.20	.05	2.01	.05	.58	4.02	.09	.02	3.60	99.46	0428
0429	75.04	.15	13.17	1.57	.04	.12	.56	3.09	4.76	.10	.01	.50	99.11	0429

Geochemical Analyses (MAJOR ELEMENTS-Weight %) LACHLAN FOLD BELT OF New South Wales

Station	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM	Station
0430	67.59	.69	15.24	4.63	.07	2.07	2.70	2.33	3.52	-.18	.04	.60	99.66	0430
0432	69.46	.58	14.66	4.02	.07	.77	2.08	3.77	3.81	-.18	.04	.20	99.65	0432
0434	68.78	.40	14.67	2.96	.04	.88	1.14	4.32	5.14	-.30	.08	1.10	99.81	0434
0435	73.02	.23	13.62	2.00	.03	.47	.73	4.06	4.55	-.29	.05	.80	99.86	0435
0436	76.26	.09	12.79	1.09	.05	.09	.47	3.47	4.82	-.03	.04	.40	99.61	0436
0437	68.10	.72	15.13	4.40	.07	1.51	2.53	2.47	3.63	-.17	.01	1.10	99.83	0437
0438	73.43	.37	13.41	2.66	.05	.55	1.11	2.81	4.74	-.17	.01	.60	99.90	0438
0440	67.63	.15	20.40	1.41	.01	.43	.12	.01	1.74	-.11	.02	7.60	99.62	0440
0445	56.70	1.09	16.98	7.93	.13	3.70	7.31	3.35	.94	-.29	.01	1.20	99.62	0445
0456	70.02	.56	14.76	3.72	.05	1.10	1.59	2.38	4.57	-.26	.02	1.00	100.02	0456
0457	68.82	.72	14.30	4.44	.07	1.42	1.82	2.21	3.99	-.23	.02	.80	98.84	0457
0465	78.33	.21	13.33	1.20	.01	.45	.04	.01	1.71	-.04	.08	4.40	99.80	0465
0466	73.78	.23	13.28	1.70	.03	.33	.70	3.50	4.86	-.12	.07	.90	99.50	0466
0467	76.05	.14	12.09	1.67	.03	.42	.68	2.91	4.61	-.11	.09	.80	99.60	0467
0469	74.48	.32	12.34	2.28	.03	.15	.73	2.81	5.05	-.15	.07	1.10	99.51	0469
0470	75.53	.22	12.02	2.74	.04	.33	.37	3.06	4.21	-.13	.10	.90	99.65	0470
0473	65.76	.56	14.99	4.01	.05	1.01	2.42	.57	7.95	-.26	.05	1.80	99.43	0473
0474	71.98	.31	13.27	1.91	.02	.32	1.08	2.30	7.42	-.18	.05	.70	99.54	0474
0476	72.55	.28	13.34	2.44	.03	.34	.38	2.93	5.71	-.18	.08	1.00	99.26	0476
0477	72.50	.45	13.05	2.78	.05	.48	.74	3.21	5.47	-.09	.09	.70	99.60	0477
0480	83.80	.54	9.56	.93	.01	.33	.02	.01	2.12	-.04	.06	2.20	99.60	0480
0481	76.07	.20	12.48	1.64	.01	.20	.02	.07	7.04	-.06	.06	1.30	99.15	0481
0482	72.07	.29	13.45	2.44	.04	.22	.57	2.25	7.17	-.09	.08	.70	99.7	0482
0485	68.86	.65	14.12	7.47	.02	.74	.04	.01	3.79	-.16	.03	3.90	99.7	0485
0486	76.71	.27	11.91	1.73	.03	.46	.92	5.07	1.34	-.12	.14	.80	99.49	0486
0491	80.37	.14	9.71	.90	.02	.21	.24	1.88	4.71	-.11	.05	.60	98.94	0491
0492	79.31	.17	10.26	1.09	.03	.52	.28	3.25	3.57	-.10	.03	.30	99.42	0492
0493	76.55	.67	9.96	5.11	.10	1.11	.02	.09	2.58	-.15	.10	2.40	98.84	0493
0494	68.16	.62	14.87	3.88	.06	1.37	.58	3.00	5.50	-.22	.05	1.30	99.63	0494
0496	77.90	.47	10.52	3.26	.04	1.37	.20	.73	3.19	-.14	.08	2.00	99.89	0496
0498	71.10	.48	13.77	2.65	.06	.78	.71	3.65	5.50	-.15	.06	1.00	99.90	0498
0499	70.92	.29	14.45	2.58	.06	.88	.75	2.50	5.19	-.20	.03	1.50	99.35	0499
0501	66.88	.64	15.30	3.87	.03	.63	.09	.89	9.42	-.15	.06	1.50	99.45	0501
0508	87.05	.36	5.18	3.33	.01	.17	.02	.01	1.06	-.11	.06	2.10	99.45	0508
0517	66.60	.69	14.56	8.60	.10	1.82	.11	.01	3.71	-.12	.06	3.10	99.47	0517
0519	66.90	.91	19.03	1.03	.01	1.06	.05	.07	4.42	-.03	.11	5.60	99.23	0519
0528	78.56	.59	11.09	2.50	.01	.64	.02	.05	3.16	-.04	.08	2.60	99.34	0528
0530	70.46	.54	13.50	2.98	.03	.90	1.44	.70	5.53	-.15	.04	1.10	99.39	0530
0534	71.07	.52	13.52	2.66	.04	.91	1.29	4.78	2.74	-.18	.14	1.50	99.36	0534
0535	75.14	.26	12.53	1.30	.03	.48	.33	2.23	5.67	-.15	.07	1.20	99.49	0535
0536	70.52	.72	12.95	4.91	.04	2.34	.19	1.20	2.72	-.16	.06	3.70	99.51	0536
0537	44.69	1.12	28.40	9.17	.02	1.36	.16	.27	7.19	-.10	.06	7.10	99.65	0537
0538	91.44	.29	4.97	3.27	.01	.25	.03	.01	1.58	-.06	.04	1.00	99.93	0538
0541	77.50	.60	11.67	2.02	.01	.41	.08	.01	2.42	-.05	.09	3.40	99.26	0541
0542	73.14	.01	15.15	.80	.04	.02	.41	4.45	3.89	-.77	.02	.90	99.59	0542
0543	75.93	.48	10.17	5.20	.06	2.60	.06	.12	1.97	-.08	.04	2.60	99.31	0543
0544	72.37	.17	14.87	1.28	.03	.87	.64	3.46	5.05	-.33	.04	.10	99.20	0544

Geochemical Analyses (MAJOR ELEMENTS-Weight %) LACHLAN FOLD BELT OF New South Wales

Station	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM	Station
0545	44.82	5.21	8.41	10.51	.14	9.13	7.96	1.49	7.11	1.04		2.94	98.76	0545
0546	73.54	.22	13.58	2.13	.04	.25	1.15	3.54	4.95	.06	.03	.01	99.49	0546
0547	76.70	.70	14.35	.34	.01	.44	.10	.02	2.03	.03		4.80	99.57	0547
0548	68.84	.49	15.42	3.40	.06	.87	2.57	3.69	3.82	.15	.01	.50	99.81	0548
0554	63.99	.72	15.97	5.12	.09	2.51	5.05	3.46	2.24	.19	.03	.50	99.87	0554
0555	68.67	.61	15.13	3.51	.06	1.74	1.06	2.97	4.24	.20	.04	.80	99.03	0555
0556	75.57	.21	12.97	1.77	.04	.45	.43	2.24	5.13	.23	.04	.60	99.68	0556
0557	71.72	.53	13.69	3.08	.03	1.46	.75	2.39	5.12	.15	.06	1.00	99.98	0557
0558	86.88	.37	7.16	1.44	.01	.12	.01	.04	1.69	.05	.05	1.70	99.54	0558
0560	78.05	.17	10.98	.96	.07	.13	.29	3.42	4.32	.09	.09	1.10	99.68	0560
0565	77.65	.08	11.78	.53	.01	.25	.02	.06	7.70	.10	.06	1.30	99.53	0565
0655	85.68	.49	6.92	1.91	.01	1.80	.02	.01	1.57	.10	.05	1.30	99.85	0655
0656	60.83	.82	16.13	6.24	.11	3.26	5.58	3.25	2.88	.29	.04	.20	99.61	0656
0657	71.87	.54	11.29	6.02	.04	3.68	.26	.26	2.70	.21	.10	3.00	99.97	0657
0659	66.45	.60	14.81	5.87	.08	1.91	3.48	3.05	2.21	.13	.16	1.20	99.96	0659
0661	56.72	.86	15.78	7.28	.12	4.49	5.34	3.26	.29	.18	.03	5.40	99.75	0661
0665	63.29	.78	15.75	5.35	.11	2.57	4.42	3.57	3.30	.29	.02	.20	99.64	0665
0666	51.42	.64	16.81	7.86	.16	3.88	5.17	3.55	5.19	.54	.58	4.00	99.81	0666
0667	53.09	.65	17.07	7.63	.14	3.86	4.11	3.76	5.34	.53	.55	3.20	99.89	0667
0679	66.39	.58	15.85	3.15	.05	1.52	3.08	4.75	3.44	.26	.02	.20	99.29	0679
0681	75.24	.97	9.81	5.75	.08	1.54	.30	.91	1.63	.19	.09	3.40	99.91	0681
0683	72.20	.41	13.98	2.32	.05	.79	1.86	3.25	4.39	.13	.07	.20	99.66	0683
0684	68.09	.41	14.59	4.00	.04	2.76	.15	4.38	3.08	.11	.08	2.20	99.89	0684
0685	52.75	.70	13.99	9.62	.16	8.03	6.21	4.33	2.11	.36	.06	1.40	99.73	0685
0686	76.00	.20	12.50	1.00	.03	.11	.16	1.23	6.36	.04	.04	2.20	99.87	0686
0689	72.68	.13	14.75	2.43	.03	.88	.32	4.19	2.79	.03	.05	1.40	99.68	0689
0690	69.90	.31	14.82	1.68	.04	.52	2.07	3.52	4.29	.13	.06	2.10	99.45	0690
0696	71.76	1.00	11.32	5.13	.09	1.48	1.88	2.16	1.83	.14	.18	3.00	99.98	0696
0697	69.64	.56	14.67	4.20	.05	1.60	.35	.77	4.04	.13	.09	2.90	99.00	0697
0698	75.07	.68	11.27	4.00	.05	1.25	1.85	1.90	2.00	.11	.06	1.50	99.73	0698
0699	62.40	.97	16.08	5.23	.09	2.56	4.57	3.75	2.89	.38	.07	.90	99.88	0699
0700	77.50	.22	10.43	2.54	.04	.86	2.37	2.43	1.35	.06	.09	2.00	99.90	0700
0704	77.17	.01	11.83	.40	.01	.10	.03	1.12	8.87	.02	.05	.30	99.91	0704
0707	51.45	.48	10.05	8.18	.14	9.56	9.83	3.05	1.70	.34	.06	5.00	99.83	0707
0708	52.30	.43	16.75	5.40	.14	3.04	4.03	3.32	5.74	.21	.18	8.10	99.62	0708
0710	70.69	.40	12.03	4.92	.15	.70	3.37	2.20	3.57	.07	.12	1.70	99.91	0710
0711	68.85	.58	15.32	3.63	.08	1.35	2.81	2.27	4.13	.21	.04	.10	99.38	0711
0713	74.13	.23	13.47	1.46	.05	.40	1.36	3.30	4.66	.08	.05	.10	99.29	0713
0714	72.77	.38	13.77	2.38	.06	.81	1.38	3.58	4.30	.15	.02	.40	100.01	0714
0716	74.38	.21	13.46	1.31	.07	.25	.82	3.74	4.52	.05	.04	.50	99.36	0716
0717	77.19	.07	13.14	.32	.02	.04	.23	3.60	4.61	.03	.04	.20	99.49	0717
0718	59.92	.70	12.42	6.66	.11	4.18	6.76	2.14	2.13	.14	.44	4.40	100.00	0718
0721	76.08	.30	11.93	2.82	.04	.35	2.63	2.06	2.05	.06	.05	1.30	99.67	0721
0722	68.03	.39	15.05	4.16	.09	1.48	3.61	3.16	3.59	.13	.04	.20	99.93	0722
0729	61.45	1.08	15.97	6.68	.08	2.76	3.84	2.37	2.49	.20	.09	2.90	99.90	0729
0734	71.54	.65	15.90	3.49	.06	.01	2.76	.01	3.80	.30	.02	.50	99.02	0734
0736	54.15	.78	13.34	9.31	.16	5.71	7.62	3.13	2.48	.43	.07	2.30	99.46	0736

Geochemical Analyses (MAJOR ELEMENTS-Weight %) LACHLAN FOLD BELT OF New South Wales

Station	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM	Station
0737	62.28	.56	14.54	6.02	.10	2.59	5.53	3.52	2.23	.10	.09	1.80	99.37	0737
0738	74.94	.29	13.15	1.78	.05	.35	.98	4.00	3.74	.08	.01	.10	99.46	0738
0739	66.50	.68	14.57	5.39	.09	2.19	1.62	2.66	3.93	.17	.06	1.90	99.73	0739
0746	72.70	.54	15.63	1.89	.01	.80	.05	.02	5.12	.02	.04	3.00	99.82	0746
0748	75.72	.14	12.34	1.88	.04	.24	1.13	3.12	3.98	.05	.05	.80	99.49	0748
0749	65.80	.57	13.93	5.57	.12	2.16	3.46	2.28	3.61	.13	.07	1.40	99.10	0749
0751	74.15	.33	11.80	2.68	.05	.58	.19	3.80	4.38	.10	.07	1.10	99.24	0751
0756	74.77	.25	13.60	.75	.01	.08	.25	3.72	4.45	.08	.01	.90	98.86	0756
0757	76.95	.07	12.34	1.25	.01	.02	.08	4.17	4.53	.02	.06	.10	99.60	0757
0763	74.73	.10	11.56	1.86	.01	.02	.06	3.17	4.78	.02	.07	1.80	98.19	0763
0764	86.29	.21	4.15	5.91	.04	.07	.06	.04	1.42	.03	.08	1.70	100.00	0764
0766	71.28	.38	14.14	2.90	.05	.63	1.47	3.97	4.56	.14	.06	.30	99.90	0766
0770	77.71	.08	12.74	.67	.01	.13	.12	2.97	4.20	.07	.04	1.00	99.73	0770
0771	71.63	.36	14.71	2.56	.03	.83	1.06	2.62	5.10	.29	.05	.50	99.74	0771
0773	70.93	.39	14.52	2.87	.06	.99	.91	2.98	4.77	.27	.03	1.10	99.82	0773
0776	68.07	.80	15.06	4.78	.07	1.88	2.27	2.50	3.75	.24	.01	.50	99.88	0776
0777	70.02	.47	14.84	3.26	.04	1.04	1.08	2.20	4.92	.24	.01	.80	98.92	0777
0778	77.04	.04	12.84	.82	.04	.06	.17	4.07	4.45	.02	.04	.30	99.88	0778
0779	76.82	.04	12.95	.47	.01	.05	.08	3.01	5.59	.02	.03	.60	99.67	0779
0782	69.40	.55	14.80	4.07	.06	1.70	1.22	2.12	4.05	.21	.01	1.60	99.79	0782
0783	77.14	.05	12.82	.67	.03	.06	.48	3.80	4.69	.02	.02	.20	99.98	0783
0784	77.40	.05	12.45	.60	.04	.06	.28	3.43	4.94	.03	.05	.20	99.53	0784
0786	75.94	.13	13.42	1.16	.04	.11	.76	3.28	4.79	.06	.04	.10	99.83	0786
0787	97.78	.94	.28	.17	.01	.01	.01	.06	.01	.02	.04	.30	99.63	0787
0788	97.76	.85	.44	.52	.01	.01	.01	.02	.01	.02	.03	.30	99.97	0788
0791	77.16	.07	12.42	1.59	.04	.10	.31	2.35	4.74	.19	.03	.60	99.60	0791
0792	76.84	.05	13.04	2.69	.10	.07	.04	.02	4.33	.16	.04	2.40	99.79	0792
0794	67.59	.32	13.93	11.48	.09	.68	.13	.01	2.64	.14	.06	2.80	99.85	0794
0795	75.26	.07	12.83	2.12	.01	.59	.03	.40	3.90	.05	.07	1.60	97.23	0795
0796	69.36	.39	14.84	3.44	.07	1.29	.63	2.85	5.03	.25	.04	1.60	99.79	0796
0797	65.79	.36	12.49	10.59	.10	.39	.20	.16	2.09	.16	.03	2.30	94.66	0797
0798	74.13	.08	14.37	1.50	.03	.01	.47	3.41	4.56	.27	.01	.60	99.41	0798
0800	70.08	.54	13.94	3.67	.08	.72	1.90	2.62	4.54	.25	.05	1.20	99.57	0800
0801	77.85	.07	13.02	2.19	.10	.08	.02	.19	4.16	.07	.03	1.50	99.29	0801
0802	74.55	.30	12.60	2.48	.03	.26	1.20	2.61	4.77	.20	.04	1.00	100.04	0802
0803	74.30	.16	14.13	1.43	.04	.41	.70	3.31	4.68	.25	.01	.50	99.91	0803
0808	73.04	.27	13.22	3.49	.05	.26	1.57	2.91	4.26	.13	.07	.60	99.87	0808
0811	70.15	.57	15.15	4.34	.06	2.12	1.52	.01	4.43	.18	.01	.70	99.21	0811
0812	65.95	.69	15.52	5.02	.06	1.89	3.05	2.65	2.66	.12	.04	2.10	99.75	0812
0816	66.47	.77	15.52	5.02	.06	2.55	2.94	2.47	3.27	.22	.05	.50	99.84	0816
0817	63.04	.91	16.12	6.43	.09	3.69	3.24	2.19	3.19	.17	.05	.70	99.83	0817
0818	76.07	.63	7.92	3.48	.08	2.02	1.83	1.29	1.55	.18	.37	3.60	99.01	0818
0821	89.48	.35	5.77	1.18	.01	.16	.01	.05	.76	.05	.05	1.80	99.66	0821
0824	71.25	.73	13.17	4.72	.04	2.24	.22	1.67	2.88	.19	.09	2.60	99.79	0824
0831	76.06	.16	13.04	.56	.01	.29	.38	4.54	4.24	.04	.06	.50	99.87	0831
0836	70.41	.49	14.48	2.69	.04	.81	1.68	4.08	4.37	.15	.01	.50	99.71	0836
0837	73.57	.19	12.91	2.21	.09	.18	.59	4.69	3.89	.04	.09	.80	99.25	0837

Geochemical Analyses (MAJOR ELEMENTS-Weight %) LACHLAN FOLD BELT OF New South Wales

Station	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM	Station
0838	73.01	.39	14.14	1.83	.01	.09	.02	4.19	3.93	.04	.03	2.00	99.69	0838
0839	76.28	.29	11.60	1.93	.01	.15	.08	3.65	3.72	.03	.08	1.50	99.32	0839
0848														0848
0851	70.10	.39	14.91	2.54	.04	.86	2.75	4.06	3.19	.15	.08	.80	99.87	0851
0852	76.54	.41	11.00	2.85	.05	.17	.68	3.32	4.22	.07	.04	.60	99.94	0852
0853	69.89	.49	14.76	2.72	.04	1.08	1.73	4.23	3.68	.08	.05	.80	99.56	0853
0855	74.16	.66	15.45	3.85	.01	2.97	.18	.79	.01	.07	.04	1.50	99.69	0855
0859	68.14	.64	14.75	4.03	.05	2.05	2.38	2.12	4.52	.16	.05	1.10	100.00	0859
0861	65.85	.63	15.60	4.66	.08	2.31	3.66	2.44	2.30	.14	.09	2.20	99.96	0861
0862	69.57	.51	13.74	2.86	.04	2.64	1.36	3.65	3.69	.12	.11	1.90	99.59	0862
0863	76.84	.15	12.25	1.34	.05	.11	.74	2.90	4.96	.05	.04	.20	99.73	0863
0864	68.39	.46	14.82	3.23	.05	.48	2.52	4.21	4.50	.13	.05	.40	99.73	0864
0867	70.04	.45	14.33	3.30	.05	1.16	2.75	2.60	4.31	.11	.05	.40	99.56	0867
0868	68.49	.51	14.19	3.72	.06	1.64	1.82	2.84	3.98	.12	.12	2.00	99.50	0868
0869	76.39	.16	12.58	1.41	.02	1.08	.30	5.10	1.37	.05	.05	1.40	99.91	0869
0870	68.63	.55	13.64	3.87	.08	1.61	2.45	2.53	3.76	.13	.05	2.10	99.40	0870
0871	65.68	.64	14.16	3.78	.03	6.47	.31	5.33	.06	.15	.12	3.00	99.73	0871
0872	70.24	.50	13.07	3.57	.06	.94	1.71	1.00	5.80	.14	.08	2.90	99.99	0872
0873	62.57	.32	9.10	12.14	.14	2.98	.05	.42	1.90	.09	.17	4.40	94.27	0873
0874	71.02	.68	13.82	4.41	.06	1.79	.10	.62	4.01	.14	.05	2.90	99.60	0874
0882	70.21	.38	14.03	3.32	.06	1.58	2.70	2.99	4.29	.12	.04	.01	99.72	0882
0884	67.22	.66	14.32	4.77	.07	2.23	2.53	3.10	3.38	.17	.04	.60	99.09	0884
0889	76.42	.09	12.44	1.50	.02	.02	.96	4.60	2.83	.03	.01	.20	99.12	0889
0891	81.65	.56	8.65	2.95	.03	1.13	.03	1.07	1.62	.08	.05	2.20	100.02	0891
0892	70.03	.71	14.67	3.36	.07	.68	.41	7.09	1.31	.20	.08	1.20	99.80	0892
0894	85.18	.06	8.61	1.28	.02	.10	.01	.01	2.66	.02	.07	1.60	99.61	0894
0895	78.91	.12	13.09	1.47	.01	.15	.03	.01	3.67	.03	.07	2.50	100.05	0895
0899	71.65	.48	13.18	4.12	.08	1.80	.54	2.53	3.86	.10	.03	1.50	99.87	0899
0900	83.86	.32	5.59	4.96	.04	1.63	.06	.03	.96	.10	.10	1.70	99.34	0900
0901	48.86	1.05	26.20	8.02	.03	1.76	.01	.17	6.84	.10	.07	6.40	99.51	0901
0902	81.23	.52	9.83	1.38	.02	.61	.01	.01	2.50	.12	.08	2.70	98.99	0902
0903	65.50	.57	15.26	5.00	.06	2.05	1.63	6.54	1.03	.14	.12	1.70	99.60	0903
0906	47.40	.42	11.13	21.77	.11	7.38	.11	1.29	.27	.10	.41	9.60	100.00	0906
0907	58.88	.55	14.26	9.31	.04	4.83	.20	5.48	.23	.09	.34	5.60	99.80	0907
0908	64.90	.67	13.87	5.30	.08	2.74	1.97	1.27	4.79	.15	.16	3.80	99.71	0908
0910	78.62	.19	10.99	1.36	.04	.82	.68	4.32	.77	.05	.06	1.20	99.11	0910
0911	74.82	.24	13.19	1.74	.04	.96	.81	4.50	1.31	.05	.08	1.50	99.24	0911
0913	77.69	.47	11.61	3.23	.01	.58	.01	.08	3.61	.06	.10	2.40	99.85	0913
0914	63.30	.64	14.74	5.48	.08	2.67	2.13	5.10	1.59	.14	.50	2.80	99.17	0914
0915	76.26	.03	13.48	1.28	.04	.08	.25	2.53	5.01	.11	.03	.60	99.70	0915
0918	75.06	.24	12.97	1.89	.02	.94	.21	6.16	1.46	.08	.02	.80	99.84	0918
0919	52.45	.03	35.01	.88	.03	.01	.24	.01	6.11	.46	.02	4.10	99.33	0919
0920	65.43	.71	15.37	5.61	.08	3.16	1.65	3.99	2.32	.16	.08	1.40	99.95	0920
0922	76.69	.02	14.00	.87	.02	.01	.36	2.49	4.40	.20	.02	.80	99.88	0922
0923	55.66	.89	17.74	7.58	.15	3.69	4.68	3.77	2.68	.25	.04	2.50	99.63	0923
0924	79.16	.22	10.95	1.41	.01	.22	.07	.50	5.46	.05	.09	1.30	99.46	0924
0929	77.46	.20	12.34	1.00	.01	.06	.07	2.41	5.31	.04	.06	.90	99.86	0929

Geochemical Analyses (MAJOR ELEMENTS Weight %) LACHLAN FOLD BELT OF New South Wales

Station	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM	Station
0931	72.40	.38	13.86	2.63	.07	.75	1.71	3.39	3.80	.13	.02	.40	99.83	0931
0936	67.00	.60	16.06	4.02	.09	1.25	3.19	3.91	2.76	.20	.05	.60	99.73	0936
0938	76.26	.12	13.29	1.44	.04	.20	1.21	5.03	1.72	.06	.02	.40	99.79	0938
0939	75.81	.62	12.32	2.19	.01	.22	1.10	3.34	4.88	.04	.08	.70	99.71	0939
0940	69.14	.42	15.06	3.47	.09	1.50	2.63	4.08	2.72	.16	.03	.50	99.80	0940
0941	65.64	.58	16.19	4.10	.08	1.83	4.12	4.06	2.36	.18	.04	.20	99.38	0941
0942	61.19	1.03	16.72	5.97	.10	2.59	4.74	4.52	1.88	.29	.07	.60	99.71	0942
0944	70.48	.33	14.63	2.68	.06	.62	2.22	4.90	2.54	.13	.06	1.00	99.67	0944
0950	65.28	.63	15.31	4.13	.05	2.02	3.69	4.42	2.69	.18	.08	1.50	99.99	0950
0951	66.30	.62	14.94	4.81	.08	1.59	3.75	3.45	2.83	.14	.04	1.10	99.67	0951
0952	66.06	.60	15.14	5.15	.08	1.48	4.42	3.20	2.88	.12	.04	.60	99.77	0952
0954	75.66	.21	12.93	1.15	.03	.18	1.03	3.99	4.15	.05	.07	.50	99.95	0954
0955	68.36	.60	14.38	4.30	.07	1.67	2.81	2.75	3.76	.16	.06	.90	99.81	0955
0956	67.84	.61	14.93	4.68	.08	2.10	2.70	2.27	3.47	.16	.07	.90	99.81	0956
0957	69.91	.51	14.47	3.25	.04	1.06	2.77	3.04	3.77	.12	.06	.70	99.69	0957
0959	70.83	.42	14.18	2.90	.05	.89	2.28	2.75	4.43	.11	.02	.80	99.58	0959
0961	68.43	.62	15.01	4.10	.04	2.00	3.34	3.43	.78	.15	.07	1.70	99.66	0961
0962	74.14	.22	13.34	2.00	.07	.59	.98	2.67	4.86	.13	.12	.90	100.02	0962
0963	66.36	.54	15.20	4.56	.09	1.90	4.26	3.74	2.29	.16	.05	.80	99.94	0963
0965	64.15	.53	15.64	5.13	.09	2.61	5.03	2.75	2.51	.12	.07	.80	99.42	0965
0966	68.76	.69	14.79	4.73	.06	1.85	2.28	2.29	3.51	.19	.16	.70	100.01	0966
0969	71.47	.47	14.24	3.49	.05	.96	2.64	3.79	1.35	.16	.04	1.30	99.96	0969
0971	76.08	.05	13.32	.76	.06	.05	.31	3.62	4.54	.06	.05	.90	99.79	0971
0972	66.92	.74	14.77	5.27	.07	2.26	2.71	2.40	3.30	.18	.05	1.10	99.77	0972
0973	70.06	.52	14.33	3.78	.05	1.46	1.61	2.45	3.68	.18	.01	1.70	99.84	0973
0974	70.22	.62	13.39	4.16	.05	1.63	.96	4.24	2.75	.14	.11	1.40	99.67	0974
0976	73.29	.37	13.44	.81	.01	.52	.30	4.54	5.33	.07	.07	.80	99.54	0976
0977	75.42	.16	12.86	1.03	.01	.08	.40	3.75	4.95	.04	.01	.90	99.61	0977
0978	67.74	.73	14.39	5.02	.06	2.11	2.20	2.53	3.45	.17	.08	1.40	99.88	0978
0979	75.42	.12	13.05	1.07	.02	.16	.94	3.56	4.36	.05	.04	.70	99.49	0979

F. TRACE ELEMENT ANALYSES

Geochemical Analyses (TRACE ELEMENTS p.p.m.) LACHLAN FOLD BELT of New South Wales

Station	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr	Station
0001	610	-6	85	17	54	44	59	-3	11	16	23	218	16	-20	142	-5	20	4	79	8	42	58	209	0001
0003	170	-6	23	-1	8	-5	10	-3	5	6	36	242	7	8	37	-5	7	14	3	-5	16	7	24	0003
0008	644	-6	62	10	18	5	56	-3	7	9	23	111	11	6	134	-5	11	3	50	-5	25	48	140	0008
0009	577	-6	47	9	14	15	29	-3	6	6	30	125	13	-20	156	-5	11	3	44	8	23	46	138	0009
0010	695	-6	53	2	5	-5	38	-3	6	8	16	135	8	-5	86	-5	14	-3	9	-5	33	28	108	0010
0011	515	-6	20	16	56	9	16	-3	7	15	7	86	21	-5	158	-5	-5	-3	97	-5	25	53	160	0011
0013	397	-6	36	23	4	18	18	-3	5	6	8	18	23	-5	280	-5	-5	-3	183	-5	25	51	77	0013
0015	514	-6	39	21	4	121	42	-3	7	-5	9	40	24	-20	271	-5	-5	-3	142	-5	34	62	112	0015
0016	228	-6	36	69	145	110	12	4	9	439	-5	23	41	-20	8 ^a	7	-5	-3	263	-5	19	97	74	0016
0030	816	-6	66	7	16	21	41	-3	12	5	34	212	6	5	126	-5	19	6	33	14	35	47	226	0030
0033	656	-6	51	20	47	147	31	-3	5	15	17	41	19	-20	617	-5	7	-3	123	-5	17	51	105	0033
0036	107	-6	17	106	256	63	48	2	-3	-31	1973	-3	4	-20	-3	20	-5	-3	16	15	-3	38	-5	0036
0044	916	8	45	11	39	39	49	-3	10	16	3	195	8	22	131	-5	8	4	46	-5	27	34	135	0044
0046	209	9	38	6	8	-5	20	-3	18	11	44	391	5	25	49	-5	5	26	7	-5	15	42	51	0046
0047	160	7	35	4	9	14	23	-3	11	11	34	338	10	17	30	5	6	11	10	-5	32	27	69	0047
0049	429	-6	57	21	57	20	50	-3	10	32	27	161	18	7	111	-5	15	5	69	-5	31	50	165	0049
0052	861	-6	50	6	9	-5	50	-3	16	7	22	109	8	-5	108	-5	10	5	7	-5	16	31	118	0052
0053	808	-6	58	-1	5	-5	91	-3	14	7	17	107	4	-5	73	-5	16	-3	6	-5	47	19	108	0053
0058	690	7	89	5	5	-5	69	5	13	-5	17	135	7	5	89	-5	12	8	17	-5	21	30	160	0058
0059	413	-6	69	6	6	10	37	-3	11	13	24	190	10	-5	76	6	20	6	18	-5	56	48	159	0059
0060	636	-6	66	6	10	-5	44	-3	11	12	25	201	7	10	82	5	15	6	19	-5	53	44	154	0060
0064	818	-6	71	9	16	20	41	-3	7	12	33	238	8	-20	117	-5	17	5	28	11	40	39	216	0064
0065	905	-6	76	10	20	31	59	4	13	10	33	177	10	-20	154	-5	17	4	53	6	42	53	287	0065
0066	208	-6	64	3	3	-5	46	3	9	8	21	239	8	-5	18	-5	27	8	7	-5	41	-5	91	0066
0067	441	-6	151	99	141	133	118	5	7	49	7	430	33	-20	3	-5	6	5	270	-5	124	77	142	0067
0072	578	-6	68	17	43	32	66	3	7	16	30	115	15	-20	214	-5	13	3	79	10	40	57	192	0072
0073	596	-6	84	17	48	62	53	-3	10	23	18	131	22	12	140	6	14	-3	98	-5	24	59	222	0073
0077	691	-6	80	8	4	18	55	4	11	11	16	93	20	6	559	-5	10	3	55	-5	32	71	178	0077
0081	408	-6	44	4	12	10	25	-3	7	11	40	178	9	-5	49	-5	14	3	20	-5	47	15	85	0081
0082	271	-6	46	21	2	41	40	7	9	142	18	8	11	-20	262	4	46	-3	4	-5	31	12	262	0082
0088	1268	-6	130	8	3	30	108	3	14	-5	14	245	14	16	256	-5	19	6	14	13	65	50	305	0088
0097	481	-6	88	4	3	11	72	-3	5	5	41	147	6	-5	91	-5	18	7	9	-5	24	-5	92	0097
0099	385	-6	60	16	75	25	47	-3	7	24	10	143	21	11	106	-5	18	4	84	22	21	63	121	0099
0100	1638	-6	66	5	4	19	65	-3	9	11	20	102	11	-5	320	-5	8	-3	27	-5	33	32	233	0100
0108	870	-6	50	11	20	20	28	-3	6	470	14	89	18	-20	323	7	10	4	110	-5	29	46	179	0108
0109	379	-6	32	40	89	86	40	-3	3	12	11	47	45	-5	243	-5	8	-3	337	-5	16	80	84	0109
0113	605	-6	58	-1	-1	-5	32	31	16	142	14	131	8	-20	56	9	19	5	-1	9	91	10	107	0113
0117	680	-6	83	17	33	359	54	-3	12	16	10	119	16	-5	246	-5	18	4	108	-5	25	17	170	0117
0118	808	-6	75	30	10	24	50	4	6	8	17	119	16	-5	275	-5	13	-3	79	-5	29	50	180	0118
0119	800	-6	64	16	12	14	44	-3	9	9	23	107	15	-5	302	-5	12	-3	98	-5	31	61	197	0119
0120	766	-6	50	16	10	9	44	-3	9	8	17	100	18	5	304	-5	13	-3	97	-5	27	50	192	0120
0121	807	-6	63	20	95	20	50	-3	9	25	18	105	25	7	308	-5	13	3	125	-5	24	71	183	0121
0122	771	-6	46	37	430	85	48	-3	6	240	9	88	28	-20	411	-5	8	-3	92	-5	26	117	139	0122
0123	707	-6	72	19	45	12	41	-3	10	14	12	106	18	-5	314	5	8	-3	120	-5	24	50	176	0123
0124	706	-6	49	22	51	42	50	-3	9	19	14	99	25	-5	327	-5	11	-3	148	-5	26	61	186	0124
0125	911	-6	65	21	25	10	54	-3	9	14	16	113	18	-5	343	5	15	4	120	-5	26	48	215	0125

Geochemical Analyses (TRACE ELEMENTS p.p.m.) LACHLAN FOLD BELT of New South Wales

Station	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr	Station	
0126	621	-6	61	21	42	-5	47	-3	7	14	12	91	25	-5	365	5	12	5	133	-5	25	44	180	0126	
0127	841	-6	54	22	14	10	46	-3	9	16	15	114	34	20	326	-5	8	-3	156	-5	43	59	149	0127	
0129	282	-6	35	10	24	26	48	-3	8	384	13	140	23	-20	236	-5	11	-3	130	-5	29	34	160	0129	
0130	889	-6	142	14	8	23	97	-3	8	-5	21	132	14	-20	175	-5	14	4	32	7	49	36	216	0130	
0131	533	7	66	17	18	-5	49	-3	6	11	29	147	21	12	117	-5	14	5	83	-5	33	76	148	0131	
0134	642	-6	75	7	10	-5	72	-3	7	8	18	116	10	10	71	-5	18	3	20	-5	39	14	148	0134	
0138	294	-6	60	3	8	-5	32	-3	8	-5	10	-3	18	8	380	-5	10	-3	40	-5	25	27	142	0138	
0142	348	-6	70	20	92	27	45	-3	9	24	-5	178	18	-20	35	-5	15	-3	95	6	34	51	184	0142	
0143	309	-6	79	17	65	20	49	-3	12	27	-5	156	14	-20	18	-5	15	-3	35	-5	29	56	225	0143	
0148	247	-6	48	4	6	-5	15	-3	13	11	25	298	6	16	49	-5	15	9	6	9	46	24	87	0148	
0150	1763	-6	28	16	-1	6	32	-3	-3	22	-5	3	5	-20	52	-5	19	4	15	-5	-3	71	21	0150	
0158	147	-6	25	9	3	7	16	-3	9	12	25	311	8	14	14	-5	10	11	2	-5	34	47	60	0158	
0159	94	-6	32	3	9	-5	7	-3	6	11	18	356	6	12	5	-5	9	4	4	-5	24	18	58	0159	
0160	654	-6	71	18	49	33	42	-3	10	21	26	174	14	-20	144	-5	16	-3	87	11	36	52	211	0160	
0164	577	-6	78	19	64	69	49	-3	13	25	19	152	18	5	113	-5	16	5	90	-5	36	61	201	0164	
0166	351	12	41	21	8	27	21	-3	8	8	6	16	43	8	425	-5	-5	-3	131	-5	15	82	87	0166	
0167	382	-6	67	4	20	-5	44	-3	14	12	27	167	8	5	52	5	21	5	12	6	42	33	166	0167	
0168	545	-6	43	-1	6	-5	31	-3	13	7	28	162	8	6	27	-5	11	7	6	-5	42	35	104	0168	
0171	605	-6	67	20	66	19	75	-3	7	23	11	85	25	-5	220	-5	11	-3	113	-5	18	47	226	0171	
0175	117	-6	29	5	6	15	15	-3	16	-5	40	385	7	-20	26	-5	11	11	-1	12	28	64	74	0175	
0176	147	-6	17	4	5	-5	-1	-3	12	8	18	497	10	34	26	6	-5	-3	4	-5	13	24	25	0176	
0182	751	-6	135	4	4	17	85	4	20	-5	16	181	11	-20	71	-5	33	5	8	10	76	22	238	0182	
0183	847	-6	148	9	5	-5	95	-3	23	43	7	232	10	-20	121	7	32	5	13	10	94	72	443	0183	
0192	53	-6	11	9	11	-5	17	-3	6	5	79	-5	-3	-1	-20	216	-5	11	-3	9	-5	7	36	48	0192
0194	440	-6	65	15	107	30	46	-3	9	30	14	91	17	-20	274	-5	12	3	101	-5	28	60	349	0194	
0196	489	-6	76	19	59	37	44	-3	6	19	26	174	17	-20	121	-5	13	-3	86	6	32	59	169	0196	
0203	153	-6	43	6	-1	-5	36	-3	21	12	69	255	3	-20	48	8	43	4	-1	-5	18	18	101	0203	
0204	164	-6	53	4	5	-5	18	-3	17	-5	46	338	5	-20	54	-5	15	3	6	9	36	37	84	0204	
0205	337	-6	56	3	3	-5	53	6	21	18	19	219	3	-20	63	-5	43	7	-1	-5	24	19	120	0205	
0207	185	-6	36	2	6	-5	14	-3	3	26	13	20	591	7	22	35	-5	-5	4	-5	20	49	56	0207	
0208	178	-6	31	-1	7	-5	17	-3	27	12	35	662	8	84	8	-5	6	3	-1	-5	17	24	27	0208	
0209	745	-6	82	23	11	10	45	3	12	44	9	144	7	-20	125	-5	24	5	27	8	43	10	288	0209	
0210	868	-6	77	9	3	7	68	5	12	145	19	224	8	-20	94	-5	30	4	36	-5	37	12	230	0210	
0211	1118	7	86	-1	6	-5	53	4	10	155	11	128	5	-20	106	-5	23	-3	21	-5	32	13	194	0211	
0214	468	-6	43	-1	61	-5	50	3	8	18	11	142	13	-20	23	-5	11	-3	56	12	27	7	169	0214	
0215	262	6	38	5	2	-5	19	-3	16	10	48	285	4	19	41	-5	7	30	7	-5	13	52	59	0215	
0216	390	-6	45	8	14	6	35	-3	14	10	38	276	10	18	81	5	15	5	19	-5	26	36	105	0216	
0217	589	-6	50	4	3	-5	27	-3	10	21	32	242	3	21	80	-5	36	6	15	11	41	17	136	0217	
0220	715	-6	60	6	11	11	48	-3	11	45	37	227	5	-20	77	-5	25	4	20	6	33	21	205	0220	
0221	255	-6	69	13	34	6	42	-3	9	90	-5	51	6	-20	53	5	19	-3	50	8	40	21	316	0221	
0222	690	-6	15	25	26	35	14	-3	11	13	8	170	14	18	11	-5	22	-3	75	8	17	20	250	0222	
0223	1029	-6	70	4	5	14	47	-3	12	-5	16	218	9	-20	93	-5	27	6	5	5	59	19	305	0223	
0224	411	3	56	4	8	7	49	1	9	10	37	227	6	11	38	2	28	7	20	2	42	22	196	0224	
0226	1103	-6	34	-1	30	-5	33	5	8	26	-5	85	6	-20	20	-5	8	-3	40	6	12	12	148	0226	
0245	93	-6	31	-1	7	-5	13	-3	21	12	22	501	8	32	12	8	6	-3	2	5	12	29	30	0245	
0246	1209	-6	77	15	3	34	52	4	22	537	22	202	7	-20	182	6	18	-3	33	5	42	40	383	0246	

Geochemical Analyses (TRACE ELEMENTS p.p.m.) LACHLAN FOLD BELT of New South Wales

Station	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr	Station	
0247	707	-6	166	4	6	12	125	-3	26	10	31	160	10	5	45	7	30	6	5	-5	74	43	404	0247	
0248	487	-6	86	15	39	34	54	-3	13	121	26	166	13	21	138	-5	21	-3	71	-5	36	66	251	0248	
0249	497	-6	41	9	10	-5	29	-5	10	181	33	249	4	14	44	-5	25	6	11	-7	48	29	138	0249	
0250	871	-6	106	12	14	-5	88	-3	26	18	9	144	16	17	165	-5	20	6	50	-5	57	35	534	0250	
0265	63	-6	1	2622	10	-5	9	-3	-3	147	-5	-3	-1	-20	3	-5	-5	-3	16	-5	-3	71	-5	0265	
0267	712	-6	101	6	-1	-5	58	-4	23	9	18	110	8	12	36	-5	12	-3	5	-5	72	49	493	0267	
0276	67	-6	100	3	3	-5	72	-3	18	-5	-5	7	5	-5	23	-5	24	8	6	-5	29	-5	160	0276	
0277	794	-6	56	6	3	-5	50	-3	8	6	22	170	6	6	70	-5	28	6	10	-5	31	25	212	0277	
0278	672	-6	57	4	5	-5	54	-3	5	6	20	167	7	5	80	-5	18	3	15	-5	15	21	191	0278	
0281	45	-6	21	11	5	-5	35	-3	69	77	14	350	2	30	-3	8	48	-3	7	43	134	193	901	0281	
0282	48	-6	77	6	5	5	10	100	4	47	22	58	270	3	15	37	8	24	9	8	12	140	137	276	0282
0286	147	-6	12	-1	-1	-5	26	6	14	28	12	12	4	-20	194	-5	6	4	-1	6	50	19	403	0286	
0287	1569	-6	50	16	8	-5	24	6	15	124	-5	77	4	-20	242	-5	9	-3	-1	-5	56	58	465	0287	
0293	923	-6	86	3	2	-5	59	-3	12	10	21	127	14	6	88	5	16	-3	8	-5	59	43	275	0293	
0294	349	-6	71	-1	-1	-5	43	-3	18	66	22	160	3	-20	12	8	26	-3	-1	-5	41	33	261	0294	
0295	106	-6	100	3	4	-5	68	-3	18	13	31	283	5	10	13	6	38	7	2	-5	66	37	120	0295	
0298	837	-6	54	6	3	12	21	4	6	37	24	71	13	25	284	3	39	-3	81	-5	29	47	173	0298	
0299	905	-6	25	6	45	42	30	-3	11	18	34	179	21	-20	60	-5	20	3	81	11	31	43	153	0299	
0301	687	-6	60	23	67	30	45	-3	13	23	7	172	16	-20	18	-5	16	4	79	11	33	56	162	0301	
0302	654	-6	53	9	10	34	49	-3	7	8	27	75	8	37	196	-5	8	4	13	11	69	82	267	0302	
0303	780	-6	41	13	72	-5	27	-3	5	21	15	84	10	-5	468	-5	16	4	63	-5	13	36	128	0303	
0306	385	-6	56	16	25	24	28	-3	8	8	23	51	16	21	152	-5	12	-3	93	7	35	70	186	0306	
0307	371	-6	44	4	11	-5	29	-3	15	9	38	193	8	-5	177	5	18	12	15	-5	23	26	81	0307	
0311	572	-6	43	18	71	-5	41	4	7	24	8	68	23	-5	229	-5	7	-3	103	-5	20	45	134	0311	
0316	805	-6	63	6	9	-5	49	-3	5	5	28	152	7	-5	410	-5	21	-3	22	-5	10	32	121	0316	
0317	203	-6	55	3	5	-5	27	-3	17	13	53	222	20	6	57	7	27	8	7	-5	65	15	67	0317	
0319	418	-6	65	40	79	37	42	-3	10	29	26	119	27	5	152	-5	12	4	122	-5	23	107	153	0319	
0321	448	-6	53	12	39	-5	45	-3	12	16	32	163	16	14	95	7	11	5	62	-5	25	47	151	0321	
0323	658	-6	45	17	7	-5	46	-3	7	6	6	52	10	-5	146	-5	7	4	26	-5	26	40	134	0323	
0324	645	-6	45	9	15	-5	25	-3	7	6	9	105	11	-5	141	-5	10	-3	48	-5	19	30	119	0324	
0325	559	-6	32	9	7	-5	20	-3	7	7	14	105	18	7	205	-5	8	3	26	-5	22	59	160	0325	
0326	794	-6	113	14	3	15	82	-5	13	78	35	199	10	-20	216	-5	32	4	26	6	88	65	293	0326	
0327	1612	-6	36	14	16	33	29	-3	7	10	20	130	10	18	674	-5	6	-3	69	-5	14	42	154	0327	
0328	799	-6	76	4	2	-5	26	-3	8	6	15	151	5	5	64	-5	18	4	8	-5	34	6	146	0328	
0332	107	-6	40	3	10	-5	32	-3	15	5	32	273	7	-3	20	-5	33	12	4	-5	10	9	65	0332	
0333	133	-6	50	4	-1	-5	31	-3	9	-5	22	249	7	-5	77	-5	31	7	10	-5	6	5	76	0333	
0334	432	-6	49	5	9	-5	41	-3	12	-5	18	39	8	-5	141	-5	7	-3	19	-5	20	45	471	0334	
0336	125	-6	34	-1	-1	-5	50	-3	6	5	26	211	5	-5	49	-5	25	-3	6	-5	4	-5	48	0336	
0338	934	-6	43	21	32	44	43	-6	9	14	18	93	22	-20	456	6	11	3	124	11	33	55	175	0338	
0339	616	-6	75	31	142	-5	53	-3	13	37	9	134	21	-5	360	6	11	6	147	-5	19	76	200	0339	
0340	612	-6	60	13	16	-5	43	-3	7	9	6	11	22	7	169	-5	10	3	75	-5	29	25	193	0340	
0341	98	-6	96	4	8	28	56	6	99	-5	17	101	3	-20	-3	8	14	-3	5	10	42	140	1062	0341	
0342	872	-6	87	6	-1	49	88	7	63	-5	14	68	12	-20	37	7	7	-3	6	14	64	154	547	0342	
0344	617	-6	58	13	5	-5	35	-3	7	7	14	140	10	-5	378	-5	47	-3	62	-5	13	26	119	0344	
0346	1040	-6	91	2	5	-5	72	-3	16	9	26	181	12	-5	164	-5	12	-3	8	-5	39	18	175	0346	
0347	778	-6	54	15	-1	20	54	4	8	63	20	118	18	-20	312	-5	19	-3	112	-5	29	53	186	0347	

Geochemical Analyses (TRACE ELEMENTS p.p.m.) LACHLAN FOLD BELT of New South Wales

Station	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr	Station
0348	813	-6	66	10	7	-5	41	-3	7	6	17	124	14	-5	211	6	11	4	35	-5	25	22	136	0348
0349	562	-6	57	12	18	-5	60	-3	14	16	22	136	12	8	153	-5	16	6	60	-5	31	50	227	0349
0351	816	-6	58	4	12	-5	47	-3	7	9	21	137	12	6	192	-5	20	-3	35	-5	21	30	143	0351
0352	890	-6	67	16	27	-5	54	-3	10	14	13	126	9	-5	560	-5	18	4	66	-5	18	31	174	0352
0353	677	-6	47	32	199	62	27	-3	7	57	15	97	19	17	350	-5	14	3	153	-5	23	33	150	0353
0357	510	-6	62	3	3	-5	66	-3	10	15	33	210	7	5	29	6	23	4	3	-5	89	47	197	0357
0359	1147	-6	166	17	-1	-5	120	-3	51	10	13	72	16	19	270	-5	14	-3	53	-5	56	105	880	0359
0360	490	-6	74	12	22	12	40	-3	8	12	27	183	14	11	104	-5	15	-3	79	11	47	46	181	0360
0362	555	-6	90	18	77	14	63	-3	13	28	32	165	18	-5	151	-5	22	-3	80	7	42	75	304	0362
0364	388	-6	57	4	14	-5	38	-3	6	6	38	184	12	7	107	-5	21	4	32	6	42	31	116	0364
0366	65	17	14	3	2	17	-1	-3	16	-5	20	653	8	40	-3	10	14	15	2	50	24	12	26	0366
0367	380	-6	76	41	76	81	45	-3	8	32	14	90	18	-20	17	-5	10	-3	96	-5	25	40	118	0367
0368	563	-6	39	13	2	-5	26	-3	6	62	-5	46	6	-20	66	-5	9	4	26	5	31	8	209	0368
0369	589	-6	62	12	33	7	43	-3	9	38	16	121	12	-20	190	7	22	-3	71	-5	36	38	205	0369
0370	505	-6	76	19	67	36	47	-3	9	110	17	68	21	-20	198	1	17	3	125	-5	23	78	210	0370
0373	1204	-6	64	16	-1	-5	55	3	8	15	24	168	5	-20	147	10	-3	3	3	6	24	32	115	0373
0374	704	-6	49	27	39	20	35	-3	6	13	25	94	21	-5	345	-5	13	-3	153	8	25	79	136	0374
0377	818	-6	61	6	10	-5	55	-3	8	8	25	133	16	-5	291	-5	17	3	46	8	33	51	196	0377
0378	779	-6	78	25	64	35	49	-3	12	24	14	138	22	20	960	-5	17	-3	146	-5	29	85	261	0378
0380	642	-6	61	4	3	-5	49	-3	8	-5	28	196	14	8	126	-5	19	-3	5	7	48	26	119	0380
0381	642	-6	63	4	-1	-5	43	-3	8	-5	32	211	12	-5	107	-5	19	3	6	8	44	27	122	0381
0385	575	-6	79	6	44	6	52	-3	13	59	13	151	14	-20	111	-5	-5	-3	74	-5	18	76	237	0385
0386	646	-6	71	16	48	20	57	-3	10	21	23	198	19	10	158	-5	15	-3	73	11	35	52	192	0386
0389	532	-6	68	15	48	16	42	4	12	71	32	189	20	-20	128	-5	18	-3	80	7	70	63	216	0389
0390	941	-6	75	3	3	15	63	-3	16	-5	45	226	6	22	93	-5	15	5	4	-5	34	57	134	0390
0391	599	-6	66	14	34	7	40	-3	16	11	38	230	15	11	130	-5	16	4	55	8	36	57	215	0391
0392	392	-6	69	16	64	19	53	-3	12	18	27	202	18	11	124	-5	18	4	72	7	34	67	206	0392
0394	849	-2	135	107	33	68	76	99	3	96	14	-21220	5	-1	171	9	-1	171	9	-1	28	108	362	0394
0397	283	-6	42	3	13	-5	25	-3	13	-5	53	338	2	-22	93	-5	6	5	4	7	23	34	70	0397
0399	155	-6	45	-1	5	-5	13	-3	20	-5	37	343	2	-5	24	-5	30	8	4	9	64	21	77	0399
0400	784	-6	68	22	44	154	44	-3	9	10	19	127	25	-20	249	-5	13	-3	123	-5	36	70	211	0400
0401	725	-6	70	20	35	29	41	-3	10	11	34	145	19	26	246	-5	17	4	112	9	35	69	209	0401
0402	141	-6	44	2	4	-5	29	-3	18	-5	32	335	8	8	13	-5	21	5	4	9	56	19	59	0402
0403	203	-6	32	2	5	-5	20	-3	17	-5	36	390	9	10	69	-5	12	5	5	16	22	9	73	0403
0404	150	-6	16	3	7	5	-1	-3	14	-5	37	460	6	47	46	11	-5	8	6	16	16	48	33	0404
0409	79	-6	55	-1	-1	-5	51	4	8	-5	39	250	10	21	17	-5	46	13	3	10	39	12	104	0409
0410	603	-6	61	11	10	7	49	-3	17	7	22	216	7	7	175	-5	13	5	46	9	35	47	219	0410
0412	386	-6	66	4	15	42	39	-3	16	-5	55	348	11	5	100	-5	15	5	17	-5	20	57	118	0412
0414	832	-6	93	11	12	11	71	-3	14	6	41	198	11	43	203	-5	23	3	44	9	41	60	220	0414
0415	809	-6	55	13	20	9	68	6	9	42	19	132	18	31	255	-5	22	-3	113	-5	28	57	164	0415
0416	79	-6	1	6	-1	-5	14	4	8	8	23	180	-1	-20	12	-5	5	-3	2	6	8	6	26	0416
0417	261	-6	43	6	11	9	23	-3	12	-5	55	385	6	31	76	6	9	13	9	14	32	51	69	0417
0418	374	-6	41	9	14	-5	32	-3	9	2	34	180	12	-5	113	-5	9	3	36	10	39	31	117	0418
0419	477	-6	75	18	64	-5	50	-3	13	22	22	177	18	7	190	-5	21	6	86	5	43	66	215	0419
0422	192	-6	48	-1	8	-5	15	-3	17	-5	37	420	6	12	58	6	7	11	7	28	20	32	82	0422
0423	549	-6	74	6	7	-5	55	-3	15	5	34	273	8	15	122	-5	14	-3	20	7	33	36	149	0423

Geochemical Analyses (TRACE ELEMENTS p.p.m.) LACHLAN FOLD BELT of New South Wales

Station	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr	Station
0424	88	23	10	-1	10	-5	14	-3	42	-5	57	704	10	50	12	14	6	3	3	19	15	20	20	0424
0427	177	113	14	3	6	42	7	-3	29	-5	19	651	10	68	58	21	8	10	3	41	7	21	27	0427
0428	917	-6	101	19	98	71	60	-3	14	32	29	208	14	10	50	-5	21	7	24	6	35	93	238	0428
0429	175	-6	38	11	2	-5	26	-3	16	7	38	394	9	25	31	-5	15	9	8	11	46	33	88	0429
0430	479	-6	66	13	59	8	49	-3	11	17	38	193	21	8	151	-5	22	4	76	7	37	67	186	0430
0432	484	-6	70	13	6	9	48	-3	12	6	31	214	13	11	132	-5	17	4	46	8	55	54	254	0432
0434	441	-6	76	6	27	12	47	-3	11	18	56	272	11	9	109	-5	15	3	35	-5	31	62	152	0434
0435	220	-6	41	6	10	-5	22	-3	16	11	41	360	16	21	58	-5	13	7	13	11	24	54	97	0435
0436	131	-6	43	4	9	-5	16	-3	28	-5	48	470	7	9	34	8	39	5	6	17	58	20	82	0436
0437	432	-6	74	17	42	19	48	-3	12	17	27	207	16	9	145	-5	22	-3	72	7	38	61	191	0437
0438	607	-6	68	7	10	6	51	-3	13	8	39	262	7	10	111	-5	19	7	25	7	50	45	182	0438
0440	484	-6	78	-1	10	5	44	-3	17	12	91	165	11	11	139	5	7	6	13	15	28	16	74	0440
0445	468	-6	43	31	50	46	37	-3	11	22	12	26	28	-5	500	-5	-5	-3	183	-5	21	66	111	0445
0456	479	-6	76	9	22	38	41	4	16	14	42	289	13	15	128	-5	16	4	40	10	27	65	169	0456
0457	642	-6	75	16	34	13	54	-3	17	16	32	234	15	7	127	-5	18	4	62	8	36	70	231	0457
0465	152	-6	101	3	8	16	80	-3	25	-5	10	94	19	34	3	-5	36	3	6	17	50	13	331	0465
0466	453	-6	99	-1	6	-5	66	-3	17	26	15	255	6	29	44	9	23	4	7	9	64	14	205	0466
0467	287	-6	50	4	6	10	40	4	17	-5	20	235	9	33	87	-5	16	8	4	14	63	20	118	0467
0469	1023	-6	163	-1	-1	6	102	5	25	49	30	219	9	-20	126	-5	49	7	-1	8	79	59	352	0469
0470	790	-6	135	9	5	29	83	4	22	-5	26	169	13	53	126	-5	38	4	4	14	85	50	236	0470
0473	1692	-6	167	23	11	9	150	3	18	-5	27	261	16	25	239	-5	34	7	41	12	82	46	364	0473
0474	1165	-6	75	-1	-1	-5	93	-3	14	18	21	264	4	-20	175	-5	25	5	15	-5	57	14	223	0474
0476	942	-6	75	9	-1	10	208	3	15	120	8	265	4	32	62	-5	36	5	15	-5	44	18	206	0476
0477	943	8	148	-1	-1	2	192	6	38	35	251	254	12	-20	150	7	36	7	7	10	77	525	610	0477
0480	388	-6	78	9	48	8	59	-3	12	-5	24	120	14	41	41	-5	24	4	53	12	33	48	510	0480
0481	1406	-6	105	16	-1	16	121	-3	7	40	27	319	10	38	91	5	22	-3	7	10	75	30	210	0481
0482	1226	-6	190	-1	-1	6	106	-3	44	52	31	269	11	57	110	-5	57	8	12	6	104	80	432	0482
0485	430	-6	55	18	58	-5	39	9	12	143	-5	201	11	-20	11	-5	13	-3	85	7	39	25	224	0485
0486	396	-6	62	4	8	29	38	-3	8	-5	37	51	5	-20	165	-5	21	6	12	8	38	26	155	0486
0491	461	-6	59	4	13	-5	39	-3	5	-5	30	233	5	25	93	-5	12	-3	14	11	18	15	86	0491
0492	559	-6	47	2	10	-5	41	-3	13	-5	7	169	9	-5	64	-5	19	-3	13	8	36	23	97	0492
0493	404	-6	88	13	55	172	54	-3	14	21	75	127	10	-20	51	-5	20	4	63	11	34	336	472	0493
0494	994	-6	118	19	10	7	65	4	7	101	35	293	8	-20	162	-5	36	5	63	7	34	63	260	0494
0496	385	-6	38	12	53	22	25	-3	10	23	14	222	10	-20	28	-5	13	3	53	10	27	52	102	0496
0498	1234	-6	139	6	-1	-5	82	6	21	20	-5	184	7	-20	159	6	28	-3	40	-5	33	51	278	0498
0499	486	33	46	8	19	-5	34	-3	11	6	64	361	9	10	89	-5	13	5	25	7	34	68	107	0499
0501	1936	-6	177	4	-1	-5	122	4	18	23	20	381	8	-20	59	6	26	-3	61	13	36	36	341	0501
0508	335	-6	48	3	41	101	42	-3	5	6	26	41	10	-20	32	-5	17	-3	46	7	10	6	241	0508
0517	497	-6	81	28	88	329	68	-3	12	33	-5	194	16	26	59	-5	16	3	90	9	31	95	140	0517
0519	720	-6	84	4	87	17	74	-3	16	6	23	215	17	-20	40	-5	20	-3	98	11	32	10	214	0519
0528	415	-6	63	10	67	44	51	-3	12	13	15	173	14	-20	11	-5	13	-3	73	13	42	16	245	0528
0530	856	-6	101	-1	-1	8	475	5	39	35	31	232	8	-20	116	7	31	7	33	6	40	32	265	0530
0534	397	-6	107	10	11	8	105	6	14	23	68	143	8	-20	174	5	24	7	35	9	43	58	243	0534
0535	267	-6	37	4	4	-5	15	4	15	30	28	289	5	-20	61	9	5	7	24	8	31	17	136	0535
0536	464	-6	85	29	69	39	68	-3	14	33	12	137	11	-20	52	5	13	4	66	8	42	70	220	0536
0537	1685	-6	191	48	161	114	111	-3	20	53	48	420	32	-20	166	-5	27	6	175	7	82	207	147	0537

Geochemical Analyses (TRACE ELEMENTS p.p.m.) LACHLAN FOLD BELT of New South Wales

Station	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr	Station	
0538	242	-6	48	6	13	-5	39	7	13	20	24	83	4	-5	18	9	11	-3	27	7	12	-5	117	0538	
0541	1334	-6	57	-1	73	35	25	7	7	41	13	42	10	-20	34	6	6	7	62	9	96	23	243	0541	
0542	117	-6	15	-1	3	-5	-1	-3	63	-5	131114	9	71	35	18	-5	6	-1	50	13	60	21	60	0542	
0543	387	-6	48	18	55	24	28	-3	8	27	15	89	8	-20	22	-5	9	-3	53	6	22	79	123	0543	
0544	300	-6	38	4	5	120	25	-3	15	-5	47	276	4	15	71	-5	8	5	10	7	20	35	75	0544	
0545	1059	2	346		204	30	207		133	231	15	246	15	21276		19	2	207		29	109	611		0545	
0546	302	-6	92	6	-1	258	62	-3	35	-5	26	332	11	11	62	6	32	5	10	11	55	32	211	0546	
0547	458	-6	81	-1	74	-5	58	-3	12	11	24	111	11	-20	28	-5	13	-3	53	9	32	-5	334	0547	
0548	610	-6	65	11	10	-5	20	-3	13	9	32	188	10	5	194	-5	15	-3	39	8	37	45	191	0548	
0554	368	-6	57	14	27	380	54	-3	12	11	13	112	19	-5	286	-5	10	-3	101	5	30	51	170	0554	
0555	1192	-6	74	9	10	234	59	-3	14	-5	30	267	16	17	202	-5	20	4	48	10	37	67	233	0555	
0556	379	-6	38	4	13	132	32	-3	16	-5	35	341	9	18	68	-5	14	-3	11	11	33	73	105	0556	
0557	727	-6	96	6	6	18	15	49	-3	9	23	23	196	8	11	97	5	25	-3	39	6	40	38	288	0557
0558	262	-6	71	3	40	18	50	-3	7	11	20	86	9	-20	15	-5	17	3	31	9	26	18	267	0558	
0560	335	-6	44	4	9	11	25	-3	7	-5	35	202	9	-20	68	-5	18	5	9	10	37	45	90	0560	
0565	981	-6	7	3	-1	-5	12	5	5	7	22	26	398	5	-20	40	7	-5	-3	12	7	11	8	45	0565
0655	246	-6	60	-1	105	161	39	-3	8	10	9	58	10	-5	14	-5	10	-3	42	9	23	21	497	0655	
0656	866	-6	69	26	71	320	54	-3	7	20	11	98	18	-5	685	-5	16	-3	127	-5	22	62	181	0656	
0657	933	-6	25	16	84	41	34	-3	5	26	10	77	18	-20	22	-5	5	-3	141	6	26	66	178	0657	
0659	665	-6	63	18	27	30	46	-3	7	9	19	119	19	-20	312	-5	15	-3	98	-5	34	69	195	0659	
0661	122	-6	41	26	116	51	19	4	4	18	12	7	30	-20	592	-5	-5	-3	149	-5	27	66	126	0661	
0665	590	-6	62	17	35	251	56	-3	11	18	20	137	20	6	583	-5	15	-8	116	8	42	63	170	0665	
0666	934	-6	36	27	37	269	32	-3	3	19	19	67	21	-20	671	-5	6	-3	205	-5	17	73	65	0666	
0667	1060	-6	42	27	48	214	41	3	-3	18	19	72	17	-20	818	-5	-5	-3	202	-5	20	70	67	0667	
0679	1121	-6	68	8	29	138	55	-3	4	17	13	90	8	-5	1568	-5	8	-3	58	7	10	43	207	0679	
0681	391	-6	56	15	69	51	58	-3	8	19	21	82	21	-20	41	-5	12	-3	129	7	29	78	510	0681	
0683	650	-6	69	6	15	114	51	-3	10	6	23	161	10	5	305	-5	19	4	38	-5	33	37	177	0683	
0684	669	-6	54	16	82	20	32	-3	7	22	7	98	16	-20	95	-5	8	-3	72	8	24	70	129	0684	
0685	553	-6	21	41	451	84	20	-3	-3	99	6	41	34	-20	273	-5	-5	-3	250	-5	18	72	56	0685	
0686	654	-6	73	4	-1	-5	36	5	10	14	21	183	3	-20	96	5	24	-3	9	7	24	38	151	0686	
0689	603	-6	71	2	2	12	49	7	9	17	29	85	8	21	120	-5	41	-3	7	-5	59	55	242	0689	
0690	497	-6	57	6	6	135	41	3	8	6	29	196	6	-5	324	-5	24	-3	28	7	15	37	140	0690	
0696	561	-6	59	16	41	34	47	-3	10	12	20	78	19	-20	144	-5	8	-3	128	10	28	64	299	0696	
0697	919	-6	19	13	65	19	25	-3	10	20	11	184	23	-20	48	-5	14	-3	114	10	29	62	137	0697	
0698	603	-6	71	2	2	12	49	7	9	17	29	85	12	-20	94	-5	6	-3	97	-5	26	56	250	0698	
0699	741	-6	72	17	42	220	42	5	9	17	17	111	15	-5	903	-5	10	-3	112	6	20	54	191	0699	
0700	215	-6	44	-1	40	18	32	4	4	40	13	56	8	-20	129	-5	5	-3	27	5	30	53	139	0700	
0704	601	-6	18	6	4	-5	20	-3	7	19	6	190	4	23	52	9	9	-3	-1	-5	33	9	57	0704	
0707	714	-6	1	42	609	90	13	4	-3	149	-5	11	32	-20	355	-5	-5	-3	226	-5	8	53	27	0707	
0708	1128	-6	26	16	164	61	18	4	3	90	12	113	13	-20	987	6	14	-3	109	-5	13	65	83	0708	
0710	650	-6	44	-1	13	7	8	23	15	6	26	16	72	11	-20	260	-5	-5	-3	15	-5	44	104	339	0710
0711	793	-6	61	13	7	145	52	-3	8	6	21	166	11	-5	521	-5	14	4	60	-5	22	54	173	0711	
0713	409	-6	46	4	7	65	40	-3	8	-5	34	240	8	-5	219	-5	24	4	22	5	14	30	100	0713	
0714	539	-6	62	7	6	86	46	5	10	7	31	236	12	-5	304	-5	24	4	32	8	19	60	175	0714	
0716	324	-6	59	-1	4	56	58	3	17	-5	29	323	10	-5	102	-5	30	7	11	11	65	18	121	0716	
0717	105	-6	17	2	2	88	5	-3	26	-5	57	527	7	-5	17	5	24	10	3	15	53	7	99	0717	

Geochemical Analyses (TRACE ELEMENTS p.p.m.): LACHLAN FOLD BELT of New South Wales

Station	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr	Station
0718	496	-6	57	27	129	40	37	-3	6	27	14	66	28	-20	278	-5	12	-3	161	-5	27	60	182	0718
0721	849	-6	36	6	8	13	35	5	10	-5	30	84	13	-20	320	-5	13	-3	28	11	33	36	232	0721
0722	842	-6	37	12	12	400	43	4	3	8	14	102	17	-5	336	-5	13	-3	74	12	21	35	116	0722
0729	348	-6	65	25	122	31	45	-3	8	102	15	117	25	-20	179	6	15	-3	147	-5	23	76	183	0729
0734	864	-6	78	9	32	456	64	-3	7	18	12	113	13	-51	290	-5	10	-3	63	13	12	50	204	0734
0736	991	-6	81	35	159	110	75	-3	10	44	11	36	40	-20	375	-5	10	-3	246	-5	20	78	127	0736
0737	339	-6	67	24	60	66	46	6	15	21	14	79	21	-20	178	-5	14	4	144	9	53	63	271	0737
0738	770	-6	53	4	4	219	39	-3	15	-5	10	109	7	-5	132	-5	12	3	13	7	31	28	188	0738
0739	734	-6	70	6	49	25	48	-3	10	38	20	172	17	-20	154	-5	4	5	83	-5	46	60	207	0739
0746	607	-6	15	-1	-1	7	2	5	-3	33	18	148	16	-20	15	-5	-5	-3	91	-5	17	26	139	0746
0748	793	-6	31	6	-1	-5	32	6	7	36	25	160	8	-20	104	-5	17	-3	6	10	36	67	162	0748
0749	783	-6	49	5	36	15	36	7	9	57	17	131	20	-20	220	-5	12	-3	114	-5	34	65	173	0749
0751	1498	-6	30	9	-1	6	24	5	8	16	12	97	10	-20	75	7	12	5	34	-5	22	34	120	0751
0756	667	-6	213	-1	4	105	201	-3	21	-5	17	223	8	31	67	-5	24	4	9	17	227	21	249	0756
0757	86	-6	142	-1	2	74	161	4	29	-5	28	290	-1	9	7	7	27	5	2	12	100	68	276	0757
0763	144	7	997	8	7	-5	695	12	1703	5	212	1161	-1	109	18	149	203	7	-1	35	635	528	7251	0763
0764	150	-6	2	10	-1	10	17	4	9	31	10	60	9	-20	-3	19	-5	-	55	-5	6	54	245	0764
0766	525	-6	78	8	10	146	51	-3	15	7	38	273	14	19	127	-5	24	-3	29	13	50	52	191	0766
0770	119	-6	31	-1	9	50	6	-3	8	-5	38	367	5	17	30	-5	-5	-3	2	16	11	33	24	0770
0771	384	-6	70	7	23	120	48	-3	17	10	48	358	6	12	119	-5	15	3	31	8	21	58	130	0771
0773	376	-6	84	10	28	100	56	-3	17	13	0	364	10	11	104	-5	18	5	34	7	34	59	143	0773
0776	416	-6	69	16	50	120	46	-3	12	12	30	222	16	10	110	-5	16	4	76	13	37	65	189	0776
0777	409	-6	67	10	28	149	54	4	20	13	41	339	12	70	85	-5	19	-3	35	8	28	61	164	0777
0778	84	-6	32	-1	8	63	20	-3	23	-5	43	454	8	16	14	-5	30	17	2	9	85	19	67	0778
0779	122	-6	23	4	3	43	13	-3	18	-5	11	474	9	-5	37	10	20	7	5	12	77	5	44	0779
0782	559	-6	59	14	52	161	46	-3	13	22	37	217	16	9	149	-5	15	-3	57	6	28	61	175	0782
0783	71	-6	27	2	6	58	15	3	55	-5	54	431	10	118	6	7	30	48	2	13	68	16	82	0783
0784	107	-6	38	-1	5	50	21	-3	39	-5	50	451	6	-5	23	7	20	10	2	12	51	17	43	0784
0786	148	-6	44	4	7	50	28	-3	10	5	34	330	10	11	49	-5	14	-3	8	11	54	13	73	0786
0787	61	-6	12	2	6	-5	3	-3	23	-5	-5	-3	7	-20	4	-5	-5	-3	12	10	9	-5	219	0787
0788	59	-6	19	2	16	10	13	3	24	-5	-5	-3	4	-20	-3	-5	-5	-3	19	13	9	-5	294	0788
0791	204	-6	30	4	4	59	14	3	11	-5	30	437	10	23	55	-5	15	16	5	10	32	49	55	0791
0792	106	12	60	2	7	55	13	4	8	-5	310	622	-1	184	97	-5	14	11	3	13	18	65	70	0792
0794	73	8	48	8	24	43	35	3	13	7	138	289	3	108	29	-5	14	9	31	24	21	223	113	0794
0795	28	39	34	7	6	32	16	-3	115	-5	109	656	-16	123	26	15	58	15	3	100	144	106	164	0795
0796	434	-6	63	9	32	113	36	-3	13	11	69	366	10	128	106	-5	15	5	38	9	27	93	131	0796
0797	118	-6	47	8	31	276	40	-3	27	20	-5	204	03282	10	8	14	4	30	58	33	70	34	0797	
0798	14	-6	23	4	8	74	3	-3	27	-5	14	825	7	38	24	9	11	8	4	37	28	55	53	0798
0800	355	-6	105	12	11	87	76	3	20	8	39	193	9	35	163	-5	25	6	34	8	54	116	310	0800
0801	124	7	40	-1	8	125	3	-3	14	-5	30	790	04753	44	-5	-5	-3	6	6	33	22	71	37	0801
0802	445	-6	83	6	12	27	57	-3	19	6	39	256	5	23	85	-5	20	6	12	11	35	55	211	0802
0803	204	-6	20	3	8	69	10	-3	16	-5	41	411	-1	43	57	-5	8	3	15	8	22	39	69	0803
0808	792	-6	108	6	6	20	69	-3	21	-5	35	212	12	-20	157	-5	19	4	7	11	48	77	324	0808
0811	713	-6	66	13	44	115	36	-3	10	16	41	195	15	43	138	-5	15	-3	55	-5	32	61	175	0811
0812	548	-6	87	15	30	128	48	-3	9	13	17	153	20	-5	170	-5	9	-3	81	-5	39	73	184	0812
0816	455	-6	77	17	69	120	43	-5	12	24	24	200	15	11	202	-5	16	3	84	6	32	70	185	0816

Geochemical Analyses (TRACE ELEMENTS p.p.m.) LACHLAN FOLD BELT of New South Wales

Station	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr	Station
0817	567	-6	84	25	124	133	55	-3	12	40	27	154	25	-5	173	-5	16	-3	117	-5	35	80	229	0817
0818	364	-6	98	8	54	20	71	-3	9	18	7	74	11	-20	58	-5	22	6	42	9	42	34	472	0818
0821	288	-6	65	5	55	11	40	-3	6	8	21	36	10	-20	12	-5	13	-3	26	7	20	26	337	0821
0824	527	-6	77	16	75	56	58	-3	11	28	7	143	13	-20	52	-5	18	3	73	5	33	68	214	0824
0831	736	-6	112	-1	5	37	80	-3	8	-5	7	145	3	-5	127	-5	27	3	7	8	50	-5	148	0831
0836	748	-6	87	10	4	64	64	-3	18	-5	10	162	14	5	234	-5	15	-3	41	5	39	20	205	0836
0837	729	-6	80	5	5	15	70	6	27	-5	19	102	5	-20	50	-5	11	3	3	7	66	86	314	0837
0838	555	-6	31	3	14	-5	40	5	22	7	11	94	8	24	24	-5	15	3	15	11	43	52	341	0838
0839	284	-6	28	3	-1	-5	20	-3	17	13	52	65	3	-20	33	8	25	-3	4	7	76	19	323	0839
0848						8																		0848
0851	780	-6	45	-1	-1	17	40	4	10	45	12	81	8	-20	469	7	8	-3	29	6	21	44	152	0851
0852	596	-6	36	4	-1	39	31	4	10	43	11	72	4	-20	51	13	14	-3	7	7	36	21	396	0852
0853	1382	-6	45	12	7	16	26	4	15	36	15	98	7	-20	387	10	17	-3	20	8	55	42	503	0853
0855	14	-6	79	12	98	9	52	4	9	109	-5	-3	12	-20	108	6	17	4	89	12	46	15	162	0855
0859	667	-6	105	14	38	18	59	3	12	43	19	192	13	12	135	8	-5	-3	34	9	29	33	203	0859
0861	535	-6	81	18	62	39	57	4	11	19	29	117	15	-20	249	-5	14	-3	86	11	29	56	217	0861
0862	1240	-6	70	10	18	30	66	-3	9	7	104	170	16	-20	158	-5	17	-3	49	-5	34	179	201	0862
0863	219	-6	73	4	5	56	52	4	13	-5	35	340	9	7	34	-5	30	12	11	15	67	11	113	0863
0864	804	-6	84	10	21	68	55	-3	12	7	27	225	13	19	149	-5	24	4	53	5	48	34	138	0864
0867	724	-6	98	12	24	171	64	-3	11	11	26	177	14	8	167	-5	22	-3	63	9	42	41	192	0867
0868	684	-6	82	15	26	36	66	-3	9	10	24	196	14	-20	174	-5	16	4	69	7	47	50	178	0868
0869	96	-6	36	-1	-1	-5	20	-3	9	23	-5	78	5	11	93	8	23	-3	9	10	39	24	98	0869
0870	634	-6	69	9	20	17	74	-3	11	29	15	166	13	-20	151	7	21	-3	78	6	58	36	180	0870
0871	80	-6	46	13	56	28	26	5	9	19	-5	-3	16	-20	62	-5	16	-3	91	12	25	19	178	0871
0872	710	-6	64	10	40	33	38	-3	10	11	33	315	12	49	55	-5	17	5	51	10	47	52	187	0872
0873	393	23	86	33	26	836	61	-3	5	-54009	80	11	-20	6	-5	-5	5	53	95	375	566	121	0873	
0874	766	-6	54	11	77	217	56	-3	11	25	27	179	10	7	77	-5	20	5	77	10	42	39	240	0874
0882	729	-6	58	14	58	157	52	-3	9	15	14	167	13	16	320	6	28	3	65	8	22	25	142	0882
0884	544	-6	78	15	64	227	52	-3	10	19	18	189	14	10	139	-5	18	-3	86	9	37	55	193	0884
0889	676	-6	77	4	10	78	65	-3	12	6	14	105	11	-5	112	-5	17	-3	2	10	63	7	125	0889
0891	347	-6	94	15	55	50	84	-3	8	20	84	79	12	-20	23	-5	17	-3	41	8	37	145	408	0891
0892	273	-6	60	10	-1	-5	14	-3	6	29	12	43	16	-20	320	7	9	-3	41	-5	38	67	219	0892
0894	266	-6	17	-1	-1	-5	12	4	6	23	8	149	3	-20	-3	5	6	-3	19	8	19	21	59	0894
0895	110	-6	50	2	22	-5	36	7	11	17	42	146	5	-20	5	-5	17	-3	8	-5	31	24	129	0895
0899	576	-6	91	12	10	129	67	-3	10	7	11	187	17	5	72	-5	17	-3	62	9	36	48	181	0899
0900	184	-6	68	7	27	44	38	-3	6	12	17	48	5	-20	4	-5	11	4	20	8	31	53	259	0900
0901	1130	-6	71	5	151	101	39	-3	18	91	17	292	23	52	10	6	19	-3	163	9	48	360	126	0901
0902	1085	-6	74	6	86	-5	51	4	15	23	-5	121	12	-20	30	6	14	-3	238	10	19	21	148	0902
0903	357	-6	58	16	9	32	46	-3	12	38	17	28	34	6	153	-5	-5	-3	99	6	21	62	170	0903
0906	141	7	66	89	440	363	40	3	6	99	37	9	25	-20	29	-5	12	-3	122	-5	19	64	105	0906
0907	138	24	61	48	147	72	35	-3	7	19	19	9	30	-20	103	-5	5	-3	137	-5	20	25	118	0907
0908	566	-6	81	23	76	51	55	-3	10	23	14	204	19	-20	50	-5	18	-3	96	8	34	81	193	0908
0910	331	-6	51	4	-1	11	186	3	9	224	165	32	5	10	284	12	9	-3	8	24	322	597	134	0910
0911	400	7	53	6	-1	7	43	3	13	26	1498	53	5	8	314	14	-3	20	12	66	420	164	0911	
0913	810	-6	45	-1	49	54	31	4	9	42	660	146	15	24	15	-5	8	-3	48	-5	28	57	249	0913
0914	545	-6	37	17	12	24	36	3	8	8	8	79	28	-20	148	-5	9	-3	98	-5	35	82	149	0914

Geochemical Analyses (TRACE ELEMENTS p.p.m.) LACHLAN FOLD BELT of New South Wales

Station	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr	Station	
0915	194	12	13	2	6	85	8	-3	7	-5	45	375	-1	51	33	5	10	17	3	26	26	16	41	0915	
0918	157	-6	78	6	3	76	49	-3	8	5	9	81	8	-5	48	-5	17	4	20	10	48	18	130	0918	
0919	102	178	19	4	8	60	6	21	38	-5	8	622	10	42	16	9	-5	22	72461	36	-5	48		0919	
0920	276	-6	48	15	65	10	39	3	11	48	8	129	16	-20	67	-5	26	4	118	-5	32	52	200	0920	
0922	66	34	20	2	5	56	9	-3	10	6	31	417	6	19	12	-5	8	22	-1	27	21	-5	39	0922	
0923	475	8	80	27	52	115	54	-3	9	16	8	90	33	6	328	-5	10	-3	161	6	39	63	203	0923	
0924	1588	-6	79	-1	2	-5	56	5	22	16	63	214	10	-20	32	-5	20	-3	16	11	87	52	303	0924	
0929	552	-6	134	-1	-1	-5	84	3	20	15	33	232	12	-20	52	-5	24	3	-1	9	92	39	257	0929	
0931	667	-6	44	8	8	73	34	-3	9	-5	16	144	8	46	200	-5	12	4	27	5	30	39	167	0931	
0936	606	-6	78	9	5	112	59	-3	11	6	18	99	13	-5	374	-5	7	-3	55	-5	25	58	180	0936	
0938	299	-6	85	-1	5	46	56	-3	14	-5	14	66	7	-5	164	-5	14	-3	8	10	23	32	96	0938	
0939	739	-6	115	-1	5	9	94	-3	20	-5	32	234	18	-20	65	-5	24	7	2	17	97	57	258	0939	
0940	708	-6	45	9	7	119	52	-3	14	-5	10	84	10	8	295	-5	8	-3	37	-5	26	52	172	0940	
0941	543	-6	31	16	29	84	44	-3	10	12	10	65	16	-5	355	-5	5	-3	71	-5	22	49	162	0941	
0942	537	-6	46	20	24	111	32	-3	11	18	25	62	18	-5	447	-5	-5	-3	126	6	33	69	232	0942	
0944	732	-6	44	8	2	75	31	3	12	-5	231	69	7	-5	276	-5	6	-3	20	8	16	44	158	0944	
0950	510	7	64	16	26	145	47	-3	13	18	14	125	10	7	406	-5	9	4	80	9	19	38	165	0950	
0951	663	-6	65	11	17	68	37	4	10	12	14	129	25	128	207	-5	13	4	93	11	43	51	214	0951	
0952	500	-6	58	16	19	76	42	-3	7	9	9	137	22	-5	152	-5	16	-3	108	-5	37	47	166	0952	
0954	593	-6	67	3	3	43	53	-3	17	-5	18	213	6	-5	101	-5	15	4	8	10	36	-5	119	0954	
0955	592	-6	71	16	37	74	44	-3	9	12	23	190	21	-5	165	-5	20	6	83	7	40	55	188	0955	
0956	491	-6	79	16	56	96	56	-3	11	21	21	174	17	8	134	-5	19	3	83	11	45	57	201	0956	
0957	543	-6	82	8	19	52	52	-3	12	9	20	210	18	-5	154	-5	22	-3	55	116	51	32	198	0957	
0959	644	-6	86	8	20	31	56	-3	11	10	22	229	10	-5	139	-5	23	-3	49	5	55	27	180	0959	
0961	341	-6	81	20	57	16	54	-3	8	23	12	36	17	-20	370	-5	19	-3	32	8	41	34	211	0961	
0962	362	6	53	12	20	40	28	-3	9	10	45	280	12	11	65	-5	6	10	7	25	12	39	36	101	0962
0963	548	-6	55	12	15	85	39	-3	11	7	16	94	14	46	282	-5	11	4	75	6	27	55	147	0963	
0965	469	-6	68	18	26	40	44	-3	8	14	12	102	20	-5	211	-5	13	-3	108	7	24	45	109	0965	
0966	563	-6	77	17	55	92	49	-3	12	21	36	204	13	-5	147	-5	18	4	82	8	43	66	215	0966	
0969	390	-6	36	9	12	74	26	-3	6	8	13	60	18	6	257	-5	6	-3	41	5	19	41	248	0969	
0971	80	8	39	3	3	23	15	-3	20	-5	28	655	8	25	9	-5	16	20	2	27	50	27	53	0971	
0972	525	-6	72	18	56	118	55	-3	13	25	24	176	21	7	156	-5	18	4	96	12	38	78	224	0972	
0973	479	-6	50	15	48	89	48	-3	13	19	37	216	16	7	140	-5	14	-3	64	9	31	63	178	0973	
0974	603	3	79	16	25	14	52	7	12	32	27	90	12	24	127	5	14	-3	68	-5	36	45	239	0974	
0976	1340	-6	69	4	3	-5	67	-3	10	-5	-5	124	10	-20	168	-5	19	4	22	10	37	7	215	0976	
0977	558	-6	113	5	8	28	77	-3	15	-5	21	284	5	-5	43	-5	26	8	3	12	61	5	172	0977	
0978	591	-6	80	20	64	47	50	-3	13	21	24	155	18	34	164	-5	18	6	38	11	36	62	214	0978	
0979	736	7	74	3	3	26	49	-3	12	-5	101	216	2	6	98	-5	28	4	4	7	25	8	103	0979	

G. DATA FOR EACH LOCATION

SAMPLE RELATING ITEM NAMES TO APPENDIX G
THE "*" CHARACTER INDICATES THE LIMITS FOR EACH ITEM'S FIELD

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(CODE)STN1 *****LOCCOM*****
 STNTP *****SHEET***** #HJUNMAP** STATE GDOM=#
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.-#PHOTO#
 **NORTH# m N **LAT## S latitude
 **EAST# m E **LONG## E longitude

Illustrations :*****ILLUS*****

Age/Unit: *****AGE***** *****UNIT*****
 Topography: *****TOPOG***** dip=#DIP strike=STRIKE
 Structure : *****STRUC*****
 Field Geology: *****LITH1*****
 *****LITH2*****
 *****LITH3*****
 *****LITH4*****
 Field Rockname: *****ROCKH*****

PHYSICAL PROPERTIES: *****ROCKF*****
 DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
 Whole rock density = #DENROC# Ch.1=#RAD1##
 Dry density = #DENDRY# Mean of SUSNO in-situ readings = #SUSAV## Ch.2=#RAD2## **RADK## % K20
 Grain density = #DENGRN# from #SUSMIN# to #SUSMAX#, SD= #SUSSD## Ch.3=#RAD3## **RADU## ppm U
 Porosity = #POROS## Laboratory susceptibility = #SUSLAB# Ch.4=#RAD4## **RADTH# ppm Th
 Remanence = #MAGREM# U/Th= #U/TH##
 Koenigsberger ratio = #QKOEN## **HGU# Heat generation units

CHEMISTRY:
 MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
 Weight % #SI02# #TI02# #AL203# #FE203# #MNO## #MGO## #CAO## #NA2O# #K2O## #P2O5# #SO3## #LOI## #SUM##
 TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
 p.p.m. **BA## **BI## **CE## **CO## **CR## **CU## **LA## **MO## **NB## **NI## **PB## **RB##
 TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
 p.p.m. **SC## **SN## **SR## **TA## **TH## **U## **V## **W## **Y## **ZN## **ZR##

DESCRIPTION OF UNPOLISHED OR POLISHED THIN SECTION

NAME: *****ROCKT*****
 Est. % MINERAL FABRIC: *****FABRI*****
 #MINPC *****THIN1*****
 #MINPC *****THIN2*****
 #MINPC *****THIN3*****
 #MINPC *****THIN4*****
 #MINPC *****THIN5*****
 #MINPC *****THIN6*****
 #MINPC *****THIN7*****
 #MINPC *****THIN9*****
 #MINPC *****THIN10*****
 #MINPC *****THIN11*****
 #MINPC *****MINRL*****
 #MINPC *****MINRL*****
 #MINPC *****MINRL*****
 #MINPC *****MINRL*****
 #MINPC *****MINRL*****
 #MINPC *****MINRL*****
 #MINPC *****MINRL*****
 #MINPC *****MINRL*****
 #MINPC *****MINRL*****
 #MINPC *****MINRL*****

Location 0001

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0001

Outcrop

COOTAMUNDRA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1

6147759 m N

34.80308 S latitude

636981 m E

148.4975 E longitude

Illustrations :

Age/Unit= Upper Silurian

DOURO GROUP

Topography: CONSPICUOUS TOPOGRAPHIC STRIKE RIDGE

dip= strike=

Structure :

Field Geology: Ignimbrite. Porphyritic in quartz, plagioclase, biotite and hornblende set in a flow banded, fine-grained groundmass. Scattered small cognate xenoliths.

Field Rockname: SAMPLE CT0001 IGNIMBRITE

PHYSICAL PROPERTIES:

TUFF

DENSITIES

Whole rock density = 2.81

Dry density = 2.68

Grain density = 2.69

Porosity = .2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

130

20.00

2.56

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.08	.66	14.18	4.47	.06	1.74	1.75	1.95	4.54	.17	.07	2.00	99.66

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	610	-6	85	17	54	44	59	-3	11	16	23	218

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	-20	142	-5	20	4	79	8	42	58	209

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Ignimbrite	Devitirified vitrophyric
30.	Plagioclase		Phenocrysts of euhedral hexagonal, & rounded quartz with embayed margins & fractured with fillings of devitrified glass. Also phenocrysts of altered plagioclase, chloritised hornblende, oxidised biotite & less frequent augite. Devitrified quartz-feldspathic, fine-grained groundmass. Accessory Ilmenite.
5.	Biotite		
2.	Hornblende		
.5	Augite		
.1	Epidote		
.4	Ilmenite		
47.	Groundmass		

Location 0002

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0002

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5228

6149689 m N 34.78625 S latitude

632645 m E 148.4498 E longitude

Illustrations :

Age/Unit=

YOUNG GRANODIORITE

Topography:

dip= strike=

Structure : PLUTON-CONTACT REGION

Field Geology: Granodiorite. Inequigranular, coarse-grained. Mesocratic with large clots of biotite. Slight foliation. This site is at contact of Young Batholith.

Field Rockname: SAMPLE CT-0002 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.74
Dry density = 2.61
Grain density = 2.65
Porosity = 1.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 100
Remanence = .10
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Mylonitised granodiorite	
30.	Quartz	Mylonitic	
45.	Plagioclase		Uneven-grained with deformed plagioclase, & quartz phenocrysts with strain extinction & sutured subgrain contacts. Kinked but randomly-oriented biotite. Veinlets of microbreccia composed of mineral fragments set in rock flour. Chlorite pseudomorphs ?hornblende & incipiently pseudomorphs biotite crystal edges. Coarse-grained. Moderately weathered with opaque secondary ?limonite along fractures & some grain edges.
10.	Orthoclase		
11.	Biotite		
1.	Opaque		
2.	Rock fragments		
1.	Chlorite		
.1	Apatite		

Location 0003

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0003
 Quarry

COOTAMUNDRA NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5228
 6142577 m N 34.85187 S latitude
 620572 m E 148.3189 E longitude

Illustrations :

Age/Unit= YOUNG GRANODIORITE
 Topography: GENTLY SLOPING UPLAND WITH OUTCROP dip= strike=
 Structure : PLUTON
 Field Geology: Aplitic granite. Fine to medium-grained, leucocratic with closely-spaced fractures lined by epidote and an oxidised sulphide mineral. Scattered clusters of muscovite in places.

Field Rockname: SAMPLE CT0003 APLITIC GRANITE

PHYSICAL PROPERTIES:

GRANITE
 DENSITIES
 Whole rock density = 2.71
 Dry density = 2.54
 Grain density = 2.91
 Porosity = 13.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
 from to SD=
 Laboratory susceptibility = 30
 Remanence = .10
 Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY

Ch.1=
 Ch.2= % K20
 Ch.3= ppm U
 Ch.4= ppm Th
 U/Th=
 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.41	.04	14.08	.34	.01	.08	.46	3.30	4.93	.16	.06	.60	99.52
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Mb	Ni	Pb	Rb	
p.p.m.	170	-6	23	-1	8	-5	10	-3	5	6	36	242	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	8	37	-5	7	14	3	-5	16	7	24		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Alkali feldspar aplitic
 Est. % MINERAL FABRIC: Aplitic trending slightly granophyric
 20. Quartz Rare phenocrysts of very altered orthoclase set in evenly medium-grained
 35. Plagioclase groundmass of quartz & two feldspars. Orthoclase is more altered
 35. Orthoclase than plagioclase. Traces of opaque mineral liberated along cleavages of
 5. Muscovite altered biotites. Minor undulose extinction in orthoclase & groundmass
 2. Biotite quartz.
 3. Sericite

Location 0004

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0004
Quarry

SITE VISITED ON CUMSEA EXCURSION

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-57.

6144006 m N

34.83907 S latitude

619877 m E

148.3111 E longitude

Illustrations :

Age/Unit=

Topography: EXCAVATED LOW IN UPLAND AREA

dip= strike=

Structure : PIPE

Field Geology: Kimberlite. Numerous ultramafic xenoliths present up to several centimetres in size. Numerous olivine phenocrysts set in fine-grained, mafic or ultramafic groundmass.

Field Rockname: SAMPLE CT-0004 KIMBERLITE

PHYSICAL PROPERTIES:

KIMBERLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 3.16

Dry density = 2.96

Grain density = 2.97

Porosity = .3

Mean of 15 in-situ readings = 21854

from 3116 to 60569, SD= 15894

Laboratory susceptibility = 30300

Remanence = 900.00

Koenigsberger ratio = .50

Ch.1=

Ch.2=

Ch.3=

Ch.4=

X K2/J

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Olivine	Kimberlite	Porphyritic
1.	Spinel		Porphyritic in olivine of variable grainsize & minor small brown spinel. Groundmass consists of augite, feldspar, magnesite, chlorite and magnetite. Minor leucocratic ocelli & igneous rock microxenoliths commonly surrounded by reaction rims within which olivine is altered to secondary minerals. Xenoliths contain secondary carbonate.
60.	Groundmass		
5.	Microxenoliths		
4.	Ocelli		

Location 0005

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0005
Road cutting

SAME LOCATION AS 0006
WAGGA WAGGA

NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5019
6119218 m N 35.06472 S latitude
599771 m E 148.0942 E longitude

Illustrations :

Age/Unit= Upper Silurian FRAMPTON VOLCANICS
Topography: DISSECTED UPLAND dip=90 strike=000
Structure : STEEPLY DIPPING
Field Geology: Argillite, medium to dark grey, variably siliceous, thin bedded,
variably pyritic in places with minor concretions of pyrite aggregates.
Minor lithic sandstone and rare paraconglomerate. Cut by small quartz
blows containing chlorite and sparse Cu mineral.
Field Rockname: SAMPLE WA0005 ARGILLITE

PHYSICAL PROPERTIES:

ARGILLITE
DENSITIES
Whole rock density = 2.79
Dry density = 2.76
Grain density = 2.80
Porosity = 1.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 2 in-situ readings = 0
from to SD=
Laboratory susceptibility = 22600
Remanence = 200.00
Koenigsberger ratio = .15

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Slatey siltstone
FABRIC: Laminated
Est. % MINERAL
15 Quartz
75 Sericite
5 Chlorite
2 Calcite
1 Plagioclase
2 Ilmenite
.1 Pyrite
.5 Mud
Scattered fine-sand-sized quartz clasts set in a matrix of optically oriented sericite with disseminated detrital ilmenite altering to hematite, as well as rare diagenetic pyrite. Bedding defined by rare mud layers and slightly lenticular laminae of calcite-plagioclase aggregates appearing as a chemical component perhaps lenticular due to compaction. Scattered diagenetic chlorite throughout, especially in small cavities and along graphitic mud laminae.

Location 0006

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NG.=(7962)0006

SAME LOCATION AS 0005

Road cutting

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5019

6119218 m N

35.06472 S latitude

599771 m E

148.0942 E longitude

Illustrations .

Age/Unit= Upper Silurian

FRAMPTON VOLCANICS

Topography: DISSECTED UPLAND

dip= strike=000

Structure : STEEPLY DIPPING

Field Geology: Argillite, medium to dark grey, variably siliceous, thin bedded,
variably pyritic in places with minor concretions of pyrite aggregates.
Minor lithic sandstone and rare paraconglomerate. Cut by small quartz
blows containing chlorite and sparse Cu mineral.

Field Rockname: SAMPLE WA0006 ARGILLITE

PHYSICAL PROPERTIES:

ARGILLITE

DENSITIES
Whole rock density = 2.86
Dry density = 2.76
Grain density = 2.77
Porosity = .3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0
from to SD=
Laboratory susceptibility = 21500
Remanence = 130.00
Koenigsberger ratio = .10

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
6.	Quartz	Pyritic mudstone
4.	Plagioclase	Poorly sorted
5.	Rock fragments	Incipient cleavage parallel & at slight angle to long axes of clasts which are parallel to bedding. Diagenetic pyrite cubes are fringed with beards of chlorite in places. Bedding defined weakly by slight variation in grain to matrix ratio. Matrix is mud with minor calcite.
2.	Pyrite	
2.	Chlorite	
1.	Muscovite	
80.	Matrix	

Location 0007

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0007

Road cutting

WAGGA WAGGA

NSW GDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5136

6109230 m N 35.15607 S latitude

585706 m E 147.9410 E longitude

Illustrations :

Age/Unit= Ordovician

Topography:

dip= strike=

Structure : STEEPLY DIPPING AND CLEAVED

Field Geology: Slate and phyllite. Laminated to thick bedded, with lenticular segregations of white quartz that are chaotically folded. The pelitic rocks are tightly folded, and have kink bands.

Field Rockname: SAMPLE WA0007 PHYLLITE WITH CRENULATION CLEAVAGE

PHYSICAL PROPERTIES:

PHYLLITE

DENSITIES
Whole rock density = 2.82
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Resonance = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 41428
Ch.2= 3239 2.67 % K2O
Ch.3= 708 2.79 ppm U
Ch.4= 107 13.64 ppm Th
U/Th= .20
4.66 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Phyllite
30.	Quartz	FABRIC:	Crenulated
65.	Sericite		Cleavage parallel to delicately laminated bedding, and cut by strain slip cleavage that is more widely spaced, and preferentially lined with graphite & secondary weathering products. Bedding defined by variations in graphite content & infrequent laminae of quartzite.
5.	Graphite		

Location 0008

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0008
Outcrop

SAME LOCATION AS WA0009

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:500,000 sheet area air-photo:run-no.= 4-5037

6094007 m N

35.29245 S latitude

595265 m E

148.0477 E longitude

Illustrations :

Age/Unit=

WONDALGA GRANITE

Topography:

dip= strike=

Structure : PLUTON

Field Geology: Gneissic granitoid with streaky clots of aligned biotite, and drawn-out
lenticles of feldspar. Numerous fine-grained inclusions.

Field Rockname: SAMPLE WA 0008 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES

Whole rock density = 2.79

Dry density = 2.65

Grain density = 2.70

Porosity = 1.8

MAGNETIC SUSCEPTIBILITY (S.I.+000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 40

Remanence = 1.00

Koenigsberger ratio = .42

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K20

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.34	.37	13.89	3.42	.05	1.00	2.83	3.42	2.99	.09	.04	.20	99.62

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	644	-6	62	10	18	-5	56	-3	7	9	23	111

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	11	6	134	-5	11	3	50	-5	25	48	140

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Gneissic granodiorite
 Est. % MINERAL FABRIC: Porphyritic; flow banded; porphyroblastic
 30. Quartz Phenocrysts of strained plagioclase with bent twin lamellae set in
 40. Plagioclase uneven-grained redistributed groundmass infiltrated by biotite &
 7. Orthoclase partially separated into differing mineral layers defined largely by
 20. Biotite quartz lenticles fringed by biotite. Quartz lenticles consist of a
 1. Muscovite mosaic of quartz grains with strain extinction & slightly interlocking
 1. Epidote grain edges. Pseudomorphs of clay & rare epidote after feldspar. Biotite
 1. Opaque -rich layers contain numerous randomly-oriented stubby plagioclase
 crystals. Numerous albite overgrowths on some feldspars. Slight
 oxidation of biotite to an opaque mineral.

Location 0009

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0009
Outcrop

SAME LOCATION AS 0008
WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area NSW GDM=2
6094009 m N 35.29243 S latitude
595265 m E 148.0477 E longitude

Illustrations :

Age/Unit= HONDALGA GRANITE dip= strike=
Topography:
Structure : PLUTON
Field Geology: Gneissic granitoid with streaky clots of aligned biotite, and drawn-out
lenticles of feldspar. Numerous fine-grained inclusions.

Field Rockname: SAMPLE WA-0009 MYLONITIC INCLUSION

PHYSICAL PROPERTIES:

MYLONITE

DENSITIES
Whole rock density = 2.75
Dry density = 2.61
Grain density = 2.71
Porosity = 3.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 100
Remanence = .00
Koenigsberger ratio = 0.00

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.36	.34	13.40	3.26	.04	.91	2.55	3.13	2.47	.08	.06	.90	99.49

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	577	-6	47	9	14	15	29	-3	6	6	30	125

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	13	-20	156	-5	11	3	44	8	23	46	138

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Biotite quartzite
75. Quartz FABRIC: Planar layered to wavy layered
15. Biotite Foliation defined by streaks rich in biotite & minor opaque mineral.
1. Opaque Fine grained rock with cherty appearance interrupted by patches within
9. Sericite which grain growth has occurred. This rock is a xenolith.

Location 0010

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0010 MINING RESERVE 32 AT ADELONG FALLS
Outcrop WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5037
6093506 m N 35.29687 S latitude
596260 m E 148.0587 E longitude

Illustrations :

Age/Unit= WONDALGA GRANITE
Topography: DISSECTED RUGGED UPLAND WITH TORS dip= strike=
Structure : PLUTON
Field Geology: Gneissic granitoid cut by non-foliated aplite dykes. Numerous mylonite zones within the granitoid, and minor vein quartz present in some.

Field Rockname: SAMPLE WA0010 GRANITE

PHYSICAL PROPERTIES: GRANITE

DENSITIES
Whole rock density = 2.62
Dry density = 2.58
Grain density = 2.64
Porosity = 2.4

MAGNETIC SUSCEPTIBILITY (S.I.+000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 600
Remanence = 4.00
Koenigsberger ratio = .11

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.70	.11	13.25	1.72	.04	.16	1.62	3.97	3.93	.03	.05	.01	99.59
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	695	-6	53	2	5	-5	38	-3	6	8	16	135	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	-5	86	-5	14	-3	9	-5	33	28	108		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
Est. % MINERAL FABRIC: Planar flow banding; slightly gneissic
25. Quartz Layering due to stringers of strained quartz with subgrain formation.
15. Plagioclase Biotite in clots & has numerous radioactive inclusions. Feldspars
25. Microcline slightly kaolinised, sericitised, & inner zones of some plagioclases
8. Biotite partially pseudomorphed by epidote. Chlorite pseudomorphs some biotite.
.1 Epidote Abundant anhedral orthoclase & microcline.
1. Chlorite
1. Opaque
25. Orthoclase

Location 0011

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0011
Road cutting

WAGGA WAGGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5037
6091366 m N 35.31642 S latitude
593582 m E 148.0295 E longitude

Illustrations :

Age/Unit=
Topography: dip= strike=
Structure : PLUTON
Field Geology: Granodiorite, melanocratic, with abundant biotite and hornblende.

Field Rockname: SAMPLE WA-0011 GRANODIORITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.95
Dry density = 2.70
Grain density = 2.76
Porosity = 2.1

GRANODIORITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to SD=
Laboratory susceptibility = 120
Remanence = .00
Koenigsberger ratio = 0.00

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.77	.64	14.88	5.23	.07	2.30	4.58	2.65	2.02	.13	.03	.50	99.80
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	515	-6	20	16	56	9	16	-3	7	15	7	86	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	21	-5	158	-5	-5	-3	97	-5	25	53	160		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granodiorite
FABRIC: Hypidiomorphic granular, tending slightly gneissic.

Est. % MINERAL FABRIC:

- 20. Quartz Phenocrysts of altered, zoned plagioclase with cores preferentially altered to clay & partially pseudomorphed by epidote & muscovite, but with clearer rims. Hornblende considerably altered to chlorite & minor sphene. Slight redistribution of groundmass into separate mineral phases of quartz patches & biotite clots & intergranular streaks. Quartz is strained; sutured subgrain contacts.
- 50. Plagioclase
- 5. Orthoclase
- 15. Biotite
- 4. Chlorite
- 4. Hornblende
- .1 Sphene
- 1. Epidote
- 1. Opaque
- .1 Muscovite

Location 0012

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0012

Road cutting

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5037

6093622 m N

35.29625 S latitude

591723 m E

148.0088 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLY SLOPING LOWLAND

dip=90 strike=000

Structure : VERTICALLY DIPPING

Field Geology: Argillite, Variably siliceous, with lenticular layers of white quartz and pink "colloidal" granitoid-like chemical sediment interbedded with, and slightly discordant to bedding.

Field Rockname: SAMPLE WA-0012 QUARTZITE WITH FLOW OF GRANITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.67
Dry density = 2.64
Grain density = 2.72
Porosity = 2.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 80
Remanence = .10
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
70.	Quartz	Feldspathic biotite quartzite	Recrystallised with coarsening due to grain growth
10.	Plagioclase		A mass of fine-sand-sized ovoid quartz bodies coarsened from originally finer silica by grain growth. They have been inhibited from further growth by pelitic impurities from which biotite has crystallised.
18.	Biotite		Scattered subangular to euhedral plagioclase.
2.	Opaque		

Location 0013

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0013
Outcrop

SAME LOCATION AS 0014 0015 AND 0016

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5041

6092976 m N

35.30147 S latitude

598127 m E

148.0793 E longitude

Illustrations :

Age/Unit= WONDALGA GRANITE
Topography: ROUNDED EVENLY SLOPING DISSECTED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Multi-phase mass of mafic granitoids, each with uneven contacts, and with xenoliths of each type within the others. Variably altered in localised patches where patchy pyrite is disseminated. Veins of quartz-epidote, and actinolite rock.
Field Rockname: SAMPLE WA0013 DIORITE.

PHYSICAL PROPERTIES:

DIORITE

DENSITIES
Whole rock density = 2.81
Dry density = 2.74
Grain density = 2.80
Porosity = 2.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 46400
Remanence = 140.00
Koenigsberger ratio = .05

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	60.89	.94	16.23	7.33	.14	2.42	5.42	4.63	1.00	.24	.02	.30	99.61

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	397	-6	36	23	4	18	18	3	5	6	8	18

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	23	-5	280	-5	-5	-3	183	-5	25	51	77

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Diorite
FABRIC: Aplitic to slightly gabbroic

Est. %	MINERAL	DESCRIPTION
10.	Quartz	Patches and interlocking laths of plagioclase. Abundant smaller hornblende with light green to light brown pleochroism rarely altering to blue-green pleochroic hornblende. Abundant green-brown pleochroic biotite. Interstitial quartz. Scattered small magnetite subhedra, and rare blebs of pyrite. Rare accessory epidote and sphene.
70.	Plagioclase	
10.	Hornblende	
9.	Biotite	
1.	Epidote	
.1	Sphene	
.3	Magnetite	
.1	Pyrite	

Location 0014

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0014
Outcrop

SAME LOCATION AS 0013 0015 AND 0016

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5041
6092976 m N 35.30147 S latitude
598127 m E 148.0793 E longitude

Illustrations :

Age/Unit= WONDALGA GRANITE

Topography: ROUNDED EVENLY-SLOPING, DISSECTED UPLAND dip= strike=

Structure : PLUTON

Field Geology: Multi-phase mass of mafic granitoids, each with uneven contacts, and with xenoliths of each type within the others. Variably altered in localised patches where patchy pyrite is disseminated. Veins of quartz-epidote rock, and actinolite rock.

Field Rockname: SAMPLE WA-0014 DIORITE

PHYSICAL PROPERTIES:

DIORITE

DENSITIES

Whole rock density = 2.78
Dry density = 2.80
Grain density = 2.80
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 26500
Remanence = 600.00
Koenigsberger ratio = .38

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Diorite
FABRIC: Slightly gabbroic
Est. % MINERAL FABRIC: Slightly gabbroic
5. Quartz Large hornblende and biotite crystals set amidst variably interlocking
60. Plagioclase laths of plagioclase. Hornblende is the brown-green variety which is
20. Hornblende altered to blue-green secondary hornblende and rare epidote, in places.
10. Biotite Scattered light-brown to brown-green pleochroic biotite. Interstitial
1. Apatite quartz. Accessory apatite, magnetite, and pyrite.
2. Epidote
2. Magnetite
.1 Pyrite

Location 0015

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0015
 Outcrop

SAME LOCATION AS 0013 0014 AND 0016
 WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5041
 6092976 m N 35.30147 S latitude
 598127 m E 148.0793 E longitude

Illustrations :

Age/Unit= HONDALGA GRANITE
 Topography: ROUNDED EVENLY-SLOPING DISSECTED UPLAND dip= strike=
 Structure : PLUTON

Field Geology: Multi-phase mass of mafic granitoids, each with uneven contacts, and
 with xenoliths of each type within the others. Variably altered in
 localised patches where patchy pyrite is disseminated. Veins of quartz-
 epidote rock, and actinolite rock.

Field Rockname: SAMPLE WA0015 DIORITE

PHYSICAL PROPERTIES:

DENSITIES	DIORITE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.96		Mean of 0 in-situ readings =	Ch.1=
Dry density = 2.76		from to ,SD=	Ch.2= % K2O
Grain density = 2.75		Laboratory susceptibility = 35500	Ch.3= ppm U
Porosity = 1.5		Remanence = 50.00	Ch.4= ppm Th
		Koenigsberger ratio = .02	U/Th=
			Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	62.67	.89	15.63	6.85	.12	2.34	4.27	4.59	1.67	.22	.08	.70	99.83
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	514	-6	39	21	4	121	42	-3	7	-5	9	40	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	24	-20	271	-5	-5	-3	142	-5	34	62	112		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Porphyritic microdiorite
	FABRIC:		Aplitic; sparsely porphyritic
8.	Quartz		Relict phenocrysts of plagioclase up to 70mm pseudomorphed by mosaic
62.	Plagioclase		of epidote crystals set in even-grained, medium-grained dioritic
20.	Biotite		groundmass. Some epidote in groundmass. Slight alteration of groundmass
2.	Epidote		plagioclase. Trace pyrite & chalcopyrite. Interstitial quartz.
5.	Hornblende		
3.	Magnetite		
.1	Pyrite		
.1	Chalcopyrite		

Location 0016

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

ND.=(7962)0016
Outcrop

SAME LOCATION AS 0013 0014 0015

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5041
6092976 m N 35.30147 S latitude
598127 m E 148.0793 E longitude

Illustrations :

Age/Unit= WONDALGA GRANITE

Topography: ROUNDED EVENLY-SLOPING DISSECTED UPLAND dip= strike=

Structure : PLUTON

Field Geology: Multi-phase mass of mafic granitoids, each with uneven contacts, and with xenoliths of each type within the others. Variably altered in localised patches where patchy pyrite is disseminated. Veins of Qtz-epidote, and actinolite rock.

Field Rockname: SAMPLE WA0016 ACTINOLITE ROCK

PHYSICAL PROPERTIES:

ACTINOLITE ROCK

DENSITIES

Whole rock density = 3.10
Dry density = 2.92
Grain density = 2.95
Porosity = 1.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 1100
Relevance = 23.00
Koenigsberger ratio = .35

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	44.46	1.39	10.99	12.34	.20	15.65	8.85	.74	1.08	.24	.05	3.50	99.49
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	228	-6	36	69	1457	110	12	4	9	439	-5	23	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	41	-20	89	7	-5	-3	263	-5	19	97	74		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Actinolite rock
99.8	Actinolite	FABRIC:	Decussate
.1	Hematite		
.1	Ilmenite		

Almost entirely made up of randomly oriented, interlocking laths of actinolite. Scattered disseminated ilmenite altering in places to red earthy hematite

Location 0017

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0017

WILLOWTREE BEND

Outcrop

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5041

6089361 m N

35.33320 S latitude

606541 m E

148.1723 E longitude

Illustrations :Photomicrograph.

Age/Unit= Lower Silurian

BUMBOLEE CREEK BEDS

Topography:

dip= strike=

Structure : STEEPLY DIPPING CLEAVED

Field Geology: Interbedded slate, greywacke, mudstone, and minor ignimbrite. Minor quartz bodies and granitic segregations. The greywackes contain abundant lithic clasts.

Field Rockname: SAMPLE WA0017 BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES

Whole rock density = 2.63

Dry density = 2.52

Grain density = 2.63

Porosity = 4.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of χ in-situ readings =

from to χ_{SD} =

Laboratory susceptibility = 210

Remanence = .10

Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

χ/Th =

1/eat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Tuffaceous andesitic breccia	
2.	Quartz		Poorly sorted with pre-consolidation flow fabric
3.	Plagioclase		Subangular to subrounded clasts of andesite, the glassier ones preferentially flattened & more rounded, appearing globular. However no destruction of delicately-fine lava texture despite cleaved nature and metamorphic appearance of matrix layering, & phenocryst orientation
1.	Opaque		is random to foliation of rock defined by wavy streaks of mud within
55.	Rock fragments		which biotite is incipiently developed. Some tiny mineral fragments in groundmass as well. Compaction of some glass fragments without distortion of volcanic features suggests pre-consolidation brecciation
39.	Matrix		formed at least some of the clasts. Abundant mud matrix. Photo clast-matrix comparison.

Location 0018

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0018
Outcrop

DAY1STOP6 ON CUMSEA EXCURSION TRAVERSE ALONG ROAD SEE PHOTO

WAGGA WAGGA

NSW GDOH-1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5049

6096294 m N

35.26870 S latitude

623908 m E

148.3623 E longitude

Illustrations :

Age/Unit=

YOUNG GRANODIORITE

Topography: RUGGED STEEPLY DISSECTED UPLAND

dip= strike=

Structure: SHEARED VERTICAL GRANITOID CONTACT

Field Geology: Magnetometer traverse from margin of Young Granodiorite across
serpentinite and into Honeysuckle Beds. The granitoid is gneissic,
especially at its contact which is finer, porphyroblastic, and mylonitic
. The serpentinite is massive to schistose. Honeysuckle Beds = mudstone.

Field Rockname: SAMPLE WA0018 GNEISSIC GRANODIORITE, 20M FROM SERPENTINITE

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density = 2.80

Dry density = 2.64

Grain density = 2.73

Porosity = 3.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility = 160

Remanence = .10

Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Gneissic granodiorite

Est. % MINERAL FABRIC: Porphyroblastic; gneissose

30. Quartz Porphyroblasts of relict plagioclase with slightly bent twin lamellae
20. Plagioclase & strain extinction set in reconstituted groundmass which has largely
10. Orthoclase separated into separate mineral phases. These include lenticular
4. Biotite streaks of quartz consisting of a mosaic of lenticular strained sub-
5. Muscovite grains. These streaks are separated by thinner more continuous streaks
1. Opaque of rock flour with included narrow muscovite selvages & biotite
30. Rock fragments patches. Some plagioclase porphyroblasts have been infiltrated by micro-
crystalline quartz & they are partially altered to clay.

Location 0019

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0019
Outcrop

DAY1STOP6 ON CUMSEA EXCURSION TRAVERSE ALONG ROAD SEE PHOTO
WAGGA WAGGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5049
6096296 m N 35.26868 S latitude
623908 m E 148.3623 E longitude

Illustrations :

Age/Unit= YOUNG GRANODIORITE
Topography: RUGGED STEEPLY DISSECTED UPLAND dip= strike=
Structure : SHEARED VERTICAL GRANITOID CONTACT
Field Geology: Magnetometer traverse from margin of Young Granodiorite across
serpentinite and into Honeysuckle Beds. The granitoid is gneissic,
especially at its contact which is finer, porphyroblastic, & mylonitic.
The serpentinite is massive to schistose. Honeysuckle Beds are mudstone.
Field Rockname: SAMPLE WA0019 MYLONITE GRANITE AT SERPENTINITE CONTACT

PHYSICAL PROPERTIES:

MYLONITE
DENSITIES
Whole rock density = 3.17
Dry density = .65
Grain density = 2.72
Porosity = 2.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 110
Remanence = 10
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Mylonitised granodiorite
FABRIC: Mylonitic, porphyroblastic, brecciated
Est. % MINERAL FABRIC: Mylonitic, porphyroblastic, brecciated
20. Quartz Porphyroblasts of plagioclase with slightly rounded edges are
30. Plagioclase surrounded by wavy-layered, flattened groundmass of compacted lenticular
15. Orthoclase quartz selvages separated by rock-flour streaks with rare fine
5. Biotite opaque particles & thin discontinuous biotite patches. The layering
1. Opaque is disrupted by small cross-cutting microfaults filled with micro-
29. Rock fragments crystalline quartz, & micro-regions of brecciation. Quartz is very
strained.

Location 0020

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0020
Outcrop

DAY1STOP6 ON CUMSEA EXCURSION TRAVERSE ALONG ROAD SEE PHOTO
WAGGA WAGGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5049
6096296 m N 35.26868 S latitude
623908 m E 148.3623 E longitude

Illustrations :

Age/Unit= COOLAC SERPENTINITE
Topography: RUGGED STEEPLY DISSECTED UPLAND dip= strike=
Structure: SHEARED GRANITE CONTACT AGAINST SERP AND ITS CONTACT WITH HONEYSUCKLE
Field Geology: Magnetometer traverse from margin of Young Granodiorite across
serpentinite and into Honeysuckle Beds. The granitoid is gneissic,
especially at its contact which is finer, porphyroblastic, & mylonitic.
The serpentinite is massive to schistose. Honeysuckle Beds are mudstone.
Field Rockname: SAMPLE WA0020 SERPENTINITE FROM STATION 0680METRES ON MAGNETIC TRAVERSE

PHYSICAL PROPERTIES:

SERPENTINITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES				Ch.1=	
Whole rock density = 2.64		Mean of 6 in-situ readings =	56314	Ch.2=	% K2O
Dry density = 2.39		from 33803 to 93632 ,SD=	22012	Ch.3=	ppm U
Grain density = 2.43		Laboratory susceptibility =	25000	Ch.4=	ppm Th
Porosity = 1.8		Remanence =	600.00	U/Th=	
		Koenigsberger ratio =	.40	Heat generation units	

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:	
89.	Chrysotile	Serpentinite	Massive	
1.	Spinel			Phenocrysts of relict, altered pyroxene & spine! surrounded by chrysotile with tiny magnetite streaks following cleavage traces of former minerals & suggesting the rock had a previously coarse grain size. Minor talc veinlets.
4.	Opaque			
1.	Talc			
5.	Pyroxene			

Location 0021

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0021 DAY1STOP6 ON CUMSEA EXCURSION TRAVERSE ALONG ROAD SEE PHOTO
Outcrop WAGGA WAGGA NSW GDOM-1
1:250,000 sheet area 1:100,000 sheet area air-photo. un-no.= 4-5049
6096581 m N 35.26617 S latitude
623403 m E 148.3567 E longitude

Illustrations :

Age/Unit= COOLAC SERPENTINITE
Topography: RUGGED STEEPLY DISSECTED UPLAND dip= strike=
Structure : SHEARED VERTICLE GRANITOID CONTACT
Field Geology: Magnetometer traverse from margin of Young Granodiorite across
serpentinite and into Honeysuckle Beds. The granitoid is gneissic,
especially at its contact which is finer, porphyroblastic, & mylonitic.
The serpentinite is massive to schistose. Honeysuckle Beds are mudstone.
Field Rockname: SAMPLE WA0021 SERPENTINITE FROM 0920 METRES MAGNETIC TRAVERSE

PHYSICAL PROPERTIES: SERPENTINITE		MAGNETIC SUSCEPTIBILITY (S.I.*000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 0 in-situ readings =		Ch.1=	
Whole rock density = 2.81		from to ,SD=		Ch.2=	% K2O
Dry density = 2.61		Laboratory susceptibility =	33500	Ch.3=	ppm U
Grain density = 2.64		Remanence =	300.00	Ch.4=	ppm Th
Porosity = 1.2		Koenigsberger ratio =	.15	U/Th=	
				Heat generation units	

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
5.	Chrysotile	Serpentinite	Massive
10.	Opaque		
85.	Antigorite		

Opaque ?magnetite forms isolated small subhedral crystals, as well as dust & thin linings pseudomorphing cleavage, old fractures, & in places, whole relict minerals which are pseudomorphed by serpentine. Based on these textures the original rock was probably uneven grained & quite coarse.

Location 0022

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0022
Outcrop

DAY1STOP6 ON CUMSEA EXCURSION TRAVERSE ALONG ROAD SEE PHOTO
WAGGA WAGGA NSII GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5049
6096296 m N 35.2686 S latitude
623908 m E 148.3623 S longitude

Illustrations :

Age/Unit= COOLAC SERPENTINITE
Topography: RUGGED STEEPLY DISSECTED UPLAND dip= strike=
Structure : SHEARED GRANITE CONTACT AGAINST SERP AND ITS CONTACT WITH HONEYSUCKLE
Field Geology: Magnetometer traverse from margin of Young Granodiorite across
serpentine and into Honeysuckle Beds. The granitoid is gneissic,
especially at its contact which is finer, porphyroblastic, & mylonitic.
The serpentine is massive to schistose. Honeysuckle Beds are mudstone.
Field Rockname: SAMPLE WA0022 SERPENTINITE ORIENTED HAND SPECIMEN FROM 0680 METRES

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 3.04
Dry density = 3.03
Grain density = 3.10
Porosity = 2.1

SERPENTINITE

MAGNETIC SUSCEPTIBILITY (S.I.*.009001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 500
Remanence = 4.00
Koenigsberger ratio = .13

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Altered serpentine
FABRIC:
Est. % MINERAL
70. Epidote Very altered rock with original ferromagnesian mineral pseudomorphed by
20. Serpentine non-resolvable clay and epidote, with interstitial serpentine mineral
10. Talc often in patches. Cut by veinlets of talc.

Location 0023

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0023
Outcrop

DAY1STOP6 ON CUMSEA EXCURSION TRAVERSE ALONG ROAD SEE PHOTO

HAGGA HAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5049
6096296 m N 35.26868 S latitude
623908 m E 148.3623 E longitude

Illustrations :

Age/Unit=

COOLAC SERPENTINITE

Topography: RUGGED STEEPLY DISSECTED UPLAND

dip= strike=

Structure: SHEARED VERTICAL GRANITOID CONTACT

Field Geology: Magnetometer traverse from margin of Young Granodiorite across
serpentinite and into Honeysuckle Beds. The granitoid is gneissic,
especially at its contact which is finer, porphyroblastic, & mylonitic.
The serpentinite is massive to schistose. Honeysuckle Beds are mudstone.

Field Rockname: SAMPLE WA0023 SERPENTINITE ORIENTED SPECIMEN FROM 0680METRES MAGTRAV

PHYSICAL PROPERTIES:

SERPENTINITE

DENSITIES
Whole rock density = 2.52
Dry density = 2.50
Grain density = 2.50
Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 34000
Remanence = 1500.00
Koenigsberger ratio = .74

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Serpentinite Massive
35.	Chrysotile		Relict phenocrysts of ?pyroxene pseudomorphed by serpentine mineral.
1.	Spinel		Some large & more frequent smaller phenocrysts surrounded by originally finer material. Some relict ?olivine-pyroxene xenoliths.
4.	Magnetite		
60.	Antigorite		Mesh texture confined to ?relict groundmass. Spinel fractures & margins lined with magnetite.

Location 0024

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0024
Outcrop

DAY1STOP6 ON CUMSEA EXCURSION TRAVERSE ALONG ROAD SEE PHOTO

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5049
6096296 m N 35.26868 S latitude
623908 m E 148.3623 E longitude

Illustrations :

Age/Unit= COOLAC SERPENTINITE

Topography: RUGGED STEEPLY DISSECTED UPLAND dip= strike=

Structure : SHEARED VERTICAL GRANITOID CONTACT

Field Geology: Magnetometer traverse from margin of Young Granodiorite across
serpentine and into Honeysuckle Beds. The granitoid is gneissic,
especially at its contact which is finer, porphyroblastic, & mylonitic.
The serpentine is massive to schistose. Honeysuckle Beds are mudstone.

Field Rockname: SAMPLE WA0024 SERPENTINITE ORIENTED SAMPLE AT 0680METRES MAG TRAVERSE

PHYSICAL PROPERTIES:

SERPENTINITE

DENSITIES
Whole rock density = 2.41
Dry density = 2.38
Grain density = 2.46
Porosity = 2.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 29500
Remanence = 1300.00
Koenigsberger ratio : .73

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Serpentine breccia
FABRIC: Foliated

Est. %	MINERAL	DESCRIPTION
40.	Chrysotile	Lenticular clasts with slightly rounded edges consist of altered
5.	Talc	slightly ferruginised serpentine which is little different from the
5.	Magnetite	groundmass chrysotile. Numerous veinlets of clear chrysotile in
50.	Rock fragments	groundmass with selvages of talc between veins & altered groundmass.

Location 0025

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0025
Outcrop

HAGGA HAGGA NSW GDMH-1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5120
6103922 m N 35.20000 S latitude
623348 m E 148.355 E longitude

Illustrations :

Age/Unit= COOLAC SERPENTINITE
Topography: MODERATELY SLOPING DISSECTED UPLAND dip= strike=
Structure : INTRUSION
Field Geology: Coarse-grained, non-foliated phase of Coolac Serpentinite. Interpreted
as harzburgite with prominent large relict pyroxenes up to 5mm in size.

Field Rockname: SAMPLE WA0025 HARZBURGITE

PHYSICAL PROPERTIES:

DENSITIES		HARZBURGITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.76	Mean of 7 in-situ readings =	37612	Ch.1=			
Dry density =	2.76	from 27168 to 45678 ,SD=	6407	Ch.2=		X K20	
Grain density =	2.78	Laboratory susceptibility =	28900	Ch.3=		ppm U	
Porosity =	.6	Remanence =	9000.00	Ch.4=		ppm Th	
		Koenigsberger ratio =	5.19	U/Th=			
				Heat generation units			

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Enstatite	Serpentinised harzburgite	Relict hypidiomorphic granular
5.	Augite		Relict enstatite phenocrysts with variable alteration to chrysotile and surrounded by granular olivine coronas with mesh-like chrysotile
5.	Olivine		pseudomorphing fractures between less altered grains. The olivines are surrounded by chrysotile which pseudomorphs the original groundmass.
3.	Opaque		Opaque mineral ?magnetite forms skeletal phenocrysts & veinlets in groundmass, which if they follow former mineral cleavages, would indicate that the rock was originally coarse grained.
1.	Spinel		
71.	Chrysotile		

Location 0026

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0026

SAME LOCATION AS 0027

Outcrop

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5019

6117506 m N 35.07997 S latitude

601612 m E 148.1146 E longitude

Illustrations :

Age/Unit=

GUNDAGAI SERPENTINITE

Topography: MODERATELY SLOPING LOWLAND

dip= strike=

Structure : CONFORMABLE

Field Geology: Serpentinite. Variable in texture from lustrous green and foliated, to massive varieties. Asbestiform in places. Rarely brecciated. Each type occurs as lenticular pods within the others. Minor sulphide-bearing phases present.

Field Rockname: SAMPLE WA0026 MAGNETIC SERPENTINITE

PHYSICAL PROPERTIES:

SERPENTINITE

DENSITIES
Whole rock density = 3.00
Dry density = 2.88
Grain density = 2.89
Porosity = .3

MAGNET. SUSCEPTIBILITY (S.I.*.000001)

Mean of 14 in-situ readings = 31034
from 13508 to 69680 ,SD= 16706
Laboratory susceptibility = 41800
Remanence = 450.00
Koenigsberger ratio = .18

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
90.	Antigorite	Serpentinite	Massive
7.	Opaque	The bulk of the rock is light green serpentine lacking fibrous texture.	
3.	Apatite	Minor unaltered apatite. Scattered opaque mineral.	

Location 0027

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0027

SAME LOCATION AS 0026

Outcrop

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5019

6117505 m N

35.07998 S latitude

601612 m E

148.1146 E longitude

Illustrations :

Age/Unit=

GUNDAGAI SERPENTINITE

Topography: MODERATELY SLOPING LOWLAND

dip= strike=

Structure : CONFORMABLE

Field Geology: Serpentinite. Variable in texture from lustrous green and foliated, to massive varieties. Asbestiform in places. Rarely brecciated. Each type occurs as lenticular pods within the others. Minor sulphide-bearing phases present.

Field Rockname: SAMPLE WA0027 SULPHIDE-BEARING SERPENTINITE

PHYSICAL PROPERTIES:

SERPENTINITE

DENSITIES
Whole rock density = 2.75
Dry density = 2.72
Grain density = 2.77
Porosity = 1.6

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)
Mean of 1 in-situ readings = 20734
from to SD=
Laboratory susceptibility = 3700
Remanence = 70.00
Koenigsberger ratio = .32

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Serpentinite	
92.	Antigorite		Massive with wavy microfoliation
8.	Opaque		Massive fibrous serpentinite with scattered magnetite subhedra and minor large ?pyrite cubes.

Location 0028

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0028 NEW ROAD CUTTING ON N EDGE OF GUNDAGAI SAME LOCATION AS 0029
Road cutting WAGGA WAGGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5019
6120897 m N 35.04955 S latitude
600118 m E 148.0978 E longitude

Illustrations :

Age/Unit= GUNDAGAI SERPENTINITE
Topography: MODERATELY SLOPING UPLAND dip= strike=
Structure : CONFORMABLE
Field Geology: Serpentine. Variable in texture from black massive variety with a sulphide mineral, in pods between green schistose serpentinite, serpentinite breccia, and asbestiform serpentinite. Minor calcite veins.

Field Rockname: SAMPLE WA0028 SERPENTINITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

SERPENTINITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 52590
from 19854 to 85011 ,SD= 26185
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

Location 0029

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0029

AS FOR 0028 SAME LOCATION

Outcrop

WAGGA WAGGA

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5019

6120897 m N

35.04955 S latitude

600118 m E

148.0978 E longitude

Illustrations :

Age/Unit=

GUNDAGAI SERPENTINITE

Topography: MODERATELY SLOPING UPLAND

dip= strike=

Structure : CONFORMABLE

Field Geology: Serpentinite. Variable in texture from black massive variety with a sulphide mineral, in pods between green schistose serpentinite, serpentinite breccia, and asbestiform serpentinite. Minor calcite veins.

Field Rockname: SAMPLE WA-0029 SERPENTINITE

PHYSICAL PROPERTIES:

SERPENTINITE

DENSITIES
Whole rock density = 2.90
Dry density = 2.74
Grain density = 2.75
Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 51380
from 18849 to 81178 ,SD= 20015
Laboratory susceptibility = *****
Remanence = 1100.00
Koenigsberger ratio = .16

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Serpentinite Massive; altered
20.	Chrysotile		Two phases are present and the modal analysis would not be representative. One consists of serpentinitised dunite preserved as a mass of talc and magnesite set in a mesh structure of chrysotile with fractures filled with magnetite. Scattered chromite rimmed by magnetite is also present. Pyrite is finely disseminated throughout. The other phase consists of large mosaics of augite and enstatite, partially serpentinitised, slightly chloritised and partially pseudomorphed by talc.
19.	Augite		
10.	Enstatite		
25.	Talc		
20.	Magnesite		
3.	Chromite		
3.	Magnetite		
.1	Pyrite		
.5	Chlorite		

Location 0030

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0030
Quarry

SAME LOCATION AS 0031

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5019
6121748 m N 35.04210 S latitude
597883 m E 148.0732 E longitude

Illustrations :

Age/Unit= Upper Silurian FRAMPTON VOLCANICS
Topography: MODERATELY SLOPING UPLAND WITH OUTCROP dip= strike=
Structure : PART OF A HIGH
Field Geology: Ignimbrite with large rounded volcanic-quartz phenocrysts and small
feldspars set in a fine-grained flow-banded groundmass. Resembles
knotted-schist texture in places, owing to mica growth along flow
banding. Minor quartz-chlorite veinlets.
Field Rockname: SAMPLE WA0030 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.82
Dry density = 2.67
Grain density = 2.70
Porosity = 1.2

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)

Mean of 0 in-situ readings =
from to .SD=
Laboratory susceptibility = 100
Remanence = 20.00
Koenigsberger ratio = 3.33

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.62	.42	12.80	2:43	.05	.55	2.34	1.55	5.09	.18	.05	2.50	99.58
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	816	-6	66	7	16	21	41	-3	12	5	34	212	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	6	5	126	-5	19	6	33	14	35	47	226		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Ignimbrite
Est. #	MINERAL FABRIC:	Devitrified eutaxitic
15.	Quartz	Phenocrysts of rounded, strained, slightly distorted & embayed volcanic
15.	Plagioclase	quartz & fractured feldspars set in devitrified groundmass which
5.	Orthoclase	flows around phenocrysts & has partially separated into constituent
2.	Biotite	phases such as muscovite, biotite & calcite. Feldspars are moderatley
5.	Muscovite	altered. Trace epidote in groundmass. Slight granulation of phenocrysts.
52.	Groundmass	Biotite occurs in small lenticular crystal clusters.
1.	Chlorite	
3.	Calcite	
2.	Opaque	

Location 0031

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0031
Quarry

SAME LOCATION AS 0030

HAGGA HAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5019

6121748 m N

35.04210 S latitude

597883 m E

148.0732 E longitude

Illustrations :

Age/Unit= Upper Silurian FRAMPTON VOLCANICS
Topography: MODERATELY SLOPING UPLAND WITH OUTCROP dip= strike=
Structure : PART OF A HIGH
Field Geology: Ignimbrite with large rounded volcanic-quartz phenocrysts and small
feldspars set in a fine-grained flow-banded groundmass. Resembles
knotted-schist texture in places, owing to mica growth along flow
banding. Minor quartz-chlorite veinlets.

Field Rockname: SAMPLE WA0031 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES
Whole rock density = 2.69
Dry density = 2.68
Grain density = 2.68
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 100
Remanence = 15.00
Koenigsberger ratio = 2.50

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= x k20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Ignimbrite	
		Detrified eutaxitic	
10.	Quartz		Phenocrysts of slightly strained, embayed volcanic quartz, fractured in
15.	Plagioclase		places, & plagioclase with smoothed rounded outlines tending slightly
5.	Biotite		porphyroblastic. Groundmass swirls around phenocrysts & consists of
5.	Muscovite		detrified quartzo-feldspathic & other material, some of which has
1.	Calcite		partially separated to form thin quartz lenticles & streaks of
60.	Groundmass		muscovite. Calcite partially pseudomorphs altered feldspar & occurs
1.	Opaque		sparingly in the groundmass. Biotite present as small crystal clusters.
3.	Chlorite		

Location 0032

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0032
Outcrop

ABOUT 1 KM NNE OF 0028,0029

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5019
6121494 m N 35.04407 S latitude
601109 m E 148.1086 E longitude

Illustrations :

Age/Unit: Middle Silurian
Topography: GENTLY SLOPING LOWLAND dip=90 strike=000
Structure: STEEPLY DIPPING AND VERTICAL
Field Geology: Grey shale. Thinly laminated, fissile. Sericitic.

Field Rockname: SAMPLE WA-0032 SHALE

PHYSICAL PROPERTIES:

SHALE

DENSITIES
Whole rock density = 2.36
Dry density = 2.25
Grain density = 2.70
Porosity = 16.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 160
Remanence = 5.00
Koenigsberger ratio = .52

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3=
Ch.4=
U/Th=
Heat generation units

Σ K20
ppm U
ppm Th

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Shale
FABRIC: Laminated
Est. % MINERAL
10. Quartz
10. Graphite
20. Sericite
60. Mud
Lamination defined by variations in graphite content & quartz-rich layers. Some quartz layers are lenticular & form micro pinch-and-swirl structures as a result of compaction; some coalescence of closely-spaced quartz layers into one mass.

Location 0033

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0033

Road cutting

WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5095

6117818 m N

35.07745 S latitude

598698 m E

148.0826 E longitude

Illustrations :1 B&W photo

Age/Unit= Upper Silurian

FRAMPTON VOLCANICS

Topography: DISSECTED STEEP UPLAND

dip=75W strike=005

Structure : STEEPLY INCLINED

Field Geology: Breccia with rounded to angular clasts of granite, quartzite, shale, felsic-lava, and marble set in a fine-grained quartzo-feldspathic matrix

Field Rockname: SAMPLE WA0033 BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES
 Whole rock density = 2.76
 Dry density = 2.73
 Grain density = 2.73
 Porosity = .1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 28668
 from 21362 to 37573 ,SD= 4350
 Laboratory susceptibility = 16500
 Remanence = 250.00
 Koenigsberger ratio = .25

GAMMA-RAY SPECTROMETRY

Ch.1=
 Ch.2=
 Ch.3= ppm U
 Ch.4= ppm Th

U/Th=
 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	64.31	.52	11.51	5.42	10	2.08	6.16	2.09	1.84	.23	.06	5.50	99.84

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	656	-6	51	20	47	147	31	-3	5	15	13	41

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	19	-20	617	-5	7	-3	123	-5	17	51	105

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
20.	Quartz	Calcareous volcanic breccia
10.	Plagioclase	Poorly sorted, with matrix flow foliation
3.	Epidote	Numerous angular & often flattened andesitic volcanic clasts as well as clastic, volcanic quartz & fractured feldspar set in fine grained matrix of mineral fragments & mud. Opaque mineral present in iron-charged andesite clasts as well as streaks & as groundmass dust.
1.	Chlorite	Epidote pseudomorphs after volcanic rock fragments. Muscovite partially separated from groundmass. A submarine volcanic mass-movement deposit.
2.	Opaque	
15.	Calcite	
15.	Rock fragments	
30.	Matrix	
4.	Muscovite	

Location 0034

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0034
Road cutting

COOTAMUNDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5109
6132808 m N 34.94473 S latitude
569462 m E 147.7607 E longitude

Illustrations :

Age/Unit= Upper Silurian
Topography: LOWLAND dip= strike=
Structure :
Field Geology: Basaltic rock. Considerably deuterically-altered. Contains calcite,
epidote, chlorite, magnetite and hematite.

Field Rockname: SAMPLE CT0034 SUBMARINE ALTERED BASALT:

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 3.00
Dry density = 2.96
Grain density = 2.96
Porosity = .1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 2 in-situ readings = 9896
from 6597 to 13194, SD= 4665
Laboratory susceptibility = *****
Remanence = 1500.00
Koenigsberger ratio = .07

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Altered ?ultramafic rock
FABRIC:	Massive
Est. % MINERAL	Calcite pseudomorphs of othropyroxene and chlorite pseudomorphs of another relict mineral. Abundant skeletal magnetite showing both partial and complete alteration to hematite. Numerous calcite veinlets.
75.	Calcite
15.	Chlorite
5.	Magnetite
5.	Hematite

Location 0035

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0035
Outcrop

COOTAMUNDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5109
6132775 m N 34.94517 S latitude
567389 m E 147.7380 E longitude

Illustrations :

Age/Unit=
Topography: GENTLY-UNDULATING SOIL-COVERED LOWLAND dip= strike=
Structure :
Field Geology: Semi-lateritised soil. Recorded magnetic traverse.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility =
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3=
Ch.4=
U/Th=
Heat generation units
% K20
ppm U
ppm Th

Location 0036

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0036
 Outcrop

COOTAMUNDRA NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5109
 6137219 m N 34.90505 S latitude
 568153 m E 147.7460 E longitude

Illustrations :

Age/Unit= Upper Silurian
 Topography: dip=65W strike=157
 Structure : STEEPLY INCLINED
 Field Geology: Altered ?ultramafic lava. Slight flow banding with thin discontinuous streaks of ?magnetite.

Field Rockname: SAMPLE CT0036 ALTERED ULTRAMAFIC LAVA?

PHYSICAL PROPERTIES:

DENSITIES		ULTRAMAFIC ?LAVA		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.65	Mean of	0	in-situ readings =		Ch.1=	
Dry density =	2.54	from	to	to	.SD=	Ch.2=	± K20
Grain density =	2.59	Laboratory susceptibility =		27600		Ch.3=	ppm U
Porosity =	1.8	Remanence =		152000.0		Ch.4=	ppm Th
		Koenigsberger ratio =		91.79		U/Th=	
						Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	48.85	.01	.20	6.35	.10	33.36	.05	.01	.01	.03	.02	10.30	99.26
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	107	-6	17	106	2563	48	2	-3	-3	1973	-5	-3	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	4	-20	-3	20	-5	-3	16	15	-3	38	-5		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Serpentinised ultramafic ?lava	
FABRIC:	Porphyritic: flow foliation	
Est. #	MINERAL	DESCRIPTION
67.	Antigorite	Relict olivine phenocrysts pseudomorphed by talc as well as ghosted
5.	Chrysotile	relics of ?pyroxene phenocrysts pseudomorphed by a granular mosaic of
10.	Olivine	serpentine mixed with lamellar antigorite and accompanied by liberations
.1	Spinel	of magnetite. Sparse chromite phenocrysts rimmed by magnetite. The
15.	Pyroxene	relict groundmass consists of oriented lamellar antigorite blades.
.1	Chromite	Layering is wavy and defined by streaks and wisps of fibrous chrysotile.
3.	Magnetite	Disseminated magnetite occurs throughout the groundmass. Rare spinel
		liberated along fractures in some altered olivines.

Location 0037

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0037 4KM MAG TRAVERSE ALONG HUME HIGHWAY
Road cutting WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5136
6107067 m N 35.17603 S latitude
580103 m E 147.8797 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: GENTLY SLOPING GENTLY UNDULATING dip= strike=
Structure : VERTICALLY DIPPING
Field Geology: Interbedded slate, siltstone, phyllite, quartz greywacke, and minor
quartzite. Thin to medium bedded. Planar. The phyllite is a chlorite-
biotite-muscovite rock and has crenulation cleavage that is stratabound
and restricted only to phyllite layers.
Field Rockname: SAMPLE WA0037 PHYLLITE

PHYSICAL PROPERTIES:

PHYLLITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES				Ch.1=	
Whole rock density = 2.67		Mean of 0 in-situ readings =		Ch.2=	± K20
Dry density = 2.55		from to ,SD=		Ch.3=	ppm U
Grain density = 2.69		Laboratory susceptibility =	70	Ch.4=	ppm Th
Porosity = 5.2		Remanence =	.10	U/Th=	
		Koenigsberger ratio =	.02	Heat generation units	

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME: FABRIC:
20.	Quartz	Phyllitic greywacke Poorly sorted; laminated to thin bedded
5.	Biotite	The greywacke consists of randomly-spaced & -shaped quartz grains set in muddy to quartzose, fine grained matrix, within which micas are very incipiently developed & in optical continuity with lamination. Shale interlaminae consist of optically continuous muscovite & biotite.
5.	Muscovite	Rare laminae of quartz crystal mosaics representing former crypto- crystalline chemical silica. Some compaction of quartz-greywacke laminae into lenses, & minor lamina-bound micro-folding.
70.	Matrix	

Location 0038

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0038
Mag traverse

INVESTIGATION OF MAGNETIC ANOMALY

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5136
6106862 m N 35.17800 S latitude
578580 m E 147.8630 E longitude

Illustrations :

Age/Unit=

Topography: LOWLAND ADJACENT TO UPLAND

dip= strike=

Structure :

Field Geology: Magnetic source concealed by surficial sediment and soil. Surrounding rocks are Ordovician slates etc. similar to locality 0037.

Field Rockname: SAMPLE WA0038 HEAVY MINERALS DOWNSTREAM OF ANOMALY IN CREEK

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0039

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0039 PROMINENT ROAD CUTTING SAME LOCALITY AS 0040
Road cutting WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5140
6102617 m N 35.21663 S latitude
573938 m E 147.8124 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: MODERATELY UNDULATING TO LOWLAND dip=75W strike=175
Structure : VERY STEEPLY DIPPING SLATE 80% QTZITE 18% GRAPHITIC QTZITE 2% OF SECTION
Field Geology: Well bedded andalusite slate interbedded with quartzite containing
cross-cutting stratabound white-quartz veins, and minor graphitic
quartzite with numerous masses and conformable layers of white quartz.
The last type is complexly folded within planar bedded enveloping units.
Field Rockname: SAMPLE WA0039 ANDALUSITE SLATE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*-030001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.46	Mean of 5 in-situ readings =	0	Ch.1=	71868
Dry density =	2.44	from to ,SD=		Ch.2=	5599 4.52 % k20
Grain density =	2.75	Laboratory susceptibility =	24	Ch.3=	1229 3.40 ppm U
Porosity =	11.5	Remanence =	.00	Ch.4=	1350 26.20 ppm Th
		Koenigsberger ratio =	0.00	U/Th=	.13
					7.60 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Andalusite slate	
		Porphyroblastic	
60.	Quartz	Andalusite porphyroblasts are largely pseudomorphed by muscovite, secondary opaque minerals & biotite. The quartz is all much the same size & does not appear to be detrital. Instead it exhibits grain-growth, & impurities have been expelled to grain edges. Graphite delineates lamination.	
10.	Andalusite		
25.	Muscovite		
5.	Graphite		

Location 0040

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0040
Road cutting

SAME LOCATION AS 0039
WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6102617 m N air-photo:run-no.= 3-5140
573938 m E 35.21663 S latitude
147.8124 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: MODERATELY UNDULATING TO LOWLAND dip= strike=
Structure : VERY STEEPLY DIPPING SLATE 80% QTZITE 18% GRAPHITIC QTZITE 2% OF SECTION
Field Geology: Well bedded andalusite slate interbedded with quartzite containing
cross-cutting stratabound white-quartz veins, and minor graphitic
quartzite with numerous masses and conformable layers of white quartz.
The last type is complexly folded within planar bedded enveloping units.
Field Rockname: SAMPLE WA0040 GRAPHITIC CHERTY QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE
DENSITIES
Whole rock density = 2.56
Dry density = 2.51
Grain density = 2.67
Porosity = 3.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to SD=
Laboratory susceptibility = 30
Remanence = .20
Koenigsberger ratio = .11

GAMMA-RAY SPECTROMETRY
Ch.1= 42413
Ch.2= 3307 2.72 % K2O
Ch.3= 738 3.40 ppm U
Ch.4= 696 13.38 ppm Th
U/Th= .25
5.01 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
5.	Graphite	Graphitic quartzite
85.	Quartz	Stylobitic, recrystallised
10.	Mud	Graphite stylolaminae wander randomly in recrystallised chert which has undergone grain growth to quartzite. The stylolaminae postdate and predate secondary, clear-quartz micro-veinlets. Graphite & small mud particles form impurities in the quartzite.

Location 0041

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0041

DEAD MANS HILL

Road cutting

HAGGA HAGGA

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5140

6102501 m N

35.21790 S latitude

570751 m E

147.7774 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: MODERATELY UNDULATING DISSECTED LOWLAND

dip=76SW strike=156

Structure: STEEPLY DIPPING

Field Geology: Interbedded semi-slate, quartz greywacke, quartzose sandstone, and impure quartzite. Well laminated. Cut by minor faults lined with quartz patches. Minor intraformational shale clasts in some sandy units.

Field Rockname: SAMPLE WA0041 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.75
Dry density = 2.61
Grain density = 2.86
Porosity = 8.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to .SD=
Laboratory susceptibility = 0
Remanence = .20
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Quartzose sandstone Moderately sorted
84.	Quartz		Detrital quartz grains of moderately variable size up to 1mm.
1.	Muscovite		Subangular, moderately well compacted, & set in a matrix of fine
.1	Tourmaline		silica, chlorite, mud & opaque material. Rare small detrital muscovite
15.	Matrix		& tourmaline. A rapidly deposited sediment. Most quartz grains show
.5	Feldspar		variable strain extinction. However strain lamellae have random
			orientation with respect to bedding. Rare feldspar.

Location 0042

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0042
Road cutting

STEEPLY DIPPING SEE 0041

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5140

6102496 m N

35.21795 S latitude

570742 m E

147.7773 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: MODERATELY UNDULATING DISSECTED LOWLAND

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Interbedded semi-slate, quartz greywacke, quartzose sandstone, and impure quartzite. Well laminated. Cut by minor faults lined with quartz patches. Minor intraformational shale clasts in some sandy units.

Field Rockname: SAMPLE WA0042 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.65
Dry density = 2.54
Grain density = 2.78
Porosity = 8.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 80
Remanence = .00
Koenigsberger ratio = 0.00

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Siltstone Poorly sorted
15.	Quartz		Dispersed quartz grains with longest axes parallel to bedding set in a muddy matrix. Muscovite may be detrital because its grain size is greatest where associated with the coarsest quartz grains. Also the grains have abrupt edges at their ends & do not grade into matrix mud. Rare feldspar.
5.	Muscovite		
1.	Biotite		
79.	Mud		
.5	Feldspar		

Location 0043

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0043
Road cutting

WAGGA WAGGA NSW GDM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5079
6110510 m N 35.14690 S latitude
550827 m E 147.5580 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: GENTLE TO MODERATE SLOPING UPLAND dip=84SW strike=136
Structure : STEEPLY DIPPING WITH MINOR FAULTS
Field Geology: Fine quartz greywacke, siltstone, micaceous slate, and graphitic slate.
Well bedded; planar bedded. Minor near-horizontal faults. Small
stratabound tension gashes filled with milky-white quartz.

Field Rockname: SAMPLE WA0043 SILTSTONE

PHYSICAL PROPERTIES: SILTSTONE

DENSITIES
Whole rock density = 2.56
Dry density =
Grain density =
Porosity =
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Siltstone
FABRIC: Laminated to thin bedded, poorly sorted.
Est. % MINERAL: Variable grain size in sand to silt fraction, though mainly silty.
60. Quartz
20. Muscovite Laminae defined by small differences in grain size & by layers of
5. Biotite different composition. Biotite is larger than adjacent quartz grains and
2. Opaque is apparently porphyroblastic. The muscovite occurs as euhedral laths of
12. Mud random orientation & though abundant it does not define a foliation.
1. Graphite

Location 0044

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0044

Outcrop

HAGGA HAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5071
6118820 m N 35.07267 S latitude
534098 m E 147.3740 E longitude

Illustrations :

Age/Unit=

WANTABDGERY GRANITE

Topography: GENTLY SLOPING LOWLAND WITH OUTCROP.TORS dip= strike=

Structure: PLUTON

Field Geology: Granite. Medium to coarse-grained. Mesocratic; equigranular. Numerous biotite-rich xenoliths. Rare muscovite present.

Field Rockname: SAMPLE HA0044 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.65
Dry density = 2.66
Grain density = 2.70
Porosity = 1.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 236
from 62 to 477, SD= 158
Laboratory susceptibility = 50
Remanence = 2.00
Koenigsberger ratio = .67

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.27	.43	14.37	3.00	.05	1.17	1.44	1.79	5.75	.26	.03	.80	99.36

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	916	8	45	11	39	39	49	-3	10	16	51	195

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	22	131	-5	8	4	46	-5	27	34	135

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Granite	Hypidiomorphic granular
40.	Orthoclase		Slightly phenocrystic in altered zoned plagioclase & poikilitic orthoclase with large patches of quartz interconnected throughout rock.
15.	Plagioclase		Deep brown, less pleochroic biotites have radioactive inclusions. Other
10.	Biotite		biotite is strongly pleochroic in yellow to red-brown & lacks radio-
6.	Muscovite		active inclusions. Biotites partially chloritised in a few specimens.
2.	Chlorite		Muscovite & chlorite pseudomorph other minerals & muscovite is
1.	Apatite		also an accessory igneous mineral. A few small grains of tourmaline.
.1	Tourmaline		Ubiquitous small apatite euhedra and rare zircons.
1.	Opaque		
.001	Zircon		

Location 0045

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0045
Outcrop

INCLUDES MAGNETOMETER TRAV FROM 35.061-147.247 TO 35.064-147.286
WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5043
6119244 m N 35.06910 S latitude
525592 m E 147.2807 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: GENTLY TO MODERATELY SLOPING RANGE dip=82NE strike=168
Structure : STEEPLY DIPPING ORDOVICIAN ADJACENT TO PLUTON. CONTACT OBSCURED
Field Geology: Sparse outcrops of coarse-grained porphyritic granite with small biotite
-rich xenoliths flanked to east by andalusite-muscovite-graphite slate,
siltstone, and quartzite all interbedded. Largely obscured by thick
colluvium. Source of magnetic anomaly not exposed.
Field Rockname: SAMPLE WA0045 MICACEOUS SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES SILTSTONE
Whole rock density = 2.36
Dry density = 2.38
Grain density = 2.76
Porosity = 14.0

MAGNETIC SUSCEPTIBILITY (S.I.*.00000?)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 46
Remanence = 5.00
Koenigsberg ratio = 1.81

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Siltstone
FABRIC: Poorly sorted, slightly veined by tiny quartz veinlets, massive.
50. Quartz Very weathered rock. Muscovite is very fine & mainly parallel to
15. Chlorite bedding. Opaques possibly pseudomorph tiny pyrite crystals.
10. Muscovite
3. Opaque
22. Mud

Location 0046

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0046
Outcrop

WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5156
6099684 m N 35.24538 S latitude
529013 m E 147.3189 E longitude

Illustrations :

Age/Unit=
Topography: DISSECTED MODERATE TO GENTLE UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granite. Coarse-grained, inequigranular, leucocratic, muscovite-bearing.

Field Rockname: SAMPLE WA-0046 MUSCOVITE GRANITE

PHYSICAL PROPERTIES:	GRANITE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
DENSITIES			
Whole rock density = 2.72		Mean of 5 in-situ readings = 0	Ch.1=
Dry density = 2.60		from to SD=	Ch.2= % K20
Grain density = 2.63		Laboratory susceptibility = 100	Ch.3= ppm U
Porosity = 1.1		Remanence = .00	Ch.4= ppm Th
		Koenigsberger ratio = 0.00	U/Th=
			Heat generation units

CHEMISTRY:														
MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM	
Weight %	73.06	.14	14.98	1.28	.02	.29	.59	3.09	5.38	.31	.04	.60	99.77	
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb		
p.p.m.	209	9	38	6	8	-5	20	-3	18	11	44	391		
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr			
p.p.m.	5	25	49	-5	5	26	7	-5	15	42	51			

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Granite
	FABRIC:	Hypidiomorphic granular
Est. %	MINERAL	Zoned euhedral plagioclase phenocrysts slightly altered to sericite.
30.	Quartz	Abundant quartz occurs as interconnected patches throughout the rock.
35.	Orthoclase	It is strained & has sutured grain boundaries where adjacent to
5.	Microcline	other quartz crystals. Quartz is also slightly fractured. Biotites show
20.	Plagioclase	variable degrees of alteration due to surface weathering & partial
5.	Biotite	chloritisation & muscovitisation. Rare accessory topaz & tourmaline.
4.	Muscovite	Muscovite pseudomorphs after cordierite, a few relicts of which remain
1.	Chlorite	in a few places.
.1	Topaz	
.1	Opaque	
.1	Tourmaline	

Location 0047

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0047

Outcrop

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5100

6080829 m N 35.41513 S latitude

536887 m E 147.4063 E longitude

Illustrations :

Age/Unit=

Topography: RUGGED UPLAND WITH TORS

dip= strike=

Structure : PLUTON

Field Geology: Granite. Medium-grained, equigranular, mesocratic, with abundant biotite

. Minor pegmatite phases and quartz-tourmaline intergrowths.

Field Rockname: SAMPLE WA0047 BIOTITE GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.67
Dry density = 2.57
Grain density = 2.63
Porosity = 2.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 58
Remanence = .20
Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.96	.14	13.44	1.37	.04	.21	.73	3.21	4.93	.13	.04	.30	99.52

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	160	7	35	4	9	14	23	-3	11	11	34	338

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	17	30	5	6	11	10	-5	32	27	69

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
35.	Quartz	Granite	Porphyritic; hypidiomorphic granular
35.	Orthoclase		Biotite shows considerably variable alteration. Some specimens fresh & others partially altered to chlorite or oxidised to chlorite with liberations of opaque oxide along cleavages. The quartz is fractured & slightly strained. Minor patchy tourmaline clusters, & rare topaz.
15.	Plagioclase		
2.	Tourmaline		
7.	Biotite		
2.	Muscovite		
.1	Topaz		
3.	Chlorite		
1.	Opaque		

Location 0048

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0048
Outcrop

WAGGA WAGGA NSW GDOM=Z
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5005
6092287 m N 35.31248 S latitude
506517 m E 147.0717 E longitude

Illustrations :

Age/Unit= Upper Devonian
Topography: RUGGED STRIKE RIDGE UPLAND dip=20W strike=015
Structure : MODERATELY TILTED
Field Geology: Sandstone; stained purplish, red, and yellowish-brown by weathering.
Mostly fine-grained, and well bedded in thin to medium bedded units.
Minor medium and coarse-grained sandstone with ferruginised,
intraformational clay pellets.
Field Rockname: SAMPLE WA0048 RED QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES: SANDSTONE

DENSITIES
Whole rock density = 2.53
Dry density =
Grain density =
Porosity =
MAGNETIC SUSCEPTIBILITY (S.I.=.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartzose sandstone
FABRIC: Sub-angular grains; moderately sorted.
Est. % MINERAL QUANTITIES: Subangular quartz grains tightly packed with thin chlorite-rich mud matrix. ?Feldspar grains partially altered to clay. Opaque is mainly a secondary weathering product. Traces of detrital tourmaline and muscovite.
87. Quartz
5. Feldspar
.01 Tourmaline
.01 Muscovite
3. Opaque
5. Matrix

Location 0049

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0049

Outcrop

COOTAHUNDRRA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6137757 m N air-photo:run-no.= 8-5104
530797 m E 34.90202 S latitude
147.3371 E longitude

Illustrations :

Age/Unit=

WANTABDGERY GRANITE

Topography:

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Equigranular to slightly porphyritic in feldspar.
Melanocratic due to abundant biotite and biotite-rich xenoliths.
Medium-grained.

Field Rockname: SAMPLE CT0049 ADAMELLITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.69
Dry density = 2.68
Grain density = 2.71
Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 190
Remanence = -30
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.34	.66	15.06	4.42	.07	1.95	2.66	2.52	3.13	.16	.04	.60	99.62
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	429	-6	57	21	57	20	50	-3	10	32	27	161	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	7	111	-5	15	5	69	-5	31	50	165		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Adamellite	Hypidiomorphic granular
35.	Plagioclase		Large red brown biotites with pleochroic haloes after radioactive inclusions. Also yellowish-brown biotites with variable degrees of chloritisation & bent cleavages. Slight oxidation of some biotites.
20.	Orthoclase		Chlorite-muscovite microxenoliths after cordierite clusters. Trace apatite and zircon. K-feldspar partially altered to clay.
15.	Biotite		
3.	Chlorite		
2.	Muscovite		
.1	Apatite		
.1	Opaque		

Location 0050

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0050

Rail cutting

COOTAMUNDRA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5241

6147152 m N

34.81743 S latitude

526101 m E

147.2854 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOWLAND MAINLY FLAT

dip=81SW strike=145

Structure : VERTICALLY DIPPING

Field Geology: Slate and siltstone. Andalusite-bearing in places. Muscovite and graphite-rich in places. Planar and thin bedded. Deeply weathered.

Field Rockname: SAMPLE CT0050 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES

Whole rock density =

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:	
		Siltstone		
		Massive		
55.	Quartz			Quartz-rich, fine-grained, massive sediment with randomly-oriented
3.	Plagioclase			muscovite laths. Some thin smears of mud of chloritic appearance
30.	Muscovite			disseminated throughout rock.
2.	Opaque			
10.	Mud			

Location 0051

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0051

Rail cutting

COOTAMUNDRA

NSW GDOM-2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5241
6146846 m N 34.82010 S latitude
529310 m E 147.3205 E longitude

Illustrations :

Age/Unit= HANTABADGERY GRANITE
Topography: FLAT LOWLAND COVERED BY COLLUVIUM dip= strike=
Structure : PLUTON
Field Geology: Cloddy lateritic soil largely covering underlying rocks. Weathered
granite floaters and quartz float eroding from soil, and indicative of
subcropping leuco granite. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SU=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0052

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0052
Outcrop

COOTAMUNDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5237
6151910 m N 34.77323 S latitude
557619 m E 147.6297 E longitude

Illustrations :

Age/Unit= WANTABADGERY GRANITE
Topography: dip= strike=
Structure : PLUTON
Field Geology: Granite. Leucocratic with only 1% dark minerals, very weathered, very quartz rich, medium-grained, even-grained, non-porphyrific.

Field Rockname: SAMPLE CT0052 GRANITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SIUM
Weight %	76.29	.19	12.81	1.10	.03	.14	.27	3.91	4.52	.03	.03	.30	99.62

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	861	-6	50	6	9	-5	50	-3	16	7	22	109

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-5	108	-5	10	5	7	-5	16	31	118

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Hypidiomorphic granular
Est. % MINERAL: Very weathered specimen with biotite partially broken down to opaque oxides, & feldspar altered to clay & sericite. Quartz has ragged edges & minor resorption.
40. Quartz
40. Orthoclase
19. Plagioclase
1. Biotite
.01 Zircon
.1 Muscovite

Location 0053

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0053

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5237

6154662 m N

34.74842 S latitude

557454 m E

147.6277 E longitude

Illustrations :

Age/Unit=

WANTABDGERY GRANITE

Topography:

dip= strike=

Structure: PLUTON

Field Geology: Granite. Equigranular, medium-grained. Leucocratic. Clay-filled joints with thin smears of epidote indicating slight alteration.

Field Rockname: SAMPLE CT0053 FELSITIC GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.51
Dry density = 2.46
Grain density = 2.63
Porosity = 6.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=

Laboratory susceptibility = 35
Remanence = 2.50
Koenigsberger ratio = 1.19

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.08	.16	12.43	.73	.01	.03	.20	4.03	4.64	.03	.02	.30	99.64

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	808	-6	58	-1	.5	-5	91	-3	14	7	17	107

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	4	-5	73	-5	16	-3	6	-5	47	19	108

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
40.	Quartz	Granite	Aplitic Medium grained, even grained. Quartz has ragged edges & slightly embayed margins suggestive of high-level crystallisation. Perthitic orthoclase is altered to clay & trace sericite. Biotite largely altered with oxidation to ilmenite & non resolvable opaque. Trace muscovite & zircon.
35.	Orthoclase		
24.	Plagioclase		
.5	Biotite		
.1	Ilmenite		
.1	Muscovite		
.01	Zircon		
.4	Opaque		

Location 0054

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0054

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5237

6152841 m N

34.76472 S latitude

559565 m E

147.6509 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian

Topography:

dip= strike=

Structure : SWARM OF VEINS

Field Geology: Quartzite and gossanous quartzite, brecciated in places and occurring as a vein swarm within non-exposed ?igneous rocks.

Field Rockname: SAMPLE CT0054 FRACTURED VEIN ROCK

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density = 2.46

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K20

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartzite

FABRIC: Veined, with minor microbrecciation

Est. X MINERAL FABRIC: A massive chaledonic rock cut by a network of microveinlets containing
89. Quartz
1. Muscovite
5. Limonite
5. Hematite
limonite and earthy hematite.

Location 0055

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0055
Outcrop

COOTAMUNDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5237
6149284 m N 34.79677 S latitude
559981 m E 147.6557 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian
Topography: dip=90 strike=150
Structure : STEEPLY DIPPING
Field Geology: Shale, slate, siltstone, greywacke. Micaceous throughout. Thin to
medium and planar bedded. Deeply weathered. No sample collected.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0056

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0056
Quarry

SAME LOCATION AS 0057
JERILDERIE

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6072068 m N air-photo:run-no.= 4-45
432335 m E 35.49250 S latitude
146.2540 E longitude

Illustrations :

Age/Unit= Quaternary
Topography: FLAT dip= strike=
Structure : INDETERMINATE ?HORIZONTAL
Field Geology: Clay. Massive with vertical joints. At least 10 m thick.

Field Rockname: SAMPLE JE0056 CLAY

PHYSICAL PROPERTIES: CLAY

DENSITIES

Whole rock density = 1.86
Dry density = 1.79
Grain density = 2.64
Porosity = 32.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 30
Remanence = .10
Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY

Ch.1= 67794
Ch.2= 3454 1.22 % ±20
Ch.3= 1622 2.87 ppm U
Ch.4= 1919 37.40 ppm Th
U/Th= .08
8.42 Heat generation units

Location 0057

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0057

SAME LOCATION AS 0056

Quarry

JERILDERIE

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-45
6072068 m N 35.49250 S latitude
432335 m E 146.2540 E longitude

Illustrations :

Age/Unit= Tertiary?

Topography: FLAT

dip= strike=

Structure : INDETERMINATE ?HORIZONTAL

Field Geology: Clay. Massive with vertical joints. At least 10 m thick.

Field Rockname: SAMPLE JE0057 SOIL

PHYSICAL PROPERTIES:

SOIL

DENSITIES
Whole rock density = 1.78
Dry density = 1.70
Grain density = 2.64
Porosity = 35.6

MAGNETIC SUSCEPTIBILITY (S.I.*.0J0001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 65
Remanence = .20
Koenigsberger ratio = .05

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Consolidated soil	Unsorted
15.	Quartz		Ragged & slightly embayed quartz fragments & minor quartzose lithic
5.	Muscovite		fragments randomly dispersed through a matrix of fine quartz, muscovite
.5	Rock fragments		& hematite with clay & tiny ?carbonaceous clots.
15.	Hematite		
60.	Matrix		
4.	Opaque		

Location 0058

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0058
 Quarry

JERILDERIE NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-160
 6050882 m N 35.68000 S latitude
 392766 m E 145.8150 E longitude

Illustrations :

Age/Unit= BERRIGAN GRANITE
 Topography: TORS SURROUNDED BY LOWLAND dip= strike=
 Structure : PLUTON
 Field Geology: Granite. Pink. Inequigranular, porphyritic in orthoclase, and coarse-grained. Leucocratic with scattered biotite, some of which is weakly chloritised. Quartz-rich.

Field Rockname: SAMPLE JE0058 GRANITE

PHYSICAL PROPERTIES:

	GRANITE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
DENSITIES			
Whole rock density = 2.62		Mean of 0 in-situ readings =	Ch.1= 60773
Dry density = 2.62		from to ;SD=	Ch.2= 5342 4.54 X K2O
Grain density = 2.62		Laboratory susceptibility = 4000	Ch.3= 1032 2.62 ppm U
Porosity = .2		Remanence = 71.00	Ch.4= 1154 22.42 ppm Th
		Koenigsberger ratio = .30	U/Th= .12
			6.48 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.93	.23	12.03	1.70	.03	.29	1.23	3.29	4.19	.06	.05	.30	99.34
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	690	7	89	5	5	-5	69	5	13	-5	17	135	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	5	89	-5	12	8	17	-5	21	30	160		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Granite
35.	Quartz	FABRIC:	Porphyritic; hypidiomorphic granular
40.	Orthoclase		Large phenocrysts of orthoclase, perthitic & rimmed with graphic
19.	Plagioclase		intergrowth of quartz-orthoclase on some margins. Granophyric texture
5.	Biotite		confined to interstitial areas. Biotite is greenish & mostly unaltered.
1.	Muscovite		though some crystals are quite chloritised. Trace zircon and
.01	Zircon		muscovite. Cores of some plagioclases are weakly calcitised.
.1	Opaque		
.5	Chlorite		

Location 0059

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0059
Quarry

SAME LOCATION AS 0060
JERILDERIE

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6042339 m N air-photo:run-no.= 7-182
375688 m E 35.75500 S latitude
145.6250 E longitude

Illustrations :

Age/Unit: TOCUMNAL GRANITE
Topography: EXFOLIATED GENTLE DOME-SHAPED RISE dip= strike=
Structure : PLUTON
Field Geology: Granite. Inequigranular, porphyritic in quartz and orthoclase, coarse-grained. Leucocratic with scattered biotite and trace muscovite. Some biotite is chloritised.

Field Rockname: SAMPLE JE0059 GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 2.62
Dry density = 2.59
Grain density = 2.61
Porosity = 1.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 95
Remanence = .60
Koenigsberger ratio = .11

GAMMA-RAY SPECTROMETRY
Ch.1= 65251
Ch.2= 5836 5.10 % K2O
Ch.3= 1213 8.34 ppm U
Ch.4= 910 17.18 ppm Th
U/Th= .49
9.26 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.36	.30	13.35	2.28	.04	.39	1.50	3.30	4.15	.10	.06	.10	99.92
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	413	-6	69	6	6	10	37	-3	11	13	24	190	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	-5	76	6	20	6	18	-5	56	48	159		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Granite	FABRIC: Porphyritic; hypidiomorphic granular
40.	Quartz		Large phenocrysts of altered perthitic orthoclase slightly altered to clay, sericite & minor muscovite. Smaller microcline and plagioclase. Biotite is red-brown variety with abundant inclusions of apatite and zircon. Minor slightly chloritised biotite.
45.	Orthoclase		
9.	Plagioclase		
5.	Biotite		
1.	Muscovite		
.001	Zircon		
.1	Apatite		

Location 0060

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0060

SAME LOCATION AS 0059

Quarry

JERILDERIE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-182

6042339 m N

35.75500 S latitude

375688 m E

145.6250 E longitude

Illustrations :

Age/Unit=

TOCUMMAL GRANITE

Topography: EXFOLIATED GENTLE DOME-SHAPED RISE

dip= strike=

Structure : PLUTON

Field Geology: Granite. Inequigranular, porphyritic in quartz and orthoclase, coarse-grained. Leucocratic with scattered biotite and trace muscovite. Some biotite is chloritised.

Field Rockname: SAMPLE JE0060 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES

Whole rock density = 2.65

Dry density = 2.61

Grain density = 2.61

Porosity = .2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility = 90

Remanence = .10

Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K20

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT

Weight %

SiO2

72.82

TiO2

.30

Al2O3

13.79

Fe2O3

2.31

MnO

.04

MgO

.39

CaO

1.49

Na2O

3.39

K2O

4.58

P2O5

.09

SO3

.05

LOI

.10

SUM

99.34

TRACE ELEMENT

p.p.m.

Ba

636

Bi

-6

Ce

66

Co

6

Cr

10

Cu

-5

La

44

Mo

-3

Nb

11

Ni

12

Pb

25

Rb

201

TRACE ELEMENT

p.p.m.

Sc

7

Sn

10

Sr

82

Ta

5

Th

15

U

6

V

19

W

-5

Y

53

Zn

44

Zr

154

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %

MINERAL

NAME:

Granite

FABRIC:

Hypidiomorphic granular

60.

Quartz

Large patches of interconnected, fractured, unstrained to slightly

25.

Orthoclase

strained quartz show minor resorption along margins and

8.

Plagioclase

preconsolidation fractures. The filling is now k-feldspar. The

5.

Biotite

plagioclase is shattered with tiny microfractures in places.

1.

Chlorite

Most biotites are unaltered & have numerous radioactive inclusions

.5

Muscovite

of zircon and apatite. Where chloritised, biotites have frequent zircon

.5

Opaque

close by.

.01

Zircon

.1

Apatite

Location 0061

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0061
Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5237
6149252 m N 34.79727 S latitude
556313 m E 147.6156 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian
Topography: LOWLAND WITH SLIGHT RISE dip= strike=
Structure :
Field Geology: Quartzite, pebbly quartzite and white quartz adjacent to greywacke.
Deeply weathered. No sample collected.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.60
Dry density = 2.58
Grain density = 2.60
Porosity = .7

QUARTZITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 219
from 0 to 1068 ,SD= 419
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0062

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0062

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5237

6144852 m N

34.83648 S latitude

564140 m E

147.7015 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian

Topography:

dip= strike=

Structure : CHAOTICALLY FOLDED STEEPLY DIPPING SEQUENCE. DIPS GREATER THAN 75.

Field Geology: Chert and argillaceous chert. Chaotically folded with randomly-oriented folds. Thin to medium bedded. No sample collected.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

Location 0063

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0063
Rail cutting

COOTAMUNDRA NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5235
6151022 m N 34.78008 S latitude
575338 m E 147.8234 E longitude

Illustrations :

Age/Unit= Lower Devonian BETHUNGRA FORMATION
Topography: MILDLY UNDULATING LOWLAND dip=55N strike=103
Structure : MODERATELY TO STEEPLY DIPPING
Field Geology: Mudstone, chert and minor siltstone. Mudstone is micaceous and variably siliceous. Poorly exposed. No sample collected.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0064

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0064

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5235

6152354 m N

34.76785 S latitude

578241 m E

147.2550 E longitude

Illustrations :

Age/Unit= Upper Silurian FRAMPTON VOLCANICS

Topography: EVENLY SLOPING TO SLIGHTLY RUGGED UPLAND dip=90 strike=175

Structure : CLEAVAGE PARALLEL TO FLOW BANDING

Field Geology: Ignimbrite. Porphyritic in quartz and feldspars set in an altered,
planar to wavy, fine-grained quartzo-feldspathic groundmass.

Field Rockname: SAMPLE CT0064 IGNIMBRITE

PHYSICAL PROPERTIES:

TUFF

DENSITIES
Whole rock density = 2.66
Dry density = 2.65
Grain density = 2.66
Porosity = .5

MAGNETIC SUSCEPTIBILITY (S.I.+000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 3600
Remanence = 135.00
Koenigsberger ratio = .63

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.03	.38	13.44	2.45	.05	.55	.96	2.16	5.64	.14	.03	1.10	99.92

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	818	-6	71	9	16	20	41	-3	7	12	33	238

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	117	-5	17	5	28	11	40	39	216

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. X MINERAL NAME: Ignimbrite
FABRIC: Devitrified eutaxitic

10. Quartz Phenocrysts of fractured & rounded, volcanic quartz with numerous embayments, altered orthoclase & altered plagioclase, set in fine-grained, devitrified groundmass with abundant smaller crystal fragments & relict biotites completely leached & oxidised to magnetite & goethite.

8. Orthoclase The relict biotites are oriented parallel to flow banding. Minor granulation of quartz phenocrysts in "pressure shadows". Partial separation of muscovite from other mineral phases of groundmass.

6. Plagioclase Muscovite has crystallised parallel to flow banding.

1. Muscovite

2. Magnetite

73. Groundmass

Location 0065

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0065
 Outcrop

COOTAMUNDRA NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5235
 6152770 m N 34.76402 S latitude
 579343 m E 147.8670 E longitude

Illustrations :

Age/Unit= Upper Silurian FRAMPTON VOLCANICS
 Topography: MODERATELY SLOPING UPLAND RISING TO EAST dip= strike=
 Structure :
 Field Geology: Ignimbrite with small ?dolerite sill. Ignimbrite has abundant feldspar
 and lesser quartz phenocrysts set in a fine-grained groundmass. Numerous
 dark mineral clots and streaks flattened parallel to flow banding.

Field Rockname: SAMPLE CT0065 IGNIMBRITE

PHYSICAL PROPERTIES: IGNIMBRITE
 DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
 Whole rock density = 2.70 Ch.1=
 Dry density = 2.67 Mean of 0 in-situ readings = Ch.2= % K2O
 Grain density = 2.69 from to SD= Ch.3= ppm U
 Porosity = .7 Laboratory susceptibility = 240 Ch.4= ppm Th
 Remanence = .30 U/Th=
 Koenigsberger ratio = .02 Heat generation units

CHEMISTRY:		SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
MAJOR ELEMENT	Weight %	71.00	.59	13.89	3.66	.06	.93	1.78	2.50	4.35	.16	.03	.90	99.84
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb		
p.p.m.	905	-6	76	10	20	31	59	4	13	10	33	177		
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr			
p.p.m.	10	-20	154	-5	17	4	53	6	42	53	287			

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Ignimbrite	
5.	Quartz	Devitirified eutaxitic	
2.	Orthoclase	Phenocrysts of embayed volcanic quartz with wide, curved fractures	
18.	Plagioclase	filled with devitirified glass. Also extensively altered, rounded, zoned	
65.	Groundmass	plagioclase & minor altered orthoclase phenocrysts. Chlorite & geothite-	
1.	Hematite	hematite streaks & clusters delineate former unaltered ferromagnesian	
5.	Chlorite	mineral phenocrysts. Groundmass consists of ultrafine quartz, feldspar,	
4.	Goethite	opaque dust & chlorite.	

Location 0066

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0066

SAME LOCATION AS 0067

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5067

6154565 m N 34.74772 S latitude

580795 m E 147.8827 E longitude

Illustrations :

Age/Unit=

WEEDALLION GRANOPHYRE

Topography: SMOOTH UPLAND SURROUNDED BY RUGGED RANGE dip= strike=

Structure : PLUTON WITH FISSURES STRIKING 170 AND DIPPING VERTICALLY

Field Geology: Granophyre. Inequigranular. Porphyritic in quartz. Medium-grained. Leucocratic. Variable-texture. Slightly altered with minor chlorite and muscovite. Linedated to massive. Cut by fissures of biotitite rock with slickensides along walls. Interpreted as a high-level pluton.

Field Rockname: SAMPLE CT0066. GRANOPHYRE

PHYSICAL PROPERTIES:

GRANOPHYRE

DENSITIES
 Whole rock density = 2.60
 Dry density = 2.52
 Grain density = 2.58
 Porosity = 2.4

MAGNETIC SUSCEPTIBILITY (S.I.+000001)

Mean of 0 in-situ readings =
 from to ,SD=
 Laboratory susceptibility = 60
 Remanence = .30
 Koenigsberger ratio = .08

GAMMA-RAY SPECTROMETRY

Ch.1=
 Ch.2=
 Ch.3=
 Ch.4=
 U/Th=
 Heat generation units

% K20
 ppm U
 ppm Th

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.84	.12	12.20	.84	.01	.06	.28	2.94	5.58	.04	.06	.20	99.17
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	208	-6	64	3	3	-5	46	3	9	8	21	239	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	-5	18	-5	27	8	7	-5	41	-5	91		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granophyre	
		Granophyric	
10.	Quartz		Patches of lenticular quartz grain aggregates resembling elongate
15.	Plagioclase		phenocrysts, as well as altered plagioclase phenocrysts, embayed in
70.	Groundmass		places. The quartzes show sutured grain contacts & considerable strain
2.	Chlorite		extinction. The groundmass consists of micrographic quartz and alkali
1.	Muscovite		feldspar within which secondary chlorite & goethite pseudomorph original
2.	Goethite		ferromagnesian minerals which include former biotite. Minor interstitial
.01	Hematite		patches of muscovite & chlorite.

Location 0067

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

ND.=(7962)0067
Outcrop

SAME LOCATION AS 0066

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5067
6154569 m N 34.74768 S latitude
580795 m E 147.8827 E longitude

Illustrations :

Age/Unit= WEEDALLION GRANOPHYRE
Topography: SMOOTH UPLAND SURROUNDED BY RUGGED RANGE dip= strike=
Structure: PLUTON WITH FISSURES STRIKING 170 AND DIPPING VERTICALLY
Field Geology: Granophyre. Inequigranular. Porphyritic in quartz. Medium-grained.
Leucocratic. Variable-texture. Slightly altered with minor chlorite and
muscovite. Linedated to massive. Cut by fissures of biotite rock with
slickensides along walls. Interpreted as a high-level pluton.
Field Rockname: SAMPLE CT0067 BIOTITITE

PHYSICAL PROPERTIES:

BIOTITITE

DENSITIES
Whole rock density = 2.71
Dry density = 2.70
Grain density = 2.82
Porosity = 4.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 830
Remanence = 1.90
Koenigsberger ratio = .04

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	48.31	1.90	14.52	20.74	.13	4.35	.15	.01	3.50	.22	.02	6.00	99.84
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	441	-6	151	99	141	133	118	5	7	49	7	430	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	33	-20	3	-5	6	5	270	-5	124	77	142		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
5.	Quartz	Biotite	Planar layered
90.	Biotite		
5.	Sericite		
.5	Hematite		

Wavy microlayering defined by thin flattened lenticles of quartz-sericite, & patches of quartz within monominerallic weathered biotite. Found as veins in granophyre.

Location 0068

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0068

Outcrop

COOTAMUNDRA

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5067

6154548 m N

34.74790 S latitude

580475 m E

147.8792 E longitude

Illustrations :

Age/Unit= Upper Silurian

FRAMPTON VOLCANICS

Topography: RUGGED UPLAND

dip= strike=

Structure : NEAR VERTICAL

Field Geology: Ignimbrite. Phenocrysts of feldspar set in a fine-grained groundmass. Flow banding defined by variations in proportion of quartz and feldspar between layers, and by different sizes of phenocrysts. Some augen-like quartzo-feldspathic xenoliths or segregations. Sample missing.

Field Rockname:

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density =

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Max of 0 in-situ readings =

from to SD=

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

Location 0069

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0069
Outcrop

COOTAMUNDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5231
6143709 m N 34.84322 S latitude
606668 m E 146.1667 E longitude

Illustrations :

Age/Unit= Upper Silurian BLOWERING BEDS dip= strike=
Topography:
Structure :
Field Geology: Ignimbrite. Densely porphyritic in quartz and feldspar phenocrysts set
in a fine-grained quartzo-feldspathic groundmass. Sample missing.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

IGNIMBRITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0070

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0070
Outcrop

SAME LOCATION AS 0071 AND 0072
COOTAMUNDRA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6144370 m N 34.83705 S latitude air-photo:run-no.= 7-5231
608661 m E 148.1884 E longitude

Illustrations :

Age/Unit= COOLAC SERPENTINITE
Topography: RUGGED UPLAND dip= strike=
Structure : VERTICAL
Field Geology: Serpentinite. 300m wide. Texture varies from massive to schistose. At its western contact there is a body of ignimbrite.

Field Rockname: SAMPLE CT0070 SERPENTINITE

PHYSICAL PROPERTIES:

	SERPENTINITE		
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.34		Mean of 14 in-situ readings = 33381	Ch.1=
Dry density = 2.30		from 15456 to 81681 .SD= 17941	Ch.2= X K20
Grain density = 2.69		Laboratory susceptibility = 51000	Ch.3= ppm U
Porosity = 14.9		Remanence = 1300.00	Ch.4= ppm Th
		Koenigsberger ratio = .42	U/Th=
			Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Serpentinite
		FABRIC:	Massive
35.	Antigorite		A layered & veined rock. Layering defined by differences in grain size & by presence & absence of different minerals & variable proportions of them. Veins of asbestiform? anthophyllite & minor talc.
2.	Talc		
8.	Epidote		
12.	Anthophyllite?		Remainder of rock consists mainly of antigorite and chrysotile. Epidote pseudomorphs a former ferromagnesian mineral. Rare chromite accompanies some magnetite grains.
2.	Magnetite		
.01	Chromite		
40.	Chrysotile		

Location 0071

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0071
Outcrop

SAME LOCATION AS 0070 AND 0072

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5231

6144370 m N

34.83705 S latitude

608661 m E

148.1884 E longitude

Illustrations :

Age/Unit=

COOLAC SERPENTINITE

Topography: RUGGED UPLAND

dip= strike=

Structure: VERTICAL

Field Geology: Serpentinite. 300m wide. Texture varies from massive to schistose. At its western contact there is a body of ignimbrite.

Field Rockname: SAMPLE CT0071 ORIENTED SERPENTINITE WITH MAG SUSC OF 3200

PHYSICAL PROPERTIES:

SERPENTINITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.64

Dry density = 2.58

Grain density = 2.69

Porosity = 4.5

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 43000

Remanence = 2250.00

Koenigsberger ratio = .87

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: FABRIC:

75. Antigorite
20. Anthophyllite
3. Magnetite
2. Chrysotile
.01 Chromite

Serpentinite
Massive

A meshwork of lamellar antigorite blades with antigorite-magnetite pseudomorphs of a former ferromagnesian mineral. Disrupted by veinlets and patches of ?anthophyllite. Rare chromite fringed by magnetite.

Location 0072

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0072

SAME LOCATION AS 0070 AND 0071

Outcrop

COOTAHUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5231
6144294 m N 34.83778 S latitude
608239 m E 148.1838 E longitude

Illustrations :

Age/Unit= Upper Silurian

BLOWERING BEDS

Topography: RUGGED UPLAND

dip= strike=

Structure : VERTICAL

Field Geology: Serpentinite. 300m wide. Texture varies from massive to schistose. At its western contact there is a body of ignimbrite belonging to Blowering Beds.

Field Rockname: SAMPLE CT0072 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES
Whole rock density = 2.70
Dry density = 2.67
Grain density = 2.68
Porosity = .3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 200
Remanence = .30
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.77	.61	13.55	4.35	.08	1.65	2.06	3.30	3.02	.13	.08	1.30	99.88

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	578	-6	68	17	43	32	66	3	7	16	30	115

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	15	-20	214	-5	13	3	79	10	40	57	192

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Igimbrite	Devitrified eutaxitic
39.	Plagioclase		Phenocrysts of volcanic quartz, strained, with embayed margins, and phenocrysts of fractured altered plagioclase set in a fine-grained groundmass with abundant small crystal fragments. Relict biotites are largely altered to chlorite. Trace xenoliths of quartzite & calcite aggregates.
30.	Groundmass		
5.	Biotite		
.1	Calcite		
.1	Muscovite		
5.	Chlorite		
1.	Goethite		
.01	Hematite		

Location 0073

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0073

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5229

6140374 m N

34.87260 S latitude

613019 m E

148.2366 E longitude

Illustrations :Photomicrograph

Age/Unit=

YOUNG GRANODIORITE

Topography:

dip= strike=

Structure : PLUTON

Field Geology: Granodiorite. Inequigranular. Porphyritic in plagioclase. Medium to coarse-grained. Melanocratic due to abundant biotite and biotite-rich, fine-grained xenoliths.

Field Rockname: SAMPLE CT0073 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES

Whole rock density = 2.88

Dry density = 2.65

Grain density = 2.71

Porosity = 2.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 210

Remanence = 1.60

Koenigsberger ratio = .13

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th= Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.80	.75	15.29	5.27	.06	1.96	3.22	2.49	3.21	.15	.02	.70	99.90

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	596	-6	84	17	48	62	53	-3	10	23	18	131

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	22	12	140	6	14	-3	98	-5	24	59	222

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granodiorite	
35.	Quartz	Hypidiomorphic granular	
40.	Plagioclase	Large patches of fractured quartz interconnected throughout the rock.	
15.	Orthoclase	Frequent altered plagioclase euhedra often zoned. Kaolinised orthoclase rimmed by secondary muscovite in optical continuity. Very minor	
9.	Biotite	alteration of biotite to chlorite in places. Biotites generally lack	
.5	Chlorite	radioactive inclusions.	
.1	Muscovite	Photograph chloritisation of biotite	
.5	Opaque		
.01	Hematite		

Location 0074

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0074
Outcrop

SAME LOCATION AS 0075

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5114
6137472 m N 34.89905 S latitude
610352 m E 148.2078 E longitude

Illustrations :

Age/Unit=

YOUNG GRANODIORITE

Topography:

dip= strike=

Structure : PLUTON

Field Geology: Altered dolerite and granite. Marginal phases of Young Batholith. The granite is porphyritic in plagioclase. Several bodies of variably altered dolerite present.

Field Rockname: SAMPLE CT0074 ALTERED DOLERITE

PHYSICAL PROPERTIES:

DOLERITE

DENSITIES
Whole rock density = 2.96
Dry density = 2.94
Grain density = 2.94
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 430
Remanence = 41.00
Koenigsberger ratio = 1.59

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Tremolite-epidote-plag rock	
40.	Tremolite		Poikilitic
29.	Epidote		
30.	Plagioclase		
1.	Muscovite		

Plagioclase aggregates, altered with partial epidote and calcite pseudomorphs. Large tremolite patches have undergone grain growth to single crystals in places. Minor asbestiform tremolite veinlets. Marginal phase of Young Granodiorite.

Location 0075

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0075
Outcrop

SAME LOCATION AS 0074
COOTA/MUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5114
6137472 m N 34.89905 S latitude
610352 m E 148.2078 E longitude

Illustrations :

Age/Unit=

YOUNG GRANODIORITE

Topography:

dip= strike=

Structure : PLUTON

Field Geology: Altered dolerite and granite. Marginal phases of Young Batholith. The granite is porphyritic in plagioclase. Several bodies of variably altered dolerite present.

Field Rockname: SAMPLE CT0075 DOLERITE

PHYSICAL PROPERTIES:

DOLERITE

DENSITIES
Whole rock density = 3.00
Dry density = 2.84
Grain density = 2.85
Porosity = .2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 260
Remanence = 3.20
Koenigsberger ratio = .21

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Dolerite
	FABRIC:	Sub-ophitic	
50.	Plagioclase	Uralitised dolerite with original pyroxenes converted to light green	
44.	Uralite	uralite. Veins of chlorite-epidote rock in places. Minor magnetite	
.5	Magnetite	altering to goethite. Very rare sphene euhedra.	
.5	Goethite		
5.	Epidote		
.01	Sphene		

Location 0076

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0076
Outcrop

COOTAMUNDRA NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5114
6130236 m N 34.96437 S latitude
609653 m E 148.2011 E longitude

Illustrations :

Age/Unit= NORTH MOONIE COMPLEX
Topography: UPLAND WITH MODERATE SLOPES dip= strike=
Structure :
Field Geology: Basalt. Deuterically-altered with vesicles of calcite and epidote.
Slightly porphyritic in altered ferromagnesian-mineral microphenocrysts
set in a light-green altered groundmass.

Field Rockname: SAMPLE CT0076 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 2.60
Dry density = 2.82
Grain density = 2.84
Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to .SD=
Laboratory susceptibility = 200
Remanence = 1.00
Koenigsberger ratio = .08

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Plagioclase	Altered Basalt	Porphyritic
10.	Actinolite	Relict plagioclase phenocrysts altered to scarcely resolvable epidote mosaics. Infrequent relict glomeroporphyritic actinolite pseudomorphing ?augite. Small vesicles of secondary quartz & less common epidote.	
5.	Epidote	Groundmass is very fine assembly of secondary minerals. Original textures difficult to discern, & much of it appears opaque. Minor relict	
5.	Quartz	groundmass plagioclase laths. A highly altered rock.	
5.	Chlorite		
50.	Groundmass		

Location 0077

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0077

Outcrop

CANBERRA BRINDABELLA NSW GDOM-1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
 6116033 m N 35.08830 S latitude
 642506 m E 148.5633 E longitude

Illustrations :

Age/Unit=

YOUNG GRANODIORITE

Topography: GENTLY SLOPING UPLAND

dip= strike=

Structure : PLUTON

Field Geology: Microgranitoid. Porphyritic with distinct laths of plagioclase. Melano-
 cratic due to fine grain size rather than great abundance of hornblende,
 biotite and minor magnetite. The groundmass is considerably-coarsened
 quartzo-feldspathic material, so the rock resembles microgranodiorite.

Field Rockname: SAMPLE CA0077 PORPHYRITIC MICROGRANODIORITE

PHYSICAL PROPERTIES:

MICRODIORITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.72

Dry density = 2.69

Grain density = 2.70

Porosity = .2

Mean of 4 in-situ readings = 40322

from 35814 to 49008, SD= 6119

Laboratory susceptibility = 33000

Remanence = 1000.00

Koenigsberger ratio = .51

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	63.86	.97	16.06	5.19	.19	1.48	4.56	3.81	3.13	.26	.03	.01	99.54

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	691	-6	80	8	4	18	55	4	11	11	16	93

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	20	6	559	-5	10	3	55	-5	32	71	178

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
8.	Quartz	Microdiorite	Porphyritic and glomeroporphyritic
80.	Plagioclase		Variably sized phenocrysts of slightly altered, zoned plagioclase, often in clusters as well as scattered phenocrysts of hornblende altering to secondary actinolite and tremolite. The fine-grained groundmass consists of a granular mosaic of plagioclase, quartz, lesser biotite, and accessory ilmenite, magnetite and sphene.
2.	Hornblende		
5.	Biotite		
.1	Sphene		
1.	Magnetite		
2.	Ilmenite		

Location 0078

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0078
Outcrop

CANBERRA BRINDABELLA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6118061 m N 35.07000 S latitude
642620 m E 148.5642 E longitude

Illustrations :

Age/Unit= YOUNG GRANODIORITE
Topography: EVENLY AND GENTLY SLOPING UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Medium to coarse-grained, inequigranular. Very weathered.
Not sampled.

Field Rockname: SAMPLE CA0078 WEATHERED GRANITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

GRANITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 13747
from 12943 to 15079 ,SD= 807
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0079

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0079
Outcrop

THIS LOCALITY REFERS TO GEOLOGY BETWEEN 0083 AND 0084
CANBERRA

NSW GDOM=1
air-photo:run-no.=
35.11810 S latitude
148.6519 E longitude

1:250,000 sheet area 1:100,000 sheet area
6112597 m N
650529 m E

Illustrations :

Age/Unit= Middle Devonian HATCHERY CREEK CONGLOMERATE
Topography: RUGGED DISSECTED LOWLAND dip= strike=
Structure :
Field Geology: Red conglomerate, sandstone and siltstone. Medium to thick bedded. Not
sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = .0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0080

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0080
Outcrop

CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6120196 m N 35.05070 S latitude
643028 m E 148.5683 E longitude

Illustrations :

Age/Unit: Tertiary
Topography: FLAT AREA WITHIN CONSIDERABLE UPLAND dip= strike=
Structure : HORIZONTAL FLOW
Field Geology: Basalt. Porphyritic in olivine which is clearly visible on weathered surfaces. Fine-grained basaltic groundmass.

Field Rockname: SAMPLE CA0080 BASALT

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 3.06
Dry density = 2.90
Grain density = 2.91
Porosity = .2

BASALT

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 4 in-situ readings = 27630
from 24944 to 31415 ,SD= 2853
Laboratory susceptibility = 22500
Remanence = 15000.00
Koenigsberger ratio = 11.11

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units.

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Olivine	Basalt	Porphyritic; trachytic
20.	Augite		Scattered phenocrysts of olivine, slightly altered to bowlingite along fractures. Scattered nepheline subhedra amongst laths of plagioclase
61.	Plagioclase		commonly oriented in subparallel fashion. Tiny interstitial pink titaniferous augite. Scattered ilmenite commonly with partly skeletal appearance. Accessory magnetite. Rare vesicles of chalcedony.
1.	Magnetite		
3.	Ilmenite		
.1	Chalcedony		
5.	Nepheline		

Location 0081

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0081
Outcrop

CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6113666 m N 35.11000 S latitude
639889 m E 148.5350 E longitude

Illustrations :

Age/Unit= YOUNG GRANODIORITE
Topography: GENTLY SLOPING UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adamellite, inequigranular, medium-grained, leucocratic though spotted
due to scattered biotite. Phase of Young Batholith.

Field Rockname: SAMPLE CA0081 GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 2.62
Dry density = 2.62
Grain density = 2.62
Porosity = .3
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to SD=
Laboratory susceptibility = 160
Remanence = .00
Koenigsberger ratio = 0.00
GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.17	.16	12.68	1.41	.03	.36	1.04	3.12	4.69	.06	.02	.20	99.93
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	408	-6	44	4	12	10	25	-3	7	11	40	178	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	9	-5	49	-5	14	3	20	-5	47	15	85		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
Est. % MINERAL FABRIC: Hypidiomorphic granular
40. Quartz Euhedral plagioclase, sericitized in cores, with clear secondary over-
35. Orthoclase growths. Interstitial orthoclase & patchy quartz which is strained
20. Plagioclase & has strong tendency to sub-grain formation. Trace muscovite and
5. Biotite chlorite. Biotite often shows thin marginal alteration to chlorite
.1 Muscovite & muscovite with opaque marginal dust.
.1 Chlorite
.5 Opaque

Location 0082

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0082

Road cutting

CANBERRA

1:250,000 sheet area 1:100,000 sheet area

NSW

GDOM=1

air-photo:run-no.=

6111865 m N

35.12500 S latitude

648521 m E

148.6300 E longitude

Illustrations :

Age/Unit= Middle Silurian GOOBARRAGANDRA VOLCANICS
Topography: RUGGED DISSECTED UPLAND AND LOWLAND dip= strike=
Structure : STEEPLY DIPPING BASED ON REGIONAL OBSERVATIONS
Field Geology: Ignimbrite. Porphyritic in quartz and feldspar phenocrysts set in a
fine-grained, epidote-bearing quartzo-feldspathic groundmass.

Field Rockname: SAMPLE CA0082 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES

Whole rock density = 2.70

Dry density = 2.67

Grain density = 2.68

Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 3 in-situ readings = 5822

from 5529 to 6031, SD= 261

Laboratory susceptibility = 5600

Remanence = 20.00

Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.37	0.20	12.19	2.26	0.18	0.13	3.54	4.11	0.29	0.06	0.08	0.60	100.02

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	271	-6	46	21	2	41	40	7	9	142	18	8

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	11	-20	262	4	46	-3	4	-5	31	12	262

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
40.	Quartz	Dacite
55.	Plagioclase	Porphyritic
5.	Epidote	Euhedral hexagonal and bipyramidal, as well as corroded quartz phenocrysts, commonly embayed and sparingly glomeroporphyritic, together with plagioclase phenocrysts, slightly altered and partially pseudomorphed by epidote. Rare pyrite microphenocrysts.
.5	Magnetite	The devitrified groundmass consists of a fine-grained mosaic of quartz and plagioclase with minor epidote pseudomorphs of a former ferro-magnesian mineral, and scattered magnetite anhedra.
.01	Pyrite	

Location 0083

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0083

Outcrop

CANBERRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6111992 m N 35.12380 S latitude
648869 m E 148.6338 E longitude

Illustrations :

Age/Unit= Middle Silurian

GOOBARRAGANDRA VOLCANICS

Topography:

dip= strike=

Structure: COMPLEXLY FOLDED ON SMALL-OUTCROP SCALE

Field Geology: Dacite. Very pure apart from tiny chlorite selvages. Chaotic mesoscopic
-scale folding. Ultrafine-grained; sparsely porphyritic.

Field Rockname: SAMPLE CA0083 DACITE

PHYSICAL PROPERTIES:

DACITE

DENSITIES
Whole rock density = 2.62
Dry density = 2.59
Grain density = 2.60
Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 907
from 0 to 1872, SD= 1049
Laboratory susceptibility = 1250
Remanence = 10.00
Koenigsberger ratio = .13

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Dacite	
1.	Plagioclase		Porphyritic; microstylolitic; shrinkage cracks present
10.	Quartz		Sparsely porphyritic in fractured sericitised plagioclase and rare quartz and pyrite microphenocrysts. The bulk of the rock consists of an ultrafine quartzo-feldspathic groundmass crossed by shrinkage cracks lined by chlorite and goethite. Ilmenite and goethite specks occur disseminated throughout.
1.	Chlorite		
.01	Pyrite		
1.	Ilmenite		
1.	Goethite		
85.	Groundmass		
.01	Epidote		

Location 0084

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0084

Outcrop

CANBERRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=

6113191 m N

35.11250 S latitude

652189 m E

148.6700 E longitude

Illustrations :

Age/Unit= Middle Devonian

GOODRADIGBEE LIMESTONE

Topography: RUGGED LOWLAND WITH BOLD OUTCROP

dip= strike=

Structure : MODERATELY DIPPING WITH PROMINENT STRIKE RIDGES

Field Geology: Limestone. Fine-grained with abundant bioclastic detritus. Minor calcite veins.

Field Rockname: SAMPLE CA0084 LIMESTONE

PHYSICAL PROPERTIES:

LIMESTONE

DENSITIES
Whole rock density = 2.75
Dry density = 2.70
Grain density = 2.70
Porosity = .1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ read
from to

Laboratory suscept 70
Remanence 1.60
Koenigsberger ratio .38

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Bioclastic limestone
99.	Calcite	FABRIC:	Poorly sorted
.5	Pyrite		Abundant brachiopod shell detritus with fragments of gastropod, crinoid & other organisms set in micrite matrix which is cloudy with mud impurities. Minor micro-stylolites with secondary iron oxides concentrated along them. Veins of sparry calcite in places.
.1	Hematite		

Location 0085

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0085
Outcrop

CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6115256 m N 35.09380 S latitude
652789 m E 148.6762 E longitude

Illustrations :

Age/Unit= Middle Devonian GOODRADIGBEE LIMESTONE
Topography: EVENLY SLOPING UNDULATING LOWLAND dip= strike=
Structure : MODERATELY DIPPING
Field Geology: Siltstone, fine lithic and quartzose sandstone, shale, and limestone.
Many beds are calcareous and richly fossiliferous. Well bedded. Finer-
grained units are slightly cleaved. Nct sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % k20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0086

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.-(7962)0086
Road cutting

AT WEE JASPER-GOODRADIGBEE RIVER BRIDGE JUNCTION

CANBERRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6113314 m N 35.11120 S latitude
653449 m E 148.6838 E longitude

Illustrations :

Age/Unit= Lower Devonian SUGARLOAF CREEK TUFF
Topography: RUGGED DISSECTED LOWLAND dip= strike=
Structure : MODERATELY DIPPING WITH CLEAVAGE
Field Geology: Siltstone. Tuffaceous, slightly cleaved, well bedded, massive within
beds; fossiliferous.

Field Rockname: SAMPLE CA0086 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.42
Dry density = 2.42
Grain density = 2.56
Porosity = 5.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 370
from 0 to 1256 ,SD= 436
Laboratory susceptibility = 150
Remanence = .00
Koenigsberger ratio = 0.00

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Epidote	Siltstone	Massive
5.	Plagioclase	Fragments of epidotised volcanic glass with scattered feldspathic and minor quartzose detritus in a mud matrix with graphite lamination. Very slightly cleaved shown by slightest rotation of graphite laminae.	
2.	Quartz	Greenish colour in mud suggests presence of non-discernible chlorite.	
10.	Graphite		
73.	Mud		

Location 0087

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0087

Quarry

CANBERRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=

6117289 m N

35.07500 S latitude

655906 m E

148.7100 E longitude

Illustrations :

Age/Unit= Lower Devonian

KIRAWIN SHALE

Topography: RUGGED DISSECTED LOWLAND

dip= strike=

Structure :

Field Geology: Shale. Black, but fawn and white where weathered. Contains minor lithic sandstone interbeds towards outcrops of Sugarloaf Creek Tuff, implying gradation with that unit.

Field Rockname: SAMPLE CA0087 SHALE

PHYSICAL PROPERTIES:

SHALE

DENSITIES
Whole rock density = 2.16
Dry density = 2.14
Grain density = 2.70
Porosity = 21.

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 125
Remanence = .20
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X k20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Black shale Massive
93.	Graphite		Silt-sized, dispersed quartz & plagioclase fragments, ?perhaps of airborne pyroclastic origin, set in matrix of massive graphite, which is slightly muddy in some layers.
5.	Quartz		
2.	Plagioclase		

Location 0088

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO (7962)0088
Creek

CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6115865 m N 35.08750 S latitude
658052 m E 148.7338 E longitude

Illustrations :

Age/Unit= Lower Devonian MOUNTAIN CREEK VOLCANICS
Topography: RUGGED TO MODERATELY SLOPING UPLAND dip= strike=
Structure : STEEPLY DIPPING
Field Geology: Latite. Very fine-grained with tiny specks of pyrite. Porphyritic in plagioclase. Minor shrinkage cracks.

Field Rockname: SAMPLE CA0088 LATITE

PHYSICAL PROPERTIES: LATITE

DENSITIES
Whole rock density = 2.82
Dry density = 2.64
Grain density = 2.64
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 4 in-situ readings = 298
from 0 to 628, SD= 345
Laboratory susceptibility = 100
Remanence = 1.00
Koenigsberger ratio = .17

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.74	.52	17.43	2.71	.16	.59	.42	3.67	4.99	.09	.09	2.20	99.61

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1268	-6	130	8	3	30	108	3	14	-5	14	245

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	16	256	-5	19	6	14	13	65	50	305

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Latite
FABRIC: Devitrified vitrophyric
Est. % MINERAL
30. Plagioclase Slightly altered latite with fractured plagioclase phenocrysts and groundmass microphenocrysts partially pseudomorphed by calcite. The groundmass is an ultrafine mosaic of recrystallised feldspathic glass within which coarser patches are locally present. The groundmass also has thin patchy meshwork of ultrafine sericite distributed through it.
.01 Calcite
1. Epidote
64. Opaque
Groundmass Microfractures are common in the groundmass & are lined by at least one opaque mineral which may be pyrite. These fractures curve around plagioclase phenocrysts & may be caused by shrinkage during cooling. Rare epidote pseudomorphs of sparse ferromagnesian mineral.

Location 0089

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0089
Road cutting

GOULBURN NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5025
6131144 m N 34.94773 S latitude
670705 m E 148.8694 E longitude

Illustrations :

Age/Unit= Middle-Upper Silurian DOURO GROUP dip= strike=
Topography: GENTLY UNDULATING
Structure : PLUTON
Field Geology: Granite. Inequigranular. Medium-grained. Porphyritic in quartz.
Mesocratic, with scattered large biotites. Very weathered. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0090

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0090
Outcrop

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5025

6135953 m N

34.90408 S latitude

672550 m E

148.8886 E longitude

Illustrations :

Age/Unit= Upper Silurian

DERRINGULLEN FORMATION

Topography: GENTLY UNDULATING

dip= strike=

Structure :

Field Geology: Mudstone, calcareous mudstone and limestone lenses. The detrital units are bedded. Bedding planes well defined by differences in lithology. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

ARGILLITE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 267
from 0 to 753 .SD= 356
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0091

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0091
Outcrop

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5102
6140654 m N 34.86010 S latitude
681748 m E 148.9882 E longitude

Illustrations :

Age/Unit= Middle-Upper Silurian DOURO GROUP
Topography: GENTLY UNDULATING dip= strike=
Structure :
Field Geology: Ignimbrite. Densely porphyritic in quartz and plagioclase set in a fine-grained groundmass.

Field Rockname: SAMPLE GB0091 IGNIMBRITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

IGNIMBRITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 62
from 0 to 188 ,SD= 88
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Ignimbrite	
		Devitirified vitrophyric	
25.	Quartz		Phenocrysts of volcanic quartz, some bipyramidal, others rounded,
39.	Plagioclase		fractured & embayed. Smaller plagioclase phenocrysts altered
10.	Rock fragments		to sericite. Lithic fragments include devitirified siliceous glass and
25.	Groundmass		chloritised volcanic rock glass. The groundmass is partially resolvable
1.	Ilmenite		as tiny quartzo-feldspathic crystal aggregates & abundant volcanic dust.
.1	Epidote		Minor ilmenite is mainly confined to patches of chlorite.

Location 0092

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0092
Road cutting

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5102
6143530 m N 34.83325 S latitude
686910 m E 149.0440 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: GENTLY UNDULATING dip= strike=
Structure : VERTICALLY DIPPING
Field Geology: Greywacke, siltstone and shale. Thin to thick bedded with finer units
generally thinnest. Planar bedded. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0093

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0093

SAME LOCATION AS 0094 AND 0095

Road cutting

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5098

6145233 m N 34.81662 S latitude

693753 m E 149.1184 E longitude

Illustrations :

Age/Unit: Ordovician

Topography: GENTLY SLOPING LOWLAND

dip= strike=

Structure : VERTICALLY DIPPING

Field Geology: Quartzite, micaceous quartzite, siltstone, greywacke, shale and micaceous quartzose sandstone. The quartzites are lenticular and have stratabound, cross-cutting quartz veinlets not present in other rock types. Other units are planar and well bedded with finer units thinnest.

Field Rockname: SAMPLE GB-0093 FINE PART OF BEDSET

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES

Whole rock density =
Dry density = 2.74
Grain density = 2.75
Porosity = 5.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 100
from 0 to 376, SD= 163
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Siltstone	Poorly sorted
2.	Opaque		Fine sand-sized clasts of quartz & rare chloritised lithic grains are randomly distributed within a mud matrix consisting of an opaque mineral, tiny muscovite plates which are not continuous throughout the rock, & abundant chlorite. This specimen is the fine top of a small graded bed of which specimen 79620094 is the coarser fraction. The quartz grains lack undulose extinction.
1.	Rock fragments		
5.	Muscovite		
72.	Mud		

Location 0094

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0094
Road cutting

SAME LOCATION AS 0093 AND 0095

GOULBURN

NSW GDOM-1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5098

6145238 m N

34.81658 S latitude

693754 m E

149.1184 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLY SLOPING LOWLAND

dip= strike=

Structure : VERTICALLY DIPPING

Field Geology: Quartzite, micaceous quartzite, siltstone, greywacke, shale and micaceous quartzose sandstone. The quartzites are lenticular and have stratabound, cross-cutting quartz veinlets not present in other rock types. Other units are planar and well bedded with finer units thinnest.

Field Rockname: SAMPLE GB0094 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES
Whole rock density = 2.71
Dry density = 2.68
Grain density = 2.68
Porosity = .01

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 110
Remanence = .10
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Greywacke
25.	Quartz	FABRIC:	Poorly sorted
5.	Muscovite		Fine to medium-sized quartz sand particles distributed randomly throughout a mud matrix containing discrete fine muscovite plates, tiny opaque particles & chloritic & impure quartzose material.
1.	Opaque		The muscovites are not always oriented parallel to bedding. The quartz grains exhibit slight undulose extinction. This specimen is part of a graded bed, the finer equivalent of which is specimen 79620093.
69.	Mud		

Location 0095

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0095
Road cutting

SAME LOCATION AS 0093 AND 0094

GOULBURN

NSH GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5098

6145238 m N

34.81658 S latitude

693754 m E

149.1184 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLY SLOPING LOWLAND

dip= strike=

Structure : VERTICALLY DIPPING

Field Geology: Quartzite, micaceous quartzite, siltstone, greywacke, shale and micaceous quartzose sandstone. The quartzites are lenticular and have stratabound, cross-cutting quartz veinlets not present in other rock types. Other units are planar and well bedded with finer units thinnest.

Field Rockname: SAMPLE GB0095 CHERTY QUARTZITE

PHYSICAL PROPERTIES:

CHERTY QUARTZITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density =

Ch.1=

Dry density = 2.65

Mean of 0 in-situ readings =

Ch.2=

Grain density = 2.65

from to ,SD=

Ch.3=

Porosity = .01

Laboratory susceptibility =

0

Ch.4=

Remanence

.00

Koenigsberger ratio =

U/Th=

Heat generation units

% K20

ppm U

ppm Th

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Cherty quartzite

Est. % MINERAL FABRIC:

Uneven-grained, poorly sorted

20. Quartz

Flattened elongate quartz grains with undulose extinction cemented by

.1 Tourmaline

fine silica with slight clay impurities including trace muscovite and

.5 Opaque

thin smears of chlorite. Rare opaque & heavy minerals. Abundant silica

75. Cement

cement. Rare scattered plagioclase.

5. Mud

.1 Plagioclase

Location 0096

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0096

Road cutting

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5094

6146417 m N

34.80535 S latitude

696891 m E

149.1524 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLY SLOPING SLIGHTLY UNDULATING AREA

dip= strike=

Structure : GRANITE CONTACT WITH ORDOVICIAN

Field Geology: Quartzite and micaceous quartzite adjacent to granitoid contact. Sedi-
mentary rocks are well bedded and bedding is not deformed nor distorted
in roof pendants. Granite contact is steep with apophyses. Granitoid is
schistose along its edges. Not sampled; rocks deeply weathered.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3= % K20
Ch.4= ppm U
ppm Th
U/Th=
Heat generation units

Location 0097

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0097
Outcrop

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5094
6147545 m N 34.79390 S latitude
703442 m E 149.2237 E longitude

Illustrations :

Age/Unit= WYANGALA BATHOLITH
Topography: GENTLY UNDULATING AREA dip= strike=
Structure : PLUTON
Field Geology: Granite. Equigranular, non-porphyrific and medium-grained. Leucocratic
with minor epidote and tiny dispersed clots of a sulphide mineral in
places.

Field Rockname: SAMPLE GB0097 APLITIC GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 2.65
Dry density = 2.63
Grain density = 2.63
Porosity = .1
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 70
Remanence = 63.00
Koenigsberger ratio = 15.00

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.00	.10	13.96	1.14	.02	.15	2.31	3.14	4.45	.04	.02	.10	99.41
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Nb	Ni	Pb	Rb		
p.p.m.	481	-6	88	4	3	11	72	5	5	41	147		
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	6	-5	0*	-5	18	7	9	-5	24	-5	92		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Microadamellite
FABRIC: Aplitic
Es. % MINERAL
25. Quartz
30. Orthoclase
35. Plagioclase
6. Epidote
2. Muscovite
1. Opaque
.5 Chlorite
.5 Biotite
Medium-grained with unaltered orthoclase & epidotised plagioclases
some of which form rare phenocrysts. Quartz is mostly interstitial and
exhibits prominent undulose extinction & sub-grain formation. Ferro
-magnesian minerals are altered to epidote, chlorite, muscovite & an
opaque mineral.

Location 0098

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0098
Road cutting

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5090
6148567 m N 34.78412 S latitude
706294 m E 149.2546 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: GENTLY UNDULATING AREA dip= strike=
Structure : VERTICALLY DIPPING
Field Geology: Shale, siltstone and greywacke. Thinly interbedded and planar bedded.
Bedding planes defined partly by prominent muscovite flakes. Weathered,
khaki to buff-coloured throughout. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.60
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I. *.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0099

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0099
 Road cutting

GOULBURN NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5090
 6149397 m N 34.77620 S latitude
 708428 m E 149.2777 E longitude

Illustrations :

Age/Unit= WYANGALA BATHOLITH
 Topography: MODERATELY SLOPING UPLAND dip= strike=
 Structure : PLUTON
 Field Geology: Granodiorite. Inequigranular, porphyritic in plagioclase set in a medium
 to coarse-grained groundmass. Mesocratic with scattered hornblende,
 biotite and small dark-coloured xenoliths.

Field Rockname: SAMPLE GB0099 GRANODIORITE

PHYSICAL PROPERTIES:

	GRANODIORITE		
DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY	
Whole rock density = 2.76	Mean of 6 in-situ readings = 2272	Ch.1=	
Dry density = 2.74	from 1884 to 2513 ,SD= 229	Ch.2=	% K2O
Grain density = 2.74	Laboratory susceptibility = 2500	Ch.3=	ppm U
Porosity = .01	Remanence = .00	Ch.4=	ppm Th
	Koenigsberger ratio = 0.00	U/Th=	
		Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.83	.42	13.91	4.80	.08	2.25	3.84	2.75	1.94	.10	.05	.80	99.77

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	385	-6	60	16	75	25	47	-3	7	24	10	143

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	21	11	106	-5	18	4	84	22	21	63	121

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Granodiorite
Est. %	FABRIC:	Porphyritic; hypidiomorphic granular
38.	Quartz	Large euhedral zoned plagioclase phenocrysts, extensively altered to epidote, fine muscovite and sericite in cores, but with clear rims.
50.	Plagioclase	Abundant ragged patches of slightly resorbed quartz as well as smaller interstitial grains. Rare hornblende, pale blue-green to colourless in pleochroism altering to actinolite and biotite. Scattered biotite with brown to near colourless pleochroism, slightly bleached and altering to less-coloured varieties, and to chlorite. Interstitial orthoclase.
5.	Orthoclase	
5.	Biotite	
2.	Hornblende	
.5	Muscovite	
.1	Epidote	
.05	Ilmenite	
.1	Apatite	
.01	Zircon	
.001	Pyrite	Accessory ilmenite, apatite, and zircon. Rare trace pyrite.

Location 0100

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0100
Road cutting

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5082
6148769 m N 34.77998 S latitude
717442 m E 149.3763 E longitude

Illustrations :

Age/Unit: WYANGALA BATHOLITH
Topography: MODERATELY SLOPING UPLAND dip= strike=
Structure: PLUTON
Field Geology: Granite. Inequigranular. Porphyritic in quartz and orthoclase.
Mesocractic with scattered biotite. Numerous small elongate to rounded
xenoliths up to 20 cm long.

Field Rockname: SAMPLE GB0100 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 1528
from 376 to 2764 ,SD= 858
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.27	.43	13.84	2.37	.06	.57	1.80	3.40	4.35	.10	.03	.10	99.32
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	1638	-6	66	5	4	19	65	-3	9	11	20	102	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	11	-5	320	-5	8	-3	27	-5	33	32	233		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Granite
FABRIC:	Hypidiomorphic granular
Est. %	40. Quartz
	40. Orthoclase
	10. Plagioclase
	9. Biotite
	.1 Muscovite
	.5 Spene
	.5 Magnetite
	.01 Hematite

Patchy large interconnected areas of fractured quartz partially interstitial to large altered orthoclase phenocrysts. Euhedral plagioclase is less altered. Minor resorption in quartz. Incipient alteration of biotite to chlorite in places. Rare spene euhedra & trace muscovite at grain edges of a few plagioclases. Scattered magnetite, often altering to ilmenite.

Location 0101

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0101

Outcrop

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5082

6148654 m N

34.78083 S latitude

718319 m E

149.3859 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: MODERATELY SLOPING REGION

dip= strike=

Structure :

Field Geology: Shale, siltstone and quartzite. Thinly interbedded and planar bedded.
Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density =

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

Location 0103

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0103

Road cutting

GOULBURN

GOULBURN

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-188

6148062 m N

34.78038 S latitude

743847 m E

149.6648 E longitude

Illustrations :

Age/Unit= Upper Silurian

Topography:

dip=25 strike=

Structure : GENTLY TO MODERATELY DIPPING

Field Geology: Micaceous siltstone, shale, greywacke, and massive quartzite with strata-bound cross-cutting veins of white quartz. Conformable lenticular bodies of white quartz present in places. Mostly weathered and khaki to buff-coloured. Well bedded and planar bedded throughout. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density =

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

Location 0104

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0104
Outcrop

GOULBURN GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-08
6152089 m N 34.74357 S latitude
746043 m E 149.6876 E longitude

Illustrations :

Age/Unit=
Topography: GENTLY TO MODERATELY SLOPING UPLAND dip= strike=
Structure :
Field Geology: Dolerite. Medium grained with distinct laths of plagioclase set amidst granular augite. Slight gabbroic appearance. Lies within an area of Ordovician sedimentary rocks.

Field Rockname: SAMPLE GB0104 DOLERITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.96
Dry density = 2.94
Grain density = 2.95
Porosity = .3

DOLERITE

MAGNETIC SUSCEPTIBILITY (S.I.: 000001)
Mean of 15 in-situ readings = 13969
from 691 to 25069, SD= 6905
Laboratory susceptibility = 17900
Remanence = 1000.00
Koenigsberger ratio = .93

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	FABRIC:
35	Plagioclase	Doleritic gabbro	Ophitic
55	Augite		Large patches of augite partially altering to a dark-brownish variety especially where in contact with chlorite. Augite is frequently intergrown with plagioclase laths. Scattered magnetite slightly altering to hematite. Scattered ilmenite. Interstitial chlorite in fine-grained aggregates. Trace disseminated fine-grained pyrite.
6	Chlorite		
2	Magnetite		
2	Ilmenite		
.01	Pyrite		

Location 0105

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0105
Quarry

GOULBURN GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-08
6152582 m N 34.73775 S latitude
751720 m E 149.7494 E longitude

Illustrations :

Age/Unit= Upper Devonian LAMBIE GROUP
Topography: RUGGED PROMINENT STRIKE RIDGE dip=25 strike=005
Structure : GENTLY TO MODERATELY TILTED WITH MINOR INTRAFORMATIONAL DISTURBANCES
Field Geology: Quartzose sandstone with minor interbeds of thin graphitic siltstone.
Well bedded, planar bedded and even bed thickness throughout. Internal
lamination frequent. Sharp top and bottom contacts of beds. Tiny heavy
minerals present in sandstone. Shallow marine.
Field Rockname: SAMPLE GB0105 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES: SANDSTONE

DENSITIES
Whole rock density = 3.00
Dry density = 2.61
Grain density = 2.62
Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.:.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .20
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartzose sandstone
FABRIC: Moderately well sorted; weakly microstylolitic
Est. % MINERAL FABRIC: Tighty compacted, subangular quartz grains with rare detrital
80. Quartz hornblende, muscovite, augite & opaque mineral set in muddy matrix
1. Opaque consisting largely of sericite.
.1 Hornblende
.01 Augite
.1 Muscovite
19. Matrix

Location 0106

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0106
Road cutting

GOULBURN GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-10
6152408 m N 34.73862 S latitude
754519 m E 149.7800 E longitude

Illustrations :

Age/Unit= Upper Silurian TOWRANG BEDS
Topography: dip= strike=
Structure :

Field Geology: Basalt. Variably altered. Porphyritic in plagioclase and augite which
are both slightly altered. Vesicular, with calcite, chlorite and
chalcedony fillings. Slight red colouration in places.

Field Rockname: SAMPLE GB0106 ALTERED BASALT

PHYSICAL PROPERTIES:

DENSITIES	BASALT	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.91		Mean of 9 in-situ readings = 4174	Ch.1=
Dry density = 2.92		from 628 to 6911, SD= 2565	Ch.2= % K20
Grain density = 2.92		Laboratory susceptibility = 0	Ch.3= ppm U
Porosity = .1		Remanence = .00	Ch.4= ppm Th
		Koenigsberger ratio =	U/Th=
			Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Basalt
25.	Plagioclase	FABRIC:	Pilotaxitic
20.	Augite		Porphyritic in sericitised & partially muscovitised plagioclase and euhedral & glomeroporphyritic augite. Groundmass is very fine-grained, iron-charged & largely non-resolvable. Rare vesicles filled with chalcedonic silica & rare chlorite. Trace calcite in a few fractured augite phenocrysts.
1.	Vesicles		
4.	Opaque		
50.	Groundmass		
.1	Calcite		

Location 0107

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0107
Road cutting

GOULBURN	GOULBURN	NSW	GDOM=1
1:250,000 sheet area	1:100,000 sheet area	air-photo:run-no.= 4-10	
6152781 m N		34.73425 S latitude	
758562 m E		149.8240 E longitude	

Illustrations :

Age/Unit= Ordovician

Topography:

Structure : STEEPLY DIPPING

dip=80 strike=000

Field Geology: Mudstone, shale, slate, greywacke and quartzite. Thin to thick bedded and mostly planar units. Lenticular beds of quartzite have stratabound cross-cutting veinlets of white quartz. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = :00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0108

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0108
 Road cutting

GOULBURN GOULBURN NSW GDOM=1
 1:250,000 sheet area :100,000 sheet area air-photo:run-no:= 5-180
 6144890 m N 34.80225 S latitude
 770393 m E 149.9556 E longitude

Illustrations :

Age/Unit= Lower-Middle Devonian BINDOOK PORPHYRY
 Topography: GENTLY SLOPING RELATIVE UPLAND dip= strike=
 Structure :
 Field Geology: Ignimbrite. Slightly porphyritic in quartz, plagioclase and ferromagnesian minerals set in a fine-grained groundmass.

Field Rockname: SAMPLE GB0108 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE
 DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
 Whole rock density = 2.75 Ch.1=
 Dry density = 2.71 Mean of 5 in-situ readings = 15431 Ch.2=
 Grain density = 2.72 from 13194 to 18221 .SD= 1902 Ch.3=
 Porosity = .5 Laboratory susceptibility = 13000 Ch.4=
 Remanence = 650.00 U/Th=
 Koenigsberger ratio = .83 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.50	0.62	15.22	4.99	0.13	1.99	4.32	2.35	2.72	0.13	0.07	1.60	99.65
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	870	-6	50	11	20	20	28	-3	6	470	14	89	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	-20	323	7	10	4	110	-5	29	46	179		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
 FABRIC: Devitrified vitrophyric
 Est. % MINERAL
 12. Quartz Porphyritic in volcanic quartz, fractured & embayed, as well as
 25. Plagioclase sericitised plagioclase, hornblende, & epidote pseudomorphs after a
 5. Hornblende relict ferromagnesian mineral. Chlorite also pseudomorphs another
 .1 Biotite former phenocryst mineral. The groundmass is very fine-grained & of
 3. Epidote quartzo-feldspathic composition with tiny mineral fragments as well.
 50. Groundmass Rare ilmenite phenocrysts, some with exsolved hematite & minor
 1. Chlorite magnetite. Trace groundmass hematite & pyrite.
 3. Ilmenite
 1. Hematite
 .2 Magnetite
 .001 Pyrite

Location 0109

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0109
Outcrop

GOULBURN GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-174
6139954 m N 34.84695 S latitude
769442 m E 149.9468 E longitude

Illustrations :

Age/Unit= MARULAN GRANITE
Topography: GENTLY UNDULATING dip= strike=
Structure: PLUTON
Field Geology: Tonalite. Inequigranular, porphyritic in plagioclase and ferromagnesian minerals. Medium-grained. Melanocratic, with low quartz content.

Field Rockname: SAMPLE GB0109 TONALITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 3.09
Dry density = 2.86
Grain density = 2.87
Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 6 in-situ readings = 12597
from 7539 to 17404 SD= 3697
Laboratory susceptibility = 11400
Remanence = 2000.00
Koenigsberger ratio = 2.92

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	53.39	.94	16.20	10.30	.17	5.39	9.02	1.75	1.34	.21	.04	1.10	99.86

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	379	-6	32	40	89	86	40	-3	3	12	11	47

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	45	-5	243	-5	8	-3	337	-5	16	80	84

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Tonalite
FABRIC: Hypidiomorphic granular tending slightly granophyric
13. Quartz Porphyritic in sericitised plagioclase with clear secondary over-
50. Plagioclase growths, as well as augite altering to hornblende & chlorite, and
5. Augite hornblende partially altering to chlorite. Opaque minerals confined
25. Hornblende entirely to biotites. All quartz is interstitial. Traces of muscovite
5. Biotite discernible in the more altered feldspar & it preferentially follows
2. Magnetite twin lamellae & cleavage. Rare large magnetite crystals in groundmass &
.01 Pyrite trace tiny pyrite & chalcopyrite.
.001 Chlorite
.001 Chalcopyrite

Location 0110

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0110

Outcrop

CANBERRA	BRAIDWOOD	NSW	GDOM=1
1:250,000 sheet area	1:100,000 sheet area	air-photo:run-no.= 2-29	
6114947 m N		35.07850 S latitude	
744534 m E		149.6820 E longitude	

Illustrations :

Age/Unit=

BORO GRANITE

dip= strike=

Topography: FLAT LOWLAND

Structure: PLUTON

Field Geology: Weathered granite and granitic soil. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0111

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0111

Road cutting

CANBERRA sheet area 1:250,000
6114606 m N
740692 m E

BRAIDWOOD sheet area 1:100,000
NSW GDOM=1
air-photo:run-no.= 2-29
35.08250 S latitude
149.6400 E longitude

Illustrations :

Age/Unit= Upper Devonian

Topography:

dip=50W strike=000

Structure : MODERATELY TILTED

Field Geology: Limestone. Lens within conglomerate, sandstone and shale. Detrital rocks are noticeably red. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility =
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0112

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0112
Outcrop

CANBERRA BRAIDWOOD NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-27
6113274 m N 35.09500 S latitude
738558 m E 149.6170 E longitude

Illustrations :

Age/Unit= Silurian MOUNT FAIREY BEDS
Topography: dip= strike=
Structure :
Field Geology: Quartzose sandstone. Fine-grained, with mud matrix. Very weathered. Not
sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X k20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0113

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0113

Outcrop

CANBERRA BRAIDWOOD NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-20
6119022 m N 35.04472 S latitude
732126 m E 149.5449 E longitude

Illustrations :

Age/Unit= Silurian-Devonian
Topography: dip= strike=
Structure :
Field Geology: Ignimbrite. Porphyritic with small quartz and larger feldspar
phenocrysts set in a very fine-grained groundmass containing sparsely
disseminated specks of a sulphide mineral.

Field Rockname: SAMPLE CA0113 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE
DENSITIES
Whole rock density = 2.85
Dry density = 2.61
Grain density = 2.61
Porosity = .01

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 3015
from 879 to 5906 ,SD= 2022
Laboratory susceptibility = 8000
Remanence = 700.00
Koenigsberger ratio = 1.46

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.70	0.05	13.12	1.01	0.01	0.05	0.27	4.84	4.57	0.03	0.06	0.30	100.00

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	605	-6	58	-1	-1	-5	32	31	16	142	14	131

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	56	9	19	5	-1	9	91	10	107

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % NAME: Ignimbrite
10. FABRIC: Porphyritic; devitrified eutaxitic
15. Quartz Variably-sized euhedral to fractured, corroded and embayed volcanic
75. Plagioclase quartz phenocrysts together with euhedral plagioclase, lightly
 Groundmass kaolinised and glomeroporphyritic in places. The groundmass consists
.001 Zircon of an ultrafine mosaic of quartz and feldspar with sparse small zircon,
.1 Epidote as well as ?magnetite dust. Rare epidote granules partially pseudomorph
.01 Magnetite a few plagioclase phenocrysts.

Location 0114

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0114
Outcrop

CANBERRA	CANBERRA	NSW	GDOM=1
1:250,000 sheet area	1:100,000 sheet area	air-photo:run-no.= 2-76	
6112732 m N		35.10260 S latitude	
726802 m E		149.4883 E longitude	

Illustrations :

Age/Unit= ELLENDEW GRANITE
Topography: dip= strike=
Structure :
Field Geology: Granite. Very weathered. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0115

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0115
Outcrop

CANBERRA BRAIDWOOD NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-64
6095700 m N 35.25517 S latitude
730583 m E 149.5345 E longitude

Illustrations :

Age/Unit= Silurian MOUNT FAIREY BEDS
Topography: dip=84W strike=157
Structure :
Field Geology: Shale, slate, siltstone, greywacke and quartzite. Numerous thin white
quartz ellipsoids containing coatings of chlorite are conformable with
bedding. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to .SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3= % K2O
Ch.4= ppm U
 ppm Th
U/Th=
Heat generation units

Location 0116

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0116
Outcrop

CANBERRA BRAIDWOOD NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-64
6095813 m N 35.25405 S latitude
731014 m E 149.5392 E longitude

Illustrations :

Age/Unit= Silurian MOUNT FAIREY BEDS
Topography: dip=50W strike=
Structure: MODERATELY TILTED
Field Geology: Quartz greywacke, shale, slate and siltstone. Thin to medium bedded.
Massive within beds.

Field Rockname: SAMPLE CA0116 QUARTZ GREYWACKE

PHYSICAL PROPERTIES: PORPHYRY

DENSITIES
Whole rock density = 2.67
Dry density = 2.63
Grain density = 2.66
Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 78
from 0 to 188 .SD= 73
Laboratory susceptibility = 16
Remanence = 0.00
Koenigsberger ratio = 0.00

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Tn=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Quartz greywacke
Est. %	MINERAL FABRIC:	Poorly sorted
45.	Quartz	Sand-sized grains of slightly flattened, strained quartz and
1.	Muscovite	plagioclase fragments with long axis parallel to bedding but random
3.	Plagioclase	to direction of twin lamellae. Rare large discrete detrital muscovite
1.	Opaque	with a trace of finer muscovite in matrix. The matrix is largely tiny
50.	Matrix	recrystallised quartz mosaic with ?chloritic impurities at grain
		boundaries. Minor veins of recrystallised cherty quartz.

Location 0117

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0117
 Outcrop

CANBFRP BRAIDWOOD NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-88
 6085464 m N 35.34287 S latitude
 749332 m E 149.7435 E longitude

Illustrations :Photomicrograph

Age/Unit= BRAIDWOOD GRANODIORITE
 Topography: DISSECTED MODERATELY RUGGED UPLAND dip= strike=
 Structure : PLUTON
 Field Geology: Granodiorite. Inequigranular, slightly porphyritic in plagioclase,
 medium to coarse-grained. Melanocratic due to abundant slightly altered
 hornblende and biotite often in clusters. Some small mafic igneous
 xenoliths are present.

Field Rockname: SAMPLE CA0117 GRANDODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 13 in-situ readings = 26060		Ch.1=	
Whole rock density = 2.74		from 18221 to 39835 ,SD= 5930		Ch.2= x K20	
Dry density = 2.71		Laboratory susceptibility = 24000		Ch.3= ppm U	
Grain density = 2.71		Remanence 120.00		Ch.4= ppm Th	
Porosity = .01		Koenigsberger ratio = .08		U/Th=	
				Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.69	.61	14.83	4.72	.05	2.17	4.08	2.86	3.62	.16	.03	.90	99.72
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	680	-6	83	17	33	359	54	-3	12	16	10	119	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	16	-5	246	-5	18	4	108	-5	25	17	170		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Granodiorite
	FABRIC:	Hypidiomorphic granular
Est. %	MINERAL	
15.	Quartz	Phenocrysts of zoned sericitised plagioclase with clear secondary overgrowths. Quartz is interstitial, partially microglobular, and embayed. All plagioclase is euhedral. Orthoclase slightly kaolinised.
50.	Plagioclase	
15.	Hornblende	Hornblende is partially chloritised & biotite partially oxidised. Trace augite. Accessory magnetite and one large grain of pyrite. Photograph embayed quartz.
4.	Biotite	
15.	Orthoclase	
.1	Sphene	
.01	Augite	
1.	Magnetite	
.001	Pyrite	

Location 0118

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NJ.=(7962)0118
Outcrop

CANBERRA BRAIDWOOD NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-88
6083647 m N 35.35885 S latitude
750874 m E 149.7610 E longitude

Illustrations :Photomicrograph

Age/Unit= BRAIDWOOD GRANODIORITE
Topography: dip= strike=
Structure : PLUTON
Field Geology: Granodiorite. Inequigranular, porphyritic in quartz. Medium to coarse-grained. Mesocratic with scattered biotite, hornblende and minor epidote.

Field Rockname: SAMPLE CA0118 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.69 Mean of 13 in-situ readings = 25239 Ch.1= % K20
Dry density = 2.66 from 20860 to 30536 ,SD= 2495 Ch.2= ppm U
Grain density = 2.67 Laboratory susceptibility = 20000 Ch.3= ppm Th
Porosity = .2 Remanence = 8500.00 U/Th= Heat generation units:
Koenigsberger ratio = 7.08

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.90	.56	15.01	4.27	.09	1.50	3.92	2.72	3.52	.16	.02	1.10	99.76
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	808	-6	75	30	10	24	50	4	6	8	17	119	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	16	-5	275	-5	13	-3	79	-5	29	50	180		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granodiorite
Est. % MINERAL FABRIC: Porphyritic, with interstitial granophyric patches.
30. Quartz Large phenocrysts tending globular masses of resorbed quartz, adjacent to abundant euhedral sericitised plagioclase. Interstitial granophyric
54. Plagioclase intergrowth between quartz & orthoclase. However some non-granophyric
5. Orthoclase orthoclase as well. Hornblende partially altered to epidote, & biotite
5. Hornblende partially chloritised. Rare accessory sphene. Photograph embayed quartz
2. Epidote & granophyric intergrowth.
3. Biotite
1. Opaque
.01 Sphene

Location 0119

* LACLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0119
Outcrop

CANBERRA BRAIDWOOD NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-88
6080891 m N 35.38330 S latitude
752343 m E 149.7780 E longitude

Illustrations :

Age/Unit=

BRAIDWOOD GRANODIORITE

Topography:

dip=

strike=

Structure : PLUTON

Field Geology: Granodiorite. Inequigranular, slightly porphyritic in quartz. Medium to coarse-grained. Mesocratic with scattered prismatic hornblende, and biotite. Epidote veinlets in places. Abundant dark-coloured, fine-grained igneous xenoliths.

Field Rockname: SAMPLE CA0119 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES

Whole rock density = 2.70
Dry density = 2.68
Grain density = 2.69
Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 14 in-situ readings = 37923
from 28902 to 47375 SD= 4278
Laboratory susceptibility = 31000
Remanence = 1400.00
Koenigsberger ratio = .75

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.63	.64	15.17	5.08	.09	1.87	3.83	2.80	3.32	.19	.02	1.00	99.64

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	800	-6	64	16	12	14	44	-3	9	9	23	107

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	15	-5	302	-5	12	-3	98	-5	31	61	197

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granodiorite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
25. Quartz
45. Plagioclase
20. Orthoclase
5. Hornblende
4. Biotite
1.1 Muscovite
1. Opaque
Patches of resorbed quartz forming large patches surrounded by kaolinised orthoclase & sericitised plagioclase euhedra. Biotites are noticeably oxidised to chlorite with liberation of opaque mineral along cleavage. Rare muscovite partially pseudomorphs a few very altered biotites. Hornblendes are partially pseudomorphed by epidote.

Location 0120

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0120
Outcrop

CANBERRA sheet area 1:250,000
6078719 m N
752909 m E
BRAIDWOOD sheet area 1:100,000
35.40272 S latitude
149.7849 E longitude
NSW GDOM=1
air-photo:run-no.= 7-10

Illustrations :

Age/Unit= BRAIDWOOD GRANODIORITE
Topography: dip= strike=
Structure :
Field Geology: Granodiorite. Moderately equigranular. Medium to coarse-grained.
Mesocratic with abundant hornblende and finer biotite. Trace pyrite.
Numerous small dark-coloured xenoliths.

Field Rockname: SAMPLE CA0120 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE
DENSITIES
Whole rock density = 2.70
Dry density = 2.70
Grain density = 2.72
Porosity = .7
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 13 in-situ readings = 41754
from 36442 to 48443, SD= 3923
Laboratory susceptibility = 33600
Remanence = 11500.00
Koenigsberger ratio = 5.70
GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.52	.61	15.12	4.85	.09	1.72	4.21	2.61	3.10	.18	.04	.90	99.95
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	766	-6	50	16	10	9	44	-3	9	8	17	100	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	5	304	-5	13	-3	97	-5	27	50	192		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granodiorite	
25.	Quartz		Hypidiomorphic granular; incipient interstitial granophyric texture
50.	Plagioclase		Clusters of euhedral, zoned, altered plagioclase with interstitial strained quartz, orthoclase & minor plagioclase. Large embayed quartz crystals, prominently rounded with ragged embayments superimposed.
17.	Orthoclase		Rare interstitial granophyric intergrowth between quartz & some orthoclase. All plagioclase is euhedral. Partial chloritisation of some biotites, & traces of rare muscovite. Rare accessory sphene.
2.	Biotite		
5.	Hornblende		
1.	Opaque		
.01	Sphene		
.1	Muscovite		

Locatic. 0121

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0121

SAME LOCATION AS 0122

Outcrop

CANBERRA

BRAIDWOOD

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-10
6077113 m N 35.41702 S latitude
753545 m E 149.7924 E longitude

Illustrations :Photomicrograph

Age/Unit=

BRAIDWOOD GRANODIORITE

Topography:

dip=

strike=

Structure : PLUTON WITH FISSURES

Field Geology: Ignimbrite. Densely porphyritic in quartz, altered feldspar and altered hornblende set in an altered fine-grained groundmass. This rock occurs as a dyke in the Braidwood Granodiorite.

Field Rockname: SAMPLE CA0121 MICROTONALITE

PHYSICAL PROPERTIES:

MICROTONALITE

DENSITIES
Whole rock density = 2.73
Dry density = 2.71
Grain density = 2.74
Porosity = 1.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 28467
from 16461 to 45741 .SD= 7772
Laboratory susceptibility = 24200
Remanence = 20.00
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3= X K20
Ch.4= ppm U
ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	62.91	.67	14.78	5.72	.13	3.09	4.43	2.59	3.40	.20	.02	1.50	99.43
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	807	-6	63	20	95	20	50	-3	9	25	18	105	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	25	7	308	-5	13	3	125	-5	24	71	183		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Porphyritic microtonalite	Porphyritic
43.	Plagioclase		Uneven grained with phenocrysts of large rounded volcanic quartz with prominent embayed edges, altered plagioclase & hornblende set in a groundmass of medium-grained quartz, plagioclase & other minerals.
10.	Orthoclase		Hornblende is both euhedral & ragged in clusters. Accessory sphene.
9.	Hornblende		Photograph embayed quartz.
1.	Biotite		
1.	Sphene		
2.	Opaque		
.01	Epidote		
20.	Groundmass		

Location 0122

* LACHLAN FOLD BELT of New South Wales, ROCK PROPEPTY DATA BASE *

NO.=(7962)0122
Outcrop

SAME LOCATION AS 0121

CANBERRA BRAIDWOOD NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-10
6076970 m N 35.41833 S latitude
753478 m E 149.7917 E longitud:

Illustrations :

BRAIDWOOD GRANODIORITE

Age/Unit:

Topography:

Structure : PLUTON WITH FISSURES

dip=

strike=

Field Geology: Ignimbrite. Densely porphyritic in quartz, altered feldspar and altered hornblende set in an altered, fine-grained groundmass. This rock occurs as a dyke in the Braidwood Granodiorite, which appears relatively quenched.

Field Rockname: SAMPLE CA0122 FISSURE ROCK-ANDESITIC IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.77
Dry density = 2.78
Grain density = 2.79
Porosity = .3

MAGNETIC SUSCEPTIBILITY (S.I.+.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 18500
Remanence = 190.00
Koenigsberger ratio = .17

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	55.67	0.71	13.48	8.38	0.18	7.13	6.29	2.19	2.27	0.25	0.06	2.50	98.91
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	771	-6	46	37	430	85	48	-3	6	240	9	88	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	28	-20	411	-5	8	-3	92	-5	26	117	139		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
FABRIC: Devitrified vitrophyric

Est. % MINERAL
5. Quartz
15. Plagioclase
15. Hornblende
2. Epidote
62. Groundmass
1. Magnetite
.2 Hematite

Phenocrysts of rounded volcanic quartz with embayed margins, sericitised zoned plagioclases, in places glomeroporphyritic, & hornblende, set in a fine-grained groundmass of the same minerals, together with opaque minerals & epidote. Epidote partially pseudomorphs some feldspar phenocrysts together with rare muscovite. Actinolite & chlorite are alteration products of some hornblende phenocrysts. This rock is a dyke in the Braidwood Granodiorite. Both large & small magnetite crystals with minor intergrowths of hematite.

Location 0123

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0123
Outcrop

CANBERRA BRAIDWOOD NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-64
6074371 m N 35.44115 S latitude
755758 m E 149.8176 E longitude

Illustrations :

Age/Unit=

BRAIDWOOD GRANODIORITE

Topography:

dip= strike=

Structure : PLUTON

Field Geology: Granodiorite. Equigranular to slightly porphyritic in plagioclase.
Medium to coarse-grained. Mesocratic due to abundant hornblende and
lesser smaller biotites often in clusters. Some small mafic igneous
xenoliths.

Field Rockname: SAMPLE CA0123 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES
Whole rock density = 2.74
Dry density = 2.72
Grain density = 2.73
Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 25572
from 19289 to 30284 ,SD= 3244
Laboratory susceptibility = 23500
Remanence = 100.00
Koenigsberger ratio = .07

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	63.98	.66	15.17	5.68	.10	2.52	5.00	2.74	3.06	.19	.05	.60	99.74
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	707	-6	72	19	45	12	41	-3	10	14	12	106	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	-5	314	5	8	-3	120	-5	24	50	176		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Granodiorite	Hypidiomorphic granular
50.	Plagioclase		Euhedral, zoned, sericitised plagioclase with interstitial & patchy
18.	Orthoclase		anhedral kaolinised orthoclase, & quartz. The quartz has ragged edges
10.	Hornblende		& is partially resorbed. The biotites are slightly chloritised and
5.	Biotite		generally occur close to anhedral hornblende clusters. Rare accessory
2.	Opaque		sphene.
.01	Sphene		

Location 0124

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0124
 Outcrop

CANBERRA sheet area 1:250,000
 BRAIDWOOD sheet area 1:100,000
 NSW GDOM=1
 6073824 m N 35.44575 S latitude
 757032 m E 149.8318 E longitude

Illustrations :

Age/Unit= BRAIDWOOD GRANODIORITE
 Topography: dip= strike=
 Structure: PLUTON
 Field Geology: Granodiorite. Equigranular. Medium to coarse-grained. Melanocratic due to abundant hornblende and biotite. Xenoliths up to 20 cm diameter are very abundant forming 10% of the rock in places.

Field Rockname: SAMPLE CA0124 GRANODIORITE

PHYSICAL PROPERTIES: GRANODIORITE
 DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
 Whole rock density = 2.79 Mean of 14 in-situ readings = 26326 Ch.1=
 Dry density = 2.76 from 22116 to 30724 .SD= 2425 Ch.2=
 Grain density = 2.76 Laboratory susceptibility = 23300 Ch.3= % K20
 Porosity = .2 Remanence = 1100.00 Ch.4= ppm U
 Koenigsberger ratio = .79 U/Th= ppm Th
 Heat generation units

CHEMISTRY:
 MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
 Weight % 60.38 .80 15.03 6.95 .12 3.47 6.08 2.73 2.88 .22 .05 .50 99.22
 TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
 p.p.m. 706 -6 49 22 51 42 50 -3 9 19 14 99
 TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
 p.p.m. 25 -5 337 -5 11 -3 148 -5 26 61 186

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granodiorite
 FABRIC: Hypidiomorphic granular
 Est. % MINERAL
 10. Quartz Fresh euhedral plagioclase, zoned & sparingly sericitised in places.
 60. Plagioclase Slightly globular, coarsened interstitial quartz with well equilibrated
 2. Orthoclase grain boundaries lined by expelled sericitic impurities. Augite breaking
 13. Hornblende down to hornblende in places. Trace accessory apatite & sphene. Opaque
 3. Augite minerals largely confined to biotite. Large crystals of, & groundmass
 10. Biotite magnetite. Trace pyrite & hematite.
 .1 Apatite
 .01 Sphene
 2. Magnetite
 .001 Pyrite
 .001 Hematite

Location 0125

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0125
 Outcrop

CANBERRA sheet area 1:250,000
 BRAIDWOOD sheet area 1:100,000
 NSW GDOM=1
 air-photo:run-no.= 8-62
 6074280 m N 35.44108 S latitude
 759199 m E 149.8555 E longitude

Illustrations :

Age/Unit= BRAIDWOOD GRANODIORITE
 Topography: dip= strike=
 Structure : PLUTON
 Field Geology: Granodiorite. Equigranular. Medium to coarse-grained. Mesocratic with scattered hornblende and biotite. Numerous xenoliths, many of which are angular, and occur in clusters separated by granodiorite with few xenoliths.
 Field Rockname: SAMPLE CA0125 GRANODIORITE

PHYSICAL PROPERTIES: GRANODIORITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.74	Mean of 15 in-situ readings = 34100	Ch.1=
Dry density = 2.74	from 28211 to 39207, SD= 3402	Ch.2= X K20
Grain density = 2.74	Laboratory susceptibility = 33000	Ch.3= ppm U
Porosity = .3	Remanence = 150.00	Ch.4= ppm Th
	Koenigsberger ratio = .08	U/Th=
		Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	64.36	.69	15.22	5.44	.09	2.31	4.73	2.54	3.58	.20	.07	.50	99.73
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	911	-6	65	21	25	10	54	-3	9	14	16	113	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	-5	343	5	15	4	120	-5	26	48	215		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Granodiorite
25.	Quartz	FABRIC:	Hypidiomorphic granular
48.	Plagioclase		Euhedral plagioclase, zoned & sparingly sericitised in places.
15.	Orthoclase		Interstitial orthoclase & quartz. Rare resorption in some quartz patches. Accessory small augite anhedral occurring as inclusions in some large plagioclases. Opaque minerals confined to hornblende & biotite.
5.	Hornblende		Sphene present as accessory crystals, particularly along margins of hornblende & in biotite cleavages. Partial oxidation of some hornblendes along cleavages. Large crystals of magnetite with inclusions of minor hematite & pyrite. These opaque minerals are also present as tiny groundmass minerals.
4.	Biotite		
1.	Augite		
.01	Sphene		
.01	Epidote		
2.	Magnetite		
.01	Hematite		
.01	Pyrite		

Location 0126

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0126
 Outcrop

CANBERRA	BRAIDWOOD	NSW	GDOM=1
1:250,000 sheet area	1:100,000 sheet area	air-photo:run-no.= 8-62	
6074770 m N	760495 m E	35.43633 S latitude	
		149.8696 E longitude	

Illustrations :Photomicrograph

Age/Unit= BRAIDWOOD GRANODIORITE
 Topography: dip= strike=
 Structure : PLUTON
 Field Geology: Granodiorite. Moderately equigranular. Medium to coarse-grained.
 Mesocratic with scattered hornblende and biotite. Numerous fine-grained
 igneous rock xenoliths.

Field Rockname: SAMPLE CA0126 GRANODIORITE

PHYSICAL PROPERTIES:	GRANODIORITE		
DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY	
Whole rock density =	Mean of 15 in-situ readings = 30184	Ch.1=	
Dry density = 2.75	from 3392 to 38955 ,SD= 8169	Ch.2=	% K2O
Grain density = 2.77	Laboratory susceptibility = 0	Ch.3=	ppm U
Porosity = 1.	Remanence = .00	Ch.4=	ppm Th
	Koenigsberger ratio =	U/Th=	Heat generation units

CHEMISTRY:													
MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	62.20	.69	15.60	6.06	.09	2.72	5.93	2.65	2.45	.19	.04	.70	99.33
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	621	-6	61	21	42	-5	47	-3	7	14	12	91	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	25	-5	365	5	12	5	133	-5	25	44	180		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Granodiorite
Est. %	FABRIC:	Hypidiomorphic granular with microxenoliths
25.	Quartz	Euhedral plagioclase, zoned & partially sericitised, with interstitial quartz, plagioclase & orthoclase. Biotite slightly altered to chlorite with liberations of sphene lenticles along cleavages.
40.	Plagioclase	
17.	Orthoclase	
10.	Hornblende	Inclusions of augite in some hornblendes & augite breaking down to hornblende in places.
5.	Biotite	
2.	Augite	?Photograph chloritised biotite with sphene
1.	Opaque	
.01	Sphene	

Location 0127

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0127
Outcrop

CANBERRA sheet area 1:250,000
BRAIDWOOD sheet area 1:100,000
NSW air-photo:run-no.= 7-12
GDOM=1
6075616 m N 35.42822 S latitude
762346 m E 149.8897 E longitude

Illustrations :

Age/Unit=: BRAIDWOOD GRANODIORITE
Topography: TORS SURROUNDED BY SOIL dip= strike=
Structure : CONTACT OF BRAIDWOOD GRANITE PLUTON
Field Geology: Granodiorite with bodies of ignimbrite. Granodiorite is inequigranular.
Medium to coarse-grained becoming finer at contact. Mesocratic due to
hornblende and biotite often in clusters.

Field Rockname: SAMPLE CA0127 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 3.05 Ch.1=
Dry density = 2.49 Mean of 13 in-situ readings = 16089 Ch.2= % K20
Grain density = 2.70 from 1382 to 26138 SD= 9124 Ch.3= ppm U
Porosity = 7.5 Laboratory susceptibility = 35000 Ch.4= ppm Th
Remanence = 200.00 U/Th=
Koenigsberger ratio = .10 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	59.60	.80	15.63	7.50	.12	3.00	5.44	2.75	3.63	.20	.04	.50	99.22
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	841	-6	54	22	14	10	46	-3	9	16	15	114	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	34	20	326	-5	8	-3	156	-5	43	59	149		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Granodiorite FABRIC: Hypidiomorphic granular
15.	Quartz	Ragged patches of quartz amidst clusters of variably sericitised
55.	Plagioclase	euhedral plagioclase. Abundant hornblende, lightly altering to light-
13.	Orthoclase	coloured varieties in places. Scattered biotite, mostly altering to
10.	Hornblende	chlorite with rare liberation of yellow epidote. Patchy interstitial
5.	Biotite	orthoclase, rarely poikilitic in plagioclase. Accessory sphene,
.1	Sphene	magnetite, apatite and pyrite.
1.5	Magnetite	
.2	Pyrite	
.1	Apatite	
.1	Epidote	

Location 0128

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0128

Outcrop

CANBERRA	BRAIDWOOD	NSW	GDM=1
1:250,000 sheet area	1:100,000 sheet area	air-photo:run-no.= 7-12	
6076182 m N		35.42268 S latitude	
764017 m E		149.9079 E longitude	

Illustrations :

Age/Unit= Ordovician

Topography:

dip=90 strike=000

Structure: VERTICALLY DIPPING

Field Geology: Quartzite, with interbedded slate and siltstone. Quartzite is most frequent close to granite contact. Detrital rocks are poorly exposed and very weathered. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility =
Remanence = .00
Koenigsberger ratio = 0.00

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3=
Ch.4=
U/Th=
Heat generation units
% K20
ppm U
ppm Th

Location 0129

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0129

Outcrop

CANBERRA

BRAIDWOOD

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-88
6084887 m N 35.34797 S latitude
749717 m E 149.7479 E longitude

Illustrations :Photomicrograph

Age/Unit= Silurian

?LONG FLAT VOLCANICS

Topography:

dip= strike=

Structure : PLUTON WITH DYKES OF VOLCANIC ROCK

Field Geology: Ignimbrite. Phenocrysts of quartz; plagioclase and hornblende set in a very fine-grained, quartzo-feldspathic groundmass. Contains small xenoliths of granite. Occurs as dyke within Braidwood Granodiorite.

Field Rockname: SAMPLE CA0129 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.78

Dry density = 2.74

Grain density = 2.74

Porosity = .2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 39577

from 19540 to 69806 ,SD= 17653

Laboratory susceptibility = 0

Remanence = 300.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 43380

Ch.2= 2673 2.01 % K2O

Ch.3= 769 5.18 ppm U

Ch.4= 586 11.08 ppm Th

U/Th= .47

5.56 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	63.96	0.67	15.07	8.00	0.07	2.23	3.62	2.55	1.95	0.13	0.06	1.50	99.81

TRACE ELEMENT	Ba	Bi	Ca	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	282	-6	35	10	24	26	48	-3	8	384	13	140

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	23	-20	236	-5	11	-3	130	-5	29	34	160

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Quartz	Ignimbrite	Devitrified vitrophyric
30.	Plagioclase		Phenocrysts of rounded volcanic quartz with embayed margins, fractured, extensively altered plagioclase & skeletal hornblende chloritised & oxidised, set in a groundmass of ultrafine quartzo-feldspathic material clouded by tiniest sericite, chlorite & opaque dust inclusions. Rare relict groundmass flow structures. Rare large crystals of magnetite, partially altering to goethite. Minor hematite & rare groundmass ilmenite.
15.	Hornblende		
53.	Groundmass		
1.	Magnetite		
1.	Hematite		
.01	Ilmenite		

?Photograph relict flow structure

Location 0130

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0130
Outcrop

CANBERRA BRAIDWOOD NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-66
6094764 m N 35.26033 S latitude
744381 m E 149.6863 E longitude

Illustrations :

Age/Unit= Silurian LONG FLAT VOLCANICS
Topography: dip=40W strike=000
Structure : MODERATELY DIPPING
Field Geology: Ignimbrite. Porphyritic in quartz and altered feldspar set in a slatey,
flow-banded fine-grained groundmass. Knotted texture due to frequent
occurrence of quartz and feldspar phenocrysts within planar flow bands.
Very weathered.

Field Rockname:

PHYSICAL PROPERTIES:

IGNIMBRITE
DENSITIES
Whole rock density = 2.58
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)
Mean of 7 in-situ readings = 520
from 376 to 753 ,SD= 139
Laboratory susceptibility = 0
Remanence = .00
Koenigsberg ratio =

GAMMA-RAY SPECTROMETRY
Ch.1= 36608
Ch.2= 1623 .98 % K20
Ch.3= 614 3.75 ppm U
Ch.4= 501 9.52 ppm Th
U/Th= .39
4.17 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.58	.37	14.62	2.50	.03	.89	1.37	2.89	3.44	.23	.05	2.90	99.86

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	889	-6	142	14	8	23	97	-3	8	-5	21	132

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	-20	175	-5	14	4	32	7	49	36	216

Location 0131

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0131
Outcrop

CANBERRA BRAIDWOOD NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-66
6096360 m N 35.24627 S latitude
743067 m E 149.6714 E longitude

Illustrations :

Age/Unit= BORO GRANITE dip= strike=
Topography:
Structure : PLUTON
Field Geology: Adamellite. Inequigranular, slightly porphyritic in plagioclase and quartz. Medium to coarse-grained. Mesocratic dur to scattered biotite and ?hornblende.

Field Rockname: SAMPLE CA0131 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 3.11 Mean of 13 in-situ readings = 442 Ch.1=
Dry density = 2.71 from 0 to 1068 .SD= 315 Ch.2= % K2O
Grain density = 2.71 Laboratory susceptibility = 6700 Ch.3= ppm U
Porosity = .2 Remanence = 120.00 Ch.4= ppm Th
Koenigsberger ratio = .30 U/Th= Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	67.69	.48	14.50	4.26	.08	1.51	3.68	2.75	3.49	.11	.01	.80	99.36
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Mi	Pb	Rb	
p.p.m.	533	7	66	17	18	-5	49	-3	6	11	29	147	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	21	12	117	-5	14	5	83	-5	33	76	148		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
35.	Quartz	Adamellite	Hypidiomorphic granular with slightly micrographic interstitial matter.
34.	Plagioclase		Ragged subangular patches of slightly resorbed quartz amidst abundant zoned euhedral sericitised plagioclase with clear rims. Scattered
25.	Orthoclase		blue-green to light yellowish-green pleochroic hornblende and lesser
4.	Hornblende		brown biotite often bleached and variably altered to chlorite, rare
2.	Biotite		epidote, and trace muscovite. Scattered accessory ilmenite, lesser
.4	Ilmenite		magnetite, apatite, and zircon euhedra. Abundant interstitial
.1	Magnetite		orthoclase which when present with quartz is micrographically
.01	Epidote		intergrown.
.01	Apatite		
.005	Zircon		

Location 0132

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0132
Outcrop

CANBERRA BRAIDWOOD NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-56
6097108 m N 35.24090 S latitude
737395 m E 149.6089 E longitude

Illustrations :

Age/Unit= Silurian MOUNT FAIREY BEDS
Topography: dip= strike=
Structure :
Field Geology: Limestone and calcareous siltstone. Well bedded, planar and crinkly to
undulating laminae with ripple-cross stratification. Small-scale folds
and minor faults present.

Field Rockname: SAMPLE CA0132 CALCAREOUS SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.48
Dry density = 2.46
Grain density = 2.69
Porosity = 8.7

CALC SILTSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 75
Remanence = .10
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Calcareous siltstone
FABRIC: Poorly sorted
Est. % MINERAL Dispersed, unsupported, scattered quartz grains set in a weathered mud
5. Quartz matrix which has chlorite & calcite as constituents. Numerous quartz
95. Opaque veinlets.
Mud/Cement

Location 0133

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0133

Road cutting

CANBERRA BRAIDWOOD NSW GDDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-56
6096325 m N 35.24843 S latitude
735343 m E 149.5866 E longitude

Illustrations :

Age/Unit= Silurian MOUNT FAIREY BEDS
Topography: dip=65 strike=
Structure : STEEPLY DIPPING
Field Geology: Quartz greywacke, quartzose sandstone, slate, shale and siltstone. Thin
to medium bedded, planar bedded.

Field Rockname: SAMPLE CA0133 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.65
Dry density = 2.63
Grain density = 2.63
Porosity = .2

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 20
Remanence = .10
Koenigsberger ratio = .08

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
75.	Quartz	Quartzose sandstone	Poorly to moderately sorted
2.	Rock fragments		Tightly packed subangular fine quartz sand grains with infrequent detrital plagioclase, muscovite & chloritised rock fragments.
5.	Muscovite		Matrix is chloritic mud with traces of ?diagenetic biotite. Muscovites
1.	Biotite		are mostly parallel to bedding & occur as discrete grains. Many have
2.	Opaque		random orientation possibly caused by differential compaction or perhaps
10.	Matrix		due to density-current deposition.
5.	Plagioclase		

Location 0134

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0134
 Outcrop

CANBERRA sheet area 1:250,000
 6095535 m N
 728949 m E

BRAIDWOOD sheet area 1:100,000
 35.25703 S latitude
 149.5166 E longitude

NSW GDOM=1
 air-photo:run-no.= 4-58

Illustrations :

Age/Unit= BORO GRANITE
 Topography: dip= strike=
 Structure : PLUTON
 Field Geology: Gneissic granite tending flow-banded ignimbrite. Porphyritic in plagioclase. Flattened lenticular streaks of quartz. Gneissic, with foliation due to alligned biotite and groundmass layering.

Field Rockname: SAMPLE CA0134 GNEISSIC GRANITE

PHYSICAL PROPERTIES: GRANITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.73	Mean of 5 in-situ readings = 0	Ch.1=
Dry density = 2.63	from to SD=	Ch.2= X K20
Grain density = 2.63	Laboratory susceptibility = 100	Ch.3= ppm U
Porosity = .0	Remanence = 1.00	Ch.4= ppm Th
	Koenigsberger ratio = .17	U/Th=
		Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.37	.26	12.86	2.36	.02	.37	1.61	2.77	4.33	.08	.05	.50	99.57

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	642	-6	75	7	10	-5	72	-3	7	8	18	116

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	10	71	-5	18	3	20	-5	39	14	148

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Granite gneiss
FABRIC:	Gneissose; porphyroblastic
Est. %	Flattened lenticular segregations of strained quartz aggregates
15.	Quartz possibly representing relict phenocrysts. Unstrained sericitised equant
10.	Plagioclase euhedral plagioclase phenocrysts. The groundmass consists of quartz,
5.	Biotite biotite, feldspars, epidote, minor opaques & muscovite. The micas
2.	Muscovite have segregated into layers which curve around plagioclase phenocrysts.
2.	Epidote Marginal phase of nearby unmetamorphosed granite.
1.	Opaque
70.	Groundmass

Location 0135

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0135
Quarry

CANBERRA sheet area 1:250,000
6098605 m N
719308 m E
BRAIDWOOD sheet area 1:100,000
NSW GDOM=1
air-photo:run-no.= 4-20
35.23153 S latitude
149.4099 E longitude

Illustrations :

Age/Unit= Silurian
Topography: ABRUPT UPLAND CAUSED BY NEARBY FAULT dip=53SW strike=140
Structure : MODERATELY TILTED AND OUTCROP-SCALE TO MACROSCOPIC FOLDS
Field Geology: Siltstone. Graphitic, slightly cleaved, containing pyrite cubes;
interbedded with cherty argillite, quartz greywacke and siltstone.
Lenticular quartz ellipsoids conformable with bedding.

Field Rockname: SAMPLE CA0135 SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.97
Dry density = 2.72
Grain density = 2.72
Porosity = .01

SILTSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to SD=
Laboratory susceptibility = 200
Remanence = .00
Koenigsberger ratio = 0.00

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Siltstone
FABRIC: Moderately sorted
Subangular fine sand- to coarse silt-sized quartz grains. Those with a long axis have it parallel to bedding. Rare detrital lithic fragments, plagioclase, & volcanic biotite. Randomly-oriented detrital muscovite. Matrix is mainly chloritic mud.
Est. % MINERAL
75. Quartz
1. Plagioclase
3. Biotite
4. Muscovite
1. Opaque
.01 Tourmaline
15. Matrix
1. Rock fragments

Location 0136

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0136
Outcrop

CANBERRA sheet area 1:250,000
6099711 m N
718151 m E
CANBERRA sheet area 1:100,000
NSW GDOM=1
air-photo:run-no.= 4-20
35.22182 S latitude
149.3969 E longitude

Illustrations :

Age/Unit= Silurian
Topography: dip=55E strike=178
Structure :
Field Geology: Ignimbrite. Porphyritic in quartz, altered feldspar and altered ferromagnesian mineral set in a slightly-altered, fine-grained quartzo-feldspathic groundmass. Slightly cleaved along flow banding.

Field Rockname: SAMPLE CA0136 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE
DENSITIES
Whole rock density = 2.73
Dry density =
Grain density =
Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 50
Remanence = 1
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
FABRIC: Devitrified eutaxitic
Est. % MINERAL
10. Quartz Phenocrysts of strained volcanic quartz with resorption canals filled with chloritised glass. Also phenocrysts of highly altered plagioclase
35. Plagioclase largely pseudomorphed by sericite, muscovite & epidote. Microphenocrysts of biotitised, epidotised & opacitised ferromagnesian mineral.
10. Ferromagnesian Some quartz phenocrysts show slight tendency to appear as porphyro-
3. Epidote blasts with tapering beards of groundmass in "pressure shadows" but they
3. Biotite still retain their volcanic fractures & resorption. The groundmass
5. Opaque is ultrafine quartzo-feldspathic material clouded by secondary
34. Groundmass fine sericite, chlorite & opaque to non-resolvable dust.

Location 0137

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0137
Outcrop

CANBERRA	CANBERRA	NSW	GDOM=1
1:250,000 sheet area	1:100,000 sheet area	air-photo:run-no.= 3-68	
6103007 m N		35.19322 S latitude	
713055 m E		149.3401 E longitude	

Illustrations :

Age/Unit= Ordovician
Topography: GENTLE TO MODERATELY SLOPING DISSECTED UPLAND dip=90 strike=175
Structure : VERTICALLY DIPPING
Field Geology: Slate, graphitic slate, and greywacke. Thin to medium bedded with internal lamination in slate. Very weathered. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

SLATE

MAGNETIC SUSCEPTIBILITY (S.I.:.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0138

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0138
Outcrop

CANBERRA CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-68
6105293 m N 35.17370 S latitude
707923 m E 149.2832 E longitude

Illustrations :

Age/Unit= SUTTON GRANITE dip= strike=
Topography:
Structure : PLUTON
Field Geology: Granite. Equigranular, non-porphyrific leucocratic, with thin smears of
epidote on small joint faces. Small pods of quartzite and planar aplite
dykes within granite.

Field Rockname: SAMPLE CA0138 GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.81 Ch.1=
Dry density = 2.62 Mean of 7 in-situ readings = 206 Ch.2= % K2O
Grain density = 2.63 from 0 to 942, SD= 339 Ch.3= ppm U
Porosity = .4 Laboratory susceptibility = 0 Ch.4= ppm Th
Remanence = .00 U/Th=
Koenigsberger ratio = Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.52	.36	14.20	.76	.01	.76	4.06	4.69	.12	.10	.05	.30	99.94
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	294	-6	60	3	8	-5	32	-3	8	-5	10	-3	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	8	380	-5	10	-3	40	-5	25	27	142		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Albitised granite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
35. Quartz Moderately weathered rock with former zoned plagioclase euhedra almost
40. Albite completely pseudomorphed by non-resolvable ?kaolinite, but surrounded
12. Plagioclase by clearer secondary overgrowths. Abundant patches of slightly strained,
10. Biotite fractured quartz, & weakly-twinning albite pseudomorphs of former
1. Sphene orthoclase. Biotite is largely altered to chlorite, muscovite, sphene &
1. Opaque thin smears of opaque alteration products. Rare traces of ilmenite and
goethite.

Location 0139

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0139

Outcrop

CANBERRA CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-68
6105561 ± N 35.17100 S latitude
709506 m E 149.2983 E longitude

Illustrations :

Age/Unit= Ordovician

Topography:

dip=60 strike=

Structure : MODERATELY DIPPING

Field Geology: Cherty quartzite interbedded with knotted slate containing altered
andalusite porphyroblasts.

Field Rockname: SAMPLE CA0139 SILTSTONE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 3.00
Dry density = 2.76
Grain density = 2.79
Porosity = .8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 4 in-situ readings = 439
from 0 to 691, SD= 328
Laboratory susceptibility = 280
Remanence = .00
Koenigsberger ratio = 0.00

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Siliceous siltstone
FABRIC: Poorly sorted; Uncleaved.
Est. % MINERAL
5. Quartz Rare detrital biotite. Matrix muscovite associated with mud. Incipient
1. Biotite ?andalusite porphyroblasts. The chemical component of the rock is
40. Andalusite recrystallised quartz which has undergone grain growth from a formerly
5. Muscovite microcrystalline mass. It has partially separated from the mud matrix,
27. Mud ?perhaps during compaction, & now occurs in microlenses. Scattered
21. Silica layers of epiclastic quartz grains.
1. Opaque

Location 0140

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0140

Outcrop

CANBERRA CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-66
6108206 m N 35.14828 S latitude
703897 m E 149.2383 E longitude

Illustrations :

Age/Unit= Middle Ordovician

PITTMAN FORMATION

Topography:

dip=90 strike=

Structure : VERTICALLY DIPPING WITH NUMEROUS FOLDS OF 50-100M WAVELENGTH

Field Geology: Shale, slate, siltstone and quartzite with stratabound
cross-cutting quartz veinlets. The quartzite is massive but the other
rocks are planar bedded and laminated internally. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY.

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0141

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0141
Outcrop

CANBERRA	CANBERRA	NSW	GDOM=1
1:250,000 sheet area	1:100,000 sheet area	air-photo:run-no.= 3-66	
6109116 m N		35.14068 S latitude	
700891 m E		149.2051 E longitude	

Illustrations :

Age/Unit= Middle Silurian FAIRBURN GROUP dip= strike=
Topography:
Structure :
Field Geology: Weathered ?tuff. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0142

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0142
Road cutting

SAME LOCATION AS 0143

CANBERRA

CANBERRA

ACT GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-62
6103934 m N 35.18970 S latitude
688887 m E 149.0746 E longitude

Illustrations :

Age/Unit= Silurian
Topography: GENTLY SLOPING UPLAND WITH OUTCROP dip=5E strike=
Structure : SUB HORIZONTAL IGNEOUS LAYERING
Field Geology: Ignimbrite. Variably porphyritic in quartz, feldspar and hornblende set
in a fine-grained groundmass that has planar flow banding. Cut by
fissures of tuffisite.

Field Rockname: SAMPLE CA0142 PORPHYRITIC IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.87
Dry density = 2.68
Grain density = 2.69
Porosity = .4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 1162
from 502 to 1947 ,SD= 530
Laboratory susceptibility = 230
Remanence = 5.00
Koenigsberger ratio = .36

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	64.01	.63	13.79	5.21	.07	2.76	2.91	.81	3.74	.16	.04	5.40	99.53

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	348	-6	70	20	92	27	45	-3	9	24	-5	178

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	18	-20	35	-5	15	-3	95	6	34	51	184

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
FABRIC: Devitrified vitrophyric
8. Quartz A very altered rock. Phenocrysts of volcanic quartz, rounded, embayed,
15. Plagioclase and with devitrified glass-filled fractures, as well as plagioclase,
1. Biotite largely altered to calcite, chlorite & rare muscovite. Skeletal
1. Opaque hornblende now represented by chlorite & opaque mineral traces of
5. Hornblende cleavage, where completely altered. Devitrified chloritic & calcitised,
70. Groundmass quartz-feldspathic groundmass.

Location 0143

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0143 SAME LOCATION AS 0142
Road cutting CANBERRA CANBERRA ACT GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-62
6103937 m N 35.18968 S latitude
682887 m E 149.0746 E longitude

Illustrations :

Age/Unit= Silurian
Topography: GENTLE SLOPING UPLAND WITH OUTCROP dip= strike=
Structure : SUB HORIZONTAL IGNEOUS LAYERING
Field Geology: Ignimbrite. Variably porphyritic in quartz, feldspar and hornblende set
in a fine-grained groundmass that has planar flow banding. Cut by
fissures of tuffite.

Field Rockname: SAMPLE CA0143 TUFFISITE DYKE

PHYSICAL PROPERTIES: TUFF

DENSITIES
Whole rock density = 2.83
Dry density = 2.66
Grain density = 2.68
Porosity = .6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 20
Remanence = 0.30
Koenigsberger ratio = .25

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.81	.68	12.22	5.24	.04	2.67	.67	.59	2.92	.13	.07	3.90	99.92

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	309	-6	79	17	65	20	49	3	12	27	-5	156

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	-20	18	-5	15	-3	35	-5	29	56	225

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Tuffisite
FABRIC: Porphyritic, xenolithic
5. Quartz Phenocrysts of volcanic quartz, fractured rounded & embayed, with relict
2. Plagioclase ghosted plagioclase pseudomorphed by calcite, set in a fine groundmass
20. Xenoliths of tiny quartz & microlithic fragments which are chloritised &
73. Groundmass sericitised. Numerous altered glassy volcanic xenoliths. Occurs as dyke
within rock unit of specimen 79620142.

Locatic 0144

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0144

SAME LOCATION AS 0145, 0146

Quarry

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5072
6217344 m N 34.18025 S latitude
596937 m E 148.0519 E longitude

Illustrations :

Age/Unit= Ordovician JINDALEE BEDS
Topography: GENTLY SLOPING UPLAND Dip= strike=
Structure : HORIZONTAL WEATHERED PROFILE OVERLYING MAFIC ROCKS
Field Geology: Amphibolitized basalt. Altered, dark green to black mafic rock mostly
weathered, with liberations of magnesite. Overlain by lateritised soils
and derived sediments.

Field Rockname: SAMPLE CT0144 AMPHIBOLITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.94
Dry density =
Grain density =
Porosity =

SERPENTINITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 3 in-situ readings = 9676
from 9550 to 9927 .SD= 217
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 9244
Ch.2= 410 .17 % K2O
Ch.3= 201 1.01 ppm U
Ch.4= 182 3.49 ppm Th
U/Th= .29
1.26 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Amphibolite	
		Holocrystalline;	granoblastic
60.	Actinolite	Actinolite occurring as equigranular crystals collectively appearing to pseudomorph the original groundmass of a mafic lava. If so, the	
35.	Plagioclase	plagioclase; could be highly altered relict, glomerocrphyritic	
5.	Magnesite	euhedra surrounded by clear secondary overgrowths. Rare veinlets of	
.5	Tremolite	cloudy ?magnesite & epidote. Cloudy ?magnesite pseudomorphs of altered	
		plagioclase. The opacity of ?magnesite is due to its ultrafine size.	
		Rare acicular tremolite needles. This rock is a magnesium-rich	
		alteration product of a mafic igneous rock.	

Location 0145

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0145

SAME LOCATION AS 0144, 0146

Quarry

COOTAMUNDRA

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5072

6217344 m N

34.18025 S latitude

596937 m E

148.0519 E longitude

Illustrations :

Age/Unit= Ordovician

JINDALEE BEDS

Topography: FLAT

dip= strike=

Structure : HORIZONTAL WEATHERED PROFILE OVERLYING MAFIC ROCK

Field Geology: Amphibolitised basalt. Altered, dark green to black mafic rock mostly weathered, with liberations of magnesite. Overlain by lateritised soils and derived sediments.

Field Rockname: SAMPLE CT0145 AMPHIBOLITE

PHYSICAL PROPERTIES:

AMPHIBOLITE

DENSITIES
Whole rock density = 3.02
Dry density = 3.01
Grain density = 3.01
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 1 in-situ readings = 0
from to χ_{sp} =
Laboratory susceptibility = 301
Remanence = .10
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 1925
Ch.2= 40 .00 % K2O
Ch.3= 43 .25 ppm U
Ch.4= 36 .69 ppm Th
U/Th= .37
.27 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Amphibolite
FABRIC: Porphyritic
Est. % MINERAL
40. Actinolite Phenocrysts of actinolite set in a fine groundmass of plagioclase and scarcely resolvable ?magnesite which clouds the groundmass considerably.
30. Plagioclase Relict laths of plagioclase in groundmass suggests an original lava texture. This rock is a magnesium-rich alteration product of a mafic igneous rock.
30. Magnesite

Location 0146

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0146
Quarry

SAME LOCATION AS 0144, 0145

COOTAHJUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5072
6217344 m N 34.18025 S latitude
596937 m E 148.0519 E longitude

Illustrations :

Age/Unit= Ordovician JINDALEE BEDS dip= strike=
Topography: FLAT
Structure : HORIZONTAL WEATHERED PROFILE OVERLYING BASIC ROCK
Field Geology: Amphibolitized basalt. Altered, dark green to black mafic rock mostly
weathered, with liberations of magnesite. Overlain by lateritised soils
and derived sediments.

Field Rockname: SAMPLE CT0146 MAGNESITE

PHYSICAL PROPERTIES:

GOSSAN

DENSITIES
Whole rock density = 2.48
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings = 559
from 0 to 1118 SD= 790
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: ?Magnesite
100. Magnesite FABRIC: Massive
Scarcely resolvable, massive, ultrafine ?magnesite. It is a weathering
product developed on amphibolite specimens 79620144 & 79620145.

Location 0147

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0147
Outcrop

ROCKY RISE WITH TREES ON NE BEND IN JAD

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5086
6231487 m N 34.05197 S latitude
604781 m E 148.1353 E longitude

Illustrations :

Age/Unit= Ordovician

JINDALEE BEDS

Topography: ROCKY RISE

dip=90 strike=45

Structure : NORTHEAST TRENDING

Field Geology: Serpentine, green fresh moderately schistose to mainly massive in texture.

Field Rockname: SAMPLE CT0147

PHYSICAL PROPERTIES:

SERPENTINITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Whole rock density = 2.52	Mean of 5 in-situ readings = 34567
Dry density = 2.52	from 29028 to 38201 .SD= 3380
Grain density = 2.56	Laboratory susceptibility = 49511
Porosity = 1.6	Remanence = 500000.0
	Koenigsberger ratio = 168.31

GAMMA-RAY SPECTROMETRY

Ch.1=	4234	
Ch.2=	130	.06 % K20
Ch.3=	67	.64 ppm U
Ch.4=	35	.64 ppm Th
U/Th=	1.01	
	.52	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Serpentine
	FABRIC:	Relict hypidiomorphic granular
Est. %	MINERAL	
10.	Enstatite	Relict slightly rounded enstatite & lesser smaller clusters of
45.	Antigorite	altered euhedral augite surrounded by serpentine minerals
41.	Serpentine	pseudomorphous after granular olivine mosaic. Relict olivine fractures
1.	Augite	pseudomorphed by magnetite. Rare "phenocrysts" of chromite with marginal
2.	Magnetite	alteration to magnetite. Magnetite has marginal alteration to, and
1.	Chromite	exsolution lamellae of, hematite.
.1	Hematite	

Location 0148

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0148
 Outcrop

EXFOLIATED SURFACE
 FORBES

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-99
 6260078 m N 33.79508 S latitude
 595033 m E 148.0266 E longitude

NSW GDDM=1

Illustrations :

Age/Unit= BOGALONG GRANITE
 Topography: EXFOLIATED SURFACE AND ROCKY RISE dip= strike=
 Structure : PLUTON
 Field Geology: Granite, inequigranular, porphyritic in randomly oriented orthoclase.
 Leucocratic, with minor altered biotite, coarse-grained.

Field Rockname: SAMPLE FB0148 GRANITE

PHYSICAL PROPERTIES:

GRANITE
 DENSITIES
 Whole rock density = 2.57
 Dry density = 2.59
 Grain density = 2.61
 Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 69
 from 0 to 175, SD= 67
 Laboratory susceptibility = 276
 Remanence = .20
 Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 61105
 Ch.2= 5603 4.99 % K2O
 Ch.3= 1102 7.53 ppm U
 Ch.4= 831 15.69 ppm Th
 U/Th= .48
 8.48 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.38	.11	13.01	1.30	.05	.16	.70	3.40	4.29	.09	.04	.40	98.92

TRACE ELEMENT	Be	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	247	-6	48	4	6	-5	15	-3	13	11	25	298

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	16	49	-5	15	9	6	9	46	24	87

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
35.	Quartz	Granite
40.	Orthoclase	Hypidiomorphic granular
20.	Plagioclase	Slightly globular, thinly interconnected patches of slightly strained quartz with relict subgrains. Euhedral zoned plagioclase with preferential sericitisation of core & clear secondary overgrowths.
3.	Biotite	Interstitial slightly sericitised & lightly kaolinised anhedral orthoclase with expulsion of muscovite films to former sub-grain boundaries as well as to grain edges. Biotite is slightly to moderately chloritised & has numerous radioactive inclusions.
1.5	Muscovite	
.5	Opaque	

Location 0149

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0149
Outcrop

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-2103
625577 m N 33.83475 S latitude
604751 m E 148.1321 E longitude

Illustrations :

Age/Unit= Upper Ordovician HOSKINS FORMATION
Topography: SMOOTH CLEARED UPLAND ALONG N-TRENDING RIDGE dip=90 strike=015
Structure : DIPPING OFF GRANITE
Field Geology: Basalt. Altered and amphibolitised. Porphyritic in altered ferromagnesian mineral. Plagioclase laths discernible as a conspicuous feature of the groundmass. Weak flow layering parallel to regional strike.
Field Rockname: SAMPLE FB0149 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 3.00	Mean of 8 in-situ readings = 28467	Ch.1= 6790
Dry density = 2.97	from 9110 to 49511, SD= 13583	Ch.2= 346 .19 % K2O
Grain density = 2.99	Laboratory susceptibility = 45125	Ch.3= 139 .79 ppm U
Porosity = .0	Remanence = 600.00	Ch.4= 118 2.25 ppm Th
	Koenigsberger ratio = .22	U/Th= .35
		.92 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Basalt
		FABRIC:	Intergranular
45.	Plagioclase		Relict phenocrysts of augite, glomeroporphyritic in places, set in an altered groundmass consisting of plagioclase laths, non resolvable
15.	Augite		pseudomorphs of a ferromagnesian mineral ?orthopyroxene, secondary
22.	Hornblende		hornblende pseudomorphs of interstitial material, & magnetite.
15.	Ferromagnesian		
3.	Magnetite		Minor epidote veinlets. A moderately altered rock.

Location 0150

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0150
Outcrop

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-2103
6255639 m N 33.83423 S latitude
604354 m E 148.1278 E longitude

Illustrations :

Age/Unit=
Topography: ROUGH, TREE-COVERED dip= strike=
Structure :
Field Geology: Rhodonite rock. With secondary iron and manganese-stained boxworks.
Fine-grained. Micro-stockworks of hematite veins in places. Lies
between amphibolitised basalt of 0149 and weathered granite of 0151.

Field Rockname: SAMPLE FB0150 PINK RHODONITE ROCK

PHYSICAL PROPERTIES:

QUARTZITE
DENSITIES
Whole rock density = 3.19
Dry density = 3.53
Grain density = 3.53
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 6 in-situ readings = 7885
from 5340 to 12189 SD= 3068
Laboratory susceptibility = 3166
Remanence = 4.00
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	50.09	.11	2.05	6.16	33.28	.65	6.06	.02	.11	.11	.04	.80	99.47

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1763	-6	28	16	-1	6	32	-3	-3	22	-5	3

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-20	52	-5	19	4	15	-5	-3	71	21

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
80.	Rhodonite	Rhodonite rock	Veined
10.	Hematite	Euhedral rhodonite occurring as aggregates in veins & as euhedral crystals in a groundmass of finely crystalline rhodonite forming a fine-grained mosaic. Numerous veinlets of hematite rimmed by goethite & ?manganese oxide patches.	
5.	Goethite		
5.	Opaque		

Location 0151

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0151
Outcrop

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-2103
6255744 m N 33.83330 S latitude
604106 m E 148.1251 E longitude

Illustrations :

Age/Unit= BOGALONG GRANITE
Topography: ROUGH TREE-COVERED dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, but slightly porphyritic in biotite. Medium
to coarse-grained, mesocratic with prominent large biotites. Weathered.
Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

ADAMELLITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 686
from 0 to 1130, SD= 376
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 72894
Ch.2= 5478 4.18 % K2O
Ch.3= 1539 10.40 ppm U
Ch.4= 1170 22.11 ppm Th
U/Th= .47
11.17 Heat generation units

Location 0152

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0152
Outcrop

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-2103
6264395 m N 33.75490 S latitude
608035 m E 148.1665 E longitude

Illustrations :

Age/Unit= Upper Ordovician
Topography: SIDE OF HILL dip=90 strike=0
Structure :
Field Geology: Basalt. Highly altered, light-green rock. Minor epidote veinlets.

Field Rockname: SAMPLE FB0152 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 3.03
Dry density = 3.01
Grain density = 3.04
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 5410
from 2701 to 7602 ,SD= 1765
Laboratory susceptibility = 4385
Remanence = 450.00
Koenigsberger ratio = 1.71

GAMMA-RAY SPECTROMETRY

Ch.1= 5908
Ch.2= 281 .20 X K2O
Ch.3= 95 .79 ppm U
Ch.4= 60 1.11 ppm Th
U/Th= .71
.72 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	FABRIC:
		Basalt	Intergrown
50.	Plagioclase		
11.	Epidote		
18.	Chlorite		
15.	Ferromagnesian		
5.	Augite		
1.	Magnetite		

A highly altered rock with sparse relict augite phenocrysts as well as epidote aggregates pseudomorphing a former phenocryst mineral ?plagioclase. Groundmass consists of relict plagioclase laths partially altered, chlorite patches & non-resolvable semi-opaque alteration product of a former ferromagnesian mineral ?orthopyroxene. Minor accessory magnetite, intergrown with minor hematite. Minor epidote veinlets.

Location 0153

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0153
Outcrop

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-2107
6264464 m N 33.75190 S latitude
629231 m E 148.3953 E longitude

Illustrations :

Age/Unit= Upper Devonian BEARGAMIL SUBGROUP
Topography: RUGGED RIDGES AND GORGES-TREE COVERED dip=30E strike=0
Structure : MODERATELY DIPPING LARGE FOLDS
Field Geology: Quartzose sandstone, pebbly sandstone and red siltstone. Planar bedded.
Pebbles consist of quartz and clay-pellet casts. Vertical cleavage in
siltstone. Magnetic susceptibility values due to ferruginous weathering
products. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

SILTSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 452
from 125 to 879 .SD= 342
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 45230
Ch.2= 3577 2.78 % K2O
Ch.3= 813 1.08 ppm U
Ch.4= 992 19.36 ppm Th
U/Th= .06
4.60 Heat generation units

Location 0154

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0154

Outcrop

FORBES

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-2129

6241713 m N

33.95827 S latitude

618766 m E

148.2854 E longitude

Illustrations :

Age/Unit: Upper Ordovician?

Topography: ROUGH UNDULATING

dip=90 strike=10

Structure : TILTED

Field Geology: Highly-altered tuff. Sparsely porphyritic in microphenocrysts set in a fine-grained groundmass. Cognate microxenoliths present.

Field Rockname: SAMPLE FB0154 HIGHLY-ALTERED TUFF

PHYSICAL PROPERTIES:

TUFF

DENSITIES

Whole rock density = 2.67

Dry density = 2.67

Grain density = 2.67

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 109

from 0 to 251, SD= 129

Laboratory susceptibility = 0

Remanence = 2.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 39675

Ch.2= 2473 1.53 % K2O

Ch.3= 849 3.43 ppm U

Ch.4= 841 16.22 ppm Th

U/Th= .21

5.24 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Quartz	Highly-altered tuff	Fine grained; massive
5.	Plagioclase		Tiny microphenocrysts of angular to rounded quartz fragments set in an altered quartzo-felspathic groundmass with discernible elongate plagioclases. Abundant opaque oxide & trace muscovite. Groundmass is patchily oxidised to hematite. Microxenoliths of similar lithology in places. Not obviously volcanic in thin section, & difficult to distinguish from an impure siliceous mudstone.
5.	Opaque		
79.	Groundmass		
1.	Muscovite		

Location 0155

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0155
Outcrop

COOTAMUNDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5043
6176900 m N 34.54680 S latitude
574531 m E 147.8123 E longitude

Illustrations :

Age/Unit=
Topography: ROUNDED AND RUGGED RISES dip=74W strike=150
Structure : STEEPLY INCLINED FOL IATION
Field Geology: Gneissic granite. Phenocrysts of quartz and biotite with ovoid to
angular feldspar porphyroblasts set in a coarsened quartzo-feldspathic
groundmass. Numerous granitic xenoliths. White quartz veins in places.

Field Rockname: SAMPLE CT0155 MISSING

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density = 2.4
Grain density = 2.65
Porosity = 9.4

GNEISS

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 376
from 0 to 691, SD= 299
Laboratory susceptibility = 150
Remanence = 50.00
Koenigsberger ratio = 5.56

GAMMA-RAY SPECTROMETRY

Ch.1= 57867
Ch.2= 4648 3.90 % K2O
Ch.3= 962 3.63 ppm U
Ch.4= 975 18.83 ppm Th
U/Th= .19
6.35 Heat generation units

Location 0156

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0156

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5043

6175791 m N

34.55667 S latitude

576247 m E

147.8311 E longitude

Illustrations :

Age/Unit=

Topography: ROUNDED AND RUGGED RISES

dip=74W strike=150

Structure :

Field Geology: Gneissic granite. Phenocrysts of quartz and biotite with ovoid to angular feldspar porphyroblasts set in a coarsened quartzo-feldspathic groundmass. Numerous granitic xenoliths. White quartz veins in places. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density =

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K20

ppm U

ppm Th

U/Th=

Heat generation units

Location 0157

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0157

Outcrop

COOTAMUNDRA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6167963 m N 34.62817 S latitude
562862 m E 147.6858 E longitude

Illustrations :

Age/Unit= Upper Devonian

Topography: ROCKY RISE

Structure: MASSIVE

dip= strike=

Field Geology: Troctolite. Mainly massive. Spotted due to scattered olivine. Medium to coarse-grained.

Field Rockname: SAMPLE CT0157 TROCTOLITE

PHYSICAL PROPERTIES:

DIORITE

DENSITIES
Whole rock density = 2.81
Dry density = 2.75
Grain density = 2.78
Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 6770
from 5026 to 8293 ,SD= 1319
Laboratory susceptibility = 6810
Remanence = 16000.00
Koenigsberger ratio = 39.16

GAMMA-RAY SPECTROMETRY

Ch.1= 5035
Ch.2= 154 .07 % K2O
Ch.3= 84 .88 ppm U
Ch.4= 37 .65 ppm Th
U/Th= 1.35
.68 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Troctolite	
26.	Olivine	Hypidiomorphic granular	
70.	Plagioclase		Fractured olivine anhedral with liberations of iddingsite along fractures & very minor marginal alteration to biotite, muscovite, and sericite. Rare augite. Remainder of the rock is equigranular plagioclase which displays shattering adjacent to olivine crystal edges especially where mica is present.
3.	Augite		
1.	Opaque		
.1	Biotite		
.1	Muscovite		
.1	Chlorite		

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E02		C06		O09	Location 0031	M13	Location 0085	K17	Location 0139
F02		D06		P09	Location 0032	N13	Location 0086	L17	Location 0140
G02		E06		C10	Location 0033	O13	Location 0087	M17	Location 0141
H02		F06		D10	Location 0034	P13	Location 0088	N17	Location 0142
I02	B. SELECTED KEY INDEXES	G06	E. MAJOR ELEMENT ANALYSES	E10	Location 0035	C14	Location 0089	O17	Location 0143
J02	B.2 STATION TYPE INDEX	H06		F10	Location 0036	D14	Location 0090	P17	Location 0144
K02		I06		G10	Location 0037	E14	Location 0091	C18	Location 0145
L02		J06		H10	Location 0038	F14	Location 0092	D18	Location 0146
M02		K06		I10	Location 0039	G14	Location 0093	E18	Location 0147
N02	B.3 SHEET NAME INDEX	L06		J10	Location 0040	H14	Location 0094	F18	Location 0148
O02		M06		K10	Location 0041	I14	Location 0095	G18	Location 0149
P02		N06		L10	Location 0042	J14	Location 0096	H18	Location 0150
Q03		O06		M10	Location 0043	K14	Location 0097	I18	Location 0151
R03	B.4 GEOLOGICAL AGE INDEX	P06	F. TRACE ELEMENT ANALYSES	N10	Location 0044	L14	Location 0098	J18	Location 0152
E03		C07		O10	Location 0045	M14	Location 0099	K18	Location 0153
F03		D07		P10	Location 0046	N14	Location 0100	L18	Location 0154
G03		E07		C11	Location 0047	O14	Location 0101	M18	Location 0155
H03		F07		D11	Location 0048	P14	Location 0102	N18	Location 0156
I03	C. KEY SUMMARIES C.1 SHE	G07		E11	Location 0049	C15	Location 0103	O18	Location 0157
J03	C.2 ILLUSTRATIONS	H07		F11	Location 0050	D15	Location 0104		
K03	C.3 STATION TYPE	I07		G11	Location 0051	E15	Location 0105		
L03	C.4 GEOLOGICAL AGE	J07		H11	Location 0052	F15	Location 0106		
M03	C.5 GEOLOGICAL UNIT	K07	G. DATA FOR EACH LOCATION	I11	Location 0053	G15	Location 0107		
N03		L07		J11	Location 0054	H15	Location 0108		
O03		M07	Location 0001	K11	Location 0055	I15	Location 0109		
P03		N07	Location 0002	L11	Location 0056	J15	Location 0110		
Q04	C.6 GENERAL ROCKTYPE	O07	Location 0003	M11	Location 0057	K15	Location 0111		
R04		P07	Location 0004	N11	Location 0058	L15	Location 0112		
E04	C.7 THIN SECTION ROCKTYPE	C08	Location 0005	O11	Location 0059	M15	Location 0113		
F04		D08	Location 0006	P11	Location 0060	N15	Location 0114		
G04		E08	Location 0007	C12	Location 0061	O15	Location 0115		
H04	C.8 FABRIC	F08	Location 0008	D12	Location 0062	P15	Location 0116		
I04		G08	Location 0009	E12	Location 0063	C16	Location 0117		
J04		H08	Location 0010	F12	Location 0064	D16	Location 0118		
K04		I08	Location 0011	G12	Location 0065	E16	Location 0119		
L04		J08	Location 0012	H12	Location 0066	F16	Location 0120		
M04		K08	Location 0013	I12	Location 0067	G16	Location 0121		
N04	D. PHYSICAL PROPERTIES	L08	Location 0014	J12	Location 0068	H16	Location 0122		

Location 0158

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0158
Outcrop

SAME LOCATION AS 0159
COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5044
6177936 m N 34.53793 S latitude
567711 m E 147.7379 E longitude

Illustrations :

Age/Unit=

Topography: LOW RISES

dip= strike=

Structure : PLUTON

Field Geology: Granite. Variable adjacent phases. Medium to coarse-grained with
rosettes of tourmaline up to 5 cm in places. Leucocratic.
Inequigranular. Rock is moderately weathered.

Field Rockname: SAMPLE CT0158 COARSE GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.53
Dry density = 2.53
Grain density = 2.68
Porosity = 5.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 649
from 376 to 1256 SD= 331
Laboratory susceptibility = 50
Remanence = 5.00
Koenigsberger ratio = 1.67

GAMMA-RAY SPECTROMETRY

Ch.1= 57033
Ch.2= 5530 5.13 % K2O
Ch.3= 1011 8.58 ppm U
Ch.4= 620 11.47 ppm Th
U/Th= .75
8.45 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.13	.08	12.86	1.75	.19	.05	.11	2.74	5.11	.08	.02	.90	100.03

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	147	-6	25	9	3	7	16	7	9	12	25	311

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	14	14	-5	10	11	2	-5	34	47	60

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
35.	Quartz	Granite	Hypidiomorphic granular
35.	Orthoclase		Large patches of quartz, some with angular edges. The quartz is slightly strained and, in places, has widely spaced fractures of volcanic-type quartz, as well as rare incipient resorption. These features suggest high level emplacement. Euhedral, finely sericitised plagioclase.
28.	Plagioclase		Anhedral interstitial orthoclase with well adjusted grain boundaries indicating crystallisation from a potash-feldspar liquid. Rare biotite, somewhat altered by weathering & slightly altered to chlorite. Minor muscovite & opaque mineral.
.5	Biotite		
.5	Muscovite		
.5	Opaque		
.5	Chlorite		

Location 0159

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0159
 Outcrop

SAME LOCATION AS 0158
 CGOTAMUNDRA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
 6177936 m N 34.53793 S latitude air-photo:run-no.= 5-5045
 567711 m E 147.7379 E longitude

Illustrations :

Age/Unit=
 Topography: LOW RISES dip= strike=
 Structure : PLUTON
 Field Geology: Granite. Variable adjacent phases. Medium to coarse-grained with
 rosettes of tourmaline up to 5 cm in places. Leucocratic.
 Inequigranular.

Field Rockname: SAMPLE CT0159 APLITIC MICROADAMELLITE

PHYSICAL PROPERTIES: GRANITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.51	Mean of 7 in-situ readings = 412	Ch.1= 51831
Dry density =	from 314 to 628 .SD= 107	Ch.2= 4805 4.42 % K2O
Grain density =	Laboratory susceptibility = 163	Ch.3= 906 7.83 ppm U
Porosity =	Remanence = .50	Ch.4= 544 10.04 ppm Th
	Koenigsberger ratio = .05	Th= .78
		7.54 next generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.74	.05	13.67	.82	.03	.01	.18	3.09	4.86	.10	.05	.80	99.37
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	94	-6	32	3	9	-5	7	-3	6	11	18	356	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	6	12	5	-5	9	4	4	-5	24	12	58		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Aplitic microadamellite
FABRIC:	Allotriomorphic granular
Est. %	Anhedra, slightly rounded, interconnected globules of strained quartz
34.	with prominent internal sub-grain formation. These are largely
30.	surrounded by slightly kaolinised orthoclase & minor plagioclase. Minor
30.	biotite, which is slightly chloritised. Minor patchy muscovite.
1.	Accessory topaz, variably altering to pseudomorphous pale-green sericite
1.	aggregates.
1.	Opaque
	Topaz

Location 0160

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0160
 Road cutting

NEAR LOCATIONS 0161-0162

COOTAMUNDRA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5079
 6158675 m N 34.70830 S latitude
 606485 m E 148.1628 E longitude

Illustrations :

Age/Unit= Upper Silurian BLOWERING BEDS
 Topography: RUGGED UPLAND dip= strike=0
 Structure : STEEPLY DIPPING
 Field Geology: Ignimbrite. Phenocrysts of rounded, volcanic quartz and feldspars set in a fine-grained groundmass.

Field Rockname: SAMPLE CT0160 IGIMBRITE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density = 2.72		Mean of 0 in-situ readings =		Ch.1=	
Dry density = 2.66		from to SD=		Ch.2=	% K20
Grain density = 2.71		Laboratory susceptibility =	402	Ch.3=	ppm U
Porosity = 2.0		Remanence =	.20	Ch.4=	ppm Th
		Koenigsberger ratio =	.01	U/Th=	
				Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.71	.67	14.44	4.51	.04	2.01	1.79	2.15	4.02	.16	.06	1.40	99.97
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	654	-6	71	18	49	33	42	-3	10	21	26	174	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	14	-20	144	-5	16	-3	87	11	36	52	211		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Ignimbrite
15.	Quartz	FABRIC:	Devitrified eutaxitic
10.	Orthoclase		Phenocrysts of slightly embayed, prominently rounded, volcanic quartz, sericitised plagioclase, sericitised orthoclase & minor oxidised
25.	Plagioclase		biotite set in a fine-grained groundmass of devitrified quartz.
7.	Biotite		feldspar, biotite, epidote, & opaques. Some extensively sericitised
1.	Muscovite		feldspars have cores of epidote crystal clusters. The quartz
1.	Opaque		phenocrysts have a narrow reaction rim of clear but finer groundmass.
40.	Groundmass		
1.	Epidote		

Location 0161

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0161 150 METRES WEST OF 0160
Road cutting COOTAMUNDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5079
6158904 m N 34.70628 S latitude
606103 m E 148.1586 E longitude

Illustrations :

Age/Unit=
Topography: LOW RISE dip= strike=0
Structure : STEEPLY DIPPING
Field Geology: Serpentinite. Width of unit approximately 75 metres in outcrop.

Field Rockname: SAMPLE CT0161 SERPENTINITE

PHYSICAL PROPERTIES:	SERPENTINITE		
DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY
Whole rock density = 2.58	Mean of 0 in-situ readings =		Ch.1=
Dry density =	from to ,SD=		Ch.2= % K2O
Grain density =	Laboratory susceptibility = 0		Ch.3= ppm U
Porosity =	Remanence = .00		Ch.4= ppm Th
	Koenigsberger ratio =		U/Th=
			Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Serpentinite
Est. #	FABRIC:	Massive
92.	Antigorite	A mass of lamellar antigorite with variably-sized opaque minerals.
3.	Opaque	Veinlets of secondary epidote, with interpenetrating antigorite.
4.	Calcite	Patchy calcite alteration.
1.	Epidote	

Location 0162

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0162
Outcrop

NEAR LOCATIONS 0161, 0162

COOTAMUNDRA

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5079

6158905 m N

34.70635 S latitude

605361 m E

148.1505 E longitude

Illustrations :

Age/Unit= Ordovician

JINDALEE BEDS

Topography: LOW RISE

dip=80E strike=345

Structure : STEEPLY DIPPING

Field Geology: Shale and siltstone, finely bedded and thinly laminated. Abundant diagenetic pyrite. Minor chert laminae.

Field Rockname: SAMPLE CT0162 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.79
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL WAHE: Siltstone
15. Quartz FABRIC: Laminated
5. Chert Finely laminated. Bedding planes defined by infrequent chert laminae
65. Mud & variations in grain size. The chert laminae are compacted into
15. Opaque flattened lenses. Diagenetic opaque ?pyrite. Mud matrix partly consists
of chlorite.

Location 0163

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0163
Mag traverse

MAG TRAVERSE SEE BW79B00K1PAGES9-13

LCOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5073

6217395 m N
612597 m E

34.17822 S latitude
148.2218 E longitude

Illustrations :

Age/Unit= YOUNG GRANODIORITE
Topography: FLAT dip= strike=
Structure :
Field Geology: Granodiorite. Equigranular. Coarse-grained. Mesocratic, due to scattered biotite.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0164

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0164

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5073

6217167 m N

34.18040 S latitude

611415 m E

148.2090 E longitude

Illustrations :

Age/Unit=

YOUNG GRANODIORITE

Topography:

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Equigranular, medium-grained. Mesocratic with abundant biotite. Numerous xenoliths up to 25 cm long of mafic igneous and biotite-rich rock including biotite quartzite. Cut by small mafic diorite dyke dipping 80 degrees west.

Field Rockname: SAMPLE CT0164 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
 Whole rock density = 2.75
 Dry density = 2.70
 Grain density = 2.77
 Porosity = 2.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 305
 from 0 to 628, SD = 236
 Laboratory susceptibility = 314
 Remanence = .40
 Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1=
 Ch.2= % k20
 Ch.3= ppm U
 Ch.4= ppm Th
 U/Th=
 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.69	.75	14.96	5.43	.08	2.31	2.61	2.00	3.64	.19	.02	.80	99.48
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	1/b	Ni	Pb	Rb	
p.p.m.	577	-6	78	19	64	69	49	-3	13	25	19	152	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	5	113	-5	16	5	90	-5	36	61	201		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
35.	Quartz	Adamellite	Hypidiomorphic granular
25.	Microcline		Strained anhedral patches of quartz grain aggregates & euhedral,
30.	Plagioclase		partly zoned, sericitised plagioclase with rare small muscovite flakes
9.	Biotite		& tiny epidote grains partially pseudomorphing it. Abundant
1.	Chlorite		interstitial microcline which has undergone grain growth to large
.2	Opaque		crystals, where space was available. It has well adjusted grain
.01	Muscovite		boundaries & is partly graphically intergrown with interstitial
.01	Epidote		quartz, but not with the large patches of quartz. Biotite is the green-
			brown variety & appears to lack radioactive inclusions. Minor
			chloritised biotite. Rare opaque mineral generally confined to biotites.

Location 0165

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0165
Outcrop

COOTAMUNDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5112
6190585 m N 34.42373 S latitude
569715 m E 147.7587 E longitude

Illustrations :

Age/Unit: Middle Silurian-Lower Devonian

Topography: VERY LOW RISE

dip=85W strike=150

Structure :

Field Geology: Conglomerate and lithic sandstone. Very weathered outcrop with boulders of quartzite mostly eroded from their matrix of clayey, sericite-rich lithic sandstone.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

CONGLOMERATE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 635
from 0 to 3392 ,SD= 1058
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 29357
Ch.2= 2135 1.60 % K20
Ch.3= 550 1.84 ppm U
Ch.4= 577 11.17 ppm Th
U/Th= .17
3.41 Heat generation units

Location 0166

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0166

Outcrop

COOTAMUNDRA

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5045

6198657 m N

34.35108 S latitude

567632 m E

147.7354 E longitude

Illustrations :

Age/Unit=

Topography: LOW ROCKY RISE MORE ELEVATED THAN SURROU

dip= strike=

Structure : PLUTON

Field Geology: Bajtite. Very mafic with abundant hornblende and scattered iron oxide.
Medium-grained.

Field Rockname: SAMPLE T0166 BAJTITE

PHYSICAL PROPERTIES:

BAJTITE

DENSITIES

Whole rock density = 2.83

Dry density = 2.80

Grain density = 2.82

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I. x .000001)

Mean of 14 in-situ readings = 805

from 502 to 1193, SD= 220

Laboratory susceptibility = 791

Remanence = 25.00

Koenigsberger ratio = .53

GAMMA-RAY SPECTROMETRY

Ch.1= 12178

Ch.2= 347 .67 % K20

Ch.3= 222 1.47 ppm U

Ch.4= 171 3.24 ppm Th

U/Th= .46

1.62 Heat generation units

CHEMISTRY:

MAJOR ELEMENT

Weight %: SiO2 49.10 TiO2 1.84 Al2O3 19.70 Fe2O3 11.20 MnO .20 MgO 2.42 CaO 8.79 Na2O 4.12 K2O .73 P2O5 .25 S03 .03 LOI 1.40 SUM 99.77

TRACE ELEMENT

p.p.m. Ba 351 Bi 12 Ce 41 Co 21 Cr 8 Cu 27 La 21 Mo -3 Nb 8 Ni 8 Pb 6 Rb 16

TRACE ELEMENT

p.p.m. Sc 43 Sn 8 Sr 425 Ta -5 Th -5 U -3 V 131 W -5 Y 15 Zn 82 Zr 87

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Bajtite

Est. % MINERAL FABRIC: Xenomorphic granular tending "sub-ophitic"-like
65. Plagioclase Plutonic-sized laths of plagioclase, randomly oriented & partially
25. Hornblende shattered. Interstitial & euhedral hornblende partly pseudomorphed
6. Epidote by epidote, & slightly chloritised in places. Accessory euhedral
2. Opaque apatite & sphene. Alteration of plagioclase to non-resolvable clay
1. Sphene in places, particularly where feldspar is fractured, & in cores. Name
1. Apatite bajtite used instead of amphibolite, because this rock has a distinctly
igneous, non-metamorphic texture.

Location 0167

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0167
Outcrop

COOTAMUNDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5047
6205063 m N 34.29402 S latitude
555852 m E 147.6069 E longitude

Illustrations :

Age/Unit=
Topography: ROCKY RISES dip= strike=
Structure : PLUTON
Field Geology: Granite. Equigranular. Medium-grained leucocratic with minor biotite and rare hornblende.

Field Rockname: SAMPLE CT0167

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNET SUSCEPTIBILITY (S.I. * 000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.60 Mean of 11 in-situ readings = 5997 Ch.1= 62218
Dry density = 2.60 from 3392 to 9801 SD= 1745 Ch.2= 4755 3.80 X K2O
Grain density = 2.63 Laboratory susceptibility = 10216 Ch.3= 1179 6.79 ppm U
Porosity = 1.1 Remanence = 1650.00 Ch.4= 996 18.99 ppm Th
Koenigsberger ratio = 2.69 U/Th= .36
8.31 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.44	.23	12.87	2.03	.05	.24	.95	3.84	4.63	.07	.01	.01	99.36
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	382	-6	67	4	20	-5	44	4	14	12	27	167	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	5	52	5	21	5	12	6	42	33	166		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
35	Quartz	Granite	Hypidiomorphic granular
45	Orthoclase		A fairly weathered rock with large patches of slightly globular quartz with microfractures. Minor plagioclase euhedra. Interstitial orthoclase
15	Plagioclase		exhibiting moderate kaolinisation from weathering. Patchy green-
4	Biotite		yellowish brown biotite moderately altered to magnetite, ilmenite &
.1	Hornblende		goethite. The ilmenite is intergrown with hematite. Rare hornblende &
1	Magnetite		zircon.
.01	Zircon		
	Ilmenite		

Location 0168

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0168

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5065

6215276 m N

34.20228 S latitude

548634 m E

147.5279 E longitude

Illustrations: Photomicrograph

Age/Unit=

Topography: RUGGED TREE-COVERED UPLAND

dip= strike=

Structure: PLUTON

Field Geology: Adamellite, fine-granular, medium-grained, leucocratic, minor biotite.

Trace muscovite and cordierite.

Field Rockname: SAMPLE CT0168 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.56
Dry density = 2.53
Grain density = 2.62
Porosity = 3.4

MAGNETIC SUSCEPTIBILITY (S.I. * 000001)

Mean of 10 in-situ readings = 289
from 0 to 1130, SD= 406
Laboratory susceptibility = 314
Remanence = 8.00
Koenigsberger ratio = .42

GAMMA-RAY SPECTROMETRY

Ch.1= 57598
Ch.2= 4787 4.36 % K20
Ch.3= 822 4.26 ppm U
Ch.4= 735 14.07 ppm Th
U/Th= .30
6.04 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.83	.12	13.04	1.41	.03	.07	.34	3.46	4.90	.09	.01	.60	99.89

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	545	-6	43	-1	6	-5	31	-3	13	7	28	162

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	6	27	-5	11	7	6	-5	42	35	104

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	FAERIC:	NAME:
30.	Quartz		Granite
50.	Orthoclase		Hypidiomorphic granular, tending slightly granophyric
16.	Plagioclase		Rounded, separate globules of quartz with prominently embayed margins together with euhedral, slightly sericitised plagioclase frequently in clusters. Rare pinites. Abundant euhedral interstitial orthoclase with bleb-like quartz inclusions & microglobules. Minor greenish-yellow & brownish-yellow biotite with radioactive inclusions. Rare muscovite pseudomorphs of plagioclase. Photograph: resorbed quartz; institial orthoclase with quartz blebs.
3.	Biotite		
.5	Muscovite		
.1	Opaque		
.1	Pinite		

Location 0169

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0169
Outcrop

OLD IN-FILLED GOLD WORKINGS

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5093

6231859 m N

34.05263 S latitude

550723 m E

147.5496 E longitude

Illustrations :

Age/Unit: Upper Devonian

Topography: RUGGED TREE-COVERED RISE IN LOWLAND

dip=30W strike=0

Structure : MODERATELY DIPPING

Field Geology: Lithic and quartzose sandstone, conglomerate. The conglomerate has well rounded quartz, chert and intraformational shale clasts. Not sampled.

Field /lockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 596
from 314 to 879 ,SD= 220
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 34284
Ch.2= 2359 1.56 X K20
Ch.3= 773 3.78 ppm U
Ch.4= 710 13.62 ppm Th
U/Th= .28
5.02 Heat generation units

Location 0170

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0170

Outcrop

FORBES

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-2155

6243590 m N

33.94780 S latitude

523018 m E

147.2491 E longitude

Illustrations :

Age/Unit=

Topography: FLAT WITH VERY LITTLE OUTCROP

dip= strike=

Structure :

Field Geology: Basalt and basaltic breccia. Microphenocrysts of plagioclase and a ferromagnesian mineral set in a very fine-grained groundmass. Minor white quartz veins in places. The breccia consists of altered basaltic clasts set in a siliceous matrix.

Field Rockname: SAMPLE F90170 BASALTIC BRECCIA

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.92
Dry density = 2.91
Grain density = 2.92
Porosity = .1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 24755
from 18221 to 31415 .SD= 4932
Laboratory susceptibility = 27859
Remanence = 700.00
Koenigsberger ratio = .42

GAMMA-RAY SPECTROMETRY
Ch.1= 8519
Ch.2= 322 .14 % K20
Ch.3= 156 .99 ppm U
Ch.4= 124 2.35 ppm Th
U/Th= .42
7.58 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Altered basaltic breccia
FABRIC: Poorly sorted
Est. % MINERAL
88. Rock fragments
10. Matrix
2. Magnetite

A very altered rock with altered sub-angular clasts of amphibolitised basalt. Hornblende occurs as stubby euhedra, elongate laths & as groundmass in clasts & it appears to be pseudomorphous after plagioclase phenocrysts & laths. Amphibolitisation is accompanied by abundant hydrothermal quartz, particularly in relict vesicles of clasts & in groundmass. In addition, a non-resolvable clay is present through the non-siliceous clasts. The matrix consists mainly of cherty quartzite, clay alteration & magnetite. Some clasts have original unaltered plagioclase laths.

Location 0171

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0171
 Outcrop

ADJACENT TO 0172
 FORBES

NSW GDDM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-2079
 6253278 m N 35.86053 S latitude
 517870 m E 147.1932 E longitude

Illustrations :

Age/Unit: MYALONG GRANODIORITE
 Topography: LOW RISE dip= strike=
 Structure :
 Field Geology: Tonalite, Equigranular, medium grained, melanocratic with abundant hornblende and biotite.

Field Rockname: SAMPLE FB0171 TONALITE

PHYSICAL PROPERTIES:

	GRANODIORITE		
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density =	2.66	Mean of 9 in-situ readings =	456
Dry density =		from 62 to 691, SD=	211
Grain density =		Laboratory susceptibility =	0
Porosity =		Remanence	.00
		Koenigsberger ratio	= .00
			1.05 Heat generation units
			Ch.1= 24924
			Ch.2= 1817 1.45 X K2O
			Ch.3= 405 .97 ppm U
			Ch.4= 458 8.90 ppm Th
			U/Th= .11

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.40	.69	15.19	5.38	.07	2.81	4.94	2.78	2.06	.15	.03	.50	100.00
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	605	-6	67	20	66	19	75	-3	7	23	11	85	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	25	-5	220	-5	11	-3	113	-5	18	47	226		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Tonalite
23.	Quartz	FABRIC:	Hypidiomorphic granular
50.	Plagioclase		Euhedral plagioclase laths, often in clusters separated by slightly bleached hornblende with minor marginal alteration to biotite with rare epidote in places. Biotite also present as independent plate aggregates. The quartz is all interstitial, is slightly strained and lacks well adjusted grain boundaries, which instead have sutured contacts. Trace accessory opaque mineral & apatite.
13.	Hornblende		
12.	Biotite		
1.	Epidote		
1.	Opaque		
.1	Apatite		

Location 0172

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0172
Outcrop

ADJOINS W EDGE OF 0171
FORBES

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-2079
6253278 m N 33.86053 S latitude
517861 m E 147.1931 E longitude

Illustrations :

Age/Unit=

KIKOIRA GRANITE

Topography: LOW RUBBLE AT GROUND LEVEL

dip=82W strike=168

Structure : STEEPLY INCLINED FOLIATION IN PLACES

Field Geology: Aplite, with patchy muscovite aggregates. Equigranular, leucocratic.

Field Rockname: SAMPLE FB0172 APLITE

PHYSICAL PROPERTIES:

APLITE

DENSITIES
Whole rock density = 2.81
Dry density = 2.76
Grain density = 2.81
Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 383
from 62 to 628 ,SD= 178
Laboratory susceptibility = 351
Remanence = .60
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 37482
Ch.2= 2473 1.54 % K2O
Ch.3= 805 2.09 ppm U
Ch.4= 896 17.40 ppm Th
U/Th= .12
4.61 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Aplite
Est. % MINERAL FABRIC:
20. Quartz
60. Feldspar
15. Biotite
5. Muscovite

Aplitic, layered
Medium grained rock with completely sericitised feldspar, orthoclase,
with lesser anhedral quartz. Abundant biotite & lesser, but larger,
muscovite crystals generally tending to have their long axes parallel
to layering but a significant number have random orientation. Layering
defined by changes in grain size.

Location 0173

* LACHLAN FOLD BELT of New South Wales, BLOCK PROPERTY DATA BASE *

NO.=(792)0173
Outcrop

CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-81
6262636 m N 33.77595 S latitude
473797 m E 146.7170 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: LOW RUBBLE RISE dip=75SW strike=135
Structure :
Field Geology: Shale, siltstone. Thin bedded to laminated, deeply weathered and
scarcely exposed. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 541
from 0 to 1256 ,SD= 428
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 35637
Ch.2= 2741 2.25 X K20
Ch.3= 549 .47 ppm U
Ch.4= 692 13.53 ppm Th
U/Th= .03
3.11 Heat generation units

Location 0174

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

ND.=(7962)0174
Outcrop

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-153

6246188 m N

33.92432 S latitude

474775 m E

146.7271 E longitude

Illustrations :

Age/Unit= Upper Devonian

Topography: RUGGED RIDGE ADJACENT TO LOWLAND

dip=15SE strike=050

Structure : GENTLY INCLINED BEDS DEFINING SYMCLINE

Field Geology: Red quartzose sandstone, granule and pebble conglomerate. Clasts include quartz, quartzite and minor intraformational shale. Thin to thick bedded. Cross bedded in places. Most units are tabular.

Field Rockname: SAMPLE CG0174 PEBBLY SANDSTONE

PHYSICAL PROPERTIES:

CONGLOMERATE

DENSITIES

Whole rock density = 2.55

Dry density = 2.51

Grain density = 2.71

Porosity = 7.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 0

from to .SD=

Laboratory susceptibility = 175

Remanence = 190.00

Koenigsberger ratio = 18.10

GAMMA-RAY SPECTROMETRY

Ch.1= 19497

Ch.2= 1429 1.12 % K2O

Ch.3= 350 1.55 ppm U

Ch.4= 335 6.44 ppm Th

U/Th= .24

2.32 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
20.	Rock fragments	Pebbly quartzose sandstone
60.	Quartz	Moderately sorted; angular to rounded
15.	Feldspar	Granule- to sand-sized, rounded clasts of mudstone, quartzite and fine-grained volcanic rocks, together with coarse-sand-sized quartz and sericitised feldspar clasts, tightly packed & cemented by fine silica, seircite & chlorite, which constitute the matrix.
4.	Matrix	
1.	Opaque	
.1	Muscovite	
.01	Tourmaline	

Location 0175

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0175
 Outcrop

NARRANDERA NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-84
 6234701 m N 34.02790 S latitude
 473781 m E 146.7160 E longitude

Illustrations :Photomicrograph

Age/Unit= Lower-Middle Silurian
 Topography: RUGGED RISES AND RIDGES dip= strike=170
 Structure : PROBABLY NEAR VERTICAL
 Field Geology: Ignimbrite. Porphyritic in quartz and feldspar set in a fine-grained
 groundmass. Rare igneous layering present.

Field Rockname: SAMPLE NR0175 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE
 DENSITIES
 Whole rock density = 2.64
 Dry density = 2.63
 Grain density = 2.66
 Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)
 Mean of 15 in-situ readings = 3614
 from 753 to 6534 SD= 1722
 Laboratory susceptibility = 5089
 Remanence = 3400.00
 Koenigsberger ratio = 11.14

GAMMA-RAY SPECTROMETRY
 Ch.1= 62134
 Ch.2= 5844 5.35 % K2O
 Ch.3= 1207 12.63 ppm U
 Ch.4= 538 9.54 ppm Th
 U/Th= 1.32
 10.69 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.12	.08	13.29	1.61	.04	.09	.49	3.05	5.19	.15	.06	.80	99.96
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	117	-6	29	5	6	15	15	3	16	-5	40	385	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	-20	26	-5	11	11	-1	12	28	64	74		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
 Est. % MINERAL FABRIC: Devitrified vitrophyric
 15. Quartz Phenocrysts of euhedral & fractured volcanic quartz with edges rounded
 25. Orthoclase by magmatic corrosion, & embayed. Also fractured phenocrysts of
 5. Plagioclase orthoclase & euhedral plagioclase. Xenoliths of andesitic to rhyolitic
 3. Rock fragments rock types including some of a graphic intergrowth between quartz &
 50. Groundmass orthoclase. The groundmass is kaolinised, ultrafine quartzo-feldspathic
 1.8 Goethite material with tiny mineral fragments. The biotite euhedra are entirely
 .2 Hematite oxidised to goethite, clay & minor hematite. Photograph clasts of
 graphic rock.

Location 0176

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0176

Outcrop

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-147

6248108 m N

33.90623 S latitude

452406 m E

146.4852 E longitude

Illustrations :

Age/Unit=

Topography: SLIGHT RISE IN GENTLE LOWLAND

dip= strike=

Structure : PLUTON

Field Geology: Aplitic granite and granite. Medium to coarse-grained, respectively.
Equigranular leucocratic, muscovite and tourmaline-bearing. Moderately weathered. Adjacent to abandoned tin workings.

Field Rockname: SAMPLE CG0176 APLITE

PHYSICAL PROPERTIES:

APLITE

DENSITIES

Whole rock density = 2.59

Dry density = 2.54

Grain density = 2.62

Porosity = 2.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0

from to .SD=

Laboratory susceptibility = 0

Remanence = 2.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 36639

Ch.2= 3407 3.20 % K2O

Ch.3= 618 5.81 ppm U

Ch.4= 331 6.03 ppm Th

U/Th= .96

5.36 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.75	.06	14.50	.68	.05	.12	.35	3.77	4.19	.23	.03	.80	99.53

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	147	-6	17	4	5	-5	-1	-3	12	8	18	497

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
o.o.m.	10	34	26	6	-5	-3	4	-5	13	24	25

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Aplite	
50.	Orthoclase	Aplitic	
20.	Plagioclase		Medium-grained with euhedral sericitised plagioclase surrounded by anhedral quartz & orthoclase. Large, scattered muscovite plates.
4.	Muscovite		Accessory biotite, tourmaline & rare apatite. Opaque oxide is partly due to weathering. The quartz is strained & has sutured contacts with adjacent quartz grains.
.1	Tourmaline		
.1	Apatite		
.8	Opaque		
.1	Biotite		

Location 0177

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0177
Outcrop

NARRANDERA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-94
6235286 m N 34.02057 S latitude
429323 m E 146.245 E longitude

Illustrations :

Age/Unit= Upper Devonian JIMBEROD MEMBER
Topography: HOGBACK AND CUESTA dip=06W strike=173
Structure : GENTLY DIPPING
Field Geology: Reddish to white quartzose sandstone, quartz-granule conglomerate and pebble conglomerate. Medium to thick bedded in planar, tabular units. Low-angle crossbedding in places. The pebbles include quartz, quartzite, greywacke, slate and volcanic rocks.

Field Rockname: SAMPLE NR0177 SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.54	Mean of 2 in-situ readings =	0	Ch.1=	13677
Dry density =	2.53	from to ,SD=		Ch.2=	836 .62 % K2O
Grain density =	2.63	Laboratory susceptibility =	75	Ch.3=	215 .57 ppm U
Porosity =	3.9	Remanence =	50.00	Ch.4=	238 4.62 ppm Th
		Koenigsberger ratio =	11.11	U/Th=	.12
				1.28	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL FABRIC:	NAME:
		Pebbly quartzose sandstone
60.	Quartz	Moderately sorted
30.	Rock fragments	Subrounded to sub angular sand-sized quartz clasts with larger lithic fragments tightly packed with a thin sericitic-chloritic mud matrix. The lithic clasts include mudstone, siltstone, greywacke & fine-grained acid to intermediate lavas. Much of the quartz is strained and some adjacent grains have stylolite contacts. However, other grains are not strained, thus suggesting the strained grains were derived from quartzites. Rare sericitised feldspar & opaque mineral. Trace tourmaline.
5.	Feldspar	
1.	Opaque	
4.	Mud	
1	Tourmaline	

Location 0178

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0178

Outcrop

NARRANDERA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-98
6226694 m N 34.79697 S latitude
414849 m E 146.0769 E longitude

Illustrations :

Age/Unit= Upper Devonian RANKIN FORMATION
Topography: STRIKE RIDGE OF COLLAPSED OUTCROPS dip= strike=
Structure : GENTLY DIPPING
Field Geology: Reddish to white quartzose sandstone, quartz-granule conglomerate,
pebbly sandstone and conglomerate. The sandstone is medium to coarse-
grained. Pebbles include quartz and quartzite.

Field Rockname: SAMPLE NR0178 SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density = 2.38
Grain density = 2.61
Porosity = 9.1

SANDSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 3 in-situ readings = 0
from to SD=
Laboratory susceptibility = 37
Remanence = 3.00
Koenigsberger ratio = 1.35

GAMMA-RAY SPECTROMETRY

Ch.1= 10039
Ch.2= 436 .16 % K2O
Ch.3= 209 .64 ppm U
Ch.4= 224 4.34 ppm Th
U/Th= .15
1.17 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
70.	Quartz	Quartzose sandstone	Moderately well sorted
5.	Feldspar		Mainly subrounded clastic framework of medium to coarse sand. Many quartz grains have been secondarily enlarged by optically continuous silica overgrowths within which original grain coatings are preserved. Detrital feldspar is kaolinised & slightly sericitised.
20.	Rock fragments		Lithic fragments include mudstone, siltstone, quartzite, rare intermediate lavas, some of which are slightly iron-charged. The interstitial material is mainly quartz & minor mud. Trace rare zircon.
2.	Cement		
1.	Mud		
2.	Opaque		
.1	Zircon		

Location 0179

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0179

Outcrop

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-35
6288159 m N 33.54083 S latitude
394157 m E 145.8600 E longitude

Illustrations :

Age/Unit= Upper Devonian

SQUARE HEAD BEDS

Topography: RUGGED RUBBLY STRIKE RIDGE

dip=23SW strike=122

Structure : GENTLY TILTED AND FOLDED

Field Geology: White quartzose sandstone, pebbly quartzose sandstone, quartz-granule and quartz-pebble conglomerate. Well washed and well bedded in planar tabular units. Sandstones contain muscovite on bedding surfaces.

Field Rockname: SAMPLE CG0179 SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.52
Dry density = 2.47
Grain density = 2.67
Porosity = 7.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 188
Remanence = 1.00
Koenigsberger ratio = .09

GAMMA-RAY SPECTROMETRY

Ch.1= 29110
Ch.2= 1921 1.36 % K2O
Ch.3= 532 1.42 ppm U
Ch.4= 589 11.44 ppm Th
U/Th= .12
3.14 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
78.	Quartz	Quartzose sandstone	Moderately well sorted
10.	Rock fragments		Rounded to sub-rounded quartz grains, slightly strained, but lacking solution contacts. Lithic fragments are kaolinised & include sandstone, altered intermediate lavas, & quartzite. Relict detrital feldspar is similarly altered & difficult to distinguish. Rare detrital tourmaline. Matrix consists of sericitic & chloritic mud.
10.	Matrix		
1.	Muscovite		
.01	Tourmaline		
1.	Opaque		

Location 0180

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0180

Outcrop

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-39

6283344 m N

33.58632 S latitude

417635 m E

146.1124 E longitude

Illustrations :

Age/Unit= Upper Devonian

BARRAT CONGLOMERATE

Topography: RUGGED RIDGE

dip=28W strike=16Z

Structure : MODERATELY DIPPING LIMB OF LARGE FOLD

Field Geology: Fine to coarse whitish, quartzose sandstone, pebbly in places with granule and quartz-pebble conglomerate. Clasts rounded to noticeably sub-angular indicating short transport. Laminated to medium bedded, but some conglomerate lenses are lenticular and cross-bedded.

Field Rockname: SAMPLE CG0180 SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.52
Dry density = 2.50
Grain density = 2.66
Porosity = 6.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0
from to SD=
Laboratory susceptibility = 263
Remanence = .20
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 16984
Ch.2= 981 .57 X K20
Ch.3= 312 .00 ppm U
Ch.4= 437 8.59 ppm Th
U/Th= .00
1.44 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
90.	Quartz	Quartzose sandstone	Moderately sorted
2.	Feldspar	Grains are tightly packed & exhibit minor solution contacts in places.	
5.	Rock fragments	Most grains are sub-rounded & well delineated by coating of secondary limonite liberated from weathering of an opaque mineral. Feldspar and lithic fragments are slightly kaolinised. Trace zircon & tourmaline.	
1.	Opaque	Some lithic clasts are iron-charged. Thin smears of matrix sericitic & chloritic mud.	
.01	Tourmaline		
.01	Zircon		
2.	Matrix		

Location 0181

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0181

AT END OF AIRSTRIP

Outcrop

CARGELLIGO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-53

6317023 m N

33.28500 S latitude

460426 m E

146.5750 E longitude

Illustrations :

Age/Unit= Ordovician?

Topography: LOW EXCAVATED RUBBLY RISE

dip=90 strike=170

Structure : STEEPLY DIPPING, FRACTURED AND JOINTED

Field Geology: Shale, siltstone and greywacke. Laminated to thinly interbedded. Slump structures present. Deeply weathered and varicoloured. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

SHALE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 3 in-situ readings = 125
from 0 to 251, SD= 125
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 46666
Ch.2= 3106 2.21 % K2O
Ch.3= 328 1.44 ppm U
Ch.4= 982 19.14 ppm Th
U/Th= .08
4.65 Heat generation units

Location 0182

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0182
Outcrop

SAME LOCATION AS 0183
CARGELLIGO

1:250,000 sheet area 1:100,000 sheet area
6304054 m N 33.40035 S latitude
428841 m E 146.2348 E longitude

NSW GDOM=2

air-photo:run-no.= 4-251

Illustrations :

Age/Unit= Silurian?

URAL VOLCANICS

Topography: RUGGED STEEP UPLAND FLANKED BY FLOAT

dip=90 strike=170

Structure : STEEPLY DIPPING

Field Geology: Ignimbrite and volcanic breccia. Porphyritic in quartz and plagioclase set in a slightly altered chloritic, quartz-feldspathic groundmass. Abundant chloritised cognate xenoliths. Volcanic breccia has clasts of ignimbrite up to 30 cm, of variable shape and random orientation.

Field Rockname: SAMPLE CG0182 NON MAGNETIC IGMIMBRITE CONTAINING ARSENOPYRITE

PHYSICAL PROPERTIES:

IGMIMBRITE

DENSITIES
Whole rock density = 2.64
Dry density = 2.61
Grain density = 2.64
Porosity = 1.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 2 in-situ readings = 0
from to SD=
Laboratory susceptibility = 75
Remanence = 2.00
Koenigsberger ratio = .44

GAMMA-RAY SPECTROMETRY

Ch.1= 69596
Ch.2= 4841 3.45 % K20
Ch.3= 1351 4.47 ppm U
Ch.4= 1422 27.53 ppm Th
U/Th= .16
8.25 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.02	.25	12.76	2.23	.04	.61	.52	4.10	3.51	.15	.07	1.00	99.25
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	751	-6	135	4	4	17	85	4	20	-5	16	181	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	11	-20	71	-5	33	5	8	10	76	22	258		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
4.	Quartz	Ignimbrite	Devitrified vitrophyric
1.	Plagioclase		Small fractured phenocrysts of quartz & plagioclase. Numerous lithic fragments including chloritised andesite, plutonic-sized plagioclase rock, perlitic-cracked & spherulitic rhyolite, & devitrified volcanic rock glass. The matrix consists mainly of ultrafine devitrified quartz & feldspar with patchy coarsening in places. The groundmass is weakly chloritised.
40.	Rock fragments		
1.	Opaque		
54.	Groundmass		
.01	Zircon		

Location 0183

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0183
Outcrop

SAME LOCATION AS 0182 SEE NOTES

CARGELLIGO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-251
6304054 m N 33.40035 S latitude
428841 m E 146.2348 E longitude

Illustrations :

Age/Unit= Silurian?

URAL VOLCANICS

Topography: RUGGED STEEP UPLAND FLANKED BY FLOAT

dip=90 strike=170

Structure : STEEPLY DIPPING

Field Geology: Ignimbrite and volcanic breccia. Porphyritic in quartz and plagioclase set in a slightly altered chloritic, quartzo-feldspathic groundmass. Abundant chloritised cognate xenoliths. Volcanic breccia has clasts of ignimbrite up to 30 cm, of variable shape and random orientation.

Field Rockname: SAMPLE CG0183 MAGNETIC IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.68
Dry density = 2.65
Grain density = 2.66
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 2 in-situ readings = 8733
from 8293 to 9173 .SD= 622
Laboratory susceptibility = 16612
Remanence = 22000.00
Koenigsberger ratio = 22.07

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.32	0.43	13.42	5.08	0.07	1.17	0.80	3.36	4.23	0.17	0.07	1.30	99.40
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	847	-6	148	9	5	-5	95	-3	23	43	7	232	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	-20	121	7	32	5	13	10	94	72	443		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Ignimbrite	
3.	Quartz		Detrified vitrophyric tending slightly eutaxitic
5.	Plagioclase		Angular fractured quartz & plagioclase phenocrysts, with abundant andesitic to rhyolitic rock clasts set in a flow-banded ultrafine, slightly chloritised, quartzo-feldspathic groundmass. The groundmass & most fragments are kaolinised. Lithic clasts include iron-charged andesite, felsic andesite, perlitic-fractured rhyolite, chloritised rhyolite & plagioclase rock. Minor magnetite and goethite. Trace pyrrhotite.
30.	Rock fragments		
60.	Groundmass		
1.	Magnetite		
1.	Goethite		
.1	Pyrrhotite		

Location 0184

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(796)0184
Outcrop

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-61

6310541 m N

33.34113 S latitude

418808 m E

146.1275 E longitude

Illustrations :

Age/Unit= Silurian?

URAL VOLCANICS

Topography:

dip= strike=

Structure :

Field Geology: No notes recorded.

Field Rockname: SAMPLE EG0184 TUFF

PHYSICAL PROPERTIES:

TUFF

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 355
from 0 to 1005 ,SD= 376
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

Location 0185

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0185
Outcrop

CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-63
6318647 m N 33.26712 S latitude
407600 m E 146.0079 E longitude

Illustrations :

Age/Unit=
Topography:
Structure :
Field Geology: No notes recorded.

dip= strike=

Field Rockname: SAMPLE CG0185 QUARTZITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

QUARTZITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 339
from 0 to 879 .SD= 309
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0186

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0186
Outcrop

CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-57
6311609 m N 33.33248 S latitude
433011 m E 146.2802 E longitude

Illustrations :

Age/Unit=
Topography:
Structure :
Field Geology: No notes recorded.

dip= strike=

Field Rockname: SAMPLE CG0186 TUFF

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

TUFF

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 314
from 0 to 628 .SD= 261
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

Location 0187

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0187 SAME LOCATION AS 0188
Outcrop FORBES NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-1645
6345458 m N 33.02917 S latitude
512943 m E 147.1386 E longitude

Illustrations :

Age/Unit= Ordovician GIRILAMBONE BEDS
Topography: MESA dip=30SW strike=135
Structure : VERTICAL ORDOVICIAN CAPPED BY DEVONIAN RESIDUAL WITH GENTLE DIP
Field Geology: Shale and siltstone of Ordovician age unconformably overlain by pebbly
quartzite and breccia of Early Devonian age. Ages indicated from Forbes
1:250,000 Geological Sheet. Clasts in the breccia include white quartz
and shale.
Field Rockname: SAMPLE FB0187 PEBBLY QUARTZITE

PHYSICAL PROPERTIES:		CONGLOMERATE	MAGNETIC SUSCEPTIBILITY (S.I. *.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES					Ch.1=	16617
Whole rock density =	2.59		Mean of 7 in-situ readings =	412	Ch.2=	1234
Dry density =	2.57		from 0 to 691 ,SD=	266	Ch.3=	310 1.54 ppm U
Grain density =	2.66		Laboratory susceptibility =	0	Ch.4=	283 5.43 ppm Th
Porosity =	3.4		Remanence =	.80	U/Th=	.28
			Koenigsberger ratio =	*****	2.10	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Pebbly quartzite
45.	Quartz	FABRIC:	Poorly sorted
35.	Rock fragments		Tightly packed grains of quartz & quartzite together with abundant intraformational muscovite-slate clasts, set in a cherty cement with patches of muscovite. Patchy pressure solution of quartz grains where abundant, & weak development of stylolites lined by opaque material.
20.	Cement		

Location 0188

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0188
Outcrop

SAME LOCATION AS 0187

FORBES

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-1645
6345458 m N 33.02917 S latitude
512943 m E 147.1386 E longitude

Illustrations :

Age/L: Ordovician

GIRILAMBONE BEDS

Topography: MESA

dip=30SW strike=135

Structure : VERTICAL ORDOVICIAN CAPPED BY DEVONIAN RESIDUAL WITH GENTLE DIP

Field Geology: The clasts include white quartz and shale derived from the underlying
Ordovician sequence. The clasts are angular to subrounded. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

SHALE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I. x .000001)

Mean of 3 in-situ readings = 1256
from 1005 to 1507 .SD= 251
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 38410
Ch.2= 3673 3.35 % K20
Ch.3= 629 3.22 ppm U
Ch.4= 566 10.84 ppm Th
U/Th= .30
4.61 Heat generation units

Location 0189

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0189

Outcrop

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-1723

6321558 m N

33.24415 S latitude

538092 m E

147.4089 E longitude

Illustrations :

Age/Unit= Lower Devonian

DERRIWONG BEDS

dip=65NE strike=140

Topography: STRIKE RIDGE

Structure : STEEPLY DIPPING

Field Geology: Red quartzose sandstone and pebbly sandstone. Medium to thick bedded.

Poorly sorted. Clasts consist mainly of quartz and are sub-rounded.

Clay in the matrix has been leached by weathering.

Field Rockname: SAMPLE F80189 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

CONGLOMERATE

DENSITIES

Whole rock density = 2.57

Dry density = 2.56

Grain density = 2.68

Porosity = 4.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 134

from 0 to 376 ,SD= 160

Laboratory susceptibility = 0

Remanence = 9.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 24048

Ch.2= 1609 1.23 X K20

Ch.3= 430 2.26 ppm U

Ch.4= 382 7.31 ppm Th

U/Th= .31

2.92 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Quartzose sandstone	
70.	Quartz		Moderately sorted
23.	Rock fragments		Subangular to sub-rounded grains of strained quartz with prominent limonite grain coatings. The lithic fragments include quartzite, mudstone, altered intermediate lavas, iron-charged andesite clasts and chert. The opaques include rare relict oxidised biotite. Minor
5.	Matrix		tourmaline & detrital muscovite. The matrix is chloritic & sericitic.
.01	Tourmaline		
1.	Muscovite		
1.	Opaque		

Location 0190

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0190
Outcrop

ROAD CUTTING

FORBES

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-1757
6311057 m N 33.33903 S latitude
533268 m E 147.3575 E longitude

Illustrations :

Age/Unit= Lower Devonian

DERRIWONG BEDS

Topography: STRIKE RIDGE OF PROMINENT OUTCROP

dip=70SW strike=133

Structure : STRIKE RIDGE STEEPLY DIPPING

Field Geology: Conglomerate and sandstone. The conglomerate consists of well rounded quartzite boulders set in sandstone matrix. The sandstone contains minor feldspar largely leached out by weathering.

Field Rockname: SAMPLE FB0190 SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.59
Dry density = 2.56
Grain density = 2.70
Porosity = 5.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 172
from 0 to 439, SD= 209
Laboratory susceptibility = 138
Remanence = .00
Koenigsberger ratio = 0.00

GAMMA-RAY SPECTROMETRY

Ch.1= 32851
Ch.2= 1930 1.21 % K2O
Ch.3= 660 2.85 ppm U
Ch.4= 638 12.28 ppm Th
U/Th= .23
4.14 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Quartzose sandstone
Est. %	MINERAL FABRIC:	Moderately sorted
60.	Quartz	Subangular tightly packed quartz sand grains with incipient stylolitic
30.	Rock fragments	contacts. Subangular lithic clasts include mudstone, quartzite, altered
1.	Muscovite	intermediate glassy lavas & greywacke. Rare detrital muscovite, which
8.	Matrix	also occurs in some slate clasts. The matrix consists of cherty silica
1.	Opaque	with thin smears of sericite & chlorite.

Location 0191

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0191
Outcrop

FORBES NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-1831
6300613 m N 33.43338 S latitude
527970 m E 147.3009 E longitude

Illustrations :

Age/Unit= Ordovician? GOTHA GROUP dip= strike=
Topography: LOW RISE
Structure : STEEPLY DIPPING
Field Geology: Quartzose sandstone, pebbly sandstone and conglomerate. Well cemented.
Cut by body of quartzite and quartzite breccia which scarcely crops out.
Sediments not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

SANDSTONE

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 3 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 34891
Ch.2= 2969 2.56 % K2O
Ch.3= 566 1.93 ppm U
Ch.4= 591 11.43 ppm Th
U/Th= .17
3.73 Heat generation units

Location 0192

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0192
Outcrop

SAME LOCATION AS 0191

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-1831

6300613 m N

33.43338 S latitude

527970 m E

147.3009 E longitude

Illustrations :

Age/Unit= Ordovician?

OOTHA GROUP

Topography: NIL

dip= strike=

Structure :

Field Geology: Quartzose sandstone, pebbly sandstone and conglomerate. Well cemented.
Cut by body of quartzite and quartzite breccia which scarcely crops out.

Field Rockname: SAMPLE FB0192 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES

Whole rock density = 2.52

Dry density = 2.59

Grain density = 2.66

Porosity = 2.7

MAGNETIC SUSCEPTIBILITY (S.I. .000001)

Mean of 2 in-situ readings = 0

from to SD=

Laboratory susceptibility = 238

Remanence = 2.00

Koenigsberger ratio = .14

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

U/Th=

Heat generation units

% K2O

ppm U

ppm Th

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	86.74	0.12	6.95	1.84	0.01	0.58	0.03	2.03	0.10	0.04	0.06	0.90	99.40

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	53	-6	11	9	11	-5	17	6	5	79	-5	-3

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	-1	-20	216	-5	11	-3	9	-5	7	36	48

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartzite
 Est. % MINERAL FABRIC: Fragmental with microveinlets
 15. Quartz Fractured fragments of quartz, much of it strained, & quartzite
 10. Rock fragments fragments, subangular to sub rounded, forming open, unsupported
 75. Groundmass framework cemented by impure slightly opacitised cherty groundmass.
 Crossed by network of quartz veinlets.

Location 0193

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0193

Outcrop

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no. = 5-1863

6290908 m N

33.52087 S latitude

529539 m E

147.3181 E longitude

Illustrations :

Age/Unit= Ordovician?

OOTHA GROUP

Topography: LOW RISE UNRELATED TO STRIKE

dip=90 strike=020

Structure : STEEPLY DIPPING

Field Geology: Shale, siltstone and greywacke. Laminated to thin bedded. Slightly cleaved with pseudo-, fracture cleavage. Closely jointed. Detrital muscovite on bedding surfaces of the finer units.

Field Rockname: SAMPLE FB0193 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.56
Dry density = 2.55
Grain density = 2.71
Porosity = 5.7

MAGNETIC SUSCEPTIBILITY (S.I.+000001)

Mean of 10 in-situ readings = 439
from 0 to 691, SD= 233
Laboratory susceptibility = 188
Remanence = .10
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 46073
Ch.2= 4154 3.80 % K2O
Ch.3= 637 1.32 ppm U
Ch.4= 737 14.35 ppm Th
U/Th= .09
4.13 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL FABRIC: NAME: Siltstone
10. Quartz Poorly sorted, with micro, pinch-and-swell quartz concentrations. Dispersed unsupported quartz grains & planar lenticular laminae of recrystallised quartz which has undergone grain growth from formerly cherty layers. During compaction, the silica has migrated to form micro-boudins. The mud is chloritic & much of the opaque material is derived from breakdown of the mud. Chlorite patches have partially separated from the mud in places. Microveinlets of quartz and limonitised chlorite.
90. Matrix

Location 0194

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0194
Outcrop

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1863
6281903 m N 33.60220 S latitude
525457 m E 147.2744 E longitude

Illustrations :

Age/Unit= Ordovician? OOTHA GROUP
Topography: LOW STRIKE RIDGE dip=70W strike=150
Structure : STEEPLY DIPPING
Field Geology: Greywacke. Fine-grained and slightly feldspathic. Jointing parallel to bedding.

Field Rockname: SAMPLE FB0194 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES
Whole rock density = 2.71
Dry density = 2.68
Grain density = 2.71
Porosity = 1.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 6 in-situ readings = 251
from 0 to 502, SD= 213
Laboratory susceptibility = 175
Remanence = 5.00
Koenigsberger ratio = .48

GAMMA-RAY SPECTROMETRY
Ch.1= 28327
Ch.2= 1949 1.47 % K20
Ch.3= 464 .50 ppm U
Ch.4= 576 11.25 ppm Th
U/Th= .04
2.56 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.44	.64	10.72	4.70	.08	2.09	2.36	1.87	1.97	.19	.08	1.40	99.52

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	440	-6	65	15	107	30	46	-3	9	30	14	91

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	17	-20	274	-5	12	3	101	-5	28	60	349

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Greywacke	
60.	Quartz		Poorly sorted
5.	Plagioclase		Sub-angular to sub-rounded quartz, altered plagioclase & quartz-rich
1.	Biotite		fine-grained lithic fragments set in a chloritic & fine quartzose
18.	Rock fragments		matrix with small fragments of altered biotite. Rare tourmaline grains.
15.	Matrix		
1.	Opaque		
.1	Tourmaline		

Location 0195

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0195
Outcrop

SAME LOCATION AS 0196, 0197

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-41
6313655 m N 33.31608 S latitude
492283 m E 146.9171 E longitude

Illustrations :

Age/Unit= Middle Silurian-Lower Devonian

Topography: FLAT WITH RUBBLE

dip=70E strike=165

Structure : STEEPLY DIPPING

Field Geology: Dacite. Variably porphyritic with plagioclase and rare quartz
phenocrysts forming up to 40% of the rock and set in a fine-grained
groundmass. Minor cognate xenoliths present.

Field Rockname: SAMPLE CG0195 DACITE

PHYSICAL PROPERTIES:

DACITE

DENSITIES
Whole rock density = 2.69
Dry density = 2.68
Grain density = 2.72
Porosity = 1.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 634
from 125 to 2136 ,SD= 558
Laboratory susceptibility = 125
Remanence = .40
Koenigsberger ratio = .05

GAMMA-RAY SPECTROMETRY

Ch.1= 32018
Ch.2= 2240 1.64 X K2O
Ch.3= 589 1.64 ppm U
Ch.4= 646 12.54 ppm Th
U/Th= .13
3.53 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Dacite	
2.	Quartz		Porphyritic; devitrified vitrophyric
15.	Plagioclase		Infrequent micro-phenocrysts of rounded, slightly resorbed volcanic quartz & euhedral abundant phenocrysts of altered plagioclase, glomeroporphyritic in places, & often surrounded by clear secondary overgrowths. The fine-grained, devitrified groundmass consists mainly of quartz & feldspar & has numerous segregations of small biotite crystal clusters & lesser small chlorite clusters. Opaques consist of ferruginous, & non resolvable clay minerals.
82.	Groundmass		
1.	Opaque		

Location 0196

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0196
Outcrop

SAME LOCATION AS 0195

CARGELLIGO

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-41
6313655 m N 33.31608 S latitude
492283 m E 146.9171 E longitude

Illustrations :

Age/Unit= Middle Silurian-Lower Devonian
Topography: FLAT WITH RUBBLE dip=70E st. θ =165
Structure :
Field Geology: Dacite. Variably porphyritic with plagioclase and rare quartz
phenocrysts forming up to 40% of the rock and set in a fine-grained
groundmass. Minor cognate xenoliths present.

Field Rockname: SAMPLE G30196 DACITE

PHYSICAL PROPERTIES: DACITE

DENSITIES
Whole rock density = 2.74
Dry density = 2.71
Grain density = 2.74
Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 113
Remanence = 10.00
Koenigsberger ratio = 1.47

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.18	.60	14.76	4.76	.08	2.86	3.65	1.65	3.26	.13	.07	.90	98.89
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	489	-6	76	19	59	37	44	-3	6	19	26	174	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	17	-20	121	-5	13	-3	86	6	32	59	169		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Dacite	
3.	Quartz	Devitrified eutaxitic	
15.	Plagioclase	Phenocrysts of resorbed, strained volcanic quartz & euhedral plagioclase, rarely glomeroporphyritic set in a devitrified groundmass of fine-grained quartz & feldspar. The groundmass contains numerous ragged patches of mosaics of biotite crystal aggregates which commonly contain an opaque mineral. Some plagioclase phenocrysts have clear secondary overgrowths. Minor relict microspherulite texture in groundmass indicated by patchy microclusters of fine chloritised biotite between relict spherules.	
2.	Opaque		
80.	Groundmass		
.1	Biotite		

Location 0197

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0197 SAME LOCATION AS 0195
Outcrop CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-41
6313655 m N 33.31608 S latitude
492274 m E 146.9170 E longitude

Illustrations :

Age/Unit= Middle Silurian-Lower Devonian
Topography: FLAT WITH RUBBLE dip=70E strike=165
Structure :
Field Geology: Dacite. Variably porphyritic with plagioclase and rare quartz
phenocrysts forming up to 40% of the rock and set in a fine-grained
groundmass. Minor cognate xenoliths present.

Field Rockname: SAMPLE CG0197 DACITE

PHYSICAL PROPERTIES: DACITE

DENSITIES
Whole rock density = 2.69
Dry density = 2.65
Grain density = 2.74
Porosity = 2.9

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)
Mean of 1 in-situ readings = 9424
from to ,SD=
Laboratory susceptibility = 15821
Remanence = 1000.00
Koenigsberger ratio = 1.05

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Dacite
FABRIC: Devitrified eutaxitic
Est. % MINERAL
1. Quartz Phenocrysts of fractured, rounded & embayed volcanic quartz, euhedral
20. Plagioclase kaolinised plagioclase with optically continuous clear secondary rims
& oxidised ferromagnesian mineral consisting of chlorite, magnetite
& hematite. Minor andesitic microxenoliths often iron-charged.
65. Groundmass & hematite. Minor andesitic microxenoliths often iron-charged.
2. Chlorite groundmass is devitrified quartz & feldspar with micro-patches of
2. Magnetite secondary chlorite & tiny fragments. Hematite occurs along magnetite
.1 Hematite margins & cleavages.
2. Rock fragments

Location 0198

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0198
Outcrop

CARGELLIGO

NSW GDOP

1:250,000 sheet area 1:100,000 sheet area air-photo:ru.-no.= 5-57
6291388 m N 33.51672 S latitude
477535 m E 146.7581 E longitude

Illustrations :

Age/Unit= Tertiary
Topography: SMOOTH RISES WITH LOTS OF RUBBLE dip= strike=
Structure :
Field Geology: Lamprophyre. Porphyritic in olivine set in a slightly-altered, fine-grained groundmass.

Field Rockname: SAMPLE CG0198 LAMPROPHYRE

PHYSICAL PROPERTIES:

LAMPROPHYRE

DENSITIES
Whole rock density = 3.01
Dry density = 3.03
Grain density = 3.04
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 9 in-situ readings = 13899
from 9550 to 16776 .SD= 2355
Laboratory susceptibility = 7539
Remanence = 29000.00
Koenigsberger ratio = 64.11

GAMMA-RAY SPECTROMETRY

Ch.1= 22591
Ch.2= 1541 1.13 % K2O
Ch.3= 419 1.65 ppm U
Ch.4= 419 8.08 ppm Th
U/Th= .20
2.66 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. X	MINERAL	NAME:	Lamprophyre
50.	Olivine	FABRIC:	Porphyritic
50.	Groundmass		Phenocrysts of fractured euhedral to subhedral olivine altering to iddingsite with liberation of goethite along fractures. The groundmass is highly altered and scarcely resolvable. It is iron charged and contains accessory apatite, clinozoisite, leucite, and tiny magnetite anhedra. Infrequent larger magnetite partly intergrown with ilmenite.

Location 0199

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0199

Outcrop

NYMAGEE

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6358330 m N air-photo:run-no.= 8-154
430988 m E 32.91095 S latitude
146.2620 E longitude

Illustrations :

Age/Unit= Silurian?

BOOTHUMBLE BEDS

Topography:

dip= strike=

Structure:

Field Geology: Pebbly quartzite, slate-pebble breccia and quartzite. The clasts consist of quartz, quartzite and slate. They are subrounded to angular and lack a detrital fabric.

Field Rockname: SAMPLE NE0199 PEBBLY QUARTZITE

PHYSICAL PROPERTIES:

CONGLOMERATE

DENSITIES

Whole rock density = 2.65
Dry density = 2.63
Grain density = 2.69
Porosity = 2.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 3 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 314
Remanence = 180.00
Koenigsberger ratio = 9.55

GAMMA-RAY SPECTROMETRY

Ch.1= 33557
Ch.2= 2460 1.88 % K2O
Ch.3= 631 2.66 ppm U
Ch.4= 616 11.87 ppm Th
U/Th= .22
4.10 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Pebbly quartzite	Poorly sorted
64.	Rock fragments	Subangular to subrounded quartz grains & larger quartzite fragments of variable grain-size & purity set in a cherty cement of cryptocrystalline & fine-grained quartz with traces of muscovite and sericite. Some quartzite clasts are layered.	
1.	Opaque		
.01	Tourmaline		
15.	Cement		

Location 0200

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0200
Outcrop

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-41
6476330 m N 31.84537 S latitude
413909 m E 146.0901 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP dip= strike=
Topography: LOW RUBBLY RIDGE
Structure : STEEPLY DIPPING
Field Geology: Shale, siltstone and fine quartzose sandstone. Argillaceous rocks
scarcely crop out. Sandstone is well sorted and has numerous quartz
veins. Marine. Not sampled. Outcrops too wet to measure magnetic
susceptibility.

Field Rockname:

PHYSICAL PROPERTIES:

SANDSTONE
DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY
Ch.1= 18794
Ch.2= 1071 .61 % K20
Ch.3= 379 .85 ppm U
Ch.4= 433 8.42 ppm Th
U/Th= .10
2.10 Heat generation units

Location 0201

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0201
Outcrop

SAME LOCATION AS 0202

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-44

6440042 m N

32.17390 S latitude

431158 m E

146.2698 E longitude

Illustrations :

Age/Unit= Lower Devonian

COBAR GROUP

Topography: FLAT LOW RISE

dip= strike=

Structure :

Field Geology: White vein quartz. Adjacent to scattered float of rare siltstone and greywacke. Secondary iron and manganese oxides present in quartz pseudomorphing a leached relict sulphide mineral. The vein is part of a swarm of closely-spaced, similar veins.

Field Rockname: SAMPLE NE0201 VEIN QUARTZ ROCK

PHYSICAL PROPERTIES:

VEIN QUARTZ

DENSITIES
Whole rock density = 2.60
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 1144
from 0 to 4523, SD= 1459
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 29723
Ch.2= 1160 .77 X K20
Ch.3= 364 1.31 ppm U
Ch.4= 374 7.23 ppm Th
U/Th= .18
2.22 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
99.	Quartz	Vein quartz	Recrystallised; exhibits grain growth
1.	Hematite		Quartz crystal aggregates clouded with patchy streaks of submicroscopic, non resolvable inclusions. The formerly cryptocrystalline silica has undergone grain growth to varying degrees & now consists of moderately equant grain aggregates. Microfractures are common & lined by ojaque dust inclusions of goethite. Rare small patches of hematite.
.1	Goethite		

Location 020Z

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)020Z

SAME LOCATION AS 0201

Outcrop

NYMAGEE

NSW

GDOM=Z

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= Z-44

6440042 m N

32.17390 S latitude

431158 m E

146.2698 E longitude

Illustrations :

Age/Unit= Lower Devonian

COBAR GROUP

Topography: FLAT LOW RISE

dip= strike=

Structure :

Field Geology: White vein quartz. Adjacent to scattered float of rare siltstone and greywacke. Secondary iron and manganese oxides present in quartz pseudomorphing a leached relict sulphide mineral. The vein is part of a swarm of closely-spaced, similar veins.

Field Rockname: SAMPLE NE020Z VEIN QUARTZ ROCK

PHYSICAL PROPERTIES:

VEIN QUARTZ

DENSITIES
Whole rock density = 2.63
Dry density = 2.58
Grain density = 2.64
Porosity = 2.2

MAGNETIC SUSCEPTIBILITY (S.I.*.0G0001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .10
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Vein quartz
99. Quartz FABRIC: Recrystallised; exhibits moderate grain growth
1. Opaque Strained quartz crystal aggregates clouded with patchy streaks of submicroscopic, non resolvable inclusions. The formerly cryptocrystalline silica has undergone incipient reordering & subsequent grain growth. Tiny microfractures lined by dust are present as pseudomorphs in enlarged grains indicating fracturing took place before cooling. Minor goethite veinlets.

Location 0203

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0203

SAME LOCATION AS 0204 0205

Outcrop

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-34

6411566 m N 32.43178 S latitude

450042 m E 146.4686 E longitude

Illustrations :Photomicrograph

Age/Unit=

ERIMERAN GRANITE

Topography: RUGGED UPLAND WITH EXFOLIATED CONVEX OUTCROP dip=65W strike=133

Structure : PLUTONIC

Field Geology: Ignimbrite and gneissic ignimbrite. Phenocrysts of volcanic quartz and feldspar set in a fine-grained, but coarsened, flow-banded groundmass of micas and quartzo-feldspathic material. Gneissosity is apparent, and due to groundmass crystallisation along flow-banding.

Field Rockname: SAMPLE NE0203 GNEISSIC IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.53

Dry density = 2.53

Grain density = 2.60

Porosity = 3.0

MAGNETIC SUSCEPTIBILITY (S.I.*.00)001)

Mean of 11 in-situ readings = 474

from 0 to 1822, SD= 636

Laboratory susceptibility = 251

Remanence = 120.00

Koenigsberger ratio = 7.97

GAMMA-RAY SPECTROMETRY

Ch.1= 73700

Ch.2= 5973 5.26 % K2O

Ch.3= 1149 6.11 ppm U

Ch.4= 1014 19.39 ppm Th

U/Th= .31

8.29 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.88	0.14	12.41	0.91	0.04	0.15	0.16	3.24	5.49	0.05	0.05	0.60	100.11

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	153	-6	43	6	-1	-5	36	-3	21	12	69	255

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zr	Zr
p.p.m.	3	-20	48	8	43	4	-1	-5	18	16	101

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Rhyodacite	Porphyritic, foliated with slightly gneissose appearance
8.	Plagioclase		Quartz occurs as infrequent rounded intratelluric phenocrysts with embayed margins, largely strain free, & also as lenticular platelets showing considerable strain & some undistorted resorption canals, thus appearing as flattened phenocrysts. Fractured euhedral kaolinised orthoclase phenocrysts & euhedral crystals & glomeroporphyritic plagioclase is present. These crystals lack deformation. Minor chloritised biotite patches & opaque mineral. The groundmass consists of very fine-grained quartz & feldspar with smears of sericite & chlorite preferentially developed along incipient wavy stylolites parallel to flow banding. Rare patchy muscovite.
10.	Orthoclase		
1.	Biotite		
1.	Opaque		
65.	Groundmass		

Location 0204

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0204
 Outcrop

SAME LOCATION AS 0203 0205

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-34
 6411566 m N 32.43178 S latitude
 450042 m E 146.4686 E longitude

Illustrations :

Age/Unit= ERIMERAN GRANITE
 Topography: RUGGED UPLAND WITH EXFOLIATED CONVEX OUTCROP dip= strike=
 Structure: PLUTONIC
 Field Geology: Ignimbrite and gneissic ignimbrite. Phenocrysts of volcanic quartz and feldspar set in a fine-grained, but coarsened, flow-banded groundmass of micas and quartzo-feldspathic material. Gneissosity is apparent, and due to groundmass crystallisation along flow-banding.
 Field Rockname: SAMPLE NE0204 GNEISSIC IGNIMBRITE

PHYSICAL PROPERTIES:

DENSITIES
 Whole rock density = 2.64
 Dry density = 2.60
 Grain density = 2.63
 Porosity = 1.3

IGNIMBRITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
 from to ,SD=
 Laboratory susceptibility = 188
 Remanence = 2.00
 Koenigsberger ratio = .18

GAMMA-RAY SPECTROMETRY

Ch.1=
 Ch.2= % K20
 Ch.3= ppm U
 Ch.4= ppm Th
 U/Th=
 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.87	.12	13.15	1.66	.04	.16	.45	2.27	5.63	.21	.02	1.00	99.59
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	164	-6	53	4	5	-5	18	-3	17	-5	46	338	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	5	-20	54	-5	15	3	6	9	36	37	84		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
30.	Quartz	Rhyolitic microgranite
30.	Orthoclase	Gneissose; porphyroblastic
1.	Andalusite	Large porphyroblasts of orthoclase & frequent lenticular patches of strained quartz with relict resorption canals. Rare andalusite and topaz. Minor altered biotite, partially oxidised & partially pseudomorphed by opaque material, chlorite & muscovite. Partial separation of groundmass into fine-grained quartzo-feldspathic and muscovite-chlorite streaks, together with crystal fragments.
1.	Chlorite	
1.	Biotite	
.5	Opaque	
2.	Muscovite	
.1	Topaz	
34.	Groundmass	
1.	Plagioclase	

Location 0205

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0205
Outcrop

SAME LOCATION AS 0203 0204

NYMAGEE

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-34

6411569 m N

32.43175 S latitude

450042 m E

146.4686 E longitude

Illustrations :

Age/Unit=

ERIMERAN GRANITE

Topography: RUGGED UPLAND WITH EXFOLIATED CONVEX OUTCROP

dip=

strike=

Structure : PLUTONIC

Field Geology: Ignimbrite and gneissic ignimbrite. Phenocrysts of volcanic quartz and feldspar set in a fine-grained, but coarsened, flow-banded groundmass of micas and quartz-feldspathic material. Gneissosity is apparent, and due to groundmass crystallisation along flow-banding.

Field Rockname: SAMPLE NE0205 MAGNETIC IGNIMBRITE GNEISS

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.61
Dry density = 2.62
Grain density = 2.63
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 2048
Remanence = 1400.00
Koenigsberger ratio = 11.39

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.01	0.19	12.72	1.08	0.03	0.30	0.27	3.75	4.97	0.05	0.07	0.50	99.93

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	337	-6	56	3	3	-5	53	6	21	18	19	219

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	3	-20	63	-5	43	7	-1	-5	24	19	120

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
25.	Quartz	Rhyodacitic microadamellite
20.	Plagioclase	Porphyritic; foliated
20.	Orthoclase	Flattened phenocrysts of quartz with distorted resorption canals, together with altered orthoclase & plagioclase phenocrysts, the latter frequently glomeroporphyritic. The groundmass is fine-grained devitrified quartz, feldspar, biotite, sericite, muscovite & chlorite.
1.	Chlorite	Very rare topaz.
1.	Opaque	
1.	Biotite	
.01	Topaz	
31.	Groundmass	

Location 0206

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0206
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-36
6382399 m N 32.69530 S latitude
460387 m E 146.5774 E longitude

Illustrations :

Age/Unit= Silurian?
Topography: STRIKE RIDGES COLONISED BY DIFFERING VEGETATION dip=90 strike=160
Structure : STEEPLY DIPPING
Field Geology: Quartzite, quartzose sandstone, conglomerate, with shale and siltstone
float between outcrops of the coarser, siliceous units. The quartzite
has numerous stratabound quartz veins. Shallow marine. Sample list.

Field Rockname: SAMPLE NE0206

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

QUARTZITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 157
from 0 to 376 .SD= 185
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 18749
Ch.2= 1118 .67 % K2O
Ch.3= 400 1.67 ppm U
Ch.4= 392 7.55 ppm Th
U/Th= .22
2.47 Heat generation units

Location 0207

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0207
Outcrop

SAME LOCATION AS 0208
NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-166
6395793 m N 32.57505 S latitude
482316 m E 146.8116 E longitude

Illustrations :

Age/Unit: ERIMERAN GRANITE dip= strike=
Topography: LOW RISE
Structure : PLUTON WITH VEINS OF HYDROTHERMAL QUARTZ
Field Geology: Microgranite and greisen. Scarcely outcropping, though cross-cutting quartz veins are prominent. The granitic rocks are altered and have abundant sericite and muscovite. Cordierite is present locally.

Field Rockname: SAMPLE NE0207 INEQUIGRANULAR GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES

Whole rock density = 2.63
Dry density = 2.63
Grain density = 2.65
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 98
from 0 to 439 ,SD= 177
Laboratory susceptibility = 75
Remanence = .30
Koenigsberger ratio = .07

GAMMA-RAY SPECTROMETRY

Ch.1= 52348
Ch.2= 4960 4.63 % K20
Ch.3= 999 11.39 ppm U
Ch.4= 366 6.27 ppm Th
U/Th= 1.82
9.19 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.57	.10	14.18	1.30	.04	.24	.23	.39	5.64	.23	.02	1.40	99.34

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	185	-6	36	2	6	-5	14	-3	26	13	20	591

TRACE ELEMENT	Sc	Sr	Ta	Th	U	V	W	Y	Zn	Zr	
p.p.m.	7	22	35	-5	-5	5	4	-5	20	49	56

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Rhyolitic microgranite
Est. # MINERAL FABRIC: Megacrystic, porphyritic, coarsened by grain growth.
40. Quartz Large zoned, kaolinised perthitic orthoclase, with minor quartz
20. Orthoclase intergrowths forming megacrysts. Exsolution blebs of former
1. Plagioclase ?albite are sericitised. Remainder consist of quartz globules with
1. Pinite slightly ragged edges forming both microphenocrysts & much smaller
5. Muscovite groundmass blebs. Minor anhedral pinite, and euhedral muscovite.
32. Groundmass Groundmass is largely quartz microglobules in altered orthoclase which
1. Opaque is slightly sericitised.

Location 0208

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0208
Outcrop

SAME LOCATION AS 0207

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-156
6395795 m N 32.57503 S latitude
482325 m E 146.8117 E longitude

Illustrations :

Age/Unit=

ERIMERAN GRANITE

Topography: LOW RISE

dip= strike=

Structure :

Field Geology: Microgranite and greisen. Scarcely outcropping, though cross-cutting quartz veins are prominent. The granitic rocks are altered and have abundant sericite and muscovite. Cordierite is present locally.

Field Rockname: SAMPLE NE0208 VEIN ROCK

PHYSICAL PROPERTIES:

GREISEN

DENSITIES
Whole rock density = 2.68
Dry density = 2.65
Grain density = 2.71
Porosity = 2.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 163
Remanence = 1.00
Koenigsberger ratio = .10

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3=
Ch.4=
ppm U
ppm Th

U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	78.54	.05	12.89	1.62	.20	.08	.20	.01	4.16	.19	.03	1.60	99.57

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	178	-6	31	-1	7	-5	17	-3	27	12	35	662

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	84	8	-5	6	3	-1	-5	17	24	27

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
40.	Quartz	Greisen	Hypidiomorphic granular
39.	Sericite		Large patches of quartz, variably strained, & minor relict resorbed quartz, set in a felt-like groundmass of sericite after K feldspar.
20.	Muscovite		Abundant large muscovite plates, minor pinite with opaque inclusions.
.1	Topaz		Rare micro-miarolitic cavities lined by terminated quartz crystals & enclosing some rare garnet. Rare topaz.
.01	Garnet		
1.	Pinite		

Location 0209

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0209
Outcrop

SAME LOCATION AS 0210 0211
NYMAGEE

NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-166
6396500 m N 32.56878 S latitude
492162 m E 146.9165 E longitude

Illustrations :

Age/Unit= Silurian? BABINDA VOLCANICS
Topography: STRIKE RIDGES ETCHED BY VEGETATION CHANGES dip=81E strike=175
Structure : CLEAVED, STEEPLY INCLINED
Field Geology: Ignimbrite, schistose and gneissose ignimbrite, and minor augen-gneissic ignimbrite. Quartz and feldspar appear as phenocrysts and porphyroblasts which are set in a variably massive to layered, foliated groundmass of felsic material and micas. Foliation present only where micaceous.
Field Rockname: SAMPLE NEO209 IGIMBRITE

PHYSICAL PROPERTIES:

	IGIMBRITE		
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density =	2.67	Mean of 9 in-situ readings =	104
Dry density =	2.67	from 0 to 376, SD=	140
Grain density =	2.67	Laboratory susceptibility =	12
Porosity =	.0	Remanence =	.40
		Koenigsberger ratio =	.56
			5.66 Heat generation units
			Ch.1= 45473
			Ch.2= 5813 5.63 X K2O
			Ch.3= 758 3.06 ppm U
			Ch.4= 751 14.48 ppm Th
			U/Th= .21

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.09	0.49	13.18	3.32	0.03	0.99	0.79	3.00	4.76	0.14	0.08	0.90	99.77

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	745	-6	82	23	11	10	45	3	12	44	9	144

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	7	-20	125	-5	24	5	27	8	43	10	288

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Rhyodacitic ignimbrite
	FABRIC:		Porphyritic; foliated
1.	Quartz		Rare microphenocrysts of quartz & orthoclase with slightly larger,
1.	Orthoclase		more abundant plagioclase euhedra, glomeroporphyritic in places. Some
10.	Plagioclase		grains are fractured & partially rounded. Minor opaque mineral
1.	Opaque		pseudomorphs after original ferromagnesian mineral. The groundmass
87.	Groundmass		consists of very fine-grained feldspar, with lesser chlorite and
			biotite platelets which tend to form clusters parallel to flow
			banding. Minor lenticular patches of secondary plagioclase parallel to
			flow banding in groundmass. These are relicts of igneous layering.

Location 0210

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0210
Outcrop

SAME LOCATION AS 0209 0211

NYMAGEE

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-166

6396495 m N

32.56883 S latitude

492162 m E

146.9165 E longitude

Illustrations :

Age/Unit= Silurian?

BABINDA VOLCANICS

Topography: STRIKE RIDGES ETCHED BY VEGETATION CHANGES

dip=81E strike=175

Structure : CLEAVED,STEEPLY INCLINED

Field Geology: Ignimbrite, schistose and gneissose ignimbrite and minor augen-gneissic ignimbrite. Quartz and feldspar appear as phenocrysts and porphyroblasts which are set in a variably massive to layered, foliated groundmass of felsic material, and micas. Foliation present only where micaceous.

Field Rockname: SAMPLE NE0210 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.55
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 1 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 80367
Ch.2= 5339 4.11 X K20
Ch.3= 1285 3.47 ppm U
Ch.4= 1419 27.55 ppm Th
U/Th= .13
7.78 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.25	0.49	13.06	3.27	0.03	0.94	0.14	0.84	7.19	0.11	0.11	1.40	99.82

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	868	-6	77	9	3	7	68	5	12	145	19	224

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	94	5	30	4	36	-5	37	12	230

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
1.	Quartz	Ignimbrite	Porphyritic
14.	Plagioclase	Sparsely porphyritic in rounded volcanic quartz, and fractured altered plagioclase rarely glomeroporphyritic. Scattered dark brown to light yellow pleochroic biotite mostly in clusters. The groundmass in quartzofeldspathic and quite altered to minor sericite and other material.	
5.	Biotite		
80.	Groundmass		
.1	Opaque		

Location 0211

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0211
Outcrop

SAME LOCATION AS 0209 0210

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-166
6396496 m N 32.56882 S latitude
492152 m E 146.9164 E longitude

Illustrations :

Age/Unit= Silurian?

BABINDA VOLCANICS

Topography: STRIKE RIDGES ETCHED BY VEGETATION CHANGES dip= strike=

Structure : CLEAVED, STEEPLY INCLINED

Field Geology: Ignimbrite, schistose and gneissose ignimbrite and minor augen-gneissic ignimbrite. Quartz and feldspar appear as phenocrysts and porphyroblasts which are set in a variably massive to layered, foliated groundmass of felsic material and micas. Foliation present only where micaceous.

Field Rockname: SAMPLE NE0211 AUGEN GNEISS

PHYSICAL PROPERTIES:

GNEISS

DENSITIES

Whole rock density = 2.65
Dry density = 2.63
Grain density = 2.65
Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = 7.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.72	0.38	11.95	2.99	0.03	0.92	0.97	1.89	4.99	0.12	0.09	0.90	98.95

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1118	7	86	-1	6	-5	53	4	10	155	11	128

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-20	106	-5	23	-3	21	-5	32	13	194

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
25.	Quartz	Gneissic ignimbrite
10.	Orthoclase	Variably porphyritic tending porphyroblastic
5.	Plagioclase	Densely porphyritic in fractured orthoclase and plagioclase phenocrysts, and quartz phenocrysts and porphyroblasts. Variably porphyritic and micaceous from layer to layer. Abundant green-brown biotite often in aggregates and associated with sericite, the two together often forming layers. The groundmass consists of devitrified fine-grained quartz and K-feldspar. Trace scattered muscovite and opaque mineral.
5.	Biotite	
2.	Sericite	
.1	Muscovite	
.1	Opaque	
53.	Groundmass	

Location 0212

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0212
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-24
6408899 m N 32.45683 S latitude
483289 m E 146.8222 E longitude

Illustrations :

Age/Unit= Silurian? BABINDA VOLCANICS
Topography: STRIKE RIDGE dip=77E strike=165
Structure : STEEPLY INCLINED CLEAVAGE
Field Geology: Ignimbrite. Porphyritic with phenocrysts of rounded, volcanic quartz
and feldspar set in a fine-grained, sericite-rich, quartzo-feldspathic
groundmass. Slaty appearance caused by abundant sericite. Very
weathered. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

IGNIMBRITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 62
from 0 to 251, SD= 125
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 51747
Ch.2= 3943 3.18 % K2O
Ch.3= 859 2.08 ppm U
Ch.4= 969 18.83 ppm Th
U/Th= .11
5.22 Heat generation units

Location 0213

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0213
Outcrop

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-149
6488649 m N 31.73452 S latitude
417718 m E 146.1314 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP
Topography: LOW RISE dip=82W strike=166
Structure : STEEPLY DIPPING
Field Geology: Flat-pebble conglomerate, shale and siltstone interbedded. Clasts in conglomerate are quartzite and intra-formational shale. Matrix is cleaved. White vein quartz in places. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

CONGLOMERATE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 2 in-situ readings = 376
from 314 to 439 ,SD= 88
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 37964
Ch.2= 3082 2.51 % K2O
Ch.3= 696 2.98 ppm U
Ch.4= 675 13.00 ppm Th
U/Th= .23
4.64 Heat generation units

Location 0214

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0214
Outcrop

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-145
6491369 m N 31.70925 S latitude
408040 m E 146.0295 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP
Topography: STRIKE RIDGE dip=75NE strike=148
Structure : STEEPLY DIPPING CLEAVAGE PARELLEL TO BEDDING
Field Geology: Quartz greywacke and sericite quartzite. Cleaved, massive.

Field Rockname: SAMPLE CB0214 SERICITE QUARTZITE

PHYSICAL PROPERTIES: QUARTZITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.49	Mean of 3 in-situ readings = 314	Ch.1= 33244
Dry density = 2.48	from 62 to 502 .SD= 226	Ch.2= 2835 2.40 X K2O
Grain density = 2.69	Laboratory susceptibility = 0	Ch.3= 569 1.94 ppm U
Porosity = 7.7	Remanence = 2.00	Ch.4= 594 11.49 ppm Th
	Koenigsberger ratio = *****	U/Th= .17
		3.71 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Height %	82.54	.51	9.66	.82	.01	.37	.01	.02	2.61	.05	.05	2.60	99.25
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	468	-6	43	-1	61	-5	50	3	8	18	11	142	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zr	Zr		
p.p.m.	13	-20	23	-5	11	-3	56	12	27	7	169		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Sericite quartzite
40.	Quartz	FABRIC:	Poorly sorted; quartz grains randomly dispersed; matrix flow foliation
2.	Opaque		Abundant globular porphyroblasts of strained quartz, in places with
58.	Groundmas.		incipient secondary overgrowths, set in a wavy layered groundmass
			consisting mainly of equal amounts of fine-grained sericite and
			quartz. Relict ?biotite now completely oxidised to opaque mineral which
			is preferentially drawn out along the wavy foliation plane from which
			it originates. In addition there are a few discrete anhedral opaque
			grains. Wavy foliation caused by flow banding around quartz globules.

Location 0215

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0215
 Outcrop

COBAR NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-41
 6462397 m N 31.97222 S latitude
 430865 m E 146.2683 E longitude

Illustrations :

Age/Unit= NYMAGEE GRANITE
 Topography: EXFOLIATED SURFACE ON STEEP ROUNDED SLOP dip=70NE strike=125
 Structure : GNEISSOSITY = FLOW BANDING
 Field Geology: Gneissic microgranite. Leucocratic. Lenticular augen of orthoclase
 with inclusions of mica. Lenticular to globular quartz patches.
 Gneissosity defined by alignment of muscovite and biotite and by grain
 size difference between layers.
 Field Rockname: SAMPLE CB0215 MICROGRANITE

PHYSICAL PROPERTIES: MICROGRANITE
 DENSITIES MAGNETIC SUSCEPTIBILITY (S.I. *.000001) GAMMA-RAY SPECTROMETRY
 Whole rock density = 2.62 Mean of 8 in-situ readings = 196 Ch.1= 61612
 Dry density = 2.61 from 0 to 376, SD= 169 Ch.2= 5381 5.00 X K20
 Grain density = 2.65 Laboratory susceptibility = 25 Ch.3= 1086 12.02 ppm U
 Porosity = 1.4 Remanence = .10 Ch.4= 429 7.45 ppm Th
 Koenigsberger ratio = .07 9.87 U/Th= 1.61 Heat generation units

CHEMISTRY:
 MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
 Weight % 73.29 .15 15.05 1.30 .03 .33 .62 3.42 4.64 .33 .02 .70 99.87

TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
 p.p.m. 262 6 38 5 2 -5 19 -3 16 10 48 285

TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
 p.p.m. 4 19 41 -5 7 30 7 -5 13 52 59

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Rhyolitic microgranite
	FABRIC:	Porphyroblastic & porphyritic; gneissic
Est. %	MINERAL	
30.	Quartz	Globular patches consisting of a mosaic of quartz grains showing
5.	Plagioclase	considerable strain, & tapering into quartz layers along flow
20.	Orthoclase	foliation. Slightly deformed fractured phenocrysts of orthoclase and
4.	Muscovite	plagioclase. Minor subhedral muscovite plates & fine trails of it
1.	Biotite	along layering in groundmass. Accessory tourmaline & apatite. The
.5	Opaque	groundmass is wavy, caused by partial separation of fine quartz into
.1	Tourmaline	lenticular boudin-like masses fringed by fine biotite & chloritised
.1	Apatite	biotite, which forms thin layers which also locally swell into fine
40.	Groundmass	crystal clusters.

Location 0216

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0216
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-84
6453643 m N 32.05160 S latitude
437872 m E 146.3419 E longitude

Illustrations :

Age/Unit= NYMAGEE GRANITE
Topography: DOMED EXFOLIATION SURFACE dip=? strike=135
Structure : MASSIVE PLUTON WITH CLEAVAGE IN PLACES
Field Geology: Microgranite. Augen gneissic character with lenticular orthoclase
augen packed together between thin crinkly foliae of micas. Clots of
biotite and muscovite, often in clusters. Muscovite-rich and
leucocratic.

Field Rockname: SAMPLE NE0216 INEQUIGRANULAR MICROGRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 2.62
Dry density = 2.60
Grain density = 2.64
Porosity = 1.4
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = .40
Koenigsberger ratio = *****
GAMMA-RAY SPECTROMETRY
Ch. 1= 60912
Ch. 2= 5415 4.95 % K20
Ch. 3= 1008 7.74 ppm U
Ch. 4= 688 12.87 ppm Th
U/Th= .60
8.12 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.73	.28	14.23	2.01	.04	.50	.45	2.51	5.17	.28	.03	1.00	99.28

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	390	-6	45	8	14	6	35	-3	14	10	38	276

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	18	81	5	15	5	19	-5	26	36	105

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Rhyolitic microgranite	Pegmatitic; porphyroblastic
10.	Orthoclase		Irregularly shaped patches of strained quartz mosaics & quartz-plagioclase mosaics adjacent to euhedral porphyroblastic or xenolithic perthitic orthoclase & lesser microcline. Scattered interstitial muscovite clusters which also fill fractures in feldspar.
7.	Plagioclase		
7.	Muscovite		
5.	Chlorite		Chloritised biotite clusters with liberated opaque oxide. Rare accessory topaz.
1.	Opaque		
32.	Groundmass		
.01	Topaz		

Location 0217

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0217
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-84
6449229 m N 32.09193 S latitude
447940 m E 146.4483 E longitude

Illustrations :Photomicrograph

Age/Unit= Silurian? BABINDA VOLCANICS dip=? strike=126
Topography:
Structure : RUBBLE RIDGES REFLECTING STRIKE ON CREST AND UPPER SLOPE OF GENTLE RISE
Field Geology: Ignimbrite. Sparsely porphyritic in quartz, feldspar and very minor
oxidised ?pyrite. Massive with brittle pyroclastic jointing. Interbedded
rocks do not crop out.

Field Rockname: SAMPLE NE0217 IGNIMBRITE

PHYSICAL PROPERTIES:

	IGNIMBRITE		
DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY	
Whole rock density = 2.56	Mean of 7 in-situ readings = 0	Ch.1= 64390	
Dry density = 2.55	from to SD=	Ch.2= 4333	3.13 % K20
Grain density = 2.62	Laboratory susceptibility = 37	Ch.3= 1234	5.50 ppm U
Porosity = 2.6	Remanence = .10	Ch.4= 1179	22.68 ppm Th
	Koenigsberger ratio = .05	U/Th= .24	
		7.98	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.10	0.19	12.26	1.51	0.01	0.22	0.08	3.76	5.09	0.07	0.13	1.10	99.53
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	589	-6	50	4	3	-5	27	-3	10	21	32	242	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	3	21	80	-5	36	6	15	11	41	17	136		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Ignimbrite
Est. %	MINERAL FABRIC:	Vitroclastic
1.	Quartz	Sparse microphenocrysts of volcanic quartz, fractured plagioclase and orthoclase, with lesser fine oxidised biotites & secondary
3.	Plagioclase	?xenolithic chlorite patches set in a fine-grained groundmass of very fine crystal fragments, quartzo-feldspathic mosaic & devitrified
3.	Orthoclase	glass shards.
1.	Biotite	Photograph glass shards.
1.	Chlorite	
1.	Opaque	
90.	Groundmass	

Location 0218

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0218
Outcrop

SAME LOCATION AS 0219

NYMAGEE

NSW GDDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-94
6426597 m N 32.29695 S latitude
471896 m E 146.7015 E longitude

Illustrations :

Age/Unit= Lower Devonian BARROW RANGE BEDS
Topography: STRIKE RIDGE dip=80E strike=161
Structure: STEEPLY CIPPING
Field Geology: Quartzite, chlorite quartzite, siltstone and slate. Siltstone and slate
scarcely crop out and are the most abundant rock types. The quartzites
are better exposed, though much less abundant.

Field Rockname: SAMPLE NE0218 CHLORITE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.67	Mean of 10 in-situ readings = 515	Ch.1= 39732
Dry density = 2.66	from 0 to 1130, SD= 390	Ch.2= 3178 2.59 X K20
Grain density = 2.66	Laboratory susceptibility = 175	Ch.3= 687 1.95 ppm U
Porosity = .0	Remanence = .30	Ch.4= 751 14.57 ppm Th
	Koenigsberger ratio = .03	U/Th= .13
		4.28 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
84.	Quartz	Chlorite quartzite	Massive; colloidal texture
12.	Chlorite		Lenticular to globular patches of strained quartz, moderately compacted & separated by thin smears of wavy chlorite & dispersed, unoriented
3.	Sericite		sericite platelets. Layering defined by difference in size of quartz
1.	Opaque		patches & varying proportion of quartz to mica. Minor boudin-like quartz patches, concentrated by compaction & tapering to quartz veinlets along flow foliation.

Location 0219

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0219
Outcrop

SAME LOCATION AS 0218
NYMAGEE

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6426597 m N air-photo:run-no.= 3-94
471896 m E 32.29695 S latitude
146.7015 E longitude

Illustrations :

Age/Unit= Lower Devonian BARROW RANGE BEDS
Topography: STRIKE RIDGE dip=80E strike=161
Structure : STEEPLY DIPPING
Field Geology: Quartzite, chlorite quartzite, siltstone and slate. Siltstone and slate
scarcely crop out and are the most abundant rock types. The quartzites
are better exposed, though much less abundant.

Field Rockname: SAMPLE NE0219 SLIGHTLY MAGNETIC SILICEOUS GREYWACKE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.+.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.54	Mean of	in-situ readings =	Ch.1=	
Dry density =		from	to ,SD=	Ch.2=	% K2O
Grain density =		Laboratory susceptibility =		Ch.3=	ppm U
Porosity =		Remanence =		Ch.4=	ppm Th
		Koenigsberger ratio =		U/Th=	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
60.	Quartz	Siliceous greywacke	
4.	Muscovite	Poorly sorted	
5.	Opaque		
31.	Mud		

Framework of partially self-supporting, variably sized, sub-angular to sub-rounded, ovoid, slightly-strained quartz clasts of medium to fine-sand size, set in a matrix of silica mixed with muscovite plates & chloritic mud ferruginised by weathering. Very slight differences in grain size define lamination & thin bedding, but within individual units thin mud coatings wrap around grains imparting a wavy microfabric. Rare oxidised biotite has crystallised from some mud-rich laminae.

Location 0220

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0220

Outcrop

NYMAGEE

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-94

NSW GDOM=2

6425923 m N

32.30302 S latitude

471436 m E

146.6966 E longitude

Illustrations :Photomicrograph

Age/Unit= Silurian?

BABINDA VOLCANICS

Topography: LOW STRIKE RIDGE NETWORK WITH EXFOLIATED OUTCROPS dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Ignimbrite. Porphyritic with phenocrysts of rounded volcanic quartz up to 2 mm and lesser but larger feldspars set in an ultrafine quartz-feldspathic groundmass. Lenticular streaks of biotite define flow banding.

Field Rockname: SAMPLE NE 0220 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.24	Mean of 5 in-situ readings = 25	Ch.1= 69101
Dry density = 2.62	from 0 to 125 .SD= 56	Ch.2= 5608 4.54 X K20
Grain density = 2.62	Laboratory susceptibility = 201	Ch.3= 1224 3.43 ppm U
Porosity = 0	Remanence = .50	Ch.4= 1341 26.02 ppm Th
	Koerigsberger ratio = .04	U/Th= .13
		7.60 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.68	0.39	13.57	2.33	0.03	1.01	0.46	2.88	5.31	0.12	0.10	1.70	99.59

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	715	-6	60	6	11	11	48	-3	11	45	37	227

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-20	77	-5	25	4	20	6	33	21	205

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Ignimbrite	Devitrified eutaxitic
30.	Quartz		Phenocrysts of fractured & strained volcanic quartz with rounded and embayed margins, embayed orthoclase fragments & fractured plagioclase set in a fine-grained groundmass of chlorite & quartz-feldspathic material. In places, the groundmass is mono-mineralic chlorite optically continuous with pseudomorphed original glass. The biotites are skeletal having been oxidised to an opaque mineral, chlorite & non resolvable secondary minerals. Rare accessory tiny ?garnets. Some plagioclase sparingly altered to calcite.
10.	Plagioclase		
18.	Orthoclase		
1.	Biotite		
1.	Opaque		
40.	Groundmass		
.001	Garnet		
.1	Calcite		

Photograph monomineralic groundmass of chlorite

Location 0221

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0221
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area photo:run-no.= 4-24
6410116 m N 32.44590 S latitude
486615 m E 146.8576 E longitude

Illustrations :

Age/Unit= Ordovician GIRILAMBONE BEDS
Topography: LOW FLAT JUST ABOVE SMALL GULLY dip=90 strike=108
Structure: STEEPLY INCLINED AND CLEAVED DUE TO CHLORITE
Field Geology: Chlorite quartzite. Lenticular microglobular bodies of quartz present in
a crinkly layered matrix. Stratabound vein quartz present in places.

Field Rockname: SAMPLE NE0221 CHLORITE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE
DENSITIES
Whole rock density = 2.64
Dry density = 2.60
Grain density = 2.63
Porosity = 1.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 150
Remanence = .30
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	78.55	0.53	2.99	2.87	0.05	2.37	0.27	2.60	0.96	0.15	0.10	1.90	99.33

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	255	-6	69	13	34	6	42	-3	9	90	-5	51

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	-20	53	5	19	-3	50	8	40	21	316

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Chlorite quartzite
Est. % MINERAL FABRIC: Massive, with flow foliation
75. Quartz Lenticular globules of strained quartz, set in a matrix of fine
1. Opaque chlorite & sericite which form wavy layering around quartzes. Minor
20. Chlorite opaque stringers in chlorite-rich laminae.
4. Sericite

Location 0222

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0222
 Outcrop

NYMAGEE NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-24
 6408749 m N 32.45823 S latitude
 486410 m E 146.8554 E longitude

Illustrations :

Age/Unit: Ordovician? GIRILAMBONE BEDS?
 Topography: dip= strike=
 Structure :
 Field Geology: Micaceous quartzite. Large porphyroblasts of quartz amidst fine-grained micaceous material. Unsorted, massive. Contains minor iron oxides.

Field Rockname: SAMPLE NE0222 SLATEY QUARTZITE

PHYSICAL PROPERTIES:

SLATE
 DENSITIES
 Whole rock density = 2.31
 Dry density =
 Grain density =
 Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 1 in-situ readings = 12566
 from to ,SD=
 Laboratory susceptibility = 0
 Remanance = .00
 Koenigsberger ratio = .00

GAMMA-RAY SPECTROMETRY

Ch.1=
 Ch.2= % K20
 Ch.3= ppm U
 Ch.4= ppm Th
 U/Th=
 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.78	.76	13.34	9.44	.04	1.51	.05	.07	4.41	.07	.04	2.80	99.30
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	690	-6	15	25	26	35	14	-3	11	13	8	170	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	14	18	11	-5	22	-3	75	8	17	20	250		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Chlorite-muscovite quartzite
 FABRIC: Porphyroblastic with flow foliation
 Est. % MINERAL
 50. Quartz Abundant phenocrysts of fractured, rounded ?volcanic quartz with rare incipient resorption. The quartzes are highly strained with prominent sutured subgrain contacts. They are set in a chlorite-muscovite, fine-grained wavy groundmass. Some muscovite is optically continuous after groundmass, whilst another variety occurs as small randomly-oriented platelets. The groundmass has been partially ferruginised by weathering to limonite. Euhedral magnetite showing considerable alteration to hematite along cleavages & grain edges. Abundant hematite which may be completely oxidised from former magnetite.
 25. Muscovite
 20. Chlorite
 4. Hematite
 1. Magnetite

Location 0223

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0223
Outcrop

SAME LOCATION AS 0224

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-24

6409831 m N

32.44847 S latitude

486145 m E

146.8526 E longitude

Illustrations :

Age/Unit=

YELLOW MOUNT GRANITE

Topography: LOW RISE WITH OUTCROP IN PLACES

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Granite and ignimbrite. Part of a high-level granitic complex. Granitic rocks have gneissic character due to prominent flow layering. They are porphyritic in feldspar. Slight alteration of biotite to chlorite.

Field Rockname: SAMPLE NE0223 MAGNETIC IGNIMBRITE

PHYSICAL PROPERTIES.

IGNIMBRITE

DENSITIES

Whole rock density = 2.58

Dry density = 2.63

Grain density = 2.64

Porosity = .5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 1 in-situ readings = 10555

from to SD=

Laboratory susceptibility = 10744

Remanence = 80.60

Koenigsberger ratio = .7

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

X K20

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.50	.20	12.60	1.92	.03	.37	.27	2.57	6.78	.03	.03	.60	99.91

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1029	-6	70	4	5	14	47	-3	12	-5	16	218

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	9	-20	93	-5	27	6	5	5	59	19	305

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
1.	Quartz	Rhyodacite	Devitrified eutaxitic
10.	Plagioclase		Rare microphenocrysts of quartz with more frequent plagioclase, slightly sericitised & frequently glomeroporphyritic. Rare orthoclase phenocrysts. The groundmass consists mainly of devitrified feldspathic glass & now appears as fine grained plagioclase with traces of chlorite & tiny fragments of other minerals. Minor highly altered, oxidised ferromagnesian minerals which include relict biotite and biotite crystal clusters. Magnetite showing considerable alteration to hematite along cleavages & at grain edges.
2.	Ferromagnesian		
86.	Groundmass		
.5	Orthoclase		
1.	Magnetite		

Location 0224

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0224
 Outcrop

SAME LOCATION AS 0223
 NYMAGEE

NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-24
 6409831 m N 32.44847 S latitude
 486136 m E 146.8525 E longitude

Illustrations :

Age/Unit= YELLOW MOUNT GRANITE
 Topography: LOW RISE WITH EXFOLIATED LOW OUTCROP dip= strike=
 Structure :
 Field Geology: Granite and ignimbrite. Part of a high-level granitic complex. Granitic rocks have gneissic character due to prominent flow layering. They are porphyritic in feldspar. Slight alteration of biotite to chlorite.

Field Rockname: SAMPLE NE0224 PORPHYRITIC MICROGRANITE

PHYSICAL PROPERTIES:

MICROGRANITE
 DENSITIES
 Whole rock density = 2.62
 Dry density = 2.58
 Grain density = 2.64
 Porosity = 2.6

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)
 Mean of 0 in-situ readings =
 from to ,SD=
 Laboratory susceptibility = 6911
 Remanence = 10500.00
 Koenigsberger ratio = 25.32

GAMMA-RAY SPECTROMETRY

Ch.1=
 Ch.2= X K20
 Ch.3= ppm U
 Ch.4= ppm Th
 U/Th=
 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.30	.31	12.99	2.01	.02	.45	.52	2.77	5.10	.10	.05	.60	99.22
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	411	3	56	4	8	7	49	1	9	10	37	227	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	6	11	38	2	28	7	20	2	42	22	196		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
25.	Quartz	Rhyolitic microgranite
50.	Orthoclase	Porphyritic & gneissose
8.	Plagioclase	Abundant quartz in patchy lenticular globules & showing considerable internal strain with prominent sub-grain formation. Abundant tightly packed orthoclase phenocrysts & grain aggregates. Minor plagioclase euhedra showing slight sericitisation. Abundant interstitial fine grained quartz, feldspar, biotite & muscovite which infiltrates fractures in phenocrystic components. Slight alteration of biotite and biotite clusters to chlorite & an opaque mineral. Minor opaque euhedra.
5.	Biotite	
.1	Muscovite	
2.	Opaque	
.1	Chlorite	
10.	Groundmass	

Location 0225

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0225

Outcrop

COBAR

NSW GDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-99
6552931 m N 31.15535 S latitude
429163 m E 146.2568 E longitude

Illustrations :Photomicrograph

Age/Unit= Lower Devonian

BARROW RANGE BEDS

Topography: LOW HILLS FLANKED BY RUBBLE APRONS

dip=70W strike=012

Structure : STEEPLY DIPPING; STRONGLY CLEAVED

Field Geology: Quartzite pebbly quartzite and cleaved, micaceous quartzite. The latter is fissile, brittle cream-coloured and contains large quartzite clasts.

Field Rockname: SAMPLE CB0225 WEATHERED MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.49
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 6 in-situ readings = 366
from 0 to 628 ,SD= 208
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 22876
Ch.2= 1375 .90 % K2O
Ch.3= 424 1.09 ppm U
Ch.4= 473 9.19 ppm Th
U/Th= .12
2.44 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
50.	Quartz	Sericite quartzite	Massive, with flow foliation
5.	Biotite		Angular to rounded fragments of strained quartz with sub-grain development moderately tightly packed in a wavy matrix which develops lenticular, pure sericite phases & separate chlorite-biotite-sericite phases with small quartz fragments. Banding in pure sericite layers is defined by lenticular & coalesced quartz boudins. Photograph quartz microboudins in sericite layers.
15.	Chlorite		
28.	Sericite		
2.	Opaque		

Location 0226

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0226
Outcrop

BW1979B00K1PAGE23-29 MAG TRAVERSE

CGBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-118
6566621 m N 31.03170 S latitude
426914 m E 146.2342 E longitude

Illustrations :

Age/Unit= Lower Devonian BARROW RANGE BEDS
Topography: SMALL HILLOCK WITH LOW RISE ON W SLOPE dip=74W strike=172
Structure : STEEPLY DIPPING STRONGLY CLAVED SHEARED
Field Geology: Conglomerate, quartzite, micaceous quartzite and slate. Noticeably
cleaved; deformed adjacent to fault zone. Conglomerate has cleaved
matrix.

Field Rockname: SAMPLE CB0226 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

	QUARTZITE		
DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY	
Whole rock density = 2.43	Mean of 12 in-situ readings = 644	Ch.1= 27516	
Dry density =	from 0 to :005 ,SD= 287	Ch.2= 1915	1.37 % K2O
Grain density =	Laboratory susceptibility = 0	Ch.3= 515	1.19 ppm U
Porosity =	Remanence = .00	Ch.4= 586	11.40 ppm Th
	Koenigsberger ratio =	U/Th= .10	
		2.99	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	84.90	0.38	8.78	0.88	0.01	0.23	0.01	0.17	1.80	0.04	0.08	2.40	99.66
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	1103	-6	34	-1	30	-5	33	5	8	26	-5	85	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	6	-20	20	-5	8	-3	40	6	12	12	148		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Sericite quartzite
40:	Quartz	FABRIC:	Massive, with flow foliation
25:	Rock fragments		Subangular to subrounded clasts of strained quartz, many unsupported, & subangular lenticular lithic fragments consisting of fine-grained
34:	Matrix		quartzite, sericite quartzite & sericite rock. The matrix consists of
1:	Opaque		sericite, fine quartz mosaic & opaque dust. There is partial separation of sericite from quartz in places.

Location 0227

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0227
Outcrop

SAME LOCATION AS 0226, 0228

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-118
6566624 m N 31.03167 S latitude
426914 m E 146.2342 E longitude

Illustrations :

Age/Unit: Lower Devonian BARROW RANGE BEDS
Topography: SMALL HILLOCK WITH LOW RISE ON W SLOPE dip=74W strike=172
Structure : STEEPLY DIPPING; STRONGLY CLEAVED
Field Geology: Conglomerate, quartzite, micaceous quartzite and slate. Noticeably
cleaved and deformed adjacent to fault zone. Conglomerate has cleaved
matrix.

Field Rockname: SAMPLE CBO227 QUARTZITE BRECCIA

PHYSICAL PROPERTIES:

BRECCIA
DENSITIES
Whole rock density = 2.46
Dry density = 2.44
Grain density = 2.72
Porosity = 10.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 62
Remanence = .70
Koenigsberger ratio = .19

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartzite breccia
FABRIC: Poorly sorted; massive with flow foliation
Est. % MINERAL
30. Quartz Angular to sub-angular flattened clasts of fine quartzite, sericite
35. Rock fragments quartzite & sericite rock, as well as subrounded grains of strained
34. Matrix quartz, all set in a matrix containing micro-crystalline quartz and
1. Opaque sericite with minor opaque oxide & tiny quartz fragments. Both clasts
& matrix have scattered opaque minerals. Very rare accessory tourmaline.
.001 Tourmaline

Location 0228

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0228 SAME LOCATION AS 0226, 0227
Outcrop COBAR NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-118
 6566637 m N 31.03155 S latitude
 426914 m E 146.2342 E longitude

Illustrations :

Age/Unit= Lower Devonian BARROW RANGE BEDS
Topography: SMALL HILLOCK WITH LOW RISE ON W SLOPE dip=74W strike=172
Structure : STEEPLY DIPPING; STRONGLY CLEAVED
Field Geology: Conglomerate, quartzite, micaceous quartzite and slate. Noticeably
cleaved and deformed adjacent to fault zone. Conglomerate has cleaved
matrix.

Field Rockname: SAMPLE C80228 SILICEOUS SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.75
Dry density =
Grain density =
Porosity =

SILTSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL FABRIC: NAME: Siliceous siltstone
60. Quartz Massive with flow foliation
40. Chlorite A very weathered rock. Much of the chlorite has been ferruginised by
weathering. The remainder consists of quartzite forming siliceous
layers, clasts & microglobules. The rock exhibits a network of veinlets
filled with quartz & ferruginous weathering products.

Location 0229

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0229

Outcrop

BOURKE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-157

6585937 m N

30.85757 S latitude

429402 m E

146.2616 E longitude

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: LOW RIDGE WITH OUTCROP ON CREST

dip=W strike=170

Structure : STEEPLY DIPPING; QUARTZ VEINED

Field Geology: Quartzite. Hard, dense, pale grey with recrystallised quartz matrix.

Thick veins of quartz mainly perpendicular to strike. Quartzite is massive with fine pseudolamination parallel to cleavage in argillaceous variants.

Field Rockname: SAMPLE BK0229 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.64
Dry density = 2.59
Grain density = 2.62
Porosity = 1.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = .40
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 11955
Ch.2= 473 .13 % K2O
Ch.3= 282 1.75 ppm U
Ch.4= 228 4.33 ppm Th
U/Th= .40
1.85 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Quartzite
98.	Quartz	FABRIC:	Massive, with flow foliation
1.	Chlorite		Subangular to rounded fragments & globules of strained hydrothermal quartz with weak sub-grain development, set in a matrix of cherty quartz with tiny chlorite partings defining weak wavy flow-banding.
1.	Opaque		The grains have very faint opaque coatings. Rare fragments of sericite-muscovite rock.

Location 0230

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0230
Outcrop

BOURKE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-151
6582889 m N 30.88328 S latitude
403965 m E 145.9953 E longitude

Illustrations :

Age/Unit= Ordovician? MOUNT DIJOU VOLCANICS
Topography: LARGE HILL; GOOD OUTCROP dip= strike=
Structure :
Field Geology: Basalt. Medium-grained, porphyritic in plagioclase, very fresh,
undeformed, massive.

Field Rockname: SAMPLE BK0230 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.80	Mean of 15 in-situ readings =	42449	Ch.1=	32123
Dry density =	2.77	from 14451 to 86896 ,SD=	18679	Ch.2=	3153 3.09 % K2O
Grain density =	2.78	Laboratory susceptibility =	35575	Ch.3=	459 3.94 ppm U
Porosity =	.0	Remanence =	61000.00	Ch.4=	278 5.14 ppm Th
		Koenigsberger ratio =	28.58	U/Th=	.77
					4.03 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Basalt	
		Vesicular;	slightly orthophyric
25.	Plagioclase	Abundant calcite pseudomorphs of a former phenocryst mineral. Rare	
40.	Calcite	phenocrysts of plagioclase. The fine-grained altered groundmass consists	
20.	Chlorite	of plagioclase laths, a non-resolvable former ferro-magnesian mineral	
1.	Quartz	now altered to clay, basaltic hornblende, interstitial chlorite &	
10.	Ferromagnesian	magnetite with opaque secondary mineral. Sparingly vesicular with	
1.	Hornblende	calcite, and minor chlorite and rare chalcedony fillings.	
2.	Magnetite		
1.	Opaque		

Location 0231

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0231

Outcrop

BOURKE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-151

6576207 m N

30.94287 S latitude

395781 m E

145.9090 E longitude

Illustrations :

Age/Unit= Silurian-Devonian

MERRERE CONGLOMERATE

Topography: LOW HILLS DENDRITIC DRAINAGE

dip=80E strike=015

Structure : STEEPLY DIPPING NEAR VERTICAL

Field Geology: Weathered metasiltstone with clasts. Highly cleaved in places,
especially where sericite-rich.

Field Rockname: SAMPLE BK0231 WEATHERED SERICITE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.52
Dry density = 2.49
Grain density = 2.72
Porosity = 8.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 9 in-situ readings = 342
from 0 to 753, SD= 291
Laboratory susceptibility = 0
Remanence = 1.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 34408
Ch.2= 2339 1.73 % K2O
Ch.3= 606 1.60 ppm U
Ch.4= 672 13.05 ppm Th
U/Th= .12
3.61 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Sericite quartzite Moderately sorted
40.	Quartz		Subangular to rounded clasts of partially strained quartz, rather
5.	Sericite		randomly dispersed in a matrix of very fine quartz, ferruginised
2.	Rock fragments		chlorite & sericite. Rare detrital muscovite & small plates of
3.	Opaque		sericite. Rare fragments of sericite quartzite. Thin bedding is
50.	Matrix		defined by differences in grain size & greater proportion of
.1	Muscovite		sericite in the finer-grained beds.
.01	Tourmaline		

Location 0232

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0232

SAME LOCATION AS 0233

Outcrop

COBAR

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-107

6550795 m N

31.17178 S latitude

392018 m E

145.8669 E longitude

Illustrations :2 Colour slides, 1 Polaroid

Age/Unit= Lower Devonian

COBAR GROUP

Topography: MOUNT DRYSDALE; LOW HILLS

dip=75NW strike=060

Structure :

Field Geology: Sandstone and conglomerate. Sandstone is massive, medium-grained and has silty cleaved matrix. Pebbles in conglomerate are elongate and mainly quartzite with some vein quartz. Matrix is cleaved.

Field Rockname: SAMPLE CB0232 MEDIUM GRAINED SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES

Whole rock density = 2.41

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 182

from 0 to 816 ,SD= 270

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 39203

Ch.2= 2591 1.78 % K2O

Ch.3= 763 2.49 ppm U

Ch.4= 806 15.61 ppm Th

U/Th= .16

4.61 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
70.	Quartz	Quartzose sandstone	Moderately sorted
5.	Muscovite	Subangular quartz sand grains, with minor kaolinised relict detrital feldspar & detrital muscovite set in a siliceous mud matrix from which sericite & traces of chlorite are included. The siliceous matrix material is very fine-grained quartz, which has partially recrystallised in a few patches. Quartz grains are very slightly strained.	
2.	Opaque		
.01	Tourmaline		
3.	Feldspar		
20.	Matrix		

Location 0233

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0233
Outcrop

SAME LOCATION AS 0232

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-107

6550796 m N

31.17177 S latitude

392018 m E

145.8669 E longitude

Illustrations :2 Colour slides, 1 Polaroid

Age/Unit= Lower Devonian

COBAR GROUP

Topography: MOUNT DRYSDALE; LOW HILLS

dip=75NW strike=060

Structure :

Field Geology: Sandstone and conglomerate. Sandstone is massive, medium-grained and has silty cleaved matrix. Pebbles in conglomerate are elongate and mainly quartzite with some vein quartz.

Field Rockname: SAMPLE CB0233 PARACONGLOMERATE

PHYSICAL PROPERTIES:

CONGLOMERATE

DENSITIES
Whole rock density = 2.42
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Pebbly quartzite
50. Rock fragments FABRIC: Poorly sorted
50. Matrix The lithic fragments include sub-angular sericite-rock clasts & sub-rounded quartzite & muscovite-biotite quartzite set in a matrix of fine-grained quartzite & sericite. Strain extinction in quartz is better developed in the more quartz-rich rocks.

Location 0234

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0234
Outcrop

SAME LOCATION AS 0235

BARNATO

NSW GDOM=3

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-139
6508717 m N 31.54388 S latitude
329975 m E 145.2089 E longitude

Illustrations :Photomicrograph

Age/Unit= Upper Devonian

MEADOWS TANK FORMATION

Topography: LOW ARCuate RIDGE

dip=35S strike=100

Structure : GENTLY DIPPING PERSISTENT HORIZON

Field Geology: Conglomerate. At base of Mulga Downs Group. Large angular and rounded
milky quartz pebbles set in a granular quartz matrix.

Field Rockname: SAMPLE BR0234 CONGLOMERATE

PHYSICAL PROPERTIES:

CONGLOMERATE

DENSITIES

Whole rock density = 2.54

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= .0629

Ch.2= 475 .16 % K2O

Ch.3= 221 .22 ppm U

Ch.4= 276 5.39 ppm Th

U/Th= .04

1.09 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Conglomerate
Est. X MINERAL FABRIC: Moderately well sorted

45. Rock fragments

55. Matrix

Granules & pebbles of quartzite set in a quartz-sand matrix consisting of well rounded quartz grains with original opaque grain coatings. These are cemented by quartz in optical continuity with the grains. Minor interstitial sericite, chlorite & rare tourmaline. Minor altered feldspar-bearing rock clasts. Photograph relict original grain coatings.

Location 0235

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0235
Outcrop

SAME LOCALITY AS 0234 AND 0236

BARNATO

NSW GDOM=3

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-139
6508717 m N 31.54388 S latitude
329975 m E 145.2089 E longitude

Illustrations :

Age/Unit= Middle Devonian

MULGA DOWNS GROUP

Topography:

dip=35S strike=100

Structure : GENTLY DIPPING PERSISTENT HORIZON

Field Geology: Quartzite and conglomerate of Mulga Downs Group. Thick-bedded, with lenticular point bar deposits eroding older deposits.

Field Rockname: SAMPLE BR0235 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.65
Dry density = 2.49
Grain density = 2.60
Porosity = 4.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = 50.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 10844
Ch.2= 534 .17 % K2O
Ch.3= 299 1.69 ppm U
Ch.4= 255 4.86 ppm Th
U/Th= .35
1.92 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	
			Quartzose sandstone
90.	Quartz	Well sorted	
5.	Rock fragments		Sub-rounded to rounded quartz grains with original thin opaque grain coatings together with minor subangular altered, fine-grained mud and kaolinised feldspar clasts set in a fairly pure silica cement in optical continuity with adjacent quartz grains. Trace interstitial mud & rare small tourmaline & opaque mineral grains.
5.	Cement		

Location 0236

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0236
Outcrop

SAME LOCALITY AS 0234 AND 0235

BARNATO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-139
6508717 m N 31.54388 S latitude
329975 m E 145.2089 E longitude

Illustrations :

Age/Unit= Middle Devonian MULGA DOWNS GROUP
Topography: dip= strike=
Structure : GENTLY DIPPING PERSISTENT HORIZON
Field Geology: Quartzite and conglomerate of Mulga Downs Group. Thick-bedded, with
lenticular point bar deposits eroding older deposits.

Field Rockname: SAMPLE BR0236 PEBBLY QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility =
Remanence =
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
58.	Quartz	Pebbly quartzose sandstone	Moderately well sorted
1.	Plagioclase	Subangular clasts of quartzite amidst abundant subrounded quartz grains with original grain coatings. Some grains are strained whilst others are strain-free. They have a fine-grained matrix of tiny quartz grains, sericite & chlorite.	
35.	Rock fragments		
5.	Matrix		
1.	Opaque		

Location 0237

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0237

Outcrop

BARNATO

NSW GDOM=3

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-139

6508331 m N

31.54735 S latitude

329887 m E

145.2079 E longitude

Illustrations :

Age/Unit= Middle Devonian

MULGA DOWNS GROUP

Topography: GENTLE DIP SLOPE

dip= strike=

Structure : LOW ARCuate OUTCROP GENTLY DIPPING TO WEST

Field Geology: Quartzite, with limonite staining.

Field Rockname: SAMPLE BR0237 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES

Whole rock density = 2.54

Dry density = 2.52

Grain density = 2.65

Porosity = 5.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 3 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 0

Remanence = 2.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 13516

Ch.2= 700 .34 % K2O

Ch.3= 296 1.23 ppm U

Ch.4= 290 5.59 ppm Th

U/Th= .22

1.79 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
93.	Quartz	Quartzose sandstone	
1.	Tourmaline	Well sorted	
1.	Opaque	Sub-rounded, strained & unstrained quartz sand grains with minor detrital tourmaline & an opaque mineral, all fairly tightly packed & cemented by minor secondary silica in optical continuity, & by	
3.	Rock fragments	a trace of chloritic mud, preferentially ferruginised by weathering.	
2.	Cement		

Location 0238

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0238
Outcrop

SAME LOCATION AS 0239

BARNATO

NSW GDOM=3

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-61
6533000 m N 31.32635 S latitude
340259 m E 145.3211 E longitude

Illustrations :

Age/Unit= Lower Devonian

AMPHITHEATRE GROUP

Topography: OUTCROP IN CREEK BED

dip= strike=

Structure :

Field Geology: Sandstone, finely laminated, fine to medium-grained and pale grey,
alternating with siltstone beds. Seventy percent sandstone and silty
sandstone; thirty percent siltstone.

Field Rockname: SAMPLE BR0238 SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.13		Ch.1= 28038
Dry density = 2.15	Mean of 6 in-situ readings = 387	Ch.2= 1743 1.08 % K2O
Grain density = 2.63	from 314 to 565 ,SD= 100	Ch.3= 588 2.11 ppm U
Porosity = 18.1	Laboratory susceptibility = 0	Ch.4= 605 11.69 ppm Th
	Remanence = .60	U/Th= .18
	Koenigsberger ratio = *****	3.55 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
90.	Quartz	Quartzose sandstone	Well sorted
5.	Muscovite		Fine grained quartz sand, sub-rounded, with minor smaller grains of opaque mineral & tourmaline. Minor detrital muscovite occurring as discrete plates mostly parallel to bedding. The cement is mainly silica with minor clay & micaceous impurities.
1.	Opaque		
.1	Tourmaline		
4.	Cement		

Location 0239

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0239

SAME LOCATION AS 0238

Outcrop

BARNATO

NSW GDOM=3

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-61
6533000 m N 31.32635 S latitude
340259 m E 145.3211 E longitude

Illustrations :

Age/Unit= Lower Devonian

AMPHITHEATRE GROUP

Topography: OUTCROP IN CREEK BED

dip= strike=

Structure :

Field Geology: Sandstone, finely laminated, fine to medium-grained pale grey,
alternating with siltstone beds. Seventy percent sandstone and silty
sandstone; thirty percent siltstone.

Field Rockname: SAMPLE BR0239 SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.28
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
82.	Quartz	Silty sandstone	Moderately sorted
1.	Opaque		Subangular to sub-rounded, fine quartz sand with scattered opaque mineral & rare tourmaline grains. Minor detrital muscovite occurring as discrete separate plates. Rare kaolinised ? lithic fragments. The matrix consists of fine silica & mud mixed. Minor apatite.
.01	Tourmaline		
1.	Muscovite		
4.	Rock fragments		
10.	Matrix		
2.	Opaque		

Location 0240

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0240

Outcrop

BARNATO

NSW GDOM=3

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-61

6531099 m N

31.34342 S latitude

339755 m E

145.3155 E longitude

Illustrations :

Age/Unit= Lower Devonian

AMPHITHEATRE GROUP

Topography: LOW RIDGE COVERED BY RUBBLE

dip= strike=

Structure : NO DISCERNABLE STRUCTURE AT OUTCROP

Field Geology: Quartzose sandstone, fine grained, with brachiopod trace fossils.

Field Rockname: SAMPLE BR0240 FINE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.40
Dry density = 2.38
Grain density = 2.59
Porosity = 8.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 118
from 0 to 439, SD= 164
Laboratory susceptibility = 62
Remanence = 4.00
Koenigsberger ratio = 1.08

GAMMA-RAY SPECTROMETRY

Ch.1= 22233
Ch.2= 1093 .38 % K2O
Ch.3= 539 1.67 ppm U
Ch.4= 577 11.18 ppm Th
U/Th= .15
3.02 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
93.	Quartz	Quartzose sandstone	
3.	Apatite	Well sorted	
.1	Tourmaline	Fine-grained quartz sand, subangular to sub-rounded, tightly packed.	
2.	Muscovite	Abundant heavy minerals including apatite, & lesser zircon and	
.1	Zircon	tourmaline. Cement is silica with clay impurities slightly ferruginised	
2.	Cement		

Location 0241

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0241
Outcrop

SAME LOCATION AS 0242

BARNATO

NSW GDM=3

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-99
6545907 m N 31.20987 S latitude
339719 m E 145.3175 E longitude

Illustrations :

Age/Unit= Middle Devonian MULGA DOWNS GROUP
Topography: BROAD FLAT DIPPING TO WEST-SUMMIT dip=15W strike=03G
Structure : GENTLY DIPPING TO THE WEST
Field Geology: Sandstone, medium to coarse-grained, cross bedded, with ripple marks.
Highly porous and friable, except where slightly silicified on weathered surface.

Field Rockname: SAMPLE BR0241 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.44
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 9396
Ch.2= 305 .00 % K2O
Ch.3= 239 .34 ppm U
Ch.4= 290 5.66 ppm Th
U/Th= .06
1.16 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Quartzose sandstone
93.	FABRIC:	Well sorted	
1.	Quartz	Subangular to subrounded quartz sand grains with minor kaolinised	
1.	Feldspar	?feldspar, opaque mineral & rare tourmaline set in a matrix of	
.01	Quartz	secondary silica cement optically continuous over many quartz grains,	
5.	Tourmaline	& clays, ferruginised by weathering. The clays include trace chlorite.	
	Matrix		

Location 0242

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0242

SAME LOCATION AS 0241

Outcrop

BARNATO

NSW GDOM=3

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-99

6545907 m N

31.20987 S latitude

339719 m E

145.3175 E longitude

Illustrations :

Age/Unit= Middle Devonian MULGA DOWNS GROUP

Topography: BROAD FL/T DIPPING TO WEST-SUMMIT dip=1SW strike=030

Structure : GENTLY RIPPING TO THE WEST

Field Geology: Sandstone, medium to coarse-grained, cross bedded, with ripple marks.
Highly porous and friable, except where slightly silicified on weathered surface.

Field Rockname: SAMPLE BRO242 SILICIFIED SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density = 2.52

Dry density = 2.48

Grain density = 2.64

Porosity = 6.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility = 0

Remanence = 10.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K20

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
90.	Quartz	Quartzose sandstone	
.01	Tourmaline	Well sorted	
.1	Opaque	Subangular to subrounded, medium-sized quartz sand grains with minor kaolinised ?feldspar, set in a silica cement in optical continuity with adjacent grains. Minor interstitial chloritic clay, ferruginised by weathering, forms prominent grain coatings.	
1.	Feldspar		
9.	Cement		

Location 0243

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0243
Outcrop

LOUTH NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-135
6569476 m N 30.99900 S latitude
352799 m E 145.4582 E longitude

Illustrations :

Age/Unit= Lower Devonian. AMPHITHEATRE GROUP
Topography: LOW FLAT TOPPED HILLOCK / p= strike=
Structure : LOW ANTICLINAL DOME
Field Geology: Quartzite. Massive in outcrop but finely laminated in detail where fresh.

Field Rockname: SAMPLE BR0243 SILICIFIED QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE		MAGNETIC SUSCEPTIBILITY (S.I. *.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 15 in-situ readings = 416		Ch.1= 10711	
Whole rock density = 2.31		from 188 to 691, SD= 175		Ch.2= 483	.12 % K2O
Dry density = 2.32		Laboratory susceptibility = 0		Ch.3= 281	1.40 ppm U
Grain density = 2.61		Remanence = 3.00		Ch.4= 256	4.91 ppm Th
Porosity = 11.2		Koenigsberger ratio = *****		U/Th= .29	
				1.73	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
90.	Quartz	Quartzose sandstone	Well sorted
1.	Apatite		Subrounded quartz sand grains with minor kaolinised ?feldspar grains, opaque mineral, apatite & rare zircon, set in a silica cement that is in optical continuity with adjacent quartz grains. Minor opaque grain coatings.
1.	Opaque		
1.	Feldspar		
.01	Zircon		
7.	Cement		

Location 0244

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0244
Outcrop

NYMAGEE NSW GDM=3
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-60
6437440 m N 32.19267 S latitude
376272 m E 145.6874 E longitude

Illustrations :

Age/Unit= Middle Devonian MEADOWS TANK FORMATION
Topography: PARALLEL STRIKE RIDGE UPLAND dip=10W strike=
Structure : GENTLY TILTED LARGE FOLDS
Field Geology: Quartzose sandstone. Fine to medium-grained. Well sorted. Medium to
thick and planar bedded, with internal cross-bedding in sets up to 1 m
thick. Some beds contain detrital clay-pellet casts. Marine, near-shore
deposit.
Field Rockname: SAMPLE NE0244 SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.47	Mean of 9 in-situ readings =	0	Ch.1=	9951
Dry density =	2.47	from to ,SD=		Ch.2=	548 .34 % K2O
Grain density =	2.62	Laboratory susceptibility =	0	Ch.3=	200 1.12 ppm U
Porosity =	5.7	Remanence =	.80	Ch.4=	172 3.28 ppm Th
		Koenigsberger ratio =	*****	U/Th=	.34
					1.33 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Quartzose sandstone	
		Well sorted	
83.	Quartz	Sub-rounded to rounded quartz grains with grain coatings, as well as	
8.	Feldspar	kaolinised feldspar & kaolinised lithic fragments. Some quartz	
1.	Opaque	grains have strain extinction, but others lack it. Secondary silica	
3.	Rock fragments	cement in optical continuity with adjacent grains. Rare zircon.	
5.	Cement		
.001	Zircon		

Location 0245

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)1245
Outcrop

NYMAGEE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-140
6401177 m N 32.52037 S latitude
382222 m E 145.7460 E longitude

Illustrations :

Age/Unit= THULE GRANITE
Topography: GENTLE LOW RISE WITH LOW EXFOLIATED OCPR dip= strike=
Structure : PLUTON
Field Geology: Granite. Equigranular, non-porphyritic, medium-grained. Leucocratic.
Muscovite-bearing with minor biotite. Variable alteration present
accompanied by slight variations in texture, higher quartz content and
minor greenish rock containing leached sulphide-mineral specks.
Field Rockname: SAMPLE NEO245 GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES Whole rock density = 2.61
Dry density = 2.61
Grain density = 2.66
Porosity = 2.1
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 62
Remanence = 2.00
Koenigsberger ratio = .54
GAMMA-RAY SPECTROMETRY
Ch.1= 60872
Ch.2= 4989 4.41 % K2O
Ch.3= 1224 14.46 ppm U
Ch.4= 406 6.81 ppm Th
U/Th= 2.12
11.13 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.86	.07	13.66	.89	.02	.08	.32	3.38	4.52	.30	.03	.50	99.68
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	93	-6	31	-1	7	-5	13	-3	21	12	22	501	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	32	12	8	6	-3	2	5	12	29	30		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
Est. % MINERAL FABRIC: Hypidiomorphic granular
40. Quartz Euhedral to subhedral sericitised & slightly kaolinised plagioclase
29. Orthoclase with anhedral heavily kaolinised orthoclase. Small interconnected
25. Plagioclase patches of quartz throughout & minor development of large equant
5. Muscovite muscovite crystals. Rare biotite partially oxidised to chlorite and
1. Biotite opaque secondary minerals. Rare accessory apatite.
.1 Opaque
.1 Apatite

Location 0246

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0246
 Outcrop

NYMAGEE NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-140
 6392262 m N 32.60085 S latitude
 382918 m E 145.7523 E longitude

Illustrations :

Age/Unit= Silurian? MOUNT HOPE VOLCANICS
 Topography: VERY LOW RISE dip= strike=
 Structure : STEEPLY DIPPING
 Field Geology: Ignimbrite, shale and siltstone interbedded on west edge of volcanic rise. This confirms that volcanism to the east accompanied sedimentation west of the rise. The ignimbrite is porphyritic in quartz and feldspar which are set in a fine-grained groundmass.
 Field Rockname: SAMPLE NE0246 IGNIMBRITE

PHYSICAL PROPERTIES:

DENSITIES
 Whole rock density =
 Dry density = 2.56
 Grain density = 2.65
 Porosity = .0

IGNIMBRITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
 Mean of 8 in-situ readings = 0
 from to SD=
 Laboratory susceptibility = 163
 Remanence = 5.00
 Koenigsberger ratio = .51

GAMMA-RAY SPECTROMETRY

Ch.1= 58373
 Ch.2= 4462 3.62 X K20
 Ch.3= 968 2.61 ppm U
 Ch.4= 1069 20.75 ppm Th
 U/Th= .13
 5.98 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.97	0.61	13.67	2.91	0.06	0.97	0.50	3.01	5.53	0.21	0.13	1.20	99.77
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	1209	-6	77	15	3	34	52	4	22	537	22	202	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	-20	182	6	18	-3	33	5	42	40	383		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
5.	Quartz	Ignimbrite	Porphyritic; massive
10.	Plagioclase		Phenocrysts of rounded, internally fractured & externally embayed volcanic quartz & fractured plagioclase set in an altered quartzo-feldspathic groundmass with abundant chlorite, uncommon muscovite and rare apatite. Relict ferromagnesian mineral pseudomorphed by a cluster of slightly ferruginised biotite platelets & opaque oxide. Minor andesite xenoliths.
1.	Opaque		
3.	Rock fragments		
80.	Ferromagnesian Groundmass		
.1	Apatite		

Location 0247

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0247

Outcrop

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-140

6394054 m N

32.58530 S latitude

388886 m E

145.8161 E longitude

Illustrations :

Age/Unit= BOOLABONE GRANITE
 Topography: RUGGED UPLAND WITH EXFOLIATED OUTCROP dip= strike=
 Structure : PLUTON
 Field Geology: Granophyre, Equigranular, medium-grained. Leucocratic. Slightly altered with chloritised biotite and minor epidote. Rare leached spots indicate former sulphide mineral specks.

Field Rockname: SAMPLE NE0247 GRANOPHYRE

PHYSICAL PROPERTIES:

DENSITIES
 Whole rock density = 2.61
 Dry density = 2.59
 Grain density = 2.60
 Porosity = .0

GRANOPHYRE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 2585
 from 0 to 4523 ,SD= 1490
 Laboratory susceptibility = 5478
 Remanence = 16000.00
 Koenigsberger ratio = 48.68

GAMMA-RAY SPECTROMETRY

Ch.1= 72926
 Ch.2= 5471 4.28 % K20
 Ch.3= 1274 3.37 ppm U
 Ch.4= 1413 27.44 ppm Th
 U/Th= .12
 7.74 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.81	.33	12.89	2.73	.04	.18	.68	3.59	4.82	.06	.07	.60	99.80

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	707	-6	166	4	6	12	125	-3	26	10	31	160

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	5	45	7	30	6	5	-5	74	43	404

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Quartz	Granophyre	Granophyric
30.	Plagioclase	Euhedral, sericitised & slightly kaolinised plagioclase amidst a graphic intergrowth of quartz & alkali potassic feldspar. Large patches of hornblende, biotite dispersed in small amounts throughout, & lesser epidote. Trace muscovite pseudomorphs of intensely altered plagioclase. Minor patches of globular quartz, some of which is resorbed. Minor magnetite altering to hematite at margins & along cleavages. Minor pyrrhotite grains.	
34.	Orthoclase		
4.	Hornblende		
1.	Epidote		
.5	Magnetite		
.5	Pyrrhotite		

Location 0248

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0248
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-140
6398570 m N 32.54518 S latitude
395147 m E 145.8833 E longitude

Illustrations :

Age/Unit= Silurian? MOUNT HOPE VOLCANICS
Topography: LOW RISES WITH LOW STRIKE RIDGES dip=79E strike=193
Structure : STEEPLY DIPPING
Field Geology: Ignimbrite. Porphyritic in quartz and feldspar. Minor cognate xenoliths
in places. Crops out parallel to regional strike. No evidence of outcrop
in corresponding strike depressions.

Field Rockname: SAMPLE NE0248 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.72 Ch.1= 50308
Dry density = 2.70 Mean of 9 in-situ readings = 0 Ch.2= 3573 2.47 % K2O
Grain density = 2.73 from to ,SD= Ch.3= 1041 3.36 ppm U
Porosity = 1.0 Laboratory suscept:ibility = 301 Ch.4= 1103 21.36 ppm Th
Remanence = 30.00 U/Th= .16
Koenigsberger ratio = 1.66 6.28 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.86	0.76	12.55	4.78	0.07	1.78	1.58	1.99	2.96	0.17	0.09	1.30	99.70
TRACE ELEMENT	Ba	Pr	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	487	-6	86	15	39	34	54	-3	13	101	26	166	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	13	21	138	-5	21	-3	71	-5	36	66	251		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
Est. % MINERAL FABRIC: Eutaxitic; variably spherulitic
10. Quartz Phenocrysts of rounded to angular, fractured, strained volcanic quartz
5. Plagioclase with infrequent minor resorption. Also euhedral to fractured
5. Orthoclase plagioclase & orthoclase phenocrysts. Groundmass consists of micro-
5. Biotite crystalline quartz, and feldspar devitrified from an originally glassy
1. Opaque material. Relict compacted shards delineated by traces of sericite.
75. Groundmass Abundant streaks & clots of groundmass chlorite & biotite, and
development of coalesced spherulites in places. Minor opaque mineral
& numerous clusters of secondary biotite aggregates, some with
radiating ?zoisite.

Location 0249

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0249
 Outcrop

NYMAGEE NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-48
 6406086 m N 32.47760 S latitude
 397371 m E 145.9078 E longitude

Illustrations :

Age/Unit= Silurian? MOUNT HOPE VOLCANICS
 Topography: RUGGED UPLAND WITH BLOCKY OUTCROP dip= strike=
 Structure :
 Field Geology: Ash-fall tuff. Ultrafine-grained, grey, fresh, massive, non-bedded,
 subareal. Quartzo-feldspathic composition. Brittle and curved pyroclastic
 jointing. Tiny specks of sulphide and a dark mineral distributed
 randomly in the rock.
 Field Rockname: SAMPLE NEO249 ASH-FALL TUFF

PHYSICAL PROPERTIES: TUFF

DENSITIES
 Whole rock density = 2.60
 Dry density = 2.63
 Grain density = 2.64
 Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 0
 from to SD=
 Laboratory susceptibility = 150
 Remanence = 2.00
 Koenigsberger ratio = .22

GAMMA-RAY SPECTROMETRY

Ch.1= 69540
 Ch.2= 5394 4.30 % K20
 Ch.3= 1317 6.85 ppm U
 Ch.4= 1175 22.49 ppm Th
 U/Th= .30
 9.06 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	HgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.03	0.18	12.36	1.44	0.03	0.36	0.74	3.69	4.64	0.07	0.16	0.80	99.51

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mn	Nb	Ni	Pb	Rb
p.p.m.	497	-6	41	9	10	-5	29	-3	10	181	33	249

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	4	14	44	5	25	6	11	7	48	29	138

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ash-fall tuff
 FABRIC: Vitroclastic
 Est. % MINERAL FABRIC: Small fragments of quartz, feldspar (probably plagioclase) muscovite,
 2. Quartz calcite, biotite, opaque mineral & zircon surrounded by feldspathic
 1. Biotite glass shards which have slightly devitrified. Minor calcite patches.
 3. Calcite
 6. Plagioclase
 .1 Zircon
 2. Opaque
 85. Glass shards
 1. Muscovite

Location 0250

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0250
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-78
6420883 m N 32.34473 S latitude
404099 m E 145.9809 E longitude

Illustrations :

Age/Unit= GILGUNNIA GRANITE
Topography: LOW RISE WITH EXFOLIATED PAVEMENT dip= strike=
Structure : PLUTON
Field Geology: Granophyre. Equigranular, medium-grained. Mesocratic. Scattered biotite
and trace muscovite in places.

Field Rockname: SAMPLE NE0250 GRANOPHYRE

PHYSICAL PROPERTIES: GRANOPHYRE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.67 Mean of 7 in-situ readings = 0 Ch.1= 60287
Dry density = 2.63 from to ,SD= Ch.2= 4178 3.07 X K20
Grain density = 2.69 Laboratory susceptibility = 75 Ch.3= 1099 3.26 ppm U
Porosity = 2.5 Remanence = 6.00 Ch.4= 1189 23.05 ppm Th
Koenigsberger ratio = 1.33 U/Th= .14
6.65 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 69.21 8.1 14.09 4.74 .06 1.05 1.71 3.18 3.83 .21 .06 .90 99.86

TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 871 -6 106 12 14 -5 88 -3 26 16 9 144

TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 16 17 165 -5 20 6 50 -5 57 35 534

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granophyre
FABRIC: Granophyric
Est. % MINERAL
20. Quartz Euhedral coarse plagioclase, zoned & slightly sericitised, amidst a
40. Orthoclase graphic intergrowth of quartz & kaolinised potassic, alkali, feldspar.
30. Plagioclase Biotite clusters show partial alteration to chlorite with rare
7. Biotite associated liberation of sphene & epidote. Opaque mineral is also
2. Chlorite confined to altered biotites. Quartz also occurs in small minor patches.
1. Opaque
.1 Epidote
.01 Sphene

Location 0251

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0251

Outcrop

COBAR

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-153

6499956 m N 31.63023 S latitude

390313 m E 145.8434 E longitude

Illustrations :

Age/Unit= Silurian

CSA SILTSTONE

Topography: FLAT ADJACENT TO CALCRETED MOUND

dip=? strike=000

Structure :

Field Geology: Siltstone, shale and quartz greywacke. Scarcely exposed beneath a cover of maghemite pisolites and soil. The rocks are thin bedded to laminated and slightly cleaved. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 3 in-situ readings = 565
from 0 to 942 ,SD= 498
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 40575
Ch.2= 2432 1.58 % K2O
Ch.3= 785 2.98 ppm U
Ch.4= 794 15.33 ppm Th
U/Th= .19
4.82 Heat generation units

Location 0252

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0252
Outcrop

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-53
6468793 m N 31.91120 S latitude
388979 m E 145.8258 E longitude

Illustrations :

Age/Unit= Lower Devonian AMPHITHEATRE GROUP
Topography: ABRUPT SMALL RUGGED RISE WITH FLOAT dip= strike=
Structure : INDETERMINATE BECAUSE POORLY DISCERNIBLE BEDDING AND ABUNDANT FLOAT
Field Geology: Quartzose sandstone, siltstone and shale. The sandstone is fine to medium-grained, well sorted, thin bedded and contains detrital muscovite. Interbedded with scarcely exposed siltstone and shale seen as chips in float.

Field Rockname: SAMPLE CB0252 SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES		SANDSTONE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.52	Mean of 6 in-situ readings =		Ch.1=	27451		
Dry density =		from to ,SD=		Ch.2=	1510	.89 % K2O	
Grain density =		Laboratory susceptibility =	0	Ch.3=	524	1.40 ppm U	
Porosity =		Remanence =	0.00	Ch.4=	580	11.26 ppm Th	
		Koenigsberger ratio =		U/Th=	.12		
					2.99	Heat generation units	

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
80.	Quartz	Quartzose sandstone	Moderately well sorted
4.	Muscovite		Subangular to subrounded, moderately packed, medium-sized quartz sand grains with lesser smaller opaque mineral & rare tourmaline & zircon.
.1	Tourmaline		Scattered dispersed detrital muscovite flakes. All these grains are set in a matrix of sericite. Rare grains of ?sericitised plagioclase.
1.	Opaque		
.01	Zircon		
15.	Matrix		
.1	Feldspar		

Location 0253

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0253
Outcrop

COBAR NSW GDOM=3
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-27
6476770 m N 31.83618 S latitude
361001 m E 145.5311 E longitude

Illustrations :

Age/Unit= Lower Devonian AMPHITHEATRE GROUP
Topography: UNDULATING, WITH STRIKE RIDGES. dip=30E strike=100
Structure : MODERATELY DIPPING NEAR FOLD CLOSURE
Field Geology: Quartzose sandstone. Fine-grained, well sorted, well washed, marine,
interbedded with non-outcropping finer-grained sediments. Minor
massive bioturbated beds with abundant brachiopods (?Rhynchonellids).
Thin bedded, laminated with low-angle cross-stratification in places.
Field Rockname: SAMPLE CB0253 SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.25	Mean of 5 in-situ readings =	0	Ch.1=	28736
Dry density =	2.31	from to ,SD=		Ch.2=	1374 .47 % K2O
Grain density =	2.63	Laboratory susceptibility =	37	Ch.3=	646 .91 ppm U
Porosity =	12.0	Remanence =	.30	Ch.4=	784 15.30 ppm Th
		Koenigsberger ratio =	.14	U/Th=	.06
				3.28	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
92.	Quartz	Quartzose sandstone	Moderately sorted
.01	Tourmaline	Subangular to subrounded, tightly packed fine to medium quartz sand grains with rare detrital muscovite, opaque mineral, zircon and	
.02	Zircon	tourmaline. Matrix consists mainly of sericitic clay. Rare grains of	
1.	Muscovite	?sericitised feldspar.	
1.	Opaque		
5.	Matrix		
1.	Feldspar		

Location 0254

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0254 ON WEST EMBANKMENT OF DAM. ROCKS DUG UP BY BULLDOZER
Dozer scrape COBAR NSW GDOM=3
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-27
6476714 m N 31.83675 S latitude
361531 m E 145.5367 E longitude

Illustrations :

Age/Unit= Lower Devonian AMPHITHEATRE GROUP
Topography: UNDULATING, WITH STRIKE RIDGES. dip=30E strike=100
Structure : MODERATELY DIPPING NEAR FOLD CLOSURE
Field Geology: Quartzose sandstone and silty sandstone. Fine-grained, moderately sorted, but with clay matrix. Abundant muscovite. The silty sandstone is khaki to green, and biturbated in places with silt infillings.

Field Rockname: SAMPLE CB0254 SILTY SANDSTONE

PHYSICAL PROPERTIES: SANDSTONE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 4 in-situ readings = 0		Ch.1= 33817	
Whole rock density = 2.42		from to ,SD=		Ch.2= 2139	1.36 % K2O
Dry density = 2.38		Laboratory susceptibility = 150		Ch.3= 664	1.28 ppm U
Grain density = 2.64		Remanence = .20		Ch.4= 777	15.13 ppm Th
Porosity = 10.0		Koenigsberger ratio = .02		U/Th= .08	
				3.68	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Silty sandstone	
		Moderately sorted	
85.	Quartz	Subangular quartz sand grains of fine grain size tightly packed together with detrital chloritised biotite, as well as muscovite, with rare zircon & tourmaline. Most grains have an opaque cloudy grain coating. The matrix consists of sericite & chlorite of silt grain size.	
5.	Muscovite		
4.	Chlorite		
.01	Tourmaline		
.01	Zircon		
5.	Matrix		
1.	Opaque		

Location 0255

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0255
Outcrop

COBAR NSW GDM=Z
1:250,000 sheet area 1:100,000 sheet area air-photo: r/n-no.= 5-149
6510959 m N 31.52933 S latitude
374158 m E 145.6745 E longitude

Illustrations :

Age/Unit= Lower Devonian AMPHITHEATRE GROUP
Topography: ABRUPT RIDGES BESIDE FLAT PLAIN dip= strike=
Structure : GENTLY TILTED OUTCROPS.
Field Geology: Quartzose sandstone, siltstone and shale. The sandstone is fine-grained,
well sorted, moderately cemented and contains minor heavy minerals. It
is interbedded with shale and siltstone which scarcely crop out except
as chips in float at base of sandstone strike ridges. Not sampled.
Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

SANDSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 16148
Ch.2= 842 .47 % K2O
Ch.3= 356 2.52 ppm U
Ch.4= 261 4.92 ppm Th
U/Th= .51
2.51 Heat generation units

Location 0256

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0256

Outcrop

COBAR

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-47
6474052 m N 31.86775 S latitude
443017 m E 146.3976 E longitude

NSW GDOM=2

Illustrations :

Age/Unit= Lower Devonian BARROW RANGE BEDS
Topography: STRIKE RIDGE dip=76SW strike=149
Structure : TIGHT SYNCLINE IN GRABEN
Field Geology: Sericite quartzite, quartz greywacke and slate. Planar interbedded but
most units are internally massive. Highly cleaved.

Field Rockname: SAMPLE CB0256 SERICITE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.51
Dry density = 2.51
Grain density = 2.71
Porosity = 7.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 251
from 0 to 1005 .SD= 299
Laboratory susceptibility = 188
Remanence = .60
Koenigsberger ratio = .05

GAMMA-RAY SPECTROMETRY

Ch.1= 32035
Ch.2= 2131 1.46 X k20
Ch.3= 622 1.75 ppm U
Ch.4= 681 13.21 ppm Th
U/Th= .13
2.67 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
50.	Quartz	Sericite quartzite	Poorly sorted, with wavy flow banding; massive
1.	Muscovite		Angular, subangular & rare subrounded clasts of strained quartz with subgrain development. Interstices, which are of lenticular shape, are filled mainly with sericite optically continuous with flow foliation.
.01	Zircon		Minor fragments of muscovite, & also muscovite occurs rarely as a result of grain growth of minor purer sericite. Abundant opaque oxide as discrete grains & as pseudomorphs after another mineral (?biotite) as a result of weathering.
5.	Opaque		
44.	Sericite		

Location 0258

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0258
Outcrop

BESIDE OLD MINE SHAFT.

COBAR

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-61
6478716 m N 31.82707 S latitude
491520 m E 146.9104 E longitude

Illustrations :

Age/Unit=

Topography: FLAT

dip= strike=

Structure :

Field Geology: Gossan beside old copper workings.

Field Rockname: SAMPLE CB0258 GOSSAN

PHYSICAL PROPERTIES:

GOSSAN

DENSITIES
Whole rock density = 3.05
Dry density = 3.59
Grain density = 3.65
Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 4429
from 2387 to 7037 ,SD= 1993
Laboratory susceptibility = 2990
Remanence = 2000.00
Koenigsberger ratio = 11.15

GAMMA-RAY SPECTROMETRY

Ch.1= 9442
Ch.2= 464 .23 % K2O
Ch.3= 233 2.10 ppm U
Ch.4= 133 2.44 ppm Th
U/Th= .86
1.77 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	Gossan
		FABRIC:	Massive
5.	Quartz		Patches of hematite set amidst a meshwork of goethite & ochreous
50.	Goethite		limonite. Minor vein quartz.
20.	Limonite		
25.	Hematite		

Location 0259

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0259
Outcrop

COBAR NSW GDOM=Z
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-25
6466314 m N 31.93897 S latitude
493015 m E 146.9261 E longitude

Illustrations :

Age/Unit=
Topography: STRIKE (CLEAVAGE) RIDGE. GOOD FRESH OUTCROP. dip=80SW strike=145
Structure : CLEAVED
Field Geology: Serpentinite. Massive and cleaved varieties. Green to black.

Field Rockname: SAMPLE CB0259 SERPENTINITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.61
Dry density = 2.59
Grain density = 2.59
Porosity = .0

SERPENTINITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 23951
from 11309 to 45490 ,SD= 10740
Laboratory susceptibility = 38578
Remanence = 7500.00
Koenigsberger ratio = 3.24

GAMMA-RAY SPECTROMETRY

Ch.1= 5869
Ch.2= 260 .13 % K2O
Ch.3= 129 1.16 ppm U
Ch.4= 74 1.36 ppm Th
U/Th= .85
.98 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
90.	Antigorite	Serpentinite	
4.	Chlorite	Massive	
3.	Enstatite		
1.	Spinel		
2.	Magnetite		
.1	Hematite		
.1	Chlorite		

Lamellar antigorite crossed by veinlets of fibrous chrysotile.
Antigorite contains a network of mesh-like magnetite stringers with rare chromite & minor hematite. Rare spinel & relict, partially serpentinised enstatite & xenolithic enstatite clusters.

Location 0260

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0260
Outcrop

NYNGAN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-174
6466940 m N 31.93317 S latitude
519831 m E 147.2098 E longitude

Illustrations :

Age/Unit= Ordovician GIRILAMBONE BEDS dip= strike=
Topography: FLAT
Structure :
Field Geology: Slate and white-quartz rubble. Scarcely exposed and occurring mostly as float. The slate has abundant muscovite, possible chlorite and two cleavages. It is slightly rodged due to quartz elongation. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 263
from 0 to 565, SD= 205
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY
Ch.1= 13010
Ch.2= 623 .22 % K2O
Ch.3= 321 1.45 ppm U
Ch.4= 305 5.86 ppm Th
U/Th= .25
1.95 Heat generation units

Location 0261

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0261
Outcrop

NARROMINE sheet area 1:250,000
6451608 m N
619859 m E

NSW GDOM=1
air-photo:run-no.= 1-75
32.06530 S latitude
148.2698 E longitude

Illustrations :

Age/Unit= Jurassic
Topography: FLAT
Structure : HORIZONTALLY BEDDED
Field Geology: Pebbly quartzose sandstone. Coarse-grained; poorly sorted. Ferruginised by weathering.

PILLIGA SANDSTONE
dip= strike=

Field Rockname: SAMPLE NM0261 SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE
DENSITIES
Whole rock density = 2.50
Dry density = 2.76
Grain density = 3.16
Porosity = 12.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = 250.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Quartzose sandstone
75. Quartz FABRIC: Moderately well sorted
20. Opaque Subangular & minor subrounded quartz & quartzite sand grains set
5. Rock fragments in a matrix completely pseudomorphed by opaque minerals, as a result of weathering.

Location 0262

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0262
Quarry

NARROMINE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-51
6434590 m N 32.21887 S latitude
619139 m E 148.2643 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: FLAT WITH LOW RISE dip= strike=
Structure : COMPLEXLY FOLDED WITH STEEP DIPS; STRIKE AND DIP HIGHLY VARIABLE
Field Geology: Micaceous quartzite, quartzite, quartzose sandstone and siltstone. The
quartzites have stratabound, cross-cutting quartz veins. The sandstone
and siltstone are planar bedded and thin bedded to laminated. Numerous
randomly-oriented mesoscopic folds.
Field Rockname: SAMPLE NM0262 SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES	SILTSTONE	MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.71		Mean of 5 in-situ readings = 138	Ch.1= 42967
Dry density =		from 62 to 188, SD= 52	Ch.2= 3214 2.52 % K2O
Grain density =		Laboratory susceptibility = 0	Ch.3= 754 2.20 ppm U
Porosity =		Remanence = 0.00	Ch.4= 819 15.88 ppm Th
		Koenigsberger ratio =	U/Th= .14
			4.64 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Siltstone	
60.	Quartz		Massive to faintly laminated & thin bedded
15.	Biotite		Unsorted mixture of subangular quartz, ragged biotite partially chloritised, detrital muscovite, and chloritised lithic fragments.
5.	Muscovite		Interstitial fine sericite & chlorite. Trace accessory ?hornblende.
1.	Opaque		Bedding defined by subtle changes in grain size & slight change in proportion of mineral constituents.
9.	Chlorite		
.01	Hornblende		
10.	Sericite		

Location 0263

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0263
Quarry

NARROMINE sheet area 1:250,000
6434590 m N
619139 m E

NSW GDOM=1
air-photo:run-no.= 2-51
32.21887 S latitude
148.2643 E longitude

Illustrations :Photomicrograph

Age/Unit= Ordovician
Topography: FLAT WITH LOW RISE dip= strike=
Structure : COMPLEXLY FOLDED WITH STEEP DIPS, STRIKE AND DIP HIGHLY VARIABLE
Field Geology: Micaceous quartzite, quartzite, quartzose sandstone and siltstone. The quartzites have stratabound, cross-cutting quartz veins. The sandstone and siltstone are planar bedded and thin bedded to laminated. Numerous randomly-oriented mesoscopic folds.

Field Rockname: SAMPLE NM0263 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE
DENSITIES
Whole rock density = 2.69
Dry density = 2.68
Grain density = 2.69
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 37
Remanence = .20
Koenigsberger ratio = .09

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Biotite quartzite
69.	Quartz	FABRIC:	Massive, with discontinuous wavy lenticular microlayering
20.	Biotite		Crinkly discontinuous wavy layering defined by biotite platelets lying
5.	Muscovite		between boudin-shaped clusters of quartz with impurities between
.01	Zircon		grains. Scattered opaque mineral & trace accessory zircon randomly
1.	Opaque		positioned throughout. Trace smears of chlorite between quartz clusters.
5.	Chlorite		Photograph wavy lenticular mica trails.

Location 0264

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0264
Quarry

NARROMINE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-51
6434590 m N 32.21887 S latitude
619139 m E 148.2643 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: FLAT WITH LOW RISE dip= strike=
Structure : COMPLEXLY FOLDED WITH STEEP DIPS, STRIKE AND DIP HIGHLY VARIABLE
Field Geology: Micaceous quartzite, quartzite, quartzose sandstone and siltstone. The quartzites have stratabound, cross-cutting quartz veins. The sandstone and siltstone are planar bedded and thin bedded to laminated. Numerous randomly-oriented mesoscopic folds.
Field Rockname: SAMPLE NM0264 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 0 in-situ readings =		Ch.1=	
Whole rock density = 2.73		from to SD=		Ch.2=	% K20
Dry density = 2.71		Laboratory susceptibility =	163	Ch.3=	ppm U
Grain density = 2.71		Remanence =	.50	Ch.4=	ppm Th
Porosity = .0		Koenigsberger ratio =		U/Th=	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Biotite-chlorite quartzite	
84.	Quartz		Massive, with discontinuous wavy microlayering around pseudoboudins
5.	Chlorite		Crinkly discontinuous wavy microlayering defined by biotite and chlorite platelets lying between lenticular pseudoboudins of quartz-crystal aggregates. Interstitial fine sericite. Microveinlets of equi-dimensional quartz grains stratabound within the rock. Accessory fine zircon & ?hornblende.
5.	Biotite		
1.	Opaque		
5.	Sericite		
.01	Zircon		
.01	Hornblende		

Location 0265

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0265
Outcrop

SAME LOCATION AS 0266 MAGNETIC TRAVERSE

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-55
6435582 m N 32.20912 S latitude
626457 m E 148.3418 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: LOW RIDGE dip=80E strike=
Structure : TILTED STEEPLY
Field Geology: Vein quartz. Slightly cavernous and sparingly gossanous in places. Some
cavities contain oxides which include magnetite in places.

Field Rockname: SAMPLE NM0265 WHITE QUARTZ ROCK

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES
Whole rock density = 2.57
Dry density = 2.58
Grain density = 2.58
Porosity = .3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 1089
from 0 to 3330, SD= 1266
Laboratory susceptibility = 1269
Remanence = 700.90
Koenigsberger ratio = 9.19

GAMMA-RAY SPECTROMETRY

Ch.1= 7059
Ch.2= 328 .18 % K20
Ch.3= 115 .11 ppm U
Ch.4= 144 2.81 ppm Th
U/Th= .04
.59 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	98.03	0.01	0.21	0.34	0.01	0.02	0.01	0.01	0.02	0.02	0.07	0.50	99.23
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	63	-6	1	26	2210	-5	9	-3	-3	147	-5	-3	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	-1	-20	3	-5	-5	-3	16	-5	-3	71	-5		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: FABRIC: Vein quartz
98. Quartz Microcrystalline
2. Magnetite Ultrafine-grained mosaic of tiny quartz grains with numerous curved
microveinlets of clear secondary quartz. Rare magnetite patches and
tiny disseminated magnetite flakes.

Location 0266

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0266

SAME LOCATION AS 0265

Outcrop

NARROMINE

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-55

6435576 m N

32.20915 S latitude

626730 m E

148.3447 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOW RIDGE

Structure : TILTED STEEPLY

dip= strike=

Field Geology: Vein quartz. Slightly cavernous and sparingly gossanous in places. Some cavities contain oxides which include magnetite in places.

Field Rockname: SAMPLE NM-0256 WHITE QUARTZ ROCK

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.53

Mean of 1 in-situ readings = 63083

Ch.1=

Dry density =

from to

SD=

Ch.2=

X K20

Grain density =

Laboratory susceptibility =

0

Ch.3=

ppm U

Porosity =

Remanence

.00

Ch.4=

ppm Th

Koenigsberger ratio =

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
79.	Quartz	Vein quartz	Microcrystalline with secondary cavities
10.	Hematite		Ultrafine-grained cloudy quartz with minor traces of sericite, crossed by minor microveinlets of clear, coarser secondary quartz. Numerous cavities lined by colloform hematite with fillings of goethite.
1.	Sericite		
10.	Goethite		

Location 0267

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0267
Outcrop

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-55
6434118 m N 32.22157 S latitude
633036 m E 148.4118 E longitude

Illustrations :

Age/Unit=

YEOVAL GRANITE

Topography: FLAT WITH A FEW LOW RISES

dip= strike=

Structure : PLUTON

Field Geology: Granodiorite. Equigranular, coarse-grained, non porphyritic.
Leucocratic. Minor scattered hornblende. Considerably weathered at this
locality.

Field Rockname: SAMPLE NM0267 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.50

Mean of 12 in-situ readings = 16388

Ch.1= 39130

Dry density = 2.51

from 7916 to 23310 ,SD= 4717

Ch.2= 3026 2.46 X K2O

Grain density = 2.62

Laboratory susceptibility = 17756

Ch.3= 722 4.16 ppm U

Porosity = 3.9

Remanence = 4000.00

Ch.4= 610 11.63 ppm Th

Koenigsberger ratio = 3.75

U/Th= .36

5.12 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.91	.27	12.87	2.72	.08	.06	.22	4.85	3.49	.04	.07	.20	99.79

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	712	-6	101	6	-1	-5	58	4	23	9	18	110

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	12	36	-5	12	-3	5	-5	72	49	493

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
35.	Quartz	Granodiorite	Hypidiomorphic granular, tending very slightly granophyric
42.	Plagioclase		Globular patches of interconnected quartz, with euhedral to jaggedly intergrown edges where adjacent to feldspar. Much of the quartz is resorbed & strain free. The rock is very weathered and it is difficult to distinguish the kaolinised feldspars. Minor
20.	Orthoclase		hornblende, altered by weathering to goethite & magnetite. Minor magnetite anhedral with slight alteration to hematite along cleavages.
2.	Biotite		Trace secondary, bright-yellow epidote.
1.	Magnetite		
.1	Epidote		

Location 0268

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0268
Outcrop

NARROMINE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-155
6428335 m N 32.27355 S latitude
634467 m E 148.4278 E longitude

Illustrations :

Age/Unit= YEOVAL GRANITE
Topography. LOW RISES dip= strike=
Structure : PLUTON
Field Geology: Ignimbrite. Porphyritic with phenocrysts of quartz and feldspar set in a
fine-grained groundmass. Occurs within a granite whose contact
is approximately delineated by a vegetation change. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

PORPHYRY

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 34907
Ch.2= 4095 4.26 % K2O
Ch.3= 420 3.66 ppm U
Ch.4= 250 4.61 ppm Th
U/Th= .79
4.03 Heat generation units

Location 0269

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0269
Outcrop

SAME LOCATION AS 0270

NARROMINE

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo.run-no.= 5-1347
6397109 m M 32.56178 S latitude
558362 m E 147.6217 E longitude

Illustrations :

Age/Unit= Silurian-Devonian TRUNDLE BEDS
Topography: FLAT RISE SCRAPED BY BULLDOZER dip=76W strike=185
Structure : STEEPLY DIPPING
Field Geology: Pebbly quartzose sandstone. Poorly sorted with variable sizes of quartz,
feldspar and lithic detritus. Scattered detrital muscovite.

Field Rockname: SAMPLE NM0269 PEBBLY SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.73
Dry density = 2.58
Grain density = 2.69
Porosity = 7.0

MAGNETIC SUSCEPTIBILITY (S.I.+0.00001)

Mean of 11 in-situ readings = 634
from 314 to 1130, SD= 283
Laboratory susceptibility = 452
Remanence = 30.00
Koenigsberger ratio = 1.11

GAMMA-RAY SPECTROMETRY

Ch.1= 24272
Ch.2= 1342 .78 % K20
Ch.3= 487 1.82 ppm U
Ch.4= 495 9.56 ppm Th
U/Th= .19
2.93 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME- FABK.C: Pebbly quartzose sandstone
50. Rock fragments Poorly sorted
43. Quartz Angular to subangular lithic fragments of quartzite, biotite quartzite
& mudstone forming an open framework in a matrix of subrounded
.01 Tourmaline quartz grains, with rare tourmaline, cemented by ferruginised chlorite,
5. Opaque & sericite.
1. Chlorite
1. Sericite

Location 0270

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

ND.=(7962)0270
Outcrop

SAME LOCALITY AS 0269

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1347
6397109 m N 32.56178 S latitude
558362 m E 147.6217 E longitude

Illustrations :

Age/Unit= Silurian-Devonian TRUNDLE BEDS
Topography: FLAT RISE SCRAPED BY BULLDOZER dip= strike=
Structure :
Field Geology: Pebbly quartzose sandstone. Poorly sorted with variable sizes of quartz,
feldspar and lithic detritus. Scattered detrital muscovite. Sample lost.

Field Rockname: SAMPLE NM0270 BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to .SD=
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0271

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0271
Outcrop

SAME LOCATION AS 0272

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1539
6375655 m N 32.75627 S latitude
535782 m E 147.3820 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: FLAT dip= strike=
Structure : INTRUSION. INDETERMINATE SHAPE AND RELATION TO ADJACENT ROCKS.
Field Geology: Gabbro. Equigranular, medium-grained. Melanocratic. Slight variation in grain size in places.

Field Rockname: SAMPLE NM0271 GABBRO

PHYSICAL PROPERTIES: GABBRO

DENSITIES
Whole rock density = 2.99
Dry density = 3.01
Grain density = 3.01
Porosity = 0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 13 in-situ readings = 58974
from 44736 to 95881, SD= 12399
Laboratory susceptibility = 53909
Remanence = 7000.00
Koenigsberger ratio = 2.16

GAMMA-RAY SPECTROMETRY
Ch.1= 16876
Ch.2= 1395 1.44 X K20
Ch.3= 136 .72 ppm U
Ch.4= 120 2.30 ppm Th
U/Th= .32
1.17 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Gabbro
40.	Plagioclase	Hypidiomorphic granular; slightly monzonitic	
40.	Augite	Patchy globules of augite, in places rimmed by red-brown biotite without obvious associated alteration. Plagioclase occurs as laths & patches between augite globules. Anhydral magnetite. Trace tiny disseminations of chalcopyrite with slight marginal alteration to covellite. Poikilitic plagioclase laths enclosed in orthoclase.	
3.	Biotite		
.1	Apatite		
2.	Magnetite		
.001	Chalcopyrite		
15.	Orthoclase		

Location 0272

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0272

SAME LOCATION AS 0271

Outcrop

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1539

6375655 m N 32.75627 S latitude

535782 m E 147.3820 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: FLAT

dip= strike=

Structure :

Field Geology: Gabbro. Equigranular, medium-grained. Melanocratic. Slight variation in grain size in places.

Field Rockname: SAMPLE NM0272 GABBRO

PHYSICAL PROPERTIES:

GABBRO

DENSITIES
Whole rock density = 3.06
Dry density = 3.11
Grain density = 3.14
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 3 in-situ readings = 4125
from 3392 to 5026 .SD= 829
Laboratory susceptibility = 6408
Remanence = 4100.00
Koenigsberger ratio = 10.66

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Gabbro
Est. %	MINERAL FABRIC:	Hypidiomorphic granular
40.	Plagioclase	Anhedral clusters of somewhat globular, pale green augite with adjacent, & inclusions of, sericitised orthopyroxene. Interstitial
48.	Augite	unaltered plagioclases, some of which form rare monominerallic patches.
.1	Biotite	Trace accessory red-brown biotite. Anhedral magnetite. Rare tiny
10.	Hypersthene	chalcopyrite crystals.
2.	Magnetite	
.	Chalcopyrite	

Location 0273

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0273

Outcrop

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1539
6370640 m N 32.80138 S latitude
539388 m E 147.4207 E longitude

Illustrations :

Age/Unit= Ordovician?

Topography: LOW RUBBLY RISE

dip= strike=

Structure :

Field Geology: Pyroxenite intruding shale, siltstone and greywacke. Sediments are weathered and have slight magnetic response due to surficial maghemite being a constituent of their ferruginous derivatives. The pyroxenite is coarse-grained and melanocratic.

Field Rockname: SAMPLE NM0273 FLOAT OF PYROXENITE

PHYSICAL PROPERTIES:

PYROXENITE

DENSITIES
Whole rock density = 3.15
Dry density = 3.13
Grain density = 3.16
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 2796
from 1884 to 4021 .SD= 1027
Laboratory susceptibility = 779
Remanence = 100.00
Koenigsberger ratio = 2.14

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Pyroxenite
	FABRIC:	Monzonitic
Est. %	MINERAL	
40.	Hornblende	Large anhedral clots of single hornblende crystals containing inclusions of augite surrounded by granoblastic mosaics of augite with minor interstitial uranalitised hypersthene. Rare zoisite and magnetite. Minor veinlets of urallite now consisting of a felt-like mass of ?cummingtonite crystals. Slight alteration of magnetite to hematite at grain edges & along cleavages.
54.	Augite	
5.	Hypersthene	
1.	Zoisite	
.5	Magnetite	
.01	Hematite	

Location 0274

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0274
Outcrop

SAME LOCATION AS 0275

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1535
6369528 m N 32.81080 S latitude
553810 m E 147.5748 E longitude

Illustrations :

Age/Unit= Lower Devonian

Topography: SMOOTH GENTLE SLOPE

dip= strike=

Structure :

Field Geology: Basalt and basaltic breccia. The basalt is variably altered and has phenocrysts of plagioclase, augite and hornblende. The breccia has clasts of variably-altered basalt set in a basaltic groundmass.

Field Rockname: SAMPLE NM0274 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.83
Dry density = 3.13
Grain density = 2.82
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 9 in-situ readings = 44840
from 22116 to 115861 .SD= 29830
Laboratory susceptibility = 70723
Remanence = 10000.00
Koenigsberger ratio = 2.36

GAMMA-RAY SPECTROMETRY
Ch.1= 24175
Ch.2= 2243 2.14 % K2O
Ch.3= 300 .78 ppm U
Ch.4= 334 6.49 ppm Th
U/Th= .12
2.08 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Basalt
50.	Plagioclase	FABRIC:	Altered ?vitrophyric
10.	Augite		Phenocrysts of glomeroporphyritic augite largely altered to opacitised non-resolvable secondary minerals, goethite & magnetite, as well as stubby zoned plagioclase euhedra with slightly chloritised cores, and rare hornblende, all set in a fine-grained, partially resolvable groundmass of plagioclase, chlorite, magnetite dust & others.
5.	Epidote		
1.	Rockfragments		
30.	Groundmass		
1.	Hornblende		Veinlets of epidote & rare ?muscovite. Non resolvable alteration coronas surrounding augite.
2.	Magnetite		
1.	Goethite		
.5	Hematite		

Location 0275

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0275
Outcrop

SAME LOCALITY AS 0274
NARROMINE

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1535
6369528 m N 32.81080 S latitude
553810 m E 147.5748 E longitude

NSW GDOM=1

Illustrations :Photomicrograph

Age/Unit= Lower Devonian

Topography: SMOOTH GENTLE SLOPE

dip= strike=

Structure :

Field Geology: Basalt and basaltic breccia. The basalt is variably altered and has phenocrysts of plagioclase, augite and hornblende. The breccia has clasts of variably-altered basalt set in a basaltic groundmass.

Field Rockname: SAMPLE NM0275 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.90
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Basalt
FABRIC: Altered ?vitrophyric

Est. X	MINERAL	
45.	Plagioclase	Very altered basalt, porphyritic & glomeroporphyritic in kaolinised plagioclases & slightly less altered augite euhedra, as well as slightly chloritised hornblende euhedra with narrow reaction coronas of ultrafine secondary minerals. Microveinlets of epidote. Numerous opaque oxides occurring as microphenocrysts, alteration products of ferromagnesian minerals & as a dust-size groundmass dissemination.
10.	Augite	
2.	Hornblende	
2.	Epidote	
3.	Opaque	
38.	Groundmass	The highly altered groundmass partially consists of clay mineral, very fine epidote, chlorite, & an opaque mineral. Photograph corona around hornblende

Location 0276

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0276
Outcrop

200 M WEST OF 0274,0275

NARROMINE

NSW GDDM-1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1535

6369686 m N

32.80940 S latitude

553277 m E

147.5691 E longitude

Illustrations :Photomicrograph

Age/Unit=

GOBONDERY GRANITE

Topography: RUGGED WITH A FEW EXFOLIATED SURFACES

dip= strike=

Structure : PLUTON

Field Geology: Granophyre. Equigranular; medium-grained. Leucocratic. Contains minor biotite. Minor disseminated sulphide mineral oxidised by weathering. Flanked by basalts of 0274 and 0275 200 m to east.

Field Rockname: SAMPLE NM0276 MICROGRANITE

PHYSICAL PROPERTIES:

GRANOPHYRE

DENSITIES

Whole rock density = 2.56

Dry density = 2.57

Grain density = 2.63

Porosity = 2.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 205

from 62 to 314, SD= 93

Laboratory susceptibility = 113

Remanence = .20

Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 51224

Ch.2= 2714 1.13 % K20

Ch.3= 1174 1.97 ppm U

Ch.4= 1398 27.25 ppm Th

U/Th= .07

6.12 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.34	.18	13.01	.91	.01	.17	.06	7.17	.21	.03	.03	.60	99.71

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	67	-6	100	3	3	-5	72	-3	18	-5	-5	7

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-5	23	-5	24	8	6	-5	29	-5	160

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
30.	Quartz	Albitised granophyre
66.	Plagioclase	Granophyric
3.	Biotite	Medium-grained with euhedral sericitised plagioclase amidst an intergrowth of skeletal quartz with resorption set in anhedral, albitised orthoclase. Minor biotite slightly to moderately altered to chlorite, & slightly limonitised by weathering.
1.	Opaque	Minor opaque mineral anhedral. Photograph skeletal resorbed quartz.

Location 0277

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0277

Outcrop

NARROMINE

1:250,000

sheet area 1:100,000 sheet area

NSW

GDOM=1

air-photo:run-no.= 4-1291

6416159 m N

32.38437 S latitude

625771 m E

148.3371 E longitude

Illustrations :

Age/Unit= YEOVAL GRANITE
Topography: RUGGED BOLD TREE-COVERED OUTCROP dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, non-porphyrific, medium-grained. Mesocratic.
Scattered biotite present.

Field Rockname: SAMPLE NM0277 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
Whole rock density = 2.61
Dry density = 2.60
Grain density = 2.61
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 6111
from 3518 to 8230 ,SD= 1352
Laboratory susceptibility = 6697
Remanence = 150.00
Koenigsberger ratio = .37

GAMMA-RAY SPECTROMETRY

Ch.1= 47924
Ch.2= 3517 2.74 % K2O
Ch.3= 853 3.05 ppm U
Ch.4= 879 16.99 ppm Th
U/Th= .18
5.41 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.61	.27	13.39	1.78	.04	.34	1.00	4.11	4.50	.05	.04	.20	99.33
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	794	-6	56	6	3	-5	50	-3	8	6	22	170	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	6	6	70	-5	28	6	10	-5	31	25	212		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Adamellite	
30.	Quartz	Hypidiomorphic granular	
35.	Orthoclase	Clusters of euhedral, lath-like plagioclase with interstitial kaolinised orthoclase & interconnected patches of globular anhedral quartz which lacks strain. Minor biotite, much of it slightly oxidised with liberations of hematite & minor magnetite preferentially along cleavages & at margins. Also biotite is partially chloritised, with zircon inclusions. Lacks muscovite.	
30.	Plagioclase		
4.	Biotite		
.01	Zircon		
.001	Apatite		
1.	Hematite		
.1	Magnetite		

Location 0278

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0278
Outcrop

NARROMINE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-1291
6416128 m N 32.38463 S latitude
625997 m E 148.3395 E longitude

Illustrations :

Age/Unit= YEOVAL GRANITE
Topography: BOLD RUGGED RELIEF SAME AS 0277 dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, non-porphyrific, medium-grained. Mesocratic
with scattered hornblende and biotite.

Field Rockname: SAMPLE NM0278 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.60	Mean of 15 in-situ readings = 6572	Ch.1= 62605
Dry density = 2.59	from 4523 to 8356, SD= 1207	Ch.2= 4905 3.96 % K2O
Grain density = 2.63	Laboratory susceptibility = 5441	Ch.3= 1141 5.25 ppm U
Porosity = 1.4	Remanence = 6000.00	Ch.4= 1076 20.68 ppm Th
	Koenigsberger ratio = 18.38	U/Th= .25
		7.68 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.08	.28	13.27	1.83	.03	.29	1.09	3.93	4.64	.07	.03	.01	99.55
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	672	-6	57	4	5	-5	54	-3	5	6	20	167	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	5	80	-5	18	3	15	-5	15	21	179		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Adamellite
Est. % MINERAL FABRIC:	Hypidiomorphic granular
40. Quartz	Medium grained aggregate of euhedral to subhedral plagioclase with
25. Orthoclase	anhedral orthoclase & globular interconnected patches of anhedral
30. Plagioclase	quartz frequently showing resorption. Interstitial hornblende and
2. Hornblende	biotite, both partially chloritised, and accompanied by hematite and
3. Biotite	magnetite.
.5 Magnetite	
.1 Hematite	

Location 0279

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0279
Outcrop

JUST WEST OF 0277
NARROMINE

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-1291
6416043 m N 32.38547 S latitude
625356 m E 148.3327 E longitude

NSW GDOM=1

Illustrations :

Age/Unit= Ordovician TANTITHA ULTRABASICS
Topography: SMOOTH CLEARED UPLAND WITH OUTCROP dip= strike=
Structure : PLUTON ADJACENT TO THAT OF 0277
Field Geology: Diorite. Inequigranular. Porphyritic in plagioclase and altered
hornblende set in a fine-grained dioritic groundmass. Sparingly pyritic
in places.

Field Rockname: SAMPLE NM0279 DIORITE

PHYSICAL PROPERTIES:

DIORITE

DENSITIES
Whole rock density = 2.72
Dry density = 2.73
Grain density = 2.73
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 23603
from 3267 to 43856 ,SD= 11281
Laboratory susceptibility = 29405
Remanence = 8000.00
Koenigsberger ratio = 4.53

GAMMA-RAY SPECTROMETRY

Ch.1= 10446
Ch.2= 568 .39 % K20
Ch.3= 176 .83 ppm U
Ch.4= 164 3.15 ppm Th
U/Th= .26
1.14 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Microdiorite	
		Porphyritic	
5.	Quartz		Porphyritic in euhedral, slightly sericitised, kaolinised plagioclase,
70.	Plagioclase		& hornblende showing considerable alteration to actinolite, sericite,
5.	Hornblende		magnetite & hematite. Many hornblendes have ghosted grain outlines
10.	Actinolite		delineated by magnetite anhedral. The groundmass is fine-grained quartz,
5.	Sericite		plagioclase, actinolite & disseminated magnetite. Some phenocrysts of
4.	Magnetite		feldspar & hornblende show partial invasion & assimilation by
1.	Hematite		groundmass.

Location 0280

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0280
Outcrop

SAME UNIT AS 0281

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1365
6393434 m N 32.58970 S latitude
622426 m E 148.3045 E longitude

Illustrations :

Age/Unit= Middle Ordovician

Topography: GENTLE SLOPES WITH ABUNDANT RUBBLE

dip= strike=

Structure : PROBABLY STEEP DIP-INDETERMINATE

Field Geology: Basalt and ignimbrite cropping out along recorded magnetic traverse.
The basalt is considerably altered and vesicular with calcite, chlorite
and epidote fillings. The ignimbrite is sparsely porphyritic and has
numerous cognate xenoliths.

Field Rockname: SAMPLE NM0280 VESICULAR BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.75
Dry density = 2.79
Grain density = 2.81
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 1347
from 0 to 2638 ,SD= 856
Laboratory susceptibility = 477
Remanence = 8.00
Koenigsberger ratio = .28

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Basalt
40.	Plagioclase	FABRIC: Vesicular, with sub-ophitic groundmass
25.	Chlorite	Vesicles of epidote, calcite & chalcedony surrounded by chloritised
10.	Epidote	basalt consisting of plagioclase microphenocrysts set in a fine-grained
10.	Calcite	groundmass of plagioclase, chlorite pseudomorphs of ?clinopyroxene,
10.	Chalcedony	interstitial opaque ?clay alteration of a former ferromagnesian mineral,
4.	Ferromagnesian	& tiny dust-sized hematite blebs.
1.	Hematite	

Location 0281

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0281
 Outcrop

SAME AREA AS 0280
 NARROMINE

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1365
 6393489 m N 32.58918 S latitude
 622615 m E 148.3065 E longitude

Illustrations :

Age/Unit= Middle Ordovician

Topography: GENTLE SLOPES WITH ABUNDANT RUBBLE

dip= strike=

Structure :

Field Geology: Basalt and ignimbrite cropping out along recorded magnetic traverse.
 The basalt is considerably altered and vesicular with calcite, chlorite
 and epidote fillings. The ignimbrite is sparsely porphyritic and has
 numerous cognate xenoliths.

Field Rockname: SAMPLE NMO281 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.42	Mean of 0 in-situ readings =	Ch.1= 73724
Dry density = 2.40	from to ,SD=	Ch.2= 4225 2.09 % K2O
Grain density = 2.71	Laboratory susceptibility = 100	Ch.3= 1679 4.02 ppm U
Porosity = 11.7	Remanence = 3.00	Ch.4= 1898 36.90 ppm Th
	Koenigsberger ratio = .50	U/Th= 11
		9.24 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LJI	SUM
Weight %	69.44	0.16	16.66	3.21	0.03	0.44	0.03	0.01	4.95	0.02	0.15	4.10	99.20
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	45	-6	21	11	5	-5	35	-3	69	77	14	350	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	2	30	-3	8	48	-3	7	43	134	193	901		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Ignimbrite
Est. %	FABRIC:	Devitrified eutaxitic
1.	Quartz	Small phenocrysts of fractured quartz, leached plagioclase pseudo-
1.	Plagioclase	morphed by secondary ?silica & opaque minerals, rare hornblende
1.	Hornblende	altered to actinolite, & numerous glassy volcanic rock xenoliths,
20.	Rock fragments	most of which show slight sericitisation & considerable iron-
2.	Opaque	charged oxidation. Groundmass is ultrafine, slightly sericitised
75.	Groundmass	volcanic glass. A highly altered rock.

Location 0282

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0282
 Outcrop

NARROMINE NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-1593
 6349601 m N 32.98465 S latitude
 625493 m E 148.3431 E longitude

Illustrations :Photomicrograph

Age/Unit= Silurian-Devonian DULLADERRY RHYOLITE
 Topography: RUGGED UPLAND dip=82W strike=010
 Structure : STEEP INCLINED FLOW BANDS
 Field Geology: Rhyolite, Porphyritic with phenocrysts of quartz and feldspar set in a fine-grained, flow-banded groundmass.

Field Rockname: SAMPLE NM-0282 RHYOLITE

PHYSICAL PROPERTIES: RHYOLITE
 DENSITIES MAGNETIC SUSCEPTIBILITY (G.I.*.000001) GAMMA-RAY SPECTROMETRY
 Whole rock density = 2.64 Mean of 15 in-situ readings = 4754 Ch.1= 66125
 Dry density = 2.65 from 3141 to 7414 ,SD= 1232 Ch.2= 4228 2.84 X K20
 Grain density = 2.65 Laboratory susceptibility = 11548 Ch.3= 1368 7.11 ppm U
 Porosity = .0 Remanence = 350.00 Ch.4= 1221 23.37 ppm Th
 Koenigsberger ratio = .51 U/Th= .30
 9.04 Heat generation units

CHEMISTRY:
 MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
 Weight % 77.02 0.20 11.53 1.73 0.03 0.21 0.32 2.92 4.62 0.04 0.02 0.90 99.54
 TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
 p.p.m. 48 -6 77 6 5 10 100 4 47 22 58 270
 TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
 p.p.m. 3 15 37 8 24 9 8 12 140 137 276

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Rhyolite
10.	Quartz	FABRIC:	Eutaxitic
5.	Orthoclase		Phenocrysts of rounded volcanic quartz with embayed margins and internal curved glass-filled fractures, kaolinised orthoclase and lesser kaolinised plagioclase with rare microphenocrysts of oxidised ferromagnesian minerals. Numerous angular to rounded xenoliths most of igneous affiliation. They include granophyre, flattened pumice, quartzite & glassy rhyolitic rocks. The groundmass is conspicuously flow banded with delicate micro flow folds preserved in an ultrafine mosaic of quartz & K-feldspar, together with hematite dust. Minor secondary alteration of groundmass to chlorite & sericite in places. Photograph volcanic quartz, groundmass & granophyre xenolith with one shot.
3.	Plagioclase		
15.	Rock fragments		
1.	Ferromagnesian		
66.	Ferromagnesian		
.1	Hematite		

Location 0283

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0283

Outcrop

NARROMINE

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 8-1589

6350021 m N

32.98202 S latitude

614975 m E

148.2305 E longitude

Illustrations :

Age/Unit= Middle Ordovician

GOONUMBLA ANDESITE

Topography: FLAT

dip= strike=000

Structure :

Field Geology: Basalt. Porphyritic with phenocrysts of augite set in a dark, fine-grained groundmass. Minor white-quartz float.

Field Rockname: SAMPLE N0283 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES

Whole rock density = 2.94

Dry density = 2.95

Grain density = 2.96

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 48811

from 39144 to 55292 .SD= 4356

Laboratory susceptibility = 43102

Remanence = 12000.00

Koenigsberger ratio = 4.64

GAMMA-RAY SPECTROMETRY

Ch.1= 28492

Ch.2= 1728 1.10 % K2O

Ch.3= 606 3.31 ppm U

Ch.4= 527 10.07 ppm Th

U/Th= .33

4.02 Heat generation units

DESCRIPTION OF MIN OR POLISHED THIN SECTION

	NAME:	Basalt
	FABRIC:	Altered ?vitrophyric
Est. %	MINERAL	
20.	Plagioclase	Phenocrysts of euhedral augite, glomeroporphyritic in places, zoned, commonly twinned & very slightly altered to iddingsite along fractures.
12.	Augite	
3.	Chlorite	Slight chloritisation of core regions of a few zoned augites. Also
1.	Epidote	phenocrysts of strongly sericitised euhedral, slightly zoned
1.	Muscovite	plagioclase, frequently glomeroporphyritic as well. The groundmass is
60.	Groundmass	highly altered & consists largely of non-resolvable clay, & magnetite
3.	Magnetite	anhedra. Minor microvesicles are commonly lined & filled with chlorite,
100.	Chalcopyrite	epidote, secondary muscovite after sericite, & clay. These secondary
		minerals are also present in veinlets. Some groundmass areas have
		discernible plagioclase microlites. Trace chalcopyrite blebs in augite
		phenocrysts.

Location 0284

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0284
Outcrop

SAME LOCATION AS 0285
FORBES

1:250,000 sheet area 1:100,000 sheet area NSH GDOM=1
6345041 m N 33.02923 S latitude air-photo:run-no.= 1-1625
590688 m E 147.9711 E longitude

Illustrations :

Age/Unit= Upper Ordovician

GOONUMBLA ANDESITE

Topography: FLAT, WITH FRESH OUTCROP

dip= strike=

Structure :

Field Geology: Andesite. Variable textures. Porphyritic with phenocrysts of plagioclase partly defining flow lineation in places, and ferromagnesian minerals, set in a fine-grained altered groundmass. Cognate xenoliths locally abundant. Trace chalcopyrite.

Field Rockname: SAMPLE FBO284 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.76
Dry density = 2.73
Grain density = 2.74
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 14 in-situ readings = 38601
from 23184 to 46998 ,SD= 7393
Laboratory susceptibility = 43630
Remanence = 2600.00
Koenigsberger ratio = .99

GAMMA-RAY SPECTROMETRY

Ch.1= 22977
Ch.2= 2053 2.10 % K2O
Ch.3= 240 2.13 ppm U
Ch.4= 139 2.56 ppm Th
U/Th= .84
2.24 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL FABRIC:	NAME: Andesite
35.	Plagioclase	Altered vitrophyric Phenocrysts of kaolinised euhedral plagioclase, hornblende considerably altered to actinolite, chlorite & goethite, & augite showing partial alteration to calcite & ?diopside. Minor andesite xenoliths. The groundmass is largely altered to clay and chlorite with magnetite dust &
5.	Augite	
5.	Hornblende	
5.	Vesicles	
10.	Rock fragments	larger magnetite anhedra & sparse chalcopyrite. Microvesicles, filled chiefly with chlorite, occur randomly sprinkled throughout the groundmass. Chalcopyrite is confined mainly to ferromagnesian phenocrysts or their margins & is slightly altered to covellite in places.
38.	Groundmass	
2.	Magnetite	
.01	Chalcopyrite	
.5	Goethite	

Location 0285

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0285
Outcrop

SAME LOCATION AS 0284
FORBES

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6345041 m N 33.02923 S latitude air-photo:run-no.= 1-1625
590688 m E 147.9711 E longitude

Illustrations :

Age/Unit= Upper Ordovician

GOONUMBLA ANDESITE

Topography: FLAT WITH FRESH OUTCROP

dip= strike=

Structure :

Field Geology: Andesite. Variable textures. Porphyritic with phenocrysts of plagioclase partly defining flow lineation in places, and ferromagnesian minerals set in a fine-grained altered groundmass. Cognate xenoliths locally abundant. Trace chalcopyrite.

Field Rockname: SAMPLE FB0285 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.74
Dry density = 2.76
Grain density = 2.76
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 1 in-situ readings = 24818
from to .SD=
Laboratory susceptibility = 52326
Remanence = 1700.00
Koenigsberger ratio = .54

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Andesite
FABRIC: Altered vitrophyric

Est. %	MINERAL	
35.	Plagioclase	Phenocrysts of kaolinised euhedral plagioclase, hornblende considerably altered to opaque non-resolvable clay particularly at edges, & chlorite,
5.	Augite	as well as augite, slightly altered to ?diopside & calcite. The ground-
5.	Hornblende	mass is entirely altered to non-resolvable clay, apart from opaque
2.	Vesicles	anhedra, and small crystals & vesicles of chlorite & epidote.
10.	Rock fragments	
41.	Groundmass	
2.	Opaque	

Location 0286

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0286
Outcrop

SAME LOCATION AS 0287
FORBES

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6336825 m N air-photo:run-no.= 1-1633
561497 m E 33.10537 S latitude
147.6591 E longitude

Illustrations :Photomicrograph

Age/Unit= Lower Devonian MILPOSE VOLCANIFIS
Topography: FLAT WITH OUTCROP AT GROUND LEVEL dip= strike=
Structure :
Field Geology: Dacite. Flow-banded. Porphyritic with small orthoclase and plagioclase
phenocrysts set in a very fine-grained groundmass.

Field Rockname: SAMPLE FB0286 PORPHYRITIC FLOW BANDED DACITE

PHYSICAL PROPERTIES:

DACITE

DENSITIES
Whole rock density = 2.57
Dry density = 2.51
Grain density = 2.57
Porosity = 2.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 0
Remanence = .50
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 25790
Ch.2= 2374 2.09 % K2O
Ch.3= 484 3.32 ppm U
Ch.4= 364 6.87 ppm Th
U/Th= .48
3.71 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	80.96	0.15	10.65	0.71	0.02	0.15	0.13	5.32	0.80	0.02	0.01	0.90	99.81

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	147	-6	12	-1	-1	-5	26	6	14	28	12	12

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	4	-20	194	-5	6	4	-1	6	50	19	403

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
7.	Plagioclase	Dacite	Detrified eutaxitic; flow banded; porphyritic; slightly spherulitic
3.	Orthoclase		Phenocrysts of kaolinised plagioclase & lesser orthoclase in a
.2	Opaque		conspicuously flow-banded, well layered groundmass with relict perlitic
90.	Groundmass		cracking. Layering defined by differences in grain size and in the
			proportions of quartz, K-feldspar & plagioclase. Spherulitic extinction
			common in groundmass indicating formerly much finer grain size. Trace
			opaque mineral.
			Photograph relict perlitic cracking

Location 0287

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0287

SAME LOCATION AS 0286

Outcrop

FORBES

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-1633

6336824 m N

33.10538 S latitude

561488 m E

147.6590 E longitude

Illustrations :

Age/Unit: Lower Devonian

MILPOSE VOLCANICS

Topography: FLAT WITH OUTCROP AT GROUND LEVEL

dip= strike=

Structure :

Field Geology: Rhyodacite. Flow-banded. Porphyritic with small orthoclase and plagioclase phenocrysts set in very fine-grained groundmass.

Field Rockname: SAMPLE FB0287 PORPHYRITIC FLOW BANDED RHYOLITE

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.54

Dry density = 2.56

Grain density = 2.57

Porosity = .2

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 12

Remanence = 2.00

Koenigsberger ratio = 2.78

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.22	0.17	12.04	1.87	0.04	0.29	0.14	2.41	5.37	0.03	0.04	1.70	99.30

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1569	-6	50	16	8	-5	24	6	15	124	-5	77

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	4	-20	242	-5	9	-3	-1	-5	56	58	465

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
4.	Plagioclase	Rhyodacite	Devitrified eutaxitic; flow banded; porphyritic; slightly spherulitic
1.	Orthoclase		Phenocrysts of euhedral, slightly kaolinised plagioclase & lesser orthoclase in a layered groundmass with relict spherulites, partially outlined by concentric chlorite laminae. Planar flow banding defined mainly by variations in chlorite content & its weathering product
5.	Chlorite		
.5	Opaque		
90.	Groundmass		limonite. Trace perlitic cracking around spherulites.

Location 0288

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0288

Outcrop

FORBES

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-1711

6330622 m N 33.16028 S latitude

577675 m E 147.8330 E longitude

Illustrations :

Age/Unit= Upper Devonian

Topography: LONG RUGGED STEEP STRIKE RIDGE

dip= strike=

Structure : GENTLY TILTED

Field Geology: Quartzose sandstone. Fine-grained, well sorted, moderately cemented.
Slightly pebbly in places.

Field Rockname: SAMPLE FB0288 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.42	Mean of 8 in-situ readings =	0	Ch.1=	15950
Dry density =	2.36	from to ,SD=		Ch.2=	842 .42 % K2O
Grain density =	2.63	Laboratory susceptibility =	75	Ch.3=	375 2.31 ppm U
Porosity =	10.3	Remanence =	.20	Ch.4=	304 5.78 ppm Th
		Koenigsberger ratio =	.04	U/Th=	.40
					2.51 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
90.	Quartz	Quartzose sandstone	Well sorted
1.	Plagioclase		Subrounded quartz grains, with minor subangular kaolinised plagioclase, rare detrital tourmaline, muscovite, & opaque minerals. Minor
3.	Rock fragments		lithic fragments of greywacke & muscovite quartzite. All grains
.1	Tourmaline		tightly packed with incipient suturing at some contacts. Lacks
.5	Opaque		secondary silica cement. Muscovite-bearing mud matrix.
6.	Matrix		
.1	Muscovite		

Location 0289

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0289

Outcrop

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-1703

6332510 m N

33.14125 S latitude

601868 m E

148.0922 E longitude

Illustrations :

Age/Unit= Upper Ordovician

GOONUMBLA ANDESITE

Topography: GENTLE RISE WITH OUTCROP

dip= strike=

Structure :

Field Geology: Basalt. Porphyritic, with phenocrysts of plagioclase, ferromagnesian minerals and minor magnetite set in a fine-grained, slightly-altered groundmass. Some cognate xenoliths present.

Field Rockname: SAMPLE F80289 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.72

Dry density = 2.78

Grain density = 2.78

Porosity = .0

Mean of 15 in-situ readings = 40258

from 29907 to 45176 ,SD= 4597

Laboratory susceptibility = 42901

Remanence = 23000.00

Koenigsberger ratio = 8.94

Ch.1= 33124

Ch.2= 3511 3.63 % K2O

Ch.3= 384 3.57 ppm U

Ch.4= 209 3.81 ppm Th

U/Th= .94

3.70 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Basalt Pilotaxitic
55.	Plagioclase		Phenocrysts of strongly ?kaolinised plagioclase, with lesser euhedral unaltered augite & minor chloritised ferromagnesian mineral with liberations of goethite & magnetite. Microphenocrysts of rare apatite often also as inclusions in augite, & minor magnetite.
10.	Augite		
2.	Ferromagnesian		
.1	Apatite		
30.	Groundmass		often glomeroporphyritic. Groundmass consists of considerably altered fine grained, felt-like mass of plagioclase microlites, chlorite, clay mineral & magnetite dust.
.5	Rock fragments		
2.	Magnetite		
1.	Goethite		

Location 0290

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0290
Outcrop

AT OLD WORKINGS
FORBES

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-1779
6316637 m N 33.23283 S latitude
617284 m E 148.2595 E longitude

NSW GDOM=1

Illustrations :

Age/Unit= Upper Ordovician
Topography: SMALL RIDGE IN UNDULATING COUNTRY dip=80H strike=011
Structure : STEEPLY DIPPING
Field Geology: Quartzite. Red-stained and jasperoidal in appearance. Gossanous,
formerly sulphide-bearing variants in places. Variably magnetic.

Field Rockname: SAMPLE FB0290 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES					
Whole rock density =	2.74	Mean of 15 in-situ readings =	4750	Ch.1=	5420
Dry density =	2.69	from 0 to 25509 ,SD=	7979	Ch.2=	246
Grain density =	2.70	Laboratory susceptibility =	10932	Ch.3=	85
Porosity =	.0	Remanence	2500.00	Ch.4=	76
		Koenigsberger ratio	= 3.21	U/Th=	.30
				.56 Heat generation units	

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Quartzite	
98.	Quartz		Massive with flow foliation
2.	Hematite		Microcrystalline mass of lenticular strained quartz aggregates with relict spherulitic extinction inherited from originally much finer cherty silica. Discontinuous streaks of hematite & lesser magnetite define original boudin-like bodies. Hematite also occurs sparsely as euhedral crystals. The fine particulate hematite & magnetite has helped to inhibit grain growth so that the finest quartz lies adjacent to it. Some hematite is the non-reflective earthy red variety.
.5	Magnetite		

Location 0291

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0291
Outcrop

PART OF PARKES RUBBISH TIP MAGNETIC TRAVERSE

FORBES

NSW GDDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-1703
6332865 m N 33.13753 S latitude
607245 m E 148.1498 E longitude

Illustrations :

Age/Unit= Upper Ordovician

PARKES ANDESITE

Topography: GENTLE SLOPE OUTCROP AT GROUND LEVEL

dip=90 strike=010

Structure :

Field Geology: Muscovite slate and quartzose sandstone interbedded with andesite. The slate and sandstone are interlaminated. The andesite is massive, slightly altered and weathered at the site of this recorded magnetic traverse. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

SLATE

DENSITIES

Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 1709
from 753 to 3141 ,SD= 1105
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 22862
Ch.2= 1813 1.79 % K2O
Ch.3= 249 2.02 ppm U
Ch.4= 161 3.00 ppm Th
U/Th= .67
2.17 Heat generation units

Location 0292

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0292
Outcrop

PART OF PARKES GARBAGE DUMP MAGNETIC TRAVERSE
FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-1703
6332865 m N 33.13753 S latitude
607236 m E 148.1497 E longitude

Illustrations :

Age/Unit= Upper Ordovician PARKES ANDESITE
Topography: GENTLE SLOPE WITH OUTCROP AND FLOAT dip=90 strike=011
Structure :
Field Geology: Muscovite slate and quartzose sandstone interbedded with andesite. The
slate and sandstone are interlaminated. The andesite is massive,
slightly altered and weathered at the site of this recorded magnetic
traverse. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 14953
from 3267 to 25509 ,SD= 6830
aboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY
Ch.1= 13277
Ch.2= 795 .60 % K2O
Ch.3= 239 1.91 ppm U
Ch.4= 157 2.93 ppm Th
U/Th= .65
1.82 Heat generation units

Location 0293

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0293

Outcrop

FORBES

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 3-1783

6316317 m N

33.28397 S latitude

632332 m E

148.4211 E longitude

Illustrations :

Age/Unit:

EUGOWRA GRANITE

Topography: RUGGED TIMBERED UPLAND

dip= strike=

Structure: PLUTON

Field Geology: Granite. Equigranular, medium-grained, non porphyritic, leucocratic with minor hornblende and biotite.

Field Rockname: SAMPLE FB0293 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES

Whole rock density = 2.62

Dry density = 2.61

Grain density = 2.62

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 2282

from 565 to 3895 .SD= 849

Laboratory susceptibility = 3493

Remanence = 100.00

Koenigsberger ratio = .48

GAMMA-RAY SPECTROMETRY

Ch.1= 43019

Ch.2= 3448 2.91 % K20

Ch.3= 731 3.45 ppm U

Ch.4= 682 13.10 ppm Th

U/Th= .26

5.03 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.07	.22	12.93	2.21	.04	.21	1.29	4.03	3.97	.05	.07	.40	99.49

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	923	-6	86	3	2	-5	59	-3	12	10	21	127

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	6	88	5	16	-3	8	-5	59	43	275

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Granite FABRIC: Hypidiomorphic granular.
35.	Quartz	Euhedral sericitised zoned plagioclase with clearer less altered rims, amidst anhedral kaolinised orthoclase & large patches of inter-connected anhedral quartz with incipient resorption. Trace epidote in cores of the more altered plagioclases. Interstitial hornblende
40.	Orthoclase	
20.	Plagioclase	
3.	Hornblende	
.01	Sphene	partially altered to chlorite, sphene & rare actinolite, and frequently accompanied by anhedral hematite. Biotite is also variably chloritised with liberations of sphene. Trace magnetite often altered to hematite at margins. Rare accessory allanite euhedra.
.1	Biotite	
.1	Epidote	
.1	Hematite	
.1	Magnetite	
.1	Goethite	
.01	Allanite	

Location 0294

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0294
 Outcrop

BATHURST NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5062
 6333571 m N 33.12573 S latitude
 632564 m E 148.6354 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian DULLADERRY RHYOLITE
 Topography: RUGGED TIMBERED UPLAND dip= strike=
 Structure :
 Field Geology: Rhyolite. Fresh, fine-grained, slightly porphyritic in feldspar. Chaotic
 flow banding; tiny spherulites in places.

Field Rockname: SAMPLE BT0294 RHYOLITE

PHYSICAL PROPERTIES:

DENSITIES	RHYOLITE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.60		Mean of 15 in-situ readings = 1076	Ch.1= 84351
Dry density = 2.53		from 188 to 2450 ,SD= 722	Ch.2= 7822 7.06 % K2O
Grain density = 2.57		Laboratory susceptibility = 3267	Ch.3= 1408 7.81 ppm U
Porosity = 1.8		Remanence = 4500.00	Ch.4= 1215 23.20 ppm Th
		Koenigsberger ratio = 22.96	U/Th= .34
			10.41 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.00	0.16	14.77	1.66	0.03	0.13	0.09	5.14	5.54	0.02	0.02	0.50	100.06
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	349	-6	71	-1	-1	-5	43	-3	18	66	22	160	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	3	-20	12	8	26	-3	-1	-5	41	33	261		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Rhyolite
8.	Orthoclase	FABRIC:	Devitrified eutaxitic; porphyritic; flow banded
2.	Plagioclase		Phenocrysts of slightly altered orthoclase & lesser plagioclase set
1.	Chlorite		in a well layered groundmass of microcrystalline quartz & K'feldspar
89.	Groundmass		exhibiting variable degrees of coarsening from layer to layer. Relict
.1	Magnetite		spherulites of coarsened devitrified feldspar occur frequently in
			some layers. Numerous planar & curved microfractures. Minor chlorite
			& tiny magnetite grains constitute remainder of groundmass.

Location 0295

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0295
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5044
6336652 m N 33.09738 S latitude
656589 m E 148.6780 E longitude

Illustrations :

Age/Unit= Middle Devonian? GUMBLE AND YOUNG GRANITE
Topography: SMOOTH TO RUGGED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granite. Mesocratic, with abundant elongate biotite. Mainly equigranular
to slightly porphyritic in quartz up to 4 mm. Medium grained.

Field Rockname: SAMPLE BT0295 GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 2.58
Dry density = 2.53
Grain density = 2.58
Porosity = 2.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = 2.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 84275
Ch.2= 6079 4.42 % K20
Ch.3= 1708 7.48 ppm U
Ch.4= 1643 31.62 ppm Th
U/Th= .24
11.03 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.15	.08	12.34	1.11	.02	.03	.44	3.73	4.84	.03	.08	.50	99.34

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	106	-6	100	3	4	-5	68	-3	18	13	31	283

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	10	13	6	38	7	2	-5	66	37	120

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
35.	Quartz	Granite	Hypidiomorphic granular tending slightly granophyric
45.	Orthoclase		Globular patches of interconnected quartz grains, with euhedral strongly sericitised plagioclase with abundant anhedral kaolinised orthoclase. Minor biotite & rare opaque mineral & fluorite. Lacks muscovite. The rock is moderately weathered & biotites are slightly limonitised & orthoclase considerably kaolinised.
16.	Plagioclase		
3.	Biotite		
.5	Opaque		
.05	Fluorite		

Location 0296

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0296

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5040

6341519 m N

33.05015 S latitude

678300 m E

148.9096 E longitude

Illustrations :

Age/Unit= Tertiary

Topography: FLAT UPLAND WITH LITTLE OUTCROP

dip= strike=

Structure :

Field Geology: Basalt. Fine grained, slightly porphyritic in plagioclase, augite and minor leucite microphenocrysts. Strongly magnetic.

Field Rockname: SAMPLE BT0296 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES

Whole rock density = 2.58

Dry density = 2.76

Grain density = 2.84

Porosity = 2.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 21597

from 16461 to 25572, SD= 2897

Laboratory susceptibility = 28839

Remanence = 1000.00

Koenigsberger ratio = .58

GAMMA-RAY SPECTROMETRY

Ch.1= 23782

Ch.2= 2172 1.91 % K20

Ch.3= 418 2.11 ppm U

Ch.4= 378 7.24 ppm Th

U/Th= .29

2.98 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Basalt Pilotaxitic
10.	Olivine		Phenocrysts of olivine slightly altered to chlorite & minor
72.	Plagioclase		phlogopite, with euhedral unaltered augite & minor leucite. The
10.	Augite		groundmass consists mainly of a mass of plagioclase laths, tiny
1.	Leucite		augites & magnetite euhedra. Minor altered olivine-rich micro-
2.	Phlogopite		xenoliths. Slight pinkish tinge on magnetites suggests they may be
5.	Rock fragments		titaniferous.
5.	Magnetite		

Location 0297

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0297

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5072
6324824 m N 33.19845 S latitude
691238 m E 149.0516 E longitude

Illustrations :

Age/Unit= Upper Ordovician

ANGULLONG TUFF

Topography: SMOOTH UPLAND WITH OUTCROP

dip= strike=

Structure :

Field Geology: Lithic sandstone. Fine-grained, with abundant labile volcanogenic detritus.

Field Rockname: SAMPLE BT0297 LITHIC SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.77
Dry density = 2.78
Grain density = 2.80
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 9839
from 4775 to 14576 .SD= 2989
Laboratory susceptibility = 7929
Remanence = 1000.00
Koenigsberger ratio = 2.10

GAMMA-RAY SPECTROMETRY

Ch.1= 13828
Ch.2= 1090 .94 % K2O
Ch.3= 240 1.88 ppm U
Ch.4= 161 3.01 ppm Th
U/Th= .62
1.89 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Lithic sandstone
FABRIC: Poorly sorted

Est. %	MINERAL	
5.	Plagioclase	Angular clasts composed mainly of lava detritus, including andesite
50.	Rock fragments	clasts, iron-charged andesite clasts with both hematite and non-
2.	Epidote	reflective red earthy hematite, & chloritised volcanic glass, & rhyolite
5.	Quartz	as well as sand-sized plagioclase, quartz, epidote & magnetite grains.
33.	Matrix	Some magnetites shows extensive alteration to hematite. The matrix
1.	Magnetite	consists of mud, chloritic in part, mixed with fine mineral fragments, &
4.	Hematite	clays.

Location 0298

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0298
Outcrop

AT TRIG STATION
BATHURST

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6313609 m N 33.28610 S latitude air-photo:run-no.= 3-5106
756054 m E 149.7495 E longitude

Illustrations :

Age/Unit= Lower Devonian WINDBURN TUFF dip= strike=
Topography: UNDULATING UPLAND
Structure : STEEPLY INCLINED
Field Geology: Dacite. Phenocrysts of quartz, plagioclase and minor orthoclase set in a
fine-grained groundmass.

Field Rockname: SAMPLE BT0298 DACITE

PHYSICAL PROPERTIES:

DACITE
DENSITIES
Whole rock density = 2.67
Dry density = 2.62
Grain density = 2.65
Porosity = 1.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 0
from to SD=
Laboratory susceptibility = 7577
Remanence = 3500.00
Koenigsberger ratio = 7.70

GAMMA-RAY SPECTROMETRY
Ch.1= 31202
Ch.2= 2244 1.71 % K20
Ch.3= 606 3.40 ppm U
Ch.4= 520 9.93 ppm Th
U/Th= .34
4.19 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.24	0.56	15.40	3.55	0.04	1.07	1.25	6.30	2.06	0.14	0.04	1.10	99.75
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	837	-6	54	6	8	12	21	4	6	37	24	71	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	13	25	284	3	39	-3	81	-5	29	47	173		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
3.	Quartz	Dacite	Porphyritic
35.	Plagioclase	Phenocrysts of fragmentary quartz, strained in places, as well as euhedral to subhedral slightly corroded plagioclase, slightly sericitised, & minor subhedral orthoclase set in a fine-grained groundmass of quartz & feldspar devitrified from formerly glassy material. Minor interstitial chlorite & epidote & rare relict skeletal hornblende. Minor opaque mineral.	
10.	Orthoclase		
5.	Chlorite		
1.	Hornblende		
1.	Opaque		
45.	Groundmass		
.1	Apatite		
.2	Epidote		

Location 0299

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0299
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5090
6324639 m N 33.18708 S latitude
754525 m E 149.7300 E longitude

Illustrations :

Age/Unit= Lower-Middle Devonian MERRIONS TUFF
Topography: TOPO LOW IN ELEVATED AREA dip= strike=
Structure :
Field Geology: Ash-fall tuff. Pink, slightly weathered ashstone. No phenocrysts. Large euhedral ?pyrite cubes, randomly oriented and randomly distributed, are completely pseudomorphed by limonite.

Field Rockname: SAMPLE BT0299 TUFF

PHYSICAL PROPERTIES: TUFF

DENSITIES
Whole rock density = 2.39
Dry density = 2.33
Grain density = 2.74
Porosity = 14.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = 10.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 41660
Ch.2= 2876 2.16 % K2O
Ch.3= 725 1.98 ppm U
Ch.4= 799 15.51 ppm Th
U/Th= .13
4.36 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.05	.53	17.27	4.14	.01	.30	.03	.12	3.58	.05	.04	4.50	99.62
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	905	-6	25	6	45	42	30	-3	11	18	34	179	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	21	-20	60	-5	20	3	81	11	31	43	153		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Ash-fall tuff
2.	Quartz	FABRIC:	Massive
30.	Feldspar		Tiny dispersed angular fragments of quartz & feldspar set in a matrix of unsorted, devitrified ash, which consists of fine chlorite, feldspar, & opaque clays & oxides. Rare siliceous cherty lithic fragments.
1.	Muscovite		
61.	Chlorite		
5.	Opaque		
1.	Rock fragments		

Location 0300

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0300

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5018
6338788 m N 33.05828 S latitude
760100 m E 149.7857 E longitude

Illustrations :

Age/Unit= Middle-Upper Ordovician SOFALA VOLCANICS

Topography: EVENLY DISSECTED, STEEP-SLOPING UPLAND dip= strike=

Structure :

Field Geology: Impure chert breccia. Slightly crumbly, micro-jointed rock consisting of
impure chert clasts set in a more siliceous chert matrix. Pseudomorphs
of iron oxides after a sulphide mineral.

Field Rockname: SAMPLE BT0300 CHERT BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES
Whole rock density = 2.54
Dry density = 2.50
Grain density = 2.65
Porosity = 5.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 10 in-situ readings = 37
from 0 to 251 .SD= 84
Laboratory susceptibility = 0
Remanence = 20.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 8868
Ch.2= 518 .40 % K20
Ch.3= 140 .82 ppm U
Ch.4= 117 2.23 ppm Th
U/Th= .37
.98 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Brecciated chert	Poorly sorted
57.	Quartz	Angular clasts of ultrafine, cloudy, slightly impure chert, set in a	
40.	Rock fragments	much purer matrix of cryptocrystalline quartz The whole has been	
3.	Opaque	veined by clear secondary quartz. Minor opaque oxide.	

Location 0301

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0301
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5088
6328813 m N 33.15085 S latitude
748612 m E 149.6655 E longitude

Illustrations :

Age/Unit= Middle Silurian BELLS CREEK VOLCANICS
Topography: EVENLY UNDULATING AND EVENLY DISSECTED UPLAND dip= strike=000
Structure : STEEPLY DIPPING
Field Geology: Mudstone. Massive, with tiny muscovites oriented parallel to bedding.

Field Rockname: SAMPLE BT0301 MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE
DENSITIES
Whole rock density = 2.34
Dry density = 2.34
Grain density = 2.74
Porosity = 14.8

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 12 in-situ readings = 467
from 188 to 879 SD= 228
Laboratory susceptibility = 75
Remanence = 5.00
Koenigsberger ratio = 1.11

GAMMA-RAY SPECTROMETRY

Ch.1= 39519
Ch.2= 2847 2.21 % K20
Ch.3= 662 1.43 ppm U
Ch.4= 761 14.81 ppm Th
U/Th= .10
3.92 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.97	.64	12.39	3.55	.02	1.24	.02	.04	3.78	.07	.07	2.90	99.69
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	687	-6	60	23	67	30	45	3	13	23	7	172	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	16	-20	18	-5	16	4	79	11	33	56	162		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Mudstone
Est. % MINERAL FABRIC: Massive; unsorted
5. Quartz A massive rock with dispersed, silt-sized quartz grains set in finer,
93. Mud weathered, limonitised mud with tiny muscovite flakes, chloritic
2. Opaque material & clays. Minor opaque oxide.

Location 0302

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0302

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5088

6321370 m N

33.21813 S latitude

747657 m E

149.6573 E longitude

Illustrations :Photomicrograph

Age/Unit= Upper Silurian

COOKMAN FORMATION

Topography: MODERATELY SLOPING DISSECTED UPLAND

dip= strike=

Structure :

Field Geology: Quartzite, with micaceous impurities defining planar thin bedding and lamination, slightly disrupted in places by lenticular quartz bodies.

Field Rockname: SAMPLE BT0302 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES

Whole rock density =

Dry density = 2.58

Grain density = 2.63

Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 329

from 0 to 1256, SD= 425

Laboratory susceptibility = 12

Remanence = 20.00

Koenigsberger ratio = 27.78

GAMMA-RAY SPECTROMETRY

Ch.1= 33257

Ch.2= 3890 4.01 X K20

Ch.3= 396 2.71 ppm U

Ch.4= 298 5.63 ppm Th

U/Th= .48

3.56 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.21	.21	11.93	2.64	.10	.52	.59	3.61	2.48	.06	.07	1.20	99.63

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	654	-6	53	9	10	34	49	-3	7	8	27	75

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	37	196	-5	8	4	13	11	69	82	267

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
80.	Quartz	Quartzite	Planar laminated & thin bedded
9.	Chlorite		Lamination & thin bedding defined by variations in chlorite content, grain size differences & laminae & lenticular flattened boudins
.1	Garnet		of pure chemical quartzite. Minor small stratabound veinlets with linings of opaque limonite. Some appear to be dewatering structures.
.01	Chamosite		Chlorite plates are parallel to bedding. Rare clots of garnet and rarer similarly-shaped clots of ?chamosite, which may be a precursor to garnet in other layers. Minor poorly twinned plagioclase grains amongst quartz-rich layers. Photograph 2 clots of ?chamosite & compare shape with garnets.
1.	Diopside		
10.	Plagioclase		

Location 0303

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0303

Outcrop

BATHURST

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5088
6322005 m N 33.21228 S latitude
748215 m E 149.6631 E longitude

NSW GDOM=1

Illustrations :

Age/Unit= Lower-Middle Carboniferous WIAGDONG GRANITE
Topography: TOPOGRAPHIC LOW IN AN ELEVATED AREA dip= strike=
Structure: PLUTON
Field Geology: Granodiorite. Melanocratic due to abundant biotite and lesser hornblende
Medium to coarse-grained; equigranular, non porphyritic.

Field Rockname: SAMPLE BT0303 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density =

Dry density = 2.64

Grain density = 2.73

Porosity = 3.1

Mean of 15 in-situ readings = 213

from 0 to 402,SD= 122

Laboratory susceptibility = 163

Remanence = 5.00

Koenigsberger ratio = .51

Ch.1= 41214

Ch.2= 2960 2.41 % K2O

Ch.3= 693 3.57 ppm U

Ch.4= 621 11.89 ppm Th

U/Th= .30

4.79 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.56	.48	14.99	3.37	.06	1.82	3.25	3.62	2.90	.17	.08	.50	99.79

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	780	-6	41	13	72	-5	27	-3	5	21	15	84

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	-5	468	-5	16	4	63	-5	13	36	128

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granodiorite	
30.	Quartz	Hypidiomorphic granular	
20.	Orthoclase		Large bulbous but ragged patches of quartz with moderately well equilibrated grain boundaries between strain-free grains. Mutually impinging euhedral to subhedral plagioclase & K'feldspar. The plagioclase is often zoned & some is slightly sericitised & has partial pseudomorphs of rare muscovite in some places. The other feldspars are orthoclase & microcline. Minor euhedral hornblende often slightly altered to epidote & sphene. Brownish-yellow biotite is partially chloritised & also has liberations of sphene. Rare accessory apatite euhedra & opaque anhedra.
40.	Plagioclase		
3.	Hornblende		
7.	Biotite		
1.	Epidote		
.1	Sphene		
.1	Apatite		
.1	Opaque		

Location 0304

* LACLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0304 SAME LOCATION AS 0305
Outcrop BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5084
6323303 m N 33.20230 S latitude
740616 m E 149.5813 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian CRUDINE GROUP
Topography: STEEPLY SLOPING, SMOOTH DISSECTED UPLAND dip=65SE strike=035
Structure : STEEPLY TILTED
Field Geology: Quartzite, fine-grained, massive to slightly cleaved parallel to
bedding; minor white quartz veins.

Field Rockname: SAMPLE BT0304 QUARTZITE

PHYSICAL PROPERTIES:		QUARTZITE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES					Ch.1=	38827
Whole rock density =	2.68		Mean of 11 in-situ readings =	119	Ch.2=	3601 3.11 % K2O
Dry density =	2.72		from 0 to 376 ,SD=	133	Ch.3=	749 4.55 ppm U
Grain density =	2.75		Laboratory susceptibility =	75	Ch.4=	613 11.66 ppm Th
Porosity =	1.0		Remanence =	30.00		U/Th= .39
			Koenigsberger ratio =	6.67	5.52	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:	
		Quartzite		
		Massive		
80.	Quartz			Equigranular quartz grains, many with strain extinction, coarsened from originally cherty silica. Tiny muscovite & chlorite impurities have been expelled to grain boundaries. Abundant opaque mineral & rare fine grains of tourmaline.
14.	Opaque			
.01	Tourmaline			
5.	Muscovite			
1.	Chlorite			

Location 0305

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0305
Outcrop

SAME LOCATION AS 0304
BATHURST

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6323303 m N 33.20230 S latitude air-photo:run-no.= Z-5084
740636 m E 149.5812 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian CRUDINE GROUP
Topography: STEEPLY SLOPING SMOOTH DISSECTED UPLAND dip=65SE strike=035
Structure : STEEPLY TILTED
Field Geology: Greywacke. Quartz-rich with scattered feldspar grains.

Field Rockname: SAMPLE BT0305 GREYWACKE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.53
Dry density = 2.54
Grain density = 2.72
Porosity = 6.3

GREYWACKE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 3 in-situ readings = 418
from 376 to 502, SD= 72
Laboratory susceptibility = 25
Remanence = 4.00
Koenigsberger ratio = 2.67

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Siliceous greywacke
Est. % MINERAL FABRIC: Poorly sorted with soft-sediment flow foliation
25. Quartz Scattered dispersed clasts of unstrained, sub-angular quartz with
1. Plagioclase lesser plagioclase & lithic fragments of plagioclase quartzite in a
1. Rock fragments two-component matrix of mud & much more abundant lenticles of
73. Matrix chemical quartzite often showing boudin-like forms & augen shapes.
.5 Opaque The mud consists of biotite platelets which define the original
.01 Tourmaline flow foliation, & chlorite. Rare accessory tourmaline.

Location 0306

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0306
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5084
6327931 m N 33.16263 S latitude
731275 m E 149.4800 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian CRUDINE GROUP
Topography: STRIKE RIDGES AND RELATED DRAINAGE dip= strike=
Structure : STEEPLY TILTED STRIKE RIDGES. NUMEROUS QUARTZ VEINS AND BLOWS
Field Geology: Arkose. Prominently outcropping and interbedded with finer-grained,
softer-weathering greywacke and siltstone. Abundant feldspathic and
lesser quartz detritus. Unsorted. The matrix is muddy, siliceous, and
contains biotite.

Field Rockname: SAMPLE BT0306 ARKOSE

PHYSICAL PROPERTIES: GREYWACKE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.73	Mean of 12 in-situ readings = 41	Ch.1= 27356
Dry density = 2.71	from 0 to 376 .SD= 111	Ch.2= 1608 .98 % K2O
Grain density = 2.74	Laboratory susceptibility = 100	Ch.3= 652 5.32 ppm U
Porosity = .8	Remanence = 30.00	Ch.4= 418 7.77 ppm Th
	Koenigsberger ratio = 5.00	U/Th= .68
		4.85 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.17	.70	14.41	5.18	.09	1.71	3.83	4.09	1.49	.12	.06	1.60	99.46
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	385	-6	56	16	25	24	28	-3	8	8	23	51	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	16	21	152	-5	12	-3	93	7	35	70	186		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	Arkose
15.	Quartz	FABRIC:	Poorly sorted
70.	Plagioclase		Subangular to subrounded clasts of abundant plagioclase, lesser strained quartz & minor lithic fragments of quartzite set in a matrix
1.	Rock fragments		of fine-grained biotite platelets, epidote granules & tiny chlorite
5.	Biotite		smears, with minor opaque mineral.
3.	Epidote		
1.	Opaque		
5.	Chlorite		

Location 0307

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0307

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5080

6327368 m N

33.16903 S latitude

724981 m E

149.4127 E longitude

Illustrations :

Age/Unit= Lower-Middle Carboniferous BRUINBUN GRANITE

Topography: TOPOGRAPHIC HIGH IN DISSECTED, ELEVATED AREA dip= strike=

Structure : PLUTON

Field Geology: Granite. Equigranular except for rare zoned orthoclase phenocrysts;
coarse-grained; leucocratic. Small patches of leached sulphides
pseudomorphed by limonite.

Field Rockname: SAMPLE 8T0307 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES

Whole rock density =
Dry density = 2.58
Grain density = 2.60
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 6769
from 4838 to 11058, SD= 1544
Laboratory susceptibility = 5466
Remanence = 700.00
Koenigsberger ratio = 2.13

GAMMA-RAY SPECTROMETRY

Ch.1= 71386
Ch.2= 5657 4.45 X K20
Ch.3= 1535 11.39 ppm U
Ch.4= 1081 20.29 ppm Th
U/Th= .56
11.53 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.82	.16	13.86	1.29	.07	.38	1.13	4.42	3.97	.06	.06	.30	99.54

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	371	-6	44	4	11	-5	29	-3	15	9	38	193

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-5	177	5	18	12	15	-5	23	26	81

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Granite	FABRIC:
30.	Quartz	Hypidiomorphic granular	Large interconnected patches of quartz showing very slight strain
44.	Orthoclase		extinction. Euhedral to sub-hedral plagioclase with sericitised cores
25.	Plagioclase		with traces of muscovite. Anhedral interstitial large orthoclase,
1.	Biotite		slightly kaolinised. Some contacts of orthoclase against quartz have
.1	Muscovite		embayments into the quartz. Rare biotite plates with minor associated
.1	Apatite		muscovite. Minor chlorite partially pseudomorphous after biotite. Rare
.001	Sphene		magnetite euhedra, & trace hematite, apatite euhedra, and rarer tiny
.1	Magnetite		allanite granules sited in some of the more strongly sericitised
.01	Hematite		plagioclases.
.001	Allanite		

Location 0308

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(796?)0308
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5080
6323843 m N 33.20212 S latitude
718528 m E 149.3444 E longitude

Illustrations :

Age/Unit= Lower Devonian CUNNINGHAM FORMATION
Topography: MODERATELY UNDULATING UPLAND dip= strike=000
Structure : STEEPLY INCLINED, BUT COLLAPSED OUTCROP AND FLOAT HERE
Field Geology: Graded turbidites. Light-coloured siltstone grading to slate,
rhythmically repeated in sets up to 15 cm thick.

Field Rockname: SAMPLE BT0308 SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

SILTSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 48283
Ch.2= 4263 3.68 X K2O
Ch.3= 816 2.95 ppm U
Ch.4= 838 16.20 ppm Th
U/Th= 18
5.43 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Siltstone	Poorly sorted; slightly cleaved
65.	Quartz		Randomly dispersed, fine-sand-sized chloritised lithic fragments with
3.	Rock fragments		opaque grains & smaller, coarse-silt-sized quartz grains in a matrix
2.	Opaque		of fine chemical silica, chloritic, and graphitic mud containing small
5.	Muscovite		unoriented muscovite crystals. However alignment of graphite has
10.	Graphite		caused cleavage in the rock, though the micas are not aligned.
15.	Matrix		Photograph aligned graphite and non-aligned micas.

Location 0309

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0309

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5074

6283142 m N 33.56837 S latitude
721253 m E 149.3836 E longitude

Illustrations :

Age/Unit= Middle Silurian MULLIONS RANGE VOLCANICS
Topography: UNDULATING UPLAND dip=90 strike=
Structure : STEEPLY DIPPING
Field Geology: Micaceous garnet quartzite, shale, and quartzite interbedded. Laminated
to thin and planar bedded. Marine.

Field Rockname: SAMPLE BT0309 MICACEOUS GARNET QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.49
Dry density = 2.45
Grain density = 2.67
Porosity = 8.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 955
from 439 to 2261 ,SD= 598
Laboratory susceptibility = 188
Remanence = .50
Koenigsberger ratio = .04

GAMMA-RAY SPECTROMETRY

Ch.1= 50470
Ch.2= 4233 3.61 % K20
Ch.3= 819 2.44 ppm U
Ch.4= 885 17.16 ppm Th
U/Th= .14
5.26 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Micaceous quartzite
Est. % MINERAL FABRIC: Well bedded with flattened clots of garnet
20. Garnet Thin bedding & lamination defined by variation in proportion of the
15. Biotite various constituents & by layers of pure quartzite & pure garnet.
10. Muscovite Where purest, they have been compacted into boudin-like lenses & clots
54. Quartz in places. Some layers exhibit grading from quartzite to micaceous
1. Hematite quartzite. Subsequent grain growth makes this look like graded bedding,
but it is due to the inhibition-dependent coarsening.

Location 0310

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0310
Outcrop

ABOUT 300M EAST OF TRIG STATION WITH RADIO MAST

BATHURST

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air photo:run-no.= 5-5074
6283081 m N 33.56997 S latitude
716096 m E 149.3281 E longitude

Illustrations :

Age/Unit= Ordovician

ANGULLONG TUFF

Topography: MODERATELY SLOPING UPLAND WITH OUTCROP

dip= strike=

Structure :

Field Geology: Pyroxene basalt. Large black pyroxene crystals up to 1 cm diameter randomly distributed in a fine-grained slightly-altered basaltic groundmass. Wispy igneous layering in places.

Field Rockname: SAMPLE BT0310 PYROXENE BASALT

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.94
Dry density = 2.92
Grain density = 2.92
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 707
from 314 to 1068 .SD= 207
Laboratory susceptibility = 678
Remanence = 260.00
Koenigsberger ratio = 6.39

GAMMA-RAY SPECTROMETRY
Ch.1= 22176
Ch.2= 2345 2.57 % K2O
Ch.3= 141 1.06 ppm U
Ch.4= 98 1.84 ppm Th
U/Th= .58
1.56 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Basalt	
25.	Plagioclase		Orthopyric tending slightly pilotaxitic
20.	Augite		Large phenocrysts of euhedral augite, smaller euhedral plagioclase with slight clay alteration & small zoisite crystals & crystal-cluster pseudomorphs of a former ferromagnesian mineral phenocryst.
4.	Zoisite		
1.	Opaque		The groundmass consists of altered plagioclase laths, small augite, opaque mineral & clay alteration. Rare small vesicles contain
48.	Groundmass		chlorite & minor zoisite.
2.	Chlorite		

Location 0311

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0311

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5070

6286482 m N 33.54212 S latitude

701826 m E 149.1737 E longitude

Illustrations :

Age/Unit= Middle Devonian?

CARCOAR GRANITE

Topography: SMOOTH MODERATE RELIEF WITH OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Tonalite. Medium-grained, melanocratic, with acicular hornblende and minor biotite.

Field Rockname: SAMPLE BT0311 TONALITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.72

Ch.1= 27975

Dry density = 2.71

Ch.2= 2449 2.13 % K2O

Grain density = 2.73

Mean of 10 in-situ readings = 175

Ch.3= 490 2.74 ppm U

Porosity = .6

from 0 to 376 ,SD= 161

Ch.4= 421 8.04 ppm Th

Laboratory susceptibility = 10166

Remanence = 340.00

U/Th= .34

Koenigsberger ratio = .56

3.56 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.82	.57	15.11	5.05	.08	2.38	3.98	2.97	2.53	.14	.05	1.20	99.39

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	572	-6	43	18	71	-5	41	4	7	24	8	68

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	23	-5	229	-5	7	-3	103	-5	20	45	134

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
12.	Quartz	Tonalite	Porphyritic; hypidiomorphic granular tending slightly granophyric
64.	Plagioclase		Phenocrysts & euhedra of plagioclase, zoned, sericitised, with clay alteration in some cores & clear rims. Scattered hornblende
5.	Hornblende		euhedra either unaltered or breaking down to green-brown biotite, chlorite, & epidote. Original biotite commonly pseudomorphed by chlorite with liberation of opaque mineral along cleavages. Patches of strained anhedral resorbed quartz & interstitial orthoclase anhedral.
2.	Biotite		Rare opaque mineral anhedral & trace accessory apatite & zircon.
10.	Chlorite		
1.	Epidote		
.1	Apatite		
5.	Orthoclase		
1.	Opaque		
.01	Zircon		

Location 0312

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0312

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5070

6283806 m N

33.56718 S latitude

696745 m E

149.1196 E longitude

Illustrations :

Age/Unit= Ordovician

ANGULLONG TUFF

Topography: SMOOTH UPLAND WITH OUTCROP

dip= strike=

Structure :

Field Geology: Trachyandesite. Sparsely porphyritic in feldspar and altered ferromagnesian minerals. Black, very fine-grained, slightly altered groundmass contains disseminated chalcopyrite and pyrite.

Field Rockname: SAMPLE BT0312 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.72
Dry density = 2.69
Grain density = 2.73
Porosity = 1.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 28927
from 17592 to 42599 ,SD= 7275
Laboratory susceptibility = 35349
Remanence = 2200.00
Koenigsberger ratio = 1.04

GAMMA-RAY SPECTROMETRY

Ch.1= 41351
Ch.2= 5017 5.35 % K2O
Ch.3= 426 3.88 ppm U
Ch.4= 239 4.38 ppm Th
U/Th= .89
4.38 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
8.	Plagioclase	Trachyandesite Pilotaxitic
2.	Orthoclase	Sparsely porphyritic in euhedral plagioclase, lesser orthoclase and epidote-chlorite pseudomorphs of a ferromagnesian phenocryst. The groundmass is very fine-grained & consists mainly of a felt-like mass of plagioclase microlites, chlorite, clay & magnetite dust.
71.	Groundmass	Most chloritised ferromagnesian phenocrysts have liberations of chalcopyrite. Minor magnetite euhedra. Very rare pyrite.
10.	Epidote	
5.	Chlorite	
1.	Calcite	
2.	Magnetite	
.01	Chalcopyrite	
.001	Pyrite	

Location 0313

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0313
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5066
6279464 m N 33.60820 S latitude
686269 m E 149.0077 E longitude

Illustrations :

Age/Unit= Middle Devonian?
Topography: SMOOTH SLOPES DISSECTED BY RUNNING CREEK dip= strike=
Structure :
Field Geology: Basalt. Fine grained, densely porphyritic in plagioclase.

Field Rockname: SAMPLE BT-0313 BASALT

PHYSICAL PROPERTIES:

DENSITIES BASALT
Whole rock density = 2.81
Dry density = 2.82
Grain density = 2.82
Porosity = 0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 52292
from 30913 to 71942 ,SD= 11612
Laboratory susceptibility = 59476
Remanence = 12000.00
Koenigsberger ratio = 3.36

GAMMA-RAY SPECTROMETRY
Ch.1= 19247
Ch.2= 2499 2.74 X K20
Ch.3= 140 .79 ppm U
Ch.4= 120 2.29 ppm Th
U/Th= .34
1.51 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Basalt
		FABRIC:	Pilotaxitic
30.	Plagioclase		Altered basalt with large phenocrysts of zoned augite, fractured with slight infiltration of groundmass & liberation of magnetite dust and
10.	Augite		slight alteration to clay. Also phenocrysts of euhedral plagioclase
57.	Groundmass		with considerable clay-rich & slight sericitic alteration making
1.	Chlorite		them difficult to distinguish from groundmass in thin section. The
2.	Magnetite		groundmass is a felt-like mass of altered plagioclase microlites with
			accompanying clay, chlorite & magnetite. Minor magnetite anhedral
			considerably larger than those in groundmass.

Location 0314

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0314
Outcrop

SAME LOCALITY AS 0315
BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5034
6302119 m N 33.40703 S latitude
667848 m E 148.8050 E longitude

Illustrations :

Age/Unit= Ordovician CARGO ANDESITE
Topography: ROCKY RISE AT TOP OF SMOOTH SLOPING UPLAND dip= strike=
Structure :
Field Geology: Andesite. Frequently with calcite vesicles. Slightly altered and
intruded by granophyre.

Field Rockname: SAMPLE BT0314 VESICULAR ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.81	Mean of 8 in-situ readings = 11773	Ch.1= 25201
Dry density = 2.78	from 5843 to 18472 ,SD= 3515	Ch.2= 2091 1.73 % k20
Grain density = 2.84	Laboratory susceptibility = 16147	Ch.3= 475 2.65 ppm U
Porosity = 2.1	Remanence = 14000.00	Ch.4= 409 7.81 ppm Th
	Koenigsberger ratio = 14.45	U/Th= .34
		3.37 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Andesite	Entirely vesicular & spherulitic
50.	Plagioclase		Rare euhedral plagioclase, mostly in clusters, & rare augite set in amongst vesicles & spherulites containing quartz (which has grown from original chalcedony), chlorite, clay, and calcite. The vesicles are rounded to oval in shape and are frequently lined by quartz with central fillings of calcite. The spherulites are largely chloritic with concentric internal shapes changing to less circular angular edges outwards as competition for growth became inhibited by lack of space. Rare chalcopyrite blebs partially pseudomorphing completely altered former crystals. Trace pyrite.
.1	Augite		
5.	Calcite		
30.	Chlorite		
5.	Quartz		
9.	Clay		
1.	Magnetite		
.01	Chalcopyrite		
.001	Pyrite		

Location 0315

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0315
Outcrop

SAME LOCALITY AS 0314
BATHURST

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6302117 m N 33.40705 S latitude air-photo:run-no.= 4-5034
667848 m E 148.8050 E longitude

Illustrations :

Age/Unit:
Topography: ROCKY RISE AT TOP OF SMOOTH SLOPING UPLAND dip= strike=
Structure :
Field Geology: Andesite. Frequently with calcite vesicles. Slightly altered and
intruded by granophyre.

Field Rockname: SAMPLE BT0315 GRANOPHYRE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.75
Dry density = 2.71
Grain density = 2.75
Porosity = 1.4

GRANOPHYRE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 7 in-situ readings = 9837
from 8293 to 11749 .SD= 1355
Laboratory susceptibility = 7904
Remanence = 2100.00
Koenigsberger ratio = 4.43

GAMMA-RAY SPECTROMETRY

Ch.1= 40507
Ch.2= 3223 2.60 % K2O
Ch.3= 769 4.05 ppm U
Ch.4= 682 13.05 ppm Th
U/Th= .31
5.33 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granophyre	
		Porphyritic	granophyric
15.	Quartz	Porphyritic in large, extensively sericitised euhedral plagioclase, and acicular crystals filled with chlorite aggregates after hornblende, and	
50.	Plagioclase	euhedral fractured augite weakly partially assimilated. The remainder	
15.	Orthoclase	of the rock consists of randomly oriented altered plagioclase	
5.	Augite	laths considerably less sericitised than the phenocrysts, and	
10.	Chlorite	interstitial, graphically-intergrown quartz & kaolinised orthoclase.	
1.	Rock fragments	Rare vesicles after ?leached minerals filled with radiating	
2.	Magnetite	chlorite aggregates. Rare xenoliths of feldspar rock. Minor anhedral	
1.	Hematite	of magnetite altering to hematite. Trace pyrite.	
.001	Pyrite		

Location 0316

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0316
Outcrop

BATHURST sheet area 1:250,000
6302164 m N
719996 m E

NSW GDOM=1
air-photo:run-no.= 4-5020
33.39720 S latitude
149.3654 E longitude

Illustrations :

Age/Unit= Lower-Middle Carboniferous BATHURST GRANITE
Topography: SMOOTH LOWLAND IN ELEVATED AREA dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Inequigranular, porphyritic in large 5 cm phenocrysts of zoned, twinned orthoclase set in leucocratic medium to coarse-grained groundmass containing scattered biotite.

Field Rockname: SAMPLE BT0316 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES
Whole rock density = 2.60
Dry density = 2.61
Grain density = 2.63
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 6668
from 5654 to 7791 ,SD= 562
Laboratory susceptibility = 7301
Remanence = 950.00
Koenigsberger ratio = 2.17

GAMMA-RAY SPECTROMETRY
Ch.1= 60213
Ch.2= 5040 4.13 X K20
Ch.3= 1152 5.68 ppm U
Ch.4= 1054 20.21 ppm Th
U/Th= .28
7.91 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.79	.27	15.11	1.72	.04	.58	1.88	4.29	4.12	.11	.07	.30	99.28

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	805	-6	63	6	9	-5	49	-3	5	5	28	152

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	7	-5	410	-5	21	-3	22	-5	10	32	121

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular

Est. %	MINERAL	Description
25.	Quartz	Large patches of fractured quartz with equilibrated grain boundaries including former fractures. Large subhedral orthoclase & microcline.
45.	Orthoclase	
25.	Plagioclase	Interstitial euhedral zoned plagioclase, slightly sericitised with liberation of muscovite in places, as well as interstitial quartz & orthoclase. Biotite shows slight chloritisation. Large infrequent accessory apatite & small euhedral sphene. Minor magnetite subhedra.
4.	Biotite	
1.	Chlorite	
.1	Muscovite	
.01	Apatite	
.01	Sphene	
.5	Magnetite	

Location 0317

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0317

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5020

6300918 m N

33.40750 S latitude

724481 m E

149.4139 E longitude

Illustrations :Photomicrograph

Age/Unit: Lower-Middle Carboniferous BATHURST GRANITE

Topography: SMOOTH HILLTOP WITH EXFOLIATED OUTCROPS dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Equigranular, non porphyritic, leucocratic, with scattered biotite.

Field Rockname: SAMPLE 8T0317 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES

Whole rock density = 2.53

Dry density = 2.55

Grain density = 2.62

Porosity = 2.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 91

from 0 to 376 ,SD= 126

Laboratory susceptibility = 100

Remanence = 5.00

Koenigsberger ratio = .83

GAMMA-RAY SPECTROMETRY

Ch.1= 78544

Ch.2= 6149 4.71 % K2O

Ch.3= 1414 1.36 ppm U

Ch.4= 1770 34.60 ppm Th

U/Th= .04

7.81 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.22	.09	13.59	.83	.07	.16	.62	3.97	4.78	.04	.04	.30	99.70

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	203	-6	55	3	5	-5	27	-3	17	13	53	222

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	20	6	57	7	27	8	7	-5	65	15	67

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Granite	Hypidiomorphic granular
58.	Orthoclase		Large patches of quartz with jagged edges where they abut feldspar.
15.	Plagioclase		Very large subhedral orthoclase & microcline phenocrysts. Kaolinised & slightly sericitised euhedral plagioclase. Minor biotite, some marginally altered to optically continuous muscovite, & rare secondary epidote. Very minor opaque mineral & trace accessory euhedral garnet & zircon.
.01	Biotite		Photograph biotite altering to muscovite.
.1	Garnet		
.1	Opaque		
.01	Zircon		
.1	Muscovite		
.1	Epidote		

Location 0318

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0318

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5186

6258392 m N 33.80085 S latitude

670188 m E 148.8385 E longitude

Illustrations :

Age/Unit= Lower Ordovician

WALLI ANDESITE

Topography: SMOOTH UPLAND WITH OUTCROP AT GROUND LEVEL

dip= strike=

Structure :

Field Geology: Andesite. Phenocrysts of an altered ferromagnesian mineral set in fine epidote-bearing, greenish altered groundmass.

Field Rockname: SAMPLE BT0318 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.93
Dry density = 2.91
Grain density = 2.91
Porosity = 0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 1002
from 188 to 1734 ,SD= 425
Laboratory susceptibility = 1482
Remanence = 1700.00
Koenigsberger ratio = 19.12

GAMMA-RAY SPECTROMETRY

Ch.1= 12923
Ch.2= 1137 1.11 % K2O
Ch.3= 171 1.45 ppm U
Ch.4= 105 1.94 ppm Th
U/Th= .75
1.48 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
40.	Plagioclase	Andesite	Pilotaxitic
2.	Augite	Extensively argillised with euhedral plagioclase clouded by clays and partially chloritised, with lesser euhedral augite mostly pseudomorphed by chlorite & epidote. The groundmass is extensively argillised to clay, though a felt-like mass of plagioclase microlites is partially discernible as a constituent.	
10.	Chlorite		
5.	Epidote		
.5	Opaque		
43.	Groundmass		

Location 0319

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0319
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5210
6267435 m N 33.72123 S latitude
657928 m E 148.7045 E longitude

Illustrations :

Age/Unit= COWRA GRANODIORITE
Topography: dip= strike=
Structure :
Field Geology: Granodiorite. Melanocratic due to abundant biotite and numerous
pyroxene-bearing xenoliths up to 20 cm long. Medium-grained. Numerous
other granitoid and minor magmatic quartz xenoliths.

Field Rockname: SAMPLE BT0319

PHYSICAL PROPERTIES: GRANODIORITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.73 Ch.1= 45988
Dry density = 2.70 Mean of 8 in-situ readings = 0 Ch.2= 3673 2.99 % K20
Grain density = 2.73 from to ,SD= Ch.3= 751 .77 ppm U
Porosity = .0 Laboratory susceptibility = 226 Ch.4= 936 18.29 ppm Th
Remanence = 2.00 U/Th= .04
Koenigsberger ratio = .15 4.27 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 62.16 .69 15.50 7.58 .12 3.58 4.59 1.90 2.32 .16 .05 .60 99.27

TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 418 -6 65 40 79 37 42 -3 10 29 26 119

TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 27 5 152 -5 12 4 122 -5 23 107 153

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granodiorite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
15. Quartz Minor glomeroporphyric cordierite largely altered to pinitite
50. Plagioclase & rimmed by muscovite. Globular patches of quartz, slightly
5. Cordierite resorbed in places. Abundant euhedral zoned plagioclase showing
20. Biotite slight sericitisation. Minor interstitial quartz & orthoclase.
1. Muscovite Abundant biotite partially altered to chlorite & rare muscovite.
1. Opaque Minor opaque mineral & rare zircon & apatite. Specimen includes
.001 Zircon a xenolith of orthopyroxene-biotite granophyre.
.1 Apatite
8. Orthoclase

Location 0320

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0320

Outcrop

BATHURST

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6246959 m N air-photo:run-no.= 8-5136
660401 m E 33.90545 S latitude
148.7349 E longitude

Illustrations :

Age/Unit= Ordovician

KENYU FORMATION

Topography: LOW RISE

dip= strike=

Structure :

Field Geology: Lithic sandstone. Abundant altered andesitic and feldspathic detritus
set in a clay-rich matrix.

Field Rockname: SAMPLE BT-0320 LITHIC SANDSTONE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.78	Mean of 15 in-situ readings = 14107	Ch.1= 17697
Dry density = 2.78	from 4209 to 31038, SD= 7008	Ch.2= 1108
Grain density = 2.80	Laboratory susceptibility = 10379	Ch.3= 346 1.81 ppm U
Porosity = .0	Remanence = 12000.00	Ch.4= 308 5.89 ppm Th
	Koenigsberger ratio = 19.27	U/Th= .31
		2.30 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Lithic sandstone
Est. % MINERAL FABRIC:	Roarily sorted
52. Rock fragments	Subangular coarse-sand-sized clasts of andesite, chlorite-epidote rock, iron charged andesite, chloritised volcanic glass, and plagioclase (in places resorbed & variably chloritised). The matrix is non-resolvable clay. Minor disseminated detrital magnetite showing minor alteration to hematite along margins & cleavages. Many of the lithic clasts also contain disseminated fine magnetite altering to small amounts of hematite.
30. Plagioclase	
15. Matrix	
3. Magnetite	

Location 0321

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0321

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5136

6243246 m N

33.93808 S latitude

665812 m E

148.7941 E longitude

Illustrations :

Age/Unit=

WYANGALA BATHOLITH

Topography: SLIGHTLY RUGGED UPLAND WITH OUTCROPS

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Melanocratic, coarse-grained, equigranular with small mica-rich xenoliths. Muscovite-bearing. Minor dykes of tourmaline aplite and other fine-grained quartz-rich granitic rocks.

Field Rockname: SAMPLE BT0321 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Whole rock density = 2.68

Dry density = 2.69

Grain density = 2.73

Porosity = 1.4

MAGNETIC SUSCEPTIBILITY (S.I. * 000001)

Mean of 15 in-situ readings = 192

from 0 to 439, SD= 119

Laboratory susceptibility = 213

Remanence = 3.00

Koenigsberger ratio = .23

GAMMA-RAY SPECTROMETRY

Ch.1= 45632

Ch.2= 3846 3.23 % K20

Ch.3= 755 1.64 ppm U

Ch.4= 268 16.89 ppm Th

U/Th = .10

4.63 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.37	.50	14.64	3.47	.05	1.37	1.88	2.62	3.60	.21	.04	.60	99.35

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	448	-6	53	12	39	-5	45	-3	12	16	32	163

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	14	95	7	11	5	62	-5	25	47	151

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Adamellite	Hypidiomorphic granular
28.	Orthoclase		Large clots of biotite & biotite-crystal clusters, frequently with inclusions of apatite & zircon, the latter surrounded by radioactive alteration haloes.
25.	Plagioclase		Interconnected globular patches of quartz showing considerable strain extinction. Euhedral plagioclase & altered zoned orthoclase with liberation of muscovite in core regions.
15.	Biotite		Minor cordierite altering to pinite. Accessory apatite & opaque mineral.
5.	Muscovite		Veinlets of tourmaline aplite.
.1	Apatite		
1.	Opaque		
1.	Cordierite		
.01	Zircon		

Location 0322

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0322

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5134

6245317 m N

33.91853 S latitude

671314 m E

148.8532 E longitude

Illustrations :

Age/Unit= Lower Ordovician

WALLI ANDESITE

Topography: HIGH, HILLY

dip= strike=

Structure :

Field Geology: Andesite. Black, fine-grained, with microphenocrysts of plagioclase and altered hornblende.

Field Rockname: SAMPLE BT0322 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.88
Dry density = 2.85
Grain density = 2.85
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 10 in-situ readings = 364
from 188 to 565 ,SD= 121
Laboratory susceptibility = 452
Remanence = 4000.00
Koenigsberger ratio = 147.49

GAMMA-RAY SPECTROMETRY
Ch.1= 21684
Ch.2= 1654 1.36 % K2O
Ch.3= 450 4.35 ppm U
Ch.4= 231 4.18 ppm Th
U/Th= 1.04
3.72 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Hornblende andesite	
		Pilotaxitic	
15.	Plagioclase	Porphyritic & glomeroporphyritic in slightly kaolinised plagioclase,	
20.	Hornblende	& abundant hornblende subhedra showing breakdown & partial alteration	
1.	Quartz	to acicular actinolite & secondary quartz. The slightly altered ground-	
1.	Opaque	mass consists of plagioclase microlites, partially altered hornblende	
1.	Actinolite	aggregates, & similarly fine-grained, scattered opaque mineral.	
62.	Groundmass		

Location 0323

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0323
 Outcrop

BATHURST NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5186
 6252318 m N 33.85547 S latitude
 671051 m E 148.8490 E longitude

Illustrations :

Age/Unit=
 Topography: RUGGED WITH OUTCROPS dip= strike=
 Structure : PLUTON
 Field Geology: Adamellite. Equigranular, non porphyritic, medium-grained, mesocratic
 with evenly-scattered small biotites.

Field Rockname: SAMPLE BT0323 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 11 in-situ readings = 2932		Ch.1= 49603	
Whole rock density = 2.62		from 1319 to 3707, SD= 710		Ch.2= 3053 3.04 % K2O	
Dry density = 2.62		Laboratory susceptibility = 1080		Ch.3= 372 2.29 ppm U	
Grain density = 2.71		Remanence = 550.00		Ch.4= 302 5.74 ppm Th	
Porosity = 3.4		Koenigsberger ratio = 8.49		U/Th= .40	
				3.09 Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.87	.31	14.33	3.20	.08	.65	2.30	4.38	2.90	.11	.01	.30	99.44

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	658	-6	45	17	7	-5	46	-3	7	6	6	52

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	-5	146	-5	7	4	26	-5	26	40	134

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Adamellite
25.	Quartz	FABRIC:	Hypidiomorphic granular tending slightly granophyric
35.	Orthoclase		Euhedral to subhedral, zoned, slightly sericitised plagioclase with anhedral quartz & orthoclase. Much of the quartz is resorbed. Abundant
30.	Plagioclase		interstitial brown-yellow pleochroic biotite & biotite clusters. Trace
10.	Biotite		muscovite, zircon, chlorite plates, & hematite, some of which is altered
.1	Muscovite		to goethite.
.1	Chlorite		
.01	Zircon		
.1	Hematite		
.05	Goethite		

Location 0324

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0324
 Outcrop

BATHURST NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5184
 6256939 m N 33.81170 S latitude
 683654 m E 148.9842 E longitude

Illustrations :

Age/Unit= HYANGALA BATHOLITH
 Topography: RUGGED WITH OUTCROP dip= strike=
 Structure : PLUTON
 Field Geology: Granodiorite. Inequigranular, porphyritic in plagioclase, medium grained
 , mesocratic.

Field Rockname: SAMPLE BT0324 GRANODIORITE

PHYSICAL PROPERTIES: GRANODIORITE
 DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
 Whole rock density = 2.65 Mean of 15 in-situ readings = 286 Ch.1= 32321
 Dry density = 2.66 from 125 to 439 ,SD= 110 Ch.2= 2767 2.45 % K2O
 Grain density = 2.68 Laboratory susceptibility = 175 Ch.3= 489 1.60 ppm U
 Porosity = .0 Remanence = 80.00 Ch.4= 516 9.99 ppm Th
 Koenigsberger ratio = 7.62 U/Th= .16
 3.26 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.38	.35	14.21	3.40	.06	.99	3.01	3.68	2.96	.09	.02	.30	99.45
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	645	-6	45	9	15	-5	25	-3	7	6	9	105	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	11	-5	141	-5	10	-3	48	-5	19	30	119		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Granodiorite Hypidiomorphic granular; porphyritic
15.	Quartz		Phenocrysts of anhedral strained quartz aggregates & sericitised
53.	Plagioclase		& kaolinised, zoned plagioclase with interstitial mosaic of quartz,
25.	Orthoclase		orthoclase, & microcline with bent twin lamellae. Minor euhedral
5.	Biotite		hornblende, partially altering to biotite around rims. Rare apatite
.5	Opaque		euhedra, epidote granules & opaque mineral.
2.	Hornblende		
.1	Apatite		
.1	Epidote		

Location 0325

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0325
Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5178
6255867 m N 33.81742 S latitude
705072 m E 149.2157 E longitude

Illustrations :

Age/Unit= BARRY GRANITE

Topography: SMOOTH TO RUGGED UPLAND WITH OUTCROP dip= strike=

Structure : PLUTON

Field Geology: Granodiorite. Medium-grained, equigranular, non porphyritic,
leucocratic. Minor veins of white quartz.

Field Rockname: SAMPLE BT0325 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES
Whole rock density = 2.72
Dry density = 2.70
Grain density = 2.75
Porosity = 1.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 160
from 62 to 314, SD= 69
Laboratory susceptibility = 100
Remanence = 10.00
Koenigsberger ratio = 1.67

GAMMA-RAY SPECTROMETRY

Ch.1= 25881
Ch.2= 2089 1.78 % K20
Ch.3= 412 1.45 ppm U
Ch.4= 426 8.24 ppm Th
U/Th= .18
2.71 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.67	.34	14.65	3.92	.07	.50	3.24	3.29	2.97	.12	.01	.60	99.38

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	559	-6	32	9	7	-5	20	-3	7	7	14	105

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	18	7	205	-5	8	3	26	-5	22	59	160

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Quartz	Granodiorite	Hypidiomorphic granular
50.	Plagioclase		Patchy interconnected strained quartz aggregates amidst abundant, strongly sericitised plagioclase & less common orthoclase. Abundant
15.	Orthoclase		small biotites, often in clusters. Rare opaque minerals. Tiny
5.	Biotite		muscovites liberated by sericitisation of plagioclase. Accessory
.1	Opaque		apatite.
.1	Apatite:		

Location 0326

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0326

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5078

6281495 m N

33.58140 S latitude

729816 m E

149.4762 E longitude

Illustrations :Photomicrograph

Age/Unit= Upper Silurian-Lower Devonian BURRAGA GROUP

Topography: STRIKE RIDGE WITH GROUND LEVEL OUTCROP

dip= strike=

Structure :

Field Geology: Altered ignimbrite. Large infrequent rounded quartz and altered plagioclase phenocrysts set in coarsened micaceous quartzo-feldspathic groundmass with lenticular fragments of compacted pumice.

Field Rockname: SAMPLE BT0326 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.72
Dry density = 2.70
Grain density = 2.73
Porosity = 1.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 213
Remanence = 3.00
Koenigsberger ratio = .23

GAMMA-RAY SPECTROMETRY

Ch.1= 38562
Ch.2= 2962 2.27 % K20
Ch.3= 753 3.09 ppm U
Ch.4= 742 14.30 ppm Th
U/Th= .22
4.87 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.74	0.54	14.84	4.01	0.06	0.97	2.45	1.88	4.06	0.21	0.04	1.00	99.80

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	794	-6	118	14	3	15	82	5	13	78	35	199

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	-20	216	-5	32	4	26	6	88	65	293

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
35.	Quartz	Altered ignimbrite
22.	Plagioclase	Slightly porphyritic; flow banded
5.	Biotite	Rounded to slightly flattened globules of quartz & euhedral altered plagioclase forming large crystals in a groundmass mosaic of equant quartz and feldspar crystals with abundant intergranular biotite & muscovite. Minor clots & discontinuous laminae of epidote. Prominent flow banding defined by alignment of groundmass micas. Partial muscovitisation of plagioclase & these muscovites are not aligned parallel to groundmass muscovite, indicating banding is not tectonic but pre-consolidation. Minor chlorite in large patches of quartz aggregates. Transitional between ignimbrite & hydrothermal rock. Photograph partially altered feldspar euhedra, groundmass, & rolled structure.
1.	Chlorite	
4.	Muscovite	
3.	Epidote	
.1	Apatite	
.1	Sphene	
20.	Orthoclase	

Location 0327

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0327
 Outcrop

BATHURST NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5014
 6294292 m N 33.46307 S latitude
 743441 m E 149.6194 E longitude

Illustrations :

Age/Unit= Lower-Middle Carboniferous BATHURST GRANITE
 Topography: TOPOGRAPHIC LOW. EXCAVATED OUTCROP IN QUARRY. dip= strike=
 Structure : PLUTON
 Field Geology: Adamellite. Inequigranular with large phenocrysts of zoned orthoclase
 up to 10 cm long with dark mineral inclusions parallel to zoning and set
 in a coarse-grained groundmass. Minor fine quartz-rich aplite veins.
 Dark-coloured xenoliths up to 30 cm diameter are present.
 Field Rockname: SAMPLE BT0327 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES					
Whole rock density = 2.68		Mean of 14 in-situ readings =	14913	Ch.1=	43631
Dry density = 2.70		from 12252 to 16776 .SD=	1250	Ch.2=	3642 3.28 X K20
Grain density = 2.71		Laboratory susceptibility =	21098	Ch.3=	645 3.25 ppm U
Porosity = .0		Remanence =	1000.00	Ch.4=	584 11.19 ppm Th
		Koenigsberger ratio =	.79	U/Th=	.29
				4.68	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	64.15	.53	16.52	3.93	.06	1.57	3.44	3.67	4.80	.21	.05	.30	99.22
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	1612	-6	36	14	16	33	29	-3	7	10	20	130	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	18	674	-5	6	-3	69	-5	14	42	154		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
15.	Quartz	Adamellite Porphyritic; hypidiomorphic granular
30.	Orthoclase	Porphyritic in large orthoclase euhedra poikilitically enclosing small hornblende euhedra. Large patches of quartz with internal
41.	Plagioclase	fractures. Euhedral kaolinised & sericitised plagioclase. Abundant
10.	Biotite	green-yellow pleochroic biotite partially altering to chlorite. Minor
3.	Hornblende	hornblende, pleochroic in shades of green, and rarely altering to bright
.1	Sphene	yellow epidote. Accessory sphene particularly common where biotite is
.01	Zircon	chloritised. Scattered magnetite euhedra & minor hematite & goethite.
.1	Apatite	Very rare pyrite.
.5	Magnetite	
.1	Hematite	
.4	Goethite	
.001	Pyrite	

Location 0328

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0328
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5080
6279481 m N 33.59717 S latitude
740596 m E 149.5928 E longitude

Illustrations :

Age/Unit= DAVIES CREEK GRANITE
Topography: GENTLE UPLAND RUGGED IN PLACES dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Leucocratic, medium-grained, non porphyritic, equigranular,
with small amounts of fine muscovite. The biotites exhibit slight
alignment.

Field Rockname: SAMPLE BT0328 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.60 Mean of 7 in-situ readings = 0
Dry density = 2.59 from to ,SD= 540
Grain density = 2.64 Laboratory susceptibility = 2.00
Porosity = 1.7 Remanence = 5.07
Koenigsberger ratio = .06 Heat generation units
Ch.1= 46673
Ch.2= 3714 3.39 % K2O
Ch.3= 751 2.93 ppm U
Ch.4= 753 14.53 ppm Th
U/Th= .20

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.80	.16	12.55	1.79	.01	.12	.72	3.47	4.29	.07	.05	.40	99.44
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	799	-6	76	4	2	-5	26	-3	8	6	15	151	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	5	5	64	-5	18	4	8	-5	34	6	146		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular, tending slightly aplitic
Est. % MINERAL FABRIC: Slightly & sparsely porphyritic & glomeroporphyritic in weakly
30. Quartz sericitised plagioclase set in a groundmass of euhedral sericitised
24. Orthoclase plagioclase & interstitial patchy quartz, orthoclase, and microcline
40. Plagioclase anhedra. Abundant streaks of biotite in linear trails, randomly
3. Biotite oriented & apparently filling early-formed gaps or pore spaces.
1. Muscovite Frequent associated muscovite, aggregates of which also partially
2. Epidote pseudomorph some plagioclases. Rare clots of euhedral and anhedral
.01 Sphene epidote aggregates with minor associated muscovite. Appears to lack
opaque minerals in this section.

Location 0329

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0329
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5230
6268507 m N 33.69808 S latitude
731443 m E 149.4971 E longitude

Illustrations :

Age/Unit= Ordovician ROCKLEY VOLCANICS dip= strike=
Topography: SMOOTH UPLAND WITH OUTCROP
Structure :
Field Geology: Altered basalt. Green, fine-grained altered rock with epidote crystals
up to 1 mm partially pseudomorphing a ferromagnesian phenocryst.
Resembles West Australian Archaean greenstones in appearance.

Field Rockname: SAMPLE BT0329 ALTERED BASALT

PHYSICAL PROPERTIES:

ALTERED BASALT		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 15 in-situ readings = 28307		Ch.1= 10202	
Whole rock density = 2.97		from 8168 to 50139 ,SD= 14682		Ch.2= 977	1.03 % K2O
Dry density = 3.04		Laboratory susceptibility = 25798		Ch.3= 94	.89 ppm U
Grain density = 3.04		Remanence = 4000.00		Ch.4= 50	.91 ppm Th
Porosity = 0		Koenigsberger ratio = 2.58		U/Th= .98	
				.94	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Altered basalt	
		Relict pilotaxitic	
10.	Epidote	Relict phenocrysts of a ferromagnesian mineral pseudomorphed by epidote	
73.	Actinolite	set in a groundmass of felt-like actinolite crystals (possibly	
5.	Chlorite	pseudomorphing original plagioclase microlites) and interstitial quartz.	
5.	Quartz	Patchy microvesicles with fillings of chlorite & calcite. Scattered,	
5.	Calcite	variably-sized magnetite euhedra, in places showing alteration to	
2.	Magnetite	hematite at margins and along cleavages.	
.01	Hematite		

Location 0330

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0330
Outcrop

SAME LOCATION AS 0331
BATHURST

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6272434 m N 33.65812 S latitude air-photo:run-no.= 6-5236
751576 m E 149.7130 E longitude

Illustrations :Photomicrograph

Age/Unit= Ordovician TRIANGLE GROUP
Topography: UPLAND FLANKED BY COLLUVIUM dip=74W strike=023
Structure : STEEPLY DIPPING
Field Geology: Bedded grey slate, siliceous siltstone, arkose and quartzite. Planar,
parallel bedded, marine. Oxidised sulphide mineral in quartzite.

Field Rockname: SAMPLE BT0330 BIOTITE QUARTZITE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.58	Mean of 7 in-situ readings =	0	Ch.1=	25387
Dry density =		from to SD=		Ch.2=	2593 2.62 % K2O
Grain density =		Laboratory susceptibility =	0	Ch.3=	287 1.67 ppm U
Porosity =		Remanence =	0.00	Ch.4=	241 4.59 ppm Th
		Koenigsberger ratio =		U/Th=	.36
				2.42	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Biotite quartzite	
		Massive	
85.	Quartz	Thin bedding & lamination defined by variations in the proportion of quartz, clay, and biotite, variable mixtures of which control the degree of grain growth in quartz-rich layers. Minor mono-minerallic quartz laminae one crystal thick have been squeezed by compaction into discontinuous lenticular boudins. Minor large euhedral limonite pseudomorphs of a former sulphide mineral, possibly pyrite. These have "pressure shadows" of chlorite crystal aggregates or single chlorite crystals fringing them.	
6.	Biotite	Photograph inhibition-dependent coarsening.	
3.	Opaque		
6.	Chlorite		

Location 0331

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0331
Outcrop

SAME LOCATION AS 0330
BATHURST

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6272434 m N air-photo:run-no.= 6-5236
751576 m E 33.65812 S latitude
149.7130 E longitude

Illustrations :

Age/Unit= Ordovician TRIANGLE GROUP
Topography: UPLAND FLANKED BY COLLUVIUM dip=74W strike=023
Structure : STEEPLY DIPPING
Field Geology: Bedded grey slate, siliceous siltstone, arkose and quartzite. Planar,
parallel bedded, marine. Oxidised sulphide mineral in quartzite.

Field Rockname: SAMPLE BT0331 ARKOSE

PHYSICAL PROPERTIES:

	QUARTZITE		
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.58		Mean of 0 in-situ readings =	Ch.1=
Dry density = 2.60		from to SD=	Ch.2= % K2O
Grain density = 2.66		Laboratory susceptibility = 565	Ch.3= ppm U
Porosity = 2.2		Remanence = .50	Ch.4= ppm Th
		Koenigsberger ratio = .01	U/Th=
			Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Arkose
75.	Plagioclase	FABRIC:	Moderately sorted
1.	Quartz		Fine sand-sized subangular plagioclase & rare quartz grains set in a matrix of chlorite, minor biotite & fine cherty silica. Minor
1.	Opaque		smaller opaque grains & rare patches of opaque secondary mineral in
23.	Matrix		small cavities.

Location 0332

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0332
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 505084
6285190 m N 33.54127 S latitude
759625 m E 149.7960 E longitude

Illustrations :

Age/Unit= Lower-Middle Carboniferous BATHURST GRANITE
Topography: GENTLE SLOPING LOWLAND WITH OUTCROP TOR dip= strike=
Structure : PLUTON
Field Geology: Adamellite, Leucocratic, medium-grained, equigranular except for small
specks of biotite and very fine iron oxide.

Field Rockname: SAMPLE BT0332 ADAMELLITE

PHYSICAL PROPERTIES: ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.=.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.51 Mean of 9 in-situ readings = 2638 Ch.1= 81473
Dry density = 2.51 from 376 to 3895, SD= 1080 Ch.2= 5892 4.28 % K2O
Grain density = 2.61 Laboratory susceptibility = 3681 Ch.3= 1720 9.40 ppm U
Porosity = 3.7 Remanence = 50.00 Ch.4= 1496 28.58 ppm Th
Koenigsberger ratio = .23 U/Th= .33
11.67 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 78.00 .09 12.32 .67 .03 .08 .53 3.31 4.54 .03 .02 .20 99.81

TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 107 -6 40 3 10 -5 32 -3 15 5 32 273

TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 7 -5 20 -5 33 12 4 -5 10 9 65

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL FABRIC: Large anhedral orthoclase poikilitically enclosing quartz. Sparse
25. Quartz phenocrystic globules of quartz aggregates lacking strain extinction
40. Orthoclase but having slightly embayed margins. Interstitial anhedral plagioclase,
33. Plagioclase microcline & quartz. Sparingly micaceous with minor biotite & very minor
.1 Muscovite secondary muscovite. Scattered tiny accessory zircon euhedra & minor
1. Biotite scattered infrequent magnetite with rare goethite. Very rare bladed
.1 Zircon
.5 Magnetite
.01 Ilmenite

Location 0333

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0333

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5010

6292165 m N 33.47862 S latitude

758846 m E 149.7856 E longitude

Illustrations :

Age/Unit= Lower-Middle Carboniferous ISABELLA GRANODIORITE
Topography: GENTLY SLOPING LOWLAND AND RUGGED RISES dip= strike=
Structure : CIRCULAR PLUTON
Field Geology: Adamellite. Porphyritic in abundant quartz phenocrysts to 1 cm long.
Numerous large scattered biotite crystals, rare orthoclase phenocrysts
up to 3 cm long are zoned. Small, uncommon dioritic xenoliths.
Leucocratic. Rare small limonite pseudomorphs of a sulphide mineral.

Field Rockname: SAMPLE BT0333 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
Whole rock density = 2.58
Dry density = 2.54
Grain density = 2.60
Porosity = 2.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to SD=
Laboratory susceptibility = 289
Remanence = 20.00
Koenigsberger ratio = 1.15

GAMMA-RAY SPECTROMETRY

Ch.1= 73217
Ch.2= 4985 3.67 % K2O
Ch.3= 1354 5.33 ppm U
Ch.4= 1353 26.10 ppm Th
U/Th= .20
8.59 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.25	.12	12.84	.95	.02	.11	.78	3.24	5.17	.04	.03	.10	99.66

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	133	-6	50	4	-1	-5	31	-3	9	-5	22	249

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	7	-5	77	-5	31	7	10	-5	6	5	76

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
35. Quartz Euhedral sericitised plagioclase amidst patchy quartz & orthoclase
40. Orthoclase anhedral & lesser, smaller plagioclases. Rare ferromagnesian minerals.
24. Plagioclase Biotite is largely pseudomorphed by chlorite with infrequent liberation
.1 Biotite of opaque mineral preferentially along cleavages. Rare skeletal opaque
.5 Chlorite mineral & trace muscovite in the most sericitised plagioclases.
.5 Opaque
.01 Apatite
.1 Muscovite

Location 0334

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0334
Outcrop

SAME LOCATION AS 0335

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5010
6299326 m N 33.41507 S latitude
754812 m E 149.7402 E longitude

Illustrations :Photomicrograph

Age/Unit= Upper Silurian CHESLEIGH FORMATION
Topography: TOPOGRAPHIC LOW WITH POOR OUTCROP dip= strike=
Structure : STEEPLY DIPPING
Field Geology: Quartzite, variably feldspathic; mudstone and chloritic siltstone
interbedded. Planar bedded, marine.

Field Rockname: SAMPLE BT0334 FELDSPATHIC QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.66	Mean of 3 in-situ readings = 272	Ch.1= 23866
Dry density = 2.62	from 125 to 565 ,SD= 253	Ch.2= 1364 .86 % K2O
Grain density = 2.62	Laboratory susceptibility = 37	Ch.3= 471 2.35 ppm U
Porosity = 0	Remanence = 2.00	Ch.4= 429 8.22 ppm Th
	Koenigsberger ratio = .90	U/Th= .29
		3.05 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.78	.50	11.52	2.01	.04	.33	2.26	3.32	1.29	.08	.02	.40	99.54
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	432	-6	49	5	9	-5	41	-3	12	-5	18	39	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	-5	141	-5	7	-3	19	-5	20	45	471		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Quartzite
20.	Quartz	FABRIC:	Porphyroblastic
15.	Rock fragments		Subangular to subrounded grains of slightly strained quartz, recrystallised quartzite, & subrounded to ovoid cloudy sericitised
49.	Matrix		plagioclase with poorly defined twinning & slightly spherulitic
1.	Opaque		extinction. The matrix has a wavy flow structure around fragments and
15.	Plagioclase		consists of biotite, sericite, tiny epidote granules, cherty silica & an opaque mineral. It flows around the quartzite grains, many of which are lenticular.

Location 0335

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0335

SAME LOCATION AS 0334

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5010

6299357 m N 33.41477 S latitude

754915 m E 149.7413 E longitude

Illustrations :

Age/Unit= Upper Silurian

CHESLEIGH FORMATION

Topography: TOPOGRAPHIC LOW WITH POOR OUTCROP

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Quartzite, mudstone, and chloritic siltstone interbedded. Planar bedded, marine.

Field Rockname: SAMPLE BT0335 MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE

DENSITIES
Whole rock density =

Dry density = 2.64

Grain density = 2.74

Porosity = 3.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 2 in-situ readings = 125

from 125 to 125, SD= 0

Laboratory susceptibility = 75

Remanence = .60

Koenigsberger ratio = .13

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2= % K2O

Ch.3= ppm U

Ch.4= ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Quartz	Mudstone	Massive
5.	Chert		
85.	Mud		

Silt-sized quartz grains randomly dispersed throughout mud which partly consists of ultrafine sericite & ?chlorite as well as non-resolvable constituents. Infrequent laminae & lenticular microboudins of cherty quartzite.

Location 0336

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0336
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5088
6284624 m N 33.54302 S latitude
773051 m E 149.9406 E longitude

Illustrations :

Age/Unit= Lower-Middle Carboniferous BATHURST GRANITE
Topography: BOTH SMOOTH LOWLAND AND RUGGED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granite, Equigranular, medium-grained, leucocratic, with small
amounts fine biotite, often in clusters. Slight epidote alteration and
trace limonite pseudomorphs of a sulphide mineral.

Field Rockname: SAMPLE BT0336 GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 2.51
Dry density = 2.55
Grain density = 2.61
Porosity = 2.2

MAGNETIC SUSCEPTIBILITY (S.I.+000001)
Mean of 15 in-situ readings = 1072
from 351 to 2890 ,SD= 720
Laboratory susceptibility = 1507
Remanence = 200.00
Koenigsberger ratio = 2.21

GAMMA-RAY SPECTROMETRY
Ch.1= 70161
Ch.2= 5149 3.90 % K2O
Ch.3= 1179 .12 ppm U
Ch.4= 1562 30.62 ppm Th
U/Th= .00
6.18 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.49	.07	12.73	.55	.03	.03	.41	3.33	4.84	.03	.02	.30	99.83

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	125	-6	34	-1	-1	-5	50	-3	6	5	26	211

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-5	49	-5	25	-3	6	-5	4	-5	43

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Aplitic tending slightly granophyric
Est. % MINERAL
25. Quartz Subhedral to anhedral sericitised plagioclase amidst abundant resorbed
50. Orthoclase quartz & anhedral orthoclase showing extensive kaolinisation. Minor
23. Plagioclase interstitial chlorite, possible pseudomorphous after relict biotite, &
.1 Muscovite frequently forms clusters with epidote aggregates & fine muscovite.
1. Epidote Accessory euhedral apatite and allanite.
1. Chlorite
.2 Apatite
.2 Opaque
.01 Allanite

Location 0337

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0337

Outcrop

SYDNEY

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-178
6266920 m N 33.70183 S latitude
224408 m E 150.0266 E longitude

Illustrations :Photomicrograph

Age/Unit=

Topography: RUGGED UPLAND WITH CLEARED COLLUV SLOPES

dip= strike=

Structure :

Field Geology: Dacite. Porphyritic in plagioclase set in a two-phased groundmass. One is unaltered and dacitic. The other is altered, chlorite-bearing and has minor pyrite. Coexistence of the two gives a clotty, ruffled appearance on weathered surface.

Field Rockname: SAMPLE SY0337 DACITE

PHYSICAL PROPERTIES:

DACITE

DENSITIES
Whole rock density = 2.76
Dry density = 2.78
Grain density = 2.79
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 13 in-situ readings = 30889
from 26389 to 42474 ,SD= 4212
Laboratory susceptibility = 42147
Remanence = 730.00
Koenigsberger ratio = .29

GAMMA-RAY SPECTROMETRY
Ch.1= 25023
Ch.2= 1901 1.59 % K2O
Ch.3= 396 1.39 ppm U
Ch.4= 410 7.93 ppm Th
U/Th= .18
2.58 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Dacite	Porphyritic with flow structure
3.	Quartz		Phenocrysts of quartz, resorbed in places, with more abundant
30.	Plagioclase		plagioclase & minor magnetite set in a variably altered, two-phase
5.	Rock fragments		groundmass. One phase consists of unaltered fine-grained quartz and
59.	Groundmass		feldspar. The other is largely biotite, chlorite & pale green to
3.	Magnetite		colourless pleochroic muscovite with rare granules of garnet. The
.01	Pyrite		chloritic alteration is clustered into patches. Minor groundmass
.1	Calcite		skeletal magnetite & rare pyrite blebs in chlorite patches. Trace
			groundmass calcite. Minor xenoliths of spherulitic rhyolite & igneous
			quartzite. Photograph garnet in groundmass.

Location 0338

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0338

NEAR JENOLAN CAVES

Outcrop

SYDNEY

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8W-40

6256834 m N 33.79275 S latitude

224699 m E 150.0266 E longitude

Illustrations :

Age/Unit=

Topography: RUGGED STEEPLY DISSECTED UPLAND

dip= strike=

Structure :

Field Geology: Andesite interbedded with mudstone. The andesite is porphyritic with phenocrysts of altered hornblende and plagioclase set in a fine-grained, slightly altered groundmass. Small cognate xenoliths present. Minor epidote. The mudstone is scarcely exposed.

Field Rockname: SAMPLE SY0338 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES

Whole rock density = 2.73

Dry density = 2.77

Grain density = 2.77

Porosity = 0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 14526

from 6785 to 19477 ,SD= 3897

Laboratory susceptibility = 9047

Remanence = 160.00

Koenigsberger ratio = .29

GAMMA-RAY SPECTROMETRY

Ch.1= 30311

Ch.2= 2237 1.86 % K2O

Ch.3= 475 1.83 ppm U

Ch.4= 478 9.23 ppm Th

U/Th= .20

3.13 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	60.74	.75	15.58	5.99	.11	2.82	5.25	2.86	3.00	.25	.09	2.30	99.73

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	934	-6	43	21	32	44	43	6	9	14	18	93

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	22	-20	456	6	11	3	124	11	33	55	175

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Andesite

Est. %	MINERAL	FABRIC:
2.	Quartz	Porphyritic; glomeroporphyritic in places
10.	Plagioclase	Phenocrysts of plagioclase partially to completely altered to clay, epidote & quartz, as well as frequent hornblende partially altered
8.	Hornblende	to a mosaic of less coloured secondary hornblende, minor chlorite and epidote. Rare microphenocrysts of fractured quartz & less frequent magnetite. The groundmass is slightly sericitised & consists of
.1	Biotite	dehydrified, slightly micrographic quartz & feldspar with smaller hornblende & minor magnetite. Very rare chalcopyrite blebs.
5.	Epidote	
74.	Groundmass	
.8	Magnetite	
.1	Hematite	
.001	Chalcopyrite	

Location 0339

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0339
Outcrop

ON SHORES OF LAKE
BATHURST

1:250,000

sheet area
6264564 m N
762258 m E

sheet area

NSW GDOM=1

air-photo:run-no.= 6-5238

33.72643 S latitude
149.8304 E longitude

Illustrations :

Age/Unit= OBERON GRANITE
Topography: SMOOTH EVEN-SLOPING UPLAND WITH TORS dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, non porphyritic, coarse-grained, melanocratic
with abundant hornblende and lesser biotite. Frequent dioritic
xenoliths.

Field Rockname: SAMPLE BT0339 ADAHELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
Whole rock density = 2.69
Dry density = 2.69
Grain density = 2.70
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 23578
from 19603 to 29342, SD= 2492
Laboratory susceptibility = 17090
Remanence = 220.00
Koenigsberger ratio = .21

GAMMA-RAY SPECTROMETRY
Ch.1= 42535
Ch.2= 3.71 3.39 x K2O
Ch.3= 725 3.95 ppm U
Ch.4= 632 12.08 ppm Th
U/Th= .33
5.28 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	57.56	1.07	15.87	8.05	.15	4.36	5.17	3.59	2.94	.41	.03	.50	99.70

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	616	-6	75	31	142	-5	53	-3	13	37	9	134

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	21	-5	360	6	11	6	147	-5	19	76	200

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. X MINERAL FABRIC: Euhedral, scarcely altered, zoned plagioclase amidst anhedral quartz
20. Quartz & orthoclase. Abundant euhedral hornblende with associated accessory
39. Plagioclase sphenes & minor biotite with frequent inclusions of apatite. Minor
30. Orthoclase magnetite subhedra altering to hematite along cleavage. Accessory zoned
3. Biotite allanite euhedra. Dioritic xenolith present in specimen, and this could
7. Hornblende explain discrepancy between this description and the chemical analysis!
.1 Sphenes
.1 Apatite
1. Magnetite
.01 Hematite
.01 Allanite

Location 0340

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0340
 Outcrop

BATHURST NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5162
 6251768 m N 33.84233 S latitude
 759729 m E 149.8069 E longitude

Illustrations :Photomicrograph

Age/Unit= BLACK SPRINGS GRANODIORITE
 Topography: GENTLY SLOPING LOWLAND dip= strike=
 Structure : PLUTON
 Field Geology: Granophyre. Inequigranular, porphyritic in large phenocrysts of quartz,
 some with 1 mm wide reaction rims adjacent to the medium-grained
 quartzo-feldspathic groundmass. Scattered hornblende often in clusters
 up to 1 cm diameter with lesser biotite.
 Field Rockname: SAMPLE BT-0340 GRANOPHYRE

PHYSICAL PROPERTIES: GRANOPHYRE
 DENSITIES MAGNETIC SUSCEPTIBILITY (S.I. x .000001) GAMMA-RAY SPECTROMETRY
 Whole rock density = 2.72 Mean of 9 in-situ readings = 20 Ch.1= 27140
 Dry density = 2.68 from 0 to 188 SD= 62 Ch.2= 2096 1.71 x K2O
 Grain density = 2.68 Laboratory susceptibilities = 201 Ch.3= 488 2.50 ppm U
 Porosity = 0 Remanence = .20 Ch.4= 439 8.41 ppm Th
 Koenigsberger ratio = .02 U/Th= .30
 3.37 Heat generation units

CHEMISTRY:
 MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
 Weight % 68.53 .58 13.80 5.19 .06 1.08 3.08 3.11 2.75 .14 .05 1.20 99 55
 TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
 p.p.m. 612 -6 60 13 16 -5 43 -3 7 9 6 73
 TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
 p.p.m. 22 7 169 -5 10 3 75 -5 29 25 193

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Granophyre
23.	Quartz	FABRIC:	Granophyric
45.	Plagioclase		Sparse rounded phenocrysts of considerably strained & resorbed quartz amidst a graphic intergrowth of quartz & orthoclase which is slightly kaolinised. The intergrowth is not continuous throughout the rock due to abundance of euhedral to subhedral strongly sericitised plagioclase, slightly epidotised in places. Infrequent clusters of ferromagnesian minerals including euhedral hornblende which is very frequently altered to epidote & chlorite. Some chlorite pseudomorphs after volcanic biotite with kinked cleavages. Minor opaque oxide. Photograph volcanic quartz phenocrysts and chloritised kinked biotite.
20.	Orthoclase		
3.	Hornblende		
1.	Epidote		
5.	Chlorite		
1.	Opaque		

Location 0341

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0341
Outcrop

AT THE PINNACLE-MT CANOBLAS NEAR ORANGE

BATHURST

NSW SDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5126

6310561 m N 33.32798 S latitude
685771 m E 148.9959 E longitude

Illustrations :Several photos

Age/Unit= Tertiary

Topography: VOLCANIC RELIEF WITH SURROUNDING TOPOGRAPHIC HIGH dip= strike=

Structure : PLUG

Field Geology: Trachyte. Porphyritic in orthoclase, rare quartz and a ferromagnesian mineral set in a light-coloured, quartzo-feldspathic groundmass. Columnar jointed.

Field Rockname: SAMPLE BT0341 TRACHYTE

PHYSICAL PROPERTIES:

TRACHYTE

DENSITIES
Whole rock density = 2.44
Dry density = 2.45
Grain density = 2.64
Porosity = 7.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 3681
from 2513 to 5277 ,SD= 772
Laboratory susceptibility = 3179
Remanence = 2600.00
Koenigsberger ratio = 13.63

GAMMA-RAY SPECTROMETRY

Ch.1= 51364
Ch.2= 6001 6.09 % K20
Ch.3= 585 1.58 ppm U
Ch.4= 646 12.54 ppm Th
U/Th= .13
4.51 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	64.75	.35	15.70	5.30	.11	.03	.87	6.38	5.47	.05	.09	.50	99.60

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	98	-6	96	4	8	28	56	6	99	-5	17	101

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	3	-20	-3	8	14	-3	5	10	42	140	1062

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
.1	Orthoclase	Trachyte	Trachytic
1.	Rock fragments	Rare sparse phenocrysts of quartz, orthoclase, & smaller aegerine set in a fine-grained groundmass of plagioclase laths, an altered, non-resolvable clay pseudomorph of a former ferromagnesian mineral, and sparse ilmenite.	
.1	Quartz		
.01	Aegerine		
99.	Groundmass		

Location 0342

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0342
Outcrop

TOP OF THE PINNACLE
BATHURST

NSW GDOM-1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5126
6310796 m N 33.32587 S latitude
685720 m E 148.9953 E longitude

Illustrations :Several photos

Age/Unit= Tertiary
Topography: PLUG dip= strike=
Structure : PLUG
Field Geology: Trachyte. Porphyritic in orthoclase, rare quartz and a ferromagnesian mineral set in a light-coloured, quartzo-feldspathic groundmass.
Columnar jointed.

Field Rockname: SAMPLE BT0342 PORPHYRITIC TRACHYTE

PHYSICAL PROPERTIES:

TRACHYTE
DENSITIES
Whole rock density = 2.49
Dry density = 2.53
Grain density = 2.55
Porosity = .0
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 7435
from 5026 to 9424 SD= 1260
Laboratory susceptibility = 8532
Remanence = 3300.00
Koenigsberger ratio = 6.45
GAMMA-RAY SPECTROMETRY
Ch.1= 34910
Ch.2= 4406 4.72 % K20
Ch.3= 287 .81 ppm U
Ch.4= 314 6.09 ppm Th
U/Th= .13
2.62 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	62.31	.57	16.34	5.52	.09	.23	1.64	5.72	5.73	.14	.06	1.30	99.65

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	872	-6	87	6	-1	49	88	7	63	-5	14	68

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	12	-20	37	7	7	-3	6	14	64	154	547

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. X	MINERAL	NAME:
		Trachyte
	FABRIC:	Porphyritic; trachytic
3.	Quartz	Sparse phenocrysts of globular, strained, internally resorbed quartz
10.	Orthoclase	with later fractures & abundant glomeroporphyritic orthoclase.
5.	Rock fragments	Small uncommon plagioclase & augite microphenocrysts. Minor
3.	Augite	xenoliths of coarse quartz-orthoclase rock & igneous hydrothermal
77.	Groundmass	quartzite. The groundmass consists of plagioclase laths with minor
1.	Ilmenite	interstitial altered ferromagnesian mineral & subhedral ilmenite
1.	Plagioclase	which also occurs as microphenocrysts, and minor magnetite.
.1	Magnetite	

Location 0343

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0343

200M EAST OF DAM SPILLWAY

Outcrop

BATHURST

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5124

6309181 m N

33.33817 S latitude

698381 m E

149.1316 E longitude

Illustrations :

Age/Unit=

Topography: LOW RISE ON LOWLAND

dip= strike=

Structure :

Field Geology: Granophyre, Equigranular, medium-grained melanocratic, altered in places with streaks of epidote. Strongly magnetic.

Field Rockname: SAMPLE BT0343 GRANOPHYRE

PHYSICAL PROPERTIES:

GRANOPHYRE

DENSITIES

Whole rock density = 2.86

Dry density = 2.86

Grain density = 2.86

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 35307

from 13069 to 55292, SD= 13484

Laboratory susceptibility = 37133

Remanence = 3100.00

Koenigsberger ratio = 1.39

GAMMA-RAY SPECTROMETRY

Ch.1= 23062

Ch.2= 2608

Ch.3= 188 2.81 % K2O

Ch.4= 139 1.32 ppm U

U/Th= .50

1.91 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granophyre	
		Granophyric	
10.	Quartz		Patchy skeletal quartz, resorbed & graphically & rarely micro-
68.	Plagioclase		graphically intergrown with strongly sericitised plagioclase. Numerous
7.	Augite		plagioclase euhedra with interstitial euhedral to anhedral augite.
5.	Biotite		Minor resorbed biotite variably to completely chloritised. Unaltered
7.	Chlorite		biotites have skeletal appearance. Sparse accessory apatite euhedra.
.1	Apatite		Uniformly distributed magnetite with rare hematite & goethite
3.	Magnetite		alteration. Resorbed biotite in places.

Location 0344

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0344
Outcrop

SYDNEY NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6W-5)
6283015 m N 33.55973 S latitude
235767 m E 150.1538 E longitude

Illustrations :

Age/Unit= Lower Carboniferous BATHURST GRANITE
Topography: SMOOTH CONVEX-SLOPING UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, non porphyritic, coarse-grained. Mesocratic.
Scattered prismatic euhedral hornblende and minor large plates of
biotite. Few small xenoliths of fine-grained dark-coloured igneous rock.

Field Rockname: SAMPLE SY0344 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 3.14 Ch.1= 51476
Dry density = 2.63 Mean of 15 in-situ readings = 24638 Ch.2= 4480 3.82 % K2O
Grain density = 2.66 from 18786 to 30159, SD= 3209 Ch.3= 809 .54 ppm U
Porosity = 1.2 Laboratory susceptibility = 33401 Ch.4= 1033 20.21 ppm Th
Remanence = 350.00 U/Th= .03
Koenigsberger ratio = .17 4.65 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.63	.51	15.21	3.23	.06	1.22	3.12	3.54	3.90	.17	.02	.30	99.90

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	617	-6	58	13	5	-5	35	-3	7	7	14	140

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	-5	378	-5	47	-3	62	-5	13	26	119

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
20. Quartz
40. Orthoclase
30. Plagioclase
3. Hornblende
5. Biotite
.1 Sphene
.01 Apatite
.5 Chlorite
1.05 Titanmagnetite
Ragged phenocrysts of plagioclase, orthoclase often poikilitically enclosing quartz, & smaller infrequent anhedral, slightly resorbed quartz. Abundant interstitial plagioclase, sericitised in contrast to phenocrysts, as well as anhedral kaolinised orthoclase & rounded quartz blebs. Euhedral hornblende, in places partially breaking down to smaller aggregates, with associated liberation of sphene & minor magnetite. Scattered variably-altered biotite. Minor accessory sphene & apatite. Patchy clusters of scattered titanmagnetite with rare inclusions of pyrite.

Location 0345

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0345
Outcrop

SYDNEY NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6W-50
6279677 m N 33.59003 S latitude
236686 m E 150.1627 E longitude

Illustrations :Photomicrograph

Age/Unit= Lower Carboniferous
Topography: STEEPLY-SLOPING UPLAND dip= strike=
Structure : PLUTON
Field Geology: Scattered large hornblende phenocrysts set in a dioritic,
medium-grained groundmass containing hornblende, minor pyroxene and
visible magnetite.

Field Rockname: SAMPLE SY0345 HORNBLLENDE GABBRO

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.99	Mean of 15 in-situ readings =	94863	Ch.1=	2699
Dry density =	3.00	from 56799 to 124281, SD=	18628	Ch.2=	158 .11 % K2O
Grain density =	3.00	Laboratory susceptibility =	*****	Ch.3=	56 .46 ppm U
Porosity =	0	Remanence	12000.00	Ch.4=	36 .67 ppm Th
		Koenigsberger ratio	= 1.68	U/Th=	.68
					.42 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
		Hornblende Gabbro
	FABRIC:	Relict sub-ophitic
60.	Plagioclase	Interlocking laths of unaltered plagioclase partially enclosed in
25.	Hornblende	anhedral augite breaking down to hornblende, particularly at margins
11.	Augite	& to bleb-like & skeletal magnetite & pyrite, in places with
3.	Magnetite	very rare chalcopyrite. Some magnetite blebs form large patches. Rare
1.	Pyrite	accessory apatite euhedra. Rims of pyrite occur around some magnetite
.1	Chalcopyrite	coronas surrounding hornblende.
.1	Apatite	Photograph augite breakdown to hornblende & opaque

Location 0346

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0346
Outcrop

SYDNEY NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9W-54
6240313 m N 33.94195 S latitude
226214 m E 150.0378 E longitude

Illustrations :

Age/Unit= Lower Carboniferous BATHURST GRANITE
Topography: FLAT TREE-COVERED DISSECTED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granite. Equigranular, non-porphyrific, very coarse-grained. Quartz-
rich. Leucocratic with minor biotite.

Field Rockname: SAMPLE SY0346 GRANITE

PHYSICAL PROPERTIES:

	GRANITE		
DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY	
Whole rock density = 3.25	Mean of 15 in-situ readings = 2852	Ch.1= 47970	
Dry density = 2.55	from 942 to 4335 ,SD= 1018	Ch.2= 4184	3.76 % K2O
Grain density = 2.59	Laboratory susceptibility = 3970	Ch.3= 666	1.00 ppm U
Porosity = 1.6	Remanence = 280.00	Ch.4= 803	15.67 ppm Th
	Koenigsberger ratio = 1.18	U/Th= .06	
		4.15	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.08	.24	13.85	1.21	.06	.20	.64	3.50	5.25	.06	.02	.50	99.59
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	1040	-6	91	2	5	-5	72	-3	16	9	26	181	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	12	-5	164	-5	12	-3	8	-5	39	18	175		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Granite
Est. %	FABRIC:	Hypidiomorphic granular
44.	Quartz	Large patches of globular interconnected quartz showing partial
40.	Orthoclase	resorption. Large patches of interstitial anhedral kaolinised
15.	Plagioclase	orthoclase. Smaller euhedral to subhedral sericitised plagioclase
1.	Biotite	cores with clear albite rims. Minor biotite showing slight marginal
.2	Titanmagnetite	alteration to chlorite & minor limonitisation due to weathering.
.1	Apatite	Rare accessory apatite & zircon. Minor titanmagnetite with slight
.01	Zircon	alteration to hematite.

Location 0347

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0347
Outcrop

HOLLONGONG

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3W-244
6203307 m N 34.27635 S latitude
230412 m E 150.0717 E longitude

NSW GDOM=1

Illustrations :Photomicrograph

Age/Unit= Lower-Middle Devonian

BINDOOK PORPHYRY

Topography:

dip= strike=

Structure : PROBABLY GENTLE DIP

Field Geology: Ignimbrite with phenocrysts of quartz, feldspar, and a ferromagnesian mineral set in a fine-grained groundmass.

Field Rockname: SAMPLE WL0347 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.69
Dry density = 2.73
Grain density = 2.73
Porosity = 0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 13521
from 8670 to 16461 ,SD= 2086
Laboratory susceptibility = 12478
Remanence = 170.00
Koenigsberger ratio = .23

GAMMA-RAY SPECTROMETRY

Ch.1= 34841
Ch.2= 3006 2.71 % K2O
Ch.3= 522 2.30 ppm U
Ch.4= 501 9.64 ppm Th
U/Th= .24
3.69 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.68	0.62	15.36	5.01	0.09	1.83	4.66	2.50	3.01	0.14	0.05	1.00	99.94

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	778	-6	54	15	-1	20	54	4	8	63	20	118

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	18	-20	312	-5	19	-3	112	-5	29	53	186

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
23.	Quartz	Ignimbrite	Porphyritic
5.	Plagioclase		Phenocrysts of deeply-embayed unstrained volcanic quartz, zoned and commonly twinned orthoclase, fractured plagioclase, augite partially altering to hypersthene which is chloritised, hypersthene, & chlorite pseudomorphs of biotite. Plagioclase is partly glomeroporphyritic and kaolinised. The groundmass consists of devitrified, very fine-grained quartz & feldspar clouded by slight sericitic alteration. Minor micropheocrysts of ilmenite & hematite. Rare magnetite & pyrite.
5.	Hypersthene		
3.	Augite		
5.	Orthoclase		
55.	Groundmass		
.01	Zircon		
.7	Magnetite		Photograph resorbed quartz.
3.	Chlorite		
.2	Hematite		
.1	Pyrite		
.3	Ilmenite		

Location 0348

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0348
Outcrop

WOLLONGONG NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-62
6195185 m N 34.35055 S latitude
234477 m E 150.1133 E longitude

Illustrations :

Age/Unit= Lower Carboniferous BATHURST GRANITE
Topography: STEEP RUGGED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adameellite. Quartz-rich with large phenocrysts up to 1cm across.
Inequigranular, leucocratic, with minor biotite and hornblende.

Field Rockname: SAMPLE WL0348 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES
Whole rock density = 2.67
Dry density = 2.65
Grain density = 2.67
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 11184
from 6408 to 14639 ,SD= 2241
Laboratory susceptibility = 12176
Remanence = 2350.00
Koenigsberger ratio = 3.22

GAMMA-RAY SPECTROMETRY
Ch.1= 43003
Ch.2= 3393 2.98 % K2O
Ch.3= 629 2.51 ppm U
Ch.4= 626 12.07 ppm Th
U/Th= .21
4.29 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.12	.34	14.44	2.52	.04	.66	3.15	3.18	3.52	.09	.02	.80	99.88

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	813	-6	66	10	7	-5	41	-3	7	6	17	124

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	-5	211	6	11	4	35	-5	25	22	136

DESCRIPTION OF THIN CR POLISHED THIN SECTION

NAME: Adameellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
30. Quartz Large globular patches of ragged resorbed quartz, unstrained but with
30. Orthoclase tiny microfractures lined by opaque dust. These patches are spatially
35. Plagioclase separated. Abundant kaolinised orthoclase & kaolinised and
2. Biotite sericitised plagioclase. Minor hornblende & biotite, the latter
2. Hornblende altering to minor chlorite & muscovite in places. Rare accessory
.1 Apatite apatite frequently occurring as inclusions in biotite, & infrequent
.01 Zircon zircon. Minor magnetite slightly altering to hematite.
1. Magnetite

Location 0349

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0349

Outcrop

HOLLONGONG

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-121

6177666 m N

34.50817 S latitude

233828 m E

150.1008 E longitude

Illustrations :

Age/Unit=

Topography: SMOOTH DISSECTED UPLAND WITH BOLD OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Inequigranular. Porphyritic in plagioclase. Coarse-grained.
Melanocratic owing to abundant biotite. Speckled appearance.

Field Rockname: SAMPLE WL0349 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.65

Ch.1= 41935

Dry density = 2.65

Mean of 15 in-situ readings = 311

Ch.2= 3681 3.20 X K20

Grain density = 2.67

from 0 to 691, SD= 199

Ch.3= 714 3.30 ppm U

Porosity = .0

Laboratory susceptibility = 138

Ch.4= 672 12.91 ppm Th

Remanence = 3.00

U/Th= .26

Koenigsberger ratio = .36

4.98 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.07	.63	15.00	4.10	.06	1.36	2.73	3.57	3.55	.19	.04	.30	99.60

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	562	-6	57	12	18	-5	60	-3	14	16	22	136

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	12	8	153	-5	16	6	60	-5	31	50	227

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Quartz	Adamellite	Hypidiomorphic granular
25.	Orthoclase		Euhedral, zoned, clear plagioclase with interstitial patches of
35.	Plagioclase		anhedral orthoclase poikilitically enclosing small euhedral
10.	Biotite		brown biotite, frequently in patches, & rare euhedral yellowish-
.1	Apatite		brown hornblende. Minor accessory apatite euhedra, frequently as
.1	Hornblende		inclusions in biotite. Rare chloritisation of a few biotites.

Location 0350

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0350

Outcrop

WOLLONGONG

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-110

6165075 m N

34.62138 S latitude

233097 m E

150.0889 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLE SLOPES POOR OUTCROP

dip= strike=

Structure :

Field Geology: Poorly exposed shale, siltstone, sandstone, and muscovite quartzite.

Field Rockname: SAMPLE WL0350 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.57
Dry density = 2.49
Grain density = 2.64
Porosity = 5.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 111
from 0 to 628, SD= 200
Laboratory susceptibility = 113
Remanence = 1.00
Koenigsberger ratio = .15

GAMMA-RAY SPECTROMETRY

Ch.1= 34736
Ch.2= 2555 2.03 % K2O
Ch.3= 597 2.11 ppm U
Ch.4= 617 11.93 ppm Th
U/Th= .18
3.80 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
60.	Quartz	Quartzose sandstone	Moderately sorted
5.	Muscovite		Subangular to subrounded quartz, sericitised feldspar & quartzite grains of medium to coarse sand size. Abundant plates of randomly oriented detrital muscovite & rare smaller opaque mineral and detrital tourmaline. The matrix consists of sericite & fine chlorite which is slightly limonitised by weathering.
.01	Tourmaline		
15.	Matrix		
1.	Opaque		
5.	Feldspar		
14.	Rock fragments		

Location 0351

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0351
Outcrop

WOLLONGONG NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-110
6168901 m N 34.58610 S latitude
229956 m E 150.0559 E longitude

Illustrations :

Age/Unit=
Topography: SMOOTH LOWLAND IN AN UPLAND AREA dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Leucocratic. Inequigranular. Porphyritic in quartz. Minor biotite and altered hornblende which is selectively weathered out from exposed surfaces.

Field Rockname: SAMPLE WL0351 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.65	Mean of 15 in-situ readings =	10128	Ch.1=	35870
Dry density =	2.62	from 3895 to 19792 ,SD=	3869	Ch.2=	3075 2.69 % k20
Grain density =	2.66	Laboratory susceptibility =	8670	Ch.3=	532 .79 ppm U
Porosity =	1.4	Remanence	370.00	Ch.4=	642 12.52 ppm Th
		Koenigsberger ratio	.71	U/Th=	.06
				3.24	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.40	.29	15.09	2.31	.04	.65	3.22	3.04	3.93	.08	.05	.30	99.40
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	816	-6	58	4	12	-5	47	-3	7	9	21	137	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	12	6	192	-5	20	-3	35	-5	21	30	143		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Adamellite	FABRIC: Porphyritic
15.	Quartz	Porphyritic in large, partially embayed anhedral, slightly strained quartz & euhedral very slightly sericitised, zoned plagioclase.	
45.	Plagioclase	Interstitial aggregate of quartz, orthoclase & plagioclase. Minor hornblende, considerably altered to chlorite & rare epidote.	
35.	Orthoclase	Biotite is dark brown & also partially chloritised. Rare accessory zircon & apatite. Minor scattered magnetite with infrequent hematite lamellae & slight alteration to goethite. Very rare pyrite.	
2.	Biotite		
1.	Hornblende		
.1	Epidote		
.1	Chlorite		
.01	Zircon		
.1	Apatite		
1.	Magnetite		
.001	Pyrite		

Location 0352

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0352
Outcrop

GOULBURN GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-22
6159458 m N 34.67233 S latitude
765520 m E 149.8978 E longitude

Illustrations :

Age/Unit= LOCKYERSLEIGH ADAMELLITE
Topography: LOWLAND FLATS DRAINED BY SLUGGISH CREEK dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Inequigranular, porphyritic in orthoclase. Coarse-grained.
Mesocratic with scattered hornblende, biotite and smaller oxides.

Field Rockname: SAMPLE GB0352 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES
Whole rock density = 2.67
Dry density = 2.64
Grain density = 2.65
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 27356
from 23184 to 29091, SD= 1724
Laboratory susceptibility = 27306
Remanence = 330.00
Koenigsberger ratio = .20

GAMMA-RAY SPECTROMETRY

Ch.1= 49012
Ch.2= 3765 2.99 % K20
Ch.3= 904 4.00 ppm U
Ch.4= 866 16.66 ppm Th
U/Th= .24
6.00 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	67.61	.65	15.14	3.85	.07	1.75	2.91	3.43	3.92	.24	.04	.10	99.71
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	890	-6	67	16	27	-5	54	-3	10	14	13	126	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	9	-5	560	-5	18	4	66	-5	18	31	174		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Adamellite
	FABRIC:	Hypidiomorphic granular
Est. %	MINERAL	
35.	Quartz	Large globular interconnected ragged patches of quartz. Anhedral
25.	Orthoclase	poikilitic orthoclase with euhedral, zoned plagioclase inclusions.
31.	Plagioclase	Euhedral plagioclase largely unaltered, whereas orthoclase is
3.	Hornblende	moderately kaolinised. Minor euhedral hornblende & biotite plates,
5.	Biotite	frequently with inclusions & often in clusters. Rare accessory
.1	Apatite	euhedral sphene & apatite, & very rare tiny zircon. Minor scattered
.1	Sphene	magnetite & very rare associated hematite. Trace allanite euhedra.
.001	Zircon	
.8	Magnetite	
.01	Hematite	
.01	Allanite	

Location 0353

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0353
Outcrop

GOULBURN GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-26
6163282 m N 34.64103 S latitude
753095 m E 149.7612 E longitude

Illustrations :

Age/Unit= FOREST LODGE GRANITE
Topography: TOPO LOWLAND dip= strike=
Structure : PLUTON
Field Geology: Granophyre. Equigranular, non porphyritic, medium-grained. Melanocratic
with abundant fine ferromagnesian minerals.

Field Rockname: SAMPLE GB0353 GRANOPHYRE

PHYSICAL PROPERTIES:

GRANOPHYRE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.78 Mean of 15 in-situ readings = 2902 Ch.1= 32654
Dry density = 2.80 from 1005 to 6346,SD= 1542 Ch.2= 2824 2.62 % K2O
Grain density = 2.82 Laboratory susceptibility = 1759 Ch.3= 416 .94 ppm U
Porosity = .0 Remanence = 140.00 Ch.4= 475 9.24 ppm Th
Koenigsberger ratio = 1.33 2.75 U/Th= .10 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	58.60	.70	14.41	6.65	.10	4.93	6.33	2.57	3.32	.20	.04	1.40	99.26
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	677	-6	47	32	199	62	27	-3	7	57	15	97	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	19	17	330	-5	14	3	153	-5	23	33	150		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granophyre
FABRIC: Granophyric
Est. % MINERAL: Euhedral, strongly sericitised plagioclase, frequently zoned & set
12. Quartz amidst interstitial kaolinised orthoclase & skeletal quartz which
30. Orthoclase are graphically intergrown. Abundant ferromagnesian minerals. Relict
37. Plagioclase hornblende is altered to a mass of chlorite & less common tremolite
15. Chlorite & yellow epidote. Relict biotite is completely chloritised. Minor
5. Epidote hematite & rare smaller magnetite altering to hematite along cleavages.
3. Tremolite Trace pyrite blebs in altered hornblendes.
2. Hornblende
.1 Apatite
.5 Hematite
.1 Magnetite
.001 Pyrite

Location 0354

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0354
Outcrop

GOULBURN sheet area 1:250,000
6184311 m N
755647 m E

TARALGA sheet area 1:100,000
NSW GDDP=1
air-photo:rn-no.= 7-5169
34.45098 S latitude
149.7827 E longitude

Illustrations :

Age/Unit= Upper Devonian LAMBIE GROUP
Topography: EVEN AND GENTLE SLOPES WITH LITTLE SCROP dip=28W strike=002
Structure : GENTLY DIPPING
Field Geology: Quartzose sandstone. Medium to coarse-grained. Medium bedded in planar units up to 10 cm. thick. Well washed. Porous at surface due to leaching of its cement.

Field Rockname: SAMPLE GB0354 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I. x .0000C1)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.60	Mean of 9 in-situ readings =	0	Ch.1=	24387
Dry density =	2.61	from to ,SD=		Ch.2=	1520 1.03 % K2O
Grain density =	2.70	Laboratory susceptibility =	238	Ch.3=	414 .08 ppm U
Porosity =	3.3	Remanence =	.70	Ch.4=	545 10.68 ppm Th
		Koenigsberger ratio =	.05	U/in-	ni
				2.10	heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
58.	Quartz	Quartzose sandstone	Moderately sorted
40.	Rock fragments		Subangular to subrounded tightly packed quartz grains as well as similarly-sized clasts of quartzite & sericite quartzite.
1.	Muscovite		Grains have a brown opaque coating. The scarce matrix consists of cherty silica & thin films of sericite. Minor detrital muscovite.
1.	Matrix		

Location 0355

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0355

Outcrop

GOULBURN TARALGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5169
6185323 m N 34.44182 S latitude
755822 m E 149.7843 E longitude

Illustrations :

Age/Unit= Tertiary
Topography: FLAT WITH ROCKY TOP AND EDGES dip= strike=
Structure : HORIZONTAL FLOW
Field Geology: Basalt, Porphyritic in olivine which is set in a black, fine-grained
groundmass.

Field Rockname: SAMPLE G80355 BASALT

PHYSICAL PROPERTIES:

BASALT
DENSITIES
Whole rock density = 2.93
Dry density = 2.96
Grain density = 2.98
Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I..000001)

Mean of 15 in-situ readings = 10325
from 4523 to 15456 ,SD= 2981
Laboratory susceptibility = 11347
Remanence = 5000.00
Koenigsberger ratio = 7.34

GAMMA-RAY SPECTROMETRY

Ch.1= 18893
Ch.2= 1323 1.02 % K2O
Ch.3= 348 1.88 ppm U
Ch.4= 305 5.83 ppm Th
U/Th= .32
2.39 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Olivine	Basalt	Pilotaxitic
53.	Plagioclase		Phenocrysts of anhedral olivine, altering to bowlingite, but lacking opaque oxides along fractures. Numerous groundmass plagioclase laths & finer microlites together with small augite granules, slight
20.	Augite		chlorite alteration & minor nepheline. Frequent titanmagnetite
3.	Nepheline		euhedra scattered throughout groundmass.
5.	Chlorite		
4.	Titanmagnetite		

Location 0356

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0356
Outcrop

GOULBURN sheet area 1:250,000
6191887 m N
746744 m E

TARALGA sheet area 1:100,000
34.38490 S latitude
149.6837 E longitude

NSW GDOM=1
air-photo:run-no.= 6-5153

Illustrations :

Age/Unit= Ordovician
Topography: GENTLY UNDULATING WITH OUTCROP IN CREEKS dip=70W strike=003
Structure : STEEPLY TILTED
Field Geology: Shale, siltstone, greywacke, quartzite and micaceous quartzite.
Quartzites have stratabound, cross-cutting quartz veinlets. Thin to
medium and planar bedded. Detrital muscovite abundant on bedding
surfaces.
Field Rockname: SAMPLE GB0356 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.68
Dry density = 2.69
Grain density = 2.76
Porosity = 2.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 188
from 0 to 502, SD= 162
Laboratory susceptibility = 37
Remanence = .40
Koenigsberger ratio = .18

GAMMA-RAY SPECTROMETRY

Ch.1= 48109
Ch.2= 3938 3.23 % K20
Ch.3= 847 2.66 ppm U
Ch.4= 904 17.51 ppm Th
U/Th= .15
5.37 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Siltstone	Poorly sorted
2.	Plagioclase		Subangular to subrounded dispersed quartz grains forming an open framework with lesser plagioclase. The matrix is mud consisting of chlorite, sericite & ?chemical quartz. Minor detrital muscovite, & rare tourmaline & zircon.
3.	Muscovite		
.001	Zircon		
.01	Tourmaline		
1.	Opaque		
79.	Matrix		

Location 0357

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0357
Outcrop

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5066
6206047 m N 34.25932 S latitude
738243 m E 149.5874 E longitude

Illustrations :

Age/Unit= WOLOGORONG GRANITE
Topography: GENTLY SLOPING DISSECTED UPLAND dip= strike=
Structure :
Field Geology: Gneissic granite. Slightly lineated due to tendency of biotite to cluster into rod-shaped aggregates. Medium-grained.

Field Rockname: SAMPLE GB0357 GNEISSIC GRANITE

PHYSICAL PROPERTIES: GRANITE

DENSITIES Whole rock density = 2.53
Dry density =
Grain density =
Porosity =
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 10 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =
GAMMA-RAY SPECTROMETRY
Ch.1= 56311
Ch.2= 5029 4.41 % K2O
Ch.3= 863 1.20 ppm U
Ch.4= 1049 20.47 ppm Th
U/Th= .06
5.24 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.38	.12	12.27	1.90	.04	.07	1.01	3.43	4.30	.03	.05	.70	99.31
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	510	-6	62	3	3	-5	66	-3	10	15	33	210	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	5	29	6	23	4	3	-5	89	47	197		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Gneissic granite
FABRIC:	Porphyroblastic; gneissose with mylonite veinlets
Est. %	Ovoid porphyroblasts of orthoclase & microcline with interstitial anhydral plagioclase in patches of strained quartz which has undergone grain growth to a mosaic of equant grains. Clusters of interstitial biotite crystal aggregates often with edges which fringe porphyroblasts. Very rare accessory garnet. Mylonitic veinlets of brecciated feldspar & quartz.
40.	Quartz
40.	Orthoclase
15.	Plagioclase
5.	Biotite
.01	Garnet
1.	Opaque

Location 0358

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0358
Outcrop

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5126
6228347 m N 34.06347 S latitude
714876 m E 149.3283 E longitude

Illustrations :

Age/Unit= Lower Devonian BOX RIDGE FORMATION
Topography: GENTLY SLOPING DISSECTED UPLAND dip= strike=
Structure :
Field Geology: Keratophyre. Sparsely porphyritic in feldspar microphenocrysts set in a
light-coloured feldspathic matrix with traces of chlorite and an
oxidised sulphide mineral.

Field Rockname: SAMPLE GB0358 KERATOPHYRE

PHYSICAL PROPERTIES:

KERATOPHYRE		GAMMA-RAY SPECTROMETRY	
DENSITIES		Ch.1= 20647	
Whole rock density = 2.66	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	Ch.2= 1818	1.73 % k20
Dry density = 2.61	Mean of 15 in-situ readings = 13655	Ch.3= 269	1.40 ppm U
Grain density = 2.64	from 6094 to 31792 ,SD= 7904	Ch.4= 240	4.59 ppm Th
Porosity = 1.3	Laboratory susceptibility = 23486	U/Th= .30	
	Remanence = 1300.00	2.05 Heat generation units	
	Koenigsberger ratio = .92		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Keratophyre	
5.	Quartz	Relict micrographic; porphyritic	
45.	Plagioclase	Phenocrysts of ovoid highly strained quartz with tendency to subgrain	
40.	Orthoclase	formation, & euhedral albitic plagioclase set in a fine-grained	
6.	Chlorite	groundmass of orthoclase and minor quartz with tiny acicular to plate-	
4.	Magnetite	like chlorite & scattered magnetite euhedra.	

Location 0359

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0359
Outcrop

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5122
6226439 m N 34.08438 S latitude
695942 m E 149.1237 E longitude

Illustrations :

Age/Unit= HYGANGALA BATHOLITH
Topography: dip= strike=
Structure : PLUTON
Field Geology: Monzonite. Equigranular medium-grained, non porphyritic, mesocratic with abundant hornblende and biotite. Small patches of tiny oxidised sulphide mineral in places.

Field Rockname: SAMPLE GB0359 MONZONITE

PHYSICAL PROPERTIES:

MONZONITE
DENSITIES
Whole rock density = 2.74
Dry density = 2.60
Grain density = 2.69
Porosity = 3.5
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 1013
from 125 to 2827 .SD= 771
Laboratory susceptibility = 854
Remanence = 40.00
Koenigsberger ratio = .78
GAMMA-RAY SPECTROMETRY
Ch.1= 39917
Ch.2= 3645 3.32 % K2O
Ch.3= 574 1.40 ppm U
Ch.4= 647 12.57 ppm Th
U/Th= .11
3.77 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	59.31	1.22	16.55	7.75	.15	1.16	3.69	4.87	4.17	.37	.05	.01	99.29
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	1147	-6	166	17	-1	-5	120	-3	51	10	13	72	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	16	19	270	-5	14	-3	53	-5	56	105	880		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
5.	Quartz	Monzonite	Hypidiomorphic granular
55.	Orthoclase		Euhedral to subhedral microcline & slightly sericitised plagioclase
25.	Plagioclase		with abundant ragged hornblende & biotite which has inclusions of most of the opaque mineral. Minor interstitial strained quartz.
6.	Hornblende		Accessory sphene, euhedral & frequently associated with hornblende.
8.	Biotite		Rare tiny apatite euhedra & rarer zircon.
.01	Sphene		
1.	Opaque		
.1	Apatite		
.01	Zircon		

Location 0360

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0360

Outcrop

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5056
6197870 m N 34.34140 S latitude
698338 m E 149.1562 E longitude

Illustrations :Photomicrograph

Age/Unit=

HYANGALA BATHOLITH

Topography: BOLD UPLAND WITH OUTCROP

dip= strike=

Structure :

Field Geology: Adamellite. Coarse-grained, equigranular, non porphyritic. Mesocratic due to abundant biotite whose orientation defines a slight foliation in places. Minor muscovite. Quartz-rich. Minor micaceous xenoliths.

Field Rockname: SAMPLE GB0360 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Whole rock density = 2.68

Dry density = 2.66

Grain density = 2.76

Porosity = 3.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 0

from to SD=

Laboratory susceptibility = 25

Remanence = .20

Koenigsberger ratio = .13

GAMMA-RAY SPECTROMETRY

Ch.1= 48346

Ch.2= 3652 2.87 % K2O

Ch.3= 882 3.49 ppm U

Ch.4= 880 16.98 ppm Th

U/Th= .21

5.71 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.14	.57	14.79	4.27	.06	1.25	2.74	2.55	3.63	.14	.03	.70	99.87

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	490	-6	74	12	22	12	40	-3	8	12	27	183

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	11	104	5	15	-3	79	11	47	46	181

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Adamellite	Hynidiomorphic granular
30.	Orthoclase		Large patches of ovoid, globular quartz with considerable strain extinction & subgrain formation. Euhedral, weakly zoned, sericitised
30.	Plagioclase		plagioclase with small liberations of muscovite & minor epidote in cores, but with clear unaltered rims. Abundant anhedral microcline.
3.	Hornblende		Minor hornblende completely altered to red-brown biotite with radioactive inclusions. Minor biotite, strongly pleochroic from red-brown to near colourless, & with kinked cleavage with liberation of opaque mineral along kink bands. Frequent apatite inclusions in biotite. Minor muscovite & epidote associated with biotite in weak flow banding. Rare chlorite, sphene, & opaque mineral.
10.	Biotite		
1.	Muscovite		
.1	Apatite		
.1	Chlorite		
.5	Epidote		
.01	Sphene		
.3	Opaque		Photograph biotite after hornblende, which has relict amphibole cleavage

Location 0361

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0361

Outcrop

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5056
6194749 m N 34.36867 S latitude
702762 m E 149.2050 E longitude

Illustrations :

Age/Unit= Tertiary

Topography: FLAT TOPPED RISE WITH ROCKY EDGES

dip= strike=

Structure : HORIZONTAL FLOW AS SEEN FROM AIR

Field Geology: Doleritic basalt. Laths of plagioclase are set in a medium-grained groundmass of stubby plagioclase and pyroxene. Coarser-grained than most basalts. Crops out as a flow.

Field Rockname: SAMPLE GB0361 DOLERITIC BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.54
Dry density = 2.93
Grain density = 3.02
Porosity = 2.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 5642
from 3832 to 8922 ,SD= 1384
Laboratory susceptibility = 3744
Remanence = 3400.00
Koenigsberger ratio = 15.14

GAMMA-RAY SPECTROMETRY

Ch.1= 16123
Ch.2= 1102 .87 % K2O
Ch.3= 281 1.61 ppm U
Ch.4= 238 4.54 ppm Th
U/Th= .36
1.97 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Doleritic basalt
50.	Plagioclase	FABRIC:	Sub-ophitic
15.	Augite		Lacks phenocrysts. Laths of randomly oriented plagioclase partially enclosed in pink titaniferous augite subhedra. Abundant interstitial olivine anhedra, fractured & slightly altered to bowlingite.
20.	Olivine		Minor ilmenite with slight blades of hematite along cleavages. Rare smaller titanmagnetite & tiny blebs of rare pyrite.
15.	Ferromagnesian		
.7	Ilmenite		
.2	Titanmagnetite		
.001	Pyrite		
.01	Hematite		

Location 0362

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0362

Outcrop

GCULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5006
6172852 m N 34.55958 S latitude
733014 m E 149.5397 E longitude

Illustrations :

Age/Unit= WOLOGORONG GRANITE
Topography: SMOOTH GENTLY SLOPING; OUTCROP ON RISES dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Slightly gneissic due to partial alignment of biotites, and to slight compositional layering with quartzo-feldspathic segregations. Medium to fine-grained. Mesocratic.

Field Rockname: SAMPLE GB0362 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.69	Mean of 15 in-situ readings = 0	Ch.1= 50521
Dry density = 2.74	from to ,SD=	Ch.2= 3652 2.74 X K20
Grain density = 2.77	Laboratory susceptibility = 402	Ch.3= 919 2.34 ppm U
Porosity = 1.3	Remanence = 15.00	Ch.4= 1027 19.95 ppm Th
	Koenigsberger ratio = .62	U/Th= 12
		5.47 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.32	.77	12.70	5.06	.07	1.93	.98	1.22	3.31	.20	.02	.60	99.24
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	555	-6	90	18	77	14	63	-3	13	28	32	165	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	-5	151	-5	22	-3	80	7	42	75	304		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Adamellite	Layered; slightly gneissic appearance
50.	Quartz		Abundant cordierite with inclusions of fine sillimanite clusters, subhedral with slight marginal alteration to pale green muscovite. Very rich in quartz which occurs as scattered globules & throughout remainder of rock. All quartz is considerably strained. Minor orthoclase, microcline, & plagioclase anhedral. Abundant biotite, strongly pleochroic in brown & light yellow with radioactive inclusions & opaque mineral & minor apatite inclusions. Scattered larger accessory apatite. Layering defined by parallel arrangement of biotites & slight segregation of them into layers.
13.	Orthoclase		
9.	Plagioclase		
15.	Cordierite		
10.	Biotite		
.2	Apatite		
2.	Muscovite		
.5	Opaque		

Location 0363

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0363
Outcrop

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5064
6158147 m N 34.69278 S latitude
729820 m E 149.5089 E longitude

Illustrations :

Age/Unit= WOLOGORONG GRANITE
Topography: LOW LAND WITH SMALL RISE AT OUTCROP dip=90 strike=090
Structure : 3M WIDE VEIN
Field Geology: White "blow" quartz. Traces of limonite staining in places.

Field Rockname: SAMPLE GB0363 WHITE VEIN QUARTZ

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.61	Mean of 12 in-situ readings =	10	Ch.1=	6410
Dry density =		from 0 to 62 ,SD=	24	Ch.2=	277 .06 % k20
Grain density =		Laboratory susceptibility =	0	Ch.3=	170 1.94 ppm U
Porosity =		Remanence =	.00	Ch.4=	62 1.06 ppm Th
		Koenigsberger ratio =		U/Th=	1.83
					Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
99.9	Quartz	Vein quartz
.1	Muscovite	FABRIC: Microcrystalline to slightly granular

A mosaic of quartz with irregular large patches of strained quartz with random local patchy development of subgrains in places & in which the quartz is less strained. Rare tiny microfractures filled with muscovite.

Location 0364

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0364
Outcrop

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5014
6174650 m N 34.54980 S latitude
702682 m E 149.2089 E longitude

Illustrations :

Age/Unit= WYANGALA BATHOLITH
Topography: BOLD RUGGED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, non-porphyritic, coarse-grained. Leucocratic
and spotted due to large biotites.

Field Rockname: SAMPLE GB0364 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.66 Ch.1= 50488
Dry density = 2.66 Mean of 11 in-situ readings = 68 Ch.2= 3873 3.12 % K2O
Grain density = 2.68 from 0 to 251 .SD= 76 Ch.3= 878 3.11 ppm U
Porosity = .0 Laboratory susceptibility = 25 Ch.4= 907 17.54 ppm Th
Remanence = .30 U/Th= .18
Koenigsberger ratio = .20 5.63 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.60	.27	13.45	2.66	.06	.68	2.63	2.99	3.93	.07	.02	.20	99.55

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	388	-6	57	4	14	-5	38	-3	6	6	38	184

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	12	7	107	-5	21	4	32	6	42	31	116

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL FABRIC: Euhedral, slightly zoned plagioclase altered in cores to minor epidote
30. Quartz & muscovite & surrounded by clear albite. large patches of strained
35. Orthoclase quartz, some showing resorbed margins. Inturstitial quartz, orthoclase
29. Plagioclase & microcline. The K-feldspar has poikilitic plagioclase inclusions.
5. Biotite Biotite is dark brown & some crystals are partially altered to minor
.5 Epidote epidote & rare chlorite. Rare apatite & opaque mineral.
.01 Apatite
.1 Chlorite
.5 Muscovite
.1 Opaque

Location 0365

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0365

Outcrop

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-114
6229815 m N 34.05898 S latitude
666925 m E 148.8087 E longitude

Illustrations :

Age/Unit=

WYANGALA BATHOLITH

Topography: GENTLE RISE WITH OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Hornblende lamprophyre. Large frequent euhedral phenocrysts of
hornblende up to 1 cm long set in a fine-grained slightly altered
dioritic groundmass.

Field Rockname: SAMPLE GB0365 LAMPROPHYRE

PHYSICAL PROPERTIES:

LAMPROPHYRE

DENSITIES
Whole rock density = 2.94
Dry density = 3.00
Grain density = 3.08
Porosity = 2.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 1053
from 314 to 1633 ,SD= 421
Laboratory susceptibility = 502
Remanence = 1.00
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 22130
Ch.2= 1248 .79 % K20
Ch.3= 492 4.29 ppm U
Ch.4= 292 5.38 ppm Th
U/Th= .80
3.76 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
30.	Hornblende	Hornblende lamprophyre
25.	Augite	Porphyritic
40.	Plagioclase	Large phenocrysts of hornblende with poikilitic inclusions of plagioclase & augite with rare sphene. The groundmass consists of abundant augite subhedra with interstitial & surrounding plagioclase & microcline. Some of the plagioclase is strongly sericitised in patches which have sharp boundaries against similar but unaltered plagioclase. Rare magnetite, often with pyrite inclusions. Rare free pyrite.
5.	Orthoclase	
.1	Sphene	
.1	Magnetite	
.1	Pyrite	

Location 0366

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0366
Outcrop

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5000
6219732 m N 34.15028 S latitude
664357 m E 148.7828 E longitude

Illustrations :

Age/Unit= HYANGA!A BATHOLITH
Topography: RUGGED UPLAND WITH TORS dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, non-porphyrific, coarse-grained. Leucocratic
with scattered large spots of biotite. Minor oxides and sulphide mineral.
Muscovite-rich.

Field Rockname: SAMPLE GB0366 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.59 Mean of 6 in-situ readings = 0 Ch.1= 85241
Dry density = 2.55 from to ,SD= Ch.2= 5548 4.23 X K20
Grain density = 2.62 Laboratory susceptibility = 0 Ch.3= 1881 21.57 ppm U
Porosity = 2.5 Remanence = .30 Ch.4= 679 11.59 ppm Th
Koenigsberger ratio = ***** U/Th= 1.86
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.01	.03	14.08	1.05	.05	.03	.13	3.95	4.21	.13	.05	.30	99.57
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	65	17	14	3	2	17	-1	-3	16	-5	20	653	
TRACE ELEMENT	Sr	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	40	-3	10	14	15	2	50	24	12	26		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular tending aplitic
Est. % MINERAL FABRIC: Abundant subhedral plagioclase & microcline, with patches of strained
35. Quartz quartz interconnected throughout. Quartz patches often appear as a
30. Orthoclase mosaic of equant grains. Biotite is dark brown variety with numerous
27. Plagioclase radioactive inclusions. However some is altered to muscovite. Abundant
.1 Andalusite muscovite, often in large plates. Rare andalusite altering to sericite.
6. Muscovite
2. Biotite
.2 Opaque

Location 0367

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0367
Outcrop

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5092
6219715 m N 34.15142 S latitude
657966 m E 148.7135 E longitude

Illustrations :

Age/Unit= Upper Ordovician
Topography: RISE IN LOWLAND DUE TO RESISTANT BED dip=78W strike=161
Structure : STEEPLY DIPPING
Field Geology: Slate, mudstone, siliceous mudstone and quartzite. Well bedded and planar bedded. Mudstones are pyritic. The quartzite has stratabound, cross-cutting quartz veins.

Field Rockname: SAMPLE GB0367 MUDSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.46
Dry density = 2.53
Grain density = 2.76
Porosity = 8.4

MUDSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 698
from 0 to 4021, SD= 1284
Laboratory susceptibility = 175
Remanence = 3.00
Koenigsberger ratio = .29

GAMMA-RAY SPECTROMETRY

Ch.1= 32578
Ch.2= 2412 2.03 % K20
Ch.3= 518 2.66 ppm U
Ch.4= 465 8.91 ppm Th
U/Th= 30
3.63 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.91	.60	13.23	5.55	.10	1.32	.04	.03	2.83	.10	.05	4.30	100.06

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	380	-6	76	41	76	81	45	-3	8	32	14	

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	18	-20	17	-5	10	-3	96	-5	25	40	118

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Mudstone Massive
10.	Quartz		Randomly dispersed, silt-sized quartz & muscovite grains set in a mud matrix which contains very fine resolvable chlorite & sericite & has thin discontinuous graphite partings forming the slightest, incipient partings. Minor diagenetic ?pyrite cubes pseudomorphed by hematite. Veinlets of hematite & goethite.
5.	Muscovite		
24.	Mud		
1.	Hematite		
.5	Goethite		

Location 0368

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0368
Outcrop

GOLBURN NSW GDOM=1
1:250.000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5092
6221786 m N 34.13423 S latitude
647854 m E 148.6035 E longitude

Illustrations :

Age/Unit= Lower Devonian ILLUNIE RHYOLITE
Topography: LOW RISE IN EVEN AND GENTLE LOWLAND dip= strike=
Structure :
Field Geology: Rhyodacite. Porphyritic with phenocrysts of quartz and plagioclase set i
fine-grained quartzo-feldspathic groundmass containing micaceous
aggregates.

Field Rockname: SAMPLE GB0368 RHYODACITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.51
Dry density = 2.50
Grain density = 2.66
Porosity = 5.7

RHYODACITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 175
from 0 to 251, SD= 63
Laboratory susceptibility = 163
Remanence = 2.00
Koenigsberger ratio = .20

GAMMA-RAY SPECTROMETRY

Ch.1= 26109
Ch.2= 1715 1.22 % K20
Ch.3= 474 1.34 ppm U
Ch.4= 518 10.05 ppm Th
1/Th= .13
2.82 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.04	0.36	14.73	3.03	0.02	0.65	0.14	5.01	2.16	0.07	0.04	2.70	99.94

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	563	-6	39	13	2	-5	26	-3	6	62	-5	46

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	-20	66	-5	9	4	26	5	31	8	209

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Rhyodacite
Est. % MINERAL FABRIC: Porphyritic; flow banded
2. Quartz Porphyritic & glomeroporphyritic in plagioclase & less common
10. Plagioclase smaller single quartz crystals rounded by corrosion. The plagioclases
3. Biotite are finely sericitised & slightly kaolinised. Scattered patches of
1. Opaque biotite, slightly limonitised by weathering. Layering in the
84. Groundmass groundmass is defined by differences in grain size & presence or
.5 Ruck fragments absence of devitrification structures such as rare spherulites and
quartz-filled lenticular cavities. The bulk of the groundmass is a
devitrified mosaic of fine quartz & feldspar, the grain size of
which is related to the degree of inhibition dependent coarsening.
Rare microxenoliths of dacite & rhyolite. Minor opaque mineral.

Location 0369

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0369

Outcrop

GOULBURN

1:250,000 sheet area 1:100,000 sheet area
6200522 m N 34.32427 S latitude
659032 m E 148.7286 E longitude

NSW GDOM=1

air-photo:run-no.= 3-5044

Illustrations :

Age/Unit= Middle-Upper Silurian

DOURO GROUP

Topography: ROCKY RISE

dip= strike=

Structure :

Field Geology: Ignimbrite. Porphyritic with phenocrysts of quartz, feldspar and biotite set in a fine-grained quartzo-feldspathic groundmass.

Field Rockname: SAMPLE GB0369 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.70
Dry density = 2.70
Grain density = 2.75
Porosity = 2.0

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 15 in-situ readings = 5244
from 565 to 27394 .SD= 7448
Laboratory susceptibility = 33200
Remanence = 20000.00
Koenigsberger ratio = 10.04

GAMMA-RAY SPECTROMETRY

Ch.1= 50726
Ch.2= 3452 2.63 % K20
Ch.3= 902 4.14 ppm U
Ch.4= 852 16.38 ppm Th
U/Th= .25
5.95 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.09	0.60	14.32	3.91	0.04	1.22	2.13	3.43	3.70	0.14	0.02	1.40	100.00

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	589	-6	62	12	33	7	43	-3	9	38	16	121

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	12	-20	190	7	22	-3	71	-5	36	38	205

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
FABRIC: Porphyritic; devitrified vitrophyric

Est. %	MINERAL	FABRIC:
10.	Quartz	Phenocrysts of fractured, rounded & embayed, strain-free quartz, & sericitised orthoclase, & slightly epidotised plagioclase, & biotite largely altered to chlorite & with liberations of hematite, and hornblende largely altered to chlorite, epidote, hematite, and magnetite. The groundmass consists of a devitrified mosaic of microcrystalline quartz & feldspar with small plates of chlorite and hematite & magnetite dust. Minor lenticular patches of chlorite, epidote & rare prehnite. Very rare small accessory zircon & apatite.
4.	Orthoclase	
2.	Plagioclase	
8.	Biotite	
1.	Prehnite	
3.	Epidote	
2.	Chlorite	
67.	Groundmass	
2.	Hornblende	
.8	Hematite	
.2	Magnetite	
.01	Zircon	
.01	Apatite	

Location 0370

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0370

Outcrop

GOULBURN

1:250,000

sheet area 1:100,000 sheet area

6173628 m N

670954 m E

NSW GDOM=1

air-photo:run-no.= 5-5022

34.56478 S latitude

148.8635 E longitude

Illustrations :

Age/Unit= Middle-Upper Silurian DOURO GROUP dip= strike=
Topography: RUGGED
Structure :
Field Geology: Ignimbrite. Porphyritic with abundant quartz phenocrysts set in a fine-grained groundmass of quartzo-feldspathic material.

Field Rockname: SAMPLE GB0370 IGIMBRITE.

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES
Whole rock density = 2.72
Dry density = 2.73
Grain density = 2.76
Porosity = 1.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 12 in-situ readings = 230
from 125 to 314 ,SD= 67
Laboratory susceptibility = 150
Remanence = 1.00
Koenigsberger ratio = .11

GAMMA-RAY SPECTROMETRY
Ch.1= 33493
Ch.2= 2155 1.46 X K20
Ch.3= 584 .00 ppm U
Ch.4= 789 15.48 ppm Th
U/Th= .00
2.89 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	62.77	0.79	15.62	6.84	0.11	3.23	3.87	2.45	1.59	0.14	0.09	2.40	99.89

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	505	-6	76	19	67	36	47	-3	9	110	17	68

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	21	-20	198	1	17	3	125	-5	23	78	210

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
Est. % MINERAL FABRIC: Porphyritic; devitrified vitrophyric
30. Quartz Abundant phenocrysts of volcanic quartz, rounded by corrosion with
4. Orthoclase frequent embayments, as well as orthoclase, plagioclase & uncommon
6. Plagioclase apatite. Biotite is largely altered to epidote with dust-sized opaque
2. Biotite edges, & some appears to be secondary growing from devitrification
1. Rock fragments of groundmass. Minor microxenoliths of ignimbrite. The groundmass is
2. Opaque ultrafine quartzo-feldspathic material with some patchy chloritisation
5. Chlorite & abundant finely disseminated opaque dust, which is particularly
1. Apatite frequent fringing biotites.
1. Epidote
48. Groundmass

Location 0371

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0371

OUTCROP IN RIVER VALLEY

Outcrop

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5058

6156202 m N 34.71552 S latitude

705292 m E 149.2418 E longitude

Illustrations :Photomicrograph

Age/Unit= Ordovician

Topography: LOWLAND CUT BY BRAIDED MEANDERING RIVER

dip=80W strike=168

Structure :

Field Geology: Slate, shale, siliceous slate and quartzite. Detrital rocks are thin bedded and laminated. The quartzites are lenticular, thick bedded and have stratabound, cross-cutting quartz veins. Some are slightly micaceous.

Field Rockname: SAMPLE GB-0371 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.60
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 10
from 0 to 62 ,SD= 24
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 34765
Ch.2= 2396 1.68 % K20
Ch.3= 713 3.19 ppm U
Ch.4= 680 13.08 ppm Th
U/Th= .24
4.59 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Sericite quartzite
FABRIC: Porphyroblastic to well bedded.
Est. % MINERAL
20. Quartz Randomly dispersed open framework of strained quartz grains subangular to subrounded with frequent frayed edges. Similar rare plagioclase.
10. Sericite These are set in a matrix of fine cryptocrystalline quartz, sericite, & chlorite which has a wavy foliation flowing around quartzes. Purer layers of quartzite are lenticular & boudined. Sericite-rich layers have stratabound strain slip cleavage.
5. Chlorite
.01 Tourmaline
1. Plagioclase
.1 Opaque
64. Matrix Photo: sericite with 2 cleavages, quartzite & microboudins

Location 0372

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0372

OUTCROP IN RIVER VALLEY SAME LOCATION AS 0371

Outcrop

GOULBURN

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5058

6156202 m N

34.71552 S latitude

705292 m E

149.2418 E longitude

Illustrations :

Age/Unit: Ordovician

Topography: LOWLAND CUT BY BRAIDED MEANDERING RIVER dip=80W strike=168

Structure: STEEPLY DIPPING-INTRAFORMATIONAL ISOCLIN FOLDS IN FINE-GRAINED ROCKS

Field Geology: Slate, shale, siliceous slate and quartzite. Detrital rocks are thin bedded and laminated. The quartzites are lenticular, thick bedded and have stratabound, cross-cutting quartz veins. Some are slightly micaceous.

Field Rockname: SAMPLE GB-0372 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I..000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.57

Dry density =

Grain density =

Porosity =

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

0

0.00

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Quartzite	
25.	Quartz		Porphyroblastic; massive with flow foliation
3.	Chlorite		Randomly dispersed open framework of strained quartz grains, subrounded but with ragged edges. Similar rare plagioclase. The matrix consists of cryptocrystalline quartz with wavy microtrails of fine chlorite occasionally swelling into patches, as well as rare zircon & apatite euhedra & minor opaque mineral. Infrequent quartz micro-veinlets.
.02	Zircon		
.02	Apatite		
1.	Opaque		
70.	Matrix		
1.	Plagioclase		

Location 0373

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0373
Outcrop

GOULBURN GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-180
6147521 m N 34.77857 S latitude
770352 m E 149.9543 E longitude

Illustrations :

Age/Unit= Lower-Middle Devonian BINDOOK PORPHYRY
Topography: GENTLY SLOPING COUNTRY WITH LOW RISES dip= strike=
Structure :
Field Geology: Ignimbrite. Phenocrysts of quartz, feldspar and rare biotite set in an
ultrafine quartz-feldspathic groundmass. Trace limonite stain indicates
presence of disseminated, fine, sulphide-mineral grains.

Field Rockname: SAMPLE GB0373 IGNI MBRITE

PHYSICAL PROPERTIES:

IGNI MBRITE
DENSITIES
Whole rock density = 2.48
Dry density = 2.57
Grain density = 2.65
Porosity = 2.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 222
from 0 to 942 ,SD= 246
Laboratory susceptibility = 0
Remanence = 1.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 37756
Ch.2= 2424 1.82 X K20
Ch.3= 630 2.33 ppm U
Ch.4= 642 12.40 ppm Th
U/Th= .19
3.97 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.77	0.11	13.89	1.29	0.04	0.17	1.29	3.07	4.36	0.04	0.05	1.40	99.47

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1204	-6	64	16	-1	-5	55	3	8	15	24	168

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-20	147	6	10	-3	3	6	24	32	115

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
Est. % MINERAL FABRIC: Devitrified vitrophyric
10. Quartz Phenocrysts of fractured, rounded, deeply embayed volcanic quartz,
7. Plagioclase sericitised plagioclase, kaolinitised orthoclase, & biotite
3. Orthoclase which is variably chloritised & sparingly epidotised in places.
2. Biotite The ultrafine, kaolinitised, devitrified groundmass is a micrographic
.5 Opaque intergrowth of quartz & K-feldspar with very minor opaque dust.
78. Groundmass Oxidation of some biotites to opaque mineral in places.

Location 0374

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0374

Outcrop

WOLLONGONG

GOULBURN

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run no.= 4-16
6153163 m N 34.72767 S latitude
229335 m E 150.0441 E longitude

Illustrations :

Age/Unit=

Topography: LOW RISES WITH OUTCROP dip= strike=

Structure : PLUTON

Field Geology: Diorite. Equigranular, medium-grained, melanocratic due to abundant euhedral hornblende and biotite.

Field Rockname: SAMPLE WLO374 DIORITE

PHYSICAL PROPERTIES:

DIORITE

DENSITIES

Whole rock density = 2.76

Dry density = 2.74

Grain density = 2.81

Porosity = 2.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 20269

from 12440 to 24944 ,SD= 3488

Laboratory susceptibility = 22192

Remanence = 2500.00

Koenigsberger ratio = 1.88

GAMMA-RAY SPECTROMETRY

Ch.1= 29419

Ch.2= 2592 2.35 % K2O

Ch.3= 455 2.45 ppm U

Ch.4= 399 7.63 ppm Th

U/Th= .32

3.36 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	60.36	.68	15.34	6.45	.11	3.06	5.95	2.51	2.49	.14	.06	1.40	99.05

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	704	-6	49	27	39	20	35	-3	6	13	25	94

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	21	-5	345	-5	13	-3	153	8	25	79	136

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Diorite
FABRIC: Hypidiomorphic granular

Est. %	MINERAL	DESCRIPTION
25.	Quartz	Euhedral sericitised plagioclase with minor liberation of muscovite.
39.	Plagioclase	& relict zoning. Clusters of hornblende aggregates, weakly chloritised in places.
15.	Orthoclase	Plates of euhedral to subhedral biotite partially to completely chloritised with frequent liberation of minor epidote & muscovite.
10.	Hornblende	Abundant interstitial anhedral kaolinised orthoclase & patchy to globular embayed quartz. Rare sphene and apatite euhedral & very rare vugs of secondary prehnite. Scattered anhedral magnetite often enclosed in altered biotite. Very minor scattered hematite grains as well as lenticular platelets of it along cleavages in magnetite. Trace pyrite blebs enclosed in hornblendes.
2.	Chlorite	
.1	Prehnite	
8.	Biotite	
.01	Sphene	
.5	Epidote	
.1	Apatite	
.7	Magnetite	
.1	Hematite	
.01	Pyrite	

Location 0375

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0375
Outcrop

SAME LOCATION AS 0376

WOLLONGONG

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-176
6138313 m N 34.86152 S latitude
229763 m E 150.0440 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: DEEP GORGE

dip=80W strike=015

Structure : STEEPLY DIPPING

Field Geology: Shale, siltstone, slate, siliceous slate, quartzose sandstone, and quartzite, all variably pyritic. Laminated to thin bedded with sole marks on base of some beds. These structures include flute casts. Quartzites are lenticular, with stratabound quartz veins.

Field Rockname: SAMPLE WL0375 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.66	Mean of 15 in-situ readings = 184	Ch.1= 65447
Dry density = 2.64	from 0 to 628 ,SD= 203	Ch.2= 5392 4.41 X K20
Grain density = 2.66	Laboratory susceptibility = 226	Ch.3= 1208 5.09 ppm U
Porosity = .0	Remanence = 1.00	Ch.4= 1179 22.71 ppm Th
	Koenigsberger ratio = .07	U/Th= .22
		8.03 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
90.	Quartz	Quartzose sandstone	Moderately sorted
5.	Rock fragments	Subangular grains of slightly strained quartz & chloritised and sericitised volcanic rock clasts, with minor opaque mineral & rare zircon & tourmaline. The grains are tightly packed, of variable size & have a coating & thin sparse matrix of siliceous, chloritic, and sericitic mud.	
.01	Zircon		
2.	Opaque		
3.	Matrix		
.01	Tourmaline		

Location 0376

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0376

SAME LOCATION AS 0375

Outcrop

WOLLONGONG

GOULBURN

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-176

6138313 m N

34.86152 S latitude

229763 m E

150.0440 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: DEEP GORGE

Structure : STEEPLY DIPPING WITH MACROSCALE 50M SLUMP FOLDS AND FAULT BLOCKS

Field Geology: Shale, siltstone, slate, siliceous slate, quartzose sandstone, and quartzite, all variably pyritic. Laminated to thin bedded with sole marks on base of some beds. Those structures include flute casts. Quartzites are lenticular, with stratabound quartz veins.

Field Rockname: SAMPLE WL0376 SILTSTO"E

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES

Whole rock density = 2.74

Dry density = 2.69

Grain density = 2.75

Porosity = 2.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 226

Remanence = 10.00

Koenigsberger ratio = .74

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Siltstone
48.	Quartz	Laminated to thin bedded	
28.	Muscovite	Delicately laminated with bedding defined by varying proportions of the constituent minerals. Quartz rich layers have tendency to be lenticular & slightly boudined. Some pure mud layers now consist of biotite & muscovite alligned parallel to bedding. The silt-sized quartz particles are slightly strained.	
2.	Opaque		
20.	Biotite		
1.	Chlorite		

Location 0377

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0377

Outcrop

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-172

6137866 m N

34.86640 S latitude

767001 m E

149.9208 E longitude

Illustrations :

Age/Unit=

MARULAN GRANITE

Topography: LOW ROCKY RISES-SOME MODERATE RISES

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Equigranular, non-porphyratic, medium-grained. Leucocratic, but has scattered hornblende and biotite in fine-crystal clusters.

Field Rockname: SAMPLE GB0377 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.69

Ch.1= 40529

Dry density = 2.67

Mean of 15 in-situ readings = 26372

Ch.2= 3418 3.00 % K2O

Grain density = 2.70

from 15456 to 31667, SD= 4168

Ch.3= 650 3.13 ppm U

Porosity = 1.1

Laboratory susceptibility = 28990

Ch.4= 601 11.53 ppm Th

Remanence = 1000.00

U/Th= .27

Koenigsberger ratio = .57

4.59 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.42	.47	15.67	3.33	.07	.77	3.92	3.31	3.16	.11	.05	.70	99.98

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	818	-6	61	6	10	-5	55	-3	8	8	25	133

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	-5	291	-5	17	3	46	8	33	51	196

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite

Est. %	MINERAL	FABRIC:
25.	Quartz	Hypidiomorphic granular tending slightly granophyric
43.	Plagioclase	Strongly sericitised euhedral zoned plagioclase & clots of ferro-magnesian minerals amidst interstitial anhedral kaolinised orthoclase
25.	Orthoclase	& globular to slightly skeletal, embayed quartz partially
4.	Hornblende	intergrown with orthoclase in places. Hornblende is variably altered
1.	Biotite	to chlorite & opaque mineral. Biotite is slightly chloritised.
2.	Opaque	

Location 0378

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0378
Outcrop

WOLLONGONG GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-142
6126670 m N 34.96647 S latitude
2301 m E 150.0442 E longitude

Illustrations :

Age/Unit=
Topography: RUGGED ROCKY UPLAND ON SHOALHAVEN GORGE dip= strike=
Structure : PLUTON WITHIN ORDOVICIAN
Field Geology: Monzodiorite. Equigranular, medium-grained, melanocratic, with fine-grained mafic xenoliths.

Field Rockname: SAMPLE WL0378 MONZODIORITE

PHYSICAL PROPERTIES:

GRANDIORITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.79 Ch.1= 43795
Dry density = 2.77 Mean of 15 in-situ readings = 33891 Ch.2= 3588 3.03 % K2O
Grain density = 2.79 from 26829 to 39709 ,SD= 3788 Ch.3= 783 4.54 ppm U
Porosity = 1.0 Laboratory susceptibility = 32886 Ch.4= 659 12.56 ppm Th
Remanence = 2000.00 U/Th= .36
Koenigsberger ratio = 1.01 5.65 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	53.63	1.40	15.69	7.27	.10	3.59	5.36	3.27	3.44	.50	.05	.40	99.69

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Pb
p.p.m.	779	-6	78	25	64	35	49	-3	12	24	14	138

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	22	20	960	-5	17	-3	146	-5	29	85	261

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Monzodiorite
FABRIC: Hypidiomorphic granular
Est. % MINERAL FABRIC: Abundant interlocking laths of unaltered plagioclase surrounding scattered biotite & altered hornblende breaking down to lighter coloured varieties accompanied by liberations of hematite. Slightly altered biotite accompanied by liberations of hematite & magnetite. Interstitial quartz & orthoclase. Minor zoned, twinned orthoclase.
1. Apatite Rare accessory apatite euhedra & sphene adjacent to altered
.01 Sphene hornblende.
1. Magnetite
2. Hematite
.01 Pyrite

Location 0379

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0379

Outcrop

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-128

6125732 m N

34.98542 S latitude

727072 m E

149.4877 E longitude

Illustrations :

Age/Unit: Upper Silurian

DE DRACK FORMATION

Topography: LOW STRIKE RIDGE

dip=50W strike=178

Structure : MODERATELY DIPPING

Field Geology: Quartzite. Massive, variably coarsened. Crumbly where weathered.

Field Rockname: SAMPLE GB0379 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.59
Dry density = 2.50
Grain density = 2.69
Porosity = 6.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 142
from 0 to 816 ,SD= 209
Laboratory susceptibility = 37
Remanence = 5.00
Koenigsberger ratio = 2.25

GAMMA-RAY SPECTROMETRY

Ch.1= 18187
Ch.2= 999 .57 % K2O
Ch.3= 352 .78 ppm U
Ch.4= 403 7.84 ppm Th
U/Th= .10
1.95 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Quartzite
	FABRIC:	Poorly sorted
Est. %	MINERAL	
60.	Quartz	Porphyroblasts of subangular to rounded quartz grains & quartzite both exhibiting variable strain, & tightly compacted in a wavy flow matrix of fine silica, abundant sericite & minor kaolinite.
1.	Muscovite	
1.	Tourmaline	
1.	Opaque	The matrix quartz has grown in places to curvi-lenticular shapes.
37.	Matrix	Minor scattered muscovite, tourmaline & opaque mineral.

Location 0380

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0380
Outcrop

SAME LOCATION AS 0381

GOULBURN

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6131143 m N 34.93915 S latitude air-photo:run-no.= 8-5053
715736 m E 149.3622 E longitude

Illustrations :

Age/Unit= WYANGALA BATHOLITH
Topography: MODERATELY RUGGED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granite and adamellite. Equigranular, non porphyritic, coarse-grained.
Mesocratic and spotted due to large biotites.

Field Rockname: SAMPLE GB0380 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I. *.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.64 Mean of 7 in-situ readings = 0 Ch.1= 41580
Dry density = 2.63 from to ,SD= 0 Ch.2= 3623 3.21 % K2O
Grain density = 2.66 Laboratory susceptibility = 0 Ch.3= 647 2.39 ppm U
Porosity = 1.3 Remanence = .10 Ch.4= 660 12.75 ppm Th
Koenigsberger ratio = ***** U/Th= .19
4.39 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.95	.11	13.64	1.85	.05	.10	1.53	3.07	4.07	.08	.06	.70	99.22

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	642	-6	61	4	3	-5	49	-3	8	-5	28	196

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	4	126	-5	19	-3	5	7	48	26	119

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Adamellite
30. FABRIC: Hypidiomorphic granular
35. Quartz Strongly sericitised, euhedral to subhedral plagioclase with partial
5. Orthoclase liberation of muscovite & minor epidote. Abundant biotite altered
25. Plagioclase to epidote preferentially along cleavages. Abundant anhedral quartz
9. Biotite & kaolinised orthoclase & microcline. The quartz is strained. Very
1.1 Opaque minor opaque oxide & muscovite.
1. Muscovite

Location 0381

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0381
Outcrop

SAME LOCATION AS 0380
GOULBURN

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5053
6131143 m N 34.93915 S latitude
715736 m E 149.3622 E longitude

NSW GDOM=1

Illustrations :

Age/Unit= NYANGALA BATHOLITH
Topography: MODERATELY RUGGED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granite and adamellite. Equigranular, non porphyritic, coarse-grained.
Mesocratic and spotted due to large biotites.

Field Rockname: SAMPLE GB0381 WEATHERED ADAMELLITE COMPARE DENSITY WITH FRESH GB0380

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
Whole rock density = 2.57
Dry density = 2.56
Grain density = 2.69
Porosity = 4.7
MAGNETIC SUSCEPTIBILITY (S.I. x .000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 75
Remanence = .80
Koenigsberger ratio = .18
GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.00	.10	13.98	1.94	.05	.08	1.29	2.86	4.35	.08	.02	.90	99.66
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	642	-6	63	4	-1	-5	43	-3	8	-5	32	211	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	12	-5	107	-5	19	3	6	8	44	27	122		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
25. Quartz Euhedral plagioclase with considerable core alteration to sericite,
40. Orthoclase minor muscovite & epidote. Biotite is partially altered to epidote
25. Plagioclase & muscovite. Abundant interstitial quartz & kaolinised orthoclase
9. Biotite with minor microcline. The quartz is fractured & strained with
1. Muscovite frequent ragged edges & incipient resorption. Minor muscovite and
.1 Opaque very rare opaque mineral.

Location 0382

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0382
Outcrop

GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5114
6147270 m N 34.80278 S latitude
668333 m E 148.8402 E longitude

Illustrations :

Age/Unit= Lower Devonian MOUNTAIN CREEK VOLCANICS
Topography: SMOOTH-SLOPING UPLAND WITH OUTCROP dip= strike=
Structure :
Field Geology: Altered basalt. Porphyritic in plagioclase and pyroxene phenocrysts set
in a fine-grained, slightly red-oxidised groundmass.

Field Rockname: SAMPLE GB0382 ALTERED BASALT

PHYSICAL PROPERTIES: ALTERED BASALT

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.71	Mean of 15 in-situ readings =	8821	Ch.1= 47164
Dry density =	2.72	from 5717 to 10807 ,SD=	1404	Ch.2= 3994 3.39 X K20
Grain density =	2.75	Laboratory susceptibility =	2990	Ch.3= 847 4.51 ppm U
Porosity =	1.0	Remanence =	800.00	Ch.4= 747 14.29 ppm Th
		Koenigsberger ratio =	4.46	U/Th= .32
				6.00 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	Altered basalt
20.	Plagioclase	FABRIC:	Vitrophyric; microvesicular with relict pilotaxitic patches.
12.	Augite		Phenocrysts of euhedral strongly sericitised plagioclase, euhedral to rounded augite embayed in places & euhedral hypersthene largely altered to chlorite. The groundmass is highly altered to chlorite and clay. It contains numerous microvesicles lined by originally chalcedonic silica & filled with clay & chlorite. The groundmass contains one percent opaque minerals of which half is hematite & the remainder magnetite, altering to hematite in a few grains.
3.	Hypersthene		
65.	Groundmass		

Location 0383

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0383
Outcrop

SAME LOCATION AS 0384

GOULBURN

1:250,000 sheet area 1:100,000 sheet area
6145594 m N
658092 m E

NSW GDOM=1

air-photo:run-no.= 7-5114
34.81953 S latitude
148.7286 E longitude

Illustrations :

Age/Unit= Lower Devonian

MOUNTAIN CREEK VOLCANICS

Topography: RUGGED STRIKE RIDGE AND ROUNDED UPLAND

dip= strike=

Structure : STEEPLY INCLINED

Field Geology: Trachyandesite. Phenocrysts of feldspars and ferromagnesian minerals set in a fine-grained, slightly vesicular groundmass. Some units contain a disseminated sulphide mineral.

Field Rockname: SAMPLE GB0383 TRACHYANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.65
Dry density = 2.67
Grain density = 2.70
Porosity = .8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 14 in-situ readings = 18795
from 10053 to 29907 .SD= 6894
Laboratory susceptibility = 30410
Remanence = 6500.00
Koenigsberger ratio = 3.56

GAMMA-RAY SPECTROMETRY

Ch.1= 44125
Ch.2= 3742 3.45 % K2O
Ch.3= 576 1.84 ppm U
Ch.4= 612 11.85 ppm Th
U/Th= .16
3.95 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
7.	Plagioclase	Trachyandesite	Porphyritic; flow banded; vesicular
3.	Orthoclase		Phenocrysts of similarly slightly kaolinised plagioclase & lesser orthoclase, with minor oxidised ferromagnesian mineral & magnetite showing partial to complete alteration to hematite. The groundmass is glassy & non resolvable apart from magnetite dust. A plane parallel fabric is developed. Within the groundmass there are numerous vesicles filled with secondary quartz, calcite, chlorite, plagioclase, & rare epidote. Minor andesite xenoliths.
1.	Ferromagnesian		
2.	Magnetite		
83.	Groundmass		
3.	Rock fragments		
1.	Hematite		

Location 0384

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0384
Outcrop

SAME LOCATION AS 0383

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5114

6145590 m N

34.81957 S latitude

658092 m E

148.7286 E longitude

Illustrations :

Age/Unit: Lower Devonian MOUNTAIN CREEK VOLCANICS
Topography: RUGGED STRIKE RIDGE AND ROUNDED UPLAND dip= strike=
Structure : STEEPLY INCLINED
Field Geology: Trachyandesite. Phenocrysts of feldspars and ferromagnesian minerals set
in a fine-grained, slightly vesicular groundmass. Some units contain a
disseminated sulphide mineral.

Field Rockname: SAMPLE GB-0384 SLIGHTLY MAGNETIC TRACHYANDESITE

PHYSICAL PROPERTIES:

ANDESITE
DENSITIES
Whole rock density = 2.68
Dry density = 2.66
Grain density = 2.67
Porosity = .1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 1 in-situ readings = 251
from to SD=
Laboratory susceptibility = 502
Remanence = 100.00
Koenigsberger ratio = 3.32

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Trachyandesite
FABRIC: Porphyritic; flow banded; microvesicular
Est. % MINERAL FABRIC: Phenocrysts of plagioclase & lesser orthoclase set in a flow banded
5. Plagioclase fine-grained groundmass of microcrystalline feldspathic material with
3. Orthoclase plane parallel fabric & numerous vesicles which are flattened. The
.1 Apatite vesicles have fillings of chlorite, quartz, & opaque sulphide with
1. Sphene lesser sphene euhedra. The groundmass contains rare apatite euhedra
1. Calcite & calcite. Minor andesitic lithic fragments.
10. Chlorite
2. Opaque
2. Rock fragments
74. Groundmass
2. Quartz

Location 0385

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0385

Outcrop

GOULBURN

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1

6152360 m N

34.76038 S latitude

645793 m E

148.5930 E longitude

Illustrations :

Age/Unit= Middle-Upper Silurian DOURO GROUP

Topography: BOLD RUGGED UPLAND WITH LOTS OF OUTCROP

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Ignimbrite. Porphyritic with phenocrysts of rounded volcanic quartz,
plagioclase and altered biotite set in a fine-grained quartzo-
feldspathic groundmass.

Field Rockname: SAMPLE GB0385 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.71

Dry density = 2.71

Grain density = 2.72

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 0

from to SD=

Laboratory susceptibility = 301

Remanence = 130.00

Koenigsberger ratio = 7.20

GAMMA-RAY SPECTROMETRY

Ch.1= 50289

Ch.2= 3171 2.18 % K20

Ch.3= 985 4.84 ppm U

Ch.4= 903 17.32 ppm Th

U/Th= .28

6.45 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.56	0.69	14.82	5.10	0.08	2.18	2.03	2.71	3.98	0.16	0.04	2.00	99.35

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mb	Nb	Ni	Pb	Rb
p.p.m.	575	-6	79	6	44	6	52	-3	13	59	13	151

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	-20	111	-5	-5	-3	74	-5	18	76	237

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
13.	Quartz	Ignimbrite	Porphyritic; devitrified vitrophyric
15.	Plagioclase		Phenocrysts of fractured, rounded & embayed volcanic quartz,
1.	Apatite		sericitised plagioclase, & orthoclase & relict biotite completely
5.	Chlorite		pseudomorphed by chlorite & an opaque mineral. Rare clots of pinite,
.5	Opaque		with minor chlorite & muscovite. Abundant accessory apatite euhedra,
.01	Zircon		chiefly as inclusions in chloritised biotite. Rare zircon. The
.1	Pinite		sericitised groundmass consists of fine-grained quartz & feldspar
60.	Groundmass		with rare patches & streaks of calcite.
6.	Orthoclase		
.1	Muscovite		

Location 0386

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0386
Outcrop

COOTAMUNDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5227
6145222 m N 34.82692 S latitude
629516 m E 148.4163 E longitude

Illustrations :

Age/Unit= YOUNG GRANODIORITE
Topography: MODERATELY STEEP UPLAND WITH OUTCROP dip= strike=
Structure: PLUTON
Field Geology: Adamellite. Equigranular, non porphyritic. Coarse-grained. Mesocratic and spotted due to large biotite and cordierite grains. Numerous fine-grained biotite-rich xenoliths.

Field Rockname: SAMPLE CT0386 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.69 Mean of 13 in-situ readings = 627 Ch.1= 58350
Dry density = 2.66 from 0 to 2199 ,SD= 720 Ch.2= 4742 3.86 % K20
Grain density = 2.70 Laboratory susceptibility = 351 Ch.3= 1062 4.27 ppm U
Porosity = 1.5 Remanence = .30 Ch.4= 1054 20.33 ppm Th
Koenigsberger ratio = .01 U/Th= .21
6.99 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.08	.61	15.21	4.29	.06	1.73	2.03	2.53	3.85	.16	.04	1.40	100.00
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	646	-6	71	16	48	20	57	-3	10	21	23	198	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	19	10	158	-5	15	-3	73	11	35	52	192		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL FABRIC: Large globular patches of strained quartz with euhedral, strongly sericitised plagioclase. Interstitial anhedral kaolinised orthoclase.
35. Quartz
20. Orthoclase
27. Plagioclase Abundant euhedral biotite showing very slight oxidation & marginal chloritisation. Frequent subhedral cordierite, largely altered to
7. Cordierite pinite. Minor interstitial muscovite. Very rare clots of pyrite, &
10. Biotite magnetite with slight alteration to hematite. These clots are mostly
.5 Muscovite
1. Apatite inclusions in biotite.
.01 Magnetite
.01 Pyrite

Location 0387

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA B'SE *

NO.=(7962)0387

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5116

6132656 m N

34.94095 S latitude

623510 m E

148.3525 E longitude

Illustrations :

Age/Unit= Tertiary

Topography: FLAT UPLAND, ALONG EDGE OF RISE

dip= strike=

Structure : HORIZONTAL FLOW

Field Geology: Basalt. Vesicular olivine basalt. Small round altered olivine phenocrysts set in a fine-grained basaltic groundmass. Numerous spheroidal vesicles in places.

Field Rockname: SAMPLE CT0387 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.77
Dry density = 2.77
Grain density = 2.88
Porosity = 3.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 17178
from 14639 to 21488, SD= 1843
Laboratory susceptibility = 17416
Remanence = 3500.00
Koenigsberger ratio = 3.35

GAMMA-RAY SPECTROMETRY

Ch.1= 26135
Ch.2= 1265 .58 % K2O
Ch.3= 594 3.40 ppm U
Ch.4= 504 9.61 ppm Th
U/Th= .35
3.87 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: FABRIC:
20. Olivine Basalt
80. Groundmass Pilotaxitic

Phenocrysts of olivine with both marginal & complete alteration to iddingsite set in a fine-grained groundmass consisting of a felt-like mass of randomly oriented plagioclase microlites amidst pyroxene altered to secondary non resolvable minerals which may include epidote. In addition abundant ilmenite subhedra form groundmass microphenocrysts & small particles together with less common magnetite, which forms about .5% of the rock.

Location 0388

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0388

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5071

6154931 m N

34.74147 S latitude

611990 m E

148.2234 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian HONEYSUCKLE BEDS

Topography: MODERATLEY RUGGED DISSECTED UPLAND

dip= strike=

Structure :

Field Geology: Altered andesite. Phenocrysts of altered plagioclase and ferromagnesian minerals set in an altered, epidote-rich groundmass. Mostly massive but planar igneous layering is present in places.

Field Rockname: SAMPLE CT0388 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.81
Dry density = 2.81
Grain density = 2.86
Porosity = 1.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 4569
from 188 to 13006 ,SD= 4871
Laboratory susceptibility = 351
Remanence = 2.00
Koenigsberger ratio = .09

GAMMA-RAY SPECTROMETRY

Ch.1= 24201
Ch.2= 2169 1.95 % K2O
Ch.3= 420 3.10 ppm U
Ch.4= 297 5.58 ppm Th
U/Th= .56
3.32 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
65.	Plagioclase	Altered andesite
10.	Biotite	Porphyritic
25.	Epidote	Phenocrysts of slightly sericitised plagioclase & two relict ferromagnesian minerals. One appears to have formerly been hornblende now pseudomorphed by a cluster of green to colourless pleochroic biotite. The other, which may formerly have been a pyroxene, now consists of epidote. The groundmass lacks original lava textures and consists of fine grained plagioclase, biotite & epidote. Very rare magnetite & pyrite.
.01	Apatite	
.01	Magnetite	
.01	Pyrite	

Location 0389

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0389

Outcrop

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5071

6162808 m N

34.67093 S latitude

607513 m E

148.1735 E longitude

Illustrations :

Age/Unit= Upper Silurian BLOWERING BEDS

Topography: RUGGED OUTCROPS ON GENTLE SLOPES dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Ignimbrite. Phenocrysts of quartz and feldspars set in a fine-grained quartzo-feldspathic groundmass.

Field Rockname: SAMPLE CT0389 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.75
Dry density = 2.71
Grain density = 2.76
Porosity = 2.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 163
Remanence = 20.00
Koenigsberger ratio = 2.04

GAMMA-RAY SPECTROMETRY

Ch.1= 46770
Ch.2= 3852 3.24 % K20
Ch.3= 802 3.18 ppm U
Ch.4= 800 15.43 ppm Th
U/Th= .21
5.34 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.71	0.68	14.31	5.17	0.06	2.80	1.85	2.10	3.91	0.16	0.04	1.80	99.59

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	532	-6	68	15	48	16	42	4	12	71	32	189

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	20	-20	128	-5	18	-3	80	7	70	63	216

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Quartz	Ignimbrite	Porphyritic
11.	Plagioclase		Phenocrysts of rounded, fractured volcanic quartz with rare embayments, & surrounded by reaction rims largely free of ferro-magnesian minerals. Kaolinised orthoclase & plagioclase as well as altered biotite & rare calcite also form phenocrysts. The biotites are altered to a pale green biotite with extensive liberation of opaque oxide preferentially along cleavages. The groundmass consists of fine-grained quartz & feldspar & small platelets of secondary biotite.
20.	Orthoclase		
10.	Biotite		
1.	Muscovite		
1.	Calcite		
1.	Opaque		
.1	Apatite		
46.	Groundmass		

Location 0390

* LACLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0390
Outcrop

COOTAMUNDRA NSW GDOM=Z
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no = 5-5052
6175917 m N 34.55835 S latitude
504862 m E 147.0530 E longitude

Illustrations :

Age/Unit=
Topography: LOW ROCKY RISE dip= strike=
Structure :
Field Geology: Ignimbrite. Phenocrysts of rounded volcanic quartz, feldspars, biotite
and rare garnet set in a fine-grained quartzo-feldspathic groundmass.

Field Rockname: SAMPLE CT0390 IGNIMBRITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.45
Dry density = 2.60
Grain density = 2.65
Porosity = 2.1

IGNIMBRITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 770
from 314 to 1947 SD= 423
Laboratory susceptibility = 603
Remanence = 15.00
Koenigsberger ratio = .41

GAMMA-RAY SPECTROMETRY

Ch.1= 60494
Ch.2= 5156 4.54 % K2O
Ch.3= 971 4.62 ppm U
Ch.4= 903 17.34 ppm Th
U/Th= .27
6.86 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.65	.13	12.39	1.79	.02	.08	.84	2.51	5.20	.08	.07	.60	99.77

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	941	-6	75	3	3	15	63	-3	16	-5	45	226

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	22	93	-5	15	5	4	-5	34	57	134

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Ignimbrite	
30.	Orthoclase	Porphyritic	
4.	Plagioclase	Phenocrysts of fractured embayed volcanic quartz, fractured orthoclase & lesser plagioclase, as well as rare garnet & ?cordierite.	
4.	Biotite	Abundant biotite, often considerably oxidised, occurs as phenocrysts & in groundmass. The groundmass consists of ultrafine quartz and	
.5	Muscovite	feldspar with tiny biotite specks & rare lenticular clusters of	
.1	Garnet	feldspar aggregates. Rare apatite.	
.1	Apatite		
1.	Opaque		
45.	Groundmass		
.5	Cordierite		

Location 0391

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0391

Outcrop

COOTAMUNDRA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5060

6160177 m N 34.69992 S latitude

528033 m E 147.3061 E longitude

Illustrations :

Age/Unit=

WANTABADGERY GRANITE

Topography:

ROCKY RISE IN LOWLAND

dip=

strike=

Structure: PLUTON

Field Geology:

Adamellite. Inequigranular, porphyritic in large orthoclase crystals.
Melanocratic due to abundant biotite. Coarse-grained. Rare xenoliths.

Field Rockname: SAMPLE CT0391 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
Whole rock density = 2.68
Dry density = 2.68
Grain density = 2.73
Porosity = 1.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 50
from 0 to 188, SD= 60
Laboratory susceptibility = 75
Remanence = .70
Koenigsberger ratio = .16

GAMMA-RAY SPECTROMETRY

Ch.1= 59990
Ch.2= 4972 4.25 % K2O
Ch.3= 999 4.28 ppm U
Ch.4= 969 18.66 ppm Th
U/Th= .23
6.80 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.06	.66	14.52	4.10	.06	1.27	1.65	2.35	4.23	.23	.02	.60	99.74

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	599	-6	66	14	34	7	40	-3	16	11	38	230

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	15	11	130	-5	16	4	55	8	36	57	215

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
40.	Quartz	Adamellite	Hypidiomorphic granular
20.	Orthoclase		Scattered large poikilitic orthoclase with smaller euhedral slightly sericitised plagioclase. Patches of interconnected globular strained quartz aggregates with ragged edges. Abundant biotite with frequent radioactive inclusions, is variably bleached & altered to muscovite with liberation of skeletal opaque oxide. Accessory apatite & rare zircon. Rare pinite.
22.	Plagioclase		
11.	Biotite		
5.	Muscovite		
1.	Opaque		
.1	Apatite		
.01	Zircon		
1.	Pinite		

Location 0392

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.-(7962)0392
Outcrop

SAME LOCATION AS 0393

COOTAMUNDRA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5105

6133433 m N

34.94073 S latitude

538819 m E

147.4251 E longitude

Illustrations :

Age/Unit= WANTABADGERY GRANITE
Topography: LOW RISE WITH TORS dip= strike=
Structure : PLUTON
Field Geology: Granodiorite. Mostly equigranular though slightly porphyritic in orthoclase. Medium to coarse-grained. Melanocratic due to abundant biotite and biotite-rich xenoliths. Quartz-epidote rock float adjacent.

Field Rockname: SAMPLE CT0392 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES

Whole rock density = 2.71

Dry density = 2.68

Grain density = 2.74

Porosity = 2.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 17

from 0 to 125 ,SD= 40

Laboratory susceptibility = 100

Remanence = .60

Koenigsberger ratio = .10

GAMMA-RAY SPECTROMETRY

Ch.1= 48202

Ch.2= 3817 3.06 % K2O

Ch.3= 866 2.84 ppm U

Ch.4= 914 17.70 ppm Th

U/Th= .16

5.47 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.73	.69	14.81	4.85	.07	2.18	2.16	2.18	3.26	.20	.01	.60	99.79

TRACE ELEMENT	Be	Bi	Ce	Co	Cr	Cu	La	Mn	Nb	Ni	Pb	Rb
p.p.m.	392	-6	69	16	64	19	53	-3	12	18	27	202

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	18	11	124	-5	18	4	72	7	34	67	206

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
40.	Quartz	Granodiorite	
14.	Orthoclase	Hypidiomorphic granular	
30.	Plagioclase		Large interconnected patches of globular strained quartz, partially intergrown with muscovite at edges in places. Large anhedral microcline & abundant smaller plagioclase subhedra. Minor pinite aggregates. Rare tourmaline & apatite. The red-brown biotites are bleached to variable extents & altered to muscovite. Biotites have numerous radioactive inclusions. Some secondary muscovite in radiating aggregates filling microcavities.
12.	Biotite		
3.	Muscovite		
.1	Tourmaline		
.1	Apatite		
1.	Pinite		

Location 0393

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0393
Float

SAME LOCATION AS 0392
COOTAMUNDRA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6133433 m N air-photo:run-no.= 8-5105
538819 m E 34.94073 S latitude
147.4251 E longitude

Illustrations :

Age/Unit=

WANTABDGERY GRANITE

Topography: LOW RISE WITH TORS

dip= strike=

Structure :

Field Geology: Granodiorite. Mostly equigranular though slightly porphyritic in orthoclase. Medium to coarse-grained. Melanocratic due to abundant biotite and biotite-rich xenoliths. Quartz-epidote rock float adjacent.

Field Rockname: SAMPLE CT-0393 QUARTZ-EPIDOTE ROCK

PHYSICAL PROPERTIES:

EPIDOTE ROCK

DENSITIES
Whole rock density = 2.82
Dry density = 2.82
Grain density = 2.84
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 1 in-situ readings = 628
from to SD=
Laboratory susceptibility = 25
Remanence = 6.00
Koenigsberger ratio = 4.00

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartz-epidote rock
FABRIC: Vuggy

Est. % MINERAL
35. Quartz
62. Epidote
3. Opaque

A mass of microcrystalline epidote with angular to subrounded cavities filled with strained quartz & an opaque mineral. This rock is probably a vein rock.

Location 0394

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0394
Outcrop

SAFE LOCATION AS 0395

COOTAMUNDRA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5105

6132238 m N

34.95153 S latitude

538321 m E

147.4197 E longitude

Illustrations :

Age/Unit=

Topography: GENTLE TO MODERATE RISE WITH OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Lamprophyre. Occurs as narrow dyke intruding granite. The mafic dyke is scarcely exposed. The granite is equigranular to slightly porphyritic in orthoclase, and coarse-grained. Chemical analysis by BMR.

Additional trace elements: 2 ppm As, 17 ppm Ga, 66 ppm Nd.

Field Rockname: SAMPLE CT-0394 LAMPROPHYRE

PHYSICAL PROPERTIES:

LAMPROPHYRE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.83

Dry density = 2.82

Grain density = 3.14

Porosity = 8.1

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility = 27030

Remanence = 6500.00

Koenigsberger ratio = 4.01

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	42.90	3.03	13.27	11.88	.20	7.25	8.49	3.85	2.84	1.07		4.14	98.92

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	849	-2	135		107	33	68		76	99	3	96

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	-2	1220		9	-1	171		28	108	362

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Olivine	Lamprophyre	Vitrophyric
29.	Augite	Phenocrysts of fractured anhedral olivine with acicular to lath-like pink titaniferous augite & small opaque euhedra set in a slightly altered glassy groundmass with tiny crystallites. Minor	
5.	Opaque	microphenocrysts of kaersutite in groundmass often clustered unevenly in patches. Rare altered microxenoliths.	
50.	Glass		
1.	Kaersutite		

Location 0395

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

. NO.=(7962)0395
Outcrop

SAME LOCATION AS 0394
COOTAMUNDRA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6132238 m N air-photo:run-no.= 8-5105
538321 m E 34.95153 S latitude
147.4197 E longitude

Illustrations :

Age/Unit=
Topography: GENTLE TO MODERATE RISE WITH OUTCROP dip= strike=
Structure : PLUTON
Field Geology: Lamprophyre. Occurs as narrow dyke intruding granite. The mafic dyke is
scarcely exposed. The granite is equigranular to slightly porphyritic in
orthoclase, and coarse-grained.

Field Rockname: SAMPLE CT0395 LAMPROPHYRE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.84
Dry density = 2.80
Grain density = 3.3;
Porosity = 14.2

LAMPROPHYRE

MAGNETIC SUSCEPTIBILITY (S.I.+000001)
Mean / 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 15243
Remanence = 900.00
Koenigsberger ratio = .98

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Lamprophyre
FABRIC: Porphyritic; microvesicular
Est. % MINERAL
5. Olivine Phenocrysts of olivine with considerable alteration to bowlingite and
1. Augite minor antigorite. Rare zoned augite phenocrysts with titanium-rich
4. Opaque rims & common euhedral orthopyroxene phenocrysts now altered to
5. Nepheline chlorite & epidote. Abundant acicular microphenocrysts of titanite
1. Kaersutite & small stubby kaersutite. The altered groundmass is patchily
2. Calcite crystallised, with resolvable nepheline. Numerous opaque grains
80. Groundmass sprinkled throughout.
2. Orthopyroxene

Location 0396

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0396

INVESTIGATION OF MAGNETIC ANOMALY IN AREA LACKING OUTCROP

No outcrop

COOTAMUNDRA

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5062

6159832 m N

34.70262 S latitude

540405 m E

147.4412 E longitude

Illustrations :

Age/Unit=

Topography: FLAT SOIL

dip= strike=

Structure :

Field Geology: Soil overlying concealed magnetic source. The magnetic source was located by recorded magnetometer traverses. The source is a circular body, the top of which was calculated to be within 50 metres of the surface.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0397

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0397
Outcrop

OUTCROP HAS BEEN PARTLY QUARRIED
JERILDERIE

1:250,000 sheet area 1:100,000 sheet area
6106159 m N 35.18738 S latitude
491960 m E 146.9117 E longitude

NSW GDOM=2

air-photo:run-no.= 2-80

Illustrations :

Age/Unit=

Topography: FLAT

Structure : NDETERMINATE-PROBABLY PLUTON

dip= strike=

Field Geology: Granite. Slightly gneissose and augen-bearing in appearance.
Porphyroblastic phenocrysts of orthoclase are set in a coarse-grained,
inequigranular granitic groundmass in which minor biotite is aligned
parallel to layering. The foliation is wavy. Muscovite-bearing.

Field Rockname: SAMPLE JE0397 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES

Whole rock density = 2.56
Dry density = 2.53
Grain density = 2.64
Porosity = 4.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to SD=
Laboratory susceptibility = 50
Remanence = .30
Koenigsberger ratio = .10

GAMMA-RAY SPECTROMETRY

Ch.1= 50921
Ch.2= 5654 5.68 x K2O
Ch.3= 785 8.30 ppm U
Ch.4= 343 6.35 ppm Th
U/Th= 1.37
7.48 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.85	.16	14.48	.92	.01	.23	.61	2.66	5.75	.30	.01	.80	99.77

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	283	-6	42	3	13	-5	25	-3	13	-5	53	338

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	2	22	.93	-5	6	5	4	7	23	34	70

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
34.	Quartz	Granite	Hypidiomorphic granular
45.	Orthoclase		Patches of anhedral, considerably strained quartz amidst large anhedral phenocrysts of orthoclase, microcline & rare plagioclase.
15.	Plagioclase		Minor biotite altering to colourless chlorite in places. Rare topaz anhedral. Interstitial muscovite, particularly close to biotite where it is probably an alteration product.
5.	Biotite		
1.	Muscovite		
.5	Topaz		
.1	Opaque		

Location 0398

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0398
Outcrop

JERILDERIE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-160
6097049 m N 35.26943 S latitude
483601 m E 146.8197 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: FLATS SURROUNDING VERY LOW RISE dip=90 strike=150
Structure : STEEPLY DIPPING
Field Geology: Shale, siltstone, mudstone and greywacke. Thin bedded to massive. Minor small-scale slump folding. Some secondary iron oxides concentrated by weathering along joints and as dispersions in "rolls" within coarser beds.
Field Rockname: SAMPLE JE-0398 WEATHERED SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE		MAGNETIC SUSCEPTIBILITY (S.I.:.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES					
Whole rock density =	2.12	Mean of 5 in-situ readings =	0	Ch.1=	52638
Dry density =		from to SD=		Ch.2=	3758 2.65 % K2O
Grain density =		Laboratory susceptibility =	0	Ch.3=	1026 2.09 ppm U
Porosity =		Remanence =	0.00	Ch.4=	1191 23.19 ppm Th
		Koenigsberger ratio =		U/Th=	.09
				5.84	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Siltstone
Est. %	FABRIC:	Poorly sorted
25.	Quartz	Subangular quartz grains & randomly oriented detrital muscovite
10.	Muscovite	with minor heavy mineral (?tourmaline) & opaque limonite after
5.	Opaque	?biotite set in a matrix of cherty silica with abundant sericite.
.01	Tourmaline	
60.	Matrix	

Location 0399

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0399
Outcrop

PARTLY QUARRIED
JERILDERIE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-27
6076578 m N 35.45413 S latitude
493856 m E 146.9323 E longitude

Illustrations :

Age/Unit: JINDERA GRANITE
Topography: MODERATELY STEEP RISE dip= strike=
Structure : PLUTON
Field Geology: Biotite granite. Inequigranular, slightly porphyritic in quartz; mostly coarse-grained; Leucocratic.

Field Rockname: SAMPLE JE0399 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.58
Dry density = 2.57
Grain density = 2.61
Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 188
Remanence = 3.00
Koenigsberger ratio = .27

GAMMA-RAY SPECTROMETRY

Ch.1= 78566
Ch.2= 5657 4.20 % K2O
Ch.3= 1661 10.95 ppm U
Ch.4= 1286 24.34 ppm Th
U/Th= .45
11.89 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.70	.04	12.50	.65	.02	.04	.38	3.54	4.52	.03	.02	.30	99.84

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	155	-6	45	-1	5	-5	13	-3	20	-5	37	343

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	2	-5	24	-5	30	8	4	9	64	21	77

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
35. Quartz Large patches of slightly strained quartz amidst euhedral sericitised
43. Orthoclase zoned plagioclase & unaltered, plagioclase. Abundant interstitial
20. Plagioclase kaolinised orthoclase. Minor biotite, slightly chloritised & rarely
2. Biotite altered to muscovite. Rare opaque mineral.
.1 Muscovite
.1 Opaque
.1 Apatite

Location 0400

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0400

SAME LOCATION AS 0401

Outcrop

JERILDERIE

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-111

6065322 m N

35.55517 S latitude

469710 m E

146.6658 E longitude

Illustrations :

Age/Unit= Lower Devonian

Topography: GENTLY SLOPING RISE

dip= strike=

Structure :

Field Geology: Ignimbrite. Porphyritic in quartz and feldspar set in a fine to medium-grained groundmass with numerous small cognate xenoliths.

Field Rockname: SAMPLE JE0400 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES

Whole rock density = 2.70

Dry density = 2.71

Grain density = 2.71

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 502

Remanence = 600.00

Koenigsberger ratio = 19.9

GAMMA-RAY SPECTROMETRY

Ch.1= 40826

Ch.2= 3473 2.92 % K2O

Ch.3= 748 3.82 ppm U

Ch.4= 673 12.89 ppm Th

U/Th= .30

5.24 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	63.26	.80	15.15	5.76	.09	2.33	4.15	2.81	2.45	.18	.13	2.00	99.61

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	784	-6	68	22	44	154	44	-3	9	10	19	127

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	H	Y	Zn	Zr
p.p.m.	25	-20	249	-5	13	-3	123	-5	36	70	211

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
5.	Quartz	Ignimbrite	Porphyritic; devitrified vitrophyric
54.	Plagioclase		Phenocrysts of rounded, embayed & skeletal volcanic quartz, abundant anhedral sericitised plagioclase often altering to minor calcite, chlorite and epidote. The groundmass has devitrified to a medium-to fine-grained mosaic of sericitised feldspar & minor quartz, with epidote, opaque mineral & fine crystal fragments. Rare xenoliths of chloritised volcanic glass & granophyre.
3.	Epidote		
2.	Calcite		
5.	Rock fragments		
1.	Opaque		
30.	Groundmass		

Location 0401

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0401
Outcrop

SAME LOCATION AS 0400

JERILDERIE

NSW GOOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-111
6065322 m N 35.55517 S latitude
469710 m E 146.6658 E longitude

Illustrations :

Age/Unit= Lower Devonian

Topography: RISE WITH OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Ignimbrite. Porphyritic in quartz and feldspar set in a fine to medium-grained groundmass with numerous small cognate xenoliths.

Field Rockname: SAMPLE JE0401 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES

Whole rock density = 2.70
Dry density = 2.69
Grain density = 2.72
Porosity = 1.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 490
Remanence = 25.00
Koenigsberger ratio = .85

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	63.95	.77	15.08	5.58	.09	2.26	4.08	2.83	3.10	.18	.09	1.70	79.70
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	725	-6	70	20	35	29	41	-3	10	11	34	145	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	19	26	246	-5	17	4	112	9	35	69	209		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
 Est. % MINERAL FABRIC: Porphyritic; devitrified vitrophyric
 5. Quartz Phenocrysts of rounded, embayed & skeletal volcanic quartz with
 32. Plagioclase sericitised euhedral glomeroporphyritic plagioclase, & relict
 3. Epidote ferromagnesian mineral (?hornblende) altered to skeletal outlines of
 3. Rock fragments cleavage traces now opacitised. Also epidote pseudomorphs of another
 1. Opaque ferromagnesian mineral. The groundmass consists of a fine-grained
 55. Groundmass devitrified mosaic of slightly sericitised feldspar. Minor chloritised
 1. Ferromagnesian volcanic rock fragments.

Location 0402

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0402
 Outcrop

JERILDERIE NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-115
 6059297 m N 35.60967 S latitude
 475854 m E 146.7334 E longitude

Illustrations :

Age/Unit= JINDERA GRANITE
 Topography: BROAD RISE WITH EXFOLIATED SURFACES dip= strike=
 Structure : PLUTON
 Field Geology: Granite. Equigranular, medium-grained, non porphyritic. Pinkish and leucocratic with very minor biotite.

Field Rockname: SAMPLE JE0402 GRANITE

PHYSICAL PROPERTIES:

DENSITIES
 Whole rock density = 2.57
 Dry density = 2.56
 Grain density = 2.61
 Porosity = 2.5

GRANITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 17
 from 0 to 62, SD= 30
 Laboratory susceptibility = 0
 Remanence = 20.00
 Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 71732
 Ch.2= 5863 4.76 % K20
 Ch.3= 1491 11.10 ppm U
 Ch.4= 1047 19.64 ppm Th
 U/Th= .56
 11.31 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.81	.03	13.25	.75	.07	.04	.41	4.28	4.48	.03	.03	.30	99.48
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	141	-6	44	2	4	-5	29	-3	18	-5	32	335	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	8	13	-5	21	5	4	9	56	19	59		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
 FABRIC: Hypidiomorphic granular
 Est. % MINERAL
 40. Quartz Large interconnected globular patches of strained quartz. Euhedral
 40. Orthoclase plagioclase with sericitised cores & clear rims. Abundant anhedral
 17. Plagioclase kaolinised orthoclase. Biotite is variably chloritised & has numerous
 2. Biotite radioactive inclusions. Minor muscovite which is interstitial, & also
 .5 Muscovite a rare alteration product of plagioclase. Minor opaque mineral which is
 .3 Opaque partly a weathering product of biotite.

Location 0403

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0403
Outcrop

SOME QUARRYING

JERILDERIE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-146
6050980 m N 35.68340 S latitude
444784 m E 146.3898 E longitude

Illustrations :

Age/Unit=

Topography: MODERATE RISE WITH EXFOLIATED OUTCROPS

dip= strike=

Structure : PLUTON

Field Geology: Granite. Inequigranular, porphyritic in orthoclase, and coarse-grained.

Leucocratic with trace biotite and tourmaline being the only dark minerals. Abundant muscovite and quartz.

Field Rockname: SAMPLE JE0403 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES

Whole rock density = 2.57
Dry density = 2.54
Grain density = 2.64
Porosity = 3.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = 7.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 47683
Ch.2= 5228 5.23 % K2O
Ch.3= 708 6.64 ppm U
Ch.4= 381 0.94 ppm Th
U/Th= .96
6.50 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.22	.14	14.34	.45	.01	.16	.22	2.99	4.63	.19	.01	1.00	99.38

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	203	-6	32	2	5	-5	20	-3	17	-5	36	390

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	9	10	69	-5	12	5	5	16	22	9	73

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Granite	Hypidiomorphic granular
50.	Orthoclase		Globular patches of slightly strained quartz with minor embayments along margins. Large phenocrysts of orthoclase, poikilitically enclosing plagioclase & quartz, & lesser plagioclase partially sericitised with minor liberation of muscovite. Abundant muscovite
15.	Plagioclase		often with opaque inclusions along cleavages indicating presence of pre-alteration biotite. Very minor biotite partially altered to muscovite. Rare tourmaline and garnet. Interstitial medium-grained quartz and feldspar.
10.	Muscovite		
.1	Biotite		
.1	Tourmaline		
.1	Opaque		
.01	Garnet		

Location 0404

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0404
Outcrop

JERILDERIE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-142
6044614 m N 35.74168 S latitude
463632 m E 146.5978 E longitude

Illustrations :

Age/Unit=
Topography: SEVERAL MODERATE RISES, EXFOLIATED SURFACE dip= strike=
Structure : PLUTON
Field Geology: Granite. Slightly gneissic in appearance. Inequigranular, porphyritic in orthoclase, and coarse-grained. Muscovite-rich, quartz-rich and tourmaline-bearing. Leucocratic. Alignment of biotites defines weak foliation. Rare pegmatitic and aplitic variants.
Field Rockname: SAMPLE JE0404 GRANITE

PHYSICAL PROPERTIES: GRANITE
DENSITIES
Whole rock density = 2.70
Dry density = 2.56
Grain density = 2.64
Porosity = 2.9
MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .10
Koenigsberger ratio = *****
GAMMA-RAY SPECTROMETRY
Ch.1= 47004
Ch.2= 5077 5.10 % K20
Ch.3= 792 10.45 ppm U
Ch.4= 170 2.50 ppm Th
U/Th= 4.18
8.08 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 74.41 .07 14.44 1.04 .06 .16 .47 3.45 4.09 .44 .01 .80 99.46
TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 150 -6 16 3 7 5 -1 -3 14 -5 37 460
TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 6 47 46 11 -5 8 6 16 16 48 33

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
Est. % MINERAL FABRIC: Hypidiomorphic granular to banded
35. Quartz Lenticular patches of formerly strained quartz with now well adjusted grain boundaries. Large orthoclase & microcline subhedra. Euhedral
35. Orthoclase muscovitised plagioclase with clear secondary rims & some secondary
15. Plagioclase albite after fractured kaolinised orthoclase. Red-brown pleochroic
4. Biotite biotite with numerous radioactive inclusions. Biotite is slightly
8. Muscovite bleached in places & partly altered to muscovite & associated
2. Tourmaline with topaz & tourmaline giving tendency to weak layered structure
1. Topaz parallel to quartz lenticles. Abundant muscovite & rare tiny garnets.
.01 Garnet
.01 Sillimanite Essentially free of opaque minerals. Rare sillimanite.

Location 0405

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0405 SAME LOCATION AS 0406
Outcrop JERILDERIE NSW GDOM=Z
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-208
 6035880 m N 35.82030 S latitude
 460443 m E 146.5621 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: LOW RISE. dip=90 strike=085
Structure : VERTICALLY DIPPING
Field Geology: Mudstone, shale, siltstone and greywacke. Fine-grained rocks are very slightly cleaved. The greywacke is quartz-rich and slightly feldspathic. Non metamorphosed.

Field Rockname: SAMPLE JE0405 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES: SANDSTONE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.67	Mean of 1 in-situ readings = 0	Ch.1= 43515
Dry density = 2.66	from to ,SD=	Ch.2= 2863 1.94 % K20
Grain density = 2.69	Laboratory susceptibility = 113	Ch.3= 844 2.27 ppm U
Porosity = 1.0	Remanence = 1.00	Ch.4= 933 18.11 ppm Th
	Koenigsberger ratio = .15	U/Th= .13
		4.93 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Quartzose sandstone	
FABRIC:	Poorly sorted	
Est. %	MINERAL	DESCRIPTION
75.	Quartz	Subangular grains of strained quartz with minor feldspar, quartzite
2.	Plagioclase	lithic fragments, detrital muscovite, opaque mineral, ?topaz, and
1.	Orthoclase	tourmaline. All grains have a dark coating from which biotite has
.5	Tourmaline	crystallised. The smaller interstices of some are filled with a cement
.1	Topaz	of cherty silica & traces of fine sericite. The matrix consists mainly
1.	Muscovite	of fine-grained quartz.
.5	Biotite	
.1	Cement	
1.	Opaque	
4.	Rock fragments	
15.	Matrix	

Location 0406

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0406
Outcrop

SAME LOCATION AS 0405

JERILDERIE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-208
6035878 m N 35.82032 S latitude
460443 m E 146.5621 E longitude

Illustrations :Photomicrograph

Age/Unit= Ordovician

Topography: LOW RISE

dip= strike=

Structure : VERTICALLY DIPPING

Field Geology: Mudstone, shale, siltstone and greywacke. Fine-grained rocks are very slightly cleaved. The greywacke is quartz-rich and slightly feldspathic.

Field Rockname: SAMPLE JE0406 MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE

DENSITIES
Whole rock density = 2.44
Dry density = 2.41
Grain density = 2.83
Porosity = 14.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 389
Remanence = .50
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Mudstone
10. Biotite FABRIC: Massive with randomly scattered porphyroblasts
90. Mud Randomly oriented & scattered biotite porphyroblasts set in a non-resolvable mud matrix limonitised by surface weathering.
Photograph biotite porphyroblasts

Location 0407

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0407

Outcrop

JERILDERIE

NSW GDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-71
6018510 m N 35.97743 S latitude
476641 m E 146.7409 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: RUGGED STEEP RISE

dip= strike=

Structure :

Field Geology: Quartzite, mudstone, slate, andalusite slate and quartzite. Planar bedded.

Field Rockname: SAMPLE JE0407 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.61
Dry density = 2.61
Grain density = 2.78
Porosity = 6.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 389
Remanence = 1.00
Koenigsberger ratio = .04

GAMMA-RAY SPECTROMETRY

Ch.1= 46674
Ch.2= 2790 1.73 % K2O
Ch.3= 889 1.56 ppm U
Ch.4= 1053 20.52 ppm Th
U/Th= .08
4.85 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
82.	Quartz	Biotite quartzite	Poorly sorted; tightly compacted
1.	Plagioclase		Subangular to subrounded quartz grains with rare plagioclase, opaque mineral, muscovite & apatite with detrital biotite of red-brown colour. Grains have a mud coating from which finely divided green-brown biotite has crystallised. This forms the entire matrix material.
1.	Muscovite		
15.	Biotite		
.1	Apatite		
1.	Opaque		

Location 0408

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0408

SAME LOCATION AS 0407

Outcrop

JERILDERIE

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-71

6018510 m N

35.97743 S latitude

476641 m E

146.7409 E longitude

Illustrations :Photomicrograph

Age/Unit= Ordovician

Topography: STEEP RUGGED RISE

dip= strike=

Structure : VERTICALLY DIPPING

Field Geology: Quartzite, mudstone, slate, andalusite slate and quartzite. Planar bedded.

Field Rockname: SAMPLE JE0408 ANDALUSITE SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 2.77
Dry density = 2.80
Grain density = 2.87
Porosity = 2.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 150
Remanence = .50
Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY

Ch.1= 50335
Ch.2= 3510 2.70 X K20
Ch.3= 856 2.69 ppm U
Ch.4= 913 17.69 ppm Th
U/Th= .15
5.30 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Knotted slate	
		Well bedded; porphyroblastic	
40.	Quartz	Bedding defined by variation in proportions of quartz & micas between layers. Porphyroblasts of free euhedral andalusite & ovoid aggregates of andalusite & micas around which bedding curves uniformly. The remainder of the rock consists of strained quartz mixed in variable proportions with approximately equal amounts of muscovite & biotite. Quartz is coarsest in layers containing the least mica indicating growth of it from formerly finer silica. The micas are optically continuous with planar bedding. However, in the ovoid aggregates they are randomly oriented. Numerous radioactive inclusions in the larger biotites.	
15.	Porphyroblasts	Photograph ovoid porphyroblasts.	
2.	Andalusite		
1.	Opaque		
21.	Biotite		
21.	Muscovite		

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Location 0409

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0409
Outcrop

SAME LOCATION AS 0410. SAMPLES FROM QUARRY

JERILDERIE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-65
6019598 m N 35.96788 S latitude
493995 m E 146.9334 E longitude

Illustrations :

Age/Unit=

JINDERA GRANITE

Topography: GENTLE WIDE RISE WITH OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Granite with numerous closely-spaced aplitic, and fine-grained porphyritic variants. The most common is coarse-grained, porphyritic in orthoclase and leucocratic with specks of biotite.

Field Rockname: SAMPLE JE0409 APLITE

PHYSICAL PROPERTIES:

APLITE

DENSITIES

Whole rock density = 2.59

Dry density = 2.57

Grain density = 2.61

Porosity = 1.3

MAGNETIC SUSCEPTIBILITY (S.I. = 000001)

Mean of 15 in-situ readings = 2010

from 0 to 6157 SD= 1771

Laboratory susceptibility = 1457

Remanence = 50.00

Koenigsberger ratio = .57

GAMMA-RAY SPECTROMETRY

Ch.1= 99580

Ch.2= 6346 4.28 % K2O

Ch.3= 2015 9.63 ppm U

Ch.4= 1870 35.90 ppm Th

U/Th= .27

13.06 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.84	.07	12.60	.97	.01	.05	.37	2.35	6.29	.03	.01	.80	99.39

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	79	-6	55	-1	-1	-5	51	4	8	-5	39	250

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	21	17	-5	46	13	3	10	39	12	104

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Aplite	Aplitic
43.	Orthoclase	Euhedral to subhedral sericitised plagioclase with frequent liberation of tiny muscovite. Anhedral interconnected globular patches of strain-free quartz. Abundant interstitial kaolinised orthoclase.	
30.	Plagioclase	Minor biotite partly chloritised & rare muscovite & apatite.	
1.	Biotite	Scattered hematite & lesser ilmenite & rare magnetite altering to hematite.	
.1	Muscovite		
.1	Apatite		
.7	Hematite		
.1	Ilmenite		
.2	Ilmenite		

Location 0410

* LA'HLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0410
Outcrop

SAME LOCATION AS 0409

JERILDERIE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-65
6019508 m N 35.96788 S latitude
493995 m E 146.9334 E longitude

Illustrations :

Age/Unit= JINDERA GRANITE
Topography: GENTLE WIDE RISE WITH OUTCROP dip= strike=
Structure : PLUTON
Field Geology: Granite with numerous closely-spaced aplitic, and fine-grained, porphyritic variants. The most common is coarse-grained, porphyritic in orthoclase and leucocratic with specks of biotite.

Field Rockname: SAMPLE JE0410 PORPHYRITIC ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
Wet rock density = 2.66
Dry density = 2.66
Grain density = 2.68
Porosity = 8.4

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 4398
Remanence = 30.00
Koenigsberger ratio = .11

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.74	.56	14.05	3.59	.06	.97	2.16	3.48	4.05	.18	.02	.50	99.36
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	603	-6	61	11	10	7	49	-3	13	7	22	216	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	7	175	-5	13	5	46	9	35	47	219		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Quartz	Adame'llite	Interconnected globular patches of strained quartz. Large poikilitic
35.	Orthoclase		orthoclase phenocrysts patchily kaolinised. Much smaller euhedral
30.	Plagioclase		sericitised plagioclase with clear secondary enlargement. Abundant
4.	Biotite		biotite often partially chloritised with liberation of epidote.
.5	Apatite		Abundant apatite inclusions in biotite, which is the yellow-brown
.01	Epidote		variety which lacks pleochroic haloes. Rare opaque mineral generally
.5	Opaque		confined to areas of biotite.

Location 0411

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0411

Outcrop

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 12-5157

6024501 m N
508813 m E

35.92365 S latitude
147.0977 E longitude

Illustrations :

Age/Unit= Ordovician?

Topography: GENTLY TO MODERATELY SLOPING RISES

dip= strike=

Structure :

Field Geology: Slate, phyllite, and quartzite. Very poorly exposed and deeply weathered
. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 8
from 0 to 62, SD= 23
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 52686
Ch.2= 2591 .9% \pm K2O
Ch.3= 1175 1.9% \pm U
Ch.4= 1402 27.34 ppm Th
U/Th= .07
6.08 Heat generation units

Location 0412

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0412

Outcrop

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 11-5129

6026750 m N

53.90332 S latitude

513228 m E

147.1466 E longitude

Illustrations :

Age/Unit=

ALBURY GNEISS

Topography: MODERATELY STEEP RISE

dip= strike=

Structure: PLUTON

Field Geology: Gneissic granite. Augen-bearing and biotite-rich, with wavy to planar foliation.

Field Rockname: SAMPLE WA0412 GNEISSIC GRANITE

PHYSICAL PROPERTIES:

GNEISS

DENSITIES

Whole rock density = 2.58

Dry density = 2.67

Grain density = 2.76

Porosity = 3.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 23

from 0 to 125, SD= 46

Laboratory susceptibility = 0

Remanence = 2.00

Kornigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 70507

Ch.2= 6331 5.78 % K20

Ch.3= 1093 6.04 ppm U

Ch.4= 945 18.05 ppm Th

U/Th= .33

8.14 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.21	.29	14.47	2.12	.02	.46	.78	2.02	6.17	.35	.02	1.00	99.91

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	386	-6	66	4	15	42	39	-3	16	-5	55	348

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	11	5	100	-5	15	5	17	-5	20	57	118

DESCRIPTION OF THIN OR POLISH: 0 THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Gneissic granite	Gneissose; porphyroblastic
53.	Orthoclase	Porphyroblasts of poikilitic orthoclase ovoids & less common plagioclase set in a layered groundmass of quartz, orthoclase, biotite, sillimanite & apatite. The layering is lenticular around porphyroblasts & defined by alternation of quartz & feldspar-rich layers, & lenticles with layers dominated by biotite & sillimanite.	
10.	Plagioclase	Essentially free of opaque minerals in this thin section.	
2.	Apatite		
10.	Biotite		
5.	Sillimanite		

Location 0413

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0413

Outcrop

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-5005

6049490 m N

35.69838 S latitude

501592 m E

147.0176 E longitude

Illustrations :Photomicrograph

Age/Unit= Upper Silurian

Topography: LOW RISE

dip= strike=

Structure :

Field Geology: Ignimbrite. Porphyritic in quartz, feldspar and a ferromagnesian mineral
, all set in an altered fine-grained groundmass.

Field Rockname: SAMPLE WA0413 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.66

Dry density = 2.71

Grain density = 2.72

Porosity = 5.9

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 15 in-situ readings = 17773

from 10053 to 20734 ,SD= 2840

Laboratory susceptibility = 16223

Remanence = 760.00

Koenigsberger ratio = .78

GAMMA-RAY SPECTROMETRY

Ch.1= 43683

Ch.2= 3109 2.19 % K2O

Ch.3= 941 4.94 ppm U

Ch.4= 836 16.00 ppm Th

U/Th= .31

6.29 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	
20.	Quartz	Ignimbrite	
10.	Plagioclase	Vitrophyric	
10.	Orthoclase		Phenocrysts of spectacularly embayed, rounded volcanic quartz with glass-filled fractures, & angular fractured fragments of orthoclase & plagioclase. All ferromagnesian phenocrysts are altered; hornblende to clays, ?sphene & minor magnetite;biotite to chlorite with liberation of sphene, & pyroxene to chlorite. Rare scattered magnetite phenocrysts.
3.	Hornblende		
2.	Pyroxene		
2.	Biotite		Rare pyrite & chalcopyrite liberated from breakdown of a few ferromagnesian minerals. Slight alteration of magnetite to hematite. Rare plutonic rock xenoliths. The groundmass consists of altered glass which is non resolvable.
50.	Groundmass		
.1	Epidote		
2.	Magnetite		
.5	Hematite		Photograph embayed quartz with glass-filled fractures.
.01	Pyrite		
.01	Chalcopyrite		
.1	Rock fragments		
.1	Sphene		

Location 0414

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0414
 Quarry

HAGGA HAGGA NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5179
 6059099 m N 35.61173 S latitude
 504944 m E 147.0546 E longitude

Illustrations :

Age/Unit= Upper Silurian
 Topography: RUGGED ROCKY RISE dip= strike=
 Structure :
 Field Geology: Ignimbrite. Coarsely porphyritic in zoned feldspar, quartz, and biotite
 set in a fine-grained groundmass. Xenoliths of pegmatite and acid lava
 fragments.

Field Rockname: SAMPLE WA0414 IGNIMBRITE

PHYSICAL PROPERTIES:

	IGNIMBRITE		
DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY	
Whole rock density =	Mean of 5 in-situ readings = 0	Ch.1= 64875	
Dry density = 2.63	from to .SD=	Ch.2= 5205 4.15 % K2O	
Grain density = 2.68	Laboratory susceptibility = 376	Ch.3= 1202 4.30 ppm U	
Porosity = 1.5	Remanence = 10.00	Ch.4= 1238 23.93 ppm Th	
	Koenigsberger ratio = .44	U/Th= .18	
		7.69 Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.41	.45	14.48	3.31	.05	.74	2.26	2.95	4.37	.16	.08	1.40	99.68
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	832	-6	93	11	12	11	71	-3	14	6	41	198	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	11	43	203	-5	23	3	44	9	41	60	220		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Ignimbrite
	FABRIC:		Porphyritic
15.	Quartz	Globular to euhedral embayed volcanic quartz with sericitised and	
10.	Plagioclase	slightly calcitised plagioclase but showing variable alteration from	
5.	Orthoclase	crystal to crystal. Biotite phenocrysts are altered to chlorite, rare	
5.	Biotite	muscovite, & epidote. Rare hornblende phenocrysts altered to chlorite	
1.	Hornblende	& epidote. Apatite inclusions in biotite are common. The groundmass	
1.	Apatite	consists of fine to slightly medium-grained quartz, orthoclase,	
63.	Groundmass	plagioclase, chlorite and rare opaque mineral.	

Location 0415

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0415
Outcrop

JERILDERIE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5073
6068763 m N 35.52460 S latitude
495811 m E 146.9538 E longitude

Illustrations :

Age/Unit= Lower Devonian
Topography: LOW ROCKY RISE dip= strike=
Structure :
Field Geology: Ignimbrite. Porphyritic, with phenocrysts of quartz and feldspar set in
a fine-grained quartzo-feldspathic groundmass. Cognate xenoliths locally
abundant.

Field Rockname: SAMPLE JE0415 IGNIMBRITE

PHYSICAL PROPERTIES: IGNIMBRITE

DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 3.00 Mean of 15 in-situ readings = 14279 Ch.1= 43562
Dry density = 2.70 from 7791 to 19854, SD= 2918 Ch.2= 3112 2.32 X K20
Grain density = 2.75 Laboratory susceptibility = 14941 Ch.3= 867 4.74 ppm U
Porosity = 1.8 Remanence = 39000.00 Ch.4= 754 14.41 ppm Th
Koenigsberger ratio = 43.50 U/Th= .33
5.92 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	64.86	0.70	15.03	4.98	0.08	2.24	4.20	2.64	3.22	0.15	0.05	1.50	99.67
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	809	-6	55	13	20	9	6	6	9	42	19	132	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	31	255	-5	22	-3	113	-5	28	57	164		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
FABRIC: Vitrophyric
Est. % MINERAL
20. Quartz Phenocrysts of fractured, rounded & embayed volcanic quartz with
12. Plagioclase epidotised, & sericitised plagioclase variably altered.
10. Orthoclase Orthoclase is also altered & slightly chloritised. Ferromagnesian
8. Hornblende minerals include:hornblende showing marginal alteration to clay,
3. Biotite chlorite & magnetite; biotite altering to muscovite & minor
2. Chlorite magnetite; grains of chlorite which are possibly xenoliths; & minor
2. Epidote epidote. Scattered magnetite phenocrysts, some altered to goethite in
2. Rock fragments a few places.
38. Groundmass
1. Calcite
2. Magnetite
.1 Goethite

Location G416

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0416
Outcrop

SAME LOCATION AS 0417
WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6067857 m N air-photo:run-no.= 7-5077
513816 m E 35.53268 S latitude
147.1524 E longitude

Illustrations :Photomicrograph

Age/Unit= KOETONG GRANITE
Topography: MODERATLEY SLOPING UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granite cut by dyke of tuffisite breccia. The granite is inequigranular with pegmatitic phases. The tuffisite has angular rock and mineral fragments set in a fine-grained siliceous groundmass.

Field Rockname: SAMPLE WA0416 TUFFISITE BRECCIA

PHYSICAL PROPERTIES:

BRECCIA
DENSITIES
Whole rock density = 2.56
Dry density = 2.56
Grain density = 2.66
Porosity = 3.8
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 4 in-situ readings = 0
from to SD=
Laboratory susceptibility = 87
Remanence = .50
Koenigsberger ratio = .10
GAMMA-RAY SPECTROMETRY
Ch.1= 47260
Ch.2= 4012 3.65 % K20
Ch.3= 903 10.72 ppm U
Ch.4= 295 4.93 ppm Th
U/Th= 2.17
8.32 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	90.69	0.05	5.57	0.55	0.01	0.10	0.08	0.01	1.74	0.07	0.05	1.10	100.00
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	79	-6	1	6	-1	-5	14	4	5	8	23	180	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	-1	-20	12	-5	5	-3	2	6	8	6	26		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Tuffisite breccia
 Est. % MINERAL FABRIC: Fragmental; unsupported framework
 30. Rock fragments Angular to subrounded fragments of quartzite and quartz with minor
 5. Quartz fragments of plutonic-sized feldspars set in a groundmass of fine-
 1. Plagioclase grained quartz, minor feldspar & sericite. Minor muscovite fragments
 1. Orthoclase & groundmass patches. All quartz is highly strained & some fragments
 3. Muscovite are noticeably fractured.
 .01 Tourmaline
 .01 Apatite
 60. Groundmass

Location 0417

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0417
Outcrop

SAME LOCATION AS 0416
WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5077
6067857 m N 35.53268 S latitude
513816 m E 147.1524 E longitude

NSW GDOM=2

Illustrations :

Age/Unit= KOETONG GRANITE
Topography: MODERATELY SLOPING UPLAND dip= strike=

Structure :
Field Geology: Granite cut by dyke of tuffisite breccia. The granite is inequigranular with pegmatitic phases. The tuffisite has angular rock and mineral fragments set in a fine-grained siliceous groundmass.

Field Rockname: SAMPLE FA0417 GRANITE

PHYSICAL PROPERTIES:

	GRANITE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
DENSITIES			
Whole rock density = 2.46	Mean of 4 in-situ readings = 0	Ch.1= 58910	
Dry density =	from to SD=	Ch.2= 5375	5.00 X K20
Grain density =	Laboratory susceptibility = 37	Ch.3= 1095	12.59 ppm U
Porosity =	Remanence = .30	Ch.4= 392	6.68 ppm Th
	Koenigsberger ratio = .14	U/Th= 1.89	
		10.10	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.58	.17	14.50	1.25	.02	.19	.40	2.36	5.75	.37	.03	1.00	99.63

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	261	-6	43	6	11	9	23	-3	12	-5	55	385

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	31	76	6	9	13	9	14	32	51	69

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Granite
40.	Quartz	FABRIC:	Hypidiomorphic granular, tending slightly aplitic & granophyric
40.	Orthoclase		Interconnected network of globular patches of strain-free quartz.
10.	Plagioclase		Euhedral sericitised plagioclase with minor liberation of muscovite.
7.	Muscovite		Rare clusters of tourmaline. Plagioclase commonly occurs in globular clusters also. Interstitial kaolinised orthoclase. Biotite slightly
3.	Biotite		limonitised by weathering and partially altered to muscovite.
.1	Tourmaline		Accessory apatite & opaque mineral.
.1	Apatite		
.1	Opaque		

Location 0418

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0418
Outcrop

WAF :AGGA NSW GDOM=2
1: 100 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5149
6073852 m N 35.47555 S latitude
579463 m E 147.8759 E longitude

Illustrations :

Age/Unit= BELMORE GRANITE
Topography: RUGGED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Inequigranular with variable phases. Porphyritic in
K-feldspar. Melanocratic to abundant biotite, and biotite-rich
xenoliths. Minor white quartz veins.

Field Rockname: SAMPLE WA0418 BIOTITE ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES
Whole rock density = 2.67
Dry density = 2.66
Grain density = 2.71
Porosity = 2.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = .30
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 57227
Ch.2= 5219 4.77 % K2O
Ch.3= 918 5.58 ppm U
Ch.4= 751 14.28 ppm Th
U/Th= .39
6.98 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.97	.32	14.19	2.60	.06	.86	1.63	3.42	3.59	.14	.02	.60	99.41
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	374	-6	41	9	14	-5	32	-3	9	8	34	180	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	12	-	113	-5	9	3	36	10	39	31	117		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
40.	Quartz	Adamellite	Hypidiomorphic granular
25.	Orthoclase		Interconnected globular patches of highly strained quartz amidst slightly kaolinised orthoclase & subhedral plagioclase with sericitised cores. Abundant biotite with deep red-brown to light yellowish brown pleochroism & with numerous apatite & tiny radioactive inclusions. Some biotites show partial alteration to chlorite & muscovite with rare liberation of opaque mineral.
15.	Plagioclase		
15.	Biotite		
5.	Muscovite		
.2	Apatite		
.1	Opaque		

Location 0419

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO. = 796210419
Outcrop

WAGGA WAGGA NSW GDOM=Z
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5084
6082086 m N 35.40073 S latitude
586474 m E 147.9523 E longitude

Illustrations :

Age/Unit= GREEN HILLS GRANITE
Topography: RUGGED STEEP UPLAND WITH OUTCROP dip= strike=
Structure : PLUTON
Field Geology: Granodiorite, Equigranular, medium-grained, and sparingly porphyritic in feldspar in places. Melanocratic due to abundant biotite.

Field Rockname: SAMPLE WA0419 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE
DENSITIES
Whole rock density = 2.68
Dry density = 2.60
Grain density = 2.63
Porosity = 1.0
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to SD=
Laboratory susceptibility = 100
Remanence = .10
Koenigsberger ratio = .02
GAMMA-RAY SPECTROMETRY
Ch.1= 47468
Ch.2= 3755 3.06 % K2O
Ch.3= 882 4.74 ppm U
Ch.4= 774 14.80 ppm Th
U/Th= .32
6.16 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.17	.80	15.33	5.24	.07	2.36	3.12	2.66	3.16	.15	.04	.70	99.79
TRACE ELEMENT	Ca	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	477	-6	75	18	64	16	50	-3	13	22	22	177	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	7	190	-5	21	6	86	5	43	66	215		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Granodiorite	Hypidiomorphic granular
40.	Plagioclase		Globular patches of strained quartz amidst subhedral fresh plagioclase with sericitised cores in places, & slightly fractured orthoclase.
14.	Orthoclase		Abundant biotite with deep red-brown to pale yellowish pleochroism
20.	Biotite		& numerous apatite & other tiny radioactive inclusions. Minor alteration of some biotites to chlorite or muscovite. Minor opaque mineral.
.4	Muscovite		
.2	Apatite		
.5	Opaque		
.3	Chlorite		

Location 0420

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0420
Outcrop

SAME LOCATION AS 0421

WAGGA WAGGA

NSW GDM-2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5088
6089201 m N 35.33767 S latitude
572819 m E 147.8013 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: STRIKE RIDGES

dip=73E strike=170

Structure : STEEP DIPPING

Field Geology: Slate, shale, mudstone, and greywacke. Planar bedded. Magnetic anomaly possibly caused by surficial ferruginous weathering products.

Field Rockname: SAMPLE WA0420 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES
Whole rock density = 2.48
Dry density = 2.50
Grain density = 2.73
Porosity = 8.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 2591
from 0 to 13446 SD= 4649
Laboratory susceptibility = 201
Remanence = .00
Koenigsberger ratio = .05

GAMMA-RAY SPECTROMETRY

Ch.1= 46667
Ch.2= 4110 3.64 % K2O
Ch.3= 732 2.52 ppm U
Ch.4= 762 14.74 ppm Th
U/Th= .17
4.91 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	FABRIC:
35.	Quartz	Greywacke	Poorly sorted; moderately open framework
4.	Muscovite		Subangular to rounded ovoid, augen-like grains of strain-free quartz & minor kaolinised feldspar with rare tourmaline & opaque mineral.
59.	Mud		Abundant mud matrix with fine sericite, biotite, chlorite & minor chemical quartz as components.
1.	Opaque		
.1	Tourmaline		
1.	Feldspar		

Location 0421

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0421
Outcrop

SAME LOCATION AS 0420

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5088

6089209 m N

35.33760 S latitude

572792 m E

147.8010 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: STRIKE RIDGES

dip=73 strike=170

Structure : STEEPLY DIPPING

Field Geology: Slate, shale, sandstone, and greywacke. Planar bedded. Magnetic anomaly possibly caused by surficial ferruginous weathering products.

Field Rockname: SAMPLE WA0421 MAGNETIC SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 2.49
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 1 in-situ readings = 6157
from to SD=
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Slate
25.	Quartz	FABRIC:	Poorly sorted; open framework
1.	Biotite		Randomly dispersed slightly ovoid quartz grains of fine-sand size together with minor biotite, tourmaline & opaque grains, set in a matrix of optically continuous sericite. Numerous veinlets ferruginised with iron oxide weathering products.
72.	Matrix		
2.	Opaque		
.1	Tourmaline		

Location 0422

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0422
Outcrop

WAGGA WAGGA NSW GDOM=1
1:250,000 sheet area i:100,000 sheet area air-photo:run-no.= 3-5156
6103470 m N 35.21113 S latitude
530900 m E 147.3395 E longitude

Illustrations :

Age/Unit=
Topography:
Structure : PLUTON dip= strike=
Field Geology: Granite. Inequigranular, porphyritic in K-feldspar & biotite. Coarse-grained. Muscovite-rich. Leucocratic. Sample quite weathered.

Field Rockname: SAMPLE WA0422 GRANITE

PHYSICAL PROPERTIES: GRANITE

DENSITIES
Whole rock density = 2.48
Dry density = 2.47
Grain density = 2.62
Porosity = 5.8
MAGNETIC SUSCEPTIBILITY (S.I. x .000001)
Mean of 4 in-situ readings = 31
from 0 to 125, SD= 62
Laboratory susceptibility = 0
Remanence = .20
Koenigsberger ratio = *****
GAMMA-RAY SPECTROMETRY
Ch.1= 56849
Ch.2= 5675 5.44 % K2O
Ch.3= 1020 11.52 ppm U
Ch.4= 383 6.59 ppm Th
U/Th= 1.75
9.51 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.69	.20	14.45	2.67	.02	.22	.38	.01	5.34	.36	.04	1.00	99.35

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	192	-6	.8	-1	8	-5	15	-3	17	-5	37	420

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	12	58	6	7	11	7	28	20	32	82

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Hypidiomorphic granular to slightly gneissic.
Est. % MINERAL FABRIC: Slightly weathered and altered rock. Globular to slightly lenticular
30. Quartz patches of highly strained quartz aggregates. Abundant poikilitic
45. Orthoclase orthoclase with lesser strongly sericitised plagioclase with liberation
15. Plagioclase of muscovite. Minor biotite with green-brown pleochroism & frequently
2. Biotite altering to apple green chlorite & muscovite. Abundant muscovite. Small
6. Muscovite accessory apatite inclusions in biotite. Minor opaque mineral.
.2 Apatite
1. Opaque
1. Chlorite

Location 0423

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NG=(7962)0423
Outcrop

SAME LOCATION AS 0424
WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM-2
6091319 m N 35.32095 S latitude
523423 m E 147.2577 E longitude

Illustrations :

Age/Unit=
Topography: dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Inequigranular, slightly porphyritic in K-feldspar.
Scattered small biotite plates. Leucocratic. Variable in grain size.

Field Rockname: SAMPLE WA0423 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.62	Mean of 5 in-situ readings = 0	Ch.1= 53420
Dry density = 2.59	from to SD=	Ch.2= 4962 4.44 X K20
Grain density = 2.65	Laboratory susceptibility = 50	Ch.3= 928 5.56 ppm U
Porosity = 2.7	Remanence = 7.00	Ch.4= 766 14.58 ppm Th
	Koenigsberger ratio = 2.33	U/Th= .38
		6.95 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.23	.26	13.50	2.09	.06	.48	1.07	3.29	4.88	.12	.05	.50	99.52
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mn	Nb	Ni	Pb	Rb	
p.p.m.	549	-6	74	6	7	-5	55	-3	15	5	34	273	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	15	122	-5	14	-3	20	7	33	36	149		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Quartz	Adamellite	Hypidiomorphic granular
37.	Orthoclase		Large globular patches of strained quartz with large subhedral orthoclase phenocrysts & euhedral strongly sericitised plagioclase
30.	Plagioclase		with clear unaltered rims. Some plagioclase cores altered to epidote & muscovite flakes. Chlorite is pseudomorphous after biotite, of which a few unaltered grains remain. Accompanying chloritisation of biotite is the liberation of epidote along cleavages. Minor apatite inclusions in biotite. Rare opaque mineral.
2.	Chlorite		
.1	Muscovite		
.7	Biotite		
.1	Apatite		
.1	Epidote		
.1	Opaque		

Location 0424

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0424
Outcrop

SAME LOCATION AS 0423
WAGGA WAGGA

NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5013
6091322 m N 35.32093 S latitude
523423 m E 147.2577 E longitude

Illustrations :

Age/Unit=
Topography:
Structure : PLUTON dip= strike=
Field Geology: Adamellite. Inequigranular, slightly porphyritic in K-feldspar.
Scattered small biotite plates. Leucocratic. Variable in grain size.

Field Rockname: SAMPLE WA0424 MEDIUM GRAINED ADAMELLITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 2.50
Dry density = 2.40
Grain density = 2.63
Porosity = 8.7
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 3 in-situ readings = 0
from to SD=
Laboratory susceptibility = 414
Remanence = .20
Koenigsberger ratio = .01
GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2=
Ch.3=
Ch.4=
% K20
ppm U
ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.08	.04	14.68	.93	.16	.01	.16	4.18	4.30	.13	.02	.80	99.48
TRACE ELEMENT	Ba	Ri	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	88	23	10	-1	10	-5	14	-3	42	-5	57	704	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	50	12	14	6	3	3	19	15	20	20		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Microadamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
30. Quartz Slightly porphyritic in subhedral orthoclase set in a medium-grained
35. Orthoclase mass of abundant anhedral strained quartz (as globular interconnected
30. Plagioclase patches), slightly altered plagioclase, & orthoclase. Abundant
4. Muscovite muscovite. Rare accessory garnet and apatite.
1. Garnet
.1 Apatite

Location 0425

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0425
Outcrop

SAME LOCATION AS 0426
HAGGA HAGGA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6075334 m N air-photo:run-no.= 6-5129
526866 m E 35.46500 S latitude
147.2961 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOW RUBBLY RISE

Structure : STEEPLY DIPPING

dip=80E strike=142

Field Geology: Shale, siltstone, micaceous sandstone, and quartzite. Planar interbedded
- Poorly exposed and considerably weathered. Magnetic response possibly
due to ferruginous weathering products.

Field Rockname: SAMPLE WA0425 MAGNETIC SEDIMENT

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 2.88
Dry density = 2.90
Grain density = 3.19
Porosity = 9.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 251
from 0 to 1507, SD= 615
Laboratory susceptibility = 439
Remanence = 800.00
Koenigsberg ratio = 30.37

GAMMA-RAY SPECTROMETRY

Ch.1= 37765
Ch.2= 2643 1.79 % K2O
Ch.3= 790 2.53 ppm U
Ch.4= 839 16.25 ppm Th
U/Th= .16
4.74 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ferruginised siltstone
F/BRIC: Massive; veined
Estr. % MINERAL
5. Quartz
60. Goethite
35. Hematite
Small, silt-sized quartz particles with a formerly mud matrix now
completely ferruginised by weathering & consisting of a mixture of
goethite & hematite with veins of colloform hematite tending to
concretionary clusters. Possibly some maghemite to explain weak
magnetic response.

Location 0426

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0426
Outcrop

SAME LOCATION AS 0425

WAGGA WAGGA

NSW GDOM=2

1:250,000 scale area 1:100,000 sheet area air-photo:run-no.= 6-5129

175332 m N

35.46502 S latitude

526866 m E

147.2961 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOW RUBBLY RISE

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Shale, siltstone, micaceous sandstone, and quartzite. Planar interbedded

. Poorly exposed and considerably weathered. Magnetic response possibly due to ferruginous weathering products.

Field Rockname: SAMPLE WA0426 MAGNETIC SEDIMENT

PHYSICAL PROPERTIES:

SLATE

DENSITIES

Whole rock density = 2.98

Dry density = 3.02

Grain density = 3.76

Porosity = 19.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 1 in-situ readings = 4021

from to .SD=

Laboratory susceptibility = 251

Remanence = 20.00

Koenigsberger ratio = 1.33

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

X k20

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ferruginised siltstone

FABRIC: Massive; veined

Est. % MINERAL
5. Quartz
60. Goethite
35. Hematite

Small, silt-sized quartz particles with a formerly mud matrix now completely ferruginised by weathering & consisting of a mixture of goethite & hematite, with vein quartz & veins of layered colloform hematite & goethite. Possibly some maghemite to explain weak magnetic response.

Location C427

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0427
Outcrop

SAME LOCATION AS 0428

WAGGA WAGGA

NSW GDOM-2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5100

6082758 m N

35.39777 S latitude

536132 m E

147.3979 E longitude

Illustrations :

Age/Unit=

Topography:

Structure : PLUTON

dip= strike=

Field Geology: Granitoid rocks. Considerably variable phases occurring close together,
and including coarse-grained porphyritic, muscovite granite, aplite, and
greisen. Minor quartz-muscovite rock veins.

Field Rockname: SAMPLE WA0427 APLITE

PHYSICAL PROPERTIES:

APLITE

DENSITIES

Whole rock density = 2.54

Dry density = 2.56

Grain density = 2.64

Porosity = 3.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0

from to SD=

Laboratory susceptibility = 0

Remanence = .40

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 60222

Ch.2= 5332 4.68 % K20

Ch.3= 1088 7.26 ppm U

Ch.4= 835 15.79 ppm Th

U/Th= .46

8.26 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.27	.04	14.53	.92	.02	.07	.18	3.01	3.76	.14	.01	1.40	99.35

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Ko	Nb	Ni	Pb	Rb
p.p.m.	177	113	14	3	6	42	7	-3	29	-5	19	651

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	68	58	21	3	10	3	41	7	21	27

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
40.	Quartz	Aplite	Aplitic tending slightly granophyric
25.	Orthoclase		Abundant patches of strained quartz amidst anhedral kaolinised and slightly sericitised plagioclase & fractured kaolinised orthoclase.
25.	Plagioclase		Abundant muscovite frequently with small apatite inclusions and possibly an alteration product of biotite. Minor opaque mineral
10.	Muscovite		slightly altered to limonite, stains of which are common along grain
.1	Apatite		edges throughout the rock.
.1	Opaque		

Location 0428

* LACHLAN FOLD BELT of New South Wales. ROCK PROPERTY DATA BASE *

NO.=(7962)0428
Outcrop

SAME LOCATION AS 0427

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5100

6082758 m N

35.39777 S latitude

536132 m E

147.3979 E longitude

Illustrations :

Age/Unit=

Topography:

Structure :

PLUTON

dip= strike=

Field Geology: Granitoid rocks. Considerably variable phases occurring close together, and including coarse-grained porphyritic, muscovite granite, aplite, and greisen. Minor quartz-muscovite rock veins.

Field Rockname: SAMPLE WA0428 GREISEN

PHYSICAL PROPERTIES:

GREISEN

DENSITIES
Whole rock density = 2.59
Dry density = 2.57
Grain density = 2.76
Porosity = 7.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 11
from 0 to 125, SD= 37
Laboratory susceptibility = 201
Remanence = .40
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 43503
Ch.2= 3504 2.80 % K20
Ch.3= 799 2.63 ppm U
Ch.4= 842 16.30 ppm Th
U/Th= .16
5.05 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.49	.76	16.59	5.20	.05	2.01	.05	.58	4.02	.09	.02	3.60	99.46

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	917	-6	101	19	98	71	60	-3	14	32	29	208

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	10	50	-5	21	7	84	6	35	93	238

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
40.	Quartz	Greisen	Aplitic
15.	Muscovite	Patchy anhedral quartz amidst a mass of smaller red-brown biotite.	
20.	Biotite	Abundant interstitial muscovite. Minor opaque mineral & rare accessory zircon.	
23.	Chlorite		
2.	Opaque		
.01	Zircon		

Location 0429

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0429
Outcrop

WAGGA WAGGA NSW GDOM-2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5096
6082854 m N 35.39632 S latitude
549655 m E 147.5468 E longitude

Illustrations :

Age/Unit= KYEAMBA ADAMELLITE
Topography: dip= strike=
Structure : PLUTON
Field Geology: Granite. Equigranular, non-porphyratic, leucocratic, medium to coarse-grained. Spotted due to biotite.

Field Rockname: SAMPLE WA0429 GRANITE

PHYSICAL PROPERTIES: GRANITE

DENSITIES
Whole rock density = 2.58
Dry density = 2.57
Grain density = 2.62
Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 6 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = .40
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 58609
Ch.2= 5699 5.27 % K2O
Ch.3= 1092 10.42 ppm U
Ch.4= 572 10.38 ppm Th
U/Th= 1.00
9.44 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.04	.15	13.17	1.57	.04	.12	.56	3.09	4.76	.10	.01	.50	99.11
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	175	-6	38	11	2	-5	26	-3	16	7	38	394	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	9	25	31	-5	15	9	8	11	46	33	88		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Hypidiomorphic granular

Est. %	MINERAL	DESCRIPTION
35.	Quartz	Interconnected patches of globular, slightly-strained quartz with abundant anhedral orthoclase which is slightly kaolinised, and subhedral unaltered plagioclase with shatter cracks lined by kaolinite.
45.	Orthoclase	
15.	Plagioclase	
4.	Biotite	Minor colourless to pale yellow garnet altering to a felt-like microcrystalline aggregate of chlorite & muscovite. Abundant red-brown biotite with numerous radio-active inclusions. Minor chlorite after biotite. Minor muscovite aggregates fill rare secondary void spaces. Rare accessory zircon. Essentially free of opaques in this thin section.
.5	Muscovite	
1.	Garnet	
.1	Chlorite	
.01	Zircon	

Location 0430

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0430
Outcrop

WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5151
6056993 m N 35.62698 S latitude
586178 m E 147.9517 E longitude

Illustrations :

Age/Unit= GREEN HILLS GRANITE
Topography: dip= strike=
Structure : PLUTON
Field Geology: Granodiorite. Mainly equigranular, moderately coarse-grained,
leucocratic. Abundant xenoliths of quartz, and micaceous rocks.
Melanocratic due to abundant biotite and biotite-rich xenoliths.

Field Rockname: SAMPLE WA0430 GRANODIORITE

PHYSICAL PROPERTIES: GRANODIORITE
DENSITIES
Whole rock density = 2.43
Dry density = 2.68
Grain density = 2.73
Porosity = 1.6
MAGNETIC SUSCEPTIBILITY (S.I. * 000001)
Mean of 8 in-situ readings = 573
from 125 to 1256 ,SD= 392
Laboratory susceptibility = 263
Remanence = .30
Koenigsberger ratio = .02
GAMMA-RAY SPECTROMETRY
Ch.1= 50781
Ch.2= 4041 3.21 % K20
Ch.3= 966 4.22 ppm U
Ch.4= 930 17.90 ppm Th
U/Th= .24
6.40 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 67.59 .69 15.24 4.63 .07 2.07 2.70 2.33 3.52 .18 .04 .60 99.66
TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 479 -6 66 13 59 8 49 -3 11 17 38 193
TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 21 8 151 -5 22 4 76 7 37 67 186

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granodiorite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
20. Quartz Globular patches of strained quartz with euhedral plagioclase
15. Orthoclase variably sericitised with minor liberation of muscovite in the most
35. Plagioclase altered crystals. Abundant interstitial & poikilitic orthoclase.
25. Biotite Very abundant red-brown biotite with numerous apatite inclusions and
3. Muscovite smaller radioactive inclusions, slightly bleached & altered to
1. Opaque chlorite & muscovite in places. Rare opaque oxide chiefly as
.4 Apatite inclusions in micas. Minor muscovite, frequently in clusters with
.1 Chlorite biotite. Trace epidote partially pseudomorphing cores of intensely
.1 Epidote sericitised plagioclases. Rare accessory zircon.
.01 Zircon

Location 0431

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0431
Outcrop

WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5147
6057279 m N 35.62337 S latitude
597257 m E 148.0740 E longitude

Illustrations :

Age/Unit= Tertiary
Topography: FLAT UPLAND dip= strike=
Structure : HORIZONTAL FLOW
Field Geology: Basalt. Phenocrysts of olivine and other ferromagnesian minerals set in
a dark, fine-grained groundmass.

Field Rockname: SAMPLE WA0431 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 2.95
Dry density = 2.93
Grain density = 2.97
Porosity = 1.3

MAGNETIC SUSCEPTIBILITY (S.I.*.00C001)
Mean of 14 in-situ readings = 28936
from 25283 to 35499 ,SD= 3109
Laboratory susceptibility = 31239
Remanence = 80000.00
Koenigsberger ratio = 42.68

GAMMA-RAY SPECTROMETRY
Ch.1= 20243
Ch.2= 1485 1.15 X K20
Ch.3= 398 2.45 ppm U
Ch.4= 323 6.14 ppm Th
U/Th= .40
2.83 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Basalt	
		Basalt	Trachytic
5.	Olivine	Phenocrysts of olivine, fractured with slight alteration to bowlingite,	
5.	Augite	as well as euhedral augite, hypersthene & lath-like plagioclase micro-	
2.	Hypersthene	phenocrysts in sub-parallel arrangement. The groundmass consists of a	
20.	Plagioclase	felt-like mass of plagioclase microlites, interstitial pyroxene, &	
68.	Groundmass	titanomagnetite which occupies about five percent of the rock.	

Location 0432

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0432

Outcrop

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 11-5157

6025166 m N

35.91365 S latitude

588901 m E

147.9853 E longitude

Illustrations :

Age/Unit=

MANNUS CREEK GRANITE

Topography: UPLAND

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Inequigranular, porphyritic in K-feldspar. Medium to coarse-grained. Mesocratic due to biotite and minor hornblende.

Field Rockname: SAMPLE WA0432 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.62	Mean of 15 in-situ readings = 691	Ch.1= 46816
Dry density = 2.63	from 0 to 2136 ,SD= 549	Ch.2= 4692 4.36 x K20
Grain density = 2.66	Laboratory susceptibility = 213	Ch.3= 769 4.41 ppm U
Porosity = 1.1	Remanence = 3.00	Ch.4= 651 12.41 ppm Th
	Koenigsberger ratio = .23	U/Th= .36
		5.85 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.46	.58	14.66	4.02	.07	.77	2.08	3.77	3.81	.18	.04	.20	99.65
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	484	-6	70	13	6	9	48	-3	??	6	31	214	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	13	11	132	-5	17	4	46	8	55	54	254		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Adamellite	
20.	Quartz		Hypidiomorphic granular tending slightly granophyric
30.	Plagioclase		Interconnected patches of slightly strained quartz amidst sericitised & kaolinised plagioclase & kaolinised orthoclase which is phenocrystic
43.	Orthoclase		in places. Abundant yellow-brown pleochroic biotite and minor hornblende. Trace accessory epidote & hematite with rare pyrite inclusions.
6.	Biotite		
1.	Hornblende		
.1	Epidote		
.1	Hematite		
.01	Pyrite		

Location 0433

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0433

Outcrop

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 11-5157

6026876 m N

35.89823 S latitude

588954 m E

147.9857 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: RUGGED LOWLAND DISSECTED BY FAST CREEK

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Quartzite. Medium to thick and planar bedded. Massive internally. Slightly micaceous in places. Abundant stratabound cross-cutting white quartz veins and pygmatic quartz veinlets. Interbedded with shale and slate nearby.

Field Rockname: SAMPLE WA0433 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.67

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 401

from 113 to 691, SD= 156

Laboratory susceptibility = 100

Remanence = .50

Koenigsberger ratio = .08

GAMMA-RAY SPECTROMETRY

Ch.1= 40703

Ch.2= 3324 2.70 % K2O

Ch.3= 753 3.13 ppm U

Ch.4= 739 14.24 ppm Th

U/Th= .22

4.98 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Quartzite	
70.	Quartz		Massive; porphyroblastic
5.	Plagioclase		Two phases are present: one is pure, strained quartz with rare muscovite along cracks vertical to bedding. The other phase consists of massive micaceous quartzite with ovoid quartz and plagioclase augen with ragged edges surrounded by trains of biotite & chloritised biotite & patches of muscovite aggregates. The ovoid quartzites are slightly strained.
4.	Biotite		
15.	Muscovite		
.2	Apatite		
1.	Opaque		
5.	Chlorite		

Location 0434

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0434
Outcrop

WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo;run-no.= 12-5133
6023467 m N 35.92975 S latitude
579861 m E 147.8853 E longitude

Illustrations :

Age/Unit= CORRONG GRANITE
Topography: RUGGED STEEP UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Inequigranular, porphyritic in K-feldspar. Melanocratic due to abundance of biotite.

Field Rockname: SAMPLE WA0434 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES
Whole rock density = 2.62
Dry density = 2.63
Grain density = 2.64
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 251
from 125 to 376 ,SD= 78
Laboratory susceptibility = 0
Remanence = 1.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 55080
Ch.2= 4910 4.41 % K2O
Ch.3= 906 5.24 ppm U
Ch.4= 764 14.56 ppm Th
U/Th= .36
6.74 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.78	.40	14.67	2.96	.04	.88	1.14	4.32	5.14	.30	.08	1.10	99.81

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	441	-6	76	6	27	12	47	-3	11	18	56	272

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	11	9	109	-5	15	3	35	-5	31	62	152

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Hypidiomorphic granular, with rare granophyric patches.
Est. % MINERAL FABRIC: Interconnected patches of strain-free quartz with large anhedral
20. Quartz orthoclase & microcline phenocrysts & lesser, more euhedral plagioclase
45. Orthoclase which is sparingly sericitised. Anhedral cordierite generally entirely
25. Plagioclase altered to pinites. Two generations of biotite are present. One is
5. Biotite largely chloritised and slightly skeletal; the other is a deep red-brown
3. Muscovite variety with numerous inclusions of radioactive mineral & apatite. Minor
.2 Apatite alteration of the latter to muscovite in places. Minor interstitial
2. Cordierite muscovite & rare opaque oxide commonly present as inclusions in biotite.
.2 Opaque

Location 0435

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0435
Outcrop

WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 10-5094
6036615 m N 35.81245 S latitude
562931 m E 147.6946 E longitude

Illustrations :

Age/Unit=
Topography:
Structure : PLUTON dip= strike=
Field Geology: Adamellite. Inequigranular, porphyritic in K-feldspar. Mesocratic due to scattered biotite.

Field Rockname: SAMPLE HA0435 ADAMELLITE

PHYSICAL PROPERTIES: ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.58 Mean of 11 in-situ readings = 134 Ch.1= 56924
Dry density = 2.58 from 0 to 251 SD= 79 Ch.2= 5792 5.44 % K2O
Grain density = 2.67 Laboratory susceptibility = 0 Ch.3= 1039 9.56 ppm U
Porosity = 3.3 Remanence = .10 Ch.4= 575 10.51 ppm Th
Koenigsberger ratio = ***** U/Th= .91
8.96 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	S	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.2	.23	13.62	2.00	.03	.47	.73	4.06	4.55	.29	.05	.80	99.86
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	220	-6	41	6	10	-5	22	-3	16	11	41	360	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	21	58	-5	13	7	13	11	24	54	97		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Granite	Hypidiomorphic granular
15.	Plagioclase		Poikilitic anhedral orthoclase with small patches of strained quartz.
55.	Orthoclase		Sericitised plagioclase with clear secondary rims. Red-brown biotite is slightly bleached & incipiently altered to chlorite & marginal muscovite in places. It contains apatite inclusions in small amounts.
5.	Biotite		Abundant muscovite frequently interstitial & in clusters adjacent to biotite. Numerous radioactive inclusions in biotites. Rare opaque mineral chiefly associated with biotite.
.1	Muscovite		
.1	Apatite		
.1	Opaque		

Location 0436

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0436

Outcrop

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-5017

6042727 m N 35.75877 S latitude

534063 m E 147.3768 E longitude

Illustrations :

Age/Unit=

KOETONG GRANITE

Topography: RUGGED UPLAND

dip= strike=

Structure: PLUTON

Field Geology: Granite. Equigranular. Medium to coarse-grained, leucocratic, with minor biotite.

Field Rockname: SAMPLE WA0436 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.56
Dry density = 2.55
Grain density = 2.61
Porosity = 2.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 1 in-situ readings = 0
from to .5D=
Laboratory susceptibility = 75
Remanence = 2.00
Koenigsberger ratio = .44

GAMMA-RAY SPECTROMETRY

Ch.1= 81923
Ch.2= 6181 4.65 % K2O
Ch.3= 1627 6.82 ppm U
Ch.4= 1591 30.65 ppm Th
U/Th= .22
10.51 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	H2O	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.26	.09	12.79	1.09	.05	.09	.47	3.47	4.82	.03	.04	.40	99.61

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	131	-6	43	4	9	-5	16	-3	28	-5	48	470

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	9	9	34	8	39	5	6	17	58	20	82

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granite	
30.	Quartz	Hypidiomorphic granular	Large irregular patches of very slightly strained quartz. Abundant
45.	Orthoclase		slightly kaolinised orthoclase. Lesser euhedral sericitised
15.	Plagioclase		plagioclase also slightly kaolinised by weathering. Abundant large
9.	Biotite		scattered biotite, slightly chloritised & extensively ferruginised
.1	Muscovite		to opaque oxide by weathering. Rare accessory apatite.
1.	Opaque		
.01	Apatite		

Location 0437

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0437
Outcrop

HAGGA HAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5089
6065370 m N 35.55443 S latitude
539162 m E 147.4321 E longitude

Illustrations :

Age/Unit=
Topography: MODERATELY SLOPING UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, medium-grained. Melanocratic due to abundant biotite.

Field Rockname: SAMPLE WA0437 ADAMELLITE

PHYSICAL PROPERTIES: ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.64 Mean of 7 in-situ readings = 107 Ch.1= 44828
Dry density = 2.63 from 0 to 376 SD= 129 Ch.2= 3744 3.13 X K20
Grain density = 2.70 Laboratory susceptibility = 263 Ch.3= 743 1.65 ppm U
Porosity = 2.7 Remanence = .20 Ch.4= 851 16.55 ppm Th
Koenigsberger ratio = .01 U/Th= .10
4.56 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 68.10 .72 15.13 4.40 .07 1.51 2.53 2.47 3.63 .17 .01 1.10 99.83

TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 432 -6 74 17 42 19 48 -3 12 17 27 207

TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 16 9 145 -5 22 -3 72 7 38 61 191

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL FABRIC: Hypidiomorphic granular
25. Quartz Lenticular to ovoid patches of highly strained quartz amidst strongly
20. Orthoclase sericitised plagioclase with clear secondary rims, & slightly
37. Plagioclase kaolinised orthoclase. Abundant red-brown biotite with apatite and
11. Biotite radioactive mineral inclusions, frequently bleached & marginally
3. Chlorite altered to chlorite & muscovite. Rare cordierite pseudomorphed by
2. Muscovite pinite & muscovite. Very rare epidote in cores of sericitised
.2 Apatite plagioclases. Minor opaque mineral & trace of zircon.
.01 Zircon
1. Cordierite
1. Opaque
.01 Epidote

Location 0438

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0438
Outcrop

WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5137
6070629 m N 35.50632 S latitude
553913 m E 147.5945 E longitude

Illustrations :

Age/Unit= KYEAMBA ADAMELLITE
Topography: dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Medium to coarse-grained, slightly porphyritic in K-feldspar
. Mesocratic with abundant biotite.

Field Rockname: SAMPLE WA0438 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.+.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.59 Mean of 9 in-situ readings = 83 Ch.1= 61593
Dry density = 2.62 from 0 to 314, SD= 121 Ch.2= 5458 4.70 X K2O
Grain density = 2.63 Laboratory susceptibility = 87 Ch.3= 1164 7.57 ppm U
Porosity = .0 Remanence = .50 Ch.4= 910 17.24 ppm Th
Koenigsberger ratio = .10 U/Th= .44
8.71 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.43	.37	13.41	2.66	.05	.55	1.11	2.81	4.74	.17	.01	.60	99.90
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	607	-6	68	7	10	6	51	-3	13	8	39	262	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	10	111	-5	19	7	25	7	50	45	182		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Adameellite	FABRIC:
15.	Quartz		Hypidiomorphic granular tending slightly granophyric
48.	Orthoclase		Small patches of quartz & blebs of it intergrown with sericitised plagioclase & orthoclase. Abundant interstitial anhedral kaolinised orthoclase. Abundant brownish-yellow pleochroic biotite with frequent apatite & radioactive inclusions, & slightly altered to chlorite & muscovite. Very rare garnet, tourmaline, pinitised cordierite and epidote. Rare secondary vugs with radiating muscovite, chlorite and rare epidote & garnet fillings. Essentially free of opaque oxides.
30.	Plagioclase		
5.	Biotite		
1.	Muscovite		
.01	Tourmaline		
1.	Chlorite		
.2	Apatite		
.01	Garnet		
.01	Cordierite		
.01	Epidote		

Location 0439

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO=(7962)04
scrape

SAME LOCATION AS 0440

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-110
6564282 m N 31.05050 S latitude
396327 m E 145.9135 E longitude

Illustrations :

Age/Unit=

Topography: VERY LOW RISE

dip= strike=

Structure :

Field Geology: Massive siltstone, and micaceous quartzite. Variably micaceous, deeply weathered.

Field Rockname: SAMPLE CB0439 WEATHERED SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density = 2.30
Dry density = 2.29
Grain density = 2.70
Porosity = 15.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 12
Remanence = 4.00
Koenigsberger ratio = 5.56

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Quartzite
70.	Quartz	FABRIC:	Massive with flow foliation
15.	Muscovite		Micro-lenticular ovoid to flattened (compacted) globules of strained quartz with abundant subgrains. These form weak layers in places and are surrounded by muscovite, chlorite & opaque oxide ?pseudomorphs
5.	Chlorite		
10.	Opaque		of weathered biotite, all of which produce a wavy flow foliation.

Location 0440

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0440
Float

SAME LOCALITY AS 0439

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-110
6564267 m N 31.05063 S latitude
396299 m E 145.9132 E longitude

Illustrations :

Age/Unit=

Topography: FLAT

dip= strike=

Structure : PLUTON LARGELY COVERED BY COLLUVIUM

Field Geology: Weathered granite. Medium-grained, deeply-weathered, with quartz surrounded by kaolinised feldspar.

Field Rockname: SAMPLE CB0440 GRANITE KAOLINISED BY WEATHERING.

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 1.17
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 502
Remanence = 190.00
Koenigsberger ratio = 6.31

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3=
Ch.4=
ppm U
ppm Th

U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	67.63	.15	20.40	1.41	.01	.43	.12	.01	1.74	.11	.02	7.60	99.62
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	484	-6	78	-1	10	5	44	-3	17	12	91	165	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	11	11	139	5	7	6	13	15	28	16	74		

Location 0441

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0441

Outcrop

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-110
6565236 m N 31.04195 S latitude
397024 m E 145.9209 E longitude

Illustrations :

Age/Unit= Jurassic?

Topography: 3M TERRACE

Structure : HORIZONTALLY BEDDED

dip= strike=

Field Geology: Pebbly sandstone, b modal with pebbles and granules of quartz set in a medium-grained quartz-rich matrix with washed-in clay. Poorly sorted. Probably an outlier of Jurassic sandstone from the Great Australian Basin.

Field Rockname: SAMPLE CB0441 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density = 2.29
Dry density = 2.25
Grain density = 2.66
Porosity = 15.3

SANDSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .70
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Quartzose sandstone
78.	Quartz	FABRIC:	Moderately sorted; slightly silicified by weathering.
2.	Rock fragments		Subangular to subrounded quartz grains, mostly considerably strained but others strain free. Lesser quartzite & ferruginised quartzite
.01	Tourmaline		clasts & rare detrital tourmaline. The matrix is mostly washed-in
20.	Matrix		finer quartz particles with patchy interstitial brown clay.

Location 0442

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0442

MAG TRAVERSE-NEAREST OUTCROP 0051 ON SAME PHOTO

No outcrop

COOTAMUNDRA

NSW GDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5241

6146419 m N

34.82388 S latitude

531595 m E

147.3455 E longitude

Illustrations :

Age/Unit=

Topography: FLAT ALLUVIUM AND COLLUVIUM

dip= strike=

Structure :

Field Geology: No outcrop. Magnetic traverse recorded.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density =

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

0
0.00

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K20

ppm U

ppm Th

U/Th=

Heat generation units

Location 0443

: LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0443
Mag traverse

MAG TRAVERSE, NORTH END OF MALEBO RANGE

COOTAMUNDRA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5103

6127597 m N

34.99382 S latitude

523818 m E

147.2610 E longitude

Illustrations :

Age/Unit=

Topography: FLAT

Structure :

dip= strike=

Field Geology: Alluvium and colluvium. Magnetic traverse recorded.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density =

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 0

Remanence = 0.00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

Location 0444

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0444
Outcrop

COOTAHUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5110
6188579 m N 34.44292 S latitude
550921 m E 147.5543 E longitude

Illustrations :

Age/Unit= Silurian-Lower Devonian

Topography: GENTLY SLOPING UPLAND WITH LITTLE OUTCROP

dip= strike=

Structure :

Field Geology: Andesite. Porphyritic with phenocrysts of altered plagioclase and a ferromagnesian mineral that has reacted with the chloritised and epidotised groundmass. Minor limonite pseudomorphs of sulphide mineral specks. Apparent shearing in places due to chlorite alteration.

Field Rockname: SAMPLE CT0444 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.92
Dry density = 2.89
Grain density = 2.92
Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 11446
from 1357 to 23687 ,SD= 6613
Laboratory susceptibility = 13823
Remanence = 200.00
Koenigsberger ratio = .24

GAMMA-RAY SPECTROMETRY

Ch.1= 19121
Ch.2= 1781 1.60 % K2O
Ch.3= 343 2.36 ppm U
Ch.4= 257 4.85 ppm Th
U/Th= .49
2.66 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Plagioclase	Andesite	Pilotaxitic
10.	Epidote		
79.	Groundmass		
1.	Chlorite		

Phenocrysts & glomeroporphyritic aggregates of plagioclase with chloritised cores where zoned. Epidote pseudomorphs of zoned ferromagnesian phenocrysts with green epidote in cores with a much less coloured rim. Some ferromagnesian phenocrysts are also pseudomorphed by chlorite. The groundmass consists of unaltered plagioclase microlites amidst a very fine-grained altered mass of epidote & chlorite, with scattered magnetite occupying about one percent of the rock & showing slight marginal alteration to hematite & also along cleavages. Trace pyrite blebs within epidote pseudomorphs of the former ferromagnesian mineral.

Location 0445

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0445
 Outcrop

FORBES
 1:250,000 sheet area 1:100,000 sheet area
 6246332 m N 524993 m E
 NSW GDOM=1
 air-photo:run-no.= 8-2155
 33.92303 S latitude
 147.2704 E longitude

Illustrations :

Age/Unit: HYALONG GRANODIORITE
 Topography: dip= strike=
 Structure: PLUTON
 Field Geology: Diorite. Equigranular, medium-grained, non porphyritic with abundant hornblende which is lightly altered to green secondary minerals. Small nearby loose boulders of andesite of uncertain relation to diorite.

Field Rockname: SAMPLE FB0445 TONALITE

PHYSICAL PROPERTIES:

DENSITIES	DIORITE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.81		Mean of 15 in-situ readings = 2289	Ch.1= 15521
Dry density = 2.79		from 251 to 6534 ,SD= 1903	Ch.2= 1224 1.02 X K2O
Grain density = 2.80		Laboratory susceptibility = 5892	Ch.3= 249 .60 ppm U
Porosity = .4		Remanence = 1100.00	Ch.4= 281 5.46 ppm Th
		Koenigsberger ratio = 3.11	U/Th= .11
			1.54 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	56.70	1.09	16.98	7.93	.13	3.70	7.31	3.35	.94	.29	.01	1.20	99.62
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	468	-6	43	31	50	46	37	-3	11	22	12	26	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	28	-5	500	-5	-5	-3	183	-5	21	66	111		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Diorite
	FABRIC:	Gabbroic
10.	Quartz	Abundant, randomly-oriented, interlocking laths of zoned plagioclase, variably sericitised & with cores of epidote & rare muscovite in the most altered examples. Abundant hornblende, also variably & patchily altered to biotite, epidote, actinolite, chlorite and magnetite. Biotite is mostly altered to chlorite & appears slightly skeletal. Minor quartz as skeletal-like interstitial fillings to plagioclases. Scattered magnetite, slightly altered to hematite along cleavages & at margins. Similarly scattered ilmenite chiefly as large inclusions in hornblende. Rare pyrite & chalcopyrite blebs enclosed in hornblende. Rare accessory apatite.
65.	Plagioclase	
20.	Hornblende	
3.	Biotite	
1.	Epidote	
.01	Apatite	
.5	Magnetite	
.5	Ilmenite	
.001	Pyrite	
.001	Chalcopyrite	

Location 0446

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0446
Outcrop

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-2155
6246115 m N 33.92500 S latitude
524475 m E 147.2648 E longitude

Illustrations :

Age/Unit=

Topography: FLAT WITH GENTLE LOW RISE

dip= strike=

Structure :

Field Geology: Altered andesite and amphibolite. The andesite is porphyritic in plagioclase and hornblende which are set in an altered groundmass. The amphibolite is equigranular, fine to medium-grained, has patchy alteration and is veined by quartz and epidote.

Field Rockname: SAMPLE FB0446 AMPHIBOLITE

PHYSICAL PROPERTIES:

AMPHIBOLITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I. x .000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.97		Ch.1= 9226
Dry density = 2.94	Mean of 15 in-situ readings = 9186	Ch.2= 627 .41 X K20
Grain density = 2.99	from 779 to 23687 .SD= 7341	Ch.3= 193 .58 ppm U
Porosity = 1.5	Laboratory susceptibility = 16009	Ch.4= 208 4.03 ppm Th
	Remanence = 1650.00	U/Th= .14
	Koenigsberger ratio = 1.72	1.14 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Amphibolite	
5.	Hornblende		Decussate to granoblastic
8.	Epidote		Relict unaltered green-brown hornblende surrounded by blue-green hornblende & actinolite, often in monominerallic patches between
30.	Actinolite		mosaics of fine-grained plagioclase & plagioclase-actinolite
55.	Plagioclase		phases. Veinlets & patches of microcrystalline epidote. Patchy
1.	Magnetite		scattered magnetite generally throughout & clusters of ilmenite
1.	Ilmenite		liberated in altered hornblendes. Rare tiny pyrite blebs also in
.001	Pyrite		a few altered hornblendes.

Location 0447

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0447 SAME LOCATION AS 0448 AND 0449 NSW GDOM=1
Quarry FORBES air-photo:run-no.= 8-2155
1:250,000 sheet area 1:100,000 sheet area
6242228 m N 33.96 '0 S latitude
522349 m E 147.2419 E longitude

Illustrations :

Age/Unit= Silurian-Lower Devonian
Topography: LOW FISE WITH OUTCROP ON TOP dip=90 strike=000
Structure : NEAR VERTICAL
Field Geology: Variably altered flows of andesites with gradational to sharp contacts.
Variably layered with banding defined by mineralogical variations,
presence or absence of phenocrysts and vesicles, and by thin curvilinear
sheets of chlorite-rich rock occurring along relict sheet joints.
Field Rockname: SAMPLE FB0447 ALTERED ANDESITE

PHYSICAL PROPERTIES:

ANDESITE		GAMMA-RAY SPECTROMETRY	
DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	
Whole rock density = 2.99	Mean of 15 in-situ readings = 15854	Ch.1= 6034	
Dry density = 2.99	from 1231 to 42599, SD= 16206	Ch.2= 557	.55 % K2O
Grain density = 3.02	Laboratory susceptibility = 439	Ch.3= 78	.75 ppm U
Porosity = 1.0	Remanence = .20	Ch.4= 40	.72 ppm Th
	Koenigsberger ratio = .61	U/Th= 1.04	
		.72	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Altered andesite	Porphyroblastic with flow foliation
30.	Quartz		Ovoid to irregularly lenticular aggregates of strained quartz grains with ragged, resorbed-like edges, in places flattened parallel to weakly defined layering. The remainder of the rock consists of micro-crystalline actinolite & epidote, slight variations in proportion of which define weak planar layering. Rare tiny chalcopyrite blebs in some epidote patches. A product of completely altered andesite.
40.	Epidote		
30.	Actinolite		
.001	Chalcopyrite		

Location 0448

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0448

SAME LOCATION AS 0447 AND 0449

Quarry

FORBES

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-2155

6242228 m N

33.96010 S latitude

522349 m E

147.2419 E longitude

Illustrations :

Age/Unit= Silurian-Lower Devonian

Topography: LOW RISE WITH OUTCROP ON TOP

dip=90 strike=000

Structure : NEAR VERTICAL

Field Geology: Variably altered flows of andesites with gradational to sharp contacts.
Layered with banding defined by mineralogical variations; presence or
absence of phenocrysts and vesicles, and by thin curvilinear sheets
of chlorite-rich rock occurring along relict sheet joints.

Field Rockname: SAMPLE FB0448 ALTERED ANDESITE

PHYSICAL PROPERTIES:

CHLORITE

DENSITIES
Whole rock density = 2.84
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Quartz	Altered andesite	Porphyroblastic with flow foliation
5.	Chlorite		A completely altered andesite lacking any original texture. Ovoid porphyroblasts of slightly strained quartz aggregates, in places with mixed chlorite plates. Lenticular patches of massive chlorite.
50.	Biotite		Abundant biotite forming thin planar layering. Some layers are rich in cummingtonite which is in optical continuity with layering throughout. Minor evenly-disseminated opaque sulphide mineral scattered throughout.
5.	Opaque		
10.	Tremolite		

Location 0449

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0449

SAME LOCATION AS 0447 AND 0448

Quarry

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-2155
6242228 m N 33.96010 S latitude
522349 m E 147.2419 E longitude

Illustrations :

Age/Unit= Silurian-Lower Devonian

Topography: LOW RISE WITH OUTCROP ON TOP

dip=90 strike=000

Structure : NEAR VERTICAL

Field Geology: Variably altered flows of andesites with gradational to sharp contacts. Layered with banding defined by mineralogical variations, presence or absence of phenocrysts and vesicles, and by thin curvilinear sheets of chlorite-rich rock occurring along relict sheet joints.

Field Rockname: SAMPLE FB0449 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.72
Dry density = 2.70
Grain density = 2.79
Porosity = 3.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 667
from 314 to 1332 ,SD= 267
Laboratory susceptibility = 728
Remanence = 1200.00
Koenigsberger ratio = 27.47

GAMMA-RAY SPECTROMETRY

Ch.1= 18650
Ch.2= 1050 .74 % K2O
Ch.3= 295 .92 ppm U
Ch.4= 315 6.10 ppm Th
U/Th= .15
1 % Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Andesite
Est. % MINERAL FABRIC: Porphyritic, with reconstituted altered groundmass
55. Plagioclase Relict phenocrysts of sericitised plagioclase set in a wavy-banded
33. Hornblende flow-foliated, reconstituted groundmass consisting of unaltered
10. Biotite medium-grained plagioclase amongst clusters of hornblende aggregates
2. Opaque frequently augen-shaped, but also euhedral in places, together with
biotite. Both are products of deuteric alteration. Minor opaque
mineral.

Location 0450

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0450

Road cutting

FORBES

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-2159

6242145 m N

33.96108 S latitude

503908 m E

147.0423 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOW RISE WITH RUBBLE

dip=96 strike=173

Structure : VERTICALLY DIPPING

Field Geology: Shale and cherty mudstone. Thin and planar bedded. Some layers red-oxidised and possibly formerly pyritic. Minor intraformational slumping and brecciation.

Field Rockname: SAMPLE FB0450 CHERTY MUDSTONE

PHYSICAL PROPERTIES:

CHERT

DENSITIES

Whole rock density = 2.65

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 135

from 0 to 276, SD= 93

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 36990

Ch.2= 2256 1.34 % K2O

Ch.3= 805 3.06 ppm U

Ch.4= 814 15.72 ppm Th

U/Th= .19

4.88 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Cherty mudstone

Est. % MINERAL FABRIC: Massive

60. Quartz Ultrafine quartz in ovoid concretions & scattered throughout the rock. Grains are separated by opaque ferruginised mudstone. Detrital
5. Muscovite muscovite flakes oriented parallel to bedding.
35. Mud

Location 0451

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0451

Outcrop

FORBES

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6242820 m N air-photo:run-no.= 8-2159
506966 m E 33.95498 S latitude
147.0754 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOWLAND WITH SMALL LOCAL RUBBLY RISES

dip=66W strike=171

Structure : STEEPLY DIPPING

Field Geology: Quartzose sandstone, siltstone, slate and shale. Thin to thick bedded.
The sandstone contains minor muscovite and has quartz veinlets with
boxwork texture.

Field Rockname: SAMPLE FB0451 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.14
Dry density = 2.12
Grain density = 2.52
Porosity = 17.3

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)
Mean of 8 in-situ readings = 50
from 0 to 188, SD= 74
Laboratory susceptibility = 0
Remanence = .50
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 48392
Ch.2= 2621 1.20 x K20
Ch.3= 1087 2.22 ppm U
Ch.4= 1261 24.55 ppm Th
U/Th= .09
5.83 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Quartzo. sandstone
80.	Quartz	FABRIC:	Massive
5.	Muscovite		Subangular to subrounded quartz grains, mostly strained to a small extent, with lesser smaller scattered detrital muscovite, & rare tourmaline, apatite & zircon. The matrix is ferruginised by weathering & now consists largely of limonite.
.1	Tourmaline		
.1	Apatite		
.01	Zircon		
15.	Matrix		

Location 0452

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0452
Quarry

SAME LOCATION AS 0453
FORBES

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-2159
6244908 m N 33.93607 S latitude
514592 m E 147.1579 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOWLAND WITH INFREQUENT RUBBLY RISES

dip=90 strike=139

Structure : NEAR VERTICAL

Field Geology: Greisenised sediment. Small quartz grains surrounded by sheaths of randomly-oriented muscovite coarsened by grain growth. Much of this sequence is massive with few laminations. Not cleaved despite abundant muscovite. Rare quartz-tourmaline veins.

Field Rockname: SAMPLE FB0452 GREISENISED SILTSTONE?

PHYSICAL PROPERTIES: TUFF

DENSITIES
Whole rock density = 2.28
Dry density = 2.18
Grain density = 2.76
Porosity = 20.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 83
from 0 to 213 .SD= 73
Laboratory susceptibility = 87
Remanence = 6.00
Koenigsberger ratio = 1.15

GAMMA-RAY SPECTROMETRY

Ch.1= 52203
Ch.2= 3554 2.50 x K20
Ch.3= 1035 4.19 ppm U
Ch.4= 1025 19.76 ppm Th
U/Th= .21
6.53 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Greisen	
		Massive, uncleaved	
43.	Quartz		Randomly-oriented muscovite, often in clusters, between abundant,
40.	Muscovite		fractured, slightly strained quartz aggregates. Minor tourmaline and
1.	Tourmaline		andalusite. Abundant opaque oxide. Sericite pseudomorphs after a
10.	Opaque		fractured ?feldspar. This is a moderately weathered rock. Insufficient
1.	Andalusite		evidence to determine if the rock is a roof phase of a concealed
5.	Sericite		granite, or a hydrothermal chemical sediment, or a hydrothermally-
			altered chemical sediment. In all cases however, proximity to a granite
			can be inferred.

Location 0453

* LACHLAN FOLD BELT of New South Wales. ROCK PROPERTY DATA BASE *

NO.=(7962)0453

SAME LOCATION AS 0452

Quarry

FORBES

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-2159

6244902 m N

33.93612 S latitude

514583 m E

147.1578 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOWLAND WITH INFREQUENT RUBBLY RISES dip=90 strike=139

Structure : NEAR VERTICAL

Field Geology: Greisenised sediment. Small quartz grains surrounded by sheaths of randomly-oriented muscovite coarsened by grain growth. Much of this sequence is massive with few laminations. Not cleaved despite abundant muscovite. Rare quartz-tourmaline veins.

Field Rockname: SAMPLE FB0453 GREISENISED SEDIMENT?

PHYSICAL PROPERTIES:

TUFF

DENSITIES

Whole rock density = 2.33

Dry density = 2.33

Grain density = 2.35

Porosity = 15.6

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 263

Remanence = 30.00

Koenigsberger ratio = 1.90

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Greisen
	FABRIC:	Massive; uncleaved
Est. %	MINERAL	
45.	Quartz	Randomly-oriented muscovite, often in subradiating clusters with
35.	Muscovite	patchy anhedral fractured, slightly-strained quartz. Scattered
5.	Biotite	tourmaline & abundant opaque mineral. This weathered rock may be
5.	Tourmaline	a roof phase of a concealed granite, or a hydrothermal chemical
10.	Opaque	sediment close to a concealed granite, or a hydrothermally-altered
		chemical sediment. In all cases, proximity to a granite can be
		inferred.

Location 0454

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0454
Outcrop

FORBES NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-2159
6244095 m N 33.94343 S latitude
512050 m E 147.1304 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: LOWLAND WITH INFREQUENT RUBBLY LOW RISES dip=76W strike=144
Structure : NEAR VERTICAL
Field Geology: Slate, silty siltstone and quartz-tourmaline veins. The slate is muscovite rich, slightly cleaved and cut by small veins of quartz-tourmaline rock.

Field Rockname: SAMPLE FB0454 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 1.98
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 353
from 62 to 653 .SD= 170
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY
Ch.1= 51509
Ch.2= 3152 1.85 % K2O
Ch.3= 1025 .59 ppm U
Ch.4= 1317 25.78 ppm Th
U/Th= .62
5.17 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Slate
Est. % MINERAL FABRIC: Massive, with lenticular micro-lamination
30. Quartz Slightly wavy, discontinuous lamination defined by persistence of
50. Muscovite ferruginised biotite & opaque mineral laminae between muscovite-
5. Opaque biotite-opaque mineral layers. Within the latter there are abundant
5. Biotite discontinuous reticular bodies of quartz aggregates, & numerous
10. Andalusite ovoid, augen-shaped porphyroblasts, formerly of andalusite? but now
consisting of a ferruginous clay-mineral pseudomorph with abundant
inclusions of quartz & muscovite. Muscovite in the porphyroblasts
is randomly oriented. Elsewhere, its long axis is parallel to
bedding.

Location 0455

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0455
Outcrop

CARGELLIGO NSW GDM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-161
6239213 m N 33.98753 S latitude
499492 m E 146.9945 E longitude

Illustrations :Photomicrograph

Age/Unit:- Ordovician
Topography: SMALL RUBBLY RISE COINCIDENT WITH UPLAND dip=90 strike=152
Structure : VERTICAL
Field Geology: Slate. Andalusite-bearing. Andalusite porphyroblasts lack orientation.
Muscovite is very fine-grained and very abundant.

Field Rockname: SAMPLE CG0455 ANDALUSITE SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.54
Dry density = 2.52
Grain density = 2.78
Porosity = 9.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 106
from 0 to 251, SD= 94
Laboratory susceptibility = 125
Remanence = 2.00
Koenigsberger ratio = .27

GAMMA-RAY SPECTROMETRY

Ch.1= 46491
Ch.2= 3758 3.01 % K2O
Ch.3= 835 2.11 ppm U
Ch.4= 934 18.14 ppm Th
U/Th= :12
5.09 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Slate	
		Massive; porphyroblastic	
15.	Andalusite	Porphyroblasts of andalusite considerably altered & clouded by tiny mica inclusions, concentrically zoned with outer ovoid margins having radial shrinkage cracks. The porphyroblasts are randomly oriented & scattered throughout a matrix of quartz, muscovite, biotite & opaque minerals, variations in the proportion of which define bedding.	
29.	Quartz		
50.	Muscovite		
5.	Biotite		
1.	Opaque	Photograph synaeresis cracks.	

Location 0456

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0456
Outcrop

CARGELLIGO NSW GDM-2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-159
6239817 m N 33.98208 S latitude
497478 m E 146.9727 E longitude

Illustrations :

Age/Unit= KIKOIRA GRANITE
Topography: LOW RISE IN MODERATELY FLAT UPLAND dip= strike=
Structure : PLUTON

Field Geology: Granite, Inequigranular, Porphyritic in orthoclase and zoned
plagioclase. Medium-grained groundmass. Mesocratic with scattered small
biotite. Very minor muscovite. Inclusions of micas in feldspar. Minor
flow lineation defined by oriented phenocrysts.

Field Rockname: SAMPLE CG0456 GRANITE

PHYSICAL PROPERTIES: GRANITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.67	Mean of 15 in-situ readings = 162	Ch.1= 55362
Dry density = 2.65	from 0 to 251, SD= 94	Ch.2= 4819 4.10 % K2O
Grain density = 2.67	Laboratory susceptibility = 113	Ch.3= 991 4.43 ppm U
Porosity = .0	Remanence = .30	Ch.4= 946 18.20 ppm Th
	Koenigsberger ratio = .04	U/Th= .24
		6.78 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.02	.56	14.76	3.72	.05	1.10	1.59	2.38	4.57	.26	.02	1.00	100.02
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	479	-6	76	9	22	38	41	4	16	14	42	289	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	13	15	128	-5	16	4	40	10	27	65	169		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Granite
Est. %	MINERAL FABRIC:	Hypidiomorphic granular
27.	Quartz	Large poikilitic orthoclase anhedral with clear euhedral plagioclase,
45.	Orthoclase	zoned in places. Abundant globular patches of highly strained quartz
15.	Plagioclase	with sutured sub-grain contacts. Abundant biotite with numerous
8.	Biotite	apatite & radioactive-mineral inclusions, & slightly bleached.
1.	Muscovite	Minor associated muscovite. Rare scattered tourmaline, opaque mineral
3.	Cordierite	& cordierite partially altered to pinite. Rare accessory zircon.
.1	Apatite	
.1	Opaque	
.01	Zircon	
1.	Tourmaline	

Location 0457

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0457
Outcrop

CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-159
6249529 m N 33.89448 S latitude
495783 m E 146.9544 E longitude

Illustrations :

Age/Unit= KIKOIRA GRANITE
Topography: LOW RISE WITH TORS IN FLAT ELEVATED AREA dip= strike=
Structure: PLUTON
Field Geology: Granite. Inequigranular. Scattered phenocrysts of orthoclase. Medium to coarse-grained. Mesocratic with scattered biotite and cordierite. Rare muscovite. Numerous small biotite-rich xenoliths and rarer magmatic quartz xenoliths.
Field Rockname: SAMPLE CG0457 GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.67 Mean of 6 in-situ readings = 37 Ch.1= 57661
Dry density = 2.65 from 0 to 125, SD= 58 Ch.2= 5015 4.32 X K2O
Grain density = 2.71 Laboratory susceptibility = 0 Ch.3= 1004 4.75 ppm U
Porosity = 2.5 Remanence = .40 Ch.4= 936 17.97 ppm Th
Koenigsberger ratio = ***** U/Th= .26
6.99 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.82	.72	14.30	4.44	.07	1.42	1.82	2.21	3.99	.23	.02	.80	98.84
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cl	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	642	-6	75	16	34	13	54	-3	17	16	32	234	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	H	Y	Zn	Zr		
p.p.m.	15	7	127	-5	18	4	62	8	36	70	231		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Hypidiomorphic granular
Est. % MINERAL FABRIC: Large, anhedral patches of orthoclase with euhedral plagioclase with sericitised cores in places. Abundant patches of highly strained plagioclase with sutured sub-grain contacts. Abundant red-brown biotite, slightly bleached, with numerous apatite & radioactive inclusions.
2. Muscovite Minor associated muscovite. Scattered minor cordierite altering to pinite, with less common tourmaline & rare garnet. Rare opaque mineral.
5. Cordierite
.1 Garnet Fine-grained xenolith of similar mineralogy present.
1. Tourmaline
.2 Apatite
.01 Zircon
.1 Opaque

Location 0458

* LACHLAN FOLD BELT of New South Wales. ROCK PROPERTY DATA BASE *

NO.=(7962)0458
Outcrop

CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-81
6252016 m N 33.87188 S latitude
480226 m E 146.7862 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: MAINLY FLAT WITH LOW RUBBLY RISES dip= strike=
Structure : VERTICALLY DIPPING
Field Geology: Shale, slate and quartzite. Laminated to medium-bedded. Deeply weathered. Muscovite-rich. Some beds slightly pyritic. Slight intraformational disruption to bedding in places.

Field Rockname: SAMPLE CG0458 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.30
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 183
from 25 to 251 SD= 91
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY
Ch.1= 52052
Ch.2= 3575 2.59 % K2O
Ch.3= 950 2.32 ppm U
Ch.4= 1070 20.80 ppm Th
U/Th= .11
5.57 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Slate
25.	Quartz	FABRIC:	Massive
70.	Muscovite		Ultrafine mixture of quartz & muscovite optically continuous with bedding. Some lenticular bodies of coarse quartz with associated opaque mineral. Finely disseminated opaque mineral with veinlets filled with its weathering product.
5.	Opaque		

Location 0459

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0459
Quarry

SAME LOCATION AS 0460
CARGELLIGO

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6287348 m N air-photo:run-no.= 5-59
483689 m E 33.55327 S latitude
146.8243 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOW RISE OF RUBBLE ON FLAT SLIGHT UPLAND dip=67NE strike=155

Structure : STEEPLY DIPPING

Field Geology: Slate, sericite-rich and formerly slightly pyritic as revealed by red hematite stain and gossanous appearance in places. Minor quartz-rich variants. Thin bedded to laminated, weathered, varicoloured. Minor interbeds of siliceous ferruginous chemical sediment.

Field Rockname: SAMPLE CG0459 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.32
Dry density = 2.32
Grain density = 2.69
Porosity = 13.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 386
from 0 to 1193, SD= 417
Laboratory susceptibility = 0
Remanence = .30
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 42612
Ch.2= 2813 2.03 % K20
Ch.3= 756 1.93 ppm U
Ch.4= 844 16.39 ppm Th
U/Th= .12
4.45 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Slate
99.999 Sericite FABRIC: Massive
Massive rock consisting entirely of fine sericite, optically continuous with bedding.

Location 0460

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0460
Quarry

SAME LOCATION AS 0459

CARGELLIGO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-59
6287348 m N 33.55327 S latitude
483680 m E 146.8242 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOW RISE OF RUBBLE ON FLAT SLIGHT UPLAND

dip=67NE strike=155

Structure : STEEPLY DIPPING

Field Geology: Slate, sericite-rich and formerly slightly pyritic as revealed by red hematite stain and gossanous appearance in places. Minor quartz-rich variants. Thin bedded to laminated, weathered, varicoloured. Minor interbeds of siliceous ferruginous chemical sediment.

Field Rockname: SAMPLE CG0460 SLATE WITH VEINS

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.64
Dry density = 2.81
Grain density = 3.28
Porosity = 14.3

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 1181
Remanence = 240.00
Koenigsberger ratio = 3.39

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3=
Ch.4=
U/Th=
Heat generation units

% K2O
ppm U
ppm Th

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Quartz	Slate	Massive;veined
30.	Sericite		Massive ultrafine sericite rock with sericite optically continuous with bedding. Veined by hydrothermal chemical quartz & opaque minerals, including earthy hematite after a sulphide, as well as a clay mineral.
40.	Opaque		

Location 0461

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0461
Outcrop

CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-261
6300577 m N 33.43343 S latitude
463077 m E 146.6028 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: LOW RISE OF RUBBLE IN MAINLY FLAT AREA dip=78E strike=179
Structure : STEEPLY DIPPING
Field Geology: Slate. Really s¹-slate because cleavage is poorly defined. Randomly scattered andalusite porphyroblasts present. Muscovite oriented parallel to bedding.

Field Rockname: SAMPLE CG0461 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.57
Dry density = 2.58
Grain density = 2.78
Porosity = 7.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 482
from 276 to 816 ,SD= 191
Laboratory susceptibility = 251
Remanence = 2.00
Koenigsberger ratio = .13

GAMMA-RAY SPECTROMETRY

Ch.1= 46307
Ch.2= 3708 2.93 % K2G
Ch.3= 869 2.90 ppm U
Ch.4= 913 17.67 ppm Th
U/Th= .16
5.47 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
13.	Quartz	Slate	Laminated to thin bedded; porphyroblastic.
40.	Muscovite		Bedding defined by variations in the proportion of quartz to micas.
20.	Biotite		The quartz-rich layers consist of lenticular micro-augen of closely-packed, globular masses separated by films of chlorite, & planar
10.	Andalusite		layers of ferruginised biotite & rare graphite. With decreasing
2.	Opaque		quartz content, muscovite becomes dominant & the micaceous layers
15.	Chlorite		preferentially are hosts to biotite as common micro-porphyroblasts,
			and less common incipient andalusite, with inclusions of bedding and biotite porphyroblasts.

Location 0462

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0462 SAME LOCATION AS 0463
Outcrop CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-55
6311288 m N 33.33578 S latitude
439891 m E 146.3541 E longit. de

Illustrations :

Age/Unit: Quaternary
Topography: LOW RISE ON FLAT AREA dip=90 strike=175
Structure : VERTICAL DIPPING CAPPED BY RESIDUAL HORIZONTAL DEPOSIT
Field Geology: Calcrete. ?magnesite-bearing. Overlies deeply weathered Ordovician
siltstone, shale and greywacke containing specks of detrital muscovite.

Field Rockname: SAMPLE CG0462 MAGNESICRETE

PHYSICAL PROPERTIES:		MAGNESICRETE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 5 in-situ readings =		7		Ch.1= 34813	
Whole rock density =	2.58	from 0 to 25, SD=		11		Ch.2= 1762 1.13 % K2O	
Dry density =	2.31	Laboratory susceptibility =		0		Ch.3= 552 1.34 ppm U	
Grain density =	2.37	Remanence =		35.00		Ch.4= 622 12.09 ppm Th	
Porosity =	12.4	Koenigsberger ratio =		*****		U/Th= .11	
						3.15 Heat generation units	

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Magnesite
90.	Magnesite	FABRIC:	Massive
10.	Clay		Rhombs of ?magnesite, some with radial & concentric structure resembling ooids, with patchy interstitial brown clay. Frequent rootless, random shrinkage cracks.

Location 0463

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0463 SAME LOCATION AS 0462
Outcrop CARGELLIG NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-55
 6311288 m N 33.33578 S latitude
 439891 m E 146.3541 E longitude

Illustrations :

Age/Unit= Quaternary
Topography: LOW RISE ON FLAT AREA dip=90 strike=175
Structure : VERTICAL DIPPING CAPPED BY RESIDUAL HORIZONTAL DEPOSIT
Field Geology: Calcrete. ?magnesite-bearing. Overlies deeply weathered siltstone, shale
and greywacke containing specks of detrital muscovite.

Field Rockname: SAMPLE CG0463 GREYWACKE

PHYSICAL PROPERTIES: GREYWACKE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.26	Mean of 5 in-situ readings = 960	Ch.1= 27745
Dry density = 2.21	from 816 to 1068 .SD= 97	Ch.2= 1584 .97 % K2O
Grain density = 2.63	Laboratory susceptibility = 12	Ch.3= 505 .62 ppm U
Porosity = 15.9	Remanence = 2.00	Ch.4= 621 12.13 ppm Th
	Koenigsberger ratio = 2.78	U/Th= .05
		2.67 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Greywacke
Est. X	FABRIC:	Massive; poorly sorted
50.	MINERAL	Quartz
.1		Tourmaline
50.		Matrix

Subangular to subrounded, strained & strain-free quartz & rare quartzite clasts, with minor tourmaline grains set in a matrix considerably ferruginised by weathering. It includes an opaque mineral, fine sericite, relict biotite & chlorite. Some minor clay-filled cavities formed by weathering.

Location 0464

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0464
Outcrop

SAME LOCATION AS G465

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-253

6303280 m N

33.40775 S latitude

435505 m E

146.3064 E longitude

Illustrations :2 Colour slides, 2 B&W photos

Age/Unit= Silurian?

URAL VOLCANICS

Topography: STRIKE RIDGE

dip=90 strike=044

Structure : VERTICAL

Field Geology: Rhyodacite and flat-pebble breccia. Rhyodacite is porphyritic in quartz and oxidised pyrite cubes which are set in a coarsened, quartzofeldspathic groundmass. The flat-pebble breccias are lenticular phases of the rhyodacite and very similar in lithology to it.

Field Rockname: SAMPLE CG0464 RHYODACITE

PHYSICAL PROPERTIES:

TUFF

DENSITIES
Whole rock density = 2.56
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 64
from 0 to 226 .SD= 80
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROGRAPHY

Ch.1= 55553
Ch.2= 2971 1.51 % K2O
Ch.3= 1082 .26 ppm U
Ch.4= 1421 27.84 ppm Th
U/Th= .01
5.24 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Altered rhyodacite	
		Porphyritic	
5.	Quartz	Sparse phenocrysts of volcanic quartz, both euhedral & fractured with embayed margins. Rare lithic fragments of fine biotite, ferruginised by weathering. Abundant small patchy vesicles and rootless veins of quartz with minor radiating muscovite aggregates.	
2.	Opaque	Abundant cubes of opaque mineral pseudomorphing a sulphide, ?pyrite.	
2.	Rock fragments	The groundmass consists of a globular mass of devitrified feldspathic rock glass which is lightly sericitised, together with ultrafine biotite & chlorite, both ferruginised by weathering & expelled to globule margins & grain boundaries of feldspars.	
5.	Vesicles		
86.	Groundmass		
.01	Zircon		

Location 0465

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0465
Outcrop

SAME LOCATION AS 0464

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-253
6303280 m N 33.40775 S latitude
435505 m E 146.3064 E longitude

Illustrations :2 Colour slides, 2 B&W photos

Age/Unit= Silurian?

URAL VOLCANICS

Topography: STRIKE RIDGE

dip=90 strike=044

Structure : VERTICAL

Field Geology: Rhyodacite and flat-pebble breccia. Rhyodacite is porphyritic in quartz and oxidised pyrite cubes which are set in a coarsened, quartzo-feldspathic groundmass. The flat-pebble breccias are lenticular phases of the rhyodacite and very similar in lithology to it.

Field Rockname: SAMPLE CG0465 RHYODACITE

PHYSICAL PROPERTIES:

TUFF

DENSITIES
Whole rock density = 2.35
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to .SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3=
Ch.4=
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	78.33	.21	13.33	1.20	.01	.45	.04	.01	1.71	.04	.08	4.40	99.80

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	152	-6	101	3	8	16	80	-3	25	-5	10	94

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	19	34	3	-5	36	3	6	17	50	13	331

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Altered rhyodacite
FABRIC: Porphyritic

Est. %	MINERAL	DESCRIPTION
1.	Quartz	Rare phenocrysts of rounded & euhedral, embayed volcanic quartz and completely sericitised feldspar. Numerous small cubes of an opaque mineral pseudomorphous after a sulphide, possibly pyrite. The groundmass consists of fine grained, devitrified, lightly sericitised feldspar with ultrafine sericite & rare fine chlorite. Numerous vesicles of quartz & minor muscovite which divide into planar rootless veins in places.
1.	Feldspar	
1.	Opaque	
7.	Vesicles	
90.	Groundmass	

Location 0466

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0466
Outcrop

CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-253
6303728 m N 33.40357 S latitude
433205 m E 146.2817 E longitude

Illustrations :

Age/Unit= Silurian? URAL VOLCANICS
Topography: LOW STRIKE RIDGE dip=90 strike=042
Structure : NEAR VERTICAL

Field Geology: Ignimbrite. Phenocrysts of small rounded volcanic quartz, larger feldspars and rare altered ?biotite set in a slightly altered, quartzofeldspathic groundmass. The feldspars tend to occur in clusters or closely-spaced aggregates with few crystals between clusters.

Field Rockname: SAMPLE CG0466 IGIMBRITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 3.04
Dry density = 2.63
Grain density = 2.67
Porosity = 1.4

IGIMBRITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 32
from 0 to 100, SD= 46
Laboratory susceptibility = 0
Remanence = .40
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 70625
Ch.2= 6180 5.32 % K2O
Ch.3= 1193 4.28 ppm U
Ch.4= 1228 23.74 ppm Th
U/Th= .18
7.91 Heat generation units

CHEMISTRY-

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.78	0.23	13.28	1.70	0.03	0.33	0.70	3.50	4.86	0.12	0.07	0.90	99.50

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	453	-6	99	-1	6	-5	66	-3	17	26	15	255

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	29	44	9	23	4	7	9	64	14	205

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
FABRIC: Porphyritic; devitrified vitrophyric
8. Quartz Phenocrysts of fractured, volcanic quartz with embayed margins,
5. Orthoclase fractured plagioclase, & fractured slightly kaolinised orthoclase.
3. Plagioclase The quartzes are variably strained. Minor chlorite, skeletal in
2. Chlorite appearance, & possibly pseudomorphous after biotite. Minor
81. Groundmass opaque oxide, some of which is pseudomorphous after a ferromagnesian
1. Opaque mineral, ?hornblende. The groundmass consists of devitrified quartzofeldspathic glass, sericitised & slightly calcified with calcite, as well as tiny crystal fragments & chlorite platelets. Rare accessory zircon & apatite in groundmass.

Location 0467

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0467

Outcrop

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-253

6295505 m N

33.47760 S latitude

431069 m E

146.2581 E longitude

Illustrations :

Age/Unit= Silurian?

URAL VOLCANICS

Topography: RUGGED UPLAND FLANKED BY SCREE dip=90 strike=020

Structure : CHAOTICALLY FLOW FOLDED ON MESOSCOPIC- SCALE WITHIN STEEP DIPPING BODY

Field Geology: Rhyolite. Flow banded. Tiny microphenocrysts of quartz and orthoclase set in an ultrafine groundmass. Minor specks of a sulphide mineral.

Field Rockname: SAMPLE CG0467 RHYOLITE

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES

Whole rock density = 2.65

Dry density = 2.62

Grain density = 2.62

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 62

from 0 to 188 SD= 81

Laboratory susceptibility = 452

Remanence = 1.00

Koenigsberger ratio = .04

GAMMA-RAY SPECTROMETRY

Ch.1= 63880

Ch.2= 5161 4.38 % K20

Ch.3= 1148 7.65 ppm U

Ch.4= 882 16.68 ppm Th

U/Th= .46

8.59 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.05	.14	12.09	1.67	.03	.42	.68	2.91	4.61	.11	.09	.80	99.60

TRACE ELEMENT	Ba	Ri	Le	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	287	-	30	4	6	10	40	4	17	-5	20	235

TRACE ELEMENT	Sr	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	9	33	87	-5	16	8	4	14	63	20	118

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Rhyolite
Est. % MINERAL FABRIC: Porphyritic; layered
10. Quartz Layering defined by presence & alternating absence of crystal fragments. Phenocrysts of volcanic quartz, slightly kaolinised
10. Orthoclase fragments. Phenocrysts of volcanic quartz, slightly kaolinised
2. Plagioclase orthoclase & variably sericitised plagioclase, all fractured.
1. Biotite Minor chloritised biotite & skeletal opaque sulphide. The groundmass
2. Opaque is ultrafine devitrified quartz & feldspar with minor chlorite
75. Groundmass often fringing small crystal fragments, some of which are shard-like.
Rare accessory zircon.

Location 0468

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0468
Mag traverse

MAGNETIC TRAVERSE SEE DT1979800K3PAGE6-9

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-45

6292029 m N

33.50900 S latitude

431865 m E

146.2664 E longitude

Illustrations :

Age/Unit=

Topography: GENTLE SLOPE ON SIDE OF HILL

dip= strike=

Structure :

Field Geology: Ignimbrite. Largely covered by soil. Magnetic traverse recorded.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3= X K20
Ch.4= ppm U
ppm Th

U/Th=
Heat generation units

Location 0469

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0469 JUST NORTH OF MAGNETIC TRAVERSE
Outcrop CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-45
6292380 m N 33.50585 S latitude
432150 m E 146.2695 E longitude

Illustrations :

Age/Unit= Silurian? URAL VOLCANICS
Topography: SLIGHTLY RUGGED MODERATELY SLOPING HIGH dip= strike=
Structure : STEEPLY DIPPING
Field Geology: Ignimbrite and volcanic breccia. The ignimbrite contains quartz and
feldspar phenocrysts which are set in a fine-grained groundmass. Cognate
sulphide-bearing xenoliths. Clasts in breccia are ignimbrites and many
are rich in sulphide (up to 10%).
Field Rockname: SAMPLE CG0469 IGNIMBRITE

PHYSICAL PROPERTIES: IGNIMBRITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.66	Mean of 0 in-situ readings =	Ch.1=
Dry density = 2.70	f m to ,SD=	Ch.2= X K20
Grain density = 2.71	Laboratory susceptibility = 113	Ch.3= ppm U
Porosity = .0	Remanence = 10.00	Ch.4= ppm Th
	Koenigsberger ratio = 1.47	U/Th=
		Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.48	0.32	12.34	2.28	0.03	0.15	0.73	2.81	5.05	0.15	0.07	1.10	99.51
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	1023	-6	163	-1	-1	6	102	5	25	49	30	219	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	9	-20	126	-5	49	7	-1	8	79	59	352		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Ignimbrite
3.	Quartz	FABRIC:	Porphyritic; devitrified vitrophyric
3.	Plagioclase		Phenocrysts of volcanic quartz, rounded with slightly embayed margins & with slight reaction rims with groundmass in places. Also
1.	Orthoclase		phenocrysts of weakly kaolinised orthoclase, & plagioclase, sparingly
3.	Opaque		altered to calcite in places. Numerous skeletal opaque mineral
90.	Groundmass		which pseudomorphs a former sulphide mineral. The groundmass consists of devitrified quartz & feldspar with micro-interstitial chlorite, as well as patchy sericite & calcite. Slight development of groundmass spherulites.

Location 0470

* LACHLAN FOLD BELT of New South Wales. ROCK PROPERTY DATA BASE *

NO.=(7962)0470
Ou'crop

CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-45
6292826 m N 33.50185 S latitude
432435 m E 146.2726 E longitude

Illustrations :

Age/Unit= Silurian? URAL VOLCANICS
Topography: SLIGHTLY RUGGED MODERATE SLOPING UPLAND dip=90 strike=164
Structure : VERTICAL

Field Geology: Volcanic breccia. Fragmental appearance with angular to round ultrafine
black rhyolite and dacite clasts 2 mm to 10 cm in size set in a fine-
grained, quartzo-feldspathic groundmass with small cognate xenoliths.
Units are both massive and flow banded.

Field Rockname: SAMPLE CG0470 VOLCANIC BRECCIA

PHYSICAL PROPERTIES:

	BRECCIA	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
	DENSITIES		
Whole rock density =	2.63	Mean of 0 in-situ readings =	Ch.1=
Dry density =	2.57	from to ,SD=	Ch.2=
Grain density =	2.61	Laboratory susceptibility =	Ch.3=
Porosity =	1.7	Remanence =	Ch.4=
		Koenigsberger ratio =	U/Th=
			Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.53	.22	12.02	2.74	.04	.33	.37	3.06	4.21	.13	.10	.90	99.65
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	790	-6	135	9	5	29	83	4	22	-5	26	169	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	13	53	126	-5	38	4	4	14	85	50	236		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Volcanic breccia
70.	Rock fragments	FABRIC:	Poorly sorted
30.	Matrix		Angular to rounded clasts of rhyolite, rhyodacite, porphyritic rhyodacite, & chlorite rhyolite, with xenolithic chlorite, set in a matrix of ultrafine quartzo-feldspathic material, very slightly sericitised. Minor groundmass opaque mineral.

Location 0471

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0471
No outcrop

MAG TRAVERSE IN CREEK
CARGELLIGO

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6291434 m N 33.51444 S latitude air-photo:run-no.= 5-45
433021 m E 146.2788 E longitude

Illustrations :

Age/Unit=
Topography: dip= strike=
Structure :
Field Geology: Soil, colluvium, and gravel concealing acid volcanics. Magnetic traverse recorded.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = 0.00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3=
Ch.4=
U/Th=
Heat generation units
% K2O
ppm U
ppm Th

Location 0472

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0472
Outcrop

MAGNETIC TRAVERSE ON WEST EDGE OF URAL RANGE

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-251
6304723 m N 33.39380 S latitude
421433 m E 146.1552 E longitude

Illustrations :

Age/Unit=

Topography: MODERATELY RUGGED UPLAND WITH BOLD OUTCROP

dip= strike=

Structure : PROBABLY NEAR VERTICAL

Field Geology: Ignimbrite, volcanic breccia, and dolerite. Magnetic traverse recorded.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0473

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0473
Outcrop

ALONG HAG TRAVERSE-STATION 260METRES EAST OF FENCE

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-251

6304400 m N

33.39672 S latitude

421594 m E

146.1569 E longitude

Illustrations :

Age/Unit= Silurian?

URAL VOLCANICS

Topography: MODERATELY RUGGED UPLAND WITH OUTCROP

dip= strike=

Structure : MASSIVE WITH CHAOTIC FOLDING IN FLOW BANDING

Field Geology: Volcanic breccia. Black ultra-fine porphyritic dacitic to rhyolitic clasts with chloritite and granophyre microclasts set in a porphyritic ignimbrite matrix. The clast rocks also occur as lenticular phases in the ignimbrite. Magnetic traverse recorded.

Field Rockname: SAMPLE CG0473 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES
Whole rock density = 2.65
Dry density = 2.65
Grain density = 2.67
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I. * .000001)

Mean of 6 in-situ readings = 0
from to SD=
Laboratory susceptibility = 163
Remanence = .70
Koenigsberger ratio = .07

GAMMA-RAY SPECTROMETRY

Ch.1= 62807
Ch.2= 4816 3.58 X K20
Ch.3= 1288 5.11 ppm U
Ch.4= 1284 24.77 ppm Th
U/Th= .21
8.20 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.76	.56	14.99	4.01	.05	1.01	2.42	.57	7.95	.26	.05	1.80	99.43

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1692	-6	167	23	11	9	150	3	18	-5	27	261

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	25	239	-5	34	7	41	12	82	46	364

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
Est. # MINERAL FABRIC: Porphyritic; devitrified vitrophyric
1. Quartz Rare small phenocrysts of volcanic quartz & fractured, slightly
4. Plagioclase sericitised & partially epidotised plagioclase, with slightly
5. Orthoclase resorbed & slightly altered orthoclase. Lithic fragments are
10. Rock fragments cognate xenoliths of massive chlorite rock, porphyry & granophyre.
78. Groundmass The groundmass consists of differentially devitrified quartz and
2. Opaque orthoclase of variable grain size, with patchy interstitial chlorite & minor biotite.

Location 0474

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0474
 Outcrop

ALONG MAG TRAVERSE AT 800M STATION DT1979BOOK3P14

CARGELLIGO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-251

6304018 m N

33.40018 S latitude

421792 m E

146.1590 E longitude

Illustrations :

Age/Unit= Silurian?

URAL VOLCANICS

Topography: MODERATELY RUGGED UPLAND WITH OUTCROP

dip= strike=

Structure : STEEP TO VERTICAL

Field Geology: Ignimbrite. Small infrequent quartz, and abundant larger altered plagioclase phenocrysts set in a fine-grained, quartzo-feldspathic groundmass. Magnetic traverse recorded.

Field Rockname: SAMPLE CG0474 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.62

Dry density = 2.62

Grain density = 2.62

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 1325

from 0 to 4523 ,SD= 1417

Laboratory susceptibility = 213

Remanence = 10.00

Koenigsberger ratio = .78

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

X K20

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.98	0.31	13.27	1.91	0.02	0.32	1.08	2.30	7.42	0.18	0.05	0.70	99.54

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1165	-6	75	-1	-1	-5	93	-3	14	18	21	264

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	4	-20	175	-5	25	5	15	-5	57	14	223

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
3.	Quartz	Ignimbrite	Porphyritic; devitrified vitrophyric
10.	Plagioclase		Phenocrysts of euhedral, bipyramidal to fractured anhedral, embayed volcanic quartz & sericitised, partially epidotised plagioclase,
1.	Chlorite		glomeroporphyritic in places, with frequently associated chlorite.
1.	Opaque		Minor opaque mineral. The groundmass consists of fine-grained quartz
85.	Groundmass		& K'feldspar with microinterstitial chlorite & rare opaque grains.

Location 0475

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0475
Outcrop

ALONG MAG TRAVERSE STATION 1000M SEE DT1979B00K3P14

CARGELLIGO

NSW GDDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-251

6303770 m N

33.40243 S latitude

421961 m E

146.1608 E longitude

Illustrations :

Age/Unit= Silurian?

URAL VOLCANICS

Topography: SUBDUED LOW IN UPLAND AREA

dip= strike=

Structure :

Field Geology: Gabbro. Medium grained, equigranular, non porphyritic with prominent randomly-oriented laths of plagioclase. Minor patches of an oxidised sulphide mineral and scattered magnetite. Magnetic traverse recorded.

Field Rockname: SAMPLE CG0475 GABBRO

PHYSICAL PROPERTIES:

GABBRO

DENSITIES
Whole rock density = 2.89
Dry density = 2.91
Grain density = 2.94
Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 9477
from 1130 to 22971, SD= 6018
Laboratory susceptibility = 27700
Remanence = 0.00
Koenigsberger ratio = 0.00

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
74.	Plagioclase	Doleritic gabbro	Sub-ophitic
10.	Quartz		Large laths of slightly chloritised & sericitised plagioclase with intergranular augite showing moderate uraltisation to blue-green
5.	Hornblende		hornblende & chlorite. Abundant skeletal & resorb. titaniferous
5.	Chlorite		magnetite showing variable alteration to hematite & intergrowth
2.	Augite		with ilmenite. Minor interstitial quartz, rarely euhedral.
.01	Apatite		Rare accessory apatite.
2.	Magnetite		
1.	Hematite		
1.	Ilmenite		

Location 0476

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0476
Outcrop

STATION 1160M ON MAG TRAVERSE SEE DT1979BOOK3PAGE
CARGELLIGO

NSW GDOM=2
air-photo:run-no.= 4-251
33.40250 S latitude
146.1608 E longitude

1:250,000 sheet area 1:100,000 sheet area
6303762 m N 421961 m E

Illustrations :

Age/Unit= Silurian? URAL VOLCANICS
Topography: RUGGED UPLAND WITH BOLD OUTCROP dip= strike=
Structure : NEAR VERTICAL
Field Geology: Ignimbrite. Small phenocrysts of quartz and larger feldspars set in an
ultrafine quartzo-feldspathic groundmass. Feldspars are
glomeroporphyritic in places. Magnetic traverse recorded.

Field Rockname: SAMPLE CG0476 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.63
Dry density = 2.58
Grain density = 2.60
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 150
Remanence = 20.00
Koenigsberger ratio = 2.22

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3=
Ch.4=
X K20
ppm U
ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.55	0.28	13.34	2.44	0.03	0.34	0.38	2.93	5.71	0.18	0.08	1.00	99.26

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	942	-6	75	9	-1	10	208	3	15	120	8	265

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	4	32	62	-5	36	5	15	-5	44	18	206

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Rhyodacite	
		Porphyritic; spherulitic	
2.	Quartz		Small phenocrysts of quartz, mostly euhedral but rarely embayed.
2.	Plagioclase		Scattered kaolinised & lightly sericitised plagioclase & smaller
3.	Orthoclase		lightly kaolinised orthoclase euhedral phenocrysts. Scattered opaque
1.	Opaque		mineral & minor andesitic to dacitic cognate xenoliths. The
2.	Rock fragments		groundmass consists of ultrafine quartz & feldspar with abundant
90.	Groundmass		patchy enrichment of quartz in places, & numerous spherulites of
			similar coarser material, particularly in central regions.
			Concentric structure is best developed in outer layers where defined
			by thin chlorite coatings. Minor patchy groundmass chlorite.

Location 0477

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0477
Outcrop

CARGELLIGO NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-59
6311637 m N 33.33192 S latitude
428283 m E 146.2294 E longitude

Illustrations :

Age/Unit= Silurian? URAL VOLCANICS
Topography: GENTLY SLOPING UPLAND WITH OUTCROP dip= strike=
Structure :
Field Geology: Rhyolite. Phenocrysts of quartz and feldspars set in a slightly
coarsened felsic groundmass.

Field Rockname: SAMPLE CG0477 RHYOLITE

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)			GAMMA-RAY SPECTROMETRY		
Whole rock density =	2.65	Mean of 7 in-situ readings =	89	Ch.1=	73058		
Dry density =	2.65	from 0 to 314, SD=	153	Ch.2=	5365	3.98 % K2O	
Grain density =	2.67	Laboratory susceptibility =	163	Ch.3=	1399	4.39 ppm U	
Porosity =	.0	Remanence =	1.00	Ch.4=	1493	28.92 ppm Th	
		Koenigsberger ratio =	.10	U/Th=	.15		
				8.55		Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.50	0.45	13.05	2.78	0.05	0.48	0.74	3.21	5.47	0.09	0.09	0.70	99.60
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	943	8	148	-1	-1	2-	192	6	38	35	251	254	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	12	-20	150	7	36	7	7	10	77	525	610		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Rhyolite
FABRIC: Porphyritic

Est. %	MINERAL	DESCRIPTION
3.	Plagioclase	Phenocrysts of very lightly sericitised & kaolinised plagioclase and kaolinised orthoclase set in a fine-grained, devitrified groundmass
5.	Orthoclase	rich in K-feldspar which is preferentially coarsened in places to phenocryst-sized crystal aggregates, surrounded by finer, quartz-rich groundmass containing sprinklings of tiny epidote crystals.
2.	Quartz	Numerous lenticular strained quartz patches & veinlets. Minor opaque mineral of streaky appearance and locally present in apparent cavities along flow banding.
88.	Groundmass	
2.	Opaque	

Location 0478

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0478
Outcrop

SCARP ON LAKE EDGE
CARGELLIGO

NSW CORR=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-55
6314718 m N 33.30500 S latitude
442747 m E 146.3850 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: SCARP ON EDGE OF LAKE

dip=86NE strike=150

Structure : VERTICAL

Field Geology: Shale, mudstone, slate, siltstone, greywacke and quartzose sandstone.

The sandstone is fine to medium-grained with detrital muscovite on bedding surfaces. Thin to thick and planar bedded, with minor soft-sediment disturbances to bedding. Multi-coloured due to weathering.

Field Rockname: SAMPLE CG0478 MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE

DENSITIES
Whole rock density = 2.30
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I. *.000001)

Mean of 6 in-situ readings = 10
from 0 to 62, SD= 25
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 59153
Ch.2= 5265 4.53 % K2O
Ch.3= 956 1.58 ppm U
Ch.4= 1141 22.25 ppm Th
U/Th= .07
5.80 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
2.	Quartz	Mudstone	Massive
97.	Mud	Ultrafine-grained, deeply weathered rock with silt-sized quartz and scattered muscovite set in a matrix of limonitic, ?chloritic, and discernible sericitic mud.	
1.	Muscovite		

Location 0479

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0479
Quarry

CARGELLIGO NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-121
6330404 m N 33.16333 S latitude
439232 m E 146.3483 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: FLAT LOWLAND dip= strike=
Structure : VERTICAL
Field Geology: Shale, slate, mudstone, siltstone, greywacke and quartzose sandstone.
Thin to thick and planar bedded. Identical to rocks at 0478. Deeply
weathered. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

SLATE

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0480

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0480
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-154
6349930 m N 32.98680 S latitude
432327 m E 146.2757 E longitude

Illustrations :

Age/Unit= Silurian
Topography: LOW RUBBLY RISE dip=90 strike=170
Structure : VERTICAL INCIPIENT CLEAVAGE
Field Geology: Greywacke. Massive, poorly bedded. Appears to be a continuously deposited sequence. Lithological variants grade into one another. Coarsest units are fine to medium sand grade. Volcanogenic crystal detritus locally abundant.
Field Rockname: SAMPLE NE0480 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.=.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.34 Ch.1= 45488
Dry density = 2.38 Mean of 15 in-situ readings = 234 Ch.2= 3058 2.10 X K2O
Grain density = 2.68 from 0 to 691, SD= 187 Ch.3= 871 2.00 ppm U
Porosity = 11.1 Laboratory susceptibility = 150 Ch.4= 992 1.29 ppm Th
Remanence = .70 U/Th= .10
Koenigsberger ratio = .08 5.00 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	83.80	.54	9.56	.93	.01	.33	.02	.01	2.12	.04	.06	2.20	97.60
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	388	-6	78	9	48	8	59	-3	12	-5	24	120	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	14	41	41	-5	24	4	53	12	33	48	510		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Greywacke
FABRIC: Massive; poorly sorted
55. Quartz Angular to rounded fine to coarse sand-sized quartz grains, some of which are strained, with much lesser feldspar pseudomorphed by clay.
4. Rock fragments muscovite, chloritised glass, & quartzite fragments. Smaller grains of accessory apatite, zircon, tourmaline & opaque mineral. The matrix consists of sericitic & chloritic mud with minor dust-sized opaque mineral.
1. Muscovite
4. Feldspar
.2 Apatite
.01 Zircon
.2 Tourmaline
1. Opaque
35. Matrix

Location 0481

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0481
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-152
6355490 m N 32.93635 S latitude
427652 m E 146.2261 E longitude

Illustrations :

Age/Unit= Silurian
Topography: STRIKE RIDGE dip=90 strike=156
Structure : VERTICAL
Field Geology: Ash-fall tuff. Grades vertically into argillaceous equivalents so that
it is a continuously depositing sequence with varying interplay of ash
deposition and background detrital sedimentation. No marked bedding
planes.
Field Rockname: SAMPLE NE0481 ASH-FALL TUFF

PHYSICAL PROPERTIES:

TUFF
DENSITIES
Whole rock density = 2.70
Dry density = 2.57
Grain density = 2.67
Porosity = 3.3

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 5 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 100
Remanence = .20
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 53610
Ch.2= 3794 2.80 % K20
Ch.3= 975 2.36 ppm U
Ch.4= 1100 21.38 ppm Th
U/Th= .11
5.74 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.07	0.20	12.48	1.64	0.01	0.20	0.02	0.07	7.04	0.06	0.06	1.30	99.15

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1406	-6	105	16	-1	16	121	-3	7	40	27	319

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	38	91	5	22	-3	7	10	75	30	210

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Ash-fall tuff
20. FABRIC: Massive
80. Glass shards Glassy shards, poorly preserved & randomly distributed in ultrafine
Ash ash, much of which appears non-resolvable glass, in addition to fine
sericite which is optically continuous with strike of unit.

Location 0482

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0482
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-152
6353859 m N 32.95100 S latitude
426720 m E 146.2160 E longitude

Illustrations :

Age/Unit= Silurian? 'JRAL VOLCANICS
Topography: STRIKE RIDGE dip=80NE strike=156
Structure : STEEPLY DIPPING
Field Geology: Rhyolite. Non porphyritic except for tiny indeterminate micropheno-
crysts. Mainly massive, ultrafine and black. Flow banded where glassy
layers adjacent to slightly coarser layers. Chaotic mesoscopic folds.

Field Rockname: SAMPLE NE0482 RHYOLITE

PHYSICAL PROPERTIES:

DENSITIES RHYOLITE
Whole rock density =
Dry density = 2.62
Grain density = 2.64
Porosity = 1.1
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 7 in-situ readings = 71
from 0 to 376, SD= 142
Laboratory susceptibility = 50
Remanence = 10.00
Koenigsberger ratio = 3.33
GAMMA-RAY SPECTROMETRY
Ch.1= 84153
Ch.2= 5459 3.51 % K20
Ch.3= 1667 2.78 ppm U
Ch.4= 1987 38.74 ppm Th
U/Th= .07
9.11 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.07	0.29	13.45	2.44	0.04	0.22	0.57	2.25	7.17	0.09	0.08	0.70	99.38
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	1226	-6	190	-1	-1	6	106	-3	44	52	31	269	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	11	57	110	-5	57	8	12	6	104	80	432		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Rhyolite
Est. % MINERAL FABRIC: Porphyritic; flow banded, tending slightly trachytic.
1. Quartz Small phenocrysts of fractured quartz, orthoclase & plagioclase, the
2. Plagioclase latter two both lightly kaolinised. Flow banding defined by alternating
3. Orthoclase absence & presence of these phenocrysts. The groundmass consists of sub-
2. Opaque parallel plagioclase laths with abundant interstitial K-feldspar, with
92. Groundmass minor chlorite along grain boundaries. Scattered opaque mineral
phenocrysts & as rare groundmass particles. Accessory zircon and
apatite.

Location 0483

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0483
Outcrop

NYMAGEE NSW GDOM=Z
1:250,000 sheet area 1:100,000 sheet area air photo:run-no.= 8-150
6352906 m N 32.95915 S latitude
420259 m E 146.1468 E longitude

Illustrations :

Age/Unit= Upper Devonian
Topography: RUGGED MESA dip= strike=
Structure : SUB-HORIZONTAL
Field Geology: Quartzose sandstone. Medium to coarse-grained with quartz and quartzite
granules and pebbles in places. Slightly feldspathic. Massive; very
poorly sorted, with many sub-angular grains. Medium to thick-bedded;
crossbedded.
Field Rockname: SAMPLE NE0483 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:		SANDSTONE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY			
Whole rock density =	2.51	Mean of 6 in-situ readings =	0	Ch.1=	34233		
Dry density =	2.51	from to ,SD=		Ch.2=	2543	1.94 % K2O	
Grain density =	2.71	Laboratory susceptibility =	37	Ch.3=	689	3.95 ppm U	
Porosity =	7.1	Remanence =	5.00	Ch.4=	584	11.14 ppm Th	
		Koenigsberger ratio =	2.25	U/Th=	.35		
				4.79	Heat generation units		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Quartzose sandstone	
65.	Quartz	Moderately sorted	
28.	Rock fragments	Subangular to rounded, medium to coarse, sand-sized quartz including strained, unstrained & vein-quartz varieties. Similarly sized lithic fragments include quartzite of variable purity, sericitised intermediate to acid volcanic fragments. Minor kaolinised feldspar, detrital muscovite & rare tourmaline, zircon, opaque mineral, and apatite. The matrix consists of sericitic mud.	
.1	Tourmaline		
2.	Muscovite		
2.	Opaque		
.01	Zircon		
2.	Feldspar		
1.	Matrix		
.01	Apatite		

Location 0484

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0484
Outcrop

SAME LOCATION AS 0485
NYMAGEE

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
air-photo:run-no.= 8-144
6364984 m N 32.84837 S latitude
398102 m E 145.9111 E longitude

Illustrations :1 Colour slide, 1 B&W photo

Age/Unit= Silurian-Lower Devonian

Topography: STRIKE RIDGE WITH OUTCROP

dip=90 strike=178

Structure : VERTICAL

Field Geology: Flat-pebble breccia, quartzite and micaceous quartzite. Massive, with no obvious breaks. Different rock types grade laterally and vertically into each other. Bedding defined only by clast orientation and weak wispy layering. Cleavage not well developed in siliceous rocks.

Field Rockname: SAMPLE NE0484 BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES

Whole rock density = 2.64

Dry density = 2.64

Grain density = 2.77

Porosity = 4.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 159

from 0 to 502, SD= 171

Laboratory susceptibility = 188

Remanence = .70

Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY

Ch.1= 49830

Ch.2= 3662 2.89 % K2O

Ch.3= 926 5.16 ppm U

Ch.4= 797 15.22 ppm Th

U/Th= .34

6.45 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL FABRIC:
30. Rock fragments
70. Matrix

NAME: Breccia
Poorly sorted
The clasts are similar to the matrix & differ only in grain size & in proportions of constituents. Angular to subrounded flat pebbles of porphyroidal to ovoid quartzes within feldspathic and micaceous ?chloritic material, largely altered, as well as ferruginised by weathering. The matrix is similar & some clasts appear to taper gradually into it. Abundant scattered muscovite crystals in both matrix & some clasts. The quartzes are strained.

Location 0485

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0485

SAME LOCATION AS 0484

Outcrop

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-144

6364984 m N

32.84837 S latitude

398102 m E

145.9111 E longitude

Illustrations :1 Colour slide, 1 B&W photo

Age/Unit= Silurian-Lower Devonian

Topography: STRIKE RIDGE WITH OUTCROP

dip=90 strike=178

Structure : VERTICAL

Field Geology: Flat-pebble breccia, quartzite and micaceous quartzite. Massive, with no obvious breaks. Different rock types grade laterally and vertically into each other. Bedding defined only by clast orientation and weak wispy layering. Cleavage not well developed in siliceous rocks.

Field Rockname: SAMPLE NE0485 BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES
Whole rock density = 2.65
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % k20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.86	0.65	14.12	7.47	0.02	0.74	0.04	0.01	3.79	0.16	0.03	3.90	99.78

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	430	-6	55	18	58	-5	39	9	12	143	-5	201

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zr	Zr
p.p.m.	10	-20	11	-5	13	-3	85	7	30	.5	224

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
75.	Rock fragments	Breccia	Poorly sorted with flow foliation
25.	Matrix		Ovoid to lenticular, tending slightly bulbous clasts of altered impure quartzite with lesser, smaller more regular mudstone clasts, differing from the former by lack of quartz & altered feldspar. The matrix consists of similar material considerably ferruginised by weathering, but including recognisable biotite oriented parallel to the flow banding which curves around the clasts.

Location 0486

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0486
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-40
6367416 m N 32.82602 S latitude
393743 m E 145.8648 E longitude

Illustrations :

Age/Unit= Silurian? MOUNT HOPE VOLCANICS
Topography: FLAT RISING UPLAND. GENTLE SLOPE. dip= strike=
Structure :
Field Geology: Ignimbrite and rhyolite. Small quartz and larger, more frequent
plagioclase and orthoclase, as well as minor ?pyrite phenocrysts set in
a fine-grained groundmass which is two-phased in some rocks. Some
flattened pumiceous fragments.
Field Rockname: SAMPLE NE0486 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.64 Ch.1= 53900
Dry density = 2.63 Mean of 6 in-situ readings = 0 Ch.2= 2931 1.62 X K20
Grain density = 2.64 from to ,SD= Ch.3= 1158 5.64 ppm U
Porosity = .0 Laboratory susceptibility = 163 Ch.4= 1066 20.45 ppm Th
Remanence = 560.00 U/Th= .28
Koenigsberger ratio = 57.26 7.34 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.71	.27	11.91	1.73	.03	.46	.92	5.07	1.34	.12	.14	.80	99.49
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	396	-6	62	4	8	29	38	-3	8	-5	37	51	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	5	-20	165	-5	21	6	12	8	38	26	155		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Rhyodacite
Est. % MINERAL FABRIC: Porphyritic; perlitic cracking in groundmass
2. Quartz Small phenocrysts of sub-rounded, embayed volcanic quartz, with
5. Plagioclase slightly sericitised euhedral plagioclase, small kaolinised orthoclase
2. Orthoclase & calcite pseudomorphs of a skeletal former mineral. Minor
1. Opaque scattered, skeletal opaque mineral. Patchy chlorite often in
1. Chlorite cusped shapes throughout groundmass, which consists largely of
88. Groundmass ultrafine feldspar & tiny chlorite specks. Some plagioclase
1. Calcite phenocrysts are partially pseudomorphed by calcite.

Location 0487

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0487
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-54
6377550 m N 52.73487 S latitude
396258 m E 145.8928 E longitude

Illustrations :

Age/Unit= Silurian? MOUNT HOPE VOLCANICS
Topography: LOW RISE IN UPLAND AREA dip=85E strike=005
Structure : NEAR VERTICAL
Field Geology: Trachyandesite. Porphyritic in feldspar occurring as stubby crystals and
laths set in a fine-grained groundmass which, in places, is two-phased.
No visible quartz phenocrysts.

Field Rockname: SAMPLE NE0487 TRACHYANDESITE

PHYSICAL PROPERTIES:

ANDESITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 12 in-situ readings = 63		Ch.1= 65390	
Whole rock density = 2.65		from 0 to 188 ,SD= 75		Ch.2= 5096	4.20 % K2O
Dry density = 2.64		Laboratory susceptibility = 150		Ch.3= 1138	5.36 ppm U
Grain density = 2.65		Remanence = .80		Ch.4= 1063	20.42 ppm Th
Porosity = .6		Koenigsberger ratio = .09		U/Th= .26	
				7.76	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
4.	Orthoclase	Trachyandesite	Porphyritic
2.	Plagioclase		Stubby phenocrysts of altered orthoclase & lath-like plagioclase, both lightly kaolinised. The orthoclase phenocrysts have poikilitic chlorite inclusions. Scattered opaque mineral. The groundmass consists of devitrified globular masses of fine-grained feldspar fringed discontinuously by chlorite, & biotite altering to chlorite. Rare accessory apatite in groundmass.
1.	Opaque		
93.	Groundmass		

Location 0488

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0488

AT OLD GOLD WORKINGS

Outcrop

NYMAGEE

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-46
6412866 m N 32.41743 S latitude
408727 m E 146.0293 E longitude

Illustrations :

Age/Unit: Lower Devonian

COBAR GROUP

Topography: LOW FLAT GENTLE RISE

dip=83W strike=024

Structure : NEAR VERTICAL

Field Geology: Greywacke, quartzose sandstone and micaceous siltstone. Lithologies often gradational. Mainly massive bedding suggestive of continuous deposition. Cut by numerous quartz-chlorite veins with relict casts after leached sulphide mineral.

Field Rockname: SAMPLE NE0488 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES

Whole rock density = 2.19

Dry density = 2.16

Grain density = 2.75

Porosity = 21.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 113

from 25 to 351, SD= 134

Laboratory susceptibility = 75

Remanence = 5.00

Koenigsberger ratio = 1.11

GAMMA-RAY SPECTROMETRY

Ch.1= 38448

Ch.2= 2063 1.19 % K2O

Ch.3= 740 2.38 ppm U

Ch.4= 785 15.20 ppm Th

U/Th= .16

4.33 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Greywacke	
30.	Quartz		Poorly sorted; massive
5.	Plagioclase		Subangular to subrounded fine to medium sand-sized quartz, altered plagioclase, detrital muscovite, altered lithic fragments difficult to distinguish from matrix, & minor opaque mineral & tourmaline.
5.	Muscovite		Abundant labile detritus. The matrix consists of sericitic and chloritic mud. The detrital muscovites are randomly oriented.
.1	Tourmaline		
1.	Opaque		
20.	Rock fragments		
39.	Matrix		

Location 0489

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

ND.=(7962)0489

Outcrop

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-80
6426492 m N 32.29522 S latitude
417719 m E 146.1261 E longitude

Illustrations :

Age/Unit= Lower Devonian

COBAR GROUP

Topography: LOW RISE WITH RUBBLE

dip=90 strike=008

Structure : VERTICAL

Field Geology: Greywacke and quartzite. Waterlain, massive, poorly bedded, poorly sorted. Changes by imperceptible gradations into more shaley, and better-cleaved variants. Numerous blows of white quartz.

Field Rockname: SAMPLE NE0489 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.15
Dry density = 2.08
Grain density = 2.77
Porosity = 24.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 86
from 0 to 238 ,SD= 85
Laboratory susceptibility = 0
Remanence = .20
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 44147
Ch.2= 3759 3.18 % K2O
Ch.3= 714 1.24 ppm U
Ch.4= 847 16.51 ppm Th
U/Th= .08
4.31 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartzite
FABRIC: Massive; porphyroblastic with flow foliation
Est. % MINERAL
55. Quartz Ovoid, augen-shaped & lenticular bodies of variably strained quartz
40. Matrix & quartz aggregates forming a moderately supporting framework.
5. Muscovite Minor muscovite flakes throughout. The matrix has been ferruginised
by weathering, but appears to have been largely chloritic.

Location 0490

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0490
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-46
6439809 m N 32.17570 S latitude
426407 m E 146.2194 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP dip= strike=
Topography: LOW RISE WITH OUTCROP
Structure :
Field Geology: Greywacke. Quartz-rich, massive, poorly sorted, fine-grained, non-bedded. Some large plates of detrital muscovite in places. Waterlain; continuous deposition without break in the exposed interval.

Field Rockname: SAMPLE NE0490 GREYWACKE

PHYSICAL PROPERTIES:		GREYWACKE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density = 2.58	DENSITIES		Mean of 15 in-situ readings =	175	Ch.1=	19682
Dry density = 2.54			from 0 to 326 ,SD=	93	Ch.2=	1255 .85 X K20
Grain density = 2.67			Laboratory susceptibility =	37	Ch.3=	392 1.76 ppm U
Porosity = 4.8			Remanence =	10.00	Ch.4=	373 7.17 ppm Th
			Koenigsberger ratio =	4.50	U/Th=	.25
						2.51 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Greywacke	
		Massive;	unsorted
85.	Quartz	Tightly packed subangular to subrounded quartz grains with minor	
2.	Plagioclase	altered feldspar, sericitised & kaolinised lava fragments, opaque	
5.	Rock fragments	mineral, muscovite & rare accessory tourmaline. The matrix is	
2.	Opaque	ferruginised by weathering & partly consists of chlorite-biotite mud.	
1.	Muscovite		
.1	Tourmaline		
5.	Matrix		

Location 0491

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0491

Outcrop

NYMAGEE

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=2

air-photo:run-no.= 3-86

6432474 m N

32.24232 S latitude

434469 m E

146.3044 E longitude

Illustrations :1 Colour slide, 1 B&W photo

Age/Unit= Silurian?

BABINDA VOLCANICS

Topography: LOW RISE OF TORS IN GENTLE UPLAND dip= strike=170

Structure : PROBABLY STEEP DIPPING-MINOR INTRAFORMATIONAL FLOW FOLDING

Field Geology: Breccia. Coarse, fragmental, lithic and crystal detritus including andesite, ignimbrite, rhyolite, hydrothermal quartzite, magmatic quartz, feldspar and granitic, angular to subrounded clasts set in a matrix of quartzite. Layering defined by clast orientation.

Field Rockname: SAMPLE NE0491 BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES

Whole rock density = 2.61

Dry density = 2.61

Grain density = 2.64

Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 7 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 0

Remanence = .90

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 50293

Ch.2= 3616 3.04 % K2O

Ch.3= 734 2.34 ppm U

Ch.4= 780 15.11 ppm Th

U/Th= .16

4.72 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	80.37	.14	9.71	.90	.02	.21	.24	1.88	4.71	.11	.05	.60	98.94

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	461	-6	59	4	13	-5	39	-3	5	-5	30	233

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	25	93	-5	12	-3	14	11	18	15	86

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
30.	Quartz	Granitic breccia
50.	Orthoclase	Massive; fragmental; unsorted Angular mineral fragments & minor rock fragments tightly packed and set in a matrix of ultrafine cherty quartzite. The mineral fragments are plutonic-derived & near source. They include abundant strained quartz, lightly kaolinised orthoclase & minor plagioclase, muscovite, interstitial biotite & rare zircon & apatite crystals.
10.	Plagioclase	
1.	Muscovite	lithic fragments include quartzite & rare andesite & granophyre.
2.	Rock fragments	
1.	Biotite	
1.	Opaque	
5.	Groundmass	
.01	Zircon	
.1	Apatite	

Location 0492

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0492

Outcrop

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-86

6423689 m N 32.32188 S latitude
439110 m E 146.3531 E longitude

Illustrations :

Age/Unit=

ERIMERAN GRANITE

Topography: LOW RISE

dip=73E strike=025

Structure : PLUTON WITH INTERNAL, NON STRATIGRAPHIC IGNEOUS LAYERING

Field Geology: Granitic breccia. Large volcanic quartzes and larger fragments of single microcline crystals containing inclusions and occurring as former rhyolitic fragments set in a fragmental medium-grained, quartzo-feldspathic groundmass. Minor muscovite and biotite. Weakly layered.

Field Rockname: SAMPLE NE0492 GRANITIC BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES

Wet: rock density = 2.64
Dry density = 2.56
Grain density = 2.64
Porosity = 2.8

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)

Mean of 15 in-situ readings = 296
from 0 to 1105, SD = 352
Laboratory susceptibility = 791
Remanence = 65.00
Koenigsberger ratio = 1.37

GAMMA-RAY SPECTROMETRY

Ch.1= 61618
Ch.2= 5364 4.75 % K2O
Ch.3= 895 1.40 ppm U
Ch.4= 1075 20.97 ppm Th
U/Th= .07
5.52 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	79.31	.17	10.26	1.09	.03	.52	.28	3.25	3.57	.10	.03	.30	99.42

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	559	-6	47	2	10	-5	41	-3	13	-5	7	169

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	9	-5	64	-5	19	-3	13	8	36	23	97

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granitic breccia

FABRIC: Fragmental with flow foliation

Est. %	MINERAL	DESCRIPTION
30.	Quartz	Deformed & fractured crystal fragments of strained quartz,
45.	Orthoclase	poikilitic lightly kaolinised orthoclase, plagioclase frequently
15.	Plagioclase	with bent displaced twin lamellae & ragged edges. Interstitial
3.	Biotite	clusters of biotite aggregates with rare associated opaque mineral
1.	Muscovite	& muscovite. Rare accessory apatite. The groundmass consists
.1	Apatite	largely of lenticular strained quartz aggregates with cherty quartz.
1.	Opaque	The layering is defined by alternation of it with dominantly
5.	Groundmass	mineral-rich layers.

Location 0493

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0493
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-84
6451732 m N 32.06872 S latitude
435751 m E 146.3193 E longitude

Illustrations :

Age/Unit= Silurian? BABINDA VOLCANICS
Topography: FLAT WITH SMALL PROMINENT OUTCROP dip=90 strike=005
Structure : VERTICAL WITH STRATABOUND FLOW FOLDS IN FLOW BANDING
Field Geology: Quartzite. Massive, fine-grained, flow-banded with bands a few mm to 10
cm thick changing thickness along layering. Stratabound, isoclinal folds
of mesoscopic scale and truncation of them against other layers gives
apparent pseudo cross-stratification. Variably micaceous.
Field Rockname: SAMPLE NE0493 QUARTZITE

PHYSICAL PROPERTIES: QUARTZITE

DENSITIES
Whole rock density = 2.66
Dry density = 2.64
Grain density = 2.75
Porosity = 3.9
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 150
Remanence = .30
Koenigsberger ratio = .03
GAMMA-RAY SPECTROMETRY
Ch.1= 24572
Ch.2= 1886 1.48 % K2O
Ch.3= 473 2.40 ppm U
Ch.4= 427 8.18 ppm Th
U/Th= .29
3.22 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.55	.67	9.96	5.11	.10	1.11	.02	.09	2.58	.15	.10	2.40	98.84

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	404	-6	88	13	55	172	54	-3	14	21	75	127

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	-20	51	-5	20	4	63	11	34	336	472

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartzite
FABRIC: Layered; porphyroblastic with flow foliation
Est. % MINERAL
55. Quartz Augen-shaped to globular porphyroblasts of quartz, variably strained
20. Chlorite with minor scattered muscovite flakes. The groundmass consists of
1. Muscovite chlorite & sericite mixed in similar proportions, & which form a
19. Sericite continuous network around the quartz porphyroblasts. Scattered opaque
5. Opaque mineral throughout. Rare zircon.
.01 Zircon

Location 0494

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0494
Outcrop

SAME LOCATION AS 0495 AND 0496

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-42
6442620 m N 37 15133 S latitude
443391 m E 1 5.3997 E longitude

Illustrations :

Age/Unit= Silurian?

BABINDA VOLCANICS

Topography: FLAT WITH LOW RISES WITH OUTCROP

dip=80W strike=160

Structure : STEEPLY DIPPING

Field Geology: Ignimbrite, ignimbritic quartzite, and greywacke, all interbedded with gradational contacts. Ignimbrites are porphyritic in quartz, and feldspars and rare biotite fragments set in an apparently foliated groundmass. The greywacke is siliceous, poorly sorted and slightly cleaved.

Field Rockname: SAMPLE NE0494 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.64
Dry density = 2.65
Grain density = 2.72
Porosity = 2.7

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 7 in-situ readings = 62
from 0 to 188 ,SD= 72
Laboratory susceptibility = 150
Remanence = .20
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1= 54216
Ch.2= 4435 3.73 % K20
Ch.3= 830 .53 ppm U
Ch.4= 1062 20.78 ppm Th
U/Th= .03
4.72 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.16	0.62	14.87	3.88	0.06	1.37	0.58	3.00	5.50	0.22	0.05	1.30	99.63

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	994	-6	118	19	10	7	65	4	7	101	35	293

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	162	-5	36	5	63	7	34	63	260

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Quartz	Ignimbrite	Porphyritic; devitrified eutaxitic
5.	Plagioclase		Large to small rounded to angular, fragmentary, strained volcanic quartz, fractured orthoclase & plagioclase phenocrysts. The groundmass is weakly layered due to oxidised, opacitised wavy streaks of former biotite mixed with fine sericite, & which are interlayered with ultrafine quartz-feldspathic material. Both K-feldspar & some quartz phenocrysts are resorbed.
25.	Orthoclase		
5.	Opaque		
55.	Groundmass		
.1	Apatite		

Location 0495

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0495 SAME LOCATION AS 0494 AND 0496
Outcrop NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= Z-42
6442620 m N 32.15133 S latitude
443391 m E 146.3997 E longitude

Illustrations :Photomicrograph

Age/Unit= Silurian? BABINDA VOLCANICS
Topography: FLAT WITH LOW RISES WITH OUTCROP dip=80W strike=160
Structure : STEEPLY DIPPING
Field Geology: Ignimbrite, ignimbritic quartzite, and greywacke, all inter-bedded with gradational contacts. Ignimbrites are porphyritic in quartz, and feldspars and rare biotite fragments set in an apparently foliated groundmass. The greywacke is siliceous, poorly sorted and slightly cleaved.
Field Rockname: SAMPLE NE0495 QUARTZITE

PHYSICAL PROPERTIES: QUARTZITE

DENSITIES
Whole rock density = 2.67
Dry density = 2.60
Grain density = 2.72
Porosity = 4.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 37
Remanence = .50
Koenigsberger ratio = .23

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Quartzite	
35.	Quartz	Massive; porphyroblastic with flow foliation	
1.	Plagioclase	Porphyroblasts of ovoid to globular strained quartz & strained quartz aggregates, minor plagioclase fragments, opaque mineral, and muscovite.	
1.	Opaque	set in a flow foliated groundmass of quartz, sericite, limonitised	
62.	Groundmass	?biotite & chlorite, trains of which flow around quartz augen.	
1.	Muscovite	This rock has textures gradational with 79620494 & 79620496 indicating its igneous affiliation.	
		Photograph globules.	

Location 0496

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0496
 Outcrop

SAME LOCATION AS 0494 AND 0495

NYMAGEE NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-42
 6442620 m N 32.15133 S latitude
 443391 m E 146.3997 E longitude

Illustrations :

Age/Unit= Silurian? BABINDA VOLCANICS
 Topography: FLAT WITH LOW RISES WITH OUTCROP dip=80W strike=160
 Structure : STEEPLY DIPPING
 Field Geology: Ignimbrite, ignimbritic quartzite, and greywacke, all interbedded with gradational contacts. Ignimbrites are porphyritic in quartz, and feldspars and rare biotite fragments set in an apparently foliated groundmass. The greywacke is siliceous, poorly sorted and slightly cleaved.
 Field Rockname: SAMPLE NE0496 IGIMBRITE QUARTZITE

PHYSICAL PROPERTIES:

IGIMBRITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 0 in-situ readings =		Ch.1=	
Whole rock density = 2.65		from to .SD=		Ch.2= X K20	
Dry density = 2.64		Laboratory susceptibility = 12		Ch.3= ppm U	
Grain density = 2.73		Remanence = .50		Ch.4= ppm Th	
Porosity = 3.5		Koenigsberger ratio = .69		U/Th=	
				Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.90	.47	10.52	3.26	.04	1.37	.20	.73	3.19	.14	.08	2.00	99.89
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	385	-6	38	12	53	22	25	-3	10	23	14	222	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	-20	28	-5	13	3	53	10	27	52	102		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Ignimbritic quartzite
25.	Quartz	FABRIC:	Porphyritic; massive, fragmental with flow foliation; porphyroblastic
5.	Orthoclase		Relict phenocrysts of partially deformed quartz, flattened plagioclase
5.	Plagioclase		with bent twin lamellae & sericitised orthoclase. In addition, lenticular to globular-shaped porphyroblasts of these minerals are present and
3.	Muscovite		the foliated groundmass wraps around them. Minor biotite & muscovite.
1.	Biotite		The groundmass consists of sericite quartzite. This rock has textures
1.	Opaque		gradational with 79620494 & 79620495. Rare scattered apatite grains.
60.	Groundmass		
.1	Apatite		

Location 0497

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0497
Mag traverse

MAG TRAVERSE SEE DT1979B00K3PAGE
NYMAGEE

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6425789 m N 32.30333 S latitude air-photo:run-no.= 3-38
446808 m E 146.4350 E longitude

Illustrations :

Age/Unit=
Topography: FLAT WITH LOW RISES WITH OUTCROP dip=90 strike=162
Structure : PLUTON WITH SPARSELY DEFINED INTERNAL IGNEOUS LAYERING
Field Geology: Soil, granitic and ignimbritic breccias cropping out along recorded
magnetometer traverse. See 0498 and 0499

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

Location 0498

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0498 SAMPLE ALONG MAG TRAVERSE 0497 THIS IS THE CAUSE OF THE MAGNETIC ANOMALY
Outcrop NYMAGEE NSW GDM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-88
6425170 m N 32.30890 S latitude
446548 m E 146.4322 E longitude

Illustrations :Photomicrograph

Age/Unit= ERIMERAN GRANITE
Topography: TOR ON FLAT COUNTRY dip=90 strike=162
Structure: PLUTON WITH WEAK VERTICAL LAYERING
Field Geology: Ignimbrite. Porphyritic with large phenocrysts of quartz and feldspar set in a fine, quartzo-feldspathic groundmass containing biotite and minor muscovite. Weakly defined vertical layering of igneous plutonic character. Roof phase of a high-level pluton.
Field Rockname: SAMPLE NE0498 IGNIMBRITIC BRECCIA

PHYSICAL PROPERTIES: BRECCIA
DENSITIES MAGNETIC SUSCEPTIBILITY (S I...000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.64 Mean of 15 in-situ readings = 8143 Ch.1= 67779
Dry density = 2.64 from 3895 to 14575, SD= 3291 Ch.2= 5960 5.17 % K2O
Grain density = 2.67 Laboratory susceptibility = 10002 Ch.3= 1053 1.45 ppm U
Porosity = 1.4 Remanence = 450.00 Ch.4= 1281 25.00 ppm Th
Koenigsberger ratio = .75 U/Th= .06
6.34 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 71.10 0.48 13.77 2.65 0.06 0.78 0.71 3.65 5.50 0.15 0.06 1.00 99.90
TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 1234 -6 139 6 -1 -5 82 6 21 20 -5 184
TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 7 -20 159 6 28 -3 40 -5 33 51 278

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
FABRIC: Porphyritic
Est. % MINERAL
.3. Quartz Phenocrysts of rounded, resorbed, strained volcanic quartz, very large
15. Orthoclase kaolinised & sericitised orthoclase & plagioclase, as well as
5. Plagioclase chloritised biotite, with rare apatite inclusions. Microphenocrysts of
3. Chlorite ilmenite showing alteration to goethite, magnetite & hematite.
65. Groundmass Around quartz phenocrysts the groundmass is a micrographic intergrowth
.01 Sphene of quartz & K'feldspar. This intergrowth is also present in
.01 Apatite clusters of spherulites. Elsewhere, the groundmass consists of micro-
1. Ilmenite crystalline quartz, feldspar, chlorite & opaque minerals. Accessory
.5 Goethite euhedral sphene. Photograph: resorbed quartz; micrographic intergrowth.
.3 Magnetite
.2 Hematite

Location 0500

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0500

Outcrop

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-88
6429556 m N 32.26918 S latitude
443473 m E 146.3998 E longitude

Illustrations :2 photos; Photomicrograph

Age/Unit=

ERIMERAN GRANITE

Topography: PROMINENT PINNACLE RISING FROM FLATS

dip=90 strike=178

Structure : VERTICAL

Field Geology: Quartzite and quartzite breccia. Fractured, massive with lenticular phases of each rock within the other. Occurs as fissure entirely within Erimeran Granite. Interpreted as a hydrothermal conduit fill. Minor white quartz blows adjacent.

Field Rockname: SAMPLE NE0500 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.61	Mean of 15 in-situ readings = 10	Ch.1= 24245
Dry density =	from 0 to 150, SD= 38	Ch.2= 1510 1.03 % K2O
Grain density =	Laboratory susceptibility = 0	Ch.3= 551 5.00 ppm U
Porosity =	Remanence = .00	Ch.4= 311 5.70 ppm Th
	Koenigsberger ratio =	U/Th= .88
		4.30 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Quartzite
Est. %	FABRIC:	Massive; sutured granoblastic
97.	Quartz	Lenticular to globular aggregates of variably strained quartz with
2.	Muscovite	patchy fine cherty silica. Minor opaque mineral & muscovite
1.	Opaque	expelled to grain boundaries of quartz. Rare scattered tourmaline
.01	Zircon	clusters & very rare rounded zircon.
.01	Tourmaline	Photograph rounded zircon.

Location 0501

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0501

Outcrop

NYMAGEE

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2

6430063 m N

air-photo:run-no.= 3-86

443687 m E

32.26462 S latitude

146.4021 E longitude

Illustrations :

Age/Unit=

ERIMERAN GRANITE

Topography: LOW RISE WITH OUTCROP

dip=90 strike=005

Structure : PLUTON WITH WEAK VERTICAL PLANAR LAYERS

Field Geology: Ignimbrite. Densely porphyritic with phenocrysts of quartz and orthoclase set in a fine-grained granitic groundmass with weak flow layering defined by variable groundmass grain size. Roof phase of Erimeran Granite. Rare limonite pseudomorphs of a sulphide mineral.

Field Rockname: SAMPLE NE0501 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES

Whole rock density = 2.60

Dry density = 2.63

Grain density = 2.64

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 75

from 0 to 251, SD= 82

Laboratory susceptibility = 25

Remanence = 520.00

Koenigsberger ratio = 346.67

GAMMA-RAY SPECTROMETRY

Ch.1= 75475

Ch.2= 8188 7.98 % K20

Ch.3= 953 1.29 ppm U

Ch.4= 1161 22.66 ppm Th

U/Th= .06

6.49 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.88	0.64	15.30	3.87	0.03	0.63	0.09	0.89	9.42	0.15	0.06	1.50	99.45

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mn	Nb	Ni	Pb	Rb
p.p.m.	1936	-6	177	4	-1	-5	122	4	18	23	20	381

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	59	6	26	-3	61	13	36	36	341

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
FABRIC: Porphyritic; devitrified eutaxitic

Est. %	MINERAL	DESCRIPTION
15.	Quartz	Phenocrysts of rounded, embayed volcanic quartz, lightly kaolinised
20.	Orthoclase	fractured fragments of orthoclase, altered plagioclase & oxidised
5.	Plagioclase	biotite extensively converted to opaque oxides with secondary
5.	Biotite	muscovite & quartz filling skeletal cavities. The quartz phenocrysts
2.	Opaque	are considerably strained. The groundmass consists of microcrystalline
.01	Zircon	quartz, K'feldspar & sericite; the last-mentioned is slightly
53.	Groundmass	segregated from the other constituents and defines relict eutaxitic flow layering. Minor clusters of opaque mineral pseudomorphs after a sulphide mineral. Patchy groundmass devitrification.

Location 0502

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0502

Outcrop

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-50

6439977 m N

32.17307 S latitude

410952 m E

146.0555 E longitude

Illustrations :

Age/Unit= Upper Devonian

Topography: LOW RUBBLY RISE SILICIFIED AT TOP

dip= strike=

Structure : SUB-HORIZONTAL, TOO FLAT TO MEASURE RELIABLY

Field Geology: Quartzose sandstone. Fine-grained, well sorted, clean and well washed.

Small amounts of mica on bedding surfaces. Slightly silicified at top to semi silcrete with curved surface joints.

Field Rockname: SAMPLE NE0502 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.43
Dry density = 2.43
Grain density = 2.66
Porosity = 8.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 7 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 0
Remanence = 15.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 18574
Ch.2= 1235 .94 % K2O
Ch.3= 333 1.76 ppm U
Ch.4= 295 5.64 ppm Th
U/Th= .31
2.26 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
93.	Quartz	Quartzose sandstone	Moderately well sorted
1.	Muscovite	Subangular to subrounded tightly packed quartz grains, with rare feldspar slightly altered to clay, & minor opaque mineral occurring as detrital grains & weathering products pseudomorphing other clasts.	
3.	Opaque	The matrix consists of chlorite which is limonitised & opacitised by weathering, and sericite. Minor detrital muscovite.	
1.	Feldspar		
.01	Zircon		
2.	Matrix		

Location 0503

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0503
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-88
6453307 m N 32.05353 S latitude
420390 m E 146.1567 E longitude

Illustrations :

Age/Unit= Middle Devonian?
Topography: RUGGED RISE FLANKED BY BLOCKY SCREE dip=31NE strike=155
Structure : GENTLY TILTED
Field Geology: Quartzose sandstone. Fine-grained. Well sorted, well washed and planar
bedded in thin to medium beds. Has silica and minor clay matrix. Minor
heavy minerals. Trace malachite. Detrital muscovite defines bedding
surfaces. No thin section.
Field Rockname: SAMPLE NE0503 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES	SANDSTONE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.56		Mean of 11 in-situ readings = 53	Ch.1= 30886
Dry density = 2.55		from 0 to 188 ,SD= 72	Ch.2= 2014 1.37 % k20
Grain density = 2.58		Laboratory susceptibility = 12	Ch.3= 595 1.83 ppm U
Porosity = 1.1		Remanence = 6.00	Ch.4= 638 12.36 ppm Th
		Koenigsberger ratio = 8.33	U/Th= .15
			3.55 Heat generation units

Location 0504

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0504

Outcrop

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-88

6452700 m N

32.05942 S latitude

426427 m E

146.2206 E longitude

Illustrations :

Age/Unit= Middle Devonian?

Topography: LOW STRIKE RIDGES AND DEPRESSIONS

dip=81NE strike=138

Structure : STEEPLY TILTED

Field Geology: Quartzose sandstone, siltstone and shale. The thick bedded sandstones are fine-grained, well washed and well sorted. Thin to medium interbeds of shale, slate and micaceous siltstone are cleaved indicating transition to Early Devonian Cobar Group rocks. No thin section.

Field Rockname: SAMPLE NE0504 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density = 2.47

Dry density = 2.55

Grain density = 2.55

Porosity = 4.5

SANDSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 0

Remanence = 4.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 17263

Ch.2= 1022 .66 % K2O

Ch.3= 339 1.44 ppm U

Ch.4= 330 6.36 ppm Th

U/.h= .23

2.12 Heat generation units

Location 0505

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0505
Outcrop

SAME LOCATION AS 0506
NYMAGEE

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6451228 m N air-photo:run-no.= 1-88
430940 m E 32.07298 S latitude
146.2683 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP
Topography: STRIKE RIDGES AND DEPRESSIONS ON RISE dip=79NE strike=132
Structure : NEAR VERTICAL
Field Geology: Slate, greywacke and quartzose sandstone. Slate and greywacke are
cleaved, massive and medium to thick bedded. The quartzose sandstone
lacks cleavage and is the least common rock type. No thin section.

Field Rockname: SAMPLE NE0505 SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.52
Dry density = 2.53
Grain density = 2.65
Porosity = 4.4

SANDSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 62
Remanence = 2.00
Koenigsberger ratio = .54

GAMMA-RAY SPECTROMETRY

Ch.1= 16711
Ch.2= 973 .57 % K2O
Ch.3= 333 .75 ppm U
Ch.4= 380 7.39 ppm Th
U/Th= .10
1.86 Heat generation units

Location 0506

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0506

SAME LOCATION AS 0505

Outcrop .

NYMAGEE

NSW GDLM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:tr-in-no.= 1-88

6451228 m N

32.07298 S latitude

430940 m E

146.2683 E longitude

Illustrations :

Age/Unit= Lower Devonian

COBAR GROUP

Topography: STRIKE RIDGES AND DEPRESSIONS ON RISE

dip= strike=

Structure : NEAR VERTICAL

Field Geology: Slate, greywacke and quartzose sandstone. Slate and greywacke are cleaved, massive and medium to thick bedded. The quartzose sandstone lacks cleavage and is the least common rock type. No thin section.

Field Rockname: SAMPLE NE0506 GREYWACKE

PHYSICAL PROPERTIES:

TUFF

DENSITIES

Whole rock density = 2.36

Dry density = 2.36

Grain density = 2.72

Porosity = 13.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 37

from 0 to 125, SD= 56

Laboratory susceptibility = 175

Remanence = .40

Koenigsberger ratio = .04

GAMMA-RAY SPECTROMETRY

Ch.1= 33933

Ch.2= 2996 2.64 % K2O

Ch.3= 516 1.05 ppm U

Ch.4= 599 11.66 ppm Th

U/Th= .09

3.24 Heat generation units

Location 0507

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7902)0507 SAME LOCATION AS 0508
butcrop NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-88
6451359 m N 32.07188 S latitude
432242 m E 146.2821 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP
Topography: LOW RISE WITH SMALL S.W. & E RIDGES dip=86NE strike=144
Structure : STEEPLY DIPPING
Field Geology: Siltstone, greywacke and quartzose sandstone. Greywacke and siltstone
are slightly cleaved and comprise most of the section. The sandstone is
well sorted, medium bedded and the least frequent, though best
exposed rock type. Weathered. No thin section.
Field Rockname: SAMPLE NE0507 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE		MAGNETIC SUSCEPTIBILITY (S.I.*.600001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 6 in-situ readings = 64		Ch.1= 35854	
Whole rock density = 2.22		from 0 to 276 ,SD= 106		Ch.2= 2693	2.00 % K2O
Dry density = 2.24		Laboratory susceptibility = 12		Ch.3= 640	.16 ppm U
Grain density = 2.72		Remanence = 2.00		Ch.4= 840	16.46 ppm Th
Porosity = 17.8		Koenigsberger ratio = 2.78		U/Th= .01	
				3.36	Heat generation units

Location 0508

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0508
Outcrop

SAME LOCATION AS 0507

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-88

6451359 m N

32.07188 S latitude

432242 m E

146.2821 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP

Topography: LOW RISE WITH SMALL STRIKE RIDGES

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Siltstone, greywacke and quartzose sandstone. Greywacke and siltstone are slightly cleaved and comprise most of the section. The sandstone is well sorted, medium bedded and the least frequent, though best exposed rock type. Weathered. No thin section.

Field Rockname: SAMPLE NE0508 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES

Whole rock density = 2.49

Dry density = 2.59

Grain density = 2.68

Porosity = 6.7

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility = 188

Remanence = 1.00

Koenigsberger ratio = .09

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K20

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	87.05	.36	5.18	3.33	.01	.17	.02	.01	1.06	.11	.06	2.10	99.45
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	335	-6	48	3	41	101	42	-3	5	6	26	41	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	-20	32	-5	17	-3	46	7	10	6	241		

Location 0509

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0509

Quarry

NYMAGEE

NSW GDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-88

6453085 m N

32.05550 S latitude

419910 m E

146.1516 E longitude

Illustrations :

Age/Unit: Lower Devonian

COBAR GROUP

Topography: FLAT ADJACENT TO GENTLE SLOPE

dip= strike=

Structure :

Field Geology: Quartzose sandstone and micaceous sandstone with abundant muscovite.
Rubble exposed in quarry. No solid outcrop. No thin section.

Field Rockname: SAMPLE NE0509 SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.20
Dry density = 2.41
Grain density = 2.65
Porosity = 9.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 89
from 0 to 188, SD= 75
Laboratory susceptibility = 87
Remanence = .50
Koenigsberger ratio = .10

GAMMA-RAY SPECTROMETRY

Ch.1= 22431
Ch.2= 1572 1.13 % K2O
Ch.3= 439 1.57 ppm U
Ch.4= 452 8.74 ppm Th
U/Th= .18
2.72 Heat generation units

Location 0510

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0510
Dozer scrape

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-94
6457311 m N 32.01568 S latitude
398748 m E 145.9279 E longitude

Illustrations :

Age/Unit= Lower Devonian AMPHITHEATRE GROUP
Topography: FLAT VERY LOW SCARCELY VISIBLE RISE dip= strike=
Structure : MODERATELY DIPPING
Field Geology: Micaceous shale, siltstone, fine silty sandstone and rare intra-
formational clay-pellet conglomerate. Thin to medium and planar bedded.
Thin lamination in fine rocks. Minor soft-sediment disruption of
bedding. All rocks lack cleavage. No thin section.
Field Rockname: SAMPLE NE0510 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE
DENSITIES
Whole rock density = 2.17
Dry density = 2.14
Grain density = 2.78
Porosity = 23.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 165
from 0 to 565 ,SD= 201
Laboratory susceptibility = 12
Remanence = 25.00
Koenigsberger ratio = 34.72

GAMMA-RAY SPECTROMETRY

Ch.1= 39670
Ch.2= 3184 2.58 % K20
Ch.3= 702 2.26 ppm U
Ch.4= 744 14.41 ppm Th
U/Th= .16
4.45 Heat generation units

Location 0511

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0511
Road cutting

NYMAGEE NSW GDM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-47
658929 m N 32.00148 S latitude
403276 m E 145.9760 E longitude

Illustrations :

Age/Unit= Lower Devonian AMPHITHEATRE GROUP
Topography: LOW RISE dip=90 strike=158
Structure : STEEPLY DIPPING
Field Geology: Siltstone overlain by surficial maghemite gravel. The siltstone has abundant fine detrital muscovite. Laminated to thin bedded. Lacks cleavage. No thin section.

Field Rockname: SAMPLE C80511 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 7 in-situ readings = 71		Ch.1= 38206	
Whole rock density = 2.23		from 0 to 251, SD= 91		Ch.2= 2855	2.28 % K2O
Dry density = 2.22		Laboratory susceptibility = 0		Ch.3= 630	1.34 ppm U
Grain density = 2.68		Remanence = 2.00		Ch.4= 726	14.13 ppm Th
Porosity = 17.3		Koenigsberger ratio = *****		U/Th= .10	
				3.76	Heat generation units

Location 0512

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0512
Road cutting

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-37
6472060 m N 31.88293 S latitude
401979 m E 145.9636 E longitude

Illustrations :

Age/Unit= Lower Devonian AMPHITHEATRE GROUP
Topography: VERY LOW RISE dip=80W strike=175
Structure : STEEPLY DIPPING
Field Geology: Siltstone, shale and silty sandstone. Minor load casts at some contacts.
Thin to medium and planar bedded, and delicately laminated in places.
Very faint incipient cleavage in a few siltstone beds. No thin section.

Field Rockname: SAMPLE CB0512 SILTY SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.19	Mean of 9 in-situ readings =	20	Ch.1=	53925
Dry density =	2.17	from 0 to 188 SD=	62	Ch.2=	3862 3.04 % K2O
Grain density =	2.72	Laboratory susceptibility =	251	Ch.3=	880 2.01 ppm U
Porosity =	20.4	Remanence	2.00	Ch.4=	1003 19.51 ppm Th
		Koenigsberger ratio	.13	U/Th=	.10
					5.26 Heat generation units

Location 0513

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0513
Dozer scrape

SAME LOCATION AS 0514

COBAR

NSW GDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-37
6480013 m N 31.81130 S latitude
403295 m E 145.9783 E longitude

Illustrations :

Age/Unit= Lower Devonian

AMPHITHEATRE GROUP

Topography: FLAT

dip=82E strike=175

Structure: STEEPLY DIPPING

Field Geology: Siltstone and silty sandstone. Very weathered, bleached, leached,
ferruginised and capped by 10 cm of red earth with 1 cm thickness of
loose maghemite pisolites at top.

Field Rockname: SAMPLE CB0513 NIL BECAUSE TOO WEATHERED

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 260
from 0 to 816, SD= 344
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 45334
Ch.2= 3457 2.76 % K2O
Ch.3= 784 2.41 ppm U
Ch.4= 841 16.30 ppm Th
U/Th= .15
4.90 Heat generation units

Location 0514

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0514

SAME LOCATION AS 0513

Outcrop

COBAR

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-37

6480010 m N 31.81132 S latitude

403285 m E 145.9782 E longitude

Illustrations :

Age/Unit= Recent

Topography: FLAT

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Siltstone and silty sandstone. Very weathered, bleached, leached,
ferruginised and capped by 10 cm of red earth with 1 cm thickness of
loose maghemite pisolites at top. No thin section.

Field Rockname: SAMPLE CB0514 MAGHEMITE PISOLITES

PHYSICAL PROPERTIES:

MAGHEMITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density =

Dry density =

Grain density =

Porosity =

Mean of 8 in-situ readings = 108856

from 45238 to 169646 ,SD= 47973

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

Location 0515

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0515

Outcrop

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-155

6502011 m N

31.61218 S latitude

395518 m E

145.8985 E longitude

Illustrations :

Age/Unit= Lower Devonian

COBAR GROUP

Topography: LOW RISE WITH STRIKE RIDGES ETC

dip=90 strike=155

Structure : VERTICAL

Field Geology: Siltstone, silty sandstone and quartz greywacke. The siltstone and sandstone lack cleavage but the interbedded quartz greywacke is cleaved. Thus units of the Amphitheatre Group are interbedded with rocks of Cobar Group type and are a facies change of them. No thin section.

Field Rockname: SAMPLE CB0515 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES
Whole rock density = 2.29
Dry density = 2.44
Grain density = 2.66
Porosity = 8.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 62
Remanence = 2.00
Koenigsberger ratio = .54

GAMMA-RAY SPECTROMETRY

Ch.1= 40732
Ch.2= 3235 2.63 % K2O
Ch.3= 667 .79 ppm U
Ch.4= 822 16.05 ppm Th
U/Th= .05
3.83 Heat generation units

Location 0516

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0516
Rail cutting

SAME LOCATION AS 0517
COBAR

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6511474 m N air-photo:run-no.= 5-155
391264 m E 31.52642 S latitude
145.8547 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP
Topography: VERY LOW RISE dip=78NE strike=155
Structure : STEEPLY DIPPING
Field Geology: Siltstone, fine silty sandstone, and slate. Chlorite rich. Slightly
cleaved. Units are massive and poorly bedded. Minor stratiform and
stratabound planar and lenticular concentrations of white quartz.

Field Rockname: SAMPLE CB0516 SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.44	Mean of 15 in-situ readings =	331	Ch.1=	60459
Dry density =	2.43	from 25 to 955 ,SD=	252	Ch.2=	5387 4.75 % K2O
Grain density =	2.71	Laboratory susceptibility =	37	Ch.3=	922 1.81 ppm U
Porosity =	10.3	Remanence	4.00	Ch.4=	1076 20.95 ppm Th
		Koenigsberger ratio	1.80	U/Th=	.09
					5.78 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Siltstone	Laminated to thin bedded
25.	Quartz		Lamination & thin bedding defined by slight variations in proportion
20.	Chlorite		of mineral constituents. Scattered fine sand- to silt-sized quartz
50.	Sericite		clasts dispersed throughout a fine sericite-chlorite matrix with minor
1.	Sphene		graphite laminations in layers lacking quartz. Scattered dispersed
.01	Pyrrhotite		?sphalerite & rare pyrrhotite. Some sulphide oxidised to goethite.
3.	Goethite		
1.	Graphite		

Location 0517

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0517

SAME LOCATION AS 0516

Old workings

COBAR

NSW GDDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-155

6511474 m N

31.52642 S latitude

391264 m E

145.8547 E longitude

Illustrations :

Age/Unit= Lower Devonian

COBAR GROUP

Topography: VERY LOW RISE

dip=78NE strike=155

Structure : STEEPLY DIPPING

Field Geology: Siltstone, fine silty sandstone, and slate. Chlorite-rich. Slightly cleaved. Units are massive and poorly bedded. Minor stratiform and stratabound planar and lenticular concentrations of white quartz.

Field Rockname: SAMPLE CB0517 SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES

Whole rock density = 2.77

Dry density = 2.75

Grain density = 2.76

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility = 376

Remanence = .10

Koenigsberger ratio = .00

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.60	.69	14.56	8.60	.10	1.82	.11	.01	3.71	.12	.06	3.10	99.47

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	497	-6	81	28	88	329	68	-3	12	33	-5	194

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	26	59	5	16	3	90	9	31	95	140

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	FABRIC:
25.	Quartz	Slate	Massive; poorly sorted
2.	Muscovite		Very fine grained. Randomly scattered quartz fragments of silt-size & minor, randomly oriented muscovite set in a very fine matrix of chlorite, sericite & quartz. Scattered diagenetic opaque mineral.
35.	Chlorite		Numerous veinlets of chlorite & quartz together & rare pygmatically folded quartz veinlets.
35.	Sericite		
3.	Opaque		

Location 0518

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0518
Quarry

SAME LOCATION AS 0519

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-143
6520168 m N 31.44730 S latitude
384083 m E 145.7801 E longitude

Illustrations :

Age/Unit= Lower Devonian

COBAR GROUP

Topography: LOW RISE IN GENTLY UNDULATING AREA

dip=72NE strike=155

Structure : STEEPLY DIPPING

Field Geology: Quartz greywacke and chloritic siltstone. Greywacke is both massive, internally laminated and is slightly slaty. The green chloritic siltstone is fine grained and massive. Medium to thick bedded throughout. Minor slump folds. Surficial magnetite. No thin section.

Field Rockname: SAMPLE CB0518 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES
Whole rock density = 2.24
Dry density = 2.24
Grain density = 2.67
Porosity = 16.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 3
from 0 to 25, SD= 9
Laboratory susceptibility = 0
Remanence = .20
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 41829
Ch.2= 3550 3.00 X K2O
Ch.3= 711 2.21 ppm U
Ch.4= 761 14.75 ppm Th
U/Th= .15
4.56 Heat generation units

Location 0519

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0519
Quarry

SAME LOCATION AS 0518

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-143
6520173 m N 31.44725 S latitude
384083 m E 145.7801 E longitude

Illustrations :

Age/Unit: Lower Devonian

COBAR GROUP

Topography: LOW RISE IN GENTLY UNDULATING AREA

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Quartz greywacke and chloritic siltstone. Greywacke is both massive, internally laminated and is slightly slaty. The green chloritic siltstone is fine grained and massive. Medium to thick bedded throughout. Minor slump folds. Surficial magnetite. No thin section.

Field Rockname: SAMPLE CB0519 CHLORITIC SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.11
Dry density = 2.13
Grain density = 2.71
Porosity = 21.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 75
Remanence = .30
Koenigsberger ratio = .07

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.90	.91	19.03	1.03	.01	1.06	.05	.07	4.42	.03	.11	5.60	99.23
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	720	-6	84	4	87	17	74	-3	16	6	23	215	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	17	-20	40	-5	20	-3	98	11	32	10	214		

Location 0520

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0520
Quarry

SAME LOCATION AS 0521
COBAR

NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-69
6532537 m N 31.33437 S latitude
371214 m E 145.6463 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP
Topography: ESSENTIALLY FLAT dip=54S strike=086
Structure : GENTLY FOLDED. FOLD WAVELENGTH ABOUT 20H
Field Geology: Fine quartzose sandstone and chloritic siltstone. Sandstone has slight clay matrix and faint lamination. Chloritic siltstone is massive. Interbedded and medium bedded. No thin section.

Field Rockname: SAMPLE CB0520 SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE
DENSITIES
Whole rock density = 2.17
Dry density = 2.19
Grain density = 2.65
Porosity = 17.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = .40
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 36754
Ch.2= 2581 1.86 % K2O
Ch.3= 706 2.15 ppm U
Ch.4= 759 14.71 ppm Th
U/Th= .15
4.26 Heat generation units

Location 0521

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0521
Quarry

SAME LOCATION AS 0520

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-69

6532537 m N

31.33437 S latitude

371205 m E

145.6462 E longitude

Illustrations :

Age/Unit= Lower Devonian

COBAR GROUP

Topography: ESSENTIALLY FLAT

dip=54S strike=086

Structure : GENTLY FOLDED FOLD WAVELENGTH ABOUT 20M

Field Geology: Fine quartzose sandstone and chloritic siltstone. Sandstone has slight clay matrix and faint lamination. Chloritic siltstone is massive. Interbedded and medium bedded. No thin section.

Field Rockname: SAMPLE CB0521 CHLORITIC SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES

Whole rock density = 2.13

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

0
.00

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=
Heat generation units

Location 0522

* LACHIAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0522

Quarry

BARNATO

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-103

6553980 m N

31.13920 S latitude

356219 m E

145.4918 E longitude

Illustrations :

Age/Unit= Lower Devonian

COBAR GROUP

Topography: FLAT WITH VERY ISOLATED SLIGHT RISES

dip= strike=

Structure : MODERATELY DIPPING

Field Geology: Chloritic siltstone thinly interbedded with cherty chloritic siltstone,
and quartzose sandstone. Thin to medium, and planar bedded.

Field Rockname: SAMPLE BR0522 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES

Whole rock density = 2.30

Dry density = 2.26

Grain density = 2.68

Porosity = 15.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 37

Remanence = .20

Koenigsberger ratio = .09

GAMMA-RAY SPECTROMETRY

Ch.1= 26330

Ch.2= 1824 1.34 % K2O

Ch.3= 468 1.04 ppm U

Ch.4= 536 10.43 ppm Th

U/Th= .10

2.72 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartzose sandstone

FABRIC: Moderately sorted

Est. % MINERAL FABRIC: Subangular quartz, sericitised feldspar, minor muscovite, opaque mineral & rare rounded tourmaline clasts, tightly packed & set in a sericitic & slightly chloritic mud matrix.

85. Quartz

2. Muscovite

1. Opaque

2. Matrix

.01 Tourmaline

10. Feldspar

Location 0523

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0523

Outcrop

LOUTH

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-139

6571581 m N

30.97923 S latitude

346609 m E

145.3937 E longitude

Illustrations :

Age/Unit= Lower Devonian

AMPHITHEATRE GROUP

Topography: MODERATELY PROMINENT RISE

dip=20S strike=050

Structure : GENTLY TILTED

Field Geology: Quartzose sandstone, siltstone and shale. Part of Darling Basin sequence. Sandstone is fine-grained, well sorted and planar bedded. It is slightly silicified by weathering. Finer units scarcely crop out but would form the major proportion of the sequence. Trace fossils.

Field Rockname: SAMPLE L00523 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.45
Dry density = 2.45
Grain density = 2.52
Porosity = 2.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 0
Remanence = 1.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 16244
Ch.2= 831 .40 X K20
Ch.3= 349 1.31 ppm U
Ch.4= 354 6.84 ppm Th
U/Th= .19
2.07 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
85.	Quartz	Quartzose sandstone
1.	Muscovite	Massive
1.	Tourmaline	Very tightly packed fine quartz grains with sutured contacts & showing strain extinction. Minor detrital muscovite, tourmaline & opaque mineral grains. Rare laminae of sericite, which also pseudomorphs ?feldspar grains.
1.	Opaque	
12.	Sericite	

Location 0524

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0524
Road cutting

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-155
6513850 m N 31.50502 S latitude
391609 m E 145.8586 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP
Topography: GENTLE SLOPING LOWLAND dip=80W strike=170
Structure : CLEAVED WITH SMALL-SCALE FOLDS IN BEDDING
Field Geology: Chlorite-muscovite slate, quartz greywacke, mudstone. The slate is moderately cleaved, medium bedded with faint internal lamination. Interbedded with thin mudstone units and thick massive slightly cleaved quartz greywacke. Weathered. No thin section.
Field Rockname: SAMPLE CB0524 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES				Ch.1= 39844	
Whole rock density =	2.12	Mean of 15 in-situ readings =	259	Ch.2= 2591	1.81 % K2O
Dry density =	2.07	from 0 to 628 .SD=	216	Ch.3= 717	1.43 ppm U
Grain density =	2.75	Laboratory susceptibility =	163	Ch.4= 835	16.26 ppm Th
Porosity =	24.8	Remanence =	1.00	U/Th=	.09
		Koenigsberger ratio =	.10	4.06	Heat generation units

Location 0525

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0525

Road cutting

COBAR

1:250,000 sheet area 1:100,000 sheet area NSW GDM=2

6513710 m N

air-photo:run-no.= 5-155

393197 m E

31.50643 S latitude

145.8753 E longitude

Illustrations :1 Colour slide, 1 B&W photo

Age/Unit= Lower Devonian

COBAR GROUP

Topography: SMALL TOPOGRAPHIC RISE

dip=85W strike=164

Structure : CHAOTIC STEEPLY DIPPING SLUMP SHEETS AND STEEPLY DIPPING ROCKS

Field Geology: Intraformational conglomerate, breccia, chloritic slate, quartz grey-wacke and quartzite. Rudites and greywacke are thick bedded and massive. Planar bedded except for stratabound intraformational slumping and pull-apart which has produced the clasts. No thin section.

Field Rockname: SAMPLE CB0525 CONGLOMERATE

PHYSICAL PROPERTIES:

CONGLOMERATE

DENSITIES
Whole rock density = 2.40
Dry density = 2.44
Grain density = 2.77
Porosity = 11.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 87
from 0 to 251, SD= 78
Laboratory susceptibility = 113
Remanence = 3.00
Koenigsberger ratio = .44

GAMMA-RAY SPECTROMETRY

Ch.1= 43888
Ch.2= 3249 2.50 X K20
Ch.3= 752 1.01 ppm U
Ch.4= 917 17.90 ppm Th
U/Th= .06
4.24 Heat generation units

Location 0526

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0526
Rail cutting

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-155
6513380 m N 31.50985 S latitude
398034 m E 145.9262 E longitude

Illustrations :

Age/Unit= Ordovician GIRILAMBONE BEDS
Topography: SLIGHT RISE IN GENERALLY FLAT AREA dip=65NE strike=122
Structure : MODERATELY DIPPING WITH UNDULATING STRIKE AND DIPS.
Field Geology: Micaceous quartzite, chloritic siltstone and quartz greywacke. Medium to thick bedded. The quartzite contains stratabound white quartz and lacks cleavage, whereas siltstone and greywacke are cleaved.

Field Rockname: SAMPLE CB0526 QUARTZITE WITH STRATABOUND CROSS-CUTTING QUARTZ VEINS.

PHYSICAL PROPERTIES:

QUARTZITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 11 in-situ readings = 0		Ch.1= 39752	
Whole rock density = 2.38		from to ,SD=		Ch.2= 3479	3.03 % K2O
Dry density = 2.34		Laboratory susceptibility = 25		Ch.3= 623	1.40 ppm U
Grain density = 2.63		Remanence = 9.00		Ch.4= 712	13.85 ppm Th
Porosity = 10.9		Koenigsberger ratio = 6.00		U/Th= .10	
				3.92	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Micaceous quartzite	
65.	Quartz	Massive; poorly sorted	
2.	Muscovite	Rounded to angular variably-sized, randomly scattered, variably strained quartz fragments, with minor sericitised feldspar, muscovite, & biotite limonitised by weathering, set in a groundmass of cherty quartz & sericite. Minor quartz veins containing opaque mineral pseudomorphing a sulphide mineral.	
3.	Biotite		
4.	Feldspar		
1.	Opaque		
25.	Sericite		
.01	Tourmaline		

Location 0527

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0527
Rail cutting

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-155
6513334 m N 31.51055 S latitude
401397 m E 145.9616 E longitude

Illustrations :

Age/Unit= Ordovician GIRILAMBONE BEDS
Topography: VERY LOW RISE CAUSED BY THIN CHERT BEDS dip=67NE strike=154
Structure : STEEPLY DIPPING WITH NUMEROUS MESOSCOPIC FOLDS
Field Geology: Slate, siltstone, quartz greywacke and chert. The chert has stratabound
white quartz veins, a lenticular pinch-and-swell bedform, but occupies
only 2% of the section. The other rocks are mostly massive and medium-
bedded.
Field Rockname: SAMPLE CB0527 CHERT

PHYSICAL PROPERTIES:

CHERT
DENSITIES
Whole rock density = 2.59
Dry density = 2.62
Grain density = 2.62
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 90
from 0 to 276 ,SD= 109
Laboratory susceptibility = 25
Remanence = 8.00
Koenigsberger ratio = 5.33

GAMMA-RAY SPECTROMETRY

Ch.1= 30483
Ch.2= 2568 2.18 % K2O
Ch.3= 516 1.98 ppm U
Ch.4= 520 10.04 ppm Th
U/Th= .20
3.44 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Argillaceous Chert
90. Quartz FABRIC: Massive; minor quartz veinlets
9. Clay Ovoids of strained quartz set in ultrafine quartz and clay with minor
1. Opaque scattered opaque mineral. Numerous randomly oriented, planar to curved,
veinlets of strained quartz aggregates. Ferruginised by weathering.

Location 0528

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0528
Rail cutting

SAME LOCATION AS 0529
COBAR

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6511123 m N 31.53268 S latitude
431543 m E 146.2789 E longitude

Illustrations :1 Colour slide, 1 B&W photo

Age/Unit= Ordovician GIFILAMBONE BEDS

Topography: FLAT ON N SLOPE OF RUGGED UPLAND dip=80E strike=175

Structure : VARIABLE STRIKE AND DIP DUE FOLDING AND EXTENSIVE CHAOTIC SLUMPING.

Field Geology: Pebbly quartzite, intraformational breccia, chloritic slate, quartzite and quartz greywacke. Thick bedded. All units are mostly massive. Clasts include quartzite and slate. Poorly sorted; lacks a traction current framework.

Field Rockname: SAMPLE CB0528 PEBBLY QUARTZITE

PHYSICAL PROPERTIES:

	CONGLOMERATE		
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.=.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density =			Ch.1= 44139
Dry density = 2.42	Mean of 11 in-situ readings = 22		Ch.2= 3515 2.92 X K20
Grain density = 2.72	from 0 to 251 SD= 75		Ch.3= 725 2.14 ppm U
Porosity = 10.9	Laboratory susceptibility = 100		Ch.4= 785 15.22 ppm Th
	Remanence = 1.00		U/Th= .14
	Koenigsberger ratio = .17		4.59 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	78.56	.59	11.09	2.50	.01	.64	.02	.05	3.16	.04	.08	2.60	99.34
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	415	-6	63	10	67	44	51	-3	12	13	15	173	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	14	-20	11	-5	13	-3	73	13	42	16	245		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Pebbly quartzite
65.	Quartz	FABRIC:	Massive; unsorted
20.	Rock fragments		Subangular to rounded quartz, variably strained with lesser clasts of quartzite & sericitite rock, set in a matrix of cherty quartz & sericite. Minor scattered opaque mineral & rare tourmaline & apatite. The grains have variable size, are not distributed evenly with respect to bedding & have random distribution & orientation.
.01	Tourmaline		
.01	Apatite		
1.	Opaque		
14.	Matrix		

Location 0529

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0529

SAME LOCATION AS 0528

Rail cutting

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-163

6511119 m N

31.53272 S latitude

431544 m E

146.2789 E longitude

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: FLAT ON N SLOPE OF RUGGED UPLAND

dip= strike=

Structure : VARIABLE STRIKE AND DIP DUE FOLDING AND EXTENSIVE CHAOTIC SLUMPING.

Field Geology: Pebbly quartzite, intraformational breccia, chloritic slate, quartzite and quartz greywacke. Thick bedded. All units are mostly massive. Clasts include quartzite and slate. Poorly sorted, lacks a traction current framework.

Field Rockname: SAMPLE CB0529 PEBBLY QUARTZITE

PHYSICAL PROPERTIES:

CONGLOMERATE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.57

Ch.1=

Dry density =

Mean of 0 in-situ readings =

% K2O

Grain density =

from to ,SD=

Ch.2=

ppm U

Porosity =

Laboratory susceptibility = 0

Ch.3=

ppm Th

Remanence = .00

U/Th=

Koenigsberger ratio =

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
70.	Quartz	Pebbly quartzite	Massive; unsorted
14.	Rock fragments		Ovoid ragged globules of strained quartz & strained lamellar to mosaic-like quartz aggregates, with subangular clasts of sericite & more rounded quartzite. Some lithic fragments contain frequent opaque minerals. The matrix consists of cherty quartz mixed with sericite & ?ferruginised chlorite, often in wavy wisps around ovoid quartz.
1.	Opaque		
.01	Tourmaline		
15.	Matrix		

Location 0530

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0530

Outcrop

COBAR

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=2

air-photo:run-no.= 5-167

6510846 m N

31.53553 S latitude

437593 m E

146.3426 E longitude

Illustrations :Photomicrograph

Age/Unit= Silurian

BABINDA VOLCANICS

Topography: MODERATELY RUGGED RISE WITH OUTCROP

dip= strike=

Structure :

Field Geology: Igne-brite. Phenocrysts of rounded volcanic quartz with larger feldspars
set in a fine-grained groundmass.

Field Rockname: SAMPLE CB0530 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES

Whole rock density = 2.65

Dry density = 2.63

Grain density = 2.64

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 558

from 188 to 1193 .SD= 319

Laboratory susceptibility = 716

Remanence = 300.00

Koenigsberger ratio = 6.98

GAMMA-RAY SPECTROMETRY

Ch.1= 79586

Ch.2= 6745 5.58 X K2O

Ch.3= 1397 3.73 ppm U

Ch.4= 1546 30.02 ppm Th

U/Th= .12

8.70 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.46	0.54	13.50	2.98	0.03	0.90	1.44	2.70	5.53	0.15	0.04	1.10	99.39

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	856	-6	101	-1	-1	8	475	5	39	35	31	232

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	116	7	31	7	33	6	40	32	265

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
5.	Quartz	Igne-brite	Porphyritic; devitrified vitrophyric
8.	Orthoclase		Phenocrysts of fractured, lightly embayed volcanic quartz with angular to corrosion-rounded shapes, and orthoclase showing alteration to kaolinite preferentially at margins and where resorbed, and plagioclase which is lightly sericitised, & chloritised biotite with frequent apatite inclusions & development of secondary opaque mineral & epidote along cleavages. The groundmass consists of fine-grained feldspar, quartz & small chlorite specks. The xenoliths are highly fractured, altered plutonic plagioclase-rich rocks. Photograph resorbed feldspar.
10.	Plagioclase		
7.	Biotite		
1.	Apatite		
2.	Rock fragments		
1.	Opaque		
66.	Groundmass		

Location 0531

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0531

Outcrop

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-165

6510157 m N

31.54142 S latitude

431835 m E

146.2819 E longitude

Illustrations :

Age/Unit= Lower Devonian BARROW RANGE BEDS

Topography: RUGGED UPLAND WITH BOLD OUTCROP AND SCRE dip= strike=

Structure: VERTICAL

Field Geology: Quartzite and quartzite-pebble quartzite. Lenticular phases of angular to slightly rounded quartzite, white quartz and slate clasts, together lacking a traction-current framework, are set in a quartzite and micaceous-quartzite matrix. Grades into non-pebbly quartzite.

Field Rockname: SAMPLE CB0531 QUARTZITE PEBBLE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.48
Dry density = 2.51
Grain density = 2.67
Porosity = 5.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 122
from 0 to 314 ,SD= 102
Laboratory susceptibility = 251
Remanence = 1.00
Koenigsberger ratio = .07

GAMMA-RAY SPECTROMETRY

Ch.1= 23893
Ch.2= 1462 .97 % K2O
Ch.3= 419 .36 ppm U
Ch.4= 528 10.32 ppm Th
U/Th= .04
2.20 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Quartzite pebble quartzite
Est. %	FABRIC:	Massive; unsorted; pebbly
69.	Quartz	Ovoid pebbles of quartzite with angular pebbles of sericitite.
20.	Rock fragments	Abundant ovoid quartz, with ragged edges, shows considerable strain.
.1	Tourmaline	Rare tourmaline & zircon. The matrix consists of cherty silica,
1.	Opaque	sericite & chlorite limonitised by weathering.
10.	Matrix	
.01	Zircon	

Location 0532

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0532

Quarry

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-151
6512302 m N 31.51747 S latitude
376535 m E 145.6997 E longitude

Illustrations :

Age/Unit= Lower Devonian

AMPHITHEATRE GROUP

Topography: FLAT WITH NEIGHBOURING VERY LOW RISES

dip= strike=

Structure :

Field Geology: Quartzose sandstone, fine-grained, well washed and well sorted. Probably interbedded with slate and siltstone which scarcely crops out. Maghemite pisolites occur in surrounding soil. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES

Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 43284
Ch.2= 3474 2.75 % K2O
Ch.3= 807 2.56 ppm U
Ch.4= 859 16.64 ppm Th
U/Th= .15
5.05 Heat generation units

Location 0533

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0533

Road cutting

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-149

6511572 m N

31.52328 S latitude

369516 m E

145.6257 E longitude

Illustrations :1 Colour slide, 1 B&W photo

Age/Unit= Lower Devonian

AMPHITHEATRE GROUP

Topography: LOW RISE IN MAINLY FLAT AREA

dip=46NE strike=133

Structure : GENTLY DIPPING

Field Geology: Shale, siltstone and fine quartzose sandstone. Thin to medium and planar bedded. Sandstone beds have ripples with internal cross-lamination. Minor 1 m thick sand beds with cut-and-fill basal contacts in places. Surficial maghemite pisolites. Sample lost.

Field Rockname: SAMPLE CB0533 SHALE

PHYSICAL PROPERTIES:

SHALE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 276
from 0 to 1231 .SD= 338
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 38107
Ch.2= 2909 2.17 % K2O
Ch.3= 777 3.15 ppm U
Ch.4= 769 14.83 ppm Th
U/Th= .21
4.97 Heat generation units

Location 0534

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0534

Outcrop

COBAR

NSW

GDOM=3

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-165
6506146 m N 31.57783 S latitude
435856 m E 146.3240 E longitude

Illustrations :

Age/Unit= Silurian

BABINDA VOLCANICS

Topography: STRIKE RIDGE NEAR GENERALLY-ELAVATED ARE

dip=85E strike=001

Structure : FLOW BANDED, PLANAR, NEAR VERTICAL DIP

Field Geology: Ignimbrite. Coarsely porphyritic in quartz and feldspar forming up to 30% of the rock. The groundmass is fine to medium-grained, slightly altered and has rare sulphide-rock, chlorite-rich rock and rhyolitic xenoliths in places. Flow banded.

Field Rockname: SAMPLE CB0534 DACITIC IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.67	Mean of 15 in-situ readings = 98	Ch.1= 60161
Dry density = 2.66	from 0 to 226 ,SD= 70	Ch.2= 3783 2.48 % K2O
Grain density = 2.68	Laboratory susceptibility = 0	Ch.3= 1218 5.02 ppm U
Porosity = .0	Remanence = 3.00	Ch.4= 1198 23.09 ppm Th
	Koenigsberger ratio = *****	U/Th= .22
		7.61 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.07	0.52	13.52	2.66	0.04	0.90	1.29	4.78	2.74	0.18	0.14	1.50	99.36

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	397	-6	107	10	11	3	105	6	14	23	68	143

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	174	5	24	7	35	9	43	58	243

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Dacitic ignimbrite
	FABRIC:		Porphyritic
7.	Quartz		Phenocrysts of unstrained quartz, fractured & disaggregated in places, with variably-sized fragments of lightly altered plagioclase.
6.	Plagioclase		lesser kaolinised orthoclase & former biotite, now completely altered to & pseudomorphed by two varieties of chlorite, epidote & rare muscovite. Relict apatite inclusions remain unaltered. The groundmass consists of variably-sized quartz, alkali feldspar, chlorite & calcite.
2.	Orthoclase		
1.	Chlorite		
.6	Opaque		
2.	Epidote		
.4	Apatite		
1.	Muscovite		
70.	Groundmass		

Location 0535

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0535

Outcrop

COBAR

NSW GDOM=3

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-155

6505123 m N

31.58708 S latitude

436251 m E

146.3281 E longitude

Illustrations :

Age/Unit= Silurian

BABINDA VOLCANICS

Topography: STRIKE RIDGE

dip=78E strike=170

Structure : WEAK NEAR VERTICAL FLOW LAYERING.

Field Geology: Ignimbrite. Porphyritic with small quartz, larger feldspar and less common altered biotite phenocrysts set in a fine-grained, quartzofeldspathic groundmass. Rare sulphide-rock microxenoliths. Planar flow banding.

Field Rockname: SAMPLE CB0535 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES

Whole rock density = 2.67
Dry density = 2.61
Grain density = 2.64
Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 75
from 0 to 276, SD= 91
Laboratory susceptibility = 0
Remanence = 15.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 66414
Ch.2= 6420 5.90 % K20
Ch.3= 1111 6.84 ppm U
Ch.4= 901 17.12 ppm Th
U/Th= .40
8.51 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.14	0.26	12.53	1.30	0.03	0.48	0.33	2.23	5.67	0.15	0.07	1.20	99.49

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	267	-6	37	4	4	-5	15	4	15	30	28	289

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-20	61	9	5	7	24	8	31	17	136

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Quartz	Ignimbrite	Porphyritic; devitrified eutaxitic
5.	Orthoclase		Phenocrysts of euhedral, rounded & embayed variably-strained volcanic quartz, kaolinised orthoclase, plagioclase altered to sericite, minor chlorite & muscovite, & chlorite aggregates with liberation of epidote & muscovite all pseudomorphing former biotite. The groundmass consists of a devitrified mosaic of fine-grained quartz, K-feldspar, sericite & chlorite. The micaceous constituents define weakly preserved flow banding. Rare opaque mineral & rare apatite inclusions in former biotite.
2.	Plagioclase		
5.	Chlorite		
1.	Epidote		
1.	Muscovite		
.05	Apatite		
.2	Opaque		
75.	Groundmass		

Location 0536

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0536
Dozer scrape

COBAR NSW GDOM=3
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-165
6501763 m N 31.61743 S latitude
436794 m E 146.3336 E longitude

Illustrations :

Age/Unit= Ordovician GIRILAMBONE BEDS
Topography: LOW RISE IN GENTLY UNDULATING COUNTRY dip=78 strike=120
Structure : STEEPLY DIPPING
Field Geology: Micaceous quartzite. Massive, poorly sorted, poorly bedded with wavy discontinuous streaks of chlorite wisps defining bedding. Minor specks of muscovite throughout and thin lenses of ?pyrite in places.

Field Rockname: SAMPLE CB0536 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE
DENSITIES
Whole rock density = 2.60
Dry density = 2.55
Grain density = 2.72
Porosity = 6.3
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 7 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 87
Remanence = .50
Koenigsberger ratio = .10
GAMMA-RAY SPECTROMETRY
Ch.1= 35560
Ch.2= 2809 2.25 x K20
Ch.3= 621 1.60 ppm U
Ch.4= 692 13.44 ppm Th
U/Th= .12
3.80 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.52	.72	12.95	4.91	.04	2.34	.19	1.20	2.72	.16	.06	3.70	99.51
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	464	-6	85	29	69	39	68	-3	14	33	12	137	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	11	-20	52	5	13	4	66	8	42	70	220		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Micaceous quartzite
FABRIC: Massive; poorly sorted; rarely porphyroblastic
Est. % MINERAL
57. Quartz Rare porphyroblasts of slightly chloritised biotite & small rare
20. Muscovite plagioclase set in a massive matrix with curvilinear layering defined
5. Chlorite by abundant muscovite, biotite & chlorite which fringe intervening
15. Biotite lenticular to microboudined quartz aggregates showing strain
2. Opaque extinction. Minor opaque mineral euhedra & fine crystal clusters.
1. Plagioclase
.01 Apatite

Location 0537

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0537

Dozer scrape :

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-165
6499533 m N 31.63757 S latitude
437177 m E 146.3375 E longitude

Illustrations :

Age/Unit: Ordovician

GIRILAMBONE BEDS

Topography: VERY LOW RISE IN FLAT COUNTRY

dip=73SW strike=156

Structure : STEEPLY INCLINED CLEAVAGE

Field Geology: Chloritite and quartzite. Mainly monomineralic chlorite rock with slight variants containing cherty quartz. Massive, poorly bedded. Numerous discontinuous stratiform and lenticular pinch-and-swell lenses of white quartz up to 0.5 m long and 5 cm thick.

Field Rockname: SAMPLE C80537 CHLORITE PHYLLITE

PHYSICAL PROPERTIES:

PHYLLITE

DENSITIES
Whole rock density = 2.48
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I. .000001)

Mean of 15 in-situ readings = 225
from 0 to 452 .SD= 151
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 52763
Ch.2= 5011 4.45 % K2O
Ch.3= 843 1.73 ppm U
Ch.4= 977 19.02 ppm Th
U/Th= .09
5.33 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	44.69	1.12	28.40	9.17	.02	1.36	.16	.27	7.19	.10	.06	7.10	99.65

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	Li	Mo	Nb	Ni	Pb	Rb
p.p.m.	1685	-6	191	48	161	114	111	-3	20	53	48	420

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	32	-20	166	-5	27	6	175	7	82	207	147

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Chloritite
FABRIC: Massive
Est. % MINERAL FABRIC: Monomineralic in chlorite apart from tiny scattered opaque mineral
98. Chlorite & rare microlenses of it. Two varieties of chlorite are present;
2. Opaque one is colourless; the other is slightly pleochroic & more birefringent. Interlamination of the two, & very thin graphite laminae define bedding. The micas are in optical continuity with bedding.

Location 0538

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0538
 Outcrop

COBAR NSW GDMH-2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-163
 6509901 m N 31.54363 S latitude
 430166 m E 146.2643 E longitude

Illustrations :

Age/Unit= Lower Devonian BARROW RANGE BEDS
 Topography: RUGGED UPLND dip=80E strike=012
 Structure : FLOW LAYERED
 Field Geology: Quartzite, pebbly quartzite and micaceous quartzite. The quartzite is massive except where micaceous and cleaved. Variably clastic throughout with closely to widely-spaced, angular to slightly rounded white quartz and quartzite clasts occurring in lenses within pebbly quartzite.
 Field Rockname: SAMPLE CB0538 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE
 DENSITIES MAGNETIC SUSCEPTIBILITY (S.I..000001) GAMMA-RAY SPECTROMETRY
 Whole rock density = 2.57 Mean of 7 in-situ readings = 0 Ch.1= 20387
 Dry density = 2.57 from to .SD= Ch.2= 1693 1.47 % K2O
 Grain density = 2.63 Laboratory susceptibility = 0 Ch.3= 292 .19 ppm U
 Porosity = 2.2 Remanence = 2.00 Ch.4= 373 7.30 ppm Th
 Koenigsberger ratio = ***** U/Th= .03
 1.70 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	91.44	0.29	4.97	0.27	0.01	0.25	0.03	0.01	1.58	0.06	0.04	1.00	99.93
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	242	-6	48	6	13	-5	39	7	13	20	24	83	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	4	-5	18	9	11	-3	27	7	12	-5	117		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
80.	Quartzite	Quartzite	Massive; porphyroblastic; slightly pebbly; wavy flow foliation
5.	Quartz	Quartz	Fragments of slightly rounded hydrothermal vein quartz set in a groundmass of micaceous quartzite. Both rounded quartz fragments & augen-shaped strained-quartz porphyroblasts are present in the groundmass with interstitial cherty quartz, sericite, & scattered opaque minerals, the largest of which frequently have adjacent beards of colourless chlorite. The groundmass has a wavy flow foliation.
4.	Sericite		
1.	Chlorite		
1.	Opaque		
10.	Rock fragments		

Location 0539

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0539

Outcrop

COBAR

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6510487 m N air-photo:run-no.= 5-163
429858 m E 31.53832 S latitude
146.2611 E longitude

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: LOW RISE WITH MODERATE OUTCROP dip=7&W strike=011

Structure : STEEPLY TILTED

Field Geology: Micaceous quartzite, slate, and white quartz-chlorite rock with 0.5 mm bands of planar monomineralic sheet quartz separated by thinner bands of chlorite. Lenses of stratiform white quartz with pinch-and-swell bedforms.

Field Rockname: SAMPLE CB0539 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.56
Dry density = 2.53
Grain density = 2.71
Porosity = 6.6

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)

Mean of 3 in-situ readings = 0
from to SD=
Laboratory susceptibility = 100
Remanence = 2.00
Koenigsberger ratio = .33

GAMMA-RAY SPECTROMETRY

Ch.1= 36716
Ch.2= 2098 1.70 % K2O
Ch.3= 601 6.18 ppm U
Ch.4= 277 4.94 ppm Th
U/Th= 1.25
5.06 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Chlorite-sericite quartzite
FABRIC: Massive with flow foliation
Est. % MINERAL
75. Quartz Laminae of sericite with graphite partings, between slightly thicker
20. Sericite laminae of quartzite with prophyroblasts of strained quartz set in a
4. Chlorite groundmass of chert, chlorite & sericite in variable proportions for
1. Opaque each layer.

Location 0540

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0540

Outcrop

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-108
6562026 m N 31.06963 S latitude
383287 m E 145.7766 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP
Topography: FLAT WITH SLIGHT RUBBLE dip= strike=
Structure :

Field Geology: Quartzite breccia. Fine-grained, angular to subrounded fragments of quartz amidst slightly finer silica cement. Scattered spherical concretions up to 1 cm with limonitic stain. Massive. Insufficient evidence to determine if a silicified soil, or weathered bedrock.

Field Rockname: SAMPLE CB0540 QUARTZITE BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.60	Mean of 4 in-situ readings = 37	Ch.1= 18281
Dry density =	from 0 to 100, SD= 43	Ch.2= 777 .18 % K2O
Grain density =	Laboratory susceptibility = 0	Ch.3= 473 2.56 ppm U
Porosity =	Remanence = .00	Ch.4= 414 7.91 ppm Th
	Koenigsberger ratio =	U/Th= .32
		2.97 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Quartzite breccia
Est. %	MINERAL FABRIC:	Massive; fragmental; unsorted
30.	Quartz	Angular to subrounded fragments of randomly distributed, variably strained quartz set in an impure cryptocrystalline siliceous cement with minor clay-filled cavities. Minor spherical concretions consisting of the same rock type except for limonite pseudomorphs of the groundmass. Rare resorption in some quartz grains. Resembles silcrete, but origin remains uncertain.
15.	Clay	
5.	Limonite	
50.	Matrix	
.01	Tourmaline	

Location 0541

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0541

Dozer scrape

BOURKE

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1

6573483 m N

30.96598 S latitude

380343 m E

145.7471 E longitude

Illustrations :Photomicrograph

Age/Unit= Lower Devonian

COBAR GROUP

Topography: FLAT

dip= strike=

Structure :

Field Geology: Biotite slate. Including mono-minerallic biotite rock and quartz-bearing variants, interbedded with fine, massive impure quartzite. Lenses and boudins of stratiform white quartz also present.

Field Rockname: SAMPLE BK0541 SLATEY QUARTZITE

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 2.34
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 40
from 0 to 125 .SD= 42
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 35343
Ch.2= 2619 1.96 % K20
Ch.3= 660 1.66 ppm U
Ch.4= 739 14.36 ppm Th
U/Th= .12
3.92 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.50	0.60	11.67	3.02	0.01	0.41	0.08	0.01	2.42	0.05	0.09	3.40	99.26

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1334	-6	57	-1	73	35	25	7	7	41	13	42

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	-20	34	6	6	7	62	9	96	23	243

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
74.	Quartz	Slatey quartzite	Lenticular layered; porphyroblastic, with flow foliation.
10.	Sericite		Layering defined by lenticular aggregates of quartz-biotite-sericite rock in different proportions of the mineral constituents, different grain size & different shapes, which are thick & globular when quartz-rich & thin & drawn out where sericite-rich. Porphyroblasts of quartz are frequent in all phases & consist of augen-shaped strained quartz aggregates. They are surrounded by sericite, biotite largely oxidised by weathering, & strained cherty quartz all in variable proportions.
1.	Opaque		Photograph lenticular layering; note lack of cleavage in "clast".
.01	Tourmaline		

Location 0542

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0542

Outcrop

COBAR

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6565720 m N 31.03573 S latitude air-photo:run-no.= 1-106
377643 m E 145.7179 E longitude

Illustrations :

Age/Unit=

Topography: EXTREMELY LOW RISE DEVOID OF VEGETATION

dip= strike=

Structure : PLUTON

Field Geology: Greisenous adamellite. Variable phases. Inequigranular to equigranular.
Mainly medium-grained. Mostly massive except for rare weak layering.
Leucocratic with scattered tourmaline and muscovite. Some phases are
coarse-grained and porphyritic.

Field Rockname: SAMPLE CB0542 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Whole rock density = 2.62

Dry density = 2.60

Grain density = 2.65

Porosity = 1.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 78

from 25 to 226, SD= 73

Laboratory susceptibility = 0

Remanence = .10

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 41905

Ch.2= 4261 4.15 X K20

Ch.3= 760 9.73 ppm U

Ch.4= 188 2.91 ppm Th

U/Th= 3.35

7.48 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.14	.01	15.15	.80	.04	.02	.41	4.45	3.89	.77	.02	.90	99.59

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	117	-6	15	-1	3	-5	-1	-3	63	-5	13	1114

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	9	71	35	18	-5	0	-1	50	13	60	21

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite

Est. % MINERAL FABRIC: Relict hypidiomorphic granular

30. Quartz

40. Plagioclase

25. Orthoclase

3. Muscovite

1. Tourmaline

1. Topaz

Large relict laths of albitic plagioclase & fractured, ragged orthoclase amidst globular patches of strained quartz aggregates. The remainder of the rock has been reconstituted by alteration so that the groundmass consists of quartz, muscovite & minor tourmaline & topaz. Essentially opaque free. Some large feldspar phenocrysts appear to be secondary porphyroblasts. The groundmass is greisenous.

Location 0543

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0543
Outcrop

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-106
6567392 m N 31.02067 S latitude
377834 m E 145.7201 E longitude

Illustrations :

Age/Unit= Lower Devonian COBAR GROUP
Topography: STRIKE RIDGE dip=80E strike=165
Structure : STEEPLY DIPPING
Field Geology: Pebbly quartzite, quartzite and chlorite slate. Clasts in quartzite include white quartz, quartzite and micaceous quartzite. They are subangular to subrounded, flat and set in a chlorite and quartz-rich matrix. The pebbly rocks lack a traction-current framework.
Field Rockname: SAMPLE CB0543 PEBBLY QUARTZITE

PHYSICAL PROPERTIES:

CONGLOMERATE
DENSITIES
Whole rock density = 2.57
Dry density =
Grain density =
Porosity =
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 15
from 0 to 50 ,SD= 22
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =
GAMMA-RAY SPECTROMETRY
Ch.1= 35537
Ch.2= 2306 1.57 % K20
Ch.3= 681 2.05 ppm U
Ch.4= 734 14.23 ppm Th
U/Th= .14
4.05 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.93	.48	10.17	5.20	.06	2.60	.06	.12	1.97	.08	.04	2.60	99.31

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	387	-6	48	18	55	24	28	-3	8	27	15	89

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	22	-5	9	-3	53	6	22	79	123

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
73.	Quartz	Pebbly quartzite	Pebbly; massive with flow foliation
10.	Sericite		Clast of uncleaved quartzite consisting of ovoid quartz porphyroblasts with quartz strained or as strained aggregates, surrounded by cherty quartz, chlorite & minor sericite. The clasts are enclosed in similar material which lacks abundant quartz & which defines a flow foliation around the ovoid clasts.
1.	Opaque		
15.	Chlorite		
1.	Plagioclase		

Location 0544

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0544

Outcrop

BOURKE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-159

6601724 m N

30.71542 S latitude

434449 m E

146.3154 E longitude

Illustrations :

Age/Unit=

Topography: FLAT BENEATH RISE OF NEARBY LEUCITITE

dip= strike=

Structure : PLUTON

Field Geology: Biotite adamellite. Medium-grained, melanocratic, porphyritic in feldspar. Hornblende and biotite-bearing. Xenoliths 5-20 cm long of fine biotite-rich dioritic rock.

Field Rockname: SAMPLE BK0544 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.+0.00001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.64

Dry density = 2.61

Grain density = 2.69

Porosity = 3.1

Mean of 6 in-situ readings = 0

from to SD=

Laboratory susceptibility = 376

Remanence = 2.00

Koenigsberger ratio = .09

Ch.1= 40163

Ch.2= 3196 2.58 % K2O

Ch.3= 728 2.79 ppm U

Ch.4= 734 14.17 ppm Th

U/Th= .20

4.73 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.37	.17	14.87	1.28	.03	.87	.64	3.46	5.05	.33	.04	.10	99.20

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	300	-6	38	4	5	120	25	-3	15	-5	47	276

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	4	15	71	-5	8	5	10	7	20	35	75

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite

FABRIC: Hypidiomorphic granular

Est. %	MINERAL	DESCRIPTION
30.	Quartz	Interconnected patches of strained, slightly fractured quartz, with smaller euhedral zoned plagioclase surrounded by interstitial orthoclase. Subhedral green-brown pleochroic biotite & euhedral green-brown hornblende, somewhat altered to biotite. Small apatite inclusions in biotite. Rare tiny opaque grains & fracture fillings.
25.	Orthoclase	
35.	Plagioclase	
7.	Biotite	
.1	Apatite	
.1	Opaque	
3.	Hornblende	

Location 0545

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0545
Quarry

BOURKE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-159
6602347 m N 30.70975 S latitude
433564 m E 146.3062 E longitude

Illustrations :

Age/Unit= Tertiary
Topography: EVENLY SLOPING UPLAND WITH OUTCROP dip= strike=
Structure : HORIZONTAL FLOWS FORMING A PLUG
Field Geology: Leucitite. Phenocrysts of phlogopite, leucite and olivine set in a fine-grained groundmass. Numerous vesicles of a zeolite mineral. Numerous xenoliths 5-20 cm long consisting of host adamellite lacking evidence of having been melted or metamorphosed. 1 ppm As, 15 ppm Ga, 149 ppm Nd.
Field Rockname: SAMPLE BK0545 LEUCITITE

PHYSICAL PROPERTIES:

LEUCITITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.91 Mean of 15 in-situ readings = 14880 Ch.1= 79342
Dry density = from 5026 to 35964 .SD= 8373 Ch.2= 6893 6.07 % K2O
Grain density = Laboratory susceptibility = 0 Ch.3= 1261 4.96 ppm U
Porosity = Remanence = .00 Ch.4= 1261 24.33 ppm Th
Koenigsberger ratio = 8.61 U/Th= .20 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	44.82	5.21	8.41	10.51	.14	9.13	7.96	1.49	7.11	1.04		2.94	98.76
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	1059	2	346		204	30	207		133	231	15	246	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	15	2	1276		19	2	207		29	109	611		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Leucitite
FABRIC: Porphyritic
Est. % MINERAL
5. Olivine Phenocrysts of euhedral to anhedral olivine with marginal alteration
25. Phlogopite to iddingsite, ragged anhedral leucite, & anhedral phlogopite with
55. Leucite small leucite inclusions. The groundmass consists of small leucite
1. Magnetite anhedral, bladed aggregates of tremolite possibly pseudomorphous
10. Tremolite after plagioclase, rare phlogopite patches, magnetite, & ilmenite
1. Zeolite anhedral. Rare vesicles of zeolite.
3. Ilmenite

Location 0546

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0546
Outcrop

BOURKE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-159
6607127 m N 30.66707 S latitude
442358 m E 146.3983 E longitude

Illustrations :

Age/Unit=
Topography: LOW RISE dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Coarse granied, equigranular to slightly porphyritic,
with plagioclase phenocrysts. Mesocratic. Biotite and hornblende-
bearing. Numerous xenoliths of aplite and porphyritic aplite up to 1
metre long.
Field Rockname: SAMPLE BK0546 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.62 Mean of 15 in-situ readings = 276 Ch.1= 73491
Dry density = 2.60 from 0 to 691 ,SD= 204 Ch.2= 5009 3.51 % K2O
Grain density = 2.62 Laboratory susceptibility = 201 Ch.3= 1455 5.34 ppm U
Porosity = .0 Remanence = 5.00 Ch.4= 1487 28.73 ppm Th
Koenigsberger ratio = .41 U/Th= .19
9.00 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.54	.22	13.58	2.13	.04	.25	1.15	3.54	4.95	.06	.03	.01	99.49
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	302	-6	92	6	-1	258	62	-3	35	-5	26	332	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	11	11	62	6	32	5	10	11	55	32	211		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular tending slightly granophyric
15. Quartz Lightly sericitised & kaolinised plagioclase, euhedral & slightly
30. Orthoclase zoned, with interstitial microcline & granophyric quartz & alkali
50. Plagioclase feldspar. Scattered globules of moderately strained quartz.
4. Biotite Minor green-brown pleochroic hornblende & biotite. Numerous
1. Hornblende accessory minerals include sphene inclusions in hornblende, garnet,
.1 Opaque apatite, epidote, & muscovite which fills a small cavity. Rare
.1 Garnet opaque mineral formed by partial oxidation of hornblende.
.01 Sphene
.01 Muscovite
.01 Apatite
.001 Epidote

Location 0547

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0547

Outcrop

BOURKE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-119

6615971 m N

30.58782 S latitude

455235 m E

146.5331 E longitude

Illustrations :1 Colour slide, 1 B&W photo

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: FLAT

dip=90 strike=045

Structure : STEEPLY DIPPING

Field Geology: Flat-pebble breccia and conglomerate. Clasts are blow-quartz, quartzite and slate set in slaty chlorite-sericite matrix. Interbedded with fine, massive, quartz-rich slate.

Field Rockname: SAMPLE BK0547 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES

Whole rock density = 2.13

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 28

from 0 to 226, SD= 79

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 27895

Ch.2= 1961 1.47 % k20

Ch.3= 529 2.50 ppm U

Ch.4= 493 9.47 ppm Th

U/Th= .26

3.50 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.70	.70	14.35	.34	.01	.44	.10	.02	2.03	.03	.06	4.80	99.57

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	458	-6	81	-1	74	-5	58	-3	12	11	24	111

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	11	-20	28	-5	13	-3	53	9	32	-5	334

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Quartz	Sericite-chlorite quartzite	Massive; pseudobrecciated, with flow foliation
45.	Sericite		The rocks consists fine sericite & chlorite mixed in variable proportions and which surround deformed lenses of cherty quartz
25.	Chlorite		which have physically separated from the micas, & which have been pulled apart & folded due to flow.

Location 0548

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0548
Outcrop

BOURKE NSW GDOM=4
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-127
6634083 m N 30.42452 S latitude
458791 m E 146.5709 E longitude

Illustrations :

Age/Unit=
Topography: FLAT WITH TORS dip= strike=
Structure : PLUTON
Field Geology: Tonalite. Coarse-grained. Inequigranular, porphyritic in hornblende
and lesser plagioclase. Melanocratic. Fine-grained dark coloured
xenoliths present.

Field Rockname: SAMPLE BK0548 TONALITE

PHYSICAL PROPERTIES:

GRANODIORITE
DENSITIES
Whole rock density = 2.73
Dry density = 2.68
Grain density = 2.72
Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 7003
from 3707 to 9550, SD= 1807
Laboratory susceptibility = 4310
Remanence = 1200.00
Koenigsberger ratio = 4.64

GAMMA-RAY SPECTROMETRY
Ch.1= 29888
Ch.2= 2228 1.87 % K20
Ch.3= 421 .37 ppm U
Ch.4= 530 10.36 ppm Th
U/Th= .04
2.42 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	P2O5	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.84	.49	15.42	3.40	.06	.87	2.57	3.09	3.82	.15	.01	.50	99.81
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	610	-6	65	11	10	-5	20	-3	13	9	32	188	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	5	194	-5	15	-3	39	8	37	45	191		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Tonalite	
15.	Quartz	Hypidiomorphic granular;	slightly porphyritic
70.	Plagioclase	Euhedral zoned plagioclase,	often in aggregates & showing variable alteration with liberation of minor epidote in places. Interstitial patchy strained quartz aggregates. Phenocrysts & smaller crystals of euhedral hornblende frequently with minor feldspar & magnetite inclusions. Scattered large magnetite aggregates in interstitial biotite clusters, & smaller magnetite with individual biotite crystals. Rare apatite inclusions in biotite. Trace sphene.
8.	Hornblende		
6.	Biotite		
.01	Epidote		
.1	Apatite		
1.	Magnetite		
.01	Sphene		

Location 0549

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0549
Mag traverse

MAG TRAVERSE
COBAR

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6517068 m N 31.47962 S latitude air-photo:run-no.= 4-159
442029 m E 146.3897 E longitude

Illustrations :

Age/Unit=
Topography: VERY GENTLY UNDULATING WITH RUBBLE RISES dip= strike=
Structure :
Field Geology: Soil, colluvium, with minor maghemite between rises of silicified
shale and chert rubble. Magnetic traverse recorded over an anomaly
whose source is entirely concealed. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0550

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0550
Dozer scrape

COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-47
6481066 m N 31.80430 S latitude
439590 m E 146.3618 E longitude

Illustrations :

Age/Unit= Lower Devonian BARROW RANGE BEDS
Topography: MODERATE UPLAND WITH STRIKE RIDGES dip=55N strike=121
Structure : MODERATELY DIPPING NEAR FOLD CLOSURE
Field Geology: Slate, quartz greywacke, siliceous iron-bearing chemical sediment,
quartzite and rare flat-pebble breccia. Thin to thick and planar inter-
bedded. Massive, poorly bedded internally. Siliceous chemical sediment
is laminated. Slate has 2 cleavages and prominent kink bands.
Field Rockname: SAMPLE CB0550 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.65
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 63
from 0 to 527 ,SD= 156
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 49198
Ch.2= 2928 1.56 X K20
Ch.3= 1071 1.65 ppm U
Ch.4= 1288 25.12 ppm Th
U/Th= .07
5.65 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Slate
FABRIC: Massive; tightly folded
Est. % Mineral
10. Quartz Tightly folded lenticular segregations of opaque mineral & quartz,
20. Opaque & small scattered lenticular patches of opaque mineral both set in
10. Sericite massive chlorite-sericite rock. Rare small lenticles of cherty quartz.
60. Chlorite

Location 0551

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0551

Mag traverse :

COBAR

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-47

6476187 m N

31.84833 S latitude

439921 m E

146.3650 E longitude

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: GENTLY UNDULATING TO FLAT

dip=70E strike=164

Structure : CLEAVED WITH STEEP DIPS-STRIKE SWINGS TO MORE EASTWARD ALONG TRAVERSE

Field Geology: Soil. Cloddy to semi-lateritic. Contains tiny floaters of weathered
slatey rocks. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.+0.00001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0552

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0552 ADJACENT TO END OF MAG TRAVERSE 0551
Outcrop COBAR NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-47
6477215 m N 31.83910 S latitude
440700 m E 146.3733 E longitude

Illustrations :

Age/Unit: Lower Devonian BARROW RANGE BEDS
Topography: PROMINENT RUGGED STRIKE RIDGE dip=70E strike=165
Structure : STEEPLY DIPPING
Field Geology: Quartzite-pebble quartzite, quartzite and quartz greywacke. Lenses of
quartzite-pebble quartzite in siliceous quartz greywacke with abundant
chemical component. Most units massive, poorly bedded. Gradations in
composition between slate and quartzite.
Field Rockname: SAMPLE CB0552 PEBBLY QUARTZITE

PHYSICAL PROPERTIES: SANDSTONE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.58 Mean of 0 in-situ readings = Ch.1=
Dry density = 2.54 from to ,SD= Ch.2= % K20
Grain density = 2.69 Laboratory susceptibility = Ch.3= ppm U
Porosity = 5.3 Remanence = .30 Ch.4= ppm Th
Koenigsberger ratio = ***** U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Pebbly quartzite
FABRIC: Massive; poorly sorted
Est. % MINERAL Rock fragments Subangular to rounded clasts of cherty muscovite quartzite, chemical
80. Matrix vein quartz, highly strained quartz, & massive chloritite, set in a
20. Matrix matrix of small quartz clasts, quartzite, opaque mineral, & rare
wavy streaks of biotite.

Location 0553

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0553
Outcrop

ADJACENT TO MAG TRAVERSE
COBAR

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6477304 m N air-photo:run-no.= 7-47
438930 m E 31.83820 S latitude
146.3546 E longitude

Illustrations :Photomicrograph

Age/Unit= Ordovician GIRILAMBONE BEDS
Topography: LOW STRIKE RIDGE dip=70E strike=165
Structure : CLEAVED STEEP DIP
Field Geology: Slate, variably siliceous with lenticular segregations of stratabound white quartz. Minor argillaceous chert.

Field Rockname: SAMPLE CB0553 ARGILLACEOUS CHERT

PHYSICAL PROPERTIES: CHERT

DENSITIES
Whole rock density = 2.56
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY
Ch.1= 26320
Ch.2= 1804 1.36 % K20
Ch.3= 443 .93 ppm U
Ch.4= 512 9.97 ppm Th
U/Th= .09
2.58 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Chert
FABRIC: Massive with microveinlets; rare microstylolites
Est. % MINERAL FABRIC: Fine mixed biotite & sericite interlayered with chert laminae with
90. Quartz crinkly layering unlike optically planar layering in mica layers. Some
40. Biotite micaceous layers have micro-augen containing cherty silica & these
5. Sericite are commonly lined by thin smears of graphite, interwoven also
.5 Opaque throughout the micaceous layers. Numerous ptymatically folded quartz
1. Graphite veinlets. Rare opaque subhedra randomly scattered & frequently
lining some veinlets.
Photograph stylolites, bedding & ptymatic folding.

Location 0554

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0554
Road cutting

SAME LOCATION AS 0555

COBAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-nc. = 8-39
6460051 m N 31.99355 S latitude
433658 m E 146.2977 E longitude

Illustrations :

Age/Unit=

NYNAGEE GRANITE

Topography: RUGGED UPLAND

dip= strike=

Structure: PLUTON WITH FISSURES

Field Geology: Adamellite. Variably phased. Massive to layered with apparent gneissic appearance. Leucocratic. Inequigranular. Muscovite-bearing. Slightly altered. Cut by dykes of microadamellite partly lined by friction breccia with fractured granite clasts set in chlorite-rich groundmass.

Field Rockname: SAMPLE CB0554 ALTERED ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Whole rock density = 2.64
Dry density = 2.65
Grain density = 2.66
Porosity = 3.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 48
from 0 to 150, SD= 48
Laboratory susceptibility = 25
Remanence = .20
Koenigsberger ratio = .13

GAMMA-RAY SPECTROMETRY

Ch.1= 58591
Ch.2= 5963 5.68 % K2O
Ch.3= 1028 9.87 ppm U
Ch.4= 534 9.68 ppm Th
U/Th= 1.02
9.07 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	63.99	.72	15.97	5.12	.09	2.51	5.05	3.46	2.24	.19	.03	.50	99.87

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	368	-6	57	14	27	380	54	-3	12	11	13	112

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	19	-5	286	-5	10	-3	101	-5	30	51	170

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Adamellite	
35.	Quartz		Hypidiomorphic granular, tending slightly foliated due to flow
45.	Orthoclase		Lenticular globules of strained quartz aggregates curving around
12.	Plagioclase		augen of microcline. Interstitial network of quartz, plagioclase,
2.	Biotite		biotite, often altering to chlorite with liberation of opaque mineral,
3.	Muscovite		& muscovite, which also occurs in microcline augen. Rare accessory
.5	Opaque		colourless garnet, yellow tourmaline, & very rare zircon inclusions
3.	Chlorite		in some biotites.
.1	Garnet		
.001	Zircon		
.1	Tourmaline		

Location 0555

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0555

SAME LOCATION AS 0554

Road cutting

COSAR

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-39

6460053 m N

31.99353 S latitude

433648 m E

146.2976 E longitude

Illustrations :

Age/Unit= Ordovician

NYMAGEE GRANITE

Topography: RUGGED UPLAND

dip= strike=

Structure : PLUTON

Field Geology: Adameellite. Variably phased. Massive to layered with apparent gneissic appearance. Leucocratic. Inequigranular. Muscovite-bearing. Slightly altered. Cut by dykes of microadameellite partly lined by friction breccia with fractured granite clasts set in chlorite-rich groundmass.

Field Rockname: SAMPLE C80555 MICROADAMELLITE FROM FISSURE

PHYSICAL PROPERTIES:

GNEISS

DENSITIES

Whole rock density = 2.70

Dry density = 2.31

Grain density = 2.69

Porosity = 1.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 25

Remanence = .10

Koenigsberger ratio = .07

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K20

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.67	.61	15.13	3.51	.06	1.74	1.06	2.97	4.24	.20	.04	.80	99.03

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1192	-6	74	9	10	234	59	-3	14	-5	30	267

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	17	202	-5	20	4	48	10	37	63	233

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Microadameellite
FABRIC: Hypidiomorphic granular trending aplitic

Est. % MINERAL
25. Quartz
30. Plagioclase
25. Orthoclase
10. Sericite
9. Biotite
1. Opaque
.1 Apatite
.1 Muscovite

Small globular to lenticular patches of strained quartz. Numerous extensively sericitised plagioclase euhedra with rare muscovite inclusions. Numerous red-brown biotite subhedra, in places bleached with slight alteration to opaque mineral along cleavages & at edges & minor development of chlorite. Abundant eugen of orthoclase poikilitically enclosing biotite & plagioclase. Minor apatite, often as inclusions in some biotites. Streaks of sericite adjacent to lenticular quartz patches define weak flow layering. This rock occurs as a dyke in granite described at 79620554.

Location 0556

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0556
Outcrop

NYMAGEE NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-90
6430509 m N 32.26107 S latitude
454158 m E 146.5133 E longitude

Illustrations :

Age/Unit: ERIMERAN GRANITE
Topography: VERY GENTLY UNDULATING WITH EXFOLIATED OUTCROPS dip= strike=
Structure : PLUTON
Field Geology: Granite, inequigranular, slightly brecciated and variably foliated.
Porphyritic with raggedly-shaped orthoclase phenocrysts and large quartz
patches set in a medium-grained, inequigranular granitic groundmass.
Leucocratic. Abundant muscovite and lesser chloritised biotite.
Field Rockname: SAMPLE NE0556 GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.63 Mean of 10 in-situ readings = 27 Ch.1= 65593
Dry density = 2.62 from 0 to 276 ,SD= 87 Ch.2= 6611 6.26 % K20
Grain density = 2.65 Laboratory susceptibility = 37 Ch.3= 992 5.37 ppm U
Porosity = 1.3 Remanence = .20 Ch.4= 867 16.57 ppm Th
Koenigsberger ratio = .09 U/Th= .32
7.59 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.57	.21	12.97	1.77	.04	.45	.43	2.24	5.13	.23	.04	.60	99.68
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	379	-6	38	4	13	132	32	-3	16	-5	35	341	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	9	18	68	-5	14	-3	11	11	33	43	105		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Hypidiomorphic granular with late magmatic cataclasis superimposed
45. Quartz Large globular patches of strained quartz amidst slightly kaolinised
40. Orthoclase anhedral orthoclase. Scattered chlorite pseudomorphs of relict biotite
5. Plagioclase with liberations of epidote along cleavages & with relict apatite
3. Muscovite & zircon inclusions. Interstitial granulated quartz, orthoclase,
2. Chlorite plagioclase, & muscovite. Rare opaque mineral & garnet. Scattered
.1 Epidote xenoliths of graphic pegmatite.
.1 Apatite
.01 Zircon
5. Xenoliths
.5 Opaque
.01 Garnet

Location 0557

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0557

Outcrop

NYMAGEE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-26

6385580 m N

32.66730 S latitude

493999 m E

146.9360 E longitude

Illustrations :

Age/Unit= Silurian?

BABINDA VOLCANICS

Topography: MODERATELY ROUGH STRIKE RIDGES

dip= strike=

Structure : STEEPLY DIPPING FLOW BANDING

Field Geology: Ignimbrite. Porphyritic with phenocrysts of quartz, feldspar and biotite set in a fragmental and wavy, flow-banded, fine-grained quartzofeldspathic groundmass. Small cognate xenoliths present.

Field Rockname: SAMPLE NE0557 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.65

Dry density = 2.62

Grain density = 2.69

Porosity = 2.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 0

from to SD=

Laboratory susceptibility = 188

Remanence = 8.00

Koenigsberger ratio = .71

GAMMA-RAY SPECTROMETRY

Ch.1= 56119

Ch.2= 4273 3.27 % K20

Ch.3= 990 1.12 ppm U

Ch.4= 1225 23.93 ppm Th

U/Th= .05

5.52 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	SnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.72	0.53	13.69	3.08	0.03	1.46	0.75	2.39	5.12	0.15	0.06	1.00	99.98

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	727	-6	96	6	18	15	49	-3	9	23	23	196

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	11	97	5	25	-3	39	6	40	38	288

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
5.	Quartz	Ignimbrite	Porphyritic; relict eutaxitic
5.	Orthoclase		Phenocrysts of resorbed volcanic quartz considerably strained, with sericitized plagioclase & lesser smaller orthoclase. Scattered
10.	Plagioclase		xenoliths of plutonic feldspar rock. The groundmass is considerably devitrified to quartz, feldspar, sericite, & biotite, of which the
10.	Biotite		biotite has partially segregated to form lenticular clusters of small
1.	Opaque		crystals of which some are altered, bleached, & have minor
64.	Groundmass		associated opaque mineral. Rare apatite in some biotite crystal
.1	Apatite		aggregates, a few of which may possibly have been phenocrysts. Very
.01	Zircon		rare epidote pseudomorphs of radiating mica.
.01	Epidote		
5.	Rock fragments		

Location 0558

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0558

Dozer scrape

FORBES

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6318792 m N 33,26973 S latitude air-photo:run-no.= 3-51
509331 m E 147.1002 E longitude

Illustrations :Photomicrograph

Age/Unit: Ordovician

GIRILAMBONE BEDS

Topography: LOW RISE IN FLAT COUNTRY

dip=83E strike=130

Structure : NEAR VERTICAL

Field Geology: Quartzite-pebble quartzite. Pebbles of white quartz, equant to elongate with tapered edges, sporadically distributed in a matrix of micaceous quartzite.

Field Rockname: SAMPLE FB0558 PEBBLY QUARTZITE

PHYSICAL PROPERTIES:

CONGLOMERATE
DENSITIES
Whole rock density = 2.56
Dry density = 2.64
Grain density = 3.21
Porosity = 20.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 6
from 0 to 25 ,SD= 11
Laboratory susceptibility = 0
Remanence = 1.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 31051
Ch.2= 1886 1.10 % K2O
Ch.3= 635 .93 ppm U
Ch.4= 768 14.98 ppm Th
U/Th= .06
3.38 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	86.88	.37	7.16	1.44	.01	.12	.01	.04	1.69	.05	.05	1.70	99.54

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	262	-6	71	3	40	18	50	-3	7	11	20	86

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	9	-20	15	-5	17	3	31	9	26	18	267

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Pebbly quartzite
Est. # MINERAL FABRIC: Poorly sorted; massive; porphyroblastic; flow foliation
15. Quartz Augen-shaped porphyroblasts of quartz, rarely weakly resorbed, &
25. Rock fragments subangular to rounded clasts of hydrothermal quartz, quartzite, &
60. Groundmass sericite-chlorite quartzite. The groundmass consists of sericite, chlorite & cherty silica with small quartz porphyroblasts & rare accessory tourmaline. Grain size of groundmass is variable; the varieties define lenticular layering.
Photograph: quartz augen & quartzite pebbles.

Location 0559

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0559
Outcrop

FORBES NSW GDM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-1753
6315970 m N 33.22508 S latitude
517978 m E 147.1931 E longitude

Illustrations :

Age/Unit= Ordovician GIRI 'MBONE BEDS
Topography: RISE ADJACENT TO UPLAND AREA dip=80SW strike=135
Structure : STEEPLY DIPPING
Field Geology: Slatey lithic sandstone and phyllite. The sandstone is pebbly in places with quartz, quartzite and intraformational shale clasts together forming a small fraction of the rock. Angularity and labile nature of clasts suggest deposition close to source. Cleavage only in matrix.
Field Rockname: SAMPLE FB0559 LITHIC SANDSTONE

PHYSICAL PROPERTIES:

CONGLOMERATE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 7 in-situ readings =	3	Ch. 1=	25271
Whole rock density =	2.32	from 0 to 25 SD=	9	Ch. 2=	1703 1.23 % K20
Dry density =		Laboratory susceptibility =	0	Ch. 3=	444 .75 ppm U
Grain density =		Remanence =	.00	Ch. 4=	528 10.29 ppm Th
Porosity =		Koenigsberger ratio =		U/Th=	.07
					2.50 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Lithic sandstone	
10.	Quartz		Poorly sorted; massive
80.	Rock fragments		Subangular to subrounded clasts of quartz, variably strained & abundant lithic fragments of hydrothermal quartzite, chert, sericitic mudstone, greywacke, slate, as well as rare biotite & tourmaline grains, all moderately tightly packed with moderately random long-axis orientation. The matrix consists of sericitic & pale biotite-bearing mud. Rare opaque minerals in some clasts & in matrix.
2.	Biotite		
.1	Tourmaline		
7.	Matrix		
1.	Opaque		Abundance of labile constituents indicates close proximity of source.

Location 0560

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0560
Outcrop

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-1753
6315038 m N 33.30340 S latitude
522426 m E 147.2409 E longitude

Illustrations :

Age/Unit= Silurian-Lower Devonian
Topography: LOW RISE WITH RUBBLE AND OUTCROP dip= strike=
Structure :

Field Geology: Rhyolite. Massive, grey, ultrafine-grained rock with microphenocrysts of altered feldspar. Contains tiny specks of a sulphide mineral.

Field Rockname: SAMPLE FB0560 RHYODACITE

PHYSICAL PROPERTIES: RHYOLITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000J01)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.57	Mean of 5 in-situ readings = 0	Ch.1= 64636
Dry density = 2.60	from to ,SD=	Ch.2= 5398 4.57 % K2O
Grain density = 2.60	Laboratory susceptibility = 75	Ch.3= 1083 3.79 ppm U
Porosity = .0	Remanence = .20	Ch.4= 1123 21.72 ppm Th
	Koenigsberger ratio = .04	U/Th= .17
		7.09 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	78.05	.17	10.98	.96	.07	.13	.29	3.42	4.32	.09	.09	1.10	99.68
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	335	-6	44	4	9	11	25	-3	7	-5	35	202	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	9	-20	68	-5	18	5	9	10	37	45	90		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Rhyodacite
5.	Carbonate	FABRIC:	Porphyritic
95.	Groundmass		Phenocrysts of a rhombic mineral pseudomorphed by a carbonate mineral, in places weathered to opaque minerals. The groundmass consists of tiny quartz fragments, muscovite needles, & microcrystalline alkali feldspar. The carbonate mineral is pleochroic from greyish to colourless.

Location 0561

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO =(7962)0561
Quarry

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-1821
6303074 m N 33.40910 S latitude
572406 m E 147.7787 E longitude

Illustrations :

Age/Unit= Upper Devonian
Topography: BOTTOM OF STEEP SST RIDGE
Structure :

dip= strike=

Field Geology: Quartzose sandstone, calcareous sandstone, quartz-pebble conglomerate and siltstone. Red and drab-green, micaceous siltstone separates thin to thick planar quartzose sandstone and pebbly units. Red beds. Fontainbleu texture in calcareous sandstone.

Field Rockname: SAMPLE FB0561 CALCAREOUS SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.60
Dry density = 2.61
Grain density = 2.65
Porosity = 1.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to SD=
Laboratory susceptibility = 226
Remanence = 45.00
Koenigsberger ratio = 3.32

GAMMA-RAY SPECTROMETRY
Ch.1= 46216
Ch.2= 3679 2.87 % K2O
Ch.3= 838 1.43 ppm U
Ch.4= 996 19.42 ppm Th
U/Th= .07
4.85 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Calcareous sandstone Moderately sorted
56.	Quartz		Subangular to subrounded fine quartz sand with similarly sized clasts
2.	Muscovite		of chloritised ?volcanic glass. Less frequent smaller muscovite,
1.	Chlorite		epidote, biotite, altered ferromagnesian mineral, opaque mineral &
5.	Rock fragments		rare apatite set in a calcite cement of fontainbleu appearance.
1.	Epidote		Diverse heavy mineral assemblage & labile constituents indicate
2.	Opaque		proximity to source area. Pebbly in places with clasts of similar
1.	Biotite		composition to matrix.
2.	Ferromagnesian		
.1	Apatite		
30.	Cement		

Location 0562

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0562

SAME LOCATION AS 0563 0854

Road cutting

FORBES

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area

air-photo:run-no.= 5-1875

6285769 m N

33.56517 S latitude

572462 m E

147.7807 E longitude

Illustrations :1 Colour slide, 1 B&W photo

Age/Unit= Lower Devonian

MILPOSE VOLCANICS

Topography: RUGGED UPLAND

dip= strike=000

Structure : STEEPLY INCLINED FLOWS ADJACENT TO CONE ABOUT 1KM TO SOUTH

Field Geology: Andesite. Two varieties: the first is light-coloured, coarsely porphyritic in plagioclase and lesser hornblende set in a fine-grained groundmass containing trace pyrite. Minor chlorite veinlets; second type is darker, finer, magnetic, porphyritic and layered.

Field Rockname: SAMPLE FB0562 LIGHT COLOURED NON MAGNETIC ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.69
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 259
from 62 to 565, SD= 182
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 24145
Ch.2= 1540 1.07 X K20
Ch.3= 456 1.73 ppm U
Ch.4= 461 8.90 ppm Th
U/Th= .19
2.83 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Andesite
FABRIC: Porphyritic; devitrified vitrophyric
Est. % MINERAL
25. Plagioclase Phenocrysts of euhedral, zoned, prominently-twinned plagioclase, some with skeletal altered cores, as well as hornblende, of variable size & slightly altered with rare liberation of epidote & weak tendency to develop secondary blue-green hornblende pseudomorphs. The groundmass consists of scattered plagioclase laths, more granular plagioclase with slight spherulitic extinction possibly inherited from original glass, & small acicular, light green, altered pyroxene. Rare opaque sulphide clots.
15. Hornblende
.1 Opaque
60. Groundmass

Location 0563

* LACHLAN FOLD BELT of New South Wales. ROCK PROPERTY DATA BASE *

NO.=(7962)0563
Road cutting

SAME LOCATION AS 0562 0854
FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1875
6285774 m N 33.56513 S latitude
572462 m E 147.7807 E longitude

Illustrations :

Age/Unit= Lower Devonian

MILPOSE VOLCANICS

Topography: RUGGED UPLAND

dip= strike=

Structure : STEEPLY INCLINED FLOWS ADJACENT TO CONE ABOUT 1 KM TO SOUTH

Field Geology: Andesite. Two varieties: the first is light-coloured, coarsely porphyritic in plagioclase and lesser hornblende set in a fine-grained groundmass containing trace pyrite. Minor chlorite veinlets; second type is darker, finer, magnetic, porphyritic and layered.

Field Rockname: SAMPLE FB0563 DARK COLOURED MAGNETIC ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.64
Dry density = 2.61
Grain density = 2.63
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 20977
from 7791 to 36191 ,SD= 9077
Laboratory susceptibility = 22292
Remanence = 570.00
Koenigrberger ratio = .43

GAMMA-RAY SPECTROMETRY

Ch.1= 47708
Ch.2= 4110 3.63 X K20
Ch.3= 787 4.28 ppm U
Ch.4= 686 13.11 ppm Th
U/Th= .33
5.72 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Andesite
	FABRIC:	Porphyritic; devitrified vitrophyric
Est. %	MINERAL	
12.	Plagioclase	Euhedral phenocrysts of extensively kaolinised plagioclase, rarely with chlorite aggregates in some cores, & rare augite micro-phenocrysts. The highly felsic groundmass is lightly chloritised & sericitised & contains numerous specks of magnetite, goethite & very rare pyrite. Numerous veinlets of magnetite, goethite, & minor quartz, which may have formed by shrinkage. Very rare epidote in clusters, possibly pseudomorphing an uncommon microphenocryst.
85.	Groundmass	
1.	Quartz	
.2	Chlorite	
.1	Augite	
.1	Epidote	
2.	Magnetite	
.1	Goethite	
.001	Pyrite	

Location 0564

* LACHLAN FOLD BELT of New South Wales. ROCK PROPERTY DATA BASE *

NO.=(7962)0564
Road cutting

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1875
6280967 m N 33.60830 S latitude
575070 m E 147.8092 E longitude

Illustrations :

Age/Unit= Lower Devonian MILPOSE VOLCANICS
Topography: RIDGE FLANKING RUGGED UPLAND dip= strike=
Structure : STEEPLY DIPPING
Field Geology: Andesite, rhyolite and tuffaceous sedimentary rocks. Interbedded. The lavas are layered. The sediments probably represent waterlain ash. They are well bedded.

Field Rockname: SAMPLE FB0564 TUFFACEOUS SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.68
Dry density = 2.65
Grain density = 2.73
Porosity = 2.8

SILTSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 113
from 0 to 565 .SD= 182
Laboratory susceptibility = 389
Remanence = .10
Koenigsberger ratio = .00

GAMMA-RAY SPECTROMETRY

Ch.1= 39841
Ch.2= 3503 3.03 % K20
Ch.3= 617 .61 ppm U
Ch.4= 771 15.07 ppm Th
U/Th= .04
3.64 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Tuffaceous siltstone
Est. % MINERAL FABRIC: Massive; poorly sorted
5. Quartz Subangular scattered unsorted quartz & plagioclase fragments
5. Plagioclase randomly scattered through a matrix consisting mainly of optically
90. Matrix continuous sericite, lesser chlorite, minor biotite, rare opaque mineral, & tourmaline. Weak bedding is defined by layers lacking crystal fragments.

Location 0565

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0565

Quarry

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-2127
6243875 m N 33.93768 S latitude
628083 m E 148.3859 E longitude

Illustrations :

Age/Unit= Upper Silurian
Topography: RUGGED STEEP RISE
Structure :

ILLUNIE RHYOLITE

dip= strike=

Field Geology: Rhyolite. Phenocrysts of volcanic quartz, K feldspar and minor epidote pseudomorphs of a ferromagnesian mineral set in a fine-grained, quartzo-feldspathic groundmass. Trace pyrite, which also lines small fractures.

Field Rockname: SAMPLE FB0565 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES
Whole rock density = 2.60
Dry density = 2.58
Grain density = 2.59
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 7 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 125
Remanence = 1.00
Koenigsberger ratio = .13

GAMMA-RAY SPECTROMETRY
Ch.1= 58811
Ch.2= 7375 7.87 % K2O
Ch.3= 611 5.16 ppm U
Ch.4= 377 6.98 ppm Th
U/Th= .74
6.20 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.65	0.08	11.78	0.53	0.01	0.25	0.02	0.06	7.70	0.10	0.06	1.30	99.53

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	981	-6	7	3	-1	-5	12	5	7	22	26	398

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-20	40	7	-5	-3	12	7	11	8	45

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Quartz	Rhyolite	Porphyritic
14.	Orthoclase	Phenocrysts of bipyramidal, skeletal, rounded, resorbed volcanic quartz, lightly kaolinised orthoclase, rare plagioclase frequently sericitised with liberation of minor muscovite, & rare	
1.	Plagioclase	ferromagnesian mineral, ?biotite, now pseudomorphed by muscovite. The	
1.	Ferromagnesian	groundmass consists of devitrified quartz & k'feldspar, which is	
.1	Opaque	micrographically intergrown on fringes of quartz phenocrysts.	
74.	Groundmass		

Location 0566

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0566
Mag traverse

ADJACENT TO 0269, 0270. MAG TRAVERSE SEE BW1979BOOK1PAGE33-36
NARROMINE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1347
6396670 m N 32.56576 S latitude
558040 m E 147.6183 E longitude

Illustrations :

Age/Unit=
Topography:
Structure :

dip= strike=

Field Geology: Soil. Recorded magnetic traverse over a concealed source near 0269 and
0270. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0651

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0651
Road cutting

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5110
6235270 m N 33.99143 S latitude
757771 m E 149.7906 E longitude

Illustrations :

Age/Unit= Ordovician ROCKLEY VOLCANICS
Topography: RUGGED SLOPING UPLAND dip= strike=
Structure : MASSIVE
Field Geology: Altered basalt. Little original texture, massive to schistose with
selvedges of chlorite adjacent to quartz-rich zones with rare
chalcopyrite. Minor veins of calcite.

Field Rockname: SAMPLE BT0651 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.73	Mean of 15 in-situ readings =	1202	Ch.1= 29887
Dry density =	2.70	from 565 to 2136 ,SD=	454	Ch.2= 2902 3.04 % K2O
Grain density =	2.72	Laboratory susceptibility =	464	Ch.3= 229 .63 ppm U
Porosity =	.0	Remanence =	.40	Ch.4= 252 4.89 ppm Th
		Koenigsberger ratio =	.01	U/Th= .13
				1.92 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Basalt	
		Porphyritic; considerably altered	
55.	Plagioclase	A considerably altered rock with relict phenocrysts of plagioclase	
13.	Calcite	often forming glomeroporphyritic aggregates. Some are deformed by	
30.	Chlorite	granulation. The groundmass is completely altered & lacks original	
1.	Muscovite	textures. It consists largely of chlorite which defines weak	
1.	Quartz	flow banding. In addition, abundant calcite is present as small	
.4	Hematite	patches & larger masses which may possibly have partially	
.1	Magnetite	psuedomorphed a former ferromagnesian microphenocryst. Minor muscovite,	
.5	Goethite	& small patches of rare quartz. Disseminated hematite altering to	
.001	Chalcopyrite	goethite, rare magnetite, & very rare, tiny chalcopyrite blebs.	

Location 0652

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0652

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5164
6253625 m N 33.82683 S latitude
754675 m E 149.7518 E longitude

Illustrations :

Age/Unit= Ordovician

ROCKLEY VOLCANICS

Topography: UNDULATING UPLAND WITH OUTCROP

dip= strike=

Structure : MASSIVE

Field Geology: Altered basalt. Fine-grained, greenish, with phenocrysts of plagioclase and lesser, smaller ferromagnesian mineral in very fine-grained epidote-bearing groundmass. Numerous xenoliths.

Field Rockname: SAMPLE BT0652 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.87
Dry density = 2.83
Grain density = 2.92
Porosity = 2.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 10 in-situ readings = 653
from 188 to 1130 ,SD= 337
Laboratory susceptibility = 565
Remanence = 2.00
Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY
Ch.1= 19535
Ch.2= 1671 1.68 % K20
Ch.3= 265 3.53 ppm U
Ch.4= 54 .78 ppm Th
U/Th= 4.54
2.71 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Basalt
45.	Plagioclase	FABRIC:	Porphyritic; considerably altered
9.	Epidote		Relict plagioclase phenocrysts pseudomorphed by microcrystalline aggregate of feldspar, as well as augite euhedral phenocrysts
20.	Augite		partially altered to epidote & minor chlorite in places. Relict microphenocrysts of a ferromagnesian phenocryst pseudomorphed by non-resolvable brown semi-opaque ?clay. The altered groundmass consists of plagioclase laths, semi-opaque ?clay & numerous segregations & veinlets of epidote, chlorite & secondary plagioclase. Rare opaque mineral sparingly scattered throughout.
5.	Chlorite		
1.	Opaque		
20.	Ferromagnesian		

Location 0653

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0653
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5236
6267122 m N 33.70643 S latitude
749655 m E 149.6938 E longitude

Illustrations :

Age/Unit= Ordovician ROCKLEY VOLCANICS
Topography: DISSECTED UPLAND WITH OUTCROP dip=55W strike=176
Structure : VARIABLY CLEAVED TO MASSIVE. MINOR IGNEOUS LAYERING
Field Geology: Greenstone. Deuterically-altered basaltic rocks with abundant quartz-
chlorite alteration zones. Variably cleaved. Numerous copper-bearing
xenoliths up to 5 cm long. Minor augite phenocrysts. Numerous quartz
veins.
Field Rockname: SAMPLE BT0653 GREENSTONE

PHYSICAL PROPERTIES:

DENSITIES		GREENSTONE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.78	Mean of 15 in-situ readings =	1294	Ch.1=	13252		
Dry density =	2.65	from 502 to 2010 ,SD=	422	Ch.2=	913	.74 % k20	
Grain density =	2.74	Laboratory susceptibility =	527	Ch.3=	220	1.28 ppm U	
Porosity =	3.4	Remanence =	15.00	Ch.4=	185	3.53 ppm Th	
		Koenigsberger ratio =	.47	U/Th=	.36		
				1.56	Heat generation units		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Basalt	
20.	Plagioclase	Porphyritic; slightly altered, pilotaxitic	
5.	Augite	Ragged phenocrysts of plagioclase, lightly kaolinised in places, & disaggregated phenocrysts of augite, partially to completely	
10.	Calcite	pseudomorphed by calcite, & less commonly, epidote & chlorite. The	
58.	Groundmass	groundmass consists of plagioclase microlites, chlorite, epidote & rare blue-green pleochroic hornblende. Scattered large blebs of	
2.	Rock fragments	chalcopyrite, & less common magnetite marginally replaced by pyrite.	
.1	Magnetite		
.1	Pyrite		
.8	Chalcopyrite		
1.	Epidote		
1.	Hornblende		
2.	Chlorite		

Location 0654

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0654
Road cutting

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5236
6266115 m N 33.71348 S latitude
758098 m E 149.7851 E longitude

Illustrations :

Age/Unit= Ordovician ROCKLEY VOLCANICS
Topography: UNDULATING COUNTRY WITH LITTLE OUTCROP dip=79E strike=035
Structure : STEEPLY DIPPING
Field Geology: Chert, cherty argillite, and slaty siltstone. Thin to medium bedded,
planar bedded, with intraformational deformation in slaty rocks.

Field Rockname: SAMPLE BT0654 CHERT

PHYSICAL PROPERTIES: CHERT

DENSITIES
Whole rock density = 2.20
Dry density = 2.42
Grain density = 2.72
Porosity = 10.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 213
Remanence = 8.00
Koenigsberger ratio = .63

GAMMA-RAY SPECTROMETRY

Ch.1= 13761
Ch.2= 875 .63 % K2O
Ch.3= 266 1.74 ppm U
Ch.4= 207 3.92 ppm Th
U/Th= .44
1.89 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
95.	Quartz	Chert	Massive; sparingly porphyroblastic
1.	Opaque		Massive ultrafine cryptocrystalline quartz crossed by numerous planar narrow quartz & opaque veinlets & curved to pygmatic veinlets of coarser quartz aggregates. Some layers, particularly those with opaque laminae contain ovoid chalcidonic pseudomorphs of poorly preserved radiolarians. Rare microporphyroblasts of biotite in places.
4.	Biotite		

Location 0655

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0655
Road cutting

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5242
6264940 m N 33.72027 S latitude
773243 m E 149.9487 E longitude

Illustrations :

Age/Unit=
Lithology: DISSECTED UPLAND dip= strike=
Structure : MASSIVE IGNEOUS BODY MARGINAL TO GRANITE
Field Geology: Hornfels. Medium-grained with small vugs of pegmatite and
lenticular masses of quartzite. Mainly massive, but sheared in places
and intruded by small aplitic dykes.

Field Rockname: SAMPLE BT0655 HORNFELS

PHYSICAL PROPERTIES: HORNFELS

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density = 2.58		Mean of 4 in-situ readings =	0	Ch.1=	50409
Dry density = 2.54		from to .SD=		Ch.2=	3442 2.50 % K20
Grain density = 2.67		Laboratory susceptibility =	87	Ch.3=	945 3.51 ppm U
Porosity = 4.6		Remanence =	2.00	Ch.4=	962 18.58 ppm Th
		Koenigsberger ratio =	.38	U/Th=	.19
				5.91	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	85.68	.49	6.92	1.91	.01	1.80	.02	.01	1.57	.10	.05	1.30	99.85
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	246	-6	60	-1	105	161	39	-3	8	10	9	58	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	-5	14	-5	10	-3	42	9	23	21	497		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Hornfels
90.	Quartz	FABRIC:	Granoblastic
5.	Muscovite		Equigranular mosaic of quartz grains with inclusions. Interstitial
2.	Opaque		muscovite, biotite variably altered to opaque mineral & discrete
3.	Biotite		opaque mineral anhedral & veinlets, some containing limonite.

Location 0656

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0656

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5242
6265966 m N 33.71078 S latitude
774218 m E 149.9589 E longitude

Illustrations :

Age/Unit=

Topography: UNDULATING UPLAND WITH OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Granodiorite. Equigranular medium-grained with infrequent glomero-
porphyritic hornblende exhibiting slight greenish alteration. Rare
sphene. Numerous dark fine dioritic xenoliths up to 30 cm long.

Field Rockname: SAMPLE BT0656 DIORITE

PHYSICAL PROPERTIES:

DIORITE

DENSITIES

Whole rock density = 2.77

Dry density = 2.73

Grain density = 2.73

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 16084

from 13069 to 20231, SD= 2075

Laboratory susceptibility = 20030

Remanence = 850.00

Koenigsberger ratio = .71

GAMMA-RAY SPECTROMETRY

Ch.1= 47443

Ch.2= 3113 2.23 X K20

Ch.3= 5.27 4.81 ppm U

Ch.4= 823 15.75 ppm Th

U/Th= .31

6.17 Heat generation unit

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI
Weight %	60.83	.82	16.13	6.24	.11	3.26	5.58	3.25	2.88	.29	.04	.20

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	806	-6	69	26	71	320	54	-3	7	20	11	98

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	18	-5	685	-5	16	-3	127	-5	22	62	181

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Diorite
8.	Quartz	Hypidiomorphic granular tending slightly gabbroic
55.	Plagioclase	Abundant euhedral to subhedral laths of largely unaltered plagioclase.
15.	Orthoclase	Scattered dark-brown to light-yellow pleochroic biotite, rarely altered to chlorite, sericite & yellow epidote. Scattered green-brown to light-yellowish-brown pleochroic hornblende altering to blue-green pleochroic hornblende. Interstitial lightly altered orthoclase & quartz. Accessory sphene, scattered minor magnetite, rare apatite, zircon & very rare pyrite.
10.	Hornblende	
12.	Biotite	
.01	Epidote	
.1	Sphene	
.1	Chlorite	
.01	Sericite	
.001	Zircon	
.01	Apatite	
.3	Magnetite	
.001	Pyrite	

Location 0657

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0657

Road cutting

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5242

6266757 m N

33.70313 S latitude

776245 m E

149.9805 E longitude

Illustrations :Photomicrograph

Age/Unit=

Topography: RUGGED DISSECTED UPLAND

dip=76E strike=023

Structure : MASSIVE WITH ELONGATE CLASTS DEFINING BEDDING

Field Geology: Volcanic breccia. Thick massive sequence with quartz-rich, quartzo-feldspathic, angular to sub rounded clasts flattened due to compaction. Matrix consists of coarsened quartzo-feldspathic material with biotite selvages. Minor quartzite phases, variably micaceous.

Field Rockname: SAMPLE BT0657 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES

Whole rock density = 2.69

Dry density = 2.66

Grain density = 2.68

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 25

from 0 to 125, SD= 56

Laboratory susceptibility = 0

Remanence = .70

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 35796

Ch.2= 2682 2.23 X K20

Ch.3= 592 2.86 ppm U

Ch.4= 547 10.50 ppm Th

U/Th= .27

4.07 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.87	.54	11.29	6.02	.04	3.68	.26	.26	2.70	.21	.10	3.00	99.97

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	933	-6	25	16	84	41	34	-3	5	26	10	77

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	18	-20	22	-5	5	-3	141	6	26	66	178

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
60.	Quartz	Biotite quartzite	Porphyroblastic
15.	Biotite	The material has segregated during flow to produce lenticular quartz-rich, clast-like lenses of biotite quartzite, which have micaceous selvages of biotite within which are quartz porphyroblasts, generally strain-free, & ?cordierite or ?garnet porphyroblasts, now pseudomorphed by randomly-oriented biotite, sericite & quartz aggregates.	
1.	Muscovite	Photograph lenticular phases.	
1.	Opaque		
23.	Cordierite		

Location 0658

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0658
Outcrop

SAME LOCATION AS 0659

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5242
6271040 m N 33.66468 S latitude
775765 m E 149.9740 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian BURRAGA GROUP

Topography: DISSECTED RANGES AT CREEK JUNCTION

dip=65NE strike=144

Structure : STEEPLY DIPPING

Field Geology: Slatey greywacke. Massive with spots of ?andalusite. Continuously deposited sequence lacking bedding planes. Interbedded with ignimbrite containing quartz and feldspar phenocrysts set in a fine-grained groundmass.

Field Rockname: SAMPLE BT0658 ANDALUSITE MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE

DENSITIES

Whole rock density = 2.61
Dry density = 2.53
Grain density = 2.74
Porosity = 7.8

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)

Mean of 5 in-situ readings = 25
from 0 to 125 ,SD= 56
Laboratory susceptibility = 113
Remanence = .80
Koenigsberger ratio = .12

GAMMA-RAY SPECTROMETRY

Ch.1= 34337
Ch.2= 2519 2.03 % K2O
Ch.3= 587 2.59 ppm U
Ch.4= 563 10.8% ppm Th
U/Th= .24
3.91 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Mudstone Porphyroblastic
10.	Quartz		Randomly scattered lenticular, ovoid & spherical porphyroblasts of incipient andalusite which have a large proportion of mud inclusions & are only slightly clearer than the matrix. Scattered silt-sized quartz fragments & rare opaque veinlets. The mud is chloritic & slightly sericitic. Interlaminae of coarser, more quartz-rich equivalents have more lenticular, & non-porphyroblastic forms.
30.	Andalusite		
59.	Mud		
1.	Opaque		

Location 0659

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0659

SAME LOCATION AS 0658

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5242

6271272 m N

33.66268 S latitude

775410 m E

149.9701 E longitude

Illustrations :

Age/Unit=

Topography: DISSECTED RANGES AT CREEK JUNCTION

dip=65NE strike=144

Structure : STEEPLY DIPPING

Field Geology: Slatey greywacke. Massive with spots of ?andalusite. Continuously deposited sequence lacking bedding planes. Interbedded with ignimbrite containing quartz and feldspar phenocrysts set in a fine-grained groundmass.

Field Rockname: SAMPLE BT0659 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.72

Dry density = 2.73

Grain density = 2.78

Porosity = 1.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 94

from 0 to 251, SD= 95

Laboratory susceptibility = 314

Remanence = 30.00

Koenigsberger ratio = 1.59

GAMMA-RAY SPECTROMETRY

Ch.1= 37200

Ch.2= 2473 1.85 % K2O

Ch.3= 653 2.63 ppm U

Ch.4= 648 12.50 ppm Th

U/Th= .21

4.18 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.45	.60	14.81	5.87	.08	1.91	3.48	3.05	2.21	.13	.16	1.20	99.96

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	665	-6	63	18	27	30	46	-3	7	9	19	119

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	19	-20	312	-5	15	-3	98	-5	34	69	195

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Ignimbrite	Porphyritic
25.	Plagioclase		Phenocrysts of fragmentary & rounded to embayed volcanic quartz with resorption canals filled with chlorite, as well as plagioclase
6.	Biotite		variably kaolinised & in places altered to secondary feldspar, &
2.	Epidote		biotite phenocryst relicts showing chloritisation & accompanying
.1	Muscovite		liberation of opaque oxides & partial destruction to secondary
45.	Groundmass		chloritised biotite aggregates, some of which have been incorporated
1.	Opaque		in the groundmass. The remaining groundmass consists of micro-
1.	Calcite		crystalline quartz, feldspar, patchy chlorite, rare patchy calcite,
5.	Chlorite		& tiny secondary biotites.

Location 0660

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0660
Outcrop

SAME LOCATION AS 0661

BATHURST

NSW GDDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5232

626944 m N

33.68735 S latitude

741792 m E

149.6084 E longitude

Illustrations :

Age/Unit= Ordovician

TRIANGLE GROUP

Topography: DISSECTED UNDULATING UPLAND

dip=73SW strike=143

Structure : STEEPLY DIPPING

Field Geology: Slate. Massive, cleaved, pyritic, marine, continuously deposited. Lacks bedding planes except where interbedded with coarser, more knotted units.

Field Rockname: SAMPLE BT0660 SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 2.54
Dry density = 2.54
Grain density = 2.65
Porosity = 4.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 163
Remanence = 1.00
Koenigsberger ratio = .10

GAMMA-RAY SPECTROMETRY

Ch.1= 22111
Ch.2= 2087 2.13 % K2O
Ch.3= 252 2.38 ppm U
Ch.4= 134 2.44 ppm Th
U/Th= .98
2.38 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	FABRIC:
		Slate	
		Massive; porphyroblastic	
65.	Quartz	Silt-sized quartz mixed with mud, from which secondary biotite has crystallised. Interlaminae of quartzite & graphite. Some porphyroblastic biotite & andalusite altering to sericite. Diagenetic	
5.	Opaque		
25.	Biotite	opaque ?pyrite euhedra.	
5.	Andalusite		

Location 0661

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0661
Outcrop

SAME LOCATION AS 0660

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5232
6269442 m N 33.68735 S latitude
741792 m E 149.6084 E longitude

Illustrations :

Age/Unit= Ordovician TRIANGLE GROUP
Topography: DISSECTED UNDULATING UPLAND dip=73SW strike=143
Structure : STEEPLY DIPPING
Field Geology: Slate. Massive, cleaved, pyritic, marine, continuously deposited. Lacks bedding planes except where interbedded with coarser more knotted units.

Field Rockname: SAMPLE BT0661 KNOTTED SLATE

PHYSICAL PROPERTIES:

TUFF

DENSITIES
Whole rock density = 2.62
Dry density = 2.61
Grain density = 2.69
Porosity = 3.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 326
Remanence = 2.00
Koenigsberger ratio = .10

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	56.72	.86	15.78	7.28	.12	4.49	5.34	3.26	.29	.18	.03	5.40	99.75
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	122	-6	41	26	116	51	19	4	4	18	12	7	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	30	-20	592	-5	-5	-3	149	-5	27	66	126		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Slate
Est. %	MINERAL FABRIC:	Porphyroblastic; schistose
30.	Andalusite	Large euhedral, randomly-oriented porphyroblasts of twinned andalusite
30.	Quartz	with numerous small inclusions of chlorite, muscovite, & hematite
3.	Muscovite	altering to goethite. Layering in remainder of rock is defined by
15.	Chlorite	planar to slightly lenticular clusters of chlorite which separate
20.	Calcite	thicker wavy layers of quartz, calcite, & goethite after hematite.
.5	Hematite	Calcite tends to occur close to andalusite porphyroblasts. Minor
1.05	Goethite	muscovite in the micaceous layers.

Location 0662

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0662
Outcrop

SAME LOCATION AS 0663 AND NEAR 0664

BATHURST

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5232
6269468 m N 33.68730 S latitude
740976 m E 149.5996 E longitude

Illustrations :

Age/Unit= Ordovician

ROCKLEY VOLCANICS

Topography: RUGGED DISSECTED UPLAND WITH OUTCROP

dip= strike=

Structure: STEEPLY DIPPING INDICATED BY CHLORITE SCHIST SELVEDGES ALONG BASALT

Field Geology: Altered basalt. Porphyritic in acicular hornblende set in a fine-grained groundmass with veinlets and patches of chlorite in places. Also contains pyrite. Some units sparsely porphyritic.

Field Rockname: SAMPLE BT0662 PORPHYRITIC ALTERED BASALT

PHYSICAL PROPERTIES:

ALTERED BASALT

DENSITIES
Whole rock density = 2.89
Dry density = 2.87
Grain density = 2.87
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 1340
from 1005 to 1759, SD= 247
Laboratory susceptibility = 565
Remanence = .40
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 15024
Ch.2= 1707 1.87 X K2O
Ch.3= 100 .62 ppm U
Ch.4= 81 1.54 ppm Th
U/Th= .40
1.07 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Altered basalt	
45.	Hornblende		Porphyritic texture, but phenocrysts are secondary acicular "phenocrysts" of secondary blue-green hornblende set in a microcrystalline altered groundmass of brown-green hornblende, amidst a mosaic of plagioclase & minor quartz. Sprinklings of fine epidote occur where hornblende is altered, & calcite is sparingly present throughout.
5.	Quartz		
5.	Calcite		
5.	Epidote		
40.	Plagioclase		

Location 0663

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0663
Outcrop

SAME LOCATION AS 0662 AND NEAR 0664

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5232
6269468 m N 33.68730 S latitude
740976 m E 149.5996 E longitude

Illustrations :

Age/Unit= ROCKLEY VOLCANICS
Topography: RUGGED DISSECTED UPLAND WITH OUTCROP dip= strike=
Structure : STEEPLY DIPPING
Field Geology: Altered basalt. Porphyritic in acicular hornblende set in a fine-grained
groundmass with veinlets and patches of chlorite in places. Also
contains pyrite. Some units sparsely porphyritic.

Field Rockname: SAMPLE BT0663 SULPHIDE-BEARING SPARSELY PORPHYRITIC BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 2.82
Dry density = 2.83
Grain density = 2.83
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 414
Remanence = .60
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Altered basalt
FABRIC: Relict porphyritic
Est. % MINERAL
49. Hornblende Brown-green pleochroic hornblende pseudomorphs of a ferromagnesian mineral. These are secondarily enlarged by outgrowths of blue green
5. Calcite hornblende, which also occurs as secondary acicular euhedra. Relict
40. Plagioclase ?plagioclase phenocrysts pseudomorphed by calcite. The groundmass
5. Quartz consists of microcrystalline secondary green-brown hornblende with
1. Chlorite slight tendency to cluster in randomly shaped aggregates, & a mosaic
1. Biotite of plagioclase & minor quartz. Minor chlorite fringes occur around
.1 Chalcopyrite the larger hornblendes. Rare clots of biotite aggregates. Rare blebs
of chalcopyrite. Numerous veinlets of secondary plagioclase & quartz

Location 0664

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0664
Outcrop

NEAR 0662 AND 0663
BATHURST

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6269468 m N air-photo:run-no.= 6-5232
740976 m E 33.68730 S latitude
149.5996 E longitude

Illustrations :

Age/Unit= ROCKLEY VOLCANICS

Topography: RUGGED DISSECTED UPLAND WITH OUTCROP dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Altered basalt. Porphyritic in acicular hornblende set in a fine-grained
groundmass with veinlets and patches of chlorite in places. Also
contains pyrite. Some units sparsely porphyritic. Minor asbestiform
veinlets.

Field Rockname: SAMPLE BT0664 ALTERED BASALT

PHYSICAL PROPERTIES:

ALTERED BASALT

DENSITIES
Whole rock density = 2.81
Dry density = 2.76
Grain density = 2.85
Porosity = 3.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 4850
from 22619 to 75398, SD= 18249
Laboratory susceptibility = 52539
Remanence = 1200.00
Koenigsberger ratio = .38

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
		Altered basalt
		FABRIC: Relict porphyritic
20.	Calcite	Relict phenocrysts pseudomorphed by calcite & chlorite, set in an
25.	Chlorite	altered groundmass of fine-grained muscovite, chlorite, & epidote.
40.	Muscovite	Minor magnetite phenocrysts showing slight marginal alteration to
14.	Epidote	hematite. Minor goethite after pyrite.
1.	Magnetite	
.1	Hematite	
.01	Pyrite	
.1	Goethite	

Location 0665

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0665

Road cutting

BATHURST

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
air-photo:run-no.= 4-5020

6300711 m N

33.40803 S latitude

730777 m E

149.4816 E longitude

Illustrations :

Age/Unit= Lower-Middle Carboniferous BATHURST GRANITE

Topography: GENTLY SLOPING ROLLING LOWLAND

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Equigranular, non porphyritic, coarse-grained, mesocratic with scattered hornblende and biotite. Xenoliths of fine-grained dark, micaceous igneous rock. Veins of medium-grained felsic material.

Field Rockname: SAMPLE BT0665 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.75

Mean of 15 in-situ readings = 10461

Ch.1= 56109

Dry density = 2.75

from 6283 to 19452 ,SD= 2985

Ch.2= 3968 3.13 % K20

Grain density = 2.75

Laboratory susceptibility = 50064

Ch.3= 1025 6.39 ppm U

Porosity = 1.7

Remanence = 150.00

Ch.4= 825 15.67 ppm Th

K:enigsberger ratio = .05

U/Th= .41

7.34 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	F ₂ O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	63.29	.78	15.75	5.35	.11	2.57	4.42	3.57	3.30	.29	.02	.20	99.64

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	590	-6	62	17	35	251	56	-3	11	18	20	137

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	20	6	583	-5	15	8	116	8	42	63	170

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite

FABRIC: Hypidiomorphic granular

Est. %	MINERAL	DESCRIPTION
15.	Quartz	Small unconnected globular patches of quartz, with slightly-altered subhedral to euhedral plagioclase & interstitial orthoclase and microcline frequently in large patches which poikilitically enclose smaller minerals. Scattered plates of dark-brown to light-yellow pleochroic biotite rarely altering to chlorite & yellow epidote.
40.	Orthoclase	
35.	Plagioclase	
3.	Hornblende	Scattered green-brown hornblende rarely altering to blue-green hornblende. Accessory scattered magnetite, euhedral sphene, & rare euhedral zoned allanite, smaller zircon & apatite.
1.	Biotite	
.1	Chlorite	
.2	Sphene	
.01	Allanite	
.01	Epidote	
.001	Zircon	
.001	Apatite	
.5	Magnetite	

Location 0666

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0666
Road cutting

SAME LOCATION AS 0667

BATHURST

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5026
6304178 m N 33.38215 S latitude
704310 m E 149.1964 E longitude

Illustrations :

Age/Unit= Upper Ordovician

ANGULLONG TUFF

Topography: GENTLY SLOPING UPLAND WITH OUTCROP

dip= strike=

Structure : MASSIVE

Field Geology: Lithic sandstone and breccia. Andesitic and basaltic-derived; angular to sub-rounded, sand to pebble-sized clasts set in finer but similar material. Minor pyrrhotite and chalcopyrite in clasts and matrix. Deposited close to source.

Field Rockname: SAMPLE BT0666 BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES

Whole rock density = 2.72
Dry density = 2.69
Grain density = 2.69
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 536
from 314 to 691, SD= 110
Laboratory susceptibility = 314
Remanence = 130.00
Koenigsberger ratio = 6.90

GAMMA-RAY SPECTROMETRY

Ch.1= 36903
Ch.2= 3663 3.78 % K2O
Ch.3= 372 2.57 ppm U
Ch.4= 278 5.25 ppm Th
U/Th= .49
3.35 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	51.42	.64	16.81	7.86	.16	3.88	5.17	3.55	5.19	.54	.58	4.00	99.81

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	934	-6	36	27	37	269	32	-3	-3	19	19	67

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	21	-20	671	-5	6	-3	205	-5	17	73	65

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Breccia
FABRIC: Poorly sorted

85.	Rock fragments	Angular to subrounded lithic fragments of andesitic & basaltic origin, variably altered & containing disseminated pyrrhotite & chalcopyrite in places. Minor augite, epidote, & plagioclase mineral fragments of phenocrystic origin. The matrix consists of a fine-grained mosaic of plagioclase, minor epidote, chlorite, pyrrhotite, & chalcopyrite. The rock has abundant labile constituents which indicate deposition close to source. The angularity of clasts is consistent with short transport.
1.	Augite	
2.	Epidote	
2.	Plagioclase	
10.	Matrix	
.7	Pyrrhotite	
.3	Chalcocite	

Location 0667

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0667
Road cutting

SAME LOCATION AS 0666

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5026
6304178 m N 33.38215 S latitude
704310 m E 149.1964 E longitude

Illustrations :

Age/Unit= Upper Ordovician ANGULLONG TUFF

Topography: GENTLY SLOPING UPLAND WITH OUTCROP dip= strike=

Structure : MASSIVE

Field Geology: Lithic sandstone and breccia. Andesitic and basaltic-derived; angular to sub-rounded, sand to pebble-sized clasts set in finer but similar material. Minor pyrrhotite and chalcopyrite in clasts and matrix. Deposited close to source.

Field Rockname: SAMPLE BT0667 BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES
Whole rock density = 2.72
Dry density = 2.69
Grain density = 2.69
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 113
Remanence = 8.00
Koenigsberger ratio = 1.18

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	53.09	.65	17.03	7.63	.14	3.86	4.11	3.76	5.34	.53	.55	3.20	99.89

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1060	-6	42	27	48	214	41	3	-3	18	19	72

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	17	-20	818	-5	-5	-3	202	-5	20	70	67

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Breccia
FABRIC: Poorly sorted
Est. % MINERAL
85. Rock fragments Angular to subrounded lithic fragments of variably altered andesite & basalt, with minor crystal detritus consisting of augite, epidote, & basalt, with minor crystal detritus consisting of augite, epidote, plagioclase, & opaque minerals. The matrix consists of fine
2. Augite & basalt, with minor crystal detritus consisting of augite, epidote, plagioclase, & opaque minerals. The matrix consists of fine
2. Plagioclase plagioclase, chlorite, epidote, calcite, & opaque mineral. Labile
4. Calcite constituents & clast angularity indicate rapid, short-distance
1. Epidote transportation & near-source deposition.
1. Opaque
5. Matrix

Location 0668

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0668

Outcrop

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5122

6318328 m N

33.25553 S latitude

699388 m E

149.1404 E longitude

Illustrations :

Age/Unit=

Topography: LOWLAND WITH OUTCROP

dip= strike=

Structure :

Field Geology: Altered basalt. Slightly serpentinised, picritic; fine-grained with phenocrysts of olivine and an altered ferromagnesian mineral set in a fine-grained black groundmass. Veinlets of ?serpentinite. Sample lost.

Field Rockname: SAMPLE BT0668 PICRITIC BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES

Whole rock density =

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 35273

from 15079 to 53658 ,SD= 9080

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 1791

Ch.2= 90 .00 % K2O

Ch.3= 89 .83 ppm U

Ch.4= 48 .87 ppm Th

U/Th= .95

.66 Heat generation units

Location 0669

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0669
Outcrop

IN RAIL CUTTING ON SOUTHERN EDGE OF MOLONG
BATHURST

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6335500 m N 33.10500 S latitude air-photo:run-no.= 1-5042
674726 m E 148.8725 E longitude

Illustrations :

Age/Unit= Ordovician BOWAN PARK LIMESTONE
Topography: STRIKE RIDGE WITH LAPIES ON UPPER SURFACE dip= strike=
Structure : STEEPLY DIPPING MASSIVE ROCK
Field Geology: Limestone. Grey, massive, fine-grained with recrystallised fabric and numerous veins and veinlets of calcite, forming mesh networks in places.

Field Rockname: SAMPLE BT0669 LIMESTONE

PHYSICAL PROPERTIES:

LIMESTONE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 15 in-situ readings = 0		Ch.1= 10636	
Whole rock density = 2.67		from	to	Ch.2= 646	.46 % K2O
Dry density = 2.65		SD=		Ch.3= 208	1.55 ppm U
Grain density = 2.68		Laboratory susceptibility = 0		Ch.4= 146	2.74 ppm Th
Porosity = .0		Remanence = .40		U/Th= .57	
		Koenigsberger ratio = *****		1.53 Heat generation units	

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
99.9	Calcite	Limestone	Massive
.1	Opaque		Massive cloudy calcite with clearer pseudomorphs of poorly preserved marine invertebrates. Numerous veins & veinlets of clear calcite.

Location 0670

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0670
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5066
6336033 m N 33.10043 S latitude
673242 m E 148.8565 E longitude

Illustrations :

Age/Unit= Middle Silurian PANUARA FORMATION
Topography: STRIKE RIDGE WITH BOULDERY OUTCROPS dip=35E strike=010
Structure : INDETERMINATE AT OUTCROP. MEASUREMENTS NOT ABSOLUTELY CERTAIN
Field Geology: Limestone and limestone breccia. Fossiliferous, recrystallised with numerous stylolites.

Field Rockname: SAMPLE BT0670 LIMESTONE

PHYSICAL PROPERTIES: LIMESTONE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 7 in-situ readings = 0		Ch.1= 9404	
Whole rock density = 2.71		from to ,SD=		Ch.2= 341	.10 % K2O
Dry density = 2.65		Laboratory susceptibility = 0		Ch.3= 203	1.35 ppm U
Grain density = 2.67		Remanence = .40		Ch.4= 156	2.95 ppm Th
Porosity = .0		Koenigsberger ratio = *****		U/Th= .46	
				1.36	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Limestone
99.9	Calcite	FABRIC:	Massive; recrystallised; stylolitic
.1	Opaque		Cloudy micritic calcite, some pseudomorphing invertebrate material including brachiopods, crinoids & corals. Abundant clear sparry calcite patches & veinlets.

Location 0671

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0671
Outcrop

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5066
6334846 m N 33.11148 S latitude
671018 m E 148.8329 E longitude

Illustrations :

Age/Unit= Upper Devonian BLACK ROCK SUB GROUP
Topography: MODERATELY SLOPING UPLAND dip=46W strike=167
Structure : MODERATELY TILTED
Field Geology: Quartzose sandstone with minor quartz-pebble conglomerate and red,
massive siltstone. All units medium to thick bedded with internal
lamination and ripples in sand-grade units.

Field Rockname: SAMPLE BT0671 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES	SANDSTONE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.54		Mean of 8 in-situ readings = 15	Ch.1= 20201
Dry density = 2.31		from 0 to 125 ,SD= 44	Ch.2= 974 .36 % K2O
Grain density = 2.63		Laboratory susceptibility = 12	Ch.3= 507 2.83 ppm U
Porosity = 12.3		Remanence = 3.00	Ch.4= 436 8.32 ppm Th
		Koenigsberger ratio = 4.17	U/Th= .34
			3.25 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
90.	Quartz	Quartzose sandstone	Moderately sorted
2.	Opaque		Subangular to subrounded fine-sand-sized quartz grains with minor cloudy kaolinised feldspar, detrital opaque mineral, & rare smaller tourmaline. The grains have prominent coatings of opaque oxide, & are tightly packed. The matrix consists of secondary silica, mud & opaque material.
.1	Feldspar		
6.	Tourmaline		
.05	Matrix		
	Zircon		

Location 0672

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0672
Road cutting

SAME LOCATION AS 0673

BATHURST

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5066
6327669 m N 33.17618 S latitude
671089 m E 148.8350 E longitude

Illustrations :

Age/Unit= Upper Ordovician MALACHIS HILL FORMATION

Topography: GENTLY UNDULATING LOW IN UPLAND AREA dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Basalt. Plagioclase phenocrysts in fine black groundmass grading upwards to altered vesicular basalt. Vesicles are filled with calcite, epidote and chlorite. This rock is non-magnetic but the non-vesicular rock is strongly magnetic.

Field Rockname: SAMPLE BT0672 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.84
Dry density = 2.83
Grain density = 2.83
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 32997
from 21614 to 63585 .SD= 12353
Laboratory susceptibility = 51207
Remanence = 250.00
Koenigsberger ratio = .08

GAMMA-RAY SPECTROMETRY

Ch.1= 14129
Ch.2= 1131 .93 % K2O
Ch.3= 250 .97 ppm U
Ch.4= 251 4.84 ppm Th
U/Th= .20
1.64 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Basalt	
			Porphyritic; trachytic
12.	Plagioclase		Phenocrysts of plagioclase, lightly altered to epidote & chlorite in places, & rarely glomeroporphyritic, & microphenocrysts of augite
10.	Augite		
75.	Groundmass		set in a groundmass of subparallel plagioclase laths, with
2.	Magnetite		minor epidote, calcite & magnetite. Rare skeletal oxidised opaque
1.	Hematite		phenocrysts with hematite around edges, earthy hematite-goethite centres & infillings of minor plagioclase.

Location 0673

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0673
Road cutting

SAME LOCATION AS 0672
BATHURST

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6327669 m N 33.17618 S latitude air-photo:run-no.= 2-5066
671089 m E 148.8350 E longitude

Illustrations :Photomicrograph

Age/Unit= Upper Ordovician MALACHIS HILL FORMATION

Topography: GENTLY UNDULATING LOW IN UPLAND AREA dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Basalt. Plagioclase phenocrysts in fine black groundmass grading upwards to altered vesicular basalt. Vesicles are filled with calcite, epidote and chlorite. This rock is non-magnetic but the non-vesicular rock is strongly magnetic.

Field Rockname: SAMPLE BT0673 VESICULAR BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.60
Dry density = 2.53
Grain density = 2.68
Porosity = 5.3

MAGNETIC SUSCEPTIBILITY (S.I.*.00/0001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = 9.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Basalt
12.	Plagioclase	FABRIC:	Vesicular; porphyritic
8.	Chlorite		Phenocrysts of lightly argillised plagioclase, & lesser epidote pseudomorphs of ?pyroxene. Scattered vesicles filled with radiating chlorite, single quartz crystals with relict gel fractures, or both together, with minor epidote. The groundmass is weakly trachytic in texture & consists largely of plagioclase laths, minor epidote, & hematite.
5.	Quartz		
2.	Epidote		
3.	Hematite		
70.	Groundmass		Photograph dehydration fractures in quartz vesicles.

Location 0674

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0674
Mag traverse

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5042
6338886 m N 33.07507 S latitude
670939 m E 148.8313 E longitude

Illustrations :

Age/Unit=
Topography: GENTLY SLOPING ROLLING UPLAND dip=70W strike=175
Structure : STEEPLY DIPPING
Field Geology: Interbedded quartzose sandstone, limestone and andesite, all of which
scarcely crop out. Magnetic traverse recorded. Not sampled.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence .00
Koenigsberger ratio =

GAMMA-RA. SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0675

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0675
Road cutting

BATHURST NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5042
6343290 m N 33.03483 S latitude
674314 m E 148.8666 E longitude

Illustrations :

Age/Unit= Lower Ordovician CARGO ANDESITE
Topography: MODERATELY SLOPING UPLAND WITH OUTCROP dip= strike=
Structure :
Field Geology: Basalt. Phenocrysts of plagioclase and a ferromagnesian mineral set in
a fine-grained groundmass containing specks of a sulphide mineral.

Field Rockname: SAMPLE BT0675 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 2.92
Dry density = 2.89
Grain density = 2.89
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 13 in-situ readings = 35195
from 14576 to 48380 ,SD= 10388
Laboratory susceptibility = 26276
Remanence = 330.00
Koenigsberger ratio = .21

GAMMA-RAY SPECTROMETRY
Ch.1= 21042
Ch.2= 1786 1.61 % K2O
Ch.3= 318 1.66 ppm U
Ch.4= 283 5.42 ppm Th
U/Th= .31
2.32 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Basalt
67.	Plagioclase	Subophitic; sparingly vesicular; porphyritic	
20.	Augite	Scattered large phenocrysts of euhedral sericitised plagioclase with weak partial pseudomorphs of minor kaersutite aggregates, as well as large chloritised ?orthopyroxene phenocrysts. Abundant micro-	
10.	Chlorite	phenocrysts of unaltered augite, chloritised ?orthopyroxene and laths of sericitised plagioclase. The medium-grained groundmass consists of a network of randomly-oriented plagioclase laths amidst smaller	
.1	Kaersutite	augite, chloritised ?orthopyroxene, scattered magnetite, sparse	
3.	Magnetite	large skeletal pyrite, sparse tiny pyrite crystals and interstitial material pseudomorphed by light-green chlorite. Sparingly vesicular	
.1	Pyrite	with chlorite and calcite fillings.	
.2	Calcite		

Location 0676

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0676

SAME LOCATION AS 0677 AND 0678

Road cutting

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5128

6380428 m N

32.69870 S latitude

682361 m E

148.9454 E longitude

Illustrations :1 Colour slide

Age/Unit= Ordovician

Topography: GENTLY SLOPING FLATS AND UPLAND

dip= strike=

Structure :

Field Geology: Altered basalt and basaltic breccia. Submarine. Deuterically-altered assemblages of chlorite, epidote, calcite and plagioclase. Various veins filled with these minerals. Minor brecciation in altered red glassy layered phases.

Field Rockname: SAMPLE BT0676 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES

Whole rock density = 2.86

Dry density = 2.81

Grain density = 2.82

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 30265

from 628 to 76152 ,SD= 23898

Laboratory susceptibility = 27922

Remanence = 80.00

Koenigsberger ratio = .05

GAMMA-RAY SPECTROMETRY

Ch.1= 5283

Ch.2= 435 .34 % K2O

Ch.3= 117 .86 ppm U

Ch.4= 83 1.56 ppm Th

U/Th= .55

.88 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
37.	Plagioclase	Basalt	Intergranular; sparingly vesicular; non porphyritic
20.	Augite		Randomly oriented, radiating aggregates of plagioclase laths amidst stubby to acicular aggregates of pink, titaniferous augite. The
40.	Chlorite		groundmass consists mainly of chloritised interstitial material and
2.	Calcite		small magnetite subhedra with variably ragged edges. Rare veinlets and
1.	Magnetite		vesicles of calcite.

Location 0677

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0677 SAME LOCATION AS 0676 AND 0678
Road cutting DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-ro.= 7-5128
6380428 m N 32.69870 S latitude
682361 m E 148.9454 E longitude

Illustrations :1 Colour slide

Age/Unit= Ordovician
Topography: GENTLY SLOPING FLATS AND UPLAND dip= strike=
Structure :
Field Geology: Altered basalt and basaltic breccia. Submarine. Deuterically-altered assemblages of chlorite, epidote, calcite and plagioclase. Various veins filled with these minerals. Minor brecciation in altered red glassy layered phases.
Field Rockname: SAMPLE DB0677 RED ALTERED BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 2.44
Dry density = 2.70
Grain density = 2.85
Porosity = 5.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 1 in-situ readings = 376
from to ,SD=
Laboratory susceptibility = 364
Remanence = 3.00
Koenigsberger ratio = .14

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Description
10.	Plagioclase	Basalt Altered	Ragged microphenocrysts of plagioclase & epidote pseudomorphs of a ferromagnesian mineral, set in a non-resolvable, fine-grained basaltic groundmass altered to clay & stained red brown. Numerous plagioclase veinlets, some of which are pygmatic. The rock is a fine-grained phase of an altered basalt.
3.	Epidote		
76.	Groundmass		
10.	Vesicles		
1.	Opaque		

Location 0678

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0678
Road cutting

SAME LOCATION AS 0676 AND 0677

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5128

6380429 m N

32.69870 S latitude

682352 m E

148.9453 E longitude

Illustrations :1 Colour slide

Age/Unit= Ordovician

Topography: GENTLY SLOPING FLATS AND UPLAND

dip= strike=

Structure :

Field Geology: Altered basalt and basaltic breccia. Submarine. Deuterically-altered assemblages of chlorite, epidote, calcite and plagioclase. Various veins filled with these minerals. Minor brecciation in altered red glassy, layered phases.

Field Rockname: SAMPLE DB0678 BASALTIC BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES
Whole rock density = 2.83
Dry density = 2.85
Grain density = 2.99
Porosity = 4.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 1 in-situ readings = 2387
from to ,SD=
Laboratory susceptibility = 2463
Remanence = 20.00
Koenigsberger ratio = .14

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Basaltic breccia
FABRIC: Brecciated; clasts have subophitic texture
Est. % MINERAL Rock fragments 95. Matrix 5.
Tightly-packed, angular clasts of slightly altered, porphyritic basalt, variably iron-charged, with epidotised ferromagnesian phenocrysts & albitised groundmass, & phenocrystic plagioclase. The groundmass contains minor kaersutite. The matrix between the clasts consists of opaque iron oxide & minor calcite.

Location 0679

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0679

Road cutting

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 5-5172

6408867 m N

32.44063 S latitude

692315 m E

149.0457 E longitude

Illustrations :

Age/Unit: Carboniferous

WUULUMAN GRANITE

Topography: LOW RISE IN GENTLY UNDULATING REGION

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Inequigranular with phenocrysts of pink orthoclase up to 5 cm long set in a medium to coarse-grained groundmass with abundant clots of altered hornblende and lesser biotite. Numerous dark fine-grained dioritic xenoliths.

Field Rockname: SAMPLE DS0679 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Whole rock density = 2.68

Dry density = 2.65

Grain density = 2.66

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 14870

from 9927 to 21362, SD= 2917

Laboratory susceptibility = 20998

Remanence = 200.00

Koenigsberger ratio = .16

GAMMA-RAY SPECTROMETRY

Ch.1= 42129

Ch.2= 3795 3.47 % K20

Ch.3= 649 3.41 ppm U

Ch.4= 576 11.02 ppm Th

U/Th= .31

4.79 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.39	.58	15.85	3.15	.05	1.52	3.08	4.75	3.44	.26	.02	.20	99.29

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1121	-6	68	8	29	138	55	-3	4	17	13	90

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-5	1568	-5	8	-3	58	7	10	43	207

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Adamellite	Hypidiomorphic granular
42.	Orthoclase		Scattered globules of slightly strained quartz amidst euhedral, lightly sericitised to unaltered plagioclase, and larger less frequent subhedral phenocrysts of orthoclase. Scattered brown to light yellow pleochroic biotite and rare chlorite. Scattered green to light brown pleochroic hornblende, often in clusters with scattered euhedral sphene. Abundant small apatite euhedra, rare zircon, allanite and calcite. Scattered minor magnetite generally near ferromagnesian minerals. Interstitial quartz and orthoclase.
30.	Plagioclase		
3.	Hornblende		
4.	Biotite		
.1	Chlorite		
.5	Sphene		
.1	Apatite		
.001	Zircon		
.4	Magnetite		
.001	Calcite		
.001	Allanite		

Location 0680

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0680

GAP IN PHOTOGRAPHY

Road cutting

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no. =

6414551 m N

32.38750 S latitude

702947 m E

149.1575 E longitude

Illustrations :

Age/Unit= Lower Devonian

LANA FORMATION

Topography: GENTLY UNDULATING WITH LITTLE OUTCROP

dip=90 strike=168

Structure : STEEPLY CLEAVED

Field Geology: Greywacke and siltstone. Greywacke is fine to medium grained. Cleaved due to clay-mica in matrix. Coarser units have no separation of grains and matrix into separate layers indicating rapid deposition. Continuous deposition indicated by paucity of bedding planes.

Field Rockname: SAMPLE DB0680 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES

Whole rock density = 2.53

Dry density = 2.50

Grain density = 2.70

Porosity = 7.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 41

from 0 to 125 ,SD= 62

Laboratory susceptibility = 75

Remanence = 10.00

Koenigsberger ratio = 2.22

GAMMA-RAY SPECTROMETRY

Ch.1= 52857

Ch.2= 4641 4.02 % K2O

Ch.3= 879 2.98 ppm U

Ch.4= 919 17.78 ppm Th

U/Th= .17

5.80 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL FABRIC:
35. Quartz
60. Sericite
2. Biotite
3. Opaque

NAME: Siltstone
FABRIC: Massive; microporphyroblastic; poorly sorted
Randomly scattered fine sand- to silt-sized quartz grains amidst a mass of optically continuous sericite mixed with finer quartz. Randomly-oriented biotite microporphyroblasts scattered throughout. Similarly distributed opaque mineral pseudomorphs after a sulphide mineral. Rare laminae of chemical quartzite coarsened to monominerallic bands one crystal thick. Minor similar quartz veinlets.

Location 0681

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0681 1.6MILES EAST OF GOOLMA ALONG MUDGEER ROAD AT PROMINENT ROAD CUTTING
Outcrop DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6415103 m N 32.38000 S latitude
716372 m E 149.3000 E longitude

Illustrations :Photomicrograph

Age/Unit= Middle-Upper Silurian CHE'SLEIGH FORMATION
Topography: GENTLY UNDULATING WITH LOW STRIKE RIDGES dip=82W strike=146
Structure : STEEPLY DIPPING
Field Geology: Ignimbrite. Porphyritic in pink feldspar and quartz set in a fine-grained groundmass. Cleavage parallel to flow banding in groundmass. Well bedded, medium bedded, but massive within each unit. Stratiform lenses of white quartz. Small kink bands in places.
Field Rockname: SAMPLE DB0681 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.50 Ch.1= 40942
Dry density = 2.48 Mean of 10 in-situ readings = 169 Ch.2= 3589 3.16 % K2O
Grain density = 2.76 from 0 to 502 ,SD= 167 Ch.3= 673 3.18 ppm U
Porosity = 10.3 Laboratory susceptibility = 314 Ch.4= 628 12.06 ppm Th
Remanence = 2.00 U/Th= .26
Koenigsberger ratio = .11 4.75 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.24	.97	9.81	5.75	.08	1.54	.30	.91	1.63	.19	.09	3.40	99.91
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	391	-6	56	15	69	51	58	-3	8	19	21	82	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	21	-20	41	-5	12	-3	129	7	.29	78	510		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
Est. % MINERAL FABRIC: Massive; unsorted; porphyroblastic with flow foliation
25. Quartz Porphyroblasts of ovoid tending spherical quartz & ovoid to euhedral
5. Plagioclase plagioclase, variably sized & not separated into layers of different
10. Rock fragments grain size. The planar to crinkly layered groundmass foliation curves
3. Opaque around porphyroblasts & clasts & does not pass through them, nor
52. Groundmass does it destroy delicate basalt microstructures in some lithic clasts.
.1 Biotite The groundmass consists of fine crystal fragments, opaque dust, sericite, green biotite, & chlorite. Rare biotite microporphyroblasts, numerous opaques, some pseudomorphing original ferromagnesian minerals. Clasts are of basaltic & intraformational origin.
Photograph of basalt clast.

Location 0682

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0682
Rail cutting

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5080
6387029 m N 32.62492 S latitude
754563 m E 149.7132 E longitude

Illustrations :

Age/Unit= Middle Devonian BOOGLEDIE FORMATION

Topography: RUGGED DISSECTED UPLAND dip=75W strike=125

Structure : CHAOTICALLY FOLDED AND CLEAVED WITH STEEP TO MODERATE DIP

Field Geology: Slate, lithic sandstone and white quartz. The slate has incipient cleavage, minor kink bands, is massive and occupies about 75% of the section. The sandstone has small shale clasts and is poorly sorted. Minor stratiform white quartz lenses. Chaotic slump folding.

Field Rockname: SAMPLE DB0682 SLATEY MUDSTONE

PHYSICAL PROPERTIES: SHALE

DENSITIES
Whole rock density = 2.69
Dry density = 2.65
Grain density = 2.72
Porosity = 7.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = 1.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 43824
Ch.2= 3272 2.59 % K2O
Ch.3= 803 3.93 ppm U
Ch.4= 737 14.14 ppm Th
U/Th= .28
5.44 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Slatey mudstone
35.	Quartz	FABRIC:	Massive; porphyroblastic
10.	Opaque		Ovoid to rounded, unstrained porphyroblasts of quartz & sericitised feldspar, partly ferruginised by weathering, & set in a mass of sericite which forms thin wavy foliae around porphyroblasts. In addition, there are patches of sericite surrounding clots of opaque ?graphite. These may have once been andalusite.
35.	Feldspar		
20.	Sericite		

Locarion 0683

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0683

Road cutting

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 6-5080

6387582 m N

32.61918 S latitude

757827 m E

149.7478 E longitude

Illustrations :

Age/Unit= Carboniferous

HAVILAH GRANITE

Topography: GENTLY UNDULATING WITH TORS.ELEVATED AREA

dip= strike=

Structure : PLUTON

Field Geology: Adameillite. Inequigranular, porphyritic in orthoclase. Coarse-grained. Mesocratic with scattered biotite and clusters of small biotite-rich xenoliths.

Field Rockname: SAMPLE DB0683 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
Whole rock density = 2.65
Dry density = 2.60
Grain density = 2.61
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 1072
from 188 to 5403 ,SD= 1376
Laboratory susceptibility = 5516
Remanence = 30.00
Koenigsberger ratio = .09

GAMMA-RAY SPECTROMETRY

Ch.1= 62201
Ch.2= 4354 3.43 % K2O
Ch.3= 1048 4.25 ppm U
Ch.4= 1037 19.99 ppm Th
U/Th= .21
6.82 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.20	.41	13.98	2.32	.05	.79	1.86	3.25	4.39	.13	.07	.20	99.66

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	650	-6	69	6	15	114	51	-3	10	6	23	161

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	5	305	-5	19	4	38	-5	33	37	177

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Adameillite	
25.	Quartz	Hypidiomorphic granular	
35.	Orthoclase		Large irregular patches of quartz amidst clustered aggregates of plagioclase & orthoclase, including microcline, phenocrysts. Abundant
30.	Plagioclase		biotite with green to light brown pleochroism, with numerous euhedral
5.	Biotite		inclusions of apatite & lesser zircon, surrounded by pleochroic
3.	Epidote		haloes. Minor opaque oxide. Rare sphene & allanite. Very minor
.1	Apatite		chloritisation of some biotites & partial pseudomorphism of some
.2	Chlorite		altered plagioclases by muscovite. Microxenolith of biotite-epidote
.5	Muscovite		rock.
1.	Opaque		
.05	Zircon		
.01	Allanite		
.05	Sphene		

Location 0684

* LACHLAN FOLIO BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0684

Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5078

6382444 m N

32.66465 S latitude

761346 m E

149.7867 E longitude

Illustrations :Photomicrograph

Age/Unit= Middle Silurian

DUNGEEVE VOLCANICS

Topography: RUGGED UPLAND WITH STRIKE RIDGES

dip=77W strike=140

Structure : STEEPLY DIPPING

Field Geology: Rhyodacite. Phenocrysts of quartz and plagioclase set in a fine-grained, quartzo-feldspathic groundmass. Some flow banding evident. Patchy occurrence of limonite pseudomorphs of a sulphide mineral.

Field Rockname: SAMPLE DB0684 RHYODACITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.61

Dry density = 2.64

Grain density = 2.64

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 0

from to SD=

Laboratory susceptibility = 201

Remanence = 15.00

Koenigsberger ratio = 1.24

GAMMA-RAY SPECTROMETRY

Ch.1= 33237

Ch.2= 2411 2.07 % K2O

Ch.3= 485 2.20 ppm U

Ch.4= 460 8.84 ppm Th

U/Th= .25

3.34 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.09	.41	14.59	4.00	.04	2.76	.15	4.38	3.08	.11	.08	2.20	99.89

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	669	-6	54	16	82	20	32	-3	7	22	7	98

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	-20	95	-5	8	-3	72	8	24	70	129

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
3.	Quartz	Rhyodacite	Porphyritic; microstylolitic
15.	Plagioclase	Phenocrysts of bipyramidal volcanic quartz sparingly resorbed,	
2.	Ferromagnesian	slightly kaolinised euhedral plagioclase, & a ferromagnesian mineral	
72.	Groundmass	altered to limonite, goethite, & clusters of secondary biotite. The	
1.	Goethite	groundmass is ultrafine quartz & feldspar crossed by numerous micro-	
2.	Limonite	stylolites lined by opaque limonite & sericite. Some cut phenocrysts.	
4.	Biotite	Photograph stylolites.	
1.	Sericite		

Location 0685

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0685
Outcrop

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5078
6384394 m N 32.64677 S latitude
762646 m E 149.8000 E longitude

Illustrations :

Age/Unit= Lower-Middle Silurian LUE BEDS
Topography: STRIKE RIDGE IN LOWLAND dip=44W strike=021
Structure : MODERATELY DIPPING
Field Geology: Lithic sandstone, greywacke and siltstone. Sand-grade rocks are fine-grained and contain abundant labile basaltic rock and mineral fragments set in a clayey matrix. Poorly sorted. Rapidly deposited close to source.

Field Rockname: SAMPLE DB0685 LITHIC SANDSTONE

PHYSICAL PROPERTIES: BASALT

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.90	Mean of 10 in-situ readings = 389	Ch.1= 21169
Dry density = 2.89	from 251 to 628 ,SD= 172	Ch.2= 2146 2.31 % K2O
Grain density = 3.50	Laboratory susceptibility = 502	Ch.3= 140 .66 ppm U
Porosity = 1.6	Remanence = 1.00	Ch.4= 131 2.52 ppm Th
	Koenigsberger ratio = .03	U/Th= .26
		1.37 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	52.75	.70	13.99	9.62	.16	8.03	6.21	4.33	2.11	.36	.06	1.40	99.73

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	553	-6	21	41	451	84	20	-3	-3	99	6	41

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	34	-20	273	-5	-5	-3	250	-5	18	72	56

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Lithic sandstone
FABRIC:	Poorly sorted; massive
Est. % MINERAL	
80. Rock fragments	Subangular to subrounded, fine-grained basaltic clasts, with coarse
5. Oxyhornblende	augite, augite altering to oxyhornblende, & oxyhornblende crystal
10. Augite	detritus, tightly packed. Some grains have thin opaque coatings &
4. Opaque	are separated by rare thin clay matrix. Detrital opaque mineral &
1. Matrix	opaque pseudomorphs. of iron-charged rock & mineral fragments.

Location 0686

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0686

Outcrop

DUBBO

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1

6379491 m N

air-photo:run-no.= 7-5154

772409 m E

32.68858 S latitude

149.9054 E longitude

Illustrations :

Age/Unit= Carboniferous?

RYLESTONE TUFF

Topography: GENTLY SLOPING, UNDULATING; EXFOLIATED OUTCROP dip= strike=

Structure : DOME?

Field Geology: Rhyolite. Large phenocrysts of volcanic quartz and smaller feldspar and biotite set in a fine, glassy to brecciated groundmass with sparse oxidised sulphide pseudomorphs which also line some fractures.

Field Rockname: SAMPLE DB0686 RHYOLITE

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES
Whole rock density = 2.27
Dry density = 2.17
Grain density = 2.59
Porosity = 16.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 7 in-situ readings = 188
from 125 to 251, SD= 62
Laboratory susceptibility = 75
Remanence = 500.00
Koenigsberger ratio = 111.11

GAMMA-RAY SPECTROMETRY
Ch.1= 49472
Ch.2= 4162 3.67 % K2O
Ch.3= 739 2.24 ppm U
Ch.4= 795 15.41 ppm Th
U/Th= .15
4.85 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.00	0.20	12.50	1.00	0.03	0.11	0.16	1.23	6.36	0.04	0.04	2.20	99.87

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	654	-6	73	4	-1	-5	36	5	10	14	21	183

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	3	-20	96	5	24	-3	9	7	24	38	151

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Rhyolite	
		Vitroclastic	
2.	Quartz		Phenocrysts of angular to rounded & resorbed volcanic quartz, ragged
6.	Feldspar		altered feldspar pseudomorphed by a microcrystalline aggregate of
7.	Opaque		feldspar, as well as epidote in places, & minor muscovite pseudomorphs
85.	Groundmass		of biotite. The groundmass consists of shards & a fine-grained
.1	Muscovite		groundmass of slightly devitrified to glassy quartz-feldspathic
			material, which has numerous spherulites. There is patchy alteration
			to clay in the groundmass & this contributes to much of the opaque
			material. The remaining opaque is goethite, limonite, & earthy
			hematite, all weathering products, after a sulphide mineral.

Location 0687

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0687
Outcrop

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5154
6378855 m N 32.69423 S latitude
772720 m E 149.9089 E longitude

Illustrations :Photomicrograph

Age/Unit= Carboniferous? RYLESTONE TUFF
Topography: STRIKE RIDGE dip=85E strike=005
Structure : STEEPLY DIPPING
Field Geology: Graphitic-quartzite tuffisite. Fine-grained, layered, appears to lie
within the rhyolite body of 0686. Contains disseminated oxidised
sulphides.

Field Rockname: SAMPLE DB0687 GRAPHITIC QUARTZITE TUFFISITE

PHYSICAL PROPERTIES: TUFF

DENSITIES
Whole rock density = 2.65
Dry density = 2.53
Grain density = 2.64
Porosity = 4.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 31
from 0 to 125 ,SD= 58
Laboratory s.sceptibility = 0
Remanence = 4.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 33011
Ch.2= 2025 1.35 % K2O
Ch.3= 757 6.71 ppm U
Ch.4= 440 8.09 ppm Th
U/Th= .83
5.85 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Graphitic quartzite
	FABRIC:	Layered; microporphroblastic
Est. %	MINERAL	
90.	Quartz	Layering defined by differences in grain size of quartz controlled by
5.	Graphite	amount of graphite, such that quartz is finest where graphite is most
1.	Opaque	abundant. In quartz rich layers, some quartzes have coalesced to form
4.	Muscovite	microporphroblasts. Small porphyroblasts of muscovite in places. It
		is secondary & frequently in small radiating clusters. Minor opaque
		oxidised sulphide euhedra, & minor development of rootless
		quartz veinlets, generally free of impurities.
		Photograph: inhibition dependent coarsening.

Location 0688

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0688

Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5154

6374973 m N

32.72832 S latitude

776282 m E

149.9480 E longitude

Illustrations :

Age/Unit: Mesozoic

Topography: RUBBLY OUTCROP SANDWICHED IN STEEP MESA

dip= strike=

Structure : FLOW OR SILL

Field Geology: Dolerite. Slightly porphyritic in altered olivine. Conspicuous
plagioclase laths.

Field Rockname: SAMPLE DB0688 DOLERITE

PHYSICAL PROPERTIES:

DOLERITE

DENSITIES

Whole rock density = 2.85

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 11393

from 5906 to 19100, SD= 4193

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 12182

Ch.2= 927 .83 % K2O

Ch.3= 174 1.05 ppm U

Ch.4= 143 2.72 ppm Th

U/Th= 39

1.30 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Dolerite	
		Sub-ophitic	
56.	Plagioclase	Slightly phenocrystic in olivine altering to bowlingite. Abundant pink	
25.	Augite	titaniferous augite surrounded by partially interlocking network of	
15.	Olivine	randomly-oriented plagioclase laths. Scattered magnetite subhedra,	
2.	Magnetite	rare ilmenite blades, & small scattered pyrrhotite anhedra.	
1.	Ilmenite		
1.	Pyrrhotite		

Location 0689

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0689
Road cutting

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5166
6362967 m N 32.83985 S latitude
762566 m E 149.8052 E longitude

Illustrations :

Age/Unit= Upper Ordovician SOFALA VOLCANICS
Topography: STEEP STRIKE RIDGE dip= strike=
Structure :

Field Geology: Ignimbrite. Phenocrysts of volcanic quartz, large zoned plagioclase and smaller biotites set in a slightly coarsened, fine to medium-grained groundmass with traces of an oxidised sulphide mineral. Fine-grained granitic xenoliths and slight layering in places. Thin section missing.

Field Rockname: SAMPLE DB0689 IGNIMBRITE

PHYSICAL PROPERTIES:

	IGNIMBRITE		
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density =		Mean of 15 in-situ readings = 351	Ch.1= 69346
Dry density = 2.62		from 125 to 879 SD= 205	Ch.2= 5170 4.43 % K2O
Grain density = 2.66		Laboratory susceptibility = 163	Ch.3= 939 1.12 ppm U
Porosity = 1.6		Remanence = 1.00	Ch.4= 1157 22.60 ppm Th
		Koenigsberger ratio = .10	U/Th= .05
			5.55 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.68	0.13	14.75	2.43	0.03	0.88	0.32	4.19	2.79	0.03	0.05	1.40	99.68
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	603	-6	71	2	2	12	49	7	9	17	29	85	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	21	120	-5	41	-3	7	-5	59	55	242		

Location 0690

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0690
Outcrop

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5166
6357856 m N 32.88590 S latitude
762562 m E 149.8066 E longitude

Illustrations :

Age/Unit= Carboniferous? AARONS PASS GRANITE
Topography: GENTLY SLOPING WITH EXFOLIATED OUTCROPS dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Inequigranular with large phenocrysts of orthoclase set in a medium to coarse-grained groundmass of large quartzes, moderately sized feldspars and smaller biotite often in aggregates and showing slight green alteration.
Field Rockname: SAMPLE DB0690 ADAMELLITE

PHYSICAL PROPERTIES: ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.58 Mean of 8 in-situ readings = 0 Ch.1= 54383
Dry density = 2.57 from to SD= Ch.2= 4595 3.94 % K2O
Grain density = 2.63 Laboratory susceptibility = 138 Ch.3= 814 .43 ppm U
Porosity = 2.0 Remanence = .60 Ch.4= 1049 20.53 ppm Th
Koenigsberger ratio = .07 U/Th= .02
4.66 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.90	.31	14.82	1.68	.04	.52	2.07	3.52	4.29	.13	.06	2.10	99.45

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	497	-6	57	6	6	135	41	3	8	6	29	196

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	-5	324	-5	24	-3	28	7	15	37	140

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
Est. % MINERAL FABRIC: Porphyritic; hypidiomorphic granular
24. Quartz Stringers of globular interconnected quartz patches between clusters of euhedral plagioclases, which have minor core alteration to calcite
35. Orthoclase & muscovite. Large patchy ragged anhedral orthoclase, lightly
25. Plagioclase kaolinised, & with small euhedral plagioclase inclusions. Minor
4. Biotite green-brown biotite, slightly bleached & lightly altered to
.1 Apatite secondary green muscovite. Numerous apatite inclusions in biotite.
1. Muscovite
1. Calcite
.1 Opaque Rare opaque mineral.

Location 0691

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0691
Road cutting

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-6042
6348129 m N 32.97357 S latitude
762424 m E 149.8079 E longitude

Illustrations :

Age/Unit= Upper Ordovician SOFALA VOLCANICS
Topography: DISSECTED UPLAND WITH CONVEX SLOPES dip= strike=
Structure : CHAOTIC FLOW FOLDING
Field Geology: Sericite quartzite. Fine-grained, banded with thin chalcidonic lenses
defining chaotic flow folds. Abundant casts of pyrite cubes
pseudomorphed by limonite.

Field Rockname: SAMPLE DB0691 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES: QUARTZITE

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.61	Mean of 13 in-situ readings =	169	Ch.1=	15990
Dry density =	2.54	from 62 to 376 ,SD=	97	Ch.2=	1499 1.43 % K2O
Grain density =	2.84	Laboratory susceptibility =	0	Ch.3=	248 2.25 ppm U
Porosity =	7.2	Remanence =	1.00	Ch.4=	140 2.57 ppm Th
		Koenigsberger ratio =	*****	U/Th=	.88
					2.16 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
90.	Quartz	FABRIC: Sericite quartzite
5.	Sericite	Microcrystalline, with numerous veinlets; stylonitic
5.	Opaque	Microcrystalline chalcidonic quartz with sericite patches & impurities. Crossed by numerous patches & veinlets of opaque after sulphide. Rare globular to spherical bodies of clear, coarser, former chalcidonic quartz, possibly pseudomorphing radiolaria. The other possibility is that they are incipient porphyroblasts. Minor developments of microstylolites lined by opaque material.

Location 0692

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0692
Road cutting

WEST EDGE OF SOFALA

BATHURST

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5022

6336511 m N

33.08095 S latitude

750919 m E

149.6881 E longitude

Illustrations :

Age/Unit= Middle-Upper Ordovician

SOFALA VOLCANICS

Topography: RUGGED DEEPLY DISSECTED UPLAND

dip= strike=

Structure : CHAOTIC FLOW FOLDS AND MASSIVE UNITS OF IGNEOUS LAYERING

Field Geology: Arkose. Fine-grained with formerly phenocrystic plagioclase set in a fine-grained matrix. Planar bedded and mesoscopic-scale folding. Abundant limonite after a sulphide mineral.

Field Rockname: SAMPLE BT0692 ARKOSE

PHYSICAL PROPERTIES:

ARKOSE

DENSITIES
Whole rock density = 2.62
Dry density = 2.61
Grain density = 2.64
Porosity = 1.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of & in-situ readings = 83
from 0 to 251, SD= 112
Laboratory susceptibility = 226
Remanence = .20
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 20060
Ch.2= 2271 2.48 % K2O
Ch.3= 148 1.28 ppm U
Ch.4= 89 1.64 ppm Th
U/Th= .78
1.64 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Arkose
FABRIC: Poorly sorted

Est. %	MINERAL	
94.	Plagioclase	Subangular to subrounded grains of turbid albitised plagioclase, slightly sericitised & with liberation of trace calcite, together with similarly-shaped andesite clasts, & minor smaller opaque mineral. The clasts are tightly packed & bound in a thin matrix of feldspathic dust & chloritic mud. Minor veinlets of opaque material. The rock appears to have originated as a waterlain andesitic ash-fall tuff, the water having effected separation of crystals from ash.
1.	Opaque	
4.	Rock fragments	
1.	Matrix	

Location 0693

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0693

Road cutting

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDM=1

air-photo:run-no.= 6-5088

6388035 m N

32.62075 S latitude

732341 m E

149.4763 E longitude

Illustrations :

Age/Unit= Lower Devonian

CRUDINE GROUP

Topography: STRIKE RIDGES ON UNDULATING TERRAIN

dip=80W strike=155

Structure: STEEPLY DIPPING CLEAVAGE WITH SMALL SCALE FOLDS IN BEDDING

Field Geology: Slate and siltstone. Interbedded, planar thin beds with laminae of siltstone defining bedding in the massive, cleaved slate. Intraformational folding present.

Field Rockname: SAMPLE DB0693 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES

Whole rock density = 2.61

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I. x .000001)

Mean of 8 in-situ readings = 31

from 0 to 125 .SD= 47

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 52263

Ch.2= 4144 3.39 % K2O

Ch.3= 897 2.89 ppm U

Ch.4= 951 18.42 ppm Th

U/Th= .16

5.70 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Slate	Massive; microporphyroblastic
2.	Muscovite		The mud is a mixture of sericitic & chloritic clay clouded by small limonitised biotites & opaque material. Scattered detrital muscovite
73.	Mud		& small porphyroblasts of cherty silica aggregates.
5.	Opaque		

Location 0694

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0694
Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5088
6389584 m N 32.60798 S latitude
726602 m E 149.4148 E longitude

Illustrations :

Age/Unit= Lower-Middle Devonian CUNNINGHAM FORMATION
Topography: STEEPLY DISSECTED STRIKE RIDGES dip=84E strike=160
Structure : CLEAVED VERY STEEPLY
Field Geology: Greywacke and slate. Massive, thick bedded. Volcaniclastic detritus in
greywacke together with intraformational shale and silt clasts randomly
distributed through it.

Field Rockname: SAMPLE DB0694 SLATEY GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.54	Mean of 9 in-situ readings = 0	Ch.1= 38524
Dry density = 2.51	from to ,SD=	Ch.2= 2789 2.12 % K2O
Grain density = 2.63	Laboratory susceptibility = 138	Ch.3= 715 2.78 ppm U
Porosity = 4.6	Remanence = .70	Ch.4= 718 13.86 ppm Th
	Koenigsberger ratio = .08	U/Th= .20
		4.56 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Greywacke	
40.	Quartz		Massive; poorly sorted; tightly compacted; slightly cleaved
15.	Rock fragments		Subangular to subrounded fragments of sand-sized quartz grains, lithic
2.	Feldspar		fine-grained volcanic rock fragments, & augen-shaped porphyroblasts
2.	Opaque		of quartz. The clasts are all variably flattened. Lenses of mudstone
1.	Muscovite		chaotically interfolded with the greywacke. The mud is fine sericitic
40.	Matrix		& chloritic material. Minor altered feldspar & opaque mineral.
			Some lithic fragments are completely chloritised.

Location 0695

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0695
Dozer scrape

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5090
6389413 m N 52.61007 S latitude
723912 m E 149.3862 E longitude

Illustrations :

Age/Unit= Lower-Middle Devonian CUNNINGHAM FORMATION
Topography: DISSECTED STRIKE RIDGES dip=74E strike=173
Structure : CLEAVED STEEPLY
Field Geology: Slate. Graphitic, massive, cleaved, fresh, dark grey to black.

Field Rockname: SAMPLE DB0695 GRAPHITIC SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.57	Mean of 10 in-situ readings = 0	Ch.1= 39522
Dry density = 2.52	from to ,SD=	Ch.2= 2998 2.45 % K2O
Grain density = 2.73	Laboratory susceptibility = 150	Ch.3= 632 1.55 ppm U
Porosity = 7.5	Remanence = .10	Ch.4= 711 13.82 ppm Th
	Koenigsberger ratio = .01	U/Th= .11
		3.88 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Slate
3.	Chlorite	FABRIC: Massive; microporphyroblastic
12.	Quartz	Microporphyroblasts of pale green chlorite, randomly scattered within
5.	Opaque	sericite-biotite mud with faint graphite laminae. Minor diagenetic
80.	Mud	opaque-mineral euhedra.

Location 0696

* LACHLAN FOLD BELT of New South Wales; ROCK PROPERTY DATA BASE *

NO.=(7962)0696

SAME LOCATION AS 0697

Road cutting

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5090

6388654 m N 32.61703 S latitude

723303 m E 149.3799 E longitude

Illustrations :1 Colour slide

Age/Unit= Lower Devonian

MERRIONS TUFF

Topography: RUGGED UPLAND

dip= strike=

Structure : STEEPLY DIPPING-INDETERMINATE DIP

Field Geology: Rhyolite and lithic sandstone. The rhyolite is altered and sparsely porphyritic with scattered accidental xenoliths. The lithic sandstone contains abundant volcanogenic rock and mineral fragments and is poorly sorted. Probably rapidly deposited close to source.

Field Rockname: SAMPLE DB0696 LITHIC SANDSTONE

PHYSICAL PROPERTIES:

DACITE

DENSITIES

Whole rock density = 2.69

Dry density = 2.71

Grain density = 2.71

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 0

from to SD=

Laboratory susceptibility = 138

Remanence = 6.00

Koenigsberger ratio = .72

GAMMA-RAY SPECTROMETRY

Ch.1= 37837

Ch.2= 2545 1.85 % K20

Ch.3= 698 2.64 ppm U

Ch.4= 707 13.65 ppm Th

U/Th= .19

4.38 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.76	1.00	11.32	5.13	.09	1.48	1.88	2.16	1.83	.14	.18	3.00	99.98

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	561	-6	59	16	41	34	47	-3	10	12	20	78

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	19	-20	144	-5	8	-3	128	10	28	64	299

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Lithic sandstone

FABRIC: Poorly sorted; massive

25. Quartz Subangular to subrounded, coarse sand-sized clasts of volcanic quartz, lightly kaolinised plagioclase, abundant andesite, dacite, quartzite, & muscovite quartzite most of which are also lightly kaolinised.

5. Plagioclase

63. Rock fragments Abundant labile constituents indicate short transport & poor sorting & massive fabric imply rapid deposition. The matrix consists of dust-sized crystal fragments mixed with chlorite & minor sericite mud. Minor detrital opaque mineral.

2. Opaque

5. Matrix

Location 0697

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0697

SAME LOCATION AS 0696

Road cutting

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5090

6388654 m N

32.61703 S latitude

723303 m E

149.3799 E longitude

Illustrations :1 Colour slide

Age/Unit= Lower Devonian

MERRIONS TUFF

Topography: RUGGED UPLAND

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Rhyolite and lithic sandstone. The rhyolite is altered and sparsely porphyritic with scattered accidental xenoliths. The lithic sandstone contains abundant volcanogenic rock and mineral fragments and is poorly sorted. Probably rapidly deposited close to source.

Field Rockname: SAMPLE DB0697 RHYOLITE

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES

Whole rock density = 2.73

Dry density = 2.65

Grain density = 2.65

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.00001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

100

.10

.02

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K20

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.64	.56	14.67	4.20	.05	1.60	.35	.77	4.04	.13	.09	2.90	99.00

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	919	-6	19	13	65	19	25	-3	10	20	11	184

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	23	-20	48	-5	14	-3	114	10	29	62	137

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Quartz	Altered rhyolite	Finely layered; rarely microporphyritic
69.	Feldspar		Microcrystalline mixture of quartz, feldspar, & sericite, with scattered muscovite flakes, rare opaque mineral & skeletal euhedral
5.	Muscovite		laths of a former ferromagnesian phenocryst leached & partially
15.	Sericite		opacitised. It is confined to particular layers, which are otherwise
1.	Opaque		defined by ?limonite laminae or variations in grain size.
.1	Ferromagnesian		

Location 0698

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)C698
Road cutting

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5092
6387534 m N 32.62912 S latitude
713214 m E 149.2727 E longitude

Illustrations :

Age/Unit: Lower Devonian CRUDINE GROUP
Topography: RUGGED STRIKE RIDGE dip= strike=
Structure : STEEPLY DIPPING REGIONALLY BUT STRIKE AND DIP INDETERMINATE AT OUTCROP
Field Geology: Lithic sandstone. Massive. Contains abundant labile volcanogenic rock
and mineral detritus. Poorly sorted. Intraformational clasts locally
abundant. Probably rapidly deposited close to source.

Field Rockname: SAMPLE DB0698 LITHIC SANDSTONE

PHYSICAL PROPERTIES:

IGNIMBRITE
DENSITIES
Whole rock density = 2.72
Dry density = 2.71
Grain density = 2.73
Porosity = .7
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 10 in-situ readings = 62
from 0 to 251, SD= 106
Laboratory susceptibility = 351
Remanence = .70
Koenigsberger ratio = .03
GAMMA-RAY SPECTROMETRY
Ch.1= 32452
Ch.2= 1809 1.09 % K2O
Ch.3= 668 3.57 ppm U
Ch.4= 588 11.24 ppm Th
U/Th= .32
4.38 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.07	0.68	11.27	4.00	0.05	1.25	1.85	1.90	2.00	0.11	0.06	1.50	99.73

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	603	-6	71	2	2	12	49	7	9	17	29	85

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	12	-20	94	-5	6	-3	97	-5	26	56	250

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Lithic sandstone	Poorly sorted
10.	Plagioclase	Subangular clasts of volcanic quartz, altered plagioclase, abundant labile andesite, dacite, altered rhyodacite, epidotised & calcitised	
48.	Rock fragments	volcanic fragments, & minor biotite & epidote detritus. Biotite appears to be secondary after former hornblende. The matrix consists of fine crystal & lithic dust mixed with micro-crystalline epidote & chlorite mud. Near source volcanic origin indicated by abundance of labile constituents.	
5.	Epidote		
2.	Biotite		
.1	Opaque		
15.	Matrix		
.1	Calcite		

Location 0699

* LACHLAN FOLD BELT of New South Wales. ROCK PROPERTY DATA BASE *

NO.=(7962)0699

Outcrop

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 6-5092

6388220 m N

32.62260 S latitude

714956 m E

149.2911 E longitude

Illustrations :

Age/Unit= Carboniferous?

MUDGE GRANITE

Topography: GENTLY SLOPING LOWLAND WITH TORS

dip= strike=

Structure : PLUTON HAS HALF-CRATER-LIKE OUTCROP PATTERN ON AIR PHOTOS

Field Geology: Adameellite. Inequigranular. Porphyritic in plagioclase. The groundmass is medium to coarse-grained. Melanocratic due to abundant hornblende and biotite. Numerous small fine-grained, dark-coloured xenoliths. Numerous bodies of white quartz present.

Field Rockname: SAMPLE DB0699 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Whole rock density = 2.71

Dry density = 2.67

Grain density = 2.70

Porosity = 1.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 9173

from 2010 to 15582 ,SD= 4449

Laboratory susceptibility = 6597

Remanence = 70.00

Koenigsberger ratio = .18

GAMMA-RAY SPECTROMETRY

Ch.1= 44906

Ch.2= 4040 3.67 % K2O

Ch.3= 739 4.85 ppm U

Ch.4= 574 10.87 ppm Th

U/Th= .45

5.70 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	62.40	.97	16.08	5.23	.09	2.56	4.57	3.75	2.89	.38	.07	.90	99.88

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	741	-6	72	17	42	220	42	5	9	17	17	111

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	15	-5	903	-5	10	-3	.112	6	20	54	191

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Adameellite	
12.	Quartz		Hypidiomorphic granular; sparingly glomeroporphyritic
25.	Orthoclase		Zoned euhedral plagioclase phenocrysts, clustered in places. Abundant ragged hornblende with brown-green pleochroism considerably altered to tremolite, biotite, chlorite, yellow-green epidote, & rare blue-green hornblende. The yellowish-brown biotite is variably altered to chlorite & has rare inclusions of apatite. Interstitial quartz & intensely sericitised orthoclase with growths of fine secondary muscovite. Accessory sphene, usually close to hornblende, & rare zircon. Rare magnetite granules occurs as inclusions in hornblende & rarely biotite. Rare ilmenite in biotite. Very rare chalcopyrite in sericitised orthoclase, & cubes of pyrite with hornblende.
42.	Plagioclase		
12.	Hornblende		
5.	Biotite		
2.	Chlorite		
1.	Epidote		
.5	Sphene		
.05	Apatite		
.01	Zircon		
.1	Magnetite		
.001	Ilmenite		
.001	Chalcopyrite		
.001	Pyrite		

Location 0700

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0700

Road cutting

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area .air-photo:run-no.= 6-5092

6387090 m N 32.63178 S latitude
720057 m E 149.3457 E longitude

Illustrations :Photomicrograph

Age/Unit= Upper Silurian CHESLEIGH FORMATION

Topography: STRIKE RIDGE IN DISSECTED UPLAND dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Ignimbrite. Densely porphyritic in quartz and feldspar phenocrysts set in a fragmental groundmass with abundant ultrafine black cognate xenoliths. Phases of medium-grained dacite occur as variants. Small clusters of pyrite in places.

Field Rockname: SAMPLE DB0700 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.68

Dry density = 2.64

Grain density = 2.72

Porosity = 2.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 113

from 0 to 376, SD= 126

Laboratory susceptibility = 251

Remanence = .40

Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 32070

Ch.2= 2119 1.47 % K20

Ch.3= 663 3.61 ppm U

Ch.4= 578 11.05 ppm Th

U/Th= .33

4.45 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.50	0.22	10.43	2.54	0.04	0.86	2.37	2.43	1.35	0.06	0.09	2.00	99.90

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mn	Nb	Ni	Pb	Rb
p.p.m.	215	-6	44	-1	40	18	32	4	4	40	13	56

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	129	-5	5	-3	27	5	30	53	139

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Ignimbrite	Densely porphyritic
30.	Quartz		Phenocrysts of fractured rarely resorbed quartz, with lightly kaolinised
10.	Plagioclase		plagioclase, abundant lithic fragments including & andesite epidotised
35.	Rock fragments		& chloritised andesite, dacite, rhyolite, & quartzite, & rare clasts of
.1	Calcite		calcite & epidote. The groundmass consists of microcrystalline quartz
.1	Epidote		& feldspar. Rare goethite, & trace pyrite altering to goethite.
25.	Groundmass		Photograph relict subgrain boundaries in quartz.
.01	Goethite		
.001	Pyrite		

Location 0701

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0701

Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5166

6366428 m N

32.80985 S latitude

757569 m E

149.7509 E longitude

Illustrations :

Age/Unit= Tertiary

Topography: MESA WITH PLAGIOCLASE TOP

dip= strike=

Structure : NOT SURE IF PLUG OR REMNANT OF FLOW.

Field Geology: Basalt. Fine to medium-grained with distinct plagioclase laths. Slightly doleritic in appearance.

Field Rockname: SAMPLE DB0701 DOLERITIC BASALT

PHYSICAL PROPERTIES:

DOLERITE

DENSITIES

Whole rock density = 2.94

Dry density = 2.90

Grain density = 2.96

Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.+.000001)

Mean of 12 in-situ readings = 5497

from 1633 to 11812, SD= 2947

Laboratory susceptibility = 3078

Remanence = 32000.00

Koenigsberger ratio = 173.27

GAMMA-RAY SPECTROMETRY

Ch.1= 15760

Ch.2= 1416 1.35 % K2O

Ch.3= 191 .49 ppm U

Ch.4= 213 4.14 ppm Th

U/Th= .12

1.32 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Dolerite	
			Subophitic
15.	Olivine	Slightly porphyritic in olivine which is of variable size & slightly altered to bowlingite along fractures. Abundant plagioclase laths, randomly oriented between similarly-sized pink titaniferous augite or clusters of smaller augite grains. Minor secondary interstitial chlorite. Scattered apatite microlites. Scattered subhedral to skeletal titaniferous magnetite.	
52.	Plagioclase		
30.	Augite		
.01	Apatite		
1.	Chlorite		
2.	Magnetite		

Location 0702

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0702

Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area :100,000 sheet area air-photo:run-no.= 8-5166
6366855 m N 32.80605 S latitude
757355 m E 149.7485 E longitude

Illustrations :

Age/Unit= Tertiary
Topography: MESA WITH PINNACLE TOP dip= strike=
Structure : NOT SURE IF PLUG OR REMNANT OF FLOW.
Field Geology: Basalt. Fine to medium-grained with distinct plagioclase laths.
Oriented sample taken. Slightly doleritic in appearance.

Field Rockname: SAMPLE DB0702 DOLERITE

PHYSICAL PROPERTIES:

DOLERITE

DENSITIES
Whole rock density = 2.67
Dry density = 2.94
Grain density = 2.95
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 1617
from 879 to 2890 ,SD= 606
Laboratory susceptibility = 2349
Remanence = 2000.00
Koenigsberger ratio = 14.19

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	FABRIC:
10.	Olivine	Dolerite	Subophitic
20.	Augite	Scattered anhedral olivine slightly altered to bowlingite along fractures, & subhedral variably-sized pink titaniferous augite as large crystals or in clusters of small crystals. Abundant plagioclase laths. Interstitial formerly glassy groundmass is altered to non-resolvable clays. Scattered subhedral to skeletal titaniferous magnetite.	
58.	Plagioclase		
10.	Groundmass		
2.	Magnetite		

Location 0703

* LACHLAN FG.D BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0703

Road cutting

DUBBO

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6373850 m N air-photo:run-no.= 7-5146
752913 m E 32.74405 S latitude
149.6992 E longitude

Illustrations :

Age/Unit= Lower-Middle Devonian WARRATRA FORMATION
Topography: LOW IN ELEVATED AREA dip=41SW strike=143
Structure : MODERATELY TILTED
Field Geology: Mudstone and siltstone. Massive, non-bedded except where planar units of
varying lithology are interbedded. Lacks cleavage; noticeably jointed.

Field Rockname: SAMPLE DB0703 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I. *.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.60	Mean of 7 in-situ readings = 0	Ch.1= 55693
Dry density =	from to SD=	Ch.2= 3667 2.69 X K20
Grain density =	Laboratory susceptibility = 0	Ch.3= 992 3.64 ppm U
Porosity =	Remanence = .00	Ch.4= 1014 19.59 ppm Th
	Koenigsberger ratio =	U/Th= .19
		6.21 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Siltstone
20.	Quartz	FABRIC:	Massive
2.	Feldspar		Subangular to subrounded fine sand-sized clasts of quartz, altered feldspar & minor opaque, set in a mud matrix with numerous
1.	Opaque		wavy discontinuous graphite laminae. The mud partly consists of
77.	Matrix		sericite & chlorite. Rare porphyroblastic biotite & detrital
.1	Muscovite		muscovite.
.1	Biotite		

Location 0704

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0704

Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5146

6379285 m N

32.69603 S latitude

748726 m E

149.6531 E longitude

Illustrations :Photomicrograph

Age/Unit= Silurian-Devonian

GULGAMREE BEDS

Topography: RUGGED DISSECTED UPLAND WITH OUTCROP

dip= strike=

Structure : MASSIVE

Field Geology: Rhyolite. Porphyritic with phenocrysts of volcanic quartz and stubby orthoclase set in a fine-grained, quartzo-feldspathic groundmass. Minor flow structures. Brittle jointing.

Field Rockname: SAMPLE DB0704 RHYOLITE

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density = 2.59

Dry density = 2.56

Grain density = 2.59

Porosity = 1.0

RHYOLITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 0

from to .SD=

Laboratory susceptibility = 113

Remanence = 1.00

Koenigsberger ratio = .15

GAMMA-RAY SPECTROMETRY

Ch.1= 71329

Ch.2= 6741 6.45 X K20

Ch.3= 971 5.26 ppm U

Ch.4= 849 16.23 ppm Th

U/Th= .32

7.50 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.17	0.01	11.83	0.40	0.01	0.10	0.03	1.12	8.87	0.02	0.05	0.30	99.91

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	601	-6	18	6	4	-5	20	-3	7	19	6	190

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	4	23	52	9	9	-3	-1	-5	33	9	57

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
3.	Quartz	Rhyolite
4.	Orthoclase	Porphyritic; devitrified microspherulitic
93.	Biotite	Phenocrysts of euhedral to rounded volcanic quartz with variably embayed & resorbed margins, as well as slightly kaolinised euhedral orthoclase, in places dismembered & partially pseudomorphed by groundmass. Rare microphenocrysts of bleached biotite with curved to kinked cleavages & liberation of minor secondary opaque oxide along them. The groundmass is two phased: one phase consists of spherulites which are spherical to slightly compacted. They are filled with single crystals of quartz or strained quartz with intersutured grain edges. The other phase consists of microcrystalline feldspar aggregates with traces of chlorite & epidote.
.01	Groundmass	Photograph spherulites.
	Epidote	

Location 0705

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0705

SAME LOCATION AS 0706

Road cutting

DUBBO

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5148

6375845 m N 32.72497 S latitude

757701 m E 149.7497 E longitude

Illustrations :3 Colour slides

Age/Unit= Ordovician

SOFALA VOLCANICS

Topography: MODERATELY DISSECTED UNDULATING UPLAND

dip= strike=

Structure :

Field Geology: Basalt and basalt breccia. The basalt is altered, porphyritic in plagioclase and has small pillows with glass selvages. The basalt breccia contains tightly packed basalt clasts. Numerous segregations and veins of calcite and some planar white-quartz sheets.

Field Rockname: SAMPLE DB0705 ALTERED BASALT

PHYSICAL PROPERTIES:

ALTERED BASALT

DENSITIES

Whole rock density = 2.76

Dry density = 2.82

Grain density = 2.84

Porosity = .6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 28 in-situ readings = 323

from 0 to 753, SD= 234

Laboratory susceptibility = 11309

Remanence = 400.00

Koenigsberger ratio = .59

GAMMA-RAY SPECTROMETRY

Ch.1= 26720

Ch.2= 1427 .73 X K20

Ch.3= 601 3.02 ppm U

Ch.4= 545 10.45 ppm Th

U/Th= .29

3.82 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Altered basalt

Est. % MINERAL FABRIC: Vesicular; slightly trachytic.

20. Plagioclase Phenocrysts of plagioclase, moderately to considerably altered to calcite, muscovite & microcrystalline aggregates of epidote. Minor
2. Ferromagnesian relict ?ferromagnesian phenocrysts pseudomorphed by calcite aggregates
5. Vesicles & chlorite. The groundmass consists of relict plagioclase laths
3. Opaque pseudomorphed by epidote & ?sericite, as well as interstitial
70. Groundmass mesostasis of secondary chlorite, patchy epidote, & opaque mineral. Frequent small vesicles of chlorite.

Location 0706

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0706

SAME LOCATION AS 0706

Road cutting

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5148

6375C45 m N

32.72497 S latitude

757701 m E

149.7497 E longitude

Illustrations :3 Photos; Photomicrograph

Age/Unit= Ordovician

SOFALA VOLCANICS

Topography: MODERATELY DISSECTED UNDULATING UPLAND

dip= strike=

Structure :

Field Geology: Basalt and basalt breccia. The basalt is altered, porphyritic in plagioclase and has small pillows with glass selvages. The basalt breccia contains tightly packed basalt clasts. Numerous segregations and veins of calcite and some planar white-quartz sheets.

Field Rockname: SAMPLE DB0706 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES

Whole rock density = 2.72

Dry density = 2.69

Grain density = 2.77

Porosity = 2.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to .SD=

Laboratory susceptibility = 150

Remanence = .20

Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
20.	Plagioclase	Basalt
1.	Epidote	Porphyritic; orthophytic; sparingly microstylolitic
.1	Quartz	Phenocrysts of slightly altered plagioclase, glomeroporphyritic in places, & partially altered to sericite, calcite, & minor epidote & chlorite. The groundmass consists of stumpy altered plagioclase
79.	Groundmass	with relict ferromagnesian mineral altered to fine mosaic of epidote granules, together with interstitial chlorite & ?ultrafine epidote.
.5	Goethite	Patches of semi-opaque epidote granules in places. Rare small vesicles lined with epidote & filled with chlorite. Rare groundmass
.01	Pyrite	stylolites lined by thin epidote granules. Minor goethite pseudo-morphs of opaque oxide & trace pyrite microeuhedra.
		Photograph stylolite

Location 0707

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0707

Road cutting

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 7-5148

6369763 m N

32.77877 S latitude

761931 m E

149.7965 E longitude

Illustrations :

Age/Unit= Silurian-Devonian GULGAMREE BEDS
Topography: GENTLY UNDULATING LOW IN ELEVATED AREA dip= strike=
Structure : MODERATELY CHAOTIC TO MASSIVE
Field Geology: Basalt, and basaltic breccia with curvilinear igneous layering. Contains specks of a sulphide mineral pseudomorphed by limonite.

Field Rockname: SAMPLE DB0707 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.78
Dry density = 2.75
Grain density = 2.81
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =
from to .SC=
Laboratory susceptibility = 201
Remanence = 1.00
Koenigsberger ratio = .08

GAMMA-RAY SPECTROMETRY

Ch.1= 14356
Ch.2= 1038 .88 % K2O
Ch.3= 219 1.17 ppm U
Ch.4= 193 3.69 ppm Th
U/Th= .32
1.55 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	51.45	0.48	10.05	8.18	0.14	9.56	9.83	3.05	1.70	0.34	0.06	5.00	99.83

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	714	-6	1	42	609	90	13	4	-3	149	-5	11

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	32	-20	355	-5	-5	-3	226	-5	8	53	27

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Altered basalt
FABRIC: Porphyritic; lamprophyric
20. Augite Lamprophyric basalt with large euhedral phenocrysts of augite, in places glomeroporphyritic, & variably altered to diopside, basaltic hornblende, calcite, chlorite, & minor opaque mineral. Scattered small vesicles filled with chlorite, calcite, & rare quartz. The groundmass consists of a felt-like mass of radiating clusters of tremolite, in places clouded by microcrystalline ?epidote.
5. Vesicles
75. Groundmass Interstitial chlorite & minor ?quartz. Some augite phenocrysts have reaction rims of tremolite.

Location 0708

LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0708

Road cutting

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 5-5160

6399538 m N

32.51508 S latitude

741709 m E

149.5731 E longitude

Illustrations :

Age/Unit= Lower-Middle Devonian BURRANAH FORMATION

Topography: GENTLY UNDULATING LOWLAND AND FLAT PLAIN dip= strike=

Structure :

Field Geology: Lithic sandstone. Fine to medium-grained. Mostly massive. Minor quartz veins and pyritic patches.

Field Rockname: SAMPLE DB0708 LITHIC SANDSTONE

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES

Whole rock density = 2.74

Dry density = 2.72

Grain density = 2.74

Porosity = .6

MAGNETIC SUSCEPTIBILITY (S.I.+000001)

Mean of 12 in-situ readings = 26

from 0 to 125 ,SD= 49

Laboratory susceptibility = 188

Remanence = 1.00

Koenigsberger ratio = .09

GAMMA-RAY SPECTROMETRY

Ch.1= 49154

Ch.2= 4983 5.19 % K20

Ch.3= 496 4.03 ppm U

Ch.4= 320 5.95 ppm Th

U/Th= .68

4.70 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	52.30	0.43	16.75	5.40	0.14	3.04	4.03	3.32	5.74	0.21	0.18	8.10	99.62

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1128	-6	26	16	164	61	18	4	3	90	12	113

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	13	-20	987	6	14	-3	109	-5	13	65	83

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
.1	Quartz	Lithic sandstone	Poorly sorted; medium grained
10.	Plagioclase		Subangular fragments of plagioclase & orthoclase amidst similarly sized & shaped fragments of altered basalt, variably calcitised & sericitised. The matrix consists of fine calcite, sericite, & chlorite. Trace goethite after iron oxide & trace pyrite micro-euhedra. Abundant labile debris suggests deposition close to source.
30.	Orthoclase		
55.	Rock fragments		
.5	Goethite		
.5	Pyrite		
3.	Matrix		
1.	Calcite		

Location 0709

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0709

Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5048

6418553 m N

32.34450 S latitude

738061 m E

149.5295 E longitude

Illustrations :

Age/Unit=

?GULGONG GRANITE

Topography: FLAT TO VERY GENTLY SLOPING RISE

dip= strike=

Structure : IGNEOUS BODY. MULTIVARIATE

Field Geology: Microdiorite. Porphyritic in plagioclase; saccharoidal appearance and abundant fine biotite. Flanked by phases of aplite and flow-banded rhyolite. May be a phase of Gulgong Granite.

Field Rockname: SAMPLE DB0709 MICRODIORITE

PHYSICAL PROPERTIES:

MICRODIORITE

DENSITIES

Whole rock density = 2.85

Dry density =

Grain density =

Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 10210

from 4398 to 15330, SD= 5064

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 15276

Ch.2= 559 .08 % K2O

Ch.3= 347 1.15 ppm U

Ch.4= 365 7.06 ppm Th

U/Th= .16

1.93 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Altered microdiorite

FABRIC: Porphyritic; slightly brecciated

Est. %

MINERAL

10.

Quartz

48.

Plagioclase

40.

Hornblende

1.

Ilmenite

1.

Magnetite

Relict phenocrysts now pseudomorphed by a mosaic of albite and minor quartz and secondary hornblende. The reconstituted groundmass consists of interlocking to slightly radiating prisms of acicular hornblende with light blue-green pleochroism. Scattered ilmenite aggregates and numerous tiny grains which define weak layering. Scattered magnetite subhedra. In places the rock is brecciated, the clasts being very rich in hornblende, and surrounded by a mosaic of secondary quartz aggregates.

Location 0710

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0710

GAP IN PHOTOGRAPHY

Outcrop

DUBBO

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=

6417453 m N 32.35500 S latitude

735256 m E 149.5000 E longitude

Illustrations :

Age/Unit=

Topography: GENTLY SLOPING LOWLAND WITH OUTCROP

dip= strike=

Structure : INDETERMINATE-MASSIVE

Field Geology: Rhyodacite. Fine-grained, sparsely porphyritic in plagioclase. Splintery conchoidal fracture where ultrafine-grained. Contains unevenly distributed pyrite in patches and veins.

Field Rockname: SAMPLE DB0710 RHYODACITE

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES

Whole rock density = 2.32

Dry density = 2.67

Grain density = 2.67

Porosity = .1

MAGNETIC SUSCEPTIBILITY (S.I. 000001)

Mean of 8 in-situ readings = 6212

from 0 to 17592, SD= 6877

Laboratory susceptibility = 34959

Remanence = 450.00

Koenigsberger ratio = .21

GAMMA-RAY SPECTROMETRY

Ch.1= 42407

Ch.2= 3654 3.33 % K2O

Ch.3= 616 2.82 ppm U

Ch.4= 582 11.19 ppm Th

U/Th= .25

4.42 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.69	0.40	12.03	4.92	0.15	0.70	3.37	2.20	3.57	0.07	0.12	1.70	99.92

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	650	-6	44	-1	7	8	23	15	6	26	16	72

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	11	-20	260	-5	-5	-3	15	-5	44	104	339

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
37.	Quartz	Altered rhyodacite	Granoblastic
4.	Epidote	Rare porphyroblasts of plagioclase, slightly calcitised & set amidst an uneven grained microgranoblastic mosaic consisting chiefly of fine-grained quartz, feldspar, interstitial calcite, & epidote. Frequent patches contain coarser epidote, minor green biotite & rare blue-green hornblende. Frequent small magnetite subhedra & minor pyrite & rare pyrrhotite. Rare euhedral zircon.	
1.	Hornblende		
1.	Biotite		
5.	Calcite		
50.	Feldspar		
2.	Magnetite		
.1	Pyrite		
.01	Pyrrhotite		
.001	Zircon		

Location 0711

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0711

Outcrop

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 3-5048

6419986 m N

32.33263 S latitude

733074 m E

149.4762 E longitude

Illustrations :

Age/Unit=

GULGONG GRANITE

Topography: GENTLY UNDULATING LOWLAND WITH OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Inequigranular. Porphyritic in orthoclase set in a coarse-grained groundmass. Mesocratic due to minor small dark fine-grained biotite-rich xenoliths and to scattered hornblende and biotite.

Field Rockname: SAMPLE DB0711 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.66

Dry density = 2.62

Grain density = 2.66

Porosity = 1.6

Mean of 15 in-situ readings = 20872

from 10932 to 25886 ,SD= 4032

Laboratory susceptibility = 15356

Remanence = 2500.00

Koenigsberger ratio = 2.71

Ch.1= 51649

Ch.2= 3632 2.83 X K20

Ch.3= 897 3.80 ppm U

Ch.4= 874 16.83 ppm Th

U/Th= .23

5.87 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.85	.58	15.32	3.63	.08	1.35	2.81	2.27	4.13	.21	.04	.10	99.38

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mg	Nb	Ni	Pb	Rb
p.p.m.	793	-6	61	13	13	145	52	-3	8	6	21	166

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	11	-5	521	-5	14	4	60	-5	22	54	173

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
		Adamellite
		Hypidiomorphic granular
20.	Quartz	Aggregates of euhedral, zoned plagioclase with cores variably altered to epidote, sericite & clay. Large subhedral orthoclase phenocrysts.
45.	Orthoclase	Interstitial quartz aggregates. Euhedral hornblende, in places ragged, slightly chloritised, & with inclusions of euhedral sphene.
30.	Plagioclase	Abundant biotite, rarely altered to chlorite, & with rare inclusions of apatite & zircon. Scattered magnetite frequently altered to hematite around margins & along crystallographic directions. Rare associated epidote & chlorite within some grains.
4.	Biotite	
1.	Hornblende	
.1	Sphene	
.5	Magnetite	
.1	Hematite	
.05	Apatite	
.01	Zircon	
.01	Epidote	
.01	Chlorite	

Location 0712

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0712
Outcrop

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5020
6435039 m N 32.19805 S latitude
727742 m E 149.4160 E longitude

Illustrations :

Age/Unit= Silurian-Devonian
Topography: VERY GENTLY SLOPING LOWLAND dip=60E strike=175
Structure : SLIGHTLY CLEAVED
Field Geology: Basalt. Slightly altered. Porphyritic in plagioclase set in a fine-grained light-coloured groundmass slightly foliated due to growth of secondary minerals along flow banding.

Field Rockname: SAMPLE DB0712 ALTERED BASALT

PHYSICAL PROPERTIES:

DENSITIES		ALTERED BASALT		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.88	Mean of 15 in-situ readings =	435	Ch.1=	16857		
Dry density =	2.88	from 251 to 628, SD=	124	Ch.2=	1034	.78	X K20
Grain density =	2.88	Laboratory susceptibility =	289	Ch.3=	272	1.23	ppm U
Porosity =	.0	Remanence =	2.00	Ch.4=	258	4.96	ppm Th
		Koenigsberger ratio =	.12	U/Th=	.25		
				1.79	Heat generation units		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Augite	Altered basalt	Porphyritic; flow-banded
10.	Plagioclase		Phenocrysts of euhedral to slightly ragged augite with minor & rim reaction to chlorite, as well as ghosted plagioclase relicts now pseudomorphed by microcrystalline plagioclase aggregates. Groundmass alteration is patchy & variable & follows flow-banding. Some bands are incipiently altered & have recognisable groundmass laths of plagioclase amidst non-resolvable material. The more altered bands are completely epidotised. Rare opaque mineral.
.2	Opaque		
65.	Groundmass		

Location 0713

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0713
Outcrop

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5048
6428553 m N 32.25405 S latitude
739570 m E 149.5430 E longitude

Illustrations :

Age/Unit= GULGONG GRANITE
Topography: GENTLY SLOPING CONVEX UPWARDS RISE dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Inequigranular; porphyritic in quartz and orthoclase set in
a coarse-grained groundmass of quartz, feldspars and smaller biotite.
Leucocratic.

Field Rockname: SAMPLE DB0713 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.60 Mean of 12 in-situ readings = 9162 Ch.1= 57415
Dry density = 2.58 from 5654 to 12315 .SD= 1905 Ch.2= 4311 3.07 % K2O
Grain density = 2.60 Laboratory susceptibility = 8859 Ch.3= 1273 6.31 ppm U
Porosity = .0 Remanence = 100.00 Ch.4= 1162 22.28 ppm Th
Koenigsberger ratio = .19 U/Th= .28
8.41 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.13	.23	13.47	1.46	.05	.4	1.36	3.30	4.66	.08	.05	.10	99.29
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	409	-6	46	4	7	65	40	-3	8	-5	34	240	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	-5	219	-5	24	4	22	5	14	30	100		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular; porphyritic
Est. % MINERAL
20. Quartz Scattered large phenocrysts of quartz & smaller plagioclase laths
Orthoclase with cores extensively altered to ultrafine epidote & rare calcite.
58. Plagioclase The medium-grained groundmass consists of subhedral sericitised
Biotite plagioclase, quartz, & interstitial orthoclase. Scattered biotite, in
.2 Chlorite places altered to chlorite with accompanying liberation of rare
.001 Fluorite fluorite. Very rare zircon & calcite. Accessory magnetite slightly
.001 Zircon altering to goethite. Rare accessory sphene euhedra.
.001 Calcite
.5 Magnetite
.01 Sphene

Location 0714

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0714
 Outcrop

DUBBO NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5156
 6408696 m N 32.43043 S latitude
 751266 m E 149.6723 E longitude

Illustrations :

Age/Unit= GULGONG GRANITE
 Topography: GENTLY SLOPING RISE dip= strike=
 Structure : PLUTON
 Field Geology: Adamellite. Moderately inequigranular. Porphyritic in orthoclase set in
 a coarse-grained groundmass of quartz, feldspars and smaller biotite.
 Leucocratic.

Field Rockname: SAMPLE DB0713 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 14 in-situ readings = 8706		Ch.1= 64563	
Whole rock density = 2.61		from 5026 to 12566 ,SD= 2061		Ch.2= 4462 3.79 % K2O	
Dry density = 2.60		Laboratory susceptibility = 9374		Ch.3= 976 5.98 ppm U	
Grain density = 2.62		Remanence = 50.00		Ch.4= 794 15.09 ppm Th	
Porosity = .0		Koenigsberger ratio = .09		U/Th= .40	
				7.15 Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.77	.38	13.77	2.38	.06	.81	1.38	3.58	4.30	.15	.02	.40	100.01
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	539	-6	62	7	6	86	46	5	10	7	31	236	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	12	-5	704	-5	24	4	32	8	19	60	175		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Adamellite
	FABRIC:	Kypidiomorphic granular
Est. %	MINERAL	
35.	Quartz	Large interconnected globular patches of unstrained quartz aggregates.
38.	Orthoclase	Scattered sphericised plagioclase with rare liberation of muscovite
22.	Plagioclase	in core regions, but surrounded by clear unaltered rims. Abundant
4.	Biotite	interstitial anhedral orthoclase with minor quartz & plagioclase
.01	Chlorite	lying along grain boundaries. Scattered smaller dark-brown to light
.001	Muscovite	yellow pleochroic biotite rarely altering to chlorite & even rarer
.1	Apatite	muscovite. Scattered accessory apatite, some occurring as inclusions
.001	Fluorite	in biotite. Tiniest traces of rare fluorite. Scattered magnetite
.5	Magnetite	rarely altering to hematite around rims.
.01	Hematite	

Location 0715

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0715
Road cutting

GAP IN PHOTOGRAPHY
DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6410082 m N 32.41750 S latitude
753202 m E 149.6925 E longitude

Illustrations :

Age/Unit= Ordovician LUE BEDS
Topography: GENTLY SLOPING LOWLAND dip=64W strike=004
Structure : STEEPLY DIPPING
Field Geology: Greywacke, shale and intraformational conglomerate and breccia. Thin to medium and planar bedded. The conglomerate has uncleaved quartzite clasts set in a cleaved matrix of slaty material.

Field Rockname: SAMPLE DB0715 BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES
Whole rock density = 2.64
Dry density = 2.62
Grain density = 2.72
Porosity = 3.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 157
from 0 to 376 ,SD= 107
Laboratory susceptibility = 427
Remanence = .80
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 30589
Ch.2= 2000 1.46 % K2O
Ch.3= 536 1.65 ppm U
Ch.4= 575 11.14 ppm Th
U/Th= .15
3.25 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Breccia	
		Porphyroblastic	
5.	Quartz	Abundant subangular to subrounded clasts of biotite quartzite, pebbly quartzite, & quartzite, all variably flattened to globular, lenticular	
40.	Rock fragments	augen shapes. Minor porphyroblasts of quartz & quartz aggregates,	
53.	Matrix	& rare plagioclase. All clasts have an iron-stained grain coating.	
1.	Plagioclase	The matrix consists of microcrystalline cherty quartz & biotite, &	
1.	Opaque	differs little from the clasts.	

Location 0716

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0716
Outcrop

GAP IN PHOTOGRAPHY

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6415592 m N 32.36750 S latitude
754754 m E 149.7075 E longitude

Illustrations :

Age/Unit=

GULGONG GRANITE

Topography: VERY GENTLY SLOPING RISE

dip= strike=

Structure : PLUTON

Field Geology: Granite. Inequigranular, porphyritic in quartz and orthoclase. Coarse-grained, leucocratic with minor scattered small biotites.

Field Rockname: SAMPLE DB0716 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.58	Mean of 11 in-situ readings = 4489	Ch.1= 77791
Dry density = 2.55	from 2136 to 5529, CO= 967	Ch.2= 5327 3.85 % K2O
Grain density = 2.62	Laboratory susceptibility = 5202	Ch.3= 1497 6.19 ppm U
Porosity = 2.6	Remanence = 330.00	Ch.4= 1471 28.35 ppm Th
	Koenigsberger ratio = 1.06	U/Th= .22
		9.54 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.38	.21	13.46	1.31	.07	.25	.82	3.74	4.52	.05	.04	.50	99.36
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	324	-6	59	-1	4	56	58	3	17	-5	29	323	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	-5	102	-5	30	7	11	11	65	18	121		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Granite
	FABRIC:		Porphyritic; hypidiomorphic granular
30.	Quartz		Interconnected globular patches of quartz in large-crystal aggregates & rarely resorbed. Subhedral megacrysts of orthoclase. Scattered
50.	Orthoclase		subhedral plagioclase with cores often altered to non-resolvable material & sericite. Abundant interstitial orthoclase. Scattered
18.	Plagioclase		yellowish-brown biotite with radioactive inclusions, variably bleached & altered to lighter-coloured biotite. Rare muscovite in small clusters. Accessory garnet, zircon, apatite & magnetite.
2.	Biotite		
.1	Muscovite		
.001	Zircon		
.001	Garnet		
.01	Apatite		
.1	Magnetite		

Location 0717

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0717

Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5154
6398242 m N 32.52163 S latitude
764196 m E 149.8126 E longitude

Illustrations :

Age/Unit=

BOTOBOLAR GRANITE

Topography: GENTLY UNDULATING,SLOPING UPLAND

dip= strike=

Structure: PLUTON

Field Geology: Granophyre. Inequigranular, medium-grained, very leucocratic, with visible muscovite and minor biotite.

Field Rockname: SAMPLE DB0717 GRANOPHYRE

PHYSICAL PROPERTIES:

GRANOPHYRE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.52

Mean of 15 in-situ readings = 33

Ch.1= 88284

Dry density = 2.52

from 0 to 125 ,SD= 57

Ch.2= 5188 2.94 % K2O

Grain density = 2.55

Laboratory susceptibility = 0

Ch.3= 1957 8.16 ppm U

Porosity = 1.1

Remanence = 3.00

Ch.4= 1917 36.94 ppm Th

Koenigsberger ratio = *****

U/Th= .22

12.02 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.19	.07	13.14	.32	.02	.04	.23	3.60	4.61	.03	.04	.20	99.49

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	105	-6	17	2	2	88	3	-3	26	-5	57	527

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	7	-5	17	5	24	10	3	15	53	7	99

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granophyre

Est. %	MINERAL	FABRIC:
35.	Quartz	Granophyric to slightly aplitic
40.	Orthoclase	Euhedral to subhedral plagioclase altered to small amounts of sericite, particularly along fractures in cores. Surrounded by intergrown quartz & orthoclase. The degree of intergrowth is variable. Some quartz has clustered into globular aggregates. Minor biotite, mostly bleached & altered to muscovite. Minor opaque oxide.
33.	Plagioclase	
1.	Biotite	
1.	Muscovite	
.1	Opaque	

Location 0718

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0718
Road cutting

GAP IN PHOTOGRAPHY
DUBBO

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=
6413233 m N 32.39500 S latitude
725744 m E 149.4000 E longitude

NSW GDOM=1

Illustrations :

Age/Unit= Upper Silurian

CHESLEIGH FORMATION

Topography: MODERATELY SLOPING UPLAND

dip= strike=

Structure : STEEPLY DIPPING MASSIVE UNIT

Field Geology: Lithic sandstone, rare siltstone and mudstone. The sandstone has small dispersed rounded volcanic quartz crystals amidst lesser plagioclase and abundant labile volcanogenic rock detritus including minor massive sulphide clasts. Minor intraformational rock clasts in places.

Field Rockname: SAMPLE DB0718 LITHIC SANDSTONE

PHYSICAL PROPERTIES: TUFF

DENSITIES

Whole rock density = 2.78
Dry density = 2.74
Grain density = 2.74
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 561
from 251 to 879, SD= 206
Laboratory susceptibility = 364
Remanence = 40.00
Koenigsberger ratio = 1.83

GAMMA-RAY SPECTROMETRY

Ch.1= 37180
Ch.2= 2368 1.54 x K20
Ch.3= 806 4.42 ppm U
Ch.4= 700 13.37 ppm Th
U/Th= .33
5.37 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	59.92	.70	12.42	6.66	.11	4.18	6.76	2.14	2.13	.14	.44	4.40	100.00

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	496	-6	57	27	129	40	37	-3	6	27	14	66

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	28	-20	278	-5	12	-3	161	-5	27	60	182

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
3.	Quartz	Lithic sandstone
78.	Rock fragments	Poorly sorted
3.	Plagioclase	Abundant clasts of andesite, dacite, & rhyolite with lesser clasts of massive sulphide & quartzite, as well as mineral detritus including volcanic quartz, plagioclase, epidote, augite, & minor pyrrhotite, and pyrite. The matrix is darkened, non resolvable & clay-rich formed by diagenesis of some lithic fragments. Uneven grain-size, poor sorting & good preservation of textures in labile clasts all suggest rapid transport & deposition close to a volcanic source.
2.	Epidote	
1.	Calcite	
1.5	Pyrrhotite	
.2	Pyrite	
1.	Augite	
10.	Matrix	

Location 0719

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0719
Road cutting

GAP IN PHOTOGRAPHY

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.=

6411361 m N

32.41250 S latitude

722644 m E

149.3675 E longitude

Illustrations :

Age/Unit: Silurian-Devonian

CRUDINE GROUP

Topography: GENTLY SLOPING RISE

dip=85NE strike=154

Structure : STEEPLY DIPPING CLEAVAGE PARALLEL TO AND AT ANGLE TO BEDDING

Field Geology: Mudstone, greywacke and siltstone. Interbedded. Planar thin to medium bedded with bedding defined by changes in these lithologies. Very slightly cleaved.

Field Rockname: SAMPLE DB0719 MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE

DENSITIES
Whole rock density = 2.73
Dry density = 2.71
Grain density = 2.74
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 188
from 125 to 251, SD= 62
Laboratory susceptibility = 590
Remanence = .40
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 39068
Ch.2= 2725 2.04 % K2O
Ch.3= 745 3.82 ppm U
Ch.4= 669 12.81 ppm Th
U/Th= .30
5.02 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Mudstone	
4.	Quartz		Massive to poorly bedded with uneven contacts.
1.	Opaque		Silt-sized quartz & opaque clasts set in mud which partly consists of sericite & chlorite. The coarser laminae are more quartzose.
95.	Mud		

Location 0720

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0720

Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5168

6404671 m N

32.47447 S latitude

714125 m E

149.2785 E longitude

Illustrations :

Age/Unit= Upper Silurian

CHESLEIGH FORMATION

Topography: MODERATELY SLOPING DISSECTED UPLAND

dip=75W strike=165

Structure : STEEPLY DIPPING

Field Geology: Arkose, quartz greywacke and tuff. Each unit is massive and has abundant labile volcanic mineral fragments. Probably rapidly deposited close to source.

Field Rockname: SAMPLE DB0720 ARKOSE

PHYSICAL PROPERTIES:

ARKOSE

DENSITIES
Whole rock density = 2.72
Dry density = 2.71
Grain density = 2.71
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 106
from 0 to 251, SD= 103
Laboratory susceptibility = 376
Remanence = 30.00
Koenigsberger ratio = 1.33

GAMMA-RAY SPECTROMETRY

Ch.1= 30786
Ch.2= 1920 1.39 % K2O
Ch.3= 560 2.90 ppm U
Ch.4= 501 9.59 ppm Th
U/Th= .30
3.75 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Arkose

Est. %

MINERAL FABRIC:

Poorly sorted

15.

Quartz

Angular to subrounded sand-sized clasts of volcanic quartz, abundant

70.

Plagioclase

sericitised plagioclase, lesser epidote as microcrystalline

5.

Epidote

mosaics, hornblende, mudstone fragments, & rare opaque mineral &

2.

Hornblende

zircon. The matrix consists of chlorite, sericite, & tiny epidote

1.

Rock fragments

granules.

.1

Opaque

7.

Matrix

.001

Zircon

Location 0721

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0721

Outcrop

DUBBO

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6407066 m N air-photo:run-no.= 5-5172
703792 m E 32.45482 S latitude
149.1681 E longitude

Illustrations :

Age/Unit: Silurian-Devonian

LANA FORMATION

Topography: GENTLY SLOPING RISE IN UPLAND

dip= strike=

Structure: STEEPLY DIPPING

Field Geology: Lithic sandstone. Fine-grained, massive with small quartz and feldspar fragments together with labile volcanic rock clasts and derived phenocrysts. Minor plates of large muscovite and sparse patches of a tiny sulphide mineral oxidised to limonite.

Field Rockname: SAMPLE DB0721 FELDSPATHIC QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES

Whole rock density =

Dry density = 2.63

Grain density = 2.64

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 2555

from 251 to 5780 ,SD= 1775

Laboratory susceptibility = 3669

Remanence = 30.00

Koenigsberger ratio = .14

GAMMA-RAY SPECTROMETRY

Ch.1= 31365

Ch.2= 1937 1.27 % K2O

Ch.3= 634 3.01 ppm U

Ch.4= 590 11.33 ppm Th

U/Th= .27

4.09 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.08	.30	11.93	2.82	.04	.35	2.63	2.06	2.05	.06	.05	1.30	99.67

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	849	-6	36	6	8	13	35	5	10	-5	30	84

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	13	-20	320	-5	13	-3	28	11	33	36	232

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Feldspathic quartzite	
50.	Quartz	Fragmental to massive with weak flow foliation	
44.	Plagioclase	Angular fragments of clear quartz, broken in places, randomly scattered and randomly oriented. Numerous scattered ovoid to semi-spherical bodies of plagioclase now pseudomorphed by secondary albite and slightly sericitised. The remainder of the rock consists of a fine-grained mosaic of quartz, plagioclase and minor epidote and chlorite. This material has undergone weak flow layering and compaction-differentiation such that ovoid bodies of cherty quartzite resembling grains have been incipiently formed. Where best developed they have impurities such as chlorite and epidote around them.	
.5	Magnetite	Minor magnetite altering to limonite. Scattered groundmass limonite after a sulphide mineral.	
.5	Ilmenite		
2.	Limonite		
2.	Epidote		
1.	Chlorite		

Location 0722

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0722

Outcrop

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDM=1

air-photo:run-no.= 5-5172

6406868 m N

32.45692 S latitude

702077 m E

149.1499 E longitude

Illustrations :

Age/Unit= Carboniferous?

WUJULUMAN GRANITE

Topography: GENTLY SLOPING RISE IN UPLAND REGION

dip= strike=

Structure: PLUTON

Field Geology: Adameellite. Inequigranular, porphyritic in orthoclase. Coarse-grained. Mesocratic with scattered small biotite and hornblende crystals as well as dark-coloured porphyritic micaceous xenoliths.

Field Rockname: SAMPLE DB0722 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Whole rock density = 2.65

Dry density = 2.59

Grain density = 2.66

Porosity = 2.6

MAGNETIC SUSCEPTIBILITY (S.I. * 1000001)

Mean of 15 in-situ readings = 15934

from 12189 to 18975, SD= 1667

Laboratory susceptibility = 17115

Remanence = 100.00

Koenigsberger ratio = .10

GAMMA-RAY SPECTROMETRY

Ch.1= 46196

Ch.2= 4004 3.57 % K20

Ch.3= 761 4.64 ppm U

Ch.4= 621 11.81 ppm Th

U/Th= .39

5.71 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.03	.39	15.05	4.16	.09	1.48	3.61	3.16	3.59	.13	.04	.20	99.93

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	842	-6	37	12	12	400	43	4	3	8	14	102

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	17	-5	336	-5	13	-3	74	12	21	35	116

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Adameellite	
		Porphyritic; hypidiomorphic granular	
15.	Quartz		Coarsely porphyritic in orthoclase which poikilitically encloses
44.	Orthoclase		euhedral zoned plagioclase, small hornblendes and sphene. Sparsely
30.	Plagioclase		scattered globular patches of quartz. Scattered variably sized biotite
7.	Biotite		with green-brown to yellow-brown pleochroism and sphene inclusions.
2.	Hornblende		Minor smaller euhedral hornblende pleochroic in shades of green and
.3	Apatite		commonly slightly altered to non resolvable material. Interstitial
.5	Sphene		aggregates of plagioclase variably altered to sericite and rare
.1	Chlorite		calcite in cores, but with clear rims. Minor interstitial quartz.
.001	Allanite		Scattered sphene and apatite euhedra. Minor chlorite after some
.7	Magnetite		biotites. Very rare alantite. Minor magnetite with inclusions and rims
.2	Ilmenite		of ilmenite. Very rare pyrite inclusions in some magnetites.
.001	Pyrite		

Location 0723

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0723

Dozer scrape

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5172
6396351 m N 32.55245 S latitude
698069 m E 149.1095 E longitude

Illustrations :

Age/Unit= Silurian-Devonian DUNMOOGIN FORMATION
Topography: GENTLY SLOPING UPLAND dip=90 strike=004
Structure : VERTICALLY CLEAVED
Field Geology: Slate, shale, mudstone, siltstone, and minor intraformational
conglomerate. Planar interbedded. Cleaved rocks interbedded with
non-cleaved rocks of similar competency.

Field Rockname: SAMPLE DB0723 MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE

DENSITIES
Whole rock density = 2.60
Dry density = 2.59
Grain density = 2.68
Porosity = 3.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 125
Remanence = .20
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 47148
Ch.2= 3278 2.35 % K20
Ch.3= 879 2.05 ppm U
Ch.4= 998 19.40 ppm Th
U/Th= .11
5.11 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Mudstone
FABRIC: Massive
Est. % MINERAL Mud
99.999 Mud
Silt-sized quartz, chlorite, & opaque clasts set randomly in mud
which consists of fine chlorite, sericite, minor graphite, & non-
resolvable material.

Location 0724

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0724
Outcrop

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5172
6398331 m N 32.53503 S latitude
695655 m E 149.0834 E longitude

Illustrations :

Age/Unit= Silurian-Devonian CUGA BURGA VOLCANICS
Topography: GENTLY TO MODERATELY SLOPING UPLAND dip= strike=
Structure : STEEPLY DIPPING BUT INDETERMINATE STRIKE AND DIP AT OUTCROP
Field Geology: Keratophyre and sandstone. Keratophyre medium-grained with laths of
plagioclase. Chloritised groundmass. Contains scattered small sulphide
mineral specks pseudomorphed by limonite. Highly variable magnetic
responses. Interbedded with fine-grained sandstone with ripple marks.
Field Rockname: SAMPLE DB0724 KERATOPHYRE

PHYSICAL PROPERTIES:

KERATOPHYRE		GAMMA-RAY SPECTROMETRY	
DENSITIES			
MAGNETIC SUSCEPTIBILITY (S...*000001)			
Whole rock density = 2.63	Mean of 15 in-situ readings = 8545	Ch.1= 35321	
Dry density = 2.54	from 0 to 32672 ,SD= 11197	Ch.2= 2159	1.37 % K2O
Grain density = 2.68	Laboratory susceptibility = 4825	Ch.3= 714	2.71 ppm U
Porosity = 5.2	Remanence = 350.00	Ch.4= 722	13.94 ppm Th
	Koenigsberger ratio = 1.21	U/Th= .19	
		4.37	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL FABRIC:	NAME:
90.	Plagioclase	Keratophyre
5.	Chlorite	Weakly orthophyric
3.	Limonite	Sparsely oophyritic in plagioclase microphenocrysts set amid smaller rectangular & lath-like plagioclase. Scattered interstitial fine-grained chlorite & lesser magnetite altering to hematite.
1.	Magnetite	Streaks & clots of limonite occur as weathering products of a disseminated sulphide mineral.
1.	Hematite	

Location 0725

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0725
Quarry

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5176
6398946 m N 32.53158 S latitude
683396 m E 148.9528 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: VERY GENTLY UNDULATING LOWLAND dip=80W strike=045
Structure : STEEPLY DIPPING
Field Geology: Siltstone, sandstone and shale. Shales are graptolite-bearing. Thin to medium bedded with thickening and thinning of bedding due to differential compaction. Rare interbeds of graded feldspathic sandstone.
Field Rockname: SAMPLE DB0725 SILTSTONE

PHYSICAL PROPERTIES:

DENSITIES	SILTSTONE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.27		Mean of 9 in-situ readings = 0	Ch.1= 32516
Dry density = 2.16		from to ,SD=	Ch.2= 2666 2.37 % K2O
Grain density = 2.64		Laboratory susceptibility = 0	Ch.3= 685 8.99 ppm U
Porosity = 18.1		Remanence = .10	Ch.4= 151 2.24 ppm Th
		Koenigsberger ratio = *****	U/Th= 4.01
			6.50 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL FABRIC:	NAME: Siltstone
20.	Plagioclase	Delicately laminated, though variably sorted within laminae
1.	Rock fragments	Randomly distributed, fine-sand sized clasts of sericitised plagioclase, minor smaller angular quartz fragments, & rare quartzite lithic fragments. The remainder of the rock consists of clay with tiny thin graphite partings. The crystal fragments appear to represent air-fall tuff material which has settled during normal marine sedimentation.
4.	Quartz	
75.	Mud	

Location 0726

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0726

Outcrop

DJBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5176
6399449 m N 32.52657 S latitude
686252 m E 148.9831 E longitude

Illustrations :

Age/Unit= Silurian-Devonian CUGA BURGA VOLCANICS
Topography: GENTLY SLOPING LOWLAND dip= strike=
Structure : STEEP DIPPING REGIONALLY. INDETERMINATE AT OUTCROP
Field Geology: Basalt. Porphyritic, fine-grained, with slight chlorite alteration.

Field Rockname: SAMPLE DB0726 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 2.87
Dry density = 2.86
Grain density = 2.86
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 14 in-situ readings = 16803
from 5026 to 30033 ,SD= 8005
Laboratory susceptibility = 11347
Remanence = 4000.00
Koenigsberger ratio = 5.88

GAMMA-RAY SPECTROMETRY
Ch.1= 16227
Ch.2= 1163 .93 % K2O
Ch.3= 296 2.01 ppm U
Ch.4= 224 4.23 ppm Th
U/Th= .48
2.18 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
		Altered basalt
	FABRIC:	Porphyritic; vesicular; weakly trachytic
40.	Plagioclase	Euhedral phenocrysts of augite & rare chloritised ferromagnesian mineral ?orthopyroxene, surrounded by moderately parallel-oriented laths of altered plagioclase. The groundmass is variably altered. In
10.	Augite	places it is iron-charged, consisting of earthy hematite & minor ilmenite. Elsewhere it is very fine-grained & often vesicular. The
15.	Vesicles	vesicles are filled with chlorite, sericite, & chalcedonic quartz.
4.	Hematite	Rare basaltic xenoliths. Scattered magnetite subhedra. Very rare
1.	Magnetite	epidote partially pseudomorphing the larger altered plagioclases.
1.	Ilmenite	
24.	Groundmass	
4.	Rock fragments	
1.	Ferromagnesian	
.1	Epidote	

Location 0727

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0727

Dozer scrape

DUBBO

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6399808 m N air-photo:run-no.= 5-5176
688993 m E 32.52287 S latitude
149.0122 E longitude

Illustrations :

Age/Unit= Silurian
Topography: GENTLY SLOPING UPLAND RISES dip=55E strike=010
Structure : MODERATELY DIPPING
Field Geology: Siltstone, lithic sandstone and mudstone. Laminated to medium-bedded.
Bedding is defined by changes in lithology. Each unit is internally
massive. Cleavage absent throughout.

Field Rockname: SAMPLE DB0727 LITHIC SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.56
Dry density = 2.56
Grain density = 2.87
Porosity = 11.3

VOLCANIC

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 3652
from 0 to 19100 SD= 5222
Laboratory susceptibility = 1507
Remanence = 10.00
Koenigsberger ratio = .11

GAMMA-RAY SPECTROMETRY

Ch.1= 24000
Ch.2= 2211 2.11 % K2O
Ch.3= 295 .76 ppm U
Ch.4= 329 6.39 ppm Th
U/Th= .12
2.04 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Lithic sandstone
Est. % MINERAL FABRIC: Poorly sorted
79. Rock fragments Abundant variably rounded clasts of labile basaltic detritus mostly
5. Calcite altered to clay minerals, with minor subangular augite & calcite
5. Augite grains. The mud matrix consists of clay minerals. Minor hematite &
10. Matrix rare magnetite grains.
.1 Magnetite
.9 Hematite

Location 0723

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0728

Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5176
6410387 m N 32.42773 S latitude
687622 m E 148.9955 E longitude

Illustrations :

Age/Unit=

Topography: GENTLY SLOPING LOWLAND IN ELEVATED AREA

dip= strike=

Structure :

Field Geology: Basalt. Porphyritic, fine-grained with small xenoliths in places. Tiny clusters of sulphide mineral aggregates in places. Rarely vesicular.

Field Rockname: SAMPLE DB0728 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.80
Dry density = 2.80
Grain density = 2.83
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 17584
from 3267 to 27143 .SD= 6995
Laboratory susceptibility = 37372
Remanence = 730.00
Koenigsberger ratio = .33

GAMMA-RAY SPECTROMETRY

Ch.1= 26784
Ch.2= 2809 2.91 % K20
Ch.3= 283 2.19 ppm U
Ch.4= 192 3.59 ppm Th
U/Th= .61
2.64 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Basalt	
		Porphyritic	
20.	Plagioclase		Variably sized phenocrysts of augite, slightly altered to chlorite
20.	Augite		along fractures & margins, as well as unaltered hypersthene &
1.	Calcite		altered plagioclase, which is sericitised & lightly epidotised. The
1.	Chlorite		fine-grained groundmass consists of plagioclase, epidotised fer
1.	Epidote		magnesian mineral, & chlorite. Rare vesicles of calcite, chalcedony
1.	Chalcedony		& magnetite. Scattered magnetite with marginal alteration to
52.	Groundmass		hematite.
1.	Hypersthene		
3.	Magnetite		
.1	Hematite		

Location 0729

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0729

Outcrop

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDM=1

air-photo:run-no.= 7-5124

6378027 m N

32.72242 S latitude

669378 m E

148.8074 E longitude

Illustrations :

Age/Unit= Middle Silurian CANOWINDRA PORPHYRY
Topography: GENTLY UNDULATING COUNTRY WITH OUTCROP dip= strike=
Structure : INDETERMINATE AT OUTCROP. REGIONALLY CONFORMABLE STRIKE RIDGE
Field Geology: Ignimbrite. Densely porphyritic in quartz, plagioclase, rare garnet and
pyrite set in a slightly-chloritised, fine-grained groundmass.
Xenoliths in places. Patchy epidote pseudomorphs of a ferromagnesian
minerite.

Field Rockname: SAMPLE DB0729 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.79

Dry density = 2.75

Grain density = 2.77

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 202

from 0 to 439, SD= 136

Laboratory susceptibility = 351

Remanence = .20

Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 49918

Ch.2= 3614 2.78 % K2O

Ch.3= 922 3.99 ppm U

Ch.4= 891 17.15 ppm Th

U/Th= .23

6.03 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	61.45	1.08	15.97	6.68	0.08	2.76	3.84	2.37	2.49	0.20	0.09	2.90	99.90

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	348	-6	65	25	122	31	45	-3	8	102	15	117

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	25	-20	179	6	15	-3	147	-5	23	76	183

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite

FABRIC: Porphyritic; sparingly microstylolitic

Est. %	MINERAL	DESCRIPTION
12.	Quartz	An altered rock densely porphyritic in rounded to embayed volcanic quartz, sericitised & albitised plagioclase, a former mineral pseudomorphed by fine sericite with ragged & corroded margins,
10.	Plagioclase	biotite largely altering to chlorite with liberation of brown epidote, a former ferromagnesian mineral altered to chlorite & rare garnet, as well as scattered pyrite euhedra. The groundmass consists of devitrified quartz & feldspar with interstitial chlorite.
5.	Sericite	
2.	Biotite	
10.	Chlorite	
2.	Epidote	
.001	Zircon	
1.	Calcite	Rare ilmenite.
.01	Garnet	
58.	Groundmass	
.5	Pyrite	
05.	Ilmenite	

Location 0730

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0730
Dozer scrape

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5124
6376274 m N 32.73880 S latitude
665636 m E 148.7678 E longitude

Illustrations :

Age/Unit= Lower Silurian LOOMBAH FORMATION
Topography: GENTLY UNDULATING LOW RISES AND FLATS dip=82W strike=1/0
Structure :
Field Geology: Shale, siltstone and "semi slate". Thin bedded. Very weathered.

Field Rockname: SAMPLE DB0730 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.31
Dry density = 2.18
Grain density = 2.83
Porosity = 20.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 11 in-situ readings = 376
from 188 to 879 .SD= 221
Laboratory susceptibility = 289
Remanence 40.00
Koenigsberger ratio = 2.31

GAMMA-RAY SPECTROMETRY
Ch.1= 24571
Ch.2= 2068 1.87 % K2O
Ch.3= 369 2.04 ppm U
Ch.4= 319 6.09 ppm Th
U/Th= .33
2.73 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Slate
Est. %	MINERAL FABRIC:	Massive
10.	Andalusite	Scarcely discernible porphyroblasts of andalusite amidst a massive
55.	Sericite	mixture of fine sericite & chlorite. Scattered isps of opaque
5.	Opaque	?graphite define incipient lamination.
30.	Chlorite	

Location 0731

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0731

Road cutting

DUBBO

NSW GDOM:1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5124

6376560 m N

32.73632 S latitude

664966 m E

148.7606 E longitude

Illustrations :

Age/Unit= Lower Silurian

BOURNEWOOD FORMATION

Topography: STRIKE RIDGE IN GENTLY UNDULATING AREA dip=78W strike=165

Structure : STEEPLY DIPPING

Field Geology: Lithic sandstone, shale and siltstone. Thin to thick and planar bedded, with finer units being mostly thinnest. Abundant mafic lava and mineral fragments in the lithic sandstone which is massive, lacks internal bedding and is pebbly in places.

Field Rockname: SAMPLE DB0731 LITHIC SANDSTONE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES

Whole rock density = 2.83

Dry density = 2.83

Grain density = 2.85

Porosity = .6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 647

from 376 to 1005, SD= 216

Laboratory susceptibility = 791

Remanence = 200.00

Koenigsberger ratio = 4.21

GAMMA-RAY SPECTROMETRY

Ch.1= 30433

Ch.2= 2319 2.00 % K2O

Ch.3= 486 2.96 ppm U

Ch.4= 397 7.55 ppm Th

U/Th= .39

3.58 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Lithic sandstone
65.	Rock fragments	FABRIC:	Poorly sorted
15.	Plagioclase		Subangular labile, sand-sized basaltic, andesitic lava, & vitric
15.	Augite		clasts together with detrital plagioclase & augite, both presumably
5.	Matrix		derived from eroded phenocrysts. The matrix is non-resolvable clayey
			material slightly iron-charged. Derived from reworking of basaltic
			rocks.

Location 0732

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0732
Dozer scrape

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5124
6376007 m N 32.74170 S latitude
662323 m E 148.7325 E longitude

Illustrations :

Age/Unit= Lower Silurian YULLUNDY FORMATION
Topography: LOW RISE IN GENTLY UNDULATING AREA dip=51W strike=166
Structure : MODERATELY DIPPING
Field Geology: Quartzose sandstone, greywacke, siltstone, shale and impure chert.
Impure chert and sandstone occupy 75% of exposed section. The cherts are finely laminated. The greywacke and siltstones are feldspathic.

Field Rockname: SAMPLE DB0732 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE
DENSITIES
Whole rock density = 2.44
Dry density = 2.40
Grain density = 2.63
Porosity = 8.5
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 11 in-situ readings = 11
from 0 to 62, SD= 25
Laboratory susceptibility = 175
Remanence = 3.00
Koenigsberger ratio = .29

GAMMA-RAY SPECTROMETRY

Ch.1= 42449
Ch.2= 4652 4.81 % K2O
Ch.3= 431 2.00 ppm U
Ch.4= 405 7.78 ppm Th
U/Th= .26
3.67 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Siltstone Laminated
5.	Quartz		Internally massive units between laminae. Each layer consists of a
25.	Plagioclase		random mixture of quartz, plagioclase, chloritised lithic fragments,
1.	Rock fragments		muscovite, opaque material, an altered ferromagnesian mineral, &
3.	Muscovite		abundant interstitial chlorite & mud material. Differences in grain
40.	Chlorite		size define bedding.
6.	Opaque		
10.	Mud		
10.	Ferromagnesian		

Location 0733

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0733
Road cutting

DUBBO NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo: un-no.= 7-5118
6380793 m N 32.70088 S latitude
645617 m E 148.5535 E longitude

Illustrations :1 Colour slide

Age/Unit= YEOVAL GRANITE
Topography: GENTLY SLOPING RUGGED RISE WITH OUTCROP dip= strike=
Structure : PLUTON
Field Geology: Mangerite. Inequigranular with variable texture. Brecciated in places,
the fractures filled with medium-grained granite which also occurs as
intrusive dykes. Melanocratic due to abundant hornblende. A phase of
the Yeoval Granite.
Field Rockname: SAMPLE DB0733 MANGERITE

PHYSICAL PROPERTIES:

DENSITIES		BRECCIA		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.80	Mean of 15 in-situ readings =	56841	Ch.1=	28486		
Dry density =		from 32044 to 82309 ,SD=	16474	Ch.2=	2215	1.83 % K2O	
Grain density =		Laboratory susceptibility =	0	Ch.3=	541	3.97 ppm U	
Porosity =		Remanence =	.00	Ch.4=	385	7.23 ppm Th	
		Koenigsberger ratio =		U/Th=	.55		
				4.11	Heat generation units		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Mangerite	
8.	Quartz	Hypidiomorphic granular tending gabbroic	
64.	Plagioclase	Rectangular to lath-shaped plagioclase, variably altered to sericite.	
8.	Orthoclase	Abundant subhedral brown-green pleochroic hornblende, often with small accessory sphene euhedra. Interstitial quartz & slightly altered orthoclase. Rare biotite. Accessory tiny acicular apatite euhedra and rare zircon. Scattered magnetite is uniformly distributed throughout the rock.	
20.	Hornblende		
.1	Apatite		
01.	Zircon		
.1	Sphene		
.001	Biotite		
.1	Magnetite		

Location 0734

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0734
Outcrop

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5120
8374725 m N 32.75450 S latitude
653709 m E 148.6408 E longitude

Illustrations :

Age/Unit= YEOVAL GRANITE
Topography: GENTLY UNDULATING RISES IN LOW UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Inequigranular. Porphyritic in augite and hornblende set in
a medium to coarse-grained groundmass. Mesocratic.

Field Rockname: SAMPLE DB0734 ADAMELLITE

PHYSICAL PROPERTIES: ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.68 Mean of 15 in-situ readings = 23214 Ch.1= 25735
Dry density = 2.61 from 17592 to 35437, SD= 5415 Ch.2= 2256 2.04 % K2O
Grain density = 2.64 Laboratory susceptibility = 17241 Ch.3= 421 2.89 ppm U
Porosity = 1.2 Remanence = 1000.00 Ch.4= 316 5.97 ppm Th
Koenigsberger ratio = .97 U/Th= .48
3.28 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 71.54 .65 15.90 3.49 .06 .01 2.76 .01 3.80 .30 .02 .50 99.02
TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 864 -6 78 9 32 456 64 -3 7 18 12 113
TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 13 -5 1290 -5 10 3 63 13 12 50 204

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Porphyritic; hypidiomorphic granular to slightly aplitic
Est. % MINERAL
35. Quartz Phenocrysts of green-brown pleochroic euhedral hornblende, as well as
25. Orthoclase augite largely altered to colourless & light green-blue pleochroic
30. Plagioclase hornblende. Abundant strongly sericitised laths of porphyritic
2. Augite plagioclase. The medium-grained groundmass has a slightly aplitic
6. Hornblende appearance & consists of anhedral quartz, kaolinised orthoclase,
.2 Epidote brown biotite often altering to bright yellowish epidote & chlorite,
.001 Allanite as well as scattered free epidote, rare accessory apatite & allanite.
1. Biotite Scattered minor magnetite with rare ilmenite exsolution lamellae.
.2 Chlorite Magnetite is generally close to or adjacent to hornblende.
.01 Apatite
1. Magnetite
.01 Ilmenite

Location 0735

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0735

Road cutting

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDM=1

air-photo:run-no.= 8-5194

6363235 m N

32.85705 S latitude

661009 m E

148.7207 E longitude

Illustrations :

Age/Unit= Lower Silurian

YULLUNDY FORMATION

Topography: GENTLY UNDULATING

dip=63E strike=021

Structure: MODERATELY DIPPING

Field Geology: Feldspathic siltstone. Grain-size differences define lamination.

Abundant feldspar.

Field Rockname: SAMPLE DB0735 FELDSPATHIC SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.72
Dry density = 2.70
Grain density = 2.97
Porosity = 4.5

MAGNETIC SUSCEPTIBILITY (S.I. x .000001)

Mean of 12 in-situ readings = 267
from 0 to 502, SD= 185
Laboratory susceptibility = 238
Remanence = .10
Koenigsberger ratio = -

GAMMA-RAY SPECTROMETRY

Ch.1= 42403
Ch.2= 3671 3.22 x K2O
Ch.3= 731 4.35 ppm U
Ch.4= 606 11.54 ppm Th
U/Th= .38
5.40 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Feldspathic siltstone
Est. %	FABRIC:	Laminated
5.	Quartz	Lamination is defined by variations in grain size. Each lamina
25.	Plagioclase	consists of a massive unsorted mixture of angular quartz, plagioclase,
.1	Epidote	fine labile volcanic rock fragments, rarer epidote, augite, & calcite
.1	Calcite	with interstitial mud. Deposited near source, possibly as a crystal
4.	Rock fragments	ash shower falling in water.
3.	Opaque	
1.	Augite	
62.	Mud	

Location 0736

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0736
Road cutting

DUBBO

1:250,000 sheet area 1:100,000 sheet area
6361595 m N 32.87168 S latitude
662115 m E 148.7328 E longitude

NSW GDDM=1

air-photo:run-no.= 8-5194

Illustrations :

Age/Unit= Upper Silurian BUCKINBAH VOLCANICS
Topography: GENTLY UNDULATING dip=62W strike=014
Structure : MODERATELY TILTED
Field Geology: Feldspathic sandstone, chert and shale.

Field Rockname: SAMPLE DB0736 FELDSPATHIC SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.86
Dry density = 2.85
Grain density = 2.85
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 21942
from 376 to 76277 ,SD= 23670
Laboratory susceptibility = 7992
Remanence = 400.00
Koenigsberger ratio = .83

GAMMA-RAY SPECTROMETRY

Ch.1= 37398
Ch.2= 2894 2.32 % K2O
Ch.3= 748 5.23 ppm U
Ch.4= 554 10.45 ppm Th
U/Th= .50
5.55 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	54.15	.78	13.34	9.31	.16	5.71	7.62	3.13	2.48	.43	.07	2.30	99.46

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	991	-6	81	35	159	110	75	-3	10	44	11	36

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	40	-20	2375	-5	10	-3	246	-5	20	78	127

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Feldspathic sandstone
15.	Plagioclase	FABRIC:	Massive; poorly sorted
25.	Augite		Subangular, variably-sized clasts of plagioclase, augite, altered hornblende, & rock fragments which include basalt, andesite, chloritised volcanic glass, & hydrothermal quartzite. The matrix consists of tiny crystal detritus mixed with clay derived from diagenesis of the more altered lava clasts. Abundant labile debris, poor rounding & poor sorting indicate this rock was formed close to its source after rapid transportation of the detritus. Minor magnetite and accessory smaller pyrite & very rare chalcopyrite in some clasts.
1.	Hornblende		
20.	Rock fragments		
37.	Matrix		
2.	Magnetite		
.1	Pyrite		
.001	Chalcopyrite		

Location 0737

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0737

Outcrop

DUBBO

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
air-photo:run-no.= 9-5008

6355935 m N

32.92500 S latitude

645859 m E

148.5600 E longitude

Illustrations :

Age/Unit= Silurian-Devonian

DULLADERRY RHYOLITE

Topography: GENTLY SLOPING RISE TOPPED WITH OUTCROP

dip= strike=

Structure : INDETERMINATE REGIONALLY-CHAOTIC FLOW BANDING IN PLACES

Field Geology: Rhyolite breccia and rhyolite. The breccia consists of angular to sub-
rounded lava fragments set in a rhyolitic groundmass. The rhyolite
is massive and flow-banded with microphenocrysts of quartz and ortho-
clase. Rare tiny epidote veinlets and tiny specks of a sulphide mineral.

Field Rockname: SAMPLE DB0737 BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES
Whole rock density = 2.76
Dry density = 2.81
Grain density = 2.81
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 14 in-situ readings = 556
from 314 to 879, SD= 201
Laboratory susceptibility = 150
Remanence = 1.00
Koenigsberger ratio = .11

GAMMA-RAY SPECTROMETRY

Ch.1= 37477
Ch.2= 2547 1.93 % K2O
Ch.3= 710 4.32 ppm U
Ch.4= 580 11.03 ppm Th
U/Th= .39
5.00 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	62.28	.56	14.54	6.02	.10	2.59	5.53	3.52	2.23	.10	.09	1.80	99.37

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	339	-6	67	24	60	66	46	6	15	21	14	79

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	21	-20	178	-5	14	4	144	9	53	63	271

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Breccia
Est. % MINERAL FABRIC: Fragmental; unsorted
70. Rock fragments Angular to subangular clasts of rhyolite, spherulitic rhyolite,
5. Orthoclase andesite, dacite, epidote, & epidote quartzite, as well as minor
25. Groundmass orthoclase, set in a very grained groundmass of fine crystal detritus
mixed with glass which has altered to non-resolvable clay & ?epidote
microgranules. Trace goethite after ?magnetite in some clasts & rare
tiny specks of pyrite in others.

Location 0738

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0738

Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-5008
 6353525 m N 32.94583 S latitude
 652425 m E 148.6306 E longitude

Illustrations :

Age/Unit=

YEOVAL GRANITE

Topography: GENTLY SLOPING RUGGED RISE IN UPLAND dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Equigranular, medium-grained, leucocratic. Scattered large biotite plates. Slightly porphyritic in places. Locally biotite rich. Phase of Yeoval Granite.

Field Rockname: SAMPLE DB0738 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Whole rock density = 2.62
 Dry density = 2.61
 Grain density = 2.61
 Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 6040
 from 1256 to 10053, SD= 2743
 Laboratory susceptibility = 10693
 Remanence = 40.00
 Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY

Ch.1= 5088
 Ch.2= 4179 3.60 X K20
 Ch.3= 883 5.62 ppm U
 Ch.4= 701 13.30 ppm Th
 U/Th= .42
 6.57 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.9%	.29	13.15	1.78	.05	.35	.98	4.00	3.74	.08	.01	.10	99.46
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	770	-6	53	4	4	219	39	-3	15	-5	10	109	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	-5	132	-5	12	3	13	7	31	28	188		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Adamellite	Hypidiomorphic granular
46.	Orthoclase		Scattered globules of quartz with resorbtion in places. Euhedral strongly sericitised plagioclase with clear secondary rims surrounded
30.	Plagioclase		by interstitial anhedral kaolinised orthoclase. Scattered biotite altering to chlorite. Scattered minor zircon & apatite generally close to biotite. Minor magnetite with exsolution lamellae of hematite intergrown with ilmenite, which also occurs free.
1.	Biotite		
2.	Chlorite		
.1	Apatite		
.001	Zircon		
.6	Magnetite		
.4	Ilmenite		
.01	Hematite		

Location 0739

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0739

Road cutting

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-5008

6354510 m N

32.93632 S latitude

656920 m E

148.6785 E longitude

Illustrations :

Age/Unit= Middle Silurian

CANOWINDRA PORPHYRY

Topography: STRIKE RIDGE IN GENTLY SLOPING REGION

dip= strike=

Structure : MASSIVE

Field Geology: Ignimbrite. Porphyritic with phenocrysts of rounded volcanic quartz, stubby euhedral plagioclase, altered biotite and sparse small garnets set in a fine-grained groundmass with smaller crystal fragments. Minor phases of breccia, the clasts being identical to the groundmass.

Field Rockname: SAMPLE DB0739 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.69

Dry density = 2.69

Grain density = 2.69

Porosity = .0

Mean of 9 in-situ readings = 314

from 0 to 565, SD= 172

Laboratory susceptibility = 75

Remanence = .80

Koenigsberger ratio = .18

Ch.1= 39103

Ch.2= 2943 2.32 % K2O

Ch.3= 702 2.71 ppm U

Ch.4= 706 13.63 ppm Th

U/Th= .20

4.53 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	HgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.50	0.68	14.57	5.39	0.09	2.19	1.62	2.66	3.93	0.17	0.06	1.90	99.73

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	734	-6	70	6	49	25	48	-3	10	38	20	172

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	V	W	Y	Zn	Zr
p.p.m.	17	-20	154	-5	4	5	83	-5	46	207

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Ignimbrite	Porphyritic
15.	Plagioclase	Phenocrysts of fractured & embayed volcanic quartz, with lesser strongly sericitised plagioclase, biotite considerably bleached &	
.5	Garnet	altered to chlorite & opaque mineral, a former ferromagnesian	
4.	Biotite	mineral pseudomorphed by chlorite, epidote & muscovite, & rare	
2.	Ferromagnesian	variably sized garnets. The groundmass consists of fine crystal	
1.	Opaque	fragments & ultrafine devitrified quartzo-feldspathic material. Rare	
58.	Groundmass	opaque mineral.	

Location 0740

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0740
Dozer scrape

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5192
6357666 m N 32.90625 S latitude
667776 m E 148.7940 E longitude

Illustrations :

Age/Unit= Lower-Middle Devonian CARINYA FORMATION
Topography: GENTLY UNDULATING UPLAND dip=07S strike=100
Structure : VERY GENTLY DIPPING
Field Geology: Siltstone. Thin to medium bedded. Bedding defined by subtle variation in
the amount of quartz. Lacks cleavage.

Field Rockname: SAMPLE DB0740 SILTSTONE

PHYSICAL PROPERTIES: SILTSTONE

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.60	Mean of 10 in-situ readings =	0	Ch.1=	44258
Dry density =	2.50	from to ,SD=		Ch.2=	2706 1.75 % k20
Grain density =	2.63	Laboratory susceptibility =	351	Ch.3=	906 4.33 ppm U
Porosity =	5.1	Remanence =	2.00	Ch.4=	841 16.14 ppm Th
		Koenigsberger ratio =	.09	U/Th=	.27
				5.83	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
5.	Quartz	Siltstone	Laminated
1.	Plagioclase	Lamination defined by variations in quartz content. Each layer consists of an unsorted mixture of angular quartz, plagioclase, rare	
2.	Epidote	epidote, opaque mineral, & abundant randomly-oriented muscovite	
20.	Muscovite	flakes, with chlorite & mud.	
2.	Opaque		
5.	Chlorite		
65.	Mud		

Location 0741

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0741
Outcrop

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5192
6357325 m N 32.90887 S latitude
670708 m E 148.8254 E longitude

Illustrations :

Age/Unit= Lower-Middle Devonian GARRA FORMATION
Topography: MAINLY FLAT WITH STRIKE RIDGE dip= strike=
Structure :
Field Geology: Limestone. Fossiliferous in bryozoans. Mainly massive with minor calcite
veins.

Field Rockname: SAMPLE DB0741 LIMESTONE

PHYSICAL PROPERTIES:

LIMESTONE
DENSITIES
Whole rock density = 2.69
Dry density = 2.63
Grain density = 2.67
Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = 1.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 13671
Ch.2= 804 .58 % k20
Ch.3= 243 1.44 ppm U
Ch.4= 202 3.85 ppm Th
U/Th= .37
1.68 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Limestone
Est. % MINERAL FABRIC: Massive with veinlets
99.999 Calcite Recrystallised mosaic of calcite crystals with relict bryozoan &
brachiopod remains. Numerous veinlets of clear calcite. Rare
microstylolites in places.

Location 0742

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0742
Outcrop

DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5192
6358413 m N 32.89915 S latitude
670128 m E 148.8190 E longitude

Illustrations :

Age/Unit= Lower-Middle Devonian CADUMBLE FORMATION
Topography: STRIKE RISES IN GENTLY UNDULATING AREA dip= strike=
Structure :
Field Geology: Basalt. Small phenocrysts of plagioclase and a larger ferro-magnesian mineral altering to chlorite and epidote. The groundmass is fine-grained and may be slightly calcareous.

Field Rockname: SAMPLE DB0742 BASALT

PHYSICAL PROPERTIES:

BASALT
DENSITIES
Whole rock density = 2.85
Dry density = 2.79
Grain density = 2.82
Porosity = .10

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 30251
from 14702 to 44861 .SD= 7773
Laboratory susceptibility = 40639
Remanence = 41000.00
Koenigsberger ratio = 16.81

GAMMA-RAY SPECTROMETRY

Ch.1= 17478
Ch.2= 1232 .94 % K2O
Ch.3= 319 1.34 ppm U
Ch.4= 312 6.01 ppm Th
U/Th= .22
2.07 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Basalt
Est. % MINERAL FABRIC: Pilotaxitic
35. Plagioclase Abundant euhedral phenocrysts of strongly sericitised plagioclase with
8. Augite lesser, unaltered augite and microphenocrysts of chlorite pseudomorphs
3. Chlorite of orthopyroxene, and scattered magnetite, set in a fine-grained
1. Calcite groundmass of unaltered plagioclase laths, altered chloritised
1.5 Magnetite pyroxene, minor augite, and magnetite dust. Rare calcite pseudomorphs
53. Groundmass of a ferromagnesian phenocryst. Magnetite microphenocrysts
preferentially cluster around, or occur as inclusions in the larger
augite phenocrysts.

Location 0743

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0743

Road cutting

DUBBO

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5192

6363858 m N

32.84982 S latitude

671636 m E

148.8341 E longitude

Illustrations :

Age/Unit= Upper Devonian

BLACK ROCK SUB GROUP

Topography: STRIKE RIDGE IN GENTLY SLOPING UPLAND

dip=47E strike=165

Structure: MODERATELY TILTED

Field Geology: Quartzose sandstone and siltstone. Planar and thinly interbedded. The sandstone is fine to medium-grained, well sorted and well washed.

Field Rockname: SAMPLE DB0743 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.55
Dry density = 2.52
Grain density = 2.84
Porosity = 11.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 5 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = 2.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 29016
Ch.2= 1520 .79 % K2O
Ch.3= 624 2.83 ppm U
Ch.4= 592 11.38 ppm Th
J/Th= .25
3.87 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Quartzose sandstone
	FABRIC:	Moderately sorted
Est. %	MINERAL	
90.	Quartz	Subrounded to rounded quartz grains tightly packed, with small amounts
.01	Zircon	of less rounded lava fragments, opaque mineral, & kaolinised feldspar,
.1	Augite	with rare zircon, tourmaline, & augite. The matrix consists mainly of
.1	Tourmaline	sericitic mud. Rare clasts of sericitised muscovite.
2.	Rock fragments	
2.	Opaque	
.1	Muscovite	
1.	Feldspar	
5.	Matrix	

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LOC	CONTENT	LOC	CONTENT	LOC	CONTENT	LOC	CONTENT	LOC	CONTENT
C01	Location 0409	004	Location 0463	M08	Location 0517	K12	Location 0655	I16	Location 0709
D01	Location 0410	P04	Location 0464	N08	Location 0518	L12	Location 0656	J16	Location 0710
E01	Location 0411	C05	Location 0465	O08	Location 0519	M12	Location 0657	K16	Location 0711
F01	Location 0412	D05	Location 0466	P08	Location 0520	N12	Location 0658	L16	Location 0712
G01	Location 0413	E05	Location 0467	C09	Location 0521	O12	Location 0659	M16	Location 0713
H01	Location 0414	F05	Location 0468	D09	Location 0522	P12	Location 0660	N16	Location 0714
I01	Location 0415	G05	Location 0469	E09	Location 0523	C13	Location 0661	O16	Location 0715
J01	Location 0416	H05	Location 0470	F09	Location 0524	D13	Location 0662	P16	Location 0716
K01	Location 0417	I05	Location 0471	G09	Location 0525	E13	Location 0663	C17	Location 0717
L01	Location 0418	J05	Location 0472	H09	Location 0526	F13	Location 0664	D17	Location 0718
M01	Location 0419	K05	Location 0473	I09	Location 0527	G13	Location 0665	E17	Location 0719
N01	Location 0420	L05	Location 0474	J09	Location 0528	H13	Location 0666	F17	Location 0720
O01	Location 0421	M05	Location 0475	K09	Location 0529	I13	Location 0667	G17	Location 0721
P01	Location 0422	N05	Location 0476	L09	Location 0530	J13	Location 0668	H17	Location 0722
Q02	Location 0423	O05	Location 0477	M09	Location 0531	K13	Location 0669	I17	Location 0723
D02	Location 0424	P05	Location 0478	N09	Location 0532	L13	Location 0670	J17	Location 0724
E02	Location 0425	C06	Location 0479	O09	Location 0533	M13	Location 0671	K17	Location 0725
F02	Location 0426	D06	Location 0480	P09	Location 0534	N13	Location 0672	L17	Location 0726
G02	Location 0427	E06	Location 0481	C10	Location 0535	O13	Location 0673	M17	Location 0727
H02	Location 0428	F06	Location 0482	D10	Location 0536	P13	Location 0674	N17	Location 0728
I02	Location 0429	G06	Location 0483	E10	Location 0537	C14	Location 0675	O17	Location 0729
J02	Location 0430	H06	Location 0484	F10	Location 0538	D14	Location 0676	P17	Location 0730
K02	Location 0431	I06	Location 0485	G10	Location 0539	E14	Location 0677	C18	Location 0731
L02	Location 0432	J06	Location 0486	H10	Location 0540	F14	Location 0678	D18	Location 0732
M02	Location 0433	K06	Location 0487	I10	Location 0541	G14	Location 0679	E18	Location 0733
N02	Location 0434	L06	Location 0488	J10	Location 0542	H14	Location 0680	F18	Location 0734
O02	Location 0435	M06	Location 0489	K10	Location 0543	I14	Location 0681	G18	Location 0735
P02	Location 0436	N06	Location 0490	L10	Location 0544	J14	Location 0682	H18	Location 0736
Q03	Location 0437	O06	Location 0491	M10	Location 0545	K14	Location 0683	I18	Location 0737
D03	Location 0438	P06	Location 0492	N10	Location 0546	L14	Location 0684	J18	Location 0738
E03	Location 0439	C07	Location 0493	O10	Location 0547	M14	Location 0685	K18	Location 0739
F03	Location 0440	D07	Location 0494	P10	Location 0548	N14	Location 0686	L18	Location 0740
G03	Location 0441	E07	Location 0495	C11	Location 0549	O14	Location 0687	M18	Location 0741
H03	Location 0442	F07	Location 0496	D11	Location 0550	P14	Location 0688	N18	Location 0742
I03	Location 0443	G07	Location 0497	E11	Location 0551	C15	Location 0689	O18	Location 0743
J03	Location 0444	H07	Location 0498	F11	Location 0552	D15	Location 0690		
K03	Location 0445	I07	Location 0499	G11	Location 0553	E15	Location 0691		
L03	Location 0446	J07	Location 0500	H11	Location 0554	F15	Location 0692		
M03	Location 0447	K07	Location 0501	I11	Location 0555	G15	Location 0693		
N03	Location 0448	L07	Location 0502	J11	Location 0556	H15	Location 0694		
O03	Location 0449	M07	Location 0503	K11	Location 0557	I15	Location 0695		
P03	Location 0450	N07	Location 0504	L11	Location 0558	J15	Location 0696		
Q04	Location 0451	O07	Location 0505	M11	Location 0559	K15	Location 0697		
D04	Location 0452	P07	Location 0506	N11	Location 0560	L15	Location 0698		
E04	Location 0453	C08	Location 0507	O11	Location 0561	M15	Location 0699		
F04	Location 0454	D08	Location 0508	P11	Location 0562	N15	Location 0700		
G04	Location 0455	E08	Location 0509	C12	Location 0563	J15	Location 0701		
H04	Location 0456	F08	Location 0510	D12	Location 0564	P15	Location 0702		
I04	Location 0457	G08	Location 0511	E12	Location 0565	C16	Location 0703		
J04	Location 0458	H08	Location 0512	F12	Location 0566	D16	Location 0704		
K04	Location 0459	I08	Location 0513	G12	Location 0567	E16	Location 0705		
L04	Location 0460	J08	Location 0514	H12	Location 0568	F16	Location 0706		
M04	Location 0461	K08	Location 0515	I12	Location 0569	G16	Location 0707		
N04	Location 0462	L08	Location 0516	J12	Location 0570	H16	Location 0708		

Location 0744

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0744

Road cutting

DUBBO

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6363399 m N 32.85365 S latitude air-photo:run-no.= 8-5192
673603 m E 148.8552 E longitude

Illustrations :

Age/Unit= Silurian-Devonian TOONGI GROUP

Topography: STRIKE RIDGE IN GENTLY SLOPING UPLAND dip= strike=

Structure :

Field Geology: Andesite. Phenocrysts of stubby plagioclase and minor augite set in a fine-grained altered groundmass.

Field Rockname: SAMPLE DB0744 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.82
Dry density = 2.77
Grain density = 2.81
Porosity = 1.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 28037
from 26797 to 36065 .SD= 4589
Laboratory susceptibility = 38440
Remanence = 6000.00
Koenigsberger ratio = 2.60

GAMMA-RAY SPECTROMETRY

Ch.1= 15373
Ch.2= 1177 1.02 % K2O
Ch.3= 245 1.52 ppm U
Ch.4= 198 3.76 ppm Th
U/Th= .40
1.81 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Andesite	
50.	Plagioclase		Porphyritic; altered; vesicular
5.	Augite		Phenocrysts of unaltered augite & plagioclase, glomeroporphyritic in places & extensively sericitised & clouded by alteration. The groundmass is extensively but variably altered. Typically, it consists of small plagioclase laths amidst chloritised non-resolvable fine-grained material & is interspersed with small vesicles of chlorite & less common sericite, epidote, tremolite, actinolite, & secondary plagioclase. The groundmass is patchily iron-charged to a mass of secondary iron oxide. Frequent groundmass & rare phenocrystic magnetite.
5.	Chlorite		
1.	Sericite		
1.	Tremolite		
1.	Actinolite		
1.	Epidote		
33.	Groundmass		
3.	Magnetite		

Location 0745

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0745
Outcrop

DUBBO

1:250,000 sheet area 1:100,000 sheet area
6368451 m N 32.80652 S latitude
683359 m E 148.9584 E longitude

NSW GDOM=1

air-photo:run-no.= 8-5188

Illustrations :

Age/Unit= GOWAN GREEN GROUP
Topography: MODERATELY SLOPING SMOOTH UPLAND dip= strike=
Structure :
Field Geology: Andesite. Deuterically altered, with small plagioclase phenocrysts set
in epidote-bearing, red-stained iron-charged groundmass. Minor calcite
veins.

Field Rockname: SAMPLE DB0745 ANDESITE

PHYSICAL PROPERTIES: ANDESITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY	
Whole rock density = 2.65	Mean of 15 in-situ readings = 10941	Ch.1= 11982	
Dry density = 2.68	from 5026 to 21488 .SD= 5210	Ch.2= 726	.50 % K2O
Grain density = 2.86	Laboratory susceptibility = 25421	Ch.3= 263	2.32 ppm U
Porosity = 6.4	Remanence = 700.00	Ch.4= 154	2.83 ppm Th
	Koenigsberger ratio = .46	U/Th= .82	
		2.03	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Andesite	Porphyritic; slightly vesicular
40.	Plagioclase		Phenocrysts of plagioclase, lightly kaolinised with chlorite pseudo-
2.	Magnetite		morphs of former ?hornblende & calcite pseudomorphs of former
1	Ilmenite		?augite. The highly felsic groundmass has scattered chlorite & is
5.	Calcite		crossed by numerous veinlets of chlorite, epidote, quartz, & calcite.
5.	Chlorite		Scattered magnetite, rarely intergrown with ilmenite. Patchy iron-
43.	Groundmass		charged groundmass in places.
3.	Epidote		
2.	Quartz		

Location 0746

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO: (7962)0746

Outcrop

GILGANDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-1560

6471445 m N

31.87197 S latitude

717159 m E

149.2956 E longitude

Illustrations :

Age/Unit: Silurian-Lower Devonian

Topography: GENTLY SLOPING RISE WITH OUTCROP

dip=85E, strike=164

Structure: STEEPLY DIPPING

Field Geology: Rhyolite. Massive, altered and slightly cleaved parallel to weak flow banding. Phenocrysts largely altered and resemble groundmass in appearance.

Field Rockname: SAMPLE GG0746 RHYOLITE

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES

Whole rock density = 2.50

Dry density = 2.52

Grain density = 2.70

Porosity = 6.5

MAGNETIC SUSCEPTIBILITY (S.I. * 000001)

Mean of 12 in-situ readings = 439

from 0 to 1150 SD = 357

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1 = 29001

Ch.2 = 2059 1.46 % K2O

Ch.3 = 670 4.99 ppm U

Ch.4 = 470 8.82 ppm Th

U/Th = 5.7

4.93 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	72.70	0.54	15.63	1.89	0.01	0.80	0.05	0.02	5.12	0.02	0.04	3.00	99.82

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	607	-6	15	-1	-1	7	2	5	-3	33	18	148

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	-20	15	-5	-5	-3	91	-5	17	26	139

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Rhyolite
10.	Quartz	FABRIC:	Altered
15.	Plagioclase		Small segregations & veinlets of quartz amidst a mass of sericite & sericitised equant plagioclase within which relict plagioclase
2.	Opaque		phenocrysts, now extensively sericitised, can be recognised. Veinlets
20.	Sericite		& disseminations of opaque mineral.
53.	Groundmass		

Location 0747

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0747
Outcrop

GILGANDRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 10-1444
6459265 m N 31.98075 S latitude
722394 m E 149.3537 E longitude

illustrations :

Age/Unit: Silurian-Devonian TUCKLAN BEDS
Topography: GENTLY UNDULATING LOWLAND dip=72W strike=005
Structure : STEEPLY DIPPING
Field Geology: Mudstone and chert. Thinly interbedded. Weathered. Chert is variably
argillaceous.

Field Rockname: SAMPLE GG0747 CHERT

PHYSICAL PROPERTIES:

CHERT

DENSITIES
Whole rock density = 2.32
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 376
from 0 to 1507 .SD= 380
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 17729
Ch.2= 1056 .71 % K2O
Ch.3= 410 4.11 ppm U
Ch.4= 198 3.55 ppm Th
U/Th= 1.16
3.32 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
81.	Quartz	Chert	Recrystallised
1.	Epidote		
15.	Opaque		
1.	Muscovite		
2.	Chlorite		

Ultrafine scarcely-resolvable mixture of chalcedonic quartz, opaque mineral, & limonite, within which rare epidote microgranules, chlorite, & muscovite can be recognised. Patches of clear chalcedony possibly pseudomorphing original diagenetic ?feldspar.

Location 0748

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0748
Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5040

6455799 m N

32.00797 S latitude

742019 m E

149.5621 E longitude

Illustrations :

Age/Unit= Silurian-Devonian

Topography: GENTLY SLOPING RISE

dip=75NW strike=04Z

Structure : STEEPLY DIPPING

Field Geology: Rhyodacite. Phenocrysts of volcanic quartz and less frequent plagioclase set in a very fine-grained groundmass containing tiny biotite aggregates clustered into patches that are flattened parallel to igneous layering.

Field Rockname: SAMPLE DB0748 RHYODACITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.65

Dry density = 2.64

Grain density = 2.64

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 17

from 0 to 125, SD= 47

Laboratory susceptibility = 0

Remanence = 1.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 42560

Ch.2= 3015 2.41 % K2O

Ch.3= 698 2.65 ppm U

Ch.4= 706 13.63 ppm Th

U/Th= .19

4.51 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SC'S	LOI	SUM
Weight %	75.72	0.14	12.34	1.88	0.04	0.24	1.13	3.12	3.98	0.05	0.05	0.80	99.49

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	793	-6	31	6	-1	-5	32	6	7	36	25	160

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	104	-5	17	-3	6	10	36	67	162

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
12.	Quartz	Rhyodacite	Porphyritic; slightly altered; flow banded.
8.	Plagioclase		Phenocrysts of rounded, embayed volcanic quartz & smaller micro-phenocrysts of non-embayed bipyramidal to spherical porphyroblast-like quartz, lesser phenocrysts of poorly twinned plagioclase with abundant muscovite & rare epidote inclusions. The groundmass is fine grained
3.	Biotite		quartz, feldspar with clots of secondary biotite aggregates &
1.	Epidote		streaks of epidote granules in places. Some potassic layers have abundant muscovite. Minor opaque mineral.
.5	Opaque		
1.	Muscovite		
75.	Groundmass		

Location 0749

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0749
Outcrop

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5040

6452782 m N

32.03662 S latitude

735105 m E

149.4897 E longitude

Illustrations :

Age/Unit= Upper Silurian-Lower Devonian TUCKLAN BEDS

Topography: VERY LOW RISE WITH OUTCROP

dip=90 strike=015

Structure : STEEPLY DIPPING

Field Geology: Ignimbrite. Phenocrysts of large rounded embayed volcanic quartz, altered plagioclase and altered ferromagnesian mineral set in a very fine quartzo-feldspathic groundmass. Clots and patches of tiny mica crystal aggregates flattened parallel to flow layering.

Field Rockname: SAMPLE D80749 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.79	Mean of 9 in-situ readings =	0	Ch.1=	37150
Dry density =	2.75	from to	SD=	Ch.2=	2752 2.30 % K2O
Grain density =	2.75	Laboratory susceptibility =	9914	Ch.3=	589 2.52 ppm U
Porosity =	.0	Remanence	3.00	Ch.4=	572 11.01 ppm Th
		Koenigsberger ratio	= .01	U/Th=	.23
				3.96	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.80	0.57	13.93	5.57	0.12	2.16	3.46	2.28	3.61	0.13	0.07	1.40	99.10

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	Zn	Mo	Nb	Ni	Pb	Rb
p.p.m.	783	-6	49	5	36	15	36	7	9	57	17	131

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	20	-20	220	-5	12	-3	114	-5	34	65	173

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Ignimbrite
7.	Quartz	FABRIC:	Porphyritic; slightly altered
7.	Plagioclase		Phenocrysts of rounded embayed volcanic quartz, ghosted relicts of plagioclase pseudomorphed by epidote & sericite as well as brownish-red hornblende often altering to light-green actinolite. The groundmass is largely devitrified quartzofeldspathic material with minor
15.	Hornblende		opaque mineral, some of which is
1.	Calcite		intergrown with hornblende, or occurs simply as inclusions within it.
1.	Opaque		
69.	Groundmass		

Location 0750

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0750

Road cutting

GILGANDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-1610
6482820 m N 31.77023 S latitude
712879 m E 149.2479 E longitude

Illustrations :

Age/Unit= Tertiary
Topography: LEVEL BENCH IN SLIGHTLY STEPPED RISE dip= strike=
Structure : HORIZONTAL FLOW
Field Geology: Lamprophyre. Not obviously porphyritic. Very mafic rock. Very fine-grained.

Field Rockname: SAMPLE GG0750 LAMPROPHYRE

PHYSICAL PROPERTIES:

LAMPROPHYRE

DENSITIES
Whole rock density = 2.96
Dry density = 2.96
Grain density = 2.96
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 10 in-situ readings = 28085
from 19603 to 37322 ,SD= 6111
Laboratory susceptibility = 41142
Remanence = 2500.00
Koenigsberger ratio = 1.01

GAMMA-RAY SPECTROMETRY

Ch.1= 23557
Ch.2= 1392 .81 % K20
Ch.3= 534 2.92 ppm U
Ch.4= 464 8.86 ppm Th
U/Th= .33
3.51 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Olivine	Lamprophyre	Microporphyritic
30.	Nepheline		Microphenocrysts of olivine showing slight marginal alteration to bowlingite & rare iddingsite. Abundant smaller euhedral pink titaniferous augite amidst interstitial glass, much of which has crystallised as nepheline. Abundant acicular ?apatite euhedra in glass & as inclusions in nepheline. Scattered anhedral magnetite. Rare tiny grains of chalcopyrite.
30.	Augite		
1.	Apatite		
4.	Magnetite		
20.	Glass		
.01	Chalcopyrite		

Location 0751

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0751
Outcrop

GILGANDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-1610
6485708 m N 31.74372 S latitude
715403 m E 149.2739 E longitude

Illustrations :

Age/Unit= Silurian-Devonian
Topography: SLIGHT RISE WITH OUTCROP dip=81W strike=163
Structure : FLOW BANDING DIPS STEEPLY
Field Geology: Rhyodacite. Sparsely porphyritic in plagioclase set in a fine-grained, sericitised felsic groundmass. Massive to cleaved. Cleavage due to trains of sericite that have crystallised along flow banding.

Field Rockname: SAMPLE GG0751 RHYODACITE

PHYSICAL PROPERTIES: TJFF

DENSITIES
Whole rock density = 2.61
Dry density = 2.60
Grain density = 2.60
Porosity = .9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 211
from 0 to 628 .SD= 223
Laboratory susceptibility = 50
Remanence = 7.00
Koenigsberger ratio = 2.33

GAMMA-RAY SPECTROMETRY

Ch.1= 34823
Ch.2= 3151 2.79 X k20
Ch.3= 596 3.24 ppm U
Ch.4= 520 9.94 ppm Th
U/Th= .33
4.34 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.15	0.33	11.80	2.68	0.05	0.58	0.19	3.80	4.38	0.10	0.07	1.10	99.24

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1498	-6	30	9	-1	6	24	5	8	16	12	97

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	-20	75	7	12	5	34	-5	22	34	120

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Rhyodacite
Est. % MINERAL FABRIC: Porphyritic;
8. Plagioclase Sparse phenocrysts of plagioclase & lesser orthoclase, extensively fractured, with former ferromagnesian mineral phenocrysts pseudomorphed by fine biotite aggregates. Very rare quartz phenocrysts. The highly felsic groundmass has scattered small patches of fine biotite aggregates & opaque mineral. Rare small patches of secondary quartz.
2. Orthoclase
10. Biotite
3. Opaque
.01 Quartz
77. Groundmass

Location 0752

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0752
Road cutting

GILGANDRA NSW GDM-1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-204
6524618 m N 31.39172 S latitude
721873 m E 149 3334 E longitude

Illustrations :

Age/Unit= Jurassic GARRAWILLA VOLCANICS
Topography: TERRACED SLOPES dip= strike=
Structure : HORIZONTAL FLOW

Field Geology: Basalt. Slightly altered. Porphyritic in altered pyroxene phenocrysts,
preferentially weathered out on surface and set in a fine basaltic
groundmass with distinguishable plagioclase laths and green colouration
due to chlorite alteration. Contains trace ?arsenopyrite.

Field Rockname: SAMPLE GG0752 ALTERED BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 2.79
Dry density = 2.77
Grain density = 2.78
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 5106
from 3644 to 7665 ,SD= 905
Laboratory susceptibility = 5943
Remanence = 400.00
Koenigsberger ratio = 1.12

GAMMA-RAY SPECTROMETRY

Ch.1= 13363
Ch.2= 1238 1.19 % K2O
Ch.3= 167 .75 ppm U
Ch.4= 159 3.06 ppm Th
U/Th= .25
1.26 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Basalt
10.	Ferromagnesian	Ophitic to subophitic; porphyritic	
15.	Augite	Phenocrysts of a former ferromagnesian mineral, ?orthopyroxene, now completely pseudomorphed by serpentine mineral. Rare microphenocrysts of plagioclase, rarely in clusters. The groundmass consists of abundant plagioclase laths amidst clusters & patches of interstitial pink titaniferous augite, as well as interstitial chlorite pseudomorphs of glass. Scattered skeletal magnetite.	
58.	Plagioclase		
15.	Chlorite		
2.	Magnetite		

Location 0753

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0753

Road cutting

GILGANDRA

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-196

6521026 m N

31.42848 S latitude

697696 m E

149.0800 E longitude

Illustrations :

Age/Unit= Tertiary

Topography: TERRACED UPLAND

Structure: HORIZONTAL FLOW

dip= strike=

Field Geology: Trachyte. Slightly altered with lath-like plagioclase phenocrysts set in a slightly chloritised groundmass. Igneous layering crudely developed and alteration varies from one igneous layer to the next, and also within layering.

Field Rockname: SAMPLE GG0753 TRACHYTE

PHYSICAL PROPERTIES:

TRACHYTE

DENSITIES
Whole rock density = 2.62
Dry density = 2.59
Grain density = 2.62
Porosity = 1.4

MAGNETIC SUSCEPTIBILITY (S.I.*.020001)

Mean of 15 in-situ readings = 8704
from 6031 to 18221, SD= 2938
Laboratory susceptibility = 10379
Remanence = 50.00
Koenigsberger ratio = .08

GAMMA-RAY SPECTROMETRY

Ch.1= 52064
Ch.2= 5089 4.96 % K2O
Ch.3= 647 2.63 ppm U
Ch.4= 640 12.34 ppm Th
U/Th= .21
4.87 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	
3.	Plagioclase	Trachytic	Rare small phenocrysts of plagioclase amidst aligned laths of
75.	Orthoclase		orthoclase with interstitial green augite. Scattered pyrrhotite
15.	Augite		altering to limonite as a result of weathering.
2.	Pyrrhotite		
5.	Limonite		

Location 0754

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0754
Road cutting

GILGANDRA sheet area 1:250,000
6518244 m N
6 1701 m E

NSW GDOM=1
air-photo:run-no.= 4-196
31.45457 S latitude
149.0175 E longitude

Illustrations :

Age/Unit= Tertiary
Topography: TERRACED UPLAND dip= strike=
Structure: HORIZONTAL FLOW
Field Geology: Basalt. Contains large xenoliths up to 5 cm long of magmatic, fractured quartz and cognate material.

Field Rockname: SAMPLE GG0754 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.=.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.85	Mean of 15 in-situ readings =	13864	Ch.1=	14041
Dry density =	2.82	from 12063 to 15959 .SD=	1327	Ch.2=	1242 1.16 % K2O
Grain density =	2.85	Laboratory susceptibility =	19138	Ch.3=	207 1.33 ppm U
Porosity =	1.3	Remanence =	2000.00	Ch.4=	163 3.09 ppm Th
		Koenigsberger ratio =	1.74	U/Th=	.43
				1.62	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Basalt Subophitic
4.	Olivine		Phenocrysts of euhedral plagioclase & anhedral olivine slightly
72.	Plagioclase		altered to bowlingite, set in a groundmass of interlocking randomly-
12.	Augite		oriented plagioclase laths with interstitial pink titaniferous augite,
7.	Ferromagnesian		scattered ferromagnesian mineral (orthopyroxene or oxyhornblende),
4.	Magnetite		altering to non-resolvable clay & scattered titaniferous magnetite
1.	Ilmenite		& ilmenite. Rare traces of pyrite.
.001	Pyrite		

Location 0755

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0755

Outcrop

DUBBO

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 5-5186

6403505 m N

32.49553 S latitude

649680 m E

148.5932 E longitude

Illustrations: .

Age/Unit= Tertiary

Topography: LOW RISE WITH OUTCROP AROUND EDGES

dip= strike=

Structure :

Field Geology: Trachyandesite. Porphyritic in large but sparse orthoclase phenocrysts set in a highly felsic, fine-grained groundmass.

Field Rockname: SAMPLE DB0755 TRACHYANDESITE

PHYSICAL PROPERTIES:

TRACHYANDESITE

DENSITIES
Whole rock density = 2.48
Dry density = 2.45
Grain density = 2.61
Porosity = 6.2

MAGNETIC SUSCEPTIBILITY 'S.I.+000001'

Mean of 15 in-situ readings = 586
from 251 to 1130 .SD= 221
Laboratory susceptibility = 12
Remanence = 190.00
Koenigsberger ratio = 138.89

GAMMA-RAY SPECTROMETRY

Ch.1= 78089
Ch.2= 4909 2.83 % K2O
Ch.3= 1867 9.25 ppm U
Ch.4= 1705 32.69 ppm Th
U/Th= .28
11.94 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Trachyandesite

Est. % MINERAL FABRIC: Porphyritic; trachytic

23. Orthoclase Sparsely porphyritic in large euhedral orthoclase which is relatively unaltered. The trachytic groundmass, consisting mainly of plagioclase, is extensively altered to clay & contains tiny interstitial aggregates of chlorite & scattered opaque mineral.
70. Plagioclase
5. Opaque
2. Chlorite

Location 0756

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0756
Outcrop

NARROMINE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-157
6419790 m N 32.35000 S latitude
639455 m E 148.4820 E longitude

Illustrations :

Age/Unit= YEEOVAL GRANITE
Topography: LOW RISE dip= strike=
Structure : PLUTON
Field Geology: Microadamellite. Equigranular, non-porphyrific, medium-grained.
Leucocratic with rare biotite. Marginal variant of Yeoval Granite.

Field Rockname: SAMPLE NM0756 MICRADAMELLITE

PHYSICAL PROPERTIES:

MICROGRANITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.+.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.49 Ch.1= 46042
Dry density = 2.45 Mean of 11 in-situ readings = 1348 Ch.2= 3766 3.22 % k20
Grain density = 2.57 from 251 to 10053 .SD= 2908 Ch.3= 743 2.66 ppm U
Porosity = 4.5 Laboratory susceptibility = 25 Ch.4= 765 14.79 ppm Th
Remanence = 100.00 U/Th= .18
Koenigsberger ratio = 66.67 4.90 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.77	.25	13.60	.75	.01	.03	.25	3.72	4.45	.08	.01	.90	98.86
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	667	-6	213	-1	4	105	201	-3	21	-5	17	223	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	31	67	5	24	4	9	17	227	21	249		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Microadamellite
Est. % MINERAL FABRIC: Aplitic trending slightly granophyric
40. Quartz Globular to ragged patches of slightly embayed quartz forming
30. Orthoclase discontinuous network of possible apparent cavity fillings. The quartz
28. Plagioclase is surrounded by strongly kaolinised orthoclase, which surrounds
1. Biotite lightly kaolinised plagioclase. Minor green biotite, bleached &
.1 Muscovite rarely altered to muscovite & minor chlorite. Scattered opaque
1. Opaque minerals: Rare zircon.
.01 Zircon

Location 0757

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0757
Road cutting

NARROMINE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-1289
6407732 m N 32.46027 S latitude
626709 m E 148.3482 E longitude

Illustrations :

Age/Unit: YEOVAL GRANITE
Topography: LOW RISE WITH TORS dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, coarse-grained, non-porphyrific. Leucocratic but spotted due to prominent quartz set in white feldspar. Minor biotite and hematite oxidation product after small mafic clots which may once have been sulphide-bearing.

Field Rockname: SAMPLE NM0757 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.59 Mean of 15 in-situ readings = 309 Ch.1= 60823
Dry density = 2.55 from 0 to 628 SD= 189 Ch.2= 4657 3.72 % K2O
Grain density = 2.66 Laboratory susceptibility = 540 Ch.3= 1097 4.70 ppm U
Porosity = 2.1 Remanence = 2000.00 Ch.4= 1064 20.49 ppm Th
Koenigsberger ratio = 61.73 U/Th= .23
7.25 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.95	.07	12.34	1.25	.01	.02	.08	4.17	4.53	.02	.06	.10	99.60
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	86	-6	142	-1	2	74	161	4	29	-5	28	290	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	-1	9	7	7	27	5	2	12	100	.68	276		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Hypidiomorphic granular
Ert. % MINERAL FABRIC: Hypidiomorphic granular
35. Quartz interconnected patches of globular aggregates of slightly strained
35. Orthoclase quartz amid a mosaic of perthitic orthoclase with abundant albite
28. Plagioclase exsolution lamellae. Rare interstitial biotite with opaque mineral &
.01 Zircon scattered zircon.
1. Biotite
.7 Opaque

Location 0758

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0758

OLD PEAK HILL MINES

Outcrop

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-1487

6378688 m N

32.72378 S latitude

612169 m E

148.1970 E longitude

Illustrations :

Age/Unit= Middle Ordovician

TOMINGLY BEDS

Topography: GENTLE RISE

dip= strike=

Structure : NEAR VERTICAL

Field Geology: Muscovite quartzite, slate and gossan. Little original texture in gossan except for relict slate appearance. It has angular quartzite and white-quartz residual pebbles in places. Pyritic white quartz adjacent in places. Old Peak Hill workings.

Field Rockname: SAMPLE NM0758 GOSSANOUS MUSCOVITE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.45
Dry density = 2.47
Grain density = 2.44
Porosity = 15.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 41
from 0 to 125 ,SD= 61
Laboratory susceptibility = 125
Remanence = 35.00
Koenigsberger ratio = 4.67

GAMMA-RAY SPECTROMETRY

Ch.1= 9664
Ch.2= 554 .35 % K2O
Ch.3= 214 1.73 ppm U
Ch.4= 139 2.59 ppm Th
U/Th= .67
1.59 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
80.	Quartz	Muscovite quartzite	Gossanous; uneven grained
5.	Muscovite		Patches of coarse, strained quartz, frequently enclosing randomly oriented muscovite needles. Abundant opaque oxide after sulphide mineral; some opaque discernible as earthy hematite.
5.	Hematite		
10.	Opaque		

Location 0759

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0759
Road cutting

NARROMINE NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1517
6370157 m N 32.80030 S latitude
616156 m E 148.2406 E longitude

Illustrations :

Age/Unit= Silurian
Topography: FLAT LOWLAND dip=71E strike=000
Structure : STEEPLY DIPPING
Field Geology: Slate. Massive, cleaved. Muscovite-bearing with lesser chlorite and biotite.

Field Rockname: SAMPLE NM0759 SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 2.52
Dry density = 2.47
Grain density = 2.67
Porosity = 7.4

MAGNETIC SUSCEPTIBILITY (S.I., 000001)

Mean of: 6 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 75
Remanence = 6.00
Koenigsberger ratio = 1.33

GAMMA-RAY SPECTROMETRY

Ch.1= 40254
Ch.2= 2819 2.07 % K2O
Ch.3= 727 1.56 ppm U
Ch.4= 837 16.29 ppm Th
U/Th= .10
4.21 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Slate	
			Massive; microporphyroblastic
55.	Quartz		Fine sand to silt-sized subangular quartz grains, scattered opaque
5.	Biotite		mineral with rare zircon & tourmaline, set in a micaceous matrix
30.	Muscovite		consisting of fine muscovite & lesser chlorite. Porphyroblasts of
.1	Tourmaline		randomly-oriented & randomly-distributed biotite scattered through-
5.	Opaque		out. Some porphyroblasts have interleaved muscovite. Bedding defined
.01	Zircon		by discontinuous graphite laminae.
5.	Chlorite		

Location 0760

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0760
Dozer scrape

SAME LOCATION AS 0761
NARROMINE

1:250,000 sheet area 1:100,000 sheet area
6372347 m N 32.78077 S latitude
S14065 m E 148.2180 E longitude

NSW GDOM=1

air-photo:run-no.= 7-1517

Illustrations :

Age/Unit= Middle Ordovician

GOONUMBLA ANDESITE

Topography: GENTLE RISE

dip= strike=

Structure :

Field Geology: Basalt. Variably altered. Porphyritic with phenocrysts of plagioclase, augite and other minerals set in an altered basaltic groundmass. Minor quartz and clay-alteration in places accompanied by minor oxidised sulphide mineral. Less altered rocks grade into altered variants.

Field Rockname: SAMPLE NM0760 ALTERED BASALT

PHYSICAL PROPERTIES:

ALTERED BASALT

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.81	Mean of 15 in-situ readings = 454	Ch.1= 23638
Dry density = 2.79	from 125 to 1256, SD= 321	Ch.2= 2586 2.76 % K2O
Grain density = 2.82	Laboratory susceptibility = 578	Ch.3= 219 2.02 ppm U
Porosity = 1.1	Remanence = 4.00	Ch.4= 121 2.21 ppm Th
	Koenigsberger ratio = .12	U/Th= .91
		2.26 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
55.	Plagioclase	Altered basalt	Porphyritic; orthopyritic
20.	Augite		Phenocrysts of augite, fractured & slightly altered to diopside & epidote in places, together with a ferromagnesian mineral now pseudomorphed by epidote & chlorite, as well as minor hypersthene & plagioclase. The groundmass consists of stumpy plagioclase, lesser epidote pseudomorphs of a ferromagnesian mineral, scattered opaque mineral, interstitial chlorite & sericite.
5.	Chlorite		
3.	Opaque		
2.	Hypersthene		
5.	Ferromagnesian		
5.	Epidote		
5.	Sericite		

Location 0761

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0761
Dozer scrape

SAME LOCATION AS 0760
NARROMINE

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6372347 m N 6372347 m N air-photo:run-no.= 7-1517
614065 m E 614065 m E 32.78077 S latitude
148.2180 E longitude

Illustrations :

Age/Unit= Middle Ordovician GOONUMBLA ANDESITE
Topography: GENTLE RISE dip= strike=
Structure :
Field Geology: Basalt. Variably altered. Porphyritic with phenocrysts of plagioclase,
augite and other minerals set in an altered basaltic groundmass. Minor
quartz and clay-alteration in places accompanied by minor oxidised
sulphide mineral. Less altered rocks grade into altered variants.
Field Rockname: SAMPLE NM0761 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 2.84
Dry density = 2.86
Grain density = 2.88
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 464
Remanence = 4.00
Koenigsberger ratio = .14

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. X	MINERAL	NAME:	FABRIC:
15.	Augite	Basalt	Porphyritic; pilotaxitic
30.	Plagioclase		Euhedral augite, fractured & slightly altered to calcite, a fibrous amphibole, & plagioclase, slightly altered to calcite, epidote & secondary albite, both occur as phenocrysts. The fine-grained groundmass consists of plagioclase microlites, chlorite fillings of scattered vesicles, calcite vesicles, & a scarcely-resolvable dark brown mosaic of tiny epidote granules pseudomorphing a glassy mesostasis.
4.	Calcite		
3.	Chlorite		
1.	Opaque		
47.	Groundmass		

Location 0762

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0762

Road cutting

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-1813

6300395 m N

33.43167 S latitude

593118 m E

148.0017 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOW RISE ALONG ALLUVIAL FLATS

dip=90 strike=017

Structure : STEEPLY AND VERTICALLY DIPPING

Field Geology: Slate and siltstone. Variably cleaved. Thin bedded and massive.

Field Rockname: SAMPLE FB0762 SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 2.31
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 83
from 0 to 628 ,SD= 188
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 54080
Ch.2= 3990 3.20 X K20
Ch.3= 891 2.51 ppm U
Ch.4= 975 18.92 ppm Th
U/Th= .13
5.51 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Slate
Est. %	MINERAL FABRIC:	Laminated to thin bedded; microporphyroblastic
50.	Quartz	Silt-sized, subangular quartz fragments set in a micaceous matrix of
25.	Muscovite	sericitic muscovite & biotite. Frequent microporphyroblasts of
20.	Biotite	biotite, often with interleaved muscovite. Rare microporphyroblasts of
4.	Opaque	altered feldspar. Scattered opaque mineral & graphite laminae.
1.	Feldspar	Variations in grain size & abundance of quartz define bedding.
		Slightly limonitised by weathering.

Location 0763

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0763
 Outcrop

PLENS DEPOSIT

DURBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5184
 6411295 m N 32.42515 S latitude
 650680 m E 148.6026 E longitude

Illustrations :

Age/Unit= Tertiary?

Topography: GENTLY INCLINED RISE WITH RUBBLY OUTCROP

dip= strike=

Structure :

Field Geology: Topaz rhyolite. Fine and even-grained, with abundant shrinkage cavities lined by secondary or late-stage green and white amorphous clay-like substances. Thin section reveals the rock to be much more crystal-rich microporphyritic than Palaeozoic rhyolites described in this Report.

Field Rockname: SAMPLE DB0763 RHYOLITE

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES
 Whole rock density = 2.28
 Dry density = 2.25
 Grain density = 2.57
 Porosity = 12.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
 from to SD=
 Laboratory susceptibility = 75
 Remanence = 10.00
 Koenigsberger ratio = 2.22

GAMMA-RAY SPECTROMETRY

Ch.1=
 Ch.2= X K20
 Ch.3= ppm U
 Ch.4= ppm Th
 U/Th=
 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.73	0.10	11.56	1.86	0.01	0.02	0.06	3.17	4.78	0.02	0.07	1.80	98.19

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	144	7	997	8	7	-5	695	12	1703	5	212	1161

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	-1	109	18	149	203	79	-1	35	635	528	7251

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Quartz	Topaz rhyolite	
50.	Feldspar	Vesicular; densely microporphyritic; highly-altered	
5.	Topaz	A highly altered rock which under medium power is seen to be densely porphyritic in clay-altered feldspar microphenocrysts, some resolvable as albitic plagioclase. Interstitial anhedral quartz, & clay pseudomorphs of former glass. Abundant vesicles & cavities. These are partly lined by prismatic topaz microeuhedra, each with terminal coatings of ultrafine ?zircon granules. Clays comprise much of the fillings to vesicles & cavities, & some show relict gel-like shrinkage cracks. A few of the larger vesicles contain colourless botryoidal garnet containing ?chaomosite layers. Similar cracking is also present in these granets. Minor opaque mineral occurring sparsely in groundmass, & as oxides & oxidation products of former sulphide mineral(s) in some vesicles.	
20.	Vesicles		
1.	Garnet		
1.	Opaque		
14.	Groundmass		

Location 0764

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0764
 Outcrop

SAME LOCATION AS 0765

DUBBO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5184

6407582 m N

32.45830 S latitude

653116 m E

148.6291 E longitude

Illustrations :

Age/Unit= Tertiary?

Topography: VERY GENTLY SLOPING RISE

dip= strike=

Structure :

Field Geology: Siliceous granophyre breccia. A highly clastic rock containing variably sized angular to subangular clasts of abundant quartz, K-feldspar, and graphic quartz-alkali feldspar intergrowths. The clasts are tightly packed and set in an altered matrix of much-softer materials.

Field Rockname: SAMPLE DB0764 SILICEOUS GRANOPHYRE BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES

Whole rock density = 2.47

Dry density = 2.44

Grain density = 2.64

Porosity = 7.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 0

Remanence = 50.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	86.29	0.21	4.15	5.91	0.04	0.07	0.06	0.04	1.42	0.03	0.08	1.70	100.00

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	150	-6	2	10	-1	10	17	4	9	38	10	60

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	9	-20	-3	19	-5	-3	55	-5	6	54	245

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
65.	Quartz	Siliceous granophyre breccia	Densely fragmentary
20.	Orthoclase		
15.	Groundmass		

Large globules and fragments of variably strained quartz, with smaller resorbed quartz phenocrysts, & anhedral orthoclase, frequently graphically intergrown with quartz. Interstitial groundmass of amorphous clay-like pseudomorphs of rock glass, opaque mineral, muscovite, biotite & ?calcite, and within which rare glass shards are preserved.

Location 0765

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0765 SAME LOCATION AS 0764
Outcrop DUBBO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5184
6407584 m N 32.45828 S latitude
653116 m E 148.6291 E longitude

Illustrations :

Age/Unit=
Topography: VERY GENTLY SLOPING RISE dip= strike=
Structure :
Field Geology: Granophyre. Porphyritic in abundant large quartz and smaller, less abundant orthoclase phenocrysts set in a fine-grained groundmass that is considerably altered. Minor cognate xenoliths present.

Field Rockname: SAMPLE DB0765 SILICEOUS GRANOPHYRE BRECCIA

PHYSICAL PROPERTIES: GRANOPHYRE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.49 Ch.1=
Dry density = Mean of 0 in-situ readings = Ch.2= % K2O
Grain density = from to .SD= Ch.3= ppm U
Porosity = Laboratory susceptibility = 0 Ch.4= ppm Th
Remanence = .00 U/Th=
Koenigsberger ratio = Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Siliceous granophyre breccia
FABRIC: Dense, fragmentary
Est. # MINERAL
59. Quartz Large patches & phenocrysts of resorbed quartz. Abundant anhedral
20. Orthoclase perthitic orthoclase, partially kaolinised, & graphically inter-
.01 Tourmaline grown with quartz in places. Interstitial groundmass of non-resolvable
.01 Zircon clay, sericitic muscovite, opaque mineral, & rare tourmaline &
20. Groundmass zircon.
1. Muscovite

Location 0766

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0766

Road cutting

MAGGA MAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5089

6070481 m N

35.50780 S latitude

551191 m E

147.5645 E longitude

Illustrations :

Age/Unit=

KYEAMBA ADAMELLITE

Topography: MODERATELY DISSECTED UPLAND AND VALLEYS

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Inequigranular, porphyritic in K'feldspar. Leucocratic to mesocratic. Variable phases occur close together. They include pegmatitic and microgranitoid variants. Numerous biotite-rich xenoliths. Tourmaline aggregates common where pegmatitic. Weak layering in places.

Field Rockname: SAMPLE WA0766 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.65

Dry density = 2.63

Grain density = 2.69

Porosity = 1.6

Mean of 9 in-situ readings = 9

from 0 to 62, SD= 20

Laboratory susceptibility = 0

Remanence = .10

Koenigsberger ratio = *****

Ch.1= 60104

Ch.2= 4326 3.52 X K20

Ch.3= 1037 6.15 ppm U

Ch.4= 861 16.39 ppm Th

U/Th= .38

7.41 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.28	.38	14.14	2.90	.05	.63	1.47	3.97	4.56	.14	.06	.30	99.90

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	525	-6	78	8	10	146	51	-3	15	7	38	273

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	19	127	-5	24	3	29	13	50	52	191

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Quartz	Adamellite	Hypidiomorphic granular
37.	Orthoclase		Large anhedral orthoclase phenocrysts with rare intergrowths of quartz blebs & poikilitically enclosing minor plagioclase. Large patches of
25.	Plagioclase		quartz, frequently in aggregates. Subhedral sericitised plagioclase, zoned with clear secondary rims. Interstitial anhedral orthoclase,
7.	Biotite		lightly kaolinised. Abundant biotite with frequent apatite inclusions
1.	Muscovite		& rare zircon inclusions surrounded by opaque haloes. Minor
.1	Apatite		alteration of biotite to chlorite & muscovite. Minor secondary
.01	Zircon		interstitial muscovite.
.1	Opaque		

Location 0767

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(762)0767

Road cutting

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5089

6068994 m N

35.52123 S latitude

550729 m E

147.5595 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: SMALL RISE IN LOWLAND

dip=90 strike=121

Structure : VERTICALLY DIPPING

Field Geology: Greywacke and graphitic slate. Planar interbedded. The greywacke has stratabound quartz veins, and muscovite on bedding surfaces.

Field Rockname: SAMPLE WA0767 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES

Whole rock density = 2.64
Dry density = 2.60
Grain density = 2.60
Porosity = 3.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 347
from 125 to 691, SD= 149
Laboratory susceptibility = 0
Remanence = .40
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 59129
Ch.2= 3574 2.29 % K2O
Ch.3= 1163 4.25 ppm U
Ch.4= 1190 22.99 ppm Th
U/Th= .18
7.07 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
65.	Quartz	Greywacke	Poorly sorted; massive
4.	Muscovite		Subangular quartz sand with minor detrital muscovite, biotite & opaque mineral set in a mud matrix consisting largely of chlorite & sericite. Rare detrital feldspar.
1.	Biotite		
2.	Opaque		
28.	Matrix		
.2	Feldspar		

Location 0768

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0768
Road cutting

SAME LOCATION AS 0769
WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6061112 m N air-photo:run-no.= 7-5089
547686 m E 35.59245 S latitude
147.5264 E longitude

Illustrations :2 Colour slides, 1 B&W photo

Age/Unit= Ordovician
Topography: GENTLE RISE IN LOWLAND dip=82E strike=175
Structure : STEEPLY DIPPING WITH STRATABOUND MESO-SCOPIC FGLDS CONFINED TO SLATES
Field Geology: Mudstone, greywacke, and slate, cut by dolerite sills. Sediments are
laminated to medium bedded and have numerous stratabound folds. The
dolerites occur as clay with spheroidal kernels of fresh rock where
onion-weathered.
Field Rockname: SAMPLE WA0768 MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE

DENSITIES
Whole rock density = 2.69
Dry density = 2.65
Grain density = 2.68
Porosity = 1.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 287
from 62 to 816 ,SD= 197
Laboratory susceptibility = 87
Remanence = 1.00
Koenigsberger ratio = .19

GAMMA-RAY SPECTROMETRY

Ch.1= 63381
Ch.2= 4549 3.43 % K2O
Ch.3= 1178 4.42 ppm U
Ch.4= 1196 23.10 ppm Th
U/Th= .19
7.45 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Mudstone
Est. % MINERAL FABRIC: Massive
99.999 Mud Ultrafine mud consisting largely of clay, with lesser sericite &
finely divided opaque ?graphite.

Location 0769

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0769

SAME LOCATION AS 0768

Road cutting

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-5089

6061112 m N

35.59245 S latitude

547686 m E

147.5264 E longitude

Illustrations :2 Colour slides, 1 B&W photo

Age/Unit=

Topography: GENTLE RISE IN LOWLAND

dip=82E strike=175

Structure : STEEPLY DIPPING WITH STRATABOUND MESO-SCOPIC FOLDS CONFINED TO SLATES

Field Geology: Mudstone, greywacke, and slate, cut by dolerite sills. Sediments are laminated to medium bedded and have numerous stratabound folds. The dolerites occur as clay with spheroidal kernels of fresh rock where onion-weathered.

Field Rockname: SAMPLE WA0769 DOLERITE

PHYSICAL PROPERTIES:

DOLERITE

DENSITIES
Whole rock density = 2.86
Dry density = 2.53
Grain density = 2.88
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 6 in-situ readings = 1074
from 753 to 1382 .SD= 221
Laboratory susceptibility = 929
Remanence = 10.00
Koenigsberger ratio = .18

GAMMA-RAY SPECTROMETRY

Ch.1= 34977
Ch.2= 2784 2.30 % K20
Ch.3= 636 3.51 ppm U
Ch.4= 550 10.50 ppm Th
U/Th= .33
4.49 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Dolerite
		FABRIC:	Intergranular
2.	Quartz		A moderately altered rock sparsely porphyritic in strongly sericitised & mildly epidotised plagioclase set in a fine to medium-grained ground-mass of sericitised plagioclase laths amidst variably-sized crystals
46.	Plagioclase		
20.	Augite		of abundant augite variably altering to epidote & chlorite, together with interstitial chlorite, patchy scattered epidote, & rare blue-green secondary hornblende. Minor orthoclase. Rare quartzite xenoliths & interstitial quartz. Scattered skeletal pyrrhotite & trace pyrite, which may contain small amounts of arsenic.
15.	Chlorite		
10.	Epidote		
1.	Hornblende		
1.	Rock fragments		
2.	Orthoclase		
3.	Pyrrhotite		
.05	Pyrite		

Location 0770

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0770
Road cutting

WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-5017
6042198 m N 35.76340 S latitude
538038 m E 147.4208 E longitude

Illustrations :

Age/Unit= KOETONG GRANITE
Topography: GENTLY UNDULATING UPLAND dip= strike=
Structure : PLUTO
Field Geology: Granite, Equigranular, medium-grained, leucocratic, quartz-rich,
muscovite-bearing, with small clots of chloritised biotite. Minor phases
of coarser and finer variants.

Field Rockname: SAMPLE WA0770 GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 2.52
Dry density = 2.43
Grain density = 2.66
Porosity = 8.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 14
from 0 to 62, SD= 20
Laboratory susceptibility = 0
Remanence = .30
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1= 61246
Ch.2= 5022 4.61 % K2O
Ch.3= 978 9.06 ppm U
Ch.4= 536 9.79 ppm Th
U/Th= .93
8.34 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.71	.08	12.74	.67	.01	.13	.12	2.97	4.20	.07	.04	1.00	99.73
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	119	-6	31	-1	9	50	6	-3	8	-5	38	367	
TRACE ELEMENT	Sc	Sn	Sr	Th	Ti	V	W	Y	Zn	Zr			
p.p.m.	5	17	30	-	-5	5	2	16	11	33	24		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
50.	Quartz	Granite	Uneven grained; hypidiomorphic granular; tending slightly greisenous
18.	Plagioclase		Large interconnected patches of globular to lenticular quartz mildly embayed & surrounded by interstitial sericitised plagioclase &
25.	Orthoclase		larger altered orthoclase. Interstitial mosaic of fine quartz, patches
5.	Muscovite		& veinlets of muscovite, & patches of secondary biotite in fine
.1	Opaque		aggregates, slightly limonitised by weathering. Rare opaque mineral.
2.	Biotite		

Location 0771

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0771

Outcrop

WAGGA WAGGA

NSW GOOM-2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 10-5098

6038977 m N

35.79193 S latitude

549492 m E

147.5477 E longitude

Illustrations :

Age/Unit=

KOETONG GRANITE

Topography: MODERATELY SLOPING, DISSECTED, UNDULATING

dip= strike=

Structure : PLUTON

Field Geology: Granite. Inequigranular, porphyritic in feldspar, medium to coarse-grained, mesocratic, with scattered small biotite flakes. Minor muscovite.

Field Rockname: SAMPLE WA0770 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.64
Dry density = 2.62
Grain density = 2.65
Porosity = 1.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 25
Remanence = .80
Koenigsberger ratio = .53

GAMMA-RAY SPECTROMETRY

Ch.1= 70348
Ch.2= 5211 4.27 % K2O
Ch.3= 1262 8.35 ppm U
Ch.4= 975 18.45 ppm Th
U/Th= .45
9.29 Heat generation units

CHEMIST: :

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.63	.36	14.71	2.56	.03	.83	1.06	2.62	5.10	.29	.05	.50	99.74

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	384	-6	70	7	23	120	48	-3	17	10	48	358

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	12	119	-5	15	3	31	8	21	58	130

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Adamellite	
35.	Quartz		Hypidiomorphic granular
30.	Orthoclase		Globular patches of quartz aggregates amidst euhedral plagioclase with patchy alteration to sericite, & abundant orthoclase & microcline.
15.	Plagioclase		Numerous plates of red-brown biotite frequently bleached & variably altered to muscovite & sericite. Euhedral cordierite largely altered to pinite. Frequent tiny zircon inclusions in biotite. Minor apatite inclusions also present in biotite. Accessory topaz & rare tourmaline & opaque mineral.
10.	Biotite		
6.	Muscovite		
1.	Topaz		
.1	Tourmaline		
.1	Apatite		
.01	Zircon		
.1	Opaque		
3.	Cordierite		

Location 0772

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0772
Outcrop

WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 10-5098
6036802 m N 35.81167 S latitude
546779 m E 147.5178 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: STRIKE RIDGE UPLAND WITH STEEP SLOPES dip=75SW strike=148
Structure : HORNFELSED STRIKE RIDGE
Field Geology: Slates, variably graphitic, with knots of andalusite in places.
Laminated to thin bedded. Abundant muscovite in most rocks.

Field Rockname: SAMPLE WA0772 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.49
Dry density = 2.52
Grain density = 2.82
Porosity = 10.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 40
from 0 to 62, SD= 31
Laboratory susceptibility = 50
Remanence = .30
Koenigsberger ratio = .10

GAMMA-RAY SPECTROMETRY

Ch.1= 53899
Ch.2= 4152 3.31 % K2O
Ch.3= 986 4.31 ppm U
Ch.4= 949 18.26 ppm Th
U/Th= .24
6.54 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
50.	Quartz	Slate	Laminated to thin bedded; cortled; microporphyroblastic
17.	Muscovite		Scattered microporphyroblasts of biotite, muscovite, & andalusite which is scarcely recognisable in places. The remainder of the rock
20.	Biotite		consists of fine-grained quartz & sericite. Bedding defined by
3.	Opaque		discontinuous graphite laminae & variable quartz content. Scattered
10.	Andalusite		opaque mineral.

Location 0773

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0773
Outcrop

WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 10-5098
6037249 m N 35.80763 S latitude
547007 m E 147.5203 E longitude

Illustrations :

Age/Unit= KOETONG GRANITE dip= strike=
Topography: STEEPLY SLOPING UPLAND
Structure : PLUTON
Field Geology: Adamellite. Inequigranular. Coarsely porphyritic in K-feldspar.
Mesocratic due to biotite and biotite-rich xenoliths. Minor muscovite.

Field Rockname: SAMPLE WA0773 ADAMELLITE

PHYSICAL PROPERTIES: GRANITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.+0.00001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.55 Mean of 0 in-situ readings = Ch.1= 63361
Dry density = 2.55 from to .SD= Ch.2= 4927 4.05 % K2O
Grain density = 2.67 Laboratory susceptibility = 125 Ch.3= 1210 8.79 ppm U
Porosity = 4.7 Remanence = .20 Ch.4= 868 16.32 ppm Th
Koenigsberger ratio = .03 U/Th= .54
9.16 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 70.93 .39 14.52 2.87 .06 .99 .91 2.98 4.77 .27 .03 1.10 99.82

TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 376 -6 84 10 28 100 56 -3 17 13 40 364

TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 10 11 104 -5 18 5 34 7 34 59 143

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL FABRIC: Large interconnected patches of slightly strained & fractured quartz
40. Quartz with euhedral plagioclase with sericitised, fractured cores & clear
25. Orthoclase rims. Abundant anhedral microcline with small inclusions of other
24. Plagioclase minerals. Scattered red-brown pleochroic biotite with radioactive
7. Biotite inclusions of zircon & apatite. Biotite lightly altered to chlorite
1. Cordierite & muscovite in places. Rare large cordierite xenocrysts, generally
3. Muscovite euhedral & largely altered to pinite & muscovite. Scattered
.1 Apatite muscovite. Rare accessory garnet & opaque mineral.
.001 Zircon
.01 Garnet
.2 Opaque

Location 0774

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0774
Road cutting

WAC 1:250,000 sheet area 1:100,000 sheet area NSW GDOM=Z
6043565 m N 35.75035 S latitude air-photo:run-no.= 10-5098
553559 m E 147.5924 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: UPLAND AREA WITH SMALL STRIKE RIDGES dip=76SW strike=149
Structure : STEEPLY DIPPING
Field Geology: Slate, feldspathic quartzite, and quartzite. Planar laminated to thick bedded, each with sharp upper and lower contacts.

Field Rockname: SAMPLE WA0774 GRAPHITIC SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.24
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 65959
Ch.2= 4692 3.36 X K20
Ch.3= 1516 11.60 ppm U
Ch.4= 1038 19.43 ppm Th
U/Th= .60
11.26 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Slate
FABRIC:	Laminated

Est. % MINERAL FABRIC: Bedding defined by graphite laminae & lenticular siltstone laminae which appear to have separated from the remaining finer fraction as a result of compaction which has caused microboudins to develop. The coarser silt lenses consist of quartz, muscovite, & chlorite. The finer material is entirely biotite, muscovite, graphite, & possibly chlorite, with a few randomly scattered quartz grains.

15.	Quartz
10.	Graphite
30.	Muscovite
20.	Biotite
25.	Chlorite

Location 0775

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0775

Road cutting

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 11-5149

6032278 m N

35.85160 S latitude

562151 m E

147.6883 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOW STRIKE RISE IN DISSECTED AREA dip=83NE strike=136

Structure : STEEPLY DIPPING AND STRATABOUND TIGHT MESOSCOPIC FOLDS IN SLATES

Field Geology: Micaceous quartzite interbedded with graphitic muscovite slate. The quartzites are medium to thick bedded, massive, and have stratabound cross-cutting quartz veins.

Field Rockname: SAMPLE WA0775 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.11
Dry density = 2.68
Grain density = 2.71
Porosity = 1.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 150
Remanence = .20
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1= 61195
Ch.2= 4423 3.24 % K2O
Ch.3= 1223 5.22 ppm U
Ch.4= 1188 22.88 ppm Th
U/Th= .23
7.87 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
89.	Quartz	Micaceous quartzite
1.	Plagioclase	Massive; slightly microporphyroblastic
4.	Muscovite	Scattered subangular to ovoid porphyroblasts of quartz, generally unstrained, surrounded by finer-grained, more-strained quartz
5.	Biotite	inhibited from coarsening by muscovite & biotite along grain boundaries & forming clots at triple junctions. Rare plagioclase,
.1	Tourmaline	tourmaline, zircon & opaque mineral.
.05	Zircon	
1.	Opaque	

Location 0776

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0776

Outcrop

WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
air-photo:run-no.= 11-5149

6034139 m N

35.83453 S latitude

566680 m E

147.7383 E longitude

Illustrations :

Age/Unit=

CORRYONG GRANITE

Topography: MODERATELY SLOPING DISSECTED UPLAND

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Sparingly porphyritic in plagioclase. Medium-grained mostly equigranular. Melanocratic due to abundant biotite and minor biotite-rich xenoliths. Minor muscovite.

Field Rockname: SAMPLE WA0776 BIOTITE ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
Whole rock density = 2.57
Dry density = 2.66
Grain density = 2.66
Porosity = 2.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 286
from 175 to 464, SD= 100
Laboratory susceptibility = 289
Remanence = -10
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 53751
Ch.2= 4055 3.15 % K2O
Ch.3= 1096 7.28 ppm U
Ch.4= 844 15.97 ppm Th
U/Th= .46
7.95 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.07	.80	15.06	4.78	.07	1.88	2.27	2.50	3.75	.24	.01	.50	99.88

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	416	-6	69	16	50	120	46	-3	12	12	30	222

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	10	110	-5	16	4	76	13	37	65	189

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Adamellite	Porphyritic; hypidiomorphic granular tending slightly granophyric
30.	Plagioclase		Scattered zoned phenocrysts of plagioclase & patches of slightly strained quartz aggregates surrounded by medium-grained granitoid
25.	Orthoclase		consisting of zoned plagioclase with strongly altered & epidotised
15.	Biotite		cores & clear rims, abundant red-brown to light yellow pleochroic
3.	Muscovite		biotite, minor muscovite, interstitial quartz & orthoclase rarely
.05	Apatite		with graphic intergrowth, & rare apatite & opaque mineral. Rare
.5	Opaque		xenoliths of granophyre. The biotites have frequent radioactive
2.	Rock fragments		inclusions & are rarely altered to minor chlorite.

Location 0777

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0777
Outcrop

WAGGA WAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 12-5141
6019781 m N 35.96482 S latitude
552676 m E 147.5842 E longitude

Illustrations :1 Colour slide

Age/Unit= KOETONG GRANITE
Topography: MODERATELY SLOPING DISSECTED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granite. Inequigranular, porphyritic in K-feldspars up to 5cm long.
Mesocratic. Quite weathered.

Field Rockname: SAMPLE WA0777 PORPHYRITIC GRANITE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

GRANITE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 83660
Ch.2= 6568 5.31 % K2O
Ch.3= 1757 14.93 ppm U
Ch.4= 1077 19.93 ppm Th
U/Th= .75
13.86 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.02	.47	14.84	3.26	.04	1.04	1.08	2.20	4.92	.24	.01	.80	98.92

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	409	-6	67	10	28	149	54	4	20	13	41	339

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	12	70	85	-5	19	-3	35	8	28	61	164

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Hypidiomorphic granular

Est. %	MINERAL	DESCRIPTION
30.	Quartz	Large anhedral microcline crystals poikiloblastic with infrequent plagioclase & biotite inclusions. Large patches of strained quartz aggregates with sutured grain contacts. Rare cordierite xenocrysts pseudomorphed by muscovite & sericite. Abundant strongly pleochroic red-brown to light yellow biotite with radioactive apatite & zircon inclusions. Rare alteration of biotite to chlorite & muscovite.
44.	Orthoclase	Minor accessory topaz. Rare opaque mineral. Abundant shattered plagioclase with slight sericitisation along fractures.
12.	Plagioclase	
10.	Biotite	
3.	Muscovite	
.6	Cordierite	
.1	Apatite	
.1	Topaz	
.01	Zircon	
.2	Opaque	
.01	Sillimanite	

Location 0778

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0778
 Road cutting

SAME LOCATION AS 0779
 WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 12-5149
 6023628 m N 35.93092 S latitude
 535324 m E 147.3916 E longitude

Illustrations :

Age/Unit= KOETONG GRANITE
 Topography: MODERATELY RUGGED UPLAND dip= strike=
 Structure :
 Field Geology: Granophyre, Sparsely porphyritic in quartz and plagioclase set in a
 medium-grained groundmass with biotite occurring in clots. Minor biotite-
 rich xenoliths. Chlorite alteration along microjoints. Slightly altered.

Field Rockname: SAMPLE WA0778 GRANOPHYRE

PHYSICAL PROPERTIES:

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.60	Mean of 8 in-situ readings = 23	Ch.1= 129322
Dry density = 2.58	from 0 to 188, SD= 66	Ch.2= 8438 5.50 % K2O
Grain density = 2.59	Laboratory susceptibility = 62	Ch.3= 3033 21.40 ppm U
Porosity = .0	Remanence = 2.00	Ch.4= 2229 42.00 ppm Th
	Koenigsberger ratio = .54	U/Th= .51
		21.67 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	HgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.04	.04	12.84	.82	.04	.06	.17	4.07	4.45	.02	.04	.30	99.88
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	84	-6	32	-1	8	63	20	-3	23	-5	43	454	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	16	14	-5	30	17	2	9	85	19	67		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Granophyre
25.	Quartz	FABRIC:	Granophyric
40.	Orthoclase		
34.	Plagioclase		
.1	Muscovite		
.1	Biotite		
.1	Opaque		
.1	Epidote		

Euhedral to subhedral plagioclase, strongly sericitised, with anhedral strongly kaolinised orthoclase, both graphically intergrown with blebs of quartz. Some large globular patches of quartz. Rare biotite, pleochroic in shades of green. Very rare muscovite & interstitial epidote. Very rare opaque mineral. Slight limonite staining in places as a result of weathering.

Location 0779

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0779
Road cutting

SAME LOCATION AS 0778

HAGGA HAGGA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2

6023627 m N

35.93093 S latitude

535315 m E

147.3915 E longitude

Illustrations :

Age/Unit: KOETONG GRANITE
Topography: MODERATELY RUGGED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granophyre. Sparsely porphyritic in quartz and plagioclase set in a medium-grained groundmass with biotite occurring in clots. Minor biotite-rich xenoliths. Chlorite alteration along microjoints. Slightly altered.

Field Rockname: SAMPLE WA0779 GRANOPHYRE

PHYSICAL PROPERTIES:

GRANOPHYRE
DENSITIES
Whole rock density = 2.56
Dry density = 2.53
Grain density = 2.59
Porosity = 2.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = 1.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.82	.04	12.95	.47	.01	.05	.08	3.01	5.59	.02	.03	.60	99.67

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	122	-6	23	4	3	43	13	-3	18	-5	11	474

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	9	-5	37	10	20	7	5	12	77	5	44

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granophyre
FABRIC: Porphyritic; granophyric
Est. % MINERAL FABRIC: Scattered phenocrysts of quartz with minor embayments & ragged edges together with euhedral, strongly sericitised plagioclase. The groundmass consists of kaolinised orthoclase, sericitised plagioclase & quartz often graphically intergrown with the feldspars. Rare muscovite & opaque mineral, the latter chiefly occurring as inclusions in sericitised plagioclase. Rare microveinlets of fine aplite.

Location 0780

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0780 SAME LOCATION AS 0781
Road cutting HAGGA HAGGA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no. = 11-5133
6035686 m N 35.82267 S latitude
518779 m E 147.2079 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: STRIKE RISE IN LOWLAND dip=90 strike=135
Structure : STRIKE RISE IN LOWLAND-VERTICAL
Field Geology: Slate, variably graphitic, interbedded with quartzite, variably
micaceous and feldspathic. Well bedded, planar, with minor cross-
lamination.

Field Rockname: SAMPLE WA0780 KNOTTED SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.63
Dry density = 2.61
Grain density = 2.72
Porosity = 4.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 322
from 62 to 628 ,SD= 169
Laboratory susceptibility = 150
Remanence = .30
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 91661
Ch.2= 7365 6.03 % K2O
Ch.3= 1673 7.93 ppm U
Ch.4= 1558 29.92 ppm Th
U/Th= .27
11.39 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Slate
FABRIC: Porphyroblastic; laminated
Est. % MINERAL
68. Quartz Euhedral biotite & anhedral globular chlorite porphyroblasts set in a
15. Biotite matrix of quartz, plagioclase, muscovite, biotite, & rare opaque
5. Chlorite mineral & tourmaline. Bedding defined by biotite laminae & variable
10. Muscovite quartz content between layers.
1. Opaque
1. Plagioclase
.01 Tourmaline

Location 0781

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0781
Road cutting

SAME LOCATION AS 0780
WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 11-5133
6035682 m N 35.82270 S latitude
518770 m E 147.2078 E longitude

NSW GDOM=2

Illustrations :

Age/Unit=

Topography: STRIKE RISE IN LOWLAND

dip=90 strike=135

Structure : VERTICAL

Field Geology: Slate, variably graphitic, interbedded with quartzite, variably micaceous and feldspathic. Well bedded, planar, with minor cross-lamination.

Field Rockname: SAMPLE WA0781 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.61
Dry density = 2.60
Grain density = 2.68
Porosity = 2.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = 2.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Quartzite	
		Porphyroblastic	
80.	Quartz		Lenticular subangular to augen-shaped globules of unstrained single quartz crystals & strained crystal aggregates which have not equilibrated. Minor large muscovite, tourmaline & plagioclase. The groundmass consists of fine muscovite, biotite & cherty quartz. Rare opaque mineral.
1.	Plagioclase		
16.	Muscovite		
1.	Tourmaline		
2.	Biotite		
.1	Opaque		

Location 0782

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0782

Road cutting

WAGGA WAGGA

NSW GDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 10-5106

6036989 m N

35.81077 S latitude

525359 m E

147.2807 E longitude

Illustrations :2 Colour slides

Age/Unit=

KOE'ONG GRANITE

Topography: GENTLY SLOPING UPLAND WITH NEARBY TORS

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Moderately equigranular and sparingly porphyritic in quartz and plagioclase. Mesocratic with scattered biotite. Abundant xenoliths of biotite-rich rock, quartzite, and white quartz. Minor muscovite.

Field Rockname: SAMPLE WA0782 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density =

Dry density = 2.65

Grain density = 2.71

Porosity = 2.0

Mean of 15 in-situ readings = 459

from 314 to 816 ,SD= 145

Laboratory susceptibility = 50

Remanence = .30

Koenigsberger ratio = .10

Ch.1= 57846

Ch.2= 4371

Ch.3= 1031

Ch.4= 1063

U/Th= .18

6.57 Heat generation units

3.45 % K2O

3.68 ppm U

20.55 ppm Th

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.40	.55	14.80	4.07	.06	1.70	1.22	2.12	4.05	.21	.01	1.60	99.79

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	559	-6	59	14	52	161	46	-3	13	22	37	217

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	9	149	-5	15	-3	57	6	28	61	175

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite

Est. %	MINERAL	FABRIC:
20.	Quartz	Hypidiomorphic granular
30.	Orthoclase	Large patches of fractured globular variably-strained quartz, with poikiloblastic microcline with euhedral plagioclase & biotite inclusions, & large to small anhedral to euhedral plagioclase.
35.	Plagioclase	Xenocrysts of cordierite largely altered to pinite, muscovite, & rare clusters of sillimanite needles. Abundant biotite which appears to be of two generations, one being deep red-brown to light yellow in pleochroic scheme with numerous radioactive inclusions which include zircon, & the other being euhedral but skeletal & considerably altered to chlorite muscovite & opaque mineral needles along crystallographic planes, & associated apatite inclusions. Rare accessory garnet, zircon, & opaque mineral.
7.	Biotite	
3.	Muscovite	
3.	Cordierite	
2.	Sillimanite	
.1	Apatite	
.01	Zircon	
.01	Garnet	
.1	Opaque	

Location 0783

* LACHIAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0783
Dozer scrape

OLD TIN MINE SITE SAME LOCATION AS 0784
WAGGA WAGGA

NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 10-5102
6042237 m N 35.76317 S latitude
534640 m E 147.3832 E longitude

Illustrations :

Age/Unit= KOETONG GRANITE
Topography: STEEPLY SLOPING UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granite with veins of biotite aplite. The granite is equigranular,
coarse-grained and mesocratic due to scattered biotite. Minor xenoliths
of layered quartzite in places.

Field Rockname: SAMPLE WA0783 APLITE

PHYSICAL PROPERTIES:

APLITE
DENSITIES
Whole rock density = 2.59
Dry density = 2.57
Grain density = 2.59
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 10 in-situ readings = 263
from 0 to 691, SD= 282
Laboratory susceptibility = 1130
Remanence = 50.00
Koenigsberger ratio = .74

GAMMA-RAY SPECTROMETRY
Ch.1= 92525
Ch.2= 6118 4.15 X K20
Ch.3= 1961 10.30 ppm U
Ch.4= 1741 33.31 ppm Th
U/Th= .31
13.00 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.14	.05	12.82	.67	.03	.06	.48	3.80	4.69	.02	.02	.20	99.98

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	71	-6	27	2	6	58	15	3	55	-5	54	431

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	118	6	7	30	48	2	13	68	16	82

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Aplite	Aplitic
56.	Orthoclase	Uneven grained with scattered plagioclase & quartz amidst finer quartz & abundant orthoclase in large patches & interstitia! with kaolinisation. Scattered small biotites, slightly oxidised by weathering & altered to minor opaque mineral in places. Rare opaque mineral possibly pseudomorphous after a sulphide mineral. Very rare muscovite.	
15.	Plagioclase		
3.	Biotite		
1.	Opaque		
.1	Muscovite		

Location 0784

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0784
Dozer scrape

SAME LOCATION AS 0783
WAGGA WAGGA

NSW GDCM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 10-5102
6042234 m N 35.76320 S latitude
534640 m E 147.3832 E longitude

Illustrations :

Age/Unit= KOETONG GRANITE
Topography: STEEPLY SLOPING UPLAND dip= strike=
Structure : PLUTON
Field Geology: Granite with veins of biotite aplite. The granite is equigranular,
coarse-grained and mesocratic due to scattered biotite. Minor xenoliths
of layered quartzite in places.

Field Rockname: SAMPLE WA0784 GRANITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 2.53
Dry density = 2.50
Grain density = 2.62
Porosity = 4.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .30
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY
Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.40	.05	12.45	.60	.04	.06	.28	3.43	4.94	.03	.05	.20	99.53

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	107	-6	38	-1	5	50	21	-3	39	-5	50	451

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	-5	23	7	20	10	2	12	51	12	43

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
30. Quartz
38. Orthoclase
30. Plagioclase
2. Biotite
.01 Zircon
.5 Opaque
Large globular patches of largely strain-free quartz amidst strongly sericitised plagioclase & kaolinised interstitial orthoclase. Minor red-brown biotite, slightly oxidised from weathering & altered to opaque mineral in places. The plagioclases have fractures lined by secondary goethite.

Location 0785

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0785
Old workings

ABANDONED TIN WORKINGS
WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=Z
6081337 m N air-photo:run-no.= 5-51(0
532022 m E 35.41072 S latitude
147.3527 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: LOW EN ECHELON STRIKE RIDGES IN UPLAND dip=66SW strike=125
Structure : MODERATELY DIPPING
Field Geology: Quartzite, variably biotite and muscovite-bearing, and with strata-bound cross-cutting veins of white quartz, and interbedded with greisenised slate with quartz veinlets.

Field Rockname: SAMPLE WA0785 GREISEN

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.69
Dry density =
Grain density =
Porosity =

GREISEN

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 99
from 25 to 188 ,SD= 58
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 45259
Ch.2= 3141 2.29 % K2O
Ch.3= 866 3.42 ppm U
Ch.4= 865 16.69 ppm Th
U/Th= .20
5.48 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Greisen
FABRIC: Porphyroblastic; layered
Est. % MINERAL
15. Quartz Porphyroblasts of chlorite, chloritised biotite & biotite crystal
20. Biotite aggregates set in a groundmass of randomly oriented muscovite, which
5. Chlorite has undergone grain growth to large crystals where inhibiting quartz
58. Muscovite is absent. Layering is accordingly defined by variations in grain size
2. Opaque & presence or absence of quartz. Minor randomly scattered opaque
mineral.

Location 0786

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0786

Outcrop

WAGGA WAGGA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheer area air-photo:run-no.= 2-5067

6114863 m N

35.10873 S latitude

520012 m E

147.2196 E longitude

Illustrations :

Age/Unit=

Topography: LOW RISE WITH EXFOLIATED OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Adamellite, inequigranular, porphyritic in quartz and biotite set in a medium-grained groundmass. Leucocratic. Minor fine biotite, muscovite, and biotite-rich xenoliths. Minor muscovite aplite bodies in places.

Field Rockname: SAMPLE WA0786 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
Whole rock density = 2.61
Dry density = 2.58
Grain density = 2.63
Porosity = 2.2

MAGNETIC SUSCEPTIBILITY (S.I.*.G00001)

Mean of 2 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = .90
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 57112
Ch.2= 5005 4.45 % K2O
Ch.3= 945 5.28 ppm U
Ch.4= 812 15.50 ppm Th
U/Th= .34
6.93 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.94	.13	13.42	1.16	.04	.11	.76	3.28	4.79	.06	.04	.10	99.83

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	148	-6	44	4	7	50	28	-3	10	5	34	330

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	11	49	-5	14	-3	8	11	54	18	73

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Adamellite	Hypidiomorphic granular; porphyritic Phenocrysts of globular quartz aggregates, euhedral zoned plagioclase with internal fractures & strongly sericitised cores, & smaller biotite, strongly pleochroic from greenish-brown to light yellow.
50.	Orthoclase		The groundmass is medium-grained & consists of anhedral quartz microcline, orthoclase, subhedral plagioclase, & minor muscovite.
31.	Plagioclase		
3.	Biotite		
1.	Muscovite		
.05	Opaque		

Location 0787

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0787
Outcrop

NARRANDERA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-91
6130676 m N 34.96535 S latitude
455185 m E 146.5091 E longitude

Illustrations :

Age/Unit=

Topography: LOW RISE

dip= strike=

Structure :

Field Geology: Breccia. Densely fragmental in quartz crystals and crystal fragments,
which are set in a glassy matrix. Possibly silcrete.

Field Rockname: SAMPLE NR0787 ?SILCRETE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.60
Dry density = 2.62
Grain density = 2.63
Porosity = .6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 75
Remanence = 35.00
Koenigsberger ratio = 7.78

GAMMA-RAY SPECTROMETRY

Ch.1= 17801
Ch.2= 664 .09 % K2O
Ch.3= 474 3.44 ppm U
Ch.4= 340 6.39 ppm Th
U/Th= .54
3.24 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	97.78	.94	.28	.17	.01	.01	.01	.06	.01	.02	.04	.30	99.63
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	61	-6	12	2	6	-5	3	-3	23	-5	-5	-3	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	-20	4	-5	-5	-3	12	10	9	-5	219		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	Breccia
60.	Quartz	FABRIC:	Fragmental
1.	Tourmaline		
39.	Matrix		

Variably sized globular to slightly embayed, slightly strained and fractured quartz crystals & aggregates, as well as smaller angular quartz crystals & scattered tourmaline fragments. The matrix is ultrafine siliceous rock flour with variable amounts of dust-sized opaque mineral particles. Bimodal population of quartz clasts.

Location 0788

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0788
 Outcrop

NARRANDERA NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-91
 6135403 m N 34.92253 S latitude
 451115 m E 146.4648 E longitude

Illustrations :

Age/Unit=
 Topography: VERY LOW RISE dip= strike=
 Structure :
 Field Geology: Breccia. Densely fragmental in quartz crystals and crystal fragments,
 which are set in a glassy matrix. Possibly silcrete.

Field Rockname: SAMPLE NR0788 ?SILCRETE

PHYSICAL PROPERTIES:

DENSITIES		IGNIMBRITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.48	Mean of 0 in-situ readings =		Ch.1=			
Dry density =	2.42	from to .SD=		Ch.2=		X K20	
Grain density =	2.67	Laboratory susceptibility =	238	Ch.3=		ppm U	
Porosity =	9.7	Remanence =	3.00	Ch.4=		ppm Th	
		Koenigsberger ratio =	.21	U/Th=		Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	97.76	.85	.46	.52	.01	.01	.01	.02	.01	.02	.03	.30	99.97
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	59	-6	19	2	16	10	13	3	24	-5	-5	-3	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	4	-20	-3	-5	-5	-3	19	13	9	-5	294		

DESCRIPTION OF THIN OR POLISHED THIN SECTION.

Est. %	MINERAL	NAME:	Breccia
		FABRIC:	Vitrophyric
51.	Quartz		Variable sized globular to slightly embayed, strained & fractured quartz crystals, crystal aggregates, & smaller angular fragments of quartz & rare tourmaline. Very rare zircon which is rounded. The matrix consists of ultrafine siliceous rock flour with variable dust-sized opaque particles & scattered fine-grained angular quartz fragments. Bimodal population of quartz clasts.
.1	Plagioclase		
.1	Tourmaline		
.001	Zircon		
49.	Matrix		

Location 0789

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(796Z)0789
Outcrop

NARRANDERA NSW GDM=Z
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-96
6170612 m N 34.60548 S latitude
461362 m E 146.5786 E longitude

Illustrations :

Age/Unit= Upper Devonian
Topography: LOW RISING RIDGE WITH OUTCROP dip= strike=
Structure : SUB HORIZONTAL
Field Geology: Quartzose sandstone. Fine-grained, clean, well sorted with minor
feldspar grains which have been kaolinised by weathering. Casts of clay
pellets in places.

Field Rockname: SAMPLE NR0789 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I..000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.42	Mean of 7 in-situ readings =	0	Ch.1=	26714
Dry density =	2.36	from to SD=		Ch.2=	1595 1.04 % K2O
Grain density =	2.64	Laboratory susceptibility =	0	Ch.3=	501 1.62 ppm U
Porosity =	10.5	Remanence =	.50	Ch.4=	531 10.28 ppm Th
		Koenigsberger ratio =	*****	U/Th=	.16
					2.99 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
80.	Quartz	Quartzose sandstone	Moderately sorted
15.	Rock fragments		Subangular to rounded sand-sized quartz grains & sericitised lithic fragments with minor opaque mineral, rare tourmaline, & very rare zircon. The matrix consists of sericitic clay-mica. The clasts are tightly packed.
1.	Opaque		
.1	Tourmaline		
.01	Zircon		
4.	Matrix		

Location 0790

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0790
Outcrop

NARRANDERA sheet area 1:250,000 sheet area 1:100,000 sheet area
6198464 m N 6198464 m N
427558 m E 427558 m E
NSW GDOM=2
air-photo:run-no.= 3-86
34.35250 S latitude
146.2123 E longitude

Illustrations :

Age/Unit= Upper Devonian
Topography: LOW RISE WITH OUTCROP dip= strike=
Structure : SUB HORIZONTAL
Field Geology: Pebbly sandstone and conglomerate. Moderately sorted, and well cemented.
Clasts include quartz, quartzite, chert and shale.

Field Rockname: SAMPLE NR0790 CONGLOMERATE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.50	Mean of 5 in-situ readings =	0	Ch.1=	22052
Dry density =	2.47	from to	SD=	Ch.2=	531 .24 X k20
Grain density =	2.60	Laboratory susceptibility =	75	Ch.3=	238 .99 ppm U
Porosity =	5.2	Remanence =	5.00	Ch.4=	233 4.49 ppm Th
		Koenigsberger ratio =	1.11	U/Th=	.22
				1.43	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Conglomerate	
50.	Quartz		Moderately sorted
40.	Rock fragments		Subangular to subrounded quartz grains & lithic fragments including quartzite, quartzite breccia, chert, & sericite slate, tightly packed
10.	Matrix		& set in a fine siliceous matrix with secondary opaque-mineral ferruginisation as a result of weathering.

Location 0791

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0791
Dozer scrape

SAME LOCATION AS 0792
NARRANDERA

1:250,000 sheet area 1:100,000 sheet area
6190457 m N 34.42495 S latitude
431195 m E 146.2512 E longitude

NSW GDOM=2

air-photo:run-no.= 4-59

Illustrations :

Age/Unit=

Topography: LOW RISE

Structure : PLUTON

dip= strike=

Field Geology: Adamellite with greisen dykes. Adamellite is quartz-rich, muscovite-bearing, equigranular, coarse-grained, leucocratic and has quartz-tourmaline intergrowth. The greisen is a finer, slightly cavernous, with epidote and minor oxidised sulphide mineral.

Field Rockname: SAMPLE NR0791 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.61
Dry density = 2.54
Grain density = 2.67
Porosity = 4.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 129
from 0 to 314, SD= 101
Laboratory susceptibility = 0
Remanence = 7.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 93234
Ch.2= 5951 4.27 % K2O
Ch.3= 2304 27.88 ppm U
Ch.4= 708 11.66 ppm Th
U/Th= 2.39
20.25 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.16	.07	12.42	1.59	.04	.10	.31	2.35	4.74	.19	.03	.60	99.60

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	204	-6	30	4	4	59	14	3	11	-5	30	437

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	23	55	-5	15	16	5	10	32	49	55

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
50.	Quartz	Granite	Hypidiomorphic granular
30.	Orthoclase		Large interconnected patches of globular, slightly strained quartz which has minor embayments in places. Abundant kaolinised orthoclase & plagioclase partially pseudomorphed by muscovite & very rare
15.	Plagioclase		& garnet. Interstitial muscovite together with or separate from opaque mineral. Both appear to pseudomorph original biotite & there is rare liberation of fluorite parallel to its former cleavage. Rare accessory
.01	Tourmaline		tourmaline.
3.	Muscovite		
.02	Garnet		
2.	Opaque		
.01	Fluorite		

Location 0792

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0792
Dozer scrape

SAME LOCATION AS 0791
NARRANDERA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6190457 m N 34.42495 S latitude
431195 m E 146.2512 E longitude

Illustrations :

Age/Unit=
Topography: LOW RISE dip= strike=
Structure : PLUTON WITH DYKE OF THIS SAMPLE
Field Geology: Adamellite with greisen dykes. Adamellite is quartz-rich, muscovite-bearing, equigranular, coarse-grained, leucocratic and has quartz-tourmaline intergrowth. The greisen is a finer, slightly cavernous, with epidote and minor oxidised sulphide mineral.
Field Rockname: SAMPLE NR0792 GREISEN

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density = 2.62
Grain density = 2.71
Porosity = 3.8

GREISEN

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 1043
Remanence = 80.00
Koenigsberger ratio = 1.28

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.84	.05	13.04	2.69	.10	.07	.04	.02	4.33	.16	.04	2.40	99.79
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	206	12	60	2	7	55	13	4	8	-5	310	622	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	-1	184	97	-5	14	11	3	13	18	65	70		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Greisen
45. Quartz FABRIC: Massive, with cavities
45. Muscovite A secondary rock with patchy areas of coarse, clear unstrained quartz
9. Epidote amidst a mass of randomly-oriented, equant muscovite grains. Numerous
1. Opaque limonite. This rock forms a dyke in the adamellite from which sample
79620791 was taken.

Location 0793

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0793
Outcrop

NARRANDERA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-84
6207085 m N 34.27377 S latitude
414593 m E 146.0722 E longitude

Illustrations :

Age/Unit= Upper Devonian
Topography: STEEP RUGGED ESCARPMENT 50M HIGH dip= strike=
Structure : SUB HORIZONTAL AND GENTLY FOLDED
Field Geology: Quartzose sandstone and pebble conglomerate. The sandstone is clean,
well sorted and has a silica cement. Pebbles include quartz, quartzite
and rare granitoid. Medium to thick bedded.

Field Rockname: SAMPLE NR0793 PEBBLY QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.52
Dry density = 2.46
Grain density = 2.63
Porosity = 6.3

SANDSTONE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 150
Remanence = .50
Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY

Ch.1= 17247
Ch.2= 831 .47 % K2O
Ch.3= 327 1.70 ppm U
Ch.4= 292 5.59 ppm Th
U/Th= .30
2.11 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartzose sandstone
FABRIC: Moderately sorted
Subrounded to subangular quartz grains with subangular lithic clasts
variably sericitised or epidotised. Accessory tourmaline, zircon,
opaque mineral, & cassiterite. The grains are tightly packed & have
a silica cement & sericitic mud matrix in different places.

Est. %	MINERAL
92.	Quartz
5.	Rock fragments
.01	Tourmaline
.01	Cassiterite
.01	Zircon
.5	Opaque
3.	Matrix

Location 0794

* LACLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0794
Opencut mine

ARDLETHAN TIN MINE. SAME LOCATION AS 0795-0797
NARRANDERA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2
6200901 m N air-photo:run-no.= 3-100
486597 m E 34.33297 S latitude
146.8543 E longitude

Illustrations :1 Colour slide

Age/Unit= ARDLETHAN GRANITE

Topography: RELATIVELY GENTLY SLOPING UPLAND dip= strike=

Structure : PLUTON WITH A FEW VERTICAL DYKES

Field Geology: Adamellite, altered granite and porphyry dykes. The granitoids are quartz-rich, leucocratic, variably altered and contain both muscovite and biotite. Where altered, feldspars are considerably bleached, biotite is chloritised and tourmaline and rare cassiterite occur.

Field Rockname: SAMPLE NR0794 ALTERED GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.78
Dry density = 2.74
Grain density = 2.78
Porosity = 1.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 177
from 0 to 565, SD= 168
Laboratory susceptibility = 502
Remanence = 6.00
Koenigsberger ratio = .20

GAMMA-RAY SPECTROMETRY

Ch.1= 75561
Ch.2= 2001 1.43 X K20
Ch.3= 2729 23.47 ppm U
Ch.4= 1648 30.44 ppm Th
U/Th= .77
19.40 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	67.59	.32	13.93	11.48	.09	.68	.13	.01	2.64	.14	.06	2.80	99.85

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mn	Nb	Ni	Pb	Rb
p.p.m.	173	8	48	8	24	43	36	3	13	7	138	289

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	3	108	29	-5	14	9	31	24	21	223	113

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Altered granite	
35.	Quartz	Relict hypidiomorphic granular	
55.	Feldspar	Interconnected to globular patches of strained quartz aggregates surrounded by feldspar which is completely altered to sericite, chlorite, & minor muscovite. Minor biotite, largely altered to sericite, chlorite, & ilmenite. Minor muscovite. Patches & veinlets of secondary chlorite. Trace pyrite. Extensive chloritisation and lesser sericitisation have affected this rock. Rare topaz altered to sericite & muscovite.	
3.	Biotite		
2.	Muscovite		
.1	Ilmenite		
.001	Pyrite		
5.	Chlorite		
.01	Topaz		

Location 0795

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0795
Opencut mine

SAME LOCATION AS 0794 0796 AND 0797

NARRANDERA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-100

6200901 m N

34.33297 S latitude

486588 m E

146.8542 E longitude

Illustrations :1 Colour slide

Age/Unit=

ARDLETHAN GRANITE

Topography: RELATIVELY GENTLY SLOPING UPLAND

dip= strike=

Structure : PLUTON WITH A FEW VERTICAL DYKES

Field Geology: Adamellite, altered granite and porphyry dykes. The granitoids are quartz-rich, leucocratic, variably altered and contain both muscovite and biotite. Where altered, feldspars are considerably bleached, biotite is chloritised and tourmaline and rare cassiterite occur.

Field Rockname: SAMPLE NR0795 QUARTZ PORPHYRY DYKE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.75

Dry density = 2.81

Grain density = 2.90

Porosity = 3.3

Mean of 7 in-situ readings = 0

from to SD=

Laboratory susceptibility = 201

Remanence = .80

Koenigsberger ratio = .07

Ch.1= 218731

Ch.2= 10242 3.25 % K2O

Ch.3= 6243 50.68 ppm U

Ch.4= 4026 74.90 ppm Th

U/Th= .68

44.90 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.26	.07	12.83	2.12	.01	.59	.03	.40	3.90	.05	.07	1.90	97.23

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	128	39	34	7	6	32	16	-3	115	-5	109	656

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	-1	16123	26	15	58	15	3	100	144	106	164

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
 Est. % MINERAL FABRIC: Porphyritic; considerably devitrified
 5. Quartz Phenocrysts of bipyramidal to angular & rounded, resorbed volcanic
 5. Feldspar quartz, feldspar extensively altered to muscovite & sericite, as
 1. Tourmaline well as tourmaline commonly associated with unevenly distributed
 1. Cassiterite cassiterite as groundmass granules and secondary cavity linings. The
 88. Groundmass groundmass consists of minor quartz amidst a mass of equant orthoclase
 .01 Opaque crystals and fine muscovite that have grown from a formerly much finer
 material. This is a dyke rock which intrudes altered granite of the
 type seen in specimen 79620794.

Location 0796

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0796
Opencut mine

SAME LOCATION AS 0794 0795 AND 0797

NARRANDERA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-100
6200901 m N 34.33297 S latitude
486588 m E 146.8542 E longitude

Illustrations :1 Colour slide

Age/Unit=

ARDLETHAN GRANITE

Topography: RELATIVELY GENTLY SLOPING UPLAND

dip= strike=

Structure : PLUTON WITH A FEW VERTICAL DYKES

Field Geology: Adamellite, altered granite and porphyry dykes. The granitoids are quartz-rich, leucocratic, variably altered and contain both muscovite and biotite. Where altered, feldspars are considerably bleached, biotite is chloritised and tourmaline and rare cassiterite occur.

Field Rockname: SAMPLE NR0796 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.67
Dry density = 2.62
Grain density = 2.64
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to SD=
Laboratory susceptibility = 263
Remanence = .40
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 117247
Ch.2= 8117 6.37 % K20
Ch.3= 2286 18.79 ppm U
Ch.4= 1455 27.03 ppm Th
U/Th= .69
17.71 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.36	.39	14.84	3.44	.07	1.29	.63	2.85	5.03	.25	.04	1.60	99.79

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	434	-6	63	9	32	113	36	-3	13	11	69	366

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	128	106	-5	15	5	38	9	27	93	131

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granite	
35.	Quartz	Hypidiomorphic granular	
32.	Orthoclase		Globular to slightly lenticular interconnected quartz patches amidst euhedral sericitised plagioclase & large patches of poikilitic orthoclase. Abundant biotite extensively altered to chlorite, opaque mineral, minor muscovite, & with rare liberation of fluorite.
20.	Plagioclase		
7.	Biotite		
3.	Muscovite		Scattered muscovite. Rare accessory topaz altered to ultrafine sericite & muscovite. Numerous small apatite & rare zircon inclusions in biotite. Rare accessory opaque mineral & very rare cassiterite.
.1	Apatite		
.001	Fluorite		
2.	Opaque		
.1	Topaz		
.001	Cassiterite		
.001	Zircon		

Location 0797

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0797
Opencut mine

SAME LOCATION AS 0794 0795 AND 0796

NARRANDERA

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-100
6200901 m N 34.33297 S latitude
486588 m E 146.8542 E longitude

Illustrations :1 Colour slide

Age/Unit=

ARDLETHAN GRANITE

Topography: RELATIVELY GENTLY SLOPING UPLAND

dip= strike=

Structure : PLUTON WITH A FEW VERTICAL DYKES

Field Geology: Adamellite, altered granite and porphyry dykes. The granitoids are quartz-rich, leucocratic, variably altered and contain both muscovite and biotite. Where altered, feldspars are considerably bleached, biotite is chloritised and tourmaline and rare cassiterite occur.

Field Rockname: SAMPLE NR0797 HIGH-GRADE ORE, ALTERED GRANITE WITH FLUORITE AND SULPHIDE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.83
Dry density = 2.74
Grain density = 2.87
Porosity = 4.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to .SD=
Laboratory susceptibility = 163
Remanence = .50
Koenigsberger ratio = .05

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.79	.36	12.49	10.59	.10	.39	.20	.16	2.09	.16	.03	2.30	94.66

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	118	-6	47	8	31	276	40	-3	27	20	-5	204

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	0	43282	10	8	14	4	30	58	33	70	34

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Altered granite	
40.	Quartz		Relict hypidiomorphic granular
45.	Feldspar		Large globular patches of strained quartz aggregates, interconnected amidst a mass of feldspar, considerably altered to sericite, chlorite, & variable amounts of tourmaline. All biotite is altered to chlorite
5.	Tourmaline		with liberations of ilmenite, goethite, & included cassiterite.
6.	Biotite		Accessory apatite inclusions in biotite, & scattered pyrite & rare chalcopyrite. Rare zircon inclusions in some biotites. Rare secondary veinlets of cassiterite & pyrite. Rare tourmaline within chloritised biotite.
2.	Muscovite		
.05	Apatite		
.5	Cassiterite		
.01	Zircon		
.5	Ilmenite		
.5	Goethite		
.01	Pyrite		
.001	Chalcopyrite		

Location 0798

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0798

Road cutting

NARRANDERA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-100

6207599 m N

34.27253 S latitude

484286 m E

146.8293 E longitude

Illustrations :

Age/Unit=

ARDLETHAN GRANITE

Topography: LOW RISE

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Equigranular, non porphyritic, medium-grained, leucocratic except for scattered quartz-tourmaline intergrowths. Cut by narrow veins of orthoclase containing tourmaline clusters. Plagioclase slightly sericitised.

Field Rockname: SAMPLE NR0798 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density =

Dry density = 2.61

Grain density = 2.63

Porosity = .0

Mean of 4 in-situ readings = 0

from to SD=

Laboratory susceptibility = 0

Remanence = .50

Koenigsberger ratio = *****

Ch.1= 61626

Ch.2= 4509 3.73 X K20

Ch.3= 1251 13.40 ppm U

Ch.4= 532 9.36 ppm Th

U/Th= 1.43

10.76 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.13	.08	14.37	1.50	.03	.01	.47	3.41	4.56	.27	.01	.60	99.41

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	114	-6	23	4	8	74	3	-3	27	-5	14	825

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	7	38	24	9	11	8	4	37	28	55	53

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Adamellite	Porphyritic; hypidiomorphic granular
36.	Orthoclase		Variably-sized patches of globular quartz & minor euhedral to sub-hedral crystals. Large phenocrysts of extensively kaolinised, ragged orthoclase which occurs interstitially as well. Abundant plagioclase, variably sericitised with inclusions of secondary fluorite in the more altered types. Sparse biotite, slightly bleached & variably altered to muscovite. Scattered tourmaline, often in clusters. Accessory apatite, both free & as inclusions in biotite. Accessory topaz with marginal alteration to sericite, particularly within rare veinlets.
30.	Plagioclase		
1.	Biotite		
5.	Tourmaline		
2.	Muscovite		
1.	Topaz		
.01	Fluorite		
.1	Opaque		
.1	Apatite		

Location 0799

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0799

Road cutting

NARRANDERA

NSW GDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-80

6230581 m N

34.06535 S latitude

491824 m E

146.9114 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: LOW STRIKE RISE

dip=90 strike=136

Structure : VERTICAL

Field Geology: Quartzite and slate. Gradationally interbedded in places. Layers and cross-cutting, stratabound veinlets of quartz in places. Laminated to thin bedded. Relations indicate quartzites are chemical precipitates deposited during normal pelagic, suspension-current sedimentation.

Field Rockname: SAMPLE NR0799 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.56
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 12
from 0 to 62 .SD= 19
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 21984
Ch.2= 1331 .84 % K2O
Ch.3= 457 2.06 ppm U
Ch.4= 435 8.37 ppm Th
U/Th= .25
2.89 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Quartzite
95.	Quartz	FABRIC:	Porphyroblastic; microveined; microstylolitic
5.	Opaque		Globular to augen-shaped ovoids of variably strained quartz and strained quartz aggregates, tightly packed with rare stylolitic contacts well defined by opaque mineral. Abundant interstitial opaque mineral together with fine-grained quartz. Microveinlets of slightly strained coarse quartz with rare opaque mineral converted to earthy hematite by weathering.

Location 0800

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0800

Outcrop

NARRANDERA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-25

6213023 m N

34.22357 S latitude

481781 m E

146.8022 E longitude

Illustrations :

Age/Unit= Middle Silurian

Topography: MODERATELY RUGGED, RISING UPLAND

dip= strike=

Structure :

Field Geology: Ignimbrite. Densely porphyritic in quartz, feldspar, altered biotite and rare? garnet set in a fine-grained groundmass.

Field Rockname: SAMPLE NR0800 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.66
Dry density = 2.60
Grain density = 2.66
Porosity = 2.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 496
from 251 to 1005, SD= 250
Laboratory susceptibility = 0
Remanence = .40
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 64303
Ch.2= 4058 2.90 % K20
Ch.3= 1128 3.76 ppm U
Ch.4= 1185 22.94 ppm Th
U/Th= .16
6.90 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.08	.54	13.94	3.67	.08	.72	1.90	2.62	4.54	.25	.05	1.20	99.57

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	856	-6	105	12	11	87	76	-3	20	8	39	193

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	9	35	163	-5	25	6	34	8	54	116	310

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
15.	Quartz	Ignimbrite Porphyritic
5.	Plagioclase	Phenocrysts of fractured, euhedral to variably rounded, sparingly resorbed volcanic quartz, with abundant fractured fragments of
35.	Orthoclase	variably kaolinised orthoclase, lesser sericitised plagioclase with preferential alteration along fractures, & biotite showing extreme
7.	Biotite	alteration to dark green chlorite, opaque mineral & rare fluorite.
.1	Apatite	Accessory apatite both free & in biotites as inclusions. Scattered
35.	Groundmass	opaque mineral. The groundmass consists of devitrified quartz and
1	Opaque	feldspar with variable small crystal fragments.
.001	Fluorite	

Location 0801

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0801
Outcrop

NARRANDERA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-71
6159823 m N 34.43285 S latitude
485171 m E 146.8386 E longitude

Illustrations :

Age/Unit= ARDLETHAN GRANITE

Topography: GENTLY SLOPING UPLAND WITH EXFOLIATED OUTCROPS dip= strike=

Structure : PLUTON

Field Geology: Granite with veins of greisen. The granite is equigranular, medium-grained, leucocratic and has abundant muscovite and accessory cassiterite. Alteration variable and leached sulphide mineral present in most altered variants. Quartz-tourmaline intergrowths in places.

Field Rockname: SAMPLE NR021 GREISEN

PHYSICAL PROPERTIES:

	GREISEN		
DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.67		Mean of 6 in-situ readings = 0	Ch.1= 62842
Dry density = 2.65		from to ,SD=	Ch.2= 4449 3.73 % K2O
Grain density = 2.65		Laboratory susceptibility = 314	Ch.3= 1204 13.12 ppm U
Porosity = 2.5		Remanence = .60	Ch.4= 493 8.62 ppm Th
		Koenigsberger ratio = .03	U/Th= 1.52
			10.46 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.85	.07	13.02	2.19	.10	.08	.02	.19	4.16	.07	.03	1.50	99.29
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	124	7	40	-1	Δ	125	3	-3	14	-5	30	790	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	0	4753	44	-5	5	-3	6	33	22	71	37		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Greisen
		FABRIC:	Massive
40.	Quartz		Globular to lenticular, interconnected patches of strained quartz and strained quartz aggregates amidst a mass of variably-sized, randomly-oriented, secondary muscovite with abundant small cassiterite crystals unevenly scattered throughout. Rare tiny opaque mineral.
49.	Muscovite		
1.	Cassiterite		
.1	Opaque		

Location 0802

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0802

Road cutting

NARRANDERA

NSW G50M=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-71

182191 m N

34.50167 S latitude

484301 m E

146.8290 E longitude

Illustrations :1 Colour slide

Age/Unit=

Topography: GENTLY SLOPING LOW RISE

dip= strike=

Structure : PLUTON

Field Geology: Granophyre. Coarsely porphyritic in quartz, white orthoclase and light green, sericitised plagioclase all set in a medium-grained, quartz-rich groundmass containing chloritised biotite and epidote. The rock is a sill or flow interbedded with slaty sediments.

Field Rockname: SAMPLE NR0802 PORPHYRITIC GRANOPHYRE

PHYSICAL PROPERTIES:

DENSITIES
 Whole rock density = 2.66
 Dry density = 2.61
 Grain density = 2.61
 Porosity = 1.2

GRANOPHYRE

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 5 in-situ readings = 0
 from to SD=
 Laboratory susceptibility = 201
 Remanence = -10
 Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 87446
 Ch.2= 5648 4.09 % K20
 Ch.3= 1649 8.81 ppm U
 Ch.4= 1452 27.77 ppm Th
 U/Th= .32
 11.12 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.55	.39	12.60	2.48	.03	.26	1.20	2.61	4.77	.20	.04	1.00	100.04

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	445	-6	83	6	12	27	57	-3	19	6	39	256

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	23	85	-5	20	6	12	11	35	55	211

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
10.	Quartz	Granophyre Porphyritic; microgranophyric
5.	Plagioclase	Phenocrysts of euhedral to slightly corroded & embayed volcanic quartz often in clusters, with plagioclase altered to sericite, and kaolinised
8.	Orthoclase	poikilitic orthoclase. Microphenocrysts of former biotite now completely
3.	Biotite	altered to chlorite, epidote, & opaque mineral. Minor cavities of
2.	Muscovite	epidote or chlorite & sericite. The groundmass consists of a micro-
3.	Epidote	graphic intergrowth of quartz & alkali feldspar with acicular skeletal
2.	Chlorite	chlorite-epidote rods pseudomorphing another variety of ?biotite, & tiny
.001	Opaque	scattered opaque mineral. Rare apatite inclusions in altered biotite.
66.	Groundmass	Muscovite occurs as clusters scattered in groundmass.
.01	Apatite	

Location 0803

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0803

Road cutting

NARRANDERA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= C-97

6156771 m N

34.73082 S latitude

479868 m E

146.7801 E longitude

Illustrations :

Age/Unit= GRONG GRONG GRANITE
Topography: LOW RISE dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, non porphyritic, coarse-grained. Leucocratic, but spotted due to scattered biotite. Muscovite-bearing. Rare radiating tourmaline clusters. Minor aplite veins.

Field Rock Name: SAMPLE NR0803 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
Whole rock density = 2.63
Dry density = 2.62
Grain density = 2.62
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)
Mean of 15 in-situ readings = 65
from 12 to 125 .SD= 33
Laboratory susceptibility = 12
Remanence = .60
Koenigsberger ratio = .83

GAMMA-RAY SPECTROMETRY
Ch.1= 43104
Ch.2= 3745 3.56 X K20
Ch.3= 612 4.99 ppm U
Ch.4= 393 7.31 ppm Th
U/Th= .68
5.15 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.30	.16	14.13	1.43	.04	.41	.70	3.31	4.68	.25	.01	.50	79.91

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	204	-6	20	3	8	69	10	-3	16	-5	41	411

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	-1	43	57	-5	8	3	15	8	22	39	69

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL FABRIC: Globular to lenticular interconnected patches of quartz amidst large
35. Quartz orthoclase & plagioclase with strong alteration to sericite, mainly
30. Orthoclase in cores. Scattered biotite, slightly bleached & altered to chlorite
25. Plagioclase & muscovite with liberation of opaque mineral in small amounts. Minor
5. Biotite apatite generally as inclusions in biotite. Scattered large muscovite
5. Muscovite plates & smaller clusters in secondary discontinuous veinlets. Minor
.2 Tourmaline tourmaline & very rare garnet, the latter occurring as inclusions in
.05 Apatite two biotites.
.1 Opaque
.001 Garnet

Location 0804

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0804
Drillhole

PERCUSSION DRILL HOLE
NARRANDERA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-71
6190513 m N 34.42663 S latitude
485068 m E 146.8375 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLE SLOPE

dip= strike=

Structure :

Field Geology: Soil overlying micaceous quartzite, intruded by granite at 147 m depth.
Depth to base of weathering 56 m. Soil 24 m thick. The quartzite is
pyritic. Granite resembles that at 0801.

Field Rockname: SAMPLE NR0804 MICACEOUS QUARTZITE CUTTINGS

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)
Mean of 0 in-situ readings =
from to .SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 44856
Ch.2= 3533 2.81 % K2O
Ch.3= 857 4.24 ppm U
Ch.4= 783 15.01 ppm Th
U/Th= .28
5.83 Heat generation units

Location 0805

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0805
Drillhole

SAME LOCATION AS 0804

NARRANDERA

NSW

GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-71
6190513 m N 34.42663 S latitude
485078 m E 146.8376 E longitude

Illustrations :

Age/Unit=

ARDLETHAN GRANITE

Topography: GENTLE SLOPE

dip= strike=

Structure :

Field Geology: Soil overlying micaceous, quartzite, intruded by granite at 147 m depth.
Depth to base of weathering 56 m. Soil 24 m thick. The quartzite is
pyritic. Granite resembles that at 0801.

Field Rockname: SAMPLE NR0806 CUTTINGS OF GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to .SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 45157
Ch.2= 4026 3.32 % K20
Ch.3= 1103 11.21 ppm U
Ch.4= 520 9.30 ppm Th
U/Th= 1.21
9.30 Heat generation units

Location 0806

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0806
Road cutting

NARRANDERA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-71
6185193 m N 34.47460 S latitude
484572 m E 146.8320 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: VERY LOW RISE dip=55SW strike=157
Structure : STEEPLY DIPPING
Field Geology: Slate, greywacke and micaceous quartzite. Mainly thin to medium and planar bedded, though slates are laminated in places. Deeply weathered. Quartzites have stratabound cross-cutting quartz veinlets.

Field Rockname: SAMPLE NR0806 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE
DENSITIES
Whole rock density = 2.28
Dry density = 2.28
Grain density = 2.78
Porosity = 17.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 100
Remanence = 5.00
Koenigsberger ratio = .83

GAMMA-RAY SPECTROMETRY

Ch.1= 61184
Ch.2= 4710 3.79 % K20
Ch.3= 1071 3.89 ppm U
Ch.4= 1098 21.22 ppm Th
U/Th= .18
6.89 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Micaceous quartzite Laminated; ghosted porphyroblasts
63.	Quartz		Bedding defined by variations in quartz content & discontinuous
30.	Muscovite		opaque laminae. Coarsened cherty silica layers with variable mixed
5.	Opaque		muscovite are interlayered with muscovite-rich laminae with quartz
2.	Andalusite		impurities. Diagenetic opaque mineral chiefly confined to muscovite-rich layers. Rare andalusite microporphyroblasts variably pseudomorphed by muscovite.

Location 0807

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0807

Road cutting

NARRANDERA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-102

6201130 m N 34.33098 S latitude

494940 m E 146.9450 E longitude

Illustrations :

Age/Unit= Upper Devonian

Topography: LOW RISE WITH OUTCROP ALONG STRIKE RIDGE

dip=34NE strike=135

Structure : MODERATELY DIPPING

Field Geology: Quartzose sandstone. Fine-grained, moderately sorted and well cemented.
Contains abundant casts of clay pellets and minor kaolinised detrital feldspar.

Field Rockname: SAMPLE NR0807 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.46
Dry density = 2.39
Grain density = 2.72
Porosity = 12.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 100
Remanence = 1.00
Koenigsberger ratio = .17

GAMMA-RAY SPECTROMETRY

Ch.1= 22090
Ch.2= 1354 .90 % K20
Ch.3= 412 1.15 ppm U
Ch.4= 452 8.77 ppm Th
U/Th= .13
2.41 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Quartzose sandstone Moderately sorted
75.	Quartz		Subangular to subrounded, fine sand-sized clasts of quartz, kaolinised
2.	Feldspar		feldspar, altered rhyolitic volcanic fragments, opaque minerals, and
15.	Rock fragments		rare smaller tourmaline, zircon, & very rare cassiterite, all tightly
5.	Opaque		packed with prominent opaque grain coatings. There is little matrix.
.1	Tourmaline		In the more quartzose layers it is a silica cement, but in the finer
.01	Zircon		multi-component layers it includes white clay-mica material often
3.	Matrix		ferruginised by weathering. Intraformational shale & slate clasts are
.01	Cassiterite		also present among the lithic fragments.

Location 0808

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.-(7962)0808
Road cutting

COOTAMUNDRA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5053
6199995 m N 34.34122 S latitude
502400 m E 147.0261 E longitude

Illustrations :

Age/Unit=

Topography: GENTLY SLOPING UPLAND RISE WITH OUTCROP dip= strike=

Structure :

Field Geology: Lithic sandstone. Medium-grained angular to subangular quartz, feldspar, felsic lava, tuff, and rare garnet grains set in a fine-grained, altered clayey matrix. Abundance of juvenile labile angular debris indicates short transport and rapid deposition close to source.

Field Rockname: SAMPLE CT0808 LITHIC SANDSTONE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.69	Mean of 15 in-situ readings = 18367	Ch.1= 65774
Dry density = 2.66	from 7476 to 30661 ,SD= 7712	Ch.2= 4894 3.78 x K2O
Grain density = 2.67	Laboratory susceptibility = 27181	Ch.3= 1202 4.22 ppm U
Porosity = .2	Remanence = 100.00	Ch.4= 1245 24.08 ppm Th
	Koenigsberger ratio = .06	U/Th= .18
		7.58 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.04	.27	13.22	3.49	.05	.26	1.57	2.91	4.26	.13	.07	.60	99.87

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	792	-6	108	6	6	20	69	-3	21	-5	35	212

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	12	-20	157	-5	19	4	7	11	48	77	324

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Lithic sandstone
	FABRIC:		Poorly sorted; massive
8.	Quartz		Angular fragments of resorbed volcanic quartz, slightly kaolinised
5.	Plagioclase		orthoclase, sericitised plagioclase, dacitic to rhyolitic lava and
4.	Orthoclase		pyroclastic fragments, volcanic biotite altering to chlorite and
40.	Rock fragments		magnetite or ilmenite, rare garnet, & magnetite. Fine particles of
2.	Biotite		magnetite are present in many lithic fragments. The matrix consists of
.04	Garnet		ultrafine volcanic ash & mud similar to alteration products of the
40.	Matrix		labile constituents, together with chlorite, opacitised unstable
1.	Magnetite		clays, & iron oxide.
.1	Ilmenite		

Location 0809

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

ND.=(7962)0809
Road cutting

COOTAMUNDRA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5053
6202115 m N 34.32207 S latitude
508151 m E 147.0886 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: RUBBL Y RISE dip= strike=
Structure :
Field Geology: Quartzite. Massive with a few joints lined by secondary quartz.

Field Rockname: SAMPLE CT0809 QUARTZITE

PHYSICAL PROPERTIES:		QUARTZITE	GAMMA-RAY SPECTROMETRY	
DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.=.000001)	Ch.1= 127.9	
Whole rock density = 2.64		Mean of 0 in-situ readings =	Ch.2= 1096	.64 % K2O
Dry density = 2.62		from to ,SD=	Ch.3= 391	1.37 ppm U
Grain density = 2.67		Laboratory susceptibility = 0	Ch.4= 405	7.83 ppm Th
Porosity = 2.3		Remanence = 20.00	U/Th= .18	
		Koenigsberger ratio = *****	2.33	Heat generation units

DESCRIPTION OF THIN GR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
94.	Quartz	Quartzite	Microporphyroblastic
.5	Tourmaline		Ovoid porphyroblasts of slightly strained quartz or quartz aggregates amidst smaller quartz which has grown from a formerly finer state.
1.	Muscovite		Muscovite impurities have been expelled to & define grain boundaries.
4.	Opaque		Scattered tourmaline, opaque mineral, cherty rock fragments, & rare zircon.
1.	Rock fragments		
.01	Zircon		

Location 0810

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0810
Road cutting

COOTAMUNDRA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5061
6222236 m N 34.14058 S latitude
511072 m E 147.1201 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: VERY LOW,WIDE RISE

dip=8SNE strike=154

Structure : NEAR VERTICAL

Field Geology: Shale, slate, siltstone, greywacke and micaceous quartzite. Interbedded,
planar bedded, with sharp top and bottom contacts to each unit. Thin to
medium bedded with internal lamination in shales.

Field Rockname: SAMPLE CT0810 SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 1.98
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 78451
Ch.2= 5162 3.49 % K2O
Ch.3= 1625 7.50 ppm U
Ch.4= 1531 29.42 ppm Th
U/Th= .25
10.45 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Quartz	Slate	Unsorted; massive; microporphyroblastic
5.	Opaque		Lenticular to ovoid porphyroblasts of slightly strained quartz with incipient porphyroblasts of coalesced quartz aggregates. These are randomly scattered throughout a matrix consisting of chemical quartz & optically oriented muscovite in slightly variable proportions.
.01	Zircon		Scattered opaque mineral & rare zircon.

Location 0811

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0811

Road cutting

COOTAMUNDRA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=2

6224569 m N

air-photo:run-no.= 2-5061

512191 m E

34.11953 S latitude
147.1322 E longitude

Illustrations :

Age/Unit=

KIKOIRA GRANITE

Topography: VERY LOW RISE

dip= strike=

Structure : PLANAR FLOW BANDING DIPPING STEEPLY.

Field Geology: Gneissic adamellite. Phenocrysts and augen of feldspar and lenticular bodies of quartz set in a medium-grained biotite and muscovite-bearing layered groundmass. Minor biotite-rich elongate xenoliths. Conformable quartz lenses.

Field Rockname: SAMPLE CT0811 GNEISSIC ADAMELLITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.70
Dry density = 2.66
Grain density = 2.67
Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 289
Remanence = 1.00
Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY

Ch.1= 51569
Ch.2= 3591 2.61 % K2O
Ch.3= 994 3.87 ppm U
Ch.4= 997 19.24 ppm Th
U/Th= .20
6.27 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.15	.57	15.15	4.34	.06	2.12	1.52	.01	4.43	.18	.01	.70	99.21

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	713	-6	66	13	44	115	36	-3	10	16	41	195

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	15	43	138	-5	15	-3	55	-5	32	61	175

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
25.	Quartz	Gneissic adamellite
25.	Orthoclase	Porphyroblastic with flow foliation
35.	Plagioclase	Phenocrysts & augen of zoned plagioclase & orthoclase amidst lenticular segregations of quartz aggregates. Abundant red-brown biotite frequently forming clots & clusters, & which has numerous apatite inclusions. The clots are frequently associated with large crystals & fringes of finer muscovite. Rare zircon inclusions in some biotites which have radioactive inclusions. Rare opaque mineral chiefly as thin lining along edges of biotites.
10.	Biotite	
5.	Muscovite	
.1	Opaque	
.5	Apatite	
.001	Zircon	

Location 0812

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0812
Road cutting

SAME LOCATION AS 0813 0814 0815

COOTAMUNDRA

NSW GDOM:

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5098

6237708 m N

34.00100 S latitude

514775 m E

147.1600 E longitude

Illustrations :Many Colour slides & B&W photo

Age/Unit=

Topography: SLIGHT RISE

dip= strike=

Structure : ROOF OF PLUTON WITH CONTACTS AND ROOF PENDANTS ALL RANDOMLY ORIENTED

Field Geology: Granodiorite. Inequigranular. Porphyritic in altered feldspar. Medium-grained. Melanocratic due to abundant biotite and biotite-rich xenoliths. Cut by fissures of quartzite and biotite quartzite, and microgranite dykes. Roof pendants present.

Field Rockname: SAMPLE LT0812 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES

Whole rock density = 2.50

Dry density = 2.49

Grain density = 2.67

Porosity = 6.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 0

from to SD=

Laboratory susceptibility = 276

Remanence = .10

Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 47643

Ch.2= 3334 2.52 % K20

Ch.3= 883 4.00 ppm U

Ch.4= 838 16.11 ppm Th

U/Th= .25

5.80 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.95	.69	15.52	5.02	.06	1.89	3.05	2.65	2.66	.12	.04	2.10	99.75

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pt	Rb
p.p.m.	548	-6	87	15	30	128	48	-3	9	13	17	153

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	20	-5	170	-5	9	-3	81	-5	39	73	184

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Granodiorite	Hypidiomorphic granular
58.	Plagioclase		Small globular patches of quartz aggregates amidst interlocking plagioclase, many with sericitised & garnetised cores. Interstitial yellowish-green to yellowish-brown pleochroic biotite. Rare apatite & zircon. Very rare opaque mineral. Xenoliths of hornblende-quartz-garnet rock often rimmed by plagioclase.
25.	Biotite		
.1	Apatite		
.1	Opaque		
2.	Xenoliths		
.01	Zircon		
.01	Garnet		

Location 0813

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.-(7962)0813
Road cutting

SAME LOCATION AS 0812 0814 0815

COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5098
6237708 m N 34.00100 S latitude
514775 m E 147.1600 E longitude

Illustrations :

Age/Unit=

Topography: SLIGHT RISE

dip= strike=

Structure : ROOF OF PLUTON WITH CONTACTS AND ROOF PENDANTS ALL RANDOMLY ORIENTED

Field Geology: Granodiorite. Inequigranular. Porphyritic in altered feldspar. Medium-grained. Melanocratic due to abundant biotite and biotite-rich xenoliths. Cut by fissures of quartzite and biotite quartzite, and microgranite dykes. Roof pendants present.

Field Rockname: SAMPLE CT0813 MASSIVE BIOTITE-BEARING QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.64
Dry density = 2.57
Grain density = 2.69
Porosity = 4.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings =
from 0 to 0, SD=
Laboratory susceptibility = 50
Remanence = 1.00
Koenigsberger ratio = .33

GAMMA-RAY SPECTROMETRY

Ch.1= 52192
Ch.2= 3367 2.28 % K2O
Ch.3= 1113 6.86 ppm U
Ch.4= 902 17.14 ppm Th
U/Th= .40
7.69 heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
92.	Quartz	Biotite quartzite	
5.	Biotite		Massive; granoblastic
1.	Opaque		Equant grains of quartz enlarged from originally finer material.
.05	Zircon		Abundant interstitial biotite impurities. Minor plagioclase, largely altered to clay, & minor opaque mineral. Rare zircon. This rock is the roof phase of granodiorite, sample 79620812.
2.	Plagioclase		

Location 0814

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0814
Road cutting

SAME LOCATION AS 0812 0813 0815
COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5098
6237708 m N 34.00100 S latitude
514775 m E 147.1600 E longitude

Illustrations :

Age/Unit=

Topography: SLIGHT RISE dip= strike=

Structure : ROOF OF PLUTON WITH CONTACTS AND ROOF PENDANTS ALL RANDOMLY ORIENTED

Field Geology: Granodiorite. Inequigranular. Porphyritic in altered feldspar. Medium-grained. Melanocratic due to abundant biotite and biotite-rich xenoliths. Cut by fissures of quartzite and biotite quartzite, and microgranite dykes. Roof pendants present.

Field Rockname: SAMPLE CT0814 BIOTITE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.71
Dry density = 2.71
Grain density = 2.73
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 238
Remanence = .10
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= X k20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Biotite quartzite
84.	Quartz	FABRIC:	Granoblastic
15.	Biotite		Equant grains of quartz coarsened by grain growth from an originally finer material. Abundant biotite generally interstitial to quartz.
1.	Zircon		Minor zircon inclusions in biotite. Occurs as dyke in granodiorite sample 79620812.

Location 0815

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0815
Road cutting

SAME LOCATION AS 0812 0813 0814
COOTAMUNDRA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5098
6237708 m N 34.00100 S latitude
514775 m E 147.1600 E longitude

Illustrations :

Age/Unit=

Topography: SLIGHT RISE

dip= strike=

Structure : ROOF OF PLUTON WITH CONTACTS AND ROOF PENDANTS ALL RANDOMLY ORIENTED

Field Geology: Granodiorite. Inequigranular. Porphyritic in altered feldspar. Medium-grained. Melanocratic due to abundant biotite and biotite-rich xenoliths. Cut by fissures of quartzite and biotite quartzite, and microgranite dykes. Roof pendants present.

Field Rockname: SAMPLE CT0815 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.57
Dry density = 2.52
Grain density = 2.62
Porosity = 3.9

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = 5.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th

U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Graphitic quartzite
Est. % MINERAL FABRIC: Microporphyroblastic; laminated
3. Andalusite Bedding defined by variations in quartz content & by muscovite
10. Muscovite laminae. Minor porphyroblasts of andalusite altering to muscovite,
10. Graphite particularly along muscovite rich laminae. The remainder of the rock
77. Quartz consists of cherty quartz with abundant particles of graphite.

Location 0816

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0816

Outcrop

FORBES

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=2

air-photo:run-no.= 6-1943

6268461 m N

33.72370 S latitude

509014 m E

147.0973 E longitude

Illustrations :

Age/Unit=

HYALONG GRANODIORITE

Topography: LOW RISE WITH OUTCROP

dip= strike=

Structure: PLUTON

Field Geology: Granodiorite. Equigranular, non porphyritic, medium-grained.

Melanocratic due to abundant biotite. Minor chlorite and muscovite.

Numerous fine-grained xenoliths of dark, biotite-rich rocks and

quartzite.

Field Rockname: SAMPLE FB0816 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES

Whole rock density = 2.72

Dry density = 2.72

Grain density = 2.72

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 351

Remanence = 1.00

Koenigsberger ratio = .05

GAMMA-RAY SPECTROMETRY

Ch.1= 48133

Ch.2= 3111 2.07 % K2O

Ch.3= 1100 8.10 ppm U

Ch.4= 780 14.65 ppm Th

U/Th= .55

7.99 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.47	.77	15.52	5.02	.06	2.55	2.94	2.47	3.27	.22	.05	.50	99.84

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	455	-6	77	17	69	120	43	-3	12	24	24	200

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	15	11	202	-5	16	3	84	6	32	70	185

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granodiorite

Est. %	MINERAL	FABRIC:	DESCRIPTION
30.	Quartz	Hypidiomorphic granular	Small patches of strained quartz & stained quartz aggregates, with abundant stubby euhedral zoned plagioclase crystals, some with sericitised cores. Minor patchy orthoclase is slightly kaolinised.
40.	Plagioclase		
5.	Orthoclase		
20.	Biotite		Abundant pleochroic red-brown to colourless biotite with numerous small apatite & radioactive zircon inclusions. Scattered cordierite
3.	Cordierite		
2.	Muscovite		generally completely altered to pinite. Rare opaque mineral generally adjacent to biotite. Scattered muscovite is both interstitial & in large plates beside biotite.
.2	Opaque		
.1	Apatite		
.05	Zircon		

Location 0817

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0817

Outcrop

FORBES

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=2

air-photo:run-no.= 5-1859

6292234 m N

33.50925 S latitude

512064 m E

147.1299 E longitude

Illustrations :

Age/Unit=

BLANDE DIORITE

Topography: VERY LOW RISE WITH GROUND-LEVEL OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Granodiorite. Equigranular, non porphyritic, medium-grained.
Melanocratic due to abundant biotite. Numerous small xenoliths of fine-grained biotite-rich rocks.

Field Rockname: SAMPLE FB0817 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES
Whole rock density = 2.75
Dry density = 2.73
Grain density = 2.73
Porosity = 1.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 0
from to SD=
Laboratory susceptibility = 289
Remanence = 2.00
Koenigsberger ratio = .12

GAMMA-RAY SPECTROMETRY

Ch.1= 39959
Ch.2= 2730 1.91 % K20
Ch.3= 841 4.50 ppm U
Ch.4= 740 14.15 ppm Th
U/Th= .32
5.63 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	63.04	.91	16.12	6.43	.09	3.69	3.24	2.19	3.19	.17	.05	.70	99.83

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	567	-6	84	25	124	133	55	-3	12	40	27	154

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	25	-5	173	-5	16	-3	117	-5	35	80	229

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
35.	Quartz	Granodiorite
42.	Plagioclase	Hypidiomorphic granular
2.	Orthoclase	Small patches of strained quartz & strained quartz aggregates, as well as abundant small grains of interstitial quartz. Abundant zoned euhedral plagioclase. Rare orthoclase. Minor cordierite entirely altered to pinite. Abundant red-brown, slightly bleached biotite with apatite & radioactive zircon inclusions. Rare opaque mineral often occurring as an inclusion in biotite. Rare secondary chlorite.
20.	Biotite	
1.	Cordierite	
.1	Apatite	
.1	Opaque	
.01	Zircon	
.1	Chlorite	

Location 0818

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0818

Outcrop

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-1567

6351529 m N

32.97395 S latitude

534125 m E

147.3652 E longitude

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: LOW RISE

dip=90 strike=140

Structure : VERTICAL; SLATEY, AND STRAIN-SLIP CLEAVAGE IN CHLORITIC ROCKS.

Field Geology: Phyllite, quartzite and white-quartz segregations. The phyllite is chloritic, muscovite-rich and massive. The quartz and quartzite occur as thin stratiform sheet-like bodies, as lenticular boudin-like masses, and as cross-cutting veins. Trace leached sulphide mineral.

Field Rockname: SAMPLE NM0818 PHYLLITE

PHYSICAL PROPERTIES:

PHYLLITE

DENSITIES
 Whole rock density = 2.66
 Dry density = 2.68
 Grain density = 2.70
 Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 0
 from to ,SD=
 Laboratory susceptibility = 741
 Remanence = 2.00
 Koenigsberger ratio = .04

GAMMA-RAY SPECTROMETRY

Ch.1= 38797
 Ch.2= 2760 2.02 % K20
 Ch.3= 722 1.81 ppm U
 Ch.4= 809 15.72 ppm Th
 U/Th= .12
 4.26 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.07	.63	7.92	3.48	.08	2.07	1.83	1.29	1.55	.18	.37	3.60	99.01

TRACE ELEMENT	Ba	Zi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	364	-6	98	8	54	20	71	-3	9	18	7	74

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	11	-20	58	-5	22	6	42	9	42	34	472

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
70.	Quartz	Phyllite	Microfolding in flow foliation
2.	Chlorite		Layering defined by variable quartz content & by mica-rich layers.
18.	Muscovite		Lenticular boudins of quartz aggregates, with or without opaque mineral are folded within more tightly folded rock consisting of quartz, muscovite, plates of chlorite, rare plagioclase, tourmaline, zircon & apatite. The rock is cut by veinlets of siderite with well terminated quartz crystals enclosed.
5.	Opaque		
5.	Siderite		
.1	Zircon		
.05	Apatite		
.1	Tourmaline		
.1	Plagioclase		

Location 0819

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0819
Dozer scrape

SAME LOCATION AS 0820

NARROMINE

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1537
6368846 m N 32.81743 S latitude
543078 m E 147.4602 E longitude

Illustrations :

Age/Unit= Ordovician GIRILAMBONE BEDS
Topography: VERY GENTLY SLOPING, LOW REGIONAL RISE dip=63NE strike=166
Structure : STEEPLY DIPPING
Field Geology: Greywacke, slate, and quartzite. Thin to thick and planar bedded, with
greywacke being the most abundant rock type. The quartzite has internal
lamination and is weakly pyritic.

Field Rockname: SAMPLE NM0819 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.55
Dry density = 2.50
Grain density = 2.50
Porosity = 6.1

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 3 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 100
Remanence = .40
Koenigsberger ratio = .07

GAMMA-RAY SPECTROMETRY

Ch.1= 32864
Ch.2= 2655 2.13 % K2O
Ch.3= 564 .79 ppm U
Ch.4= 685 13.37 ppm Th
U/Th= .06
3.25 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Slate
FABRIC: Porphyroblastic
Est. % MINERAL FABRIC: Porphyroblastic
84. Quartz Lenticular, ovoid & spheroidal porphyroblasts of slightly strained
1. Tourmaline quartz & quartz grain aggregates, randomly distributed throughout a
.01 Zircon mass of fine oriented sericite. Scattered minor larger muscovite,
.5 Muscovite tourmaline, zircon, & feldspar clouded by weathering. Rare small
14. Sericite opaque mineral particles.
.1 Feldspar
.5 Opaque

Location 0820

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0820
Dozer scrape

SAME LOCATION AS 0819

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1537
6368846 m N 32.81743 S latitude
543078 m E 147.4602 E longitude

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: VERY GENTLY SLOPING LOW REGIONAL RISE

dip= strike=

Structure: STEEPLY DIPPING

Field Geology: Greywacke, slate, and quartzite. Thin to thick and planar bedded, with greywacke being the most abundant rock type. The quartzite has internal lamination and is weakly pyritic.

Field Rockname: SAMPLE NM0820 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.48
Dry density = 2.50
Grain density = 2.50
Porosity = 5.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 339
Remanence = .20
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Quartzite
Est. %	FABRIC:	Massive with veinlets
95.	MINERAL	Quartz
1.		Opaque
4.		Sericite

Patches of clear coarse quartz terminating as veinlets & conformable layers. These are set in a mass of ultrafine cherty silica inhibited from coarsening by thin films of fine sericite. Minor scattered opaque mineral.

Location 0821

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0821
 Dozer scrape

NARROMINE NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-1469
 6385330 m N 32.66867 S latitude
 544734 m E 147.4771 E longitude

Illustrations :

Age/Unit= Ordovician GIRILAMBONE BEDS
 Topography: FLAT WITH TINY LOW RISES dip=90 strike=008
 Structure : VERTICALLY DIPPING
 Field Geology: Greywacke and micaceous quartzite. Slightly cleaved. Massive to slightly bedded. Numerous leached pyrite cubes pseudomorphed by limonite.
 Numerous small, narrow quartz veins.

Field Rockname: SAMPLE NM0821 BIOTITE QUARTZITE

PHYSICAL PROPERTIES: QUARTZITE
 DENSITIES: Whole rock density = 2.41
 Dry density = 2.39
 Grain density = 2.64
 Porosity = 9.3
 MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
 Mean of 4 in-situ readings = 0
 from to ,SD=
 Laboratory susceptibility = 150
 Remanence = .20
 Koenigsberger ratio = .02
 GAMMA-RAY SPECTROMETRY
 Ch.1= 29418
 Ch.2= 1749 .99 % K20
 Ch.3= 633 1.76 ppm U
 Ch.4= 695 13.49 ppm Th
 U/Th= .13
 3.61 Heat generation units

CHEMISTRY:
 MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
 Weight % 89.48 .35 5.77 1.18 .01 .16 .01 .05 .76 .05 .05 1.80 99.66
 TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
 p.p.m. 288 -6 65 5 55 11 40 -3 6 8 21 36
 TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zr Zr
 p.p.m. 10 -20 12 -5 13 -3 26 7 20 26 337

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Biotite quartzite
90.	Quartz	FABRIC:	Porphyroblastic; laminated
9.	Biotite		Lenticular to ovoid augen of strained quartz & strained quartz aggregates amidst smaller interstitial quartz, & biotite limonitised by weathering. Rare scattered opaque mineral, zircon, tourmaline and muscovite. Weak lamination defined by limonitised biotite, much of which has migrated to a pressure solution cleavage, but without obliterating bedding.
1.	Opaque		
.05	Zircon		
.01	Tourmaline		
.1	Muscovite		

Location 0822

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0822

Road cutting

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1345

6392591 m N

32.60287 S latitude

551692 m E

147.5509 E longitude

Illustrations :

Age/Unit: Ordovician

GIRILAMBONE BEDS

Topography: VERY GENTLY UNDULATING LOWLAND

dip=52S strike=095

Structure : MODERATELY TILTED

Field Geology: Phyllite, slaty greywacke and quartzite. The phyllite is massive and muscovite-rich. It grades into the other rock types and has stratiform units of white sheet quartz within it. Segregations and veins of white quartz in places.

Field Rockname: SAMPLE NM0822 PHYLITE

PHYSICAL PROPERTIES:

PHYLITE

DENSITIES

Whole rock density = 2.24

Dry density = 2.20

Grain density = 2.78

Porosity = 20.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 3 in-situ readings = 0

from to SD=

Laboratory susceptibility = 62

Remanence = 30.00

Koenigsberger ratio = 8.06

GAMMA-RAY SPECTROMETRY

Ch.1= 28682

Ch.2= 1641 .89 % K20

Ch.3= 595 1.04 ppm U

Ch.4= 705 13.74 ppm Th

U/Th= .08

3.19 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Phyllite

Est. % MINERAL FABRIC: Schistose; tightly folded at microscopic scale

60. Quartz Interlayered muscovite quartzite & muscovite forming planar laminae
32. Muscovite which show internal isoclinal folding. Numerous boudin-like bodies of
8. Opaque coarser quartzite, coarser because of more advanced grain growth due
to absence of inhibiting muscovite. Opaque material scattered
through each layer.

Location 0823

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0823

Road cutting

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-1311

6410059 m N

32.44538 S latitude

549902 m E

147.5309 E longitude

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: SLIGHT RISE WITH RUBBLY SURFACE

dip=15E strike=170

Structure : VERY GENTLY TILTED

Field Geology: Phyllite. Rich in dark micas. Has quartz-rich variants. Prominently cleaved, with strain-slip cleavage and kink bands. Conformable thin to medium lenticular bodies of white quartz. Variably pyritic. No thin section.

Field Rockname: SAMPLE NM0823 PHYLLITE

PHYSICAL PROPERTIES:

PHYLLITE

DENSITIES
Whole rock density = 2.43
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 54525
Ch.2= 3999 3.04 % K2O
Ch.3= 989 2.86 ppm U
Ch.4= 1076 20.87 ppm Th
U/Th= .14
6.02 Heat generation units

Location 0824

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0824
Road cutting

SAME LOCATION AS 0825
NARROMINE

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-129
6429212 m N 32.27303 S latitude
538960 m E 147.4137 E longitude

NSW GDOM=1

Illustrations :1 Colour slide

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: VERY LOW RUBBLY RISE

dip=64NE strike=152

Structure : MODERATELY TILTED

Field Geology: Phyllite intruded by swarm of small dolerite dykes. The phyllite is massive, rich in dark micas and contains white sheet quartz and lenticular quartz segregations. The dolerite dykes are up to 5 m wide and have altered plagioclase laths.

Field Rockname: SAMPLE NM0824 PHYLLITE

PHYSICAL PROPERTIES:

PHYLLITE

DENSITIES
Whole rock density = 2.70
Dry density = 2.68
Grain density = 2.75
Porosity = 2.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 0
from to SD=
Laboratory susceptibility = 376
Remanence = .20
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 43756
Ch.2= 3210 2.45 % K20
Ch.3= 795 2.42 ppm U
Ch.4= 855 16.57 ppm Th
U/Th= .15
4.88 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.25	.73	13.17	4.72	.04	2.24	.22	1.67	2.88	.19	.09	2.60	99.79

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	527	-6	77	16	75	56	58	-3	11	28	7	143

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	13	-20	52	-5	18	3	73	5	33	68	214

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	FABRIC:
65.	Quartz	Phyllite	Schistose; tightly folded at microscopic scale
13.	Muscovite		Layers & laminae of fine quartzite, biotite-muscovite-chlorite quartzite, & mica schist all tightly folded. Interlayered boudin-like bodies of coarser, purer quartzite, often bifurcating into layers at extremities.
12.	Biotite		
5.	Chlorite		
5.	Opaque		

Location 0825

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0825

SAME LOCATION AS 0824

Road cutting

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-129

6429212 m N

32.27303 S latitude

538950 m E

147.4136 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: VERY LOW RUBBLY RISE

dip= strike=

Structure : MODERATELY TILTED. STRIKE OF LARGEST DYKE ABOUT 045 DIP VERTICAL

Field Geology: Phyllite intruded by swarm of small dolerite dykes. The phyllite is massive, rich in dark micas and contains white sheet quartz and lenticular quartz segregations. The dolerite dykes are up to 5 m wide and have altered plagioclase laths.

Field Rockname: SAMPLE NM0825 DOLERITE

PHYSICAL PROPERTIES:

DOLERITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.73

Dry density = 2.70

Grain density = 2.78

Porosity = 2.7

Mean of 1 in-situ readings = 29028

from to ,SD=

Laboratory susceptibility = 42725

Remanence = 900.00

Koenigsberger ratio = .35

Ch.1= 27115

Ch.2= 1658 1.09 % K2O

Ch.3= 518 1.79 ppm U

Ch.4= 539 10.43 ppm Th

U/Th= .17

3.13 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Dolerite	Relict sub-ophitic
60.	Plagioclase		Slightly porphyritic in subhedral to ragged augite showing extensive alteration to brown ?amphibole. Subhedral ferromagnesian mineral pseudomorphed by calcite & rare quartz. Abundant plagioclase laths.
5.	Chlorite		Scattered fine opaque mineral. Chlorite pseudomorphs patchy
10.	Calcite		institial former glass in groundmass. This rock is part of a dyke
1.	Quartz		swarm intruding phyllite of the type represented at 79620824.
4.	Opaque		

Location 0826

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0826
Mag traverse

MAG TRAVERSE SEE DT1979 BOOK3PAGE43-44

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.- 3-129
6429212 m N 32.27303 S latitude
538950 m E 147.4136 E longitude

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography:

dip= strike=

Structure :

Field Geology: Soil, overlying phyllite cut by dolerite dyke swarm adjacent to sites
0824 and 0825. Recorded magnetic traverse.

Field Rockname:

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density =
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

Location 0827

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0827

Road cutting

NARROMINE

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-107
6452157 m N 32.06670 S latitude
504823 m E 147.0511 E longitude

NSW GDOM=2

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: VERY LOW RISE WITH QUARTZ RUBBLE

dip=59NE strike=137

Structure : MODERATELY TILTED

Field Geology: Biotite quartzite. Fine-grained, slightly cleaved. Segregations of white quartz in places. Rare laminae of mica or graphite. Abundant white quartz rubble. Very poor outcrop.

Field Rockname: SAMPLE NM0827 BIOTITE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES

Whole rock density = 2.57

Dry density = 2.55

Grain density = 2.70

Porosity = 5.8

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 9 in-situ readings = 224

from 125 to 314 ,SD= 53

Laboratory susceptibility = 50

Remanence = 6.00

Koenigsberger ratio = 2.00

GAMMA-RAY SPECTROMETRY

Ch.1= 36003

Ch.2= 2119 1.31 % K2O

Ch.3= 702 2.06 ppm U

Ch.4= 761 14.76 ppm Th

U/Th= .14

4.09 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	FABRIC:
75.	Quartz	Biotite quartzite	Microporphyroblastic; flow foliation
20.	Biotite		Lenticular to ovoid & augen-like strained quartz, aggregates of quartz, & plagioclase forming porphyroblasts in a flow-layered matrix of fine grained quartz & biotite. Minor muscovite & opaque mineral scattered randomly throughout. Rare tourmaline.
1.	Muscovite		
.1	Tourmaline		
2.	Opaque		
2.	Plagioclase		

Location 0828

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0828

OLD TOTTENHAM MINES. SAME LOCATION AS 0829

Old workings

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-23

6433354 m N 32.23585 S latitude

533304 m E 147.3535 E longitude

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: VERY SLIGHT RISE

dip=45S strike=075

Structure : MODERATELY TILTED

Field Geology: Phyllite, quartzite and white quartz. The phyllite has crenulation cleavage and wavy bedding. Numerous lenses of both quartzite and conformable white quartz. All rock types have traces of secondary copper minerals. Some quartzites have abundant pyrite.

Field Rockname: SAMPLE NM0828 PHYLLITE

PHYSICAL PROPERTIES:

PHYLLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.54

Mean of 15 in-situ readings = 1440

Ch.1= 3138

Dry density =

from 62 to 14451 .SD= 3634

Ch.2= 1900 1.21 % K2O

Grain density =

Laboratory susceptibility = 0

Ch.3= 727 5.83 ppm U

Porosity =

Remanence = .00

Ch.4= 475 8.85 ppm Th

Koenigsberger ratio =

U/Th= .66

5.40 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Phyllite	Schistose
71.	Quartz	Layers of quartzite & mica quartzite interbedded with laminae of mica schist which consist of pale green biotite, muscovite, & rare clots of chlorite. Opaque minerals are mainly confined to the quartz rich layers. The pure quartzite lenses are lenticular.	
13.	Muscovite		
12.	Biotite		
1.	Chlorite		
3.	Opaque		

Location 0829

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0829
Old workings

SAME LOCATION AS 0828

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-23
6433356 m N 32.23583 S latitude
533304 m E 147.3535 E longitude

Illustrations :

Age/Unit= Ordovician

GIRILAMBONE BEDS

Topography: VERY SLIGHT RISE

dip= strike=

Structure : MODERATELY TILTED

Field Geology: Phyllite, quartzite and white quartz. The phyllite has crenulation cleavage and wavy bedding. Numerous lenses of both quartzite and conformable white quartz. All rock types have traces of secondary copper minerals. Some quartzites have abundant pyrite.

Field Rockname: SAMPLE NM0829 PYRITIC QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.76
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Pyritic quartzite
Est. %	MINERAL FABRIC:	Layered
74.	Quartz	Layers of pyrite cubes set within an aggregate of strained quartz.
25.	Pyrite	Thin layers of interlaminated cupriferous quartzite containing
.01	Muscovite	disseminated covellite & covellite replacing chalcocite. Rare
.001	Chalcopyrite	chalcocite & very rare chalcopyrite.
1.	Covellite	
.1	Chalcocite	

Location 0830

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0830

Outcrop

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1337

6403923 m N

32.50158 S latitude

524236 m E

147.2580 E longitude

Illustrations :

Age/Unit= Middle Devonian

BOONA SANDSTONE

Topography: STRIKE RIDGE

dip=44\W strike=132

Structure : GENTLY DIPPING

Field Geology: Quartzose sandstone. Fine to medium-grained, well cemented, slightly silicified, laminated to thin and planar bedded. Low to moderate-angle, medium to large-scale cross stratification in places.

Field Rockname: SAMPLE NM0830 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES

Whole rock density =

Dry density = 2.59

Grain density = 2.59

Porosity = 1.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0

from to .SD=

Laboratory susceptibility = 125

Remanence = .20

Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 10225

Ch.2= 641 .45 % K2O

Ch.3= 166 .10 ppm U

Ch.4= 213 4.17 ppm Th

U/Th= .02

.87 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
95.	Quartz	Quartzose sandstone	Well sorted
2.	Rock fragments	Subrounded grains of quartz, with minor kaolinised feldspar, rock fragments of chert & quartzite, & rare tourmaline & opaque mineral,	
1.	Feldspar	all tightly packed & set in a matrix of silica cement and light green biotite mud.	
.001	Tourmaline		
.1	Opaque		
2.	Matrix		

Location 0831

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0831

Outcrop

NARROMINE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1333

6394798 m N

32.58415 S latitude

506588 m E

147.0702 E longitude

Illustrations :

Age/Unit=

WILMATHA GRANITE

Topography: GENTLY SLOPING UPLAND WITH OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Granophyre. Equigranular, sparsely and slightly porphyritic in feldspar and quartz. Medium-grained. Leucocratic. Plagioclase is noticeably sericitised. Contains shrinkage cracks and rare vughs lined by tiny chlorite aggregates and rare oxidised sulphide mineral.

Field Rockname: SAMPLE NM0831 GRANOPHYRE

PHYSICAL PROPERTIES:

GRANOPHYRE

DENSITIES

Whole rock density = 2.61

Dry density = 2.56

Grain density = 2.58

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 5 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 263

Remanence = 10.00

Koenigsberger ratio = .63

GAMMA-RAY SPECTROMETRY

Ch.1= 703a5

Ch.2= 4272 2.43 % K2O

Ch.3= 1663 8.59 ppm U

Ch.4= 1489 28.51 ppm Th

U/Th= .30

10.73 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.06	.16	13.04	.56	.01	.29	.38	4.54	4.24	.04	.06	.50	99.87

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	736	-6	112	-1	5	37	80	-3	8	-5	7	145

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	3	-5	127	-5	27	3	7	8	50	-5	148

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Granophyre	Granophyric
63.	Plagioclase	Gloabular to skeletal quartz often in patches. Sericitised plagioclase & kaolinised orthoclase amidst a mass of slightly coarsened, fine	
15.	Orthoclase	grained micrographic quartz & alkali feldspar. Scattered opaque	
2.	Chlorite	mineral & secondary vughs of an aggregate of tiny chlorite crystals.	
.5	Opaque	Rare microphenocrysts of quartz.	

Location 0832

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0832
Dozer scrape

SAME LOCATION AS 0833

NARROMINE

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1333
6394710 m N 32.58493 S latitude
508240 m E 147.0878 E longitude

Illustrations :

Age/Unit= Silurian-Devonian
Topography: GENTLY RISING LOWLAND dip=45SW strike=123
Structure : MODERATELY TILTED
Field Geology: Greywacke. Variably feldspathic with prominent, though sparse, pink
plagioclase. Very slightly cleaved.

Field Rockname: SAMPLE NM0832 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES
Whole rock density = 2.89
Dry density = 2.56
Grain density = 2.67
Porosity = 4.4

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 7 in-situ readings = 0
from to SD=
Laboratory susceptibility = 12
Remanence = 1.00
Koenigsberger ratio = 1.39

GAMMA-RAY SPECTROMETRY

Ch.1= 37297
Ch.2= 2896 2.31 % K₂O
Ch.3= 645 1.52 ppm U
Ch.4= 731 14.21 ppm Th
U/Th= .11
3.89 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
50.	Quartz	Greywacke	Massive; unsorted
5.	Feldspar		Subangular to subrounded, variably-sized, randomly scattered, sand-sized quartz, altered feldspar, quartzite rock fragments, with minor
1.	Epidote		muscovite, opaque mineral, epidote, & rare euhedral zircon. These
1.	Muscovite		constituents are set in a mud matrix, partially resolvable as sericitic
1.	Opaque		& chloritic material.
40.	Matrix		
2.	Rock fragments		
.001	Zircon		

Location 0833

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0833
Dozer scrape

SAME LOCATION AS 0832

NARROMINE

1:250,000 sheet area 1:100,000 sheet area
6394710 m N 32.58493 S latitude
508240 m E 147.0878 E longitude

NSW GDOM=1

air-photo:run-no.= 5-1333

Illustrations :

Age/Unit= Silurian-Devonian
Topography: GENTLY RISING LOWLAND dip= strike=
Structure : MODERATELY TILTED
Field Geology: Greywacke. Variably feldspathic with prominent, though sparse, pink
plagioclase. Very slightly cleaved.

Field Rockname: SAMPLE NM0832 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES
Whole rock density = 2.43
Dry density = 2.52
Grain density = 2.69
Porosity = 6.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 100
Remanence = .50
Koenigsberger ratio = .08

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Greywacke
32.	Quartz		Massive; poorly sorted; weak flow foliation
2.	Plagioclase		Subangular to subrounded, randomly-distributed, sand-sized clasts of quartz, minor plagioclase, detrital muscovite, biotite, & opaque
2.	Muscovite		mineral set in a muddy matrix partially resolvable as sericite and
1.	Biotite		secondary biotite & chlorite.
3.	Opaque		
60.	Mud		

Location 0834

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0834

Outcrop

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-1471
6380985 m N 32.70737 S latitude
555512 m E 147.5923 E longitude

Illustrations :

Age/Unit= Lower Devonian

Topography: LOW ROCKY RISE IN LOWLAND

dip= strike=

Structure :

Field Geology: Diorite. Inequigranular. Slightly porphyritic in plagioclase and hornblende set in a fine-grained dioritic groundmass. Mesocratic due to hornblende and oxides. Minor cognate xenoliths.

Field Rockname: SAMPLE NM0834 DIORITE

PHYSICAL PROPERTIES:

DIORITE

DENSITIES
Whole rock density = 2.71
Dry density = 2.70
Grain density = 2.72
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 39877
from 17844 to 57176 ,SD= 9801
Laboratory susceptibility = 32056
Remanence = 2500.00
Koenigsberger ratio = 1.30

GAMMA-RAY SPECTROMETRY

Ch.1= 30667
Ch.2= 2170 1.69 % K20
Ch.3= 564 3.17 ppm U
Ch.4= 483 9.22 ppm Th
U/Th= .34
3.92 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	
		Diorite	
		Porphyritic	
5.	Quartz		A highly felsic rock porphyritic in sericitised & lightly epidotised
81.	Plagioclase		plagioclase. Subhedral hornblende, pleochroic in shades of green and
8.	Hornblende		lightly altered to secondary green hornblende in places. The bulk of
1.	Chlorite		the rocks consists of argillised euhedral laths & anhedral
1.	Epidote		interstitial plagioclase, with minor quartz, scattered ilmenite,
0.01	Apatite		goethite, & magnetite. Minor chlorite & epidote. Trace apatite.
2.	Ilmenite		
1.	Magnetite		
1.	Goethite		

Location 0835

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0835

Outcrop

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-1471

6377664 m N

32.73735 S latitude

555053 m E

147.5876 E longitude

Illustrations :

Age/Unit= Lower Devonian

Topography: GENTLY RISING UPLAND WITH OUTCROP

dip= strike=

Structure :

Field Geology: Dacite and volcanic breccia. The dacite is porphyritic in plagioclase and rare quartz and has sub-conchoidal fracture in places. Clasts in the breccia include varieties of porphyritic and vesicular andesite as well as dacitic types. Interpreted as being close to source area.

Field Rockname: SAMPLE NM0835 DACITE BRECCIA

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.68
Dry density = 2.66
Grain density = 2.69
Porosity = .9

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)

Mean of 15 in-situ readings = 30042
from 15079 to 46746 ,SD= 8588
Laboratory susceptibility = 24718
Remanence = 1200.00
Koenigsberger ratio = .81

GAMMA-RAY SPECTROMETRY

Ch.1= 45994
Ch.2= 2979 2.16 % K2O
Ch.3= 834 3.40 ppm U
Ch.4= 824 15.89 ppm Th
U/Th= .21
5.30 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Dacite breccia	
Est. %	MINERAL	FABRIC:	Porphyritic, with abundant cognate xenoliths
2.	Quartz		Fractured phenocrysts of zoned plagioclase & smaller quartz.
8.	Plagioclase		Abundant angular clasts of andesite, iron-charged andesite, and
30.	Rock fragments		dacite. The clasts show variable alteration. The groundmass consists
1.	Epidote		of fine crystal fragments & an ultrafine mass of devitrified quartz
1.	Chlorite		& feldspar. Minor ilmenite & magnetite. Some clasts have abundant
57.	Groundmass		magnetite.
.5	Ilmenite		
.5	Magnetite		

Location 0836

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0836
Outcrop

NARROMINE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-1471
6377881 m N 32.73540 S latitude
554886 m E 147.5858 E longitude

Illustrations :

Age/Unit= GOBONDERY GRANITE
Topography: GENTLY RISING UPLAND WITH OUTCROP dip= strike=
Structure : PLUTON-MARGINAL PHASE OF
Field Geology: Microadamellite. Inequigranular, porphyritic in sericitised plagioclase
set in a medium-grained, mesocratic groundmass. Scattered hornblende,
biotite and iron oxides. Numerous small cognate, fine-grained xenoliths.

Field Rockname: SAMPLE NM0836 MICROADAMELLITE

PHYSICAL PROPERTIES:

MONZONITE
DENSITIES
Whole rock density = 2.62
Dry density = 2.62
Grain density = 2.62
Porosity = .0
MAGNETIC SUSCEPTIBILITY (S.I. *.000001)
Mean of 15 in-situ readings = 13722
from 3267 to 21237, SD= 4408
Laboratory susceptibility = 15645
Remanence = 1000.00
Koenigsberger ratio = 1.07
GAMMA-RAY SPECTROMETRY
Ch.1= 51081
Ch.2= 3783 3.01 % K2O
Ch.3= 942 5.25 ppm U
Ch.4= 811 15.48 ppm Th
U/Th= .34
6.58 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.41	.49	14.48	2.69	.04	.81	1.68	4.08	4.37	.15	.01	.50	99.71
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	748	-6	87	10	4	64	64	-3	18	-5	10	162	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	14	5	234	-5	15	-3	41	5	39	20	205		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Microadamellite	
		Slightly porphyritic	
20.	Quartz	Slightly porphyritic in strongly sericitised plagioclase, and	
40.	Orthoclase	hornblende showing slight alteration to chlorite, epidote, & sphene.	
33.	Plagioclase	Numerous small globular patches of quartz, some interconnected,	
3.	Hornblende	slightly resorbed & set amidst strongly sericitised, euhedral	
2.	Biotite	plagioclase laths & interstitial anhedral kaolinised orthoclase.	
.01	Epidote	Scattered brown biotite largely altered to chlorite & ultrafine	
1.	Xenoliths	epidote along cleavages. Scattered magnetite. Minor diorite xenoliths.	
2.	Magnetite		
.01	Sphene	Rare free epidote & sphene.	

Location 0837

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0837

Dozer scrape

NARROMINE

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-1471

6377959 m N

32.73482 S latitude

552403 m E

147.5593 E longitude

Illustrations :

Age/Unit=

GOBONDERY GRANITE

Topography: GENTLY SLOPING UPLAND WITH OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Granophyre. Inequigranular, porphyritic in altered plagioclase. Medium-grained. Mesocratic due to sparse hornblende, and to overall grey colour. Trace sulphide mineral in places. Xenoliths of fine-grained igneous rocks.

Field Rockname: SAMPLE NM0837 GRANOPHYRE

PHYSICAL PROPERTIES:

GRANOPHYRE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.35

Ch.1= 45464

Dry density = 2.59

Mean of 15 in-situ readings = 9881

Ch.2= 3409 2.71 X K20

Grain density = 2.60

from 6408 to 12817, SD= 1879

Ch.3= 841 4.45 ppm U

Porosity = .0

Laboratory susceptibility = 4926

Ch.4= 744 14.23 ppm Th

Remanence = 2000.00

U/Th= .31

Koenigsberger ratio = 6.77

5.80 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.57	.19	12.91	2.21	.09	.18	.59	4.69	3.89	.04	.09	.80	99.25

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	729	-6	80	5	5	15	70	6	27	-5	19	102

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-20	50	-5	11	3	3	7	66	86	314

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Description
30.	Quartz	Granophyre	Phenocrysts of argillised plagioclase with epidotised cores. Patches of globular to ragged, slightly resorbed quartz in places. Most of the rock consists of a micrographic intergrowth of quartz and argillised alkali feldspar just discernible as plagioclase. Minor skeletal hornblende altered to chlorite, non resolvable clay, epidote & pyrrhotite. Rare deep green, strongly pleochroic biotite. Scattered pyrite cubes, ragged to skeletal, smaller pyrrhotite which frequently occurs with hornblende, & rare anhedral magnetite.
65.	Plagioclase	Granophyric; porphyritic	
2.	Hornblende		
1.	Biotite		
.1	Epidote		
.8	Pyrite		
1.	Pyrrhotite		
.2	Magnetite		

Location 0838

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0838
Outcrop

NARROMINE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1531
6374371 m N 32.76680 S latitude
559943 m E 147.6400 E longitude

Illustrations :

Age/Unit= Lower Devonian
Topography: LOW STRIKE RIDGE dip= strike=
Structure :
Field Geology: Rhyodacite. Fine-grained, pink, no obvious phenocrysts, flow banded with planar, closely-spaced layering. Numerous, small closely-spaced joints of irregular pattern.

Field Rockname: SAMPLE NM0838 RHYODACITE

PHYSICAL PROPERTIES:

DENSITIES RHYOLITE
Whole rock density = 2.48
Dry density = 2.42
Grain density = 2.61
Porosity = 7.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 330
from 163 to 565 ,SD= 120
Laboratory susceptibility = 238
Remanence = 7.00
Koenigsberger ratio = .49

GAMMA-RAY SPECTROMETRY
Ch.1= 49670
Ch.2= 3851 3.19 % K20
Ch.3= 852 4.00 ppm U
Ch.4= 797 15.31 ppm Th
U/Th= .26
5.81 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.01	.39	14.14	1.83	.01	.09	.02	4.19	3.93	.04	.03	2.00	99.69
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	555	-6	31	3	14	-5	40	5	22	7	11	94	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	24	24	-5	15	3	15	11	43	52	341		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Plagioclase	Rhyodacite	Relict hyalopilitic; flow banded
66.	Feldspar		Microlites of acicular plagioclase amidst feldspathic glass, slightly devitrified with weak development of microspherulites. Tiny non-
2.	Ferromagnesian		defineable ferromagnesian mineral. Flow banding well defined by
1.	Opaque		discontinuous laminae of quartz, opaque mineral, & rare muscovite.
1.	Quartz		Variable groundmass devitrification.
.01	Muscovite		

Location 0839

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0839
 Outcrop

NARROMINE NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-1531
 6374243 m N 32.76792 S latitude
 560486 m E 147.6458 E longitude

Illustrations :

Age/Unit= Lower Devonian
 Topography: VERY LOW STRIKE RIDGE dip= strike=
 Structure :

Field Geology: Dacite. Phenocrysts of pink stubby plagioclase and tiny clots of an altered ferromagnesian mineral set in a fine-grained groundmass with numerous small compacted and drawn out pumiceous xenolithic lenticles, some of which have feldspar phenocrysts.

Field Rockname: SAMPLE NM0839 DACITE

PHYSICAL PROPERTIES:

DENSITIES	DACITE	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.46		Mean of 15 in-situ readings = 649	Ch.1= 35202
Dry density = 2.36		from 188 to 1130 ,SD= 252	Ch.2= 2528 1.92 % K2O
Grain density = 2.60		Laboratory susceptibility = 364	Ch.3= 658 2.90 ppm U
Porosity = 9.2		Remanence = 25.00	Ch.4= 631 12.14 ppm Th
		Koenigsberger ratio = 1.14	U/Th= .24
			4.31 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.28	0.29	11.60	1.93	0.01	0.15	0.08	3.65	3.72	0.03	0.08	1.50	99.32
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	284	-6	28	3	-1	-5	20	-3	17	13	52	65	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	3	-20	33	8	25	-3	4	7	76	19	323		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Dacite
15.	Plagioclase	FABRIC:	Porphyritic
1.	Quartz		Phenocrysts of euhedral plagioclase, lightly sericitised and moderately kaolinised. The groundmass consists of devitrified quartz & kaolinised feldspar, with small patches of quartz or quartz aggregates sparingly scattered throughout. Minor opaque mineral.
5.	Rock fragments		
1.	Opaque		
78.	Groundmass		Several cognate xenoliths of altered andesite, dacite, & rhyolite.

Location 0840

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0840
Road cutting

NARROMINE NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1351
6397746 m N 32.55545 S latitude
568553 m E 147.7302 E longitude

Illustrations :

Age/Unit= Upper Devonian
Topography: STRIKE RIDGE dip=30E strike=020
Structure : GENTLY DIPPING
Field Geology: Quartzose sandstone, pebbly sandstone and conglomerate. Sandstone is medium to coarse-grained and moderately sorted. Crossbedded. The pebbles consist of quartz, quartzite, and siliceous argillite.

Field Rockname: SAMPLE NM0840 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.62	Mean of 5 in-situ readings =	0	Ch.1=	10221
Dry density =	2.58	from to SD=		Ch.2=	567 .31 % K2O
Grain density =	2.62	Laboratory susceptibility =	0	Ch.3=	214 .66 ppm U
Porosity =	1.8	Remanence =	3.00	Ch.4=	229 4.44 ppm Th
		Koenigsberger ratio =	*****	U/Th=	.15
				1.24	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Quartzose sandstone	
		Moderately sorted	
82.	Quartz	Subrounded to rounded sand & granule-sized clasts of quartz, quartzite, chert, mudstone, & altered rhyolite. Grains have well developed opaque coatings & are tightly compacted with rare micro-styolitic pressure solutions contacts in places. Interstitial silica cement in optical continuity with adjacent quartz grains. Minor detrital kaolinised feldspar, tourmaline, & opaque mineral.	
.01	Tourmaline		
2.	Feldspar		
1.	Opaque		
5.	Cement		

Location 0841

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0841

Outcrop

NARROMINE

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-1291
6416150 m N 32.38455 S latitude
624896 m E 148.3278 E longitude

Illustrations :

Age/Unit= Ordovician

TANTITHA ULTRABASICS

Topography: MODERATELY STEEP ROCKY PINNACLE dip= strike=

Structure : SMALL PLUTON

Field Geology: Pyroxenite. Consisting of a pyroxene mineral, magnetite and minor altered plagioclase. Variable medium to coarse grain size. Some crude discontinuous wavy layering. Minor epidote-bearing, feldspathic veins. No thin section.

Field Rockname: SAMPLE NM0841 PYROXENITE

PHYSICAL PROPERTIES:

PYROXENITE

DENSITIES

Whole rock density = 3.01
Dry density = 2.98
Grain density = 2.99
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.+.000001)

Mean of 15 in-situ readings = 96828
from 59187 to 149539 ,SD= 26953
Laboratory susceptibility = *****
Remanence = 63000.00
Koenigsberger ratio = 10.23

GAMMA-RAY SPECTROMETRY

Ch.1= 4414
Ch.2= 238 .20 % K2O
Ch.3= 61 .66 ppm U
Ch.4= 25 .44 ppm Th
U/Th= 1.52
.53 Heat generation units

Location 0842

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0842

Outcrop

FORBES

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-1621

6336968 m N

33.10130 S latitude

599124 m E

148.0623 E longitude

Illustrations :

Age/Unit= Upper Ordovician

GOONUMBI * ANDESITE

Topography: LOW RUBBLY RISE

dip= strike=

Structure : SMALL STOCK

Field Geology: Saussuritised gabbro. Phenocrysts of lath-like slightly altered plagioclase and unaltered augite set in a medium-grained groundmass of the same minerals. Moderately equigranular. Dark coloured.

Field Rockname: SAMPLE FB0842 SAUSSURITISED GABBRO

PHYSICAL PROPERTIES:

GABBRO

DENSITIES
Whole rock density = 2.77
Dry density = 2.77
Grain density = 2.77
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 25551
from 12943 to 33175 ,SD= 5696
Laboratory susceptibility = 27143
Remanence = 47000.00
Koenigsberger ratio = 28.86

GAMMA-RAY SPECTROMETRY

Ch.1= 23820
Ch.2= 1805 1.66 X K20
Ch.3= 351 3.29 ppm U
Ch.4= 189 3.44 ppm Th
U/Th= .96
3.01 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Gabbro Subophitic
75.	Plagioclase		A moderately altered rock consisting largely of coarse interlocking laths of strongly sericitised plagioclase. Scattered augite partially altered to hornblende & chlorite. Hornblende variably altered to secondary amphibole & chlorite. Patchy chlorite & sericite pseudomorphs of relict orthopyroxene. Scattered magnetite with rare ilmenite lamellae & minor alteration along margins. Interstitial quartz & slightly kaolinised orthoclase rarely micrographically intergrown. Rare interstitial secondary chlorite & sericite. Minor apatite euhedra. Rare epidote veinlets.
8.	Hornblende		
2.	Augite		
5.	Chlorite		
1.	Epidote		
1.	Quartz		
.5	Apatite		
2.	Magnetite		
.01	Ilmenite		
7.	Orthoclase		
.01	Sericite		

Location 0843

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0843

Outcrop

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-1621

6340220 m N

33.07142 S latitude

604973 m E

148.1246 E longitude

Illustrations :

Age/Unit= Upper Ordovician

GOONUMBLA ANDESITE

Topography: LOW RISE WITH OUTCROP

dip= strike=

Structure :

Field Geology: Andesite. Porphyritic in altered plagioclase laths and less frequent augite showing alteration and oxidation to iron-oxide mineral, probably magnetite. The groundmass is fine-grained and felsic.

Field Rockname: SAMPLE FB0843 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.71
Dry density = 2.76
Grain density = 2.76
Porosity = 0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 30255
from 23373 to 42348 ,SD= 5279
Laboratory susceptibility = 51484
Remanence = 22000.00
Koenigsberger ratio = 7.12

GAMMA-RAY SPECTROMETRY

Ch.1= 27230
Ch.2= 2401 2.49 % K2O
Ch.3= 244 1.90 ppm U
Ch.4= 164 3.06 ppm Th
U/Th= .62
2.27 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Andesite
Est. % MINERAL FABRIC: Pilotaxitic
45. Plagioclase Phenocrysts of large plagioclase laths, variably sericitised & rare
8. Augite cores of chlorite in the most altered examples. Microphenocrysts of
45. Groundmass euhedral unaltered augite, euhedral orthopyroxene pseudomorphed by
2. Magnetite secondary chlorite & sericite, & anhedral magnetite with apparent
.1 Orthopyroxene shrinkage cracks. The groundmass consists of plagioclase microlites,
lightly sericitised non-resolvable specks of a ferromagnesian mineral,
& tiny specks of magnetite.

Location 0844

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

ND.=(7962)0844

Road cutting

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-1777

6318387 m N

33.26853 S latitude

602783 m E

148.1036 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: FLAT WITH RARE, BROAD, LOW RISES

dip=80E strike=015

Structure : VERTICAL

Field Geology: Siliceous chloritic slate. Visible bedding in places. Prominent cleavage and numerous curved kink bands. Bedding defined by infrequent sudden variations in proportion of chlorite to quartz. Mainly massive. Trace oxidised sulphide mineral. No thin section.

Field Rockname: SAMPLE FB0844 SILICEOUS CHLORITIC SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES

Whole rock density = 2.68

Dry density = 2.65

Grain density = 2.70

Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 4 in-situ readings = 0

from to SD=

Laboratory susceptibility = 37

Remanence = .30

Koenigsberger ratio = .14

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

X K20

ppm U

ppm Th

U/Th=

Heat generation units

Location 0845

* LACLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0845
Outcrop

FORBES
1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6285036 m N 33.57180 S latitude air-photo:run-no.= 5-1875
572150 m E 147.7774 E longitude

Illustrations :

Age/Unit= Lower Devonian MILPOSE VOLCANICS
Topography: STEEP, RUGGED, STRIKE RIDGE dip= strike=
Structure : STEEPLY DIPPING IGNEOUS LAYERING
Field Geology: Andesite. Porphyritic in pink plagioclase variably altering to epidote
and set in a very fine-grained felsic groundmass. Thin planar to
slightly wavy igneous layering.

Field Rockname: SAMPLE FB0845 PORPHYRITIC ANDESITE

PHYSICAL PROPERTIES:

ANDESITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 15 in-situ readings = 2568		Ch.1= 57150	
Whole rock density = 2.65		from 17090 to 47249, SD= 6910		Ch.2= 2355	1.28 % K2O
Dry density = 2.64		Laboratory susceptibility = 24429		Ch.3= 1102	10.06 ppm U
Grain density = 2.64		Remanence = 6500.00		Ch.4= 616	11.28 ppm Th
Porosity = .0		Koenigsberger ratio = 4.43		U/Th= .89	
				8.45	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Andesite
		FABRIC:	Porphyritic
15.	Plagioclase		Phenocrysts of lightly-sericitised moderately-kaolinised, euhedral plagioclase slightly altered to epidote. Lesser phenocrysts of brown ?hornblende pseudomorphed by a cluster of granular epidote, minor quartz & chlorite, & fringes of opaque mineral. Minor xenoliths of epidote-quartz rock. The groundmass was formerly glassy & has devitrified to a fine feldspathic mosaic with inclusions of opaque mineral specks.
5.	Epidote		
2.	Opaque		
1.	Chlorite		
76.	Groundmass		
1.	Rock fragments		

Location 0846

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0846
Outcrop

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1875
6283614 m N 33.58462 S latitude
572241 m E 147.7785 E longitude

Illustrations :

Age/Unit= Lower Devonian MILPOSE VOLCANICS
Topography: STRIKE DEPRESSION IN STEEP RUGGED UPLAND dip= strike=
Structure : STEEPLY DIPPING
Field Geology: Andesite. Fine to ultrafine black rock with basaltic texture. Rare
microphenocrysts of plagioclase, and epidote pseudomorphs of a
ferromagnesian mineral. Microjoints are lined with traces of epidote.

Field Rockname: SAMPLE FB0846 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 15 in-situ readings = 61721		Ch.1= 31789	
Whole rock density = 2.79		from 34683 to 81681, SD= 11633		Ch.2= 1195	.63 % K2O
Dry density = 2.77		Laboratory susceptibility = 66187		Ch.3= 555	4.63 ppm U
Grain density = 2.77		Remanence = 3300.00		Ch.4= 347	6.43 ppm Th
Porosity = .0		Koenigsberger ratio = .83		U/Th= .72	
				4.11	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Andesite	FABRIC:
2.	Plagioclase	Pilotaxitic; sparsely porphyritic	
1.	Augite	Scattered rare microphenocrysts of augite, & epidotised euhedral plagioclase, set in a very fine grained groundmass of small plagioclase laths amidst a mass of plagioclase microlites, fine-grained epidote, & tiny specks of magnetite. Rare patchy groundmass quartz.	
97.	Groundmass		
.1	Quartz		

Location 0847

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0847 SAME LOCATION AS 0848 0849 0850 0851 AT TRIG STATION
Outcrop FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1875
6283151 m N 33.58875 S latitude
572943 m E 147.7861 E longitude

Illustrations :Photomicrograph

Age/Unit= Lower Devonian MILPOSE VOLCANICS
Topography: STEEPLY SLOPING UPLAND dip= strike=
Structure : POSSIBLE ERUPTIVE CENTRE
Field Geology: Andesite. Highly felsic. Variable wispy and discontinuous layering and
non-layered in different places. Numerous small pipe-like segregations
of leucocratic veins and microbreccia. Shrinkage cracks present. Rare
small dolerite dykes.
Field Rockname: SAMPLE FB0847 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 15 in-situ readings = 3300		Ch.1= 59464	
Whole rock density = 2.62		from 62 to 6031, SD= 2164		Ch.2= 2505	1.41 % K2O
Dry density = 2.61		Laboratory susceptibility = 4611		Ch.3= 1143	10.59 ppm U
Grain density = 2.67		Remanence = 300.00		Ch.4= 626	11.43 ppm Th
Porosity = 2.2		Koenigsberger ratio = 1.08		U/Th= .93	
				8.83	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Felsic andesite
2	Plagioclase	Sparsely porphyritic; devitrified glassy; sparingly microstylolitic	
.001	Muscovite	Scattered sparse phenocrysts of plagioclase, rarely glomeroporphyritic	
.1	Quartz	and slightly altered, set in a devitrified, highly felsic, fine-	
.05	Apatite	grained groundmass cut by rare microstylolites along which rare	
.5	Opaque	muscovite has grown. Rare veinlets and vugs of secondary quartz.	
98	Groundmass	Photograph microstylolites.	

Location 0848

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0848
Outcrop

SAME LOCATION AS 0847 0849 0850 0851

FORBES

NSW GDGM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1875

6283151 m N

33.58875 S latitude

572943 m E

147.7861 E longitude

Illustrations :

Age/Unit= Lower Devonian

MILPOSE VOLCANICS

Topography: STEEPLY SLOPING UPLAND

dip= strike=

Structure : POSSIBLE ERUPTIVE CENTRE

Field Geology: Andesite. Highly felsic. Variable wispy and discontinuous layering and non-layered in different places. Numerous small pipe-like segregations of leucocratic veins and microbreccia. Shrinkage cracks present. Rare small dolerite dykes.

Field Rockname: SAMPLE FB0848 FELSIC ANDESITE WITH SHRINKAGE CRACKS

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.59
Dry density = 2.57
Grain density = 2.64
Porosity = 2.7

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 12428
Remanence = 350.00
Koenigsberger ratio = .47

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT Weight % SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM

TRACE ELEMENT p.p.m. Ba Bi Ce Co Cr Cu 8 La Mo Nb Ni Pb Rb

TRACE ELEMENT p.p.m. Sc Sn Sr Ta Th U V W Y Zn Zr

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Felsic andesite
Est. % MINERAL FABRIC: Porphyritic; devitrified glassy with confined shrinkage cracks
2. Plagioclase Scattered sparse phenocrysts of plagioclase showing slight clayey alteration set in an altered slightly devitrified, felsic groundmass
.5 Opaques containing small specks of an opaque mineral and traces of micro-crystalline epidote. The rock is cut by confined cracks lined with
98. Groundmass non resolvable oxides.

Location 0849

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0849
Outcrop

SAME LOCATION AS 0847 0848 0850 0851

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1875
6283151 m N 33.58875 S latitude
572943 m E 147.7861 E longitude

Illustrations :

Age/Unit= Lower Devonian

MILPOSE VOLCANICS

Topography: STEEPLY SLOPING UPLAND

dip= strike=

Structure : POSSIBLE ERUPTIVE CENTRE

Field Geology: Andesite. Highly felsic. Variable wispy and discontinuous layering and non-layered in different places. Numerous small pipe-like segregations of leucocratic veins and microbreccia. Shrinkage cracks present. Rare small dolerite dykes.

Field Rockname: SAMPLE FB0849 LAYERED ANDESITE CUT BY VEINLETS

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.64
Dry density = 2.63
Grain density = 2.66
Porosity = 1.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 2990
Remanence = 170.00
Koenigsberger ratio = .95

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K2O
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
5.	Plagioclase	Felsic andesite	Porphyritic; pilotaxitic; layered; sparingly microstylolitic
90.	Groundmass		Sparingly porphyritic in unaltered plagioclase set in a fine-grained felsic groundmass with abundant plagioclase microlites mostly oriented parallel to flow banding. Layering defined by variable clay alteration and variable devitrification of finer layers. Some contacts between layers are microstylolitic. Cut by high-temperature veinlets and vugs of secondary quartz, epidote and blue-green pleochroic hornblende. Trace dust-sized specks of opaque oxide.
1.	Quartz		
3.	Epidote		
1.	Hornblende		
.1	Opaque oxide		

Location 0850

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0850

SAME LOCATION AS 0847 0848 0849 AND 0851

Outcrop

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1875

6283151 m N

33.58875 S latitude

572943 m E

147.7861 E longitude

Illustrations :

Age/Unit= Lower Devonian

MILPOSE VOLCANICS

Topography: STEEPLY SLOPING UPLAND

dip= strike=

Structure : POSSIBLE ERUPTIVE CENTRE

Field Geology: Andesite. Highly felsic. Variable wispy and discontinuous layering and non layered in different places. Numerous small pipe-like segregations of leucocratic veins and microbreccia. Shrinkage cracks present. Rare small dolerite dykes.

Field Rockname: SAMPLE FB0850 DOLERITE DYKE

PHYSICAL PROPERTIES:

DOLERITE

DENSITIES
Whole rock density = 2.91
Dry density = 2.88
Grain density = 2.93
Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 18811
Remanence = 1100000.
Koenigsberger ratio = 97.46

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
50.	Plagioclase	Dolerite	Subophitic
46.	Hornblende		Interlocking network of plagioclase laths, adjacent to & surrounded by patches of secondary hornblende including an acicular blue-green pleochroic variety & fibrous green amphibole. Scattered skeletal opaque mineral, often with associated accessory sphene. The rock is really a unaltered dolerite.
3.	Opaque		
1.	Sphene		

Location 0851

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0851

SAME LOCATION AS 0847 0848 0849 0850

Outcrop

FORBES

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1875

6283151 m N

33,58875 S latitude

572943 m E

147.7861 E longitude

Illustrations :

Age/Unit: Lower Devonian

MILPOSE VOLCANICS

Topography: STEEPLY SLOPING UPLAND

dip= strike=

Structure : POSSIBLE CRUPTIVE CENTRE

Field Geology: Andesite. Highly felsic. Variable wispy and discontinuous layering and non-layered in different places. Numerous small pipe-like segregations of leucocratic veins and microbreccia. Shrinkage cracks present. Rare small dolerite dykes.

Field Rockname: SAMPLE FB0847 HORNBLLENDE BIOTITE DACITE

PHYSICAL PROPERTIES:

DACITE

DENSITIES
 Whole rock density = 2.65
 Dry density = 2.63
 Grain density = 2.65
 Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
 from to SD=
 Laboratory susceptibility = 13961
 Remanence = 800.00
 Koenigsberger ratio = .96

GAMMA-RAY SPECTROMETRY

Ch.1=
 Ch.2= X K20
 Ch.3= ppm U
 Ch.4= ppm Th
 U/Th=
 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.10	0.39	14.91	2.54	0.04	0.86	2.75	4.06	3.19	0.15	0.08	0.80	99.87

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	780	-6	45	-1	-1	17	40	4	10	45	12	81

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-20	469	7	8	-3	29	6	21	44	152

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Dacite	FABRIC: Porphyritic; glomeroporphyritic in places
3.	Quartz	Phenocrysts of euhedral & fractured volcanic quartz with edges rounded by corrosion, with larger euhedral zoned plagioclase, glomeroporphyritic in places. Minor microphenocrysts of hornblende altering to chlorite, & deep brown biotite. Rare opaque mineral & sphene, in places of phenocryst size. The groundmass consists of devitrified feldspar aggregates with small biotite, hornblende, & opaque mineral.	
10.	Plagioclase		
.5	Hornblende		
1.	Biotite		
.5	Opaque		
1.	Sphene		
85.	Groundmass		

Location 0852

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0852

Outcrop

FORBES

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1785

6283820 m N

33.58273 S latitude

572688 m E

147.7833 E longitude

Illustrations :

Age/Unit= Lower Devonian

MILPOSE VOLCANICS

Topography: STEEP RUGGED UPLAND

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Andesitic volcanic breccia. Angular fragments of variably porphyritic andesite fragments set in a non-fragmented andesite groundmass. This rock is a phase of a layered andesite flow lacking clasts.

Field Rockname: SAMPLE FB0852 ANDESITIC VOLCANIC BRECCIA

PHYSICAL PROPERTIES:

BRECCIA

DENSITIES

Whole rock density = 2.50

Dry density = 2.59

Grain density = 2.61

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility = 3606

Remanence = 5000.00

Koenigsberger ratio = 23.11

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

X K20

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT

Weight % SiO2 76.54 TiO2 0.41 Al2O3 11.00 Fe2O3 2.85 MnO 0.05 MgO 0.17 CaO 0.68 Na2O 3.32 K2O 4.22 P2O5 0.07 SO3 0.04 LOI 0.60 SUM 99.94

TRACE ELEMENT

p.p.m. Ba 596 Bi -6 Ce 36 Co 4 Cr -1 Cu 39 La 31 Mo 4 Nb 10 Ni 43 Pb 11 Rb 72

TRACE ELEMENT

p.p.m. Sc 4 Sn -20 Sr 51 Ta 3 Th 14 U -3 V 7 W 7 Y 36 Zn 21 Zr 396

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Breccia

Est. % MINERAL FABRIC: Fragmental; unsorted

50. Rock fragments

50. Groundmass

Angular clasts of porphyritic andesite & dacite, variably sized and randomly-oriented. The groundmass consists of non porphyritic dacite, being a mosaic of devitrified equant feldspar with minor quartz, and coarser patches of quartz & epidote. One andesite clast has micro-stylolites which do not continue into the groundmass suggesting that they are early-formed compaction features.

Location 0853

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0853
Outcrop

FORBES NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1875
6284632 m N 33.57543 S latitude
572333 m E 147.7794 E longitude

Illustrations :

Age/Unit: Lower Devonian MILPOSE VOLCANICS
Topography: STEEP RUGGED UPLAND dip= strike=
Structure : STEEPLY DIPPING
Field Geology: Two-phased andesite. Spherical to dumbbell-shaped globular bodies of
andesite interlayered with and enclosed by slightly more mafic andesite.
Iron enrichment at uneven contacts indicates slight reaction.

Field Rockname: SAMPLE FB0853 TWO-PHASED ANDESITE

PHYSICAL PROPERTIES: ANDESITE

DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.+.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.60 Ch.1=
Dry density = Mean of 0 in-situ readings = Ch.2= X K20
Grain density = from to .SD= Ch.3= ppm U
Porosity = Laboratory susceptibility = 0 Ch.4= ppm Th
Remanence = .00 U/Th=
Koenigsberger ratio = Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.89	0.49	14.76	2.72	0.04	1.08	1.73	4.23	3.68	0.08	0.05	0.80	99.56

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1382	-6	45	12	7	16	26	4	16	36	15	98

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	7	-20	387	10	17	-3	20	8	55	42	503

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Two-phase andesite
Est. % MINERAL FABRIC: Layered; with immiscible droplets
45. Spheres A two-phase lava consisting of spherical bodies of sparsely porphyritic
55. Groundmass pilotaxitic felsic andesite with preferential concentrations of opaque
around rims indicating reaction with the other phase. Less common,
smaller spherical bodies of highly felsic orthopyric andesite with
perlitic cracking. The remainder of the rock consists of altered non-
porphyritic, pilotaxitic, more mafic andesite which surrounds & abuts
the spherical bodies with knife-edge contact. This phase also exhibits
slightly variable crystallisation.

Location 0854

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0854
Road cutting

SAME LOCATION AS 0562 AND 0563

FORBES

MSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1875
6285783 m N 33.56505 S latitude
572388 m E 147.7799 E longitude

Illustrations :

Age/Unit= Lower Devonian

MILPOSE VOLC*NICS

Topography: RUGGED UPLAND

dip= strike=000

Structure : STEEPLY DIPPING

Field Geology: Andesite. Two varieties: the first is light-coloured, coarsely porphyritic in plagioclase and lesser hornblende set in a fine-grained groundmass. It contains minor pyrite and has chlorite veinlets; the second type is darker, finer, magnetic, porphyritic and layered.

Field Rockname: SAMPLE FB0854 ANDESITE WITH MINERALISED MICROJOINTS

PHYSICAL PROPERTIES:

FELSIC ANDESITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.62

Dry density = 2.60

Grain density = 2.62

Porosity = .0

Mean of 0 in-situ readings =

from to .SD=

Laboratory susceptibility = 14124

Remanence = 350.00

Koenigsberger ratio = .41

Ch.1=

Ch.2=

Ch.3=

Ch.4=

X K20

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Felsic andesite

FABRIC: Porphyritic; devitrified glassy

Est. % MINERAL
5. Plagioclase Sparse phenocrysts of argillised plagioclase, slightly glomero-
90. Apatite porphyritic in places. Rare ilmenite microphenocrysts. The groundmass
1. Ilmenite consists of highly felsic devitrified glass with ilmenite dust. Trace
.001 Pyrite secondary blue-green hornblende in places. Rare pyrite grains.
97. Groundmass

Location 0855

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0855
Road cutting

SAME LOCATION AS 0856
FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1883
6290536 m N 33.51943 S latitude
605506 m E 148.1361 E longitude

Illustrations :

Age/Unit= Upper Ordovician-Lower Silurian

Topography: GENTLY SLOPING RISE

dip=56E strike=033

Structure : STEEPLY DIPPING AND SLIGHTLY FAULTED

Field Geology: Muscovite-chlorite slate interbedded with mudstone and rare altered dacite. Thin to medium bedding defined by cleaved slate interbedded with uncleaved mudstone, and by low-angle cross bedding and ripple cross-lamination in mudstones. Intraformational folding in places.

Field Rockname: SAMPLE FB0855 ALTERED DACITE

PHYSICAL PROPERTIES:

ALTERED DACITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I. *.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.71	Mean of 14 in-situ readings = 195	Ch.1= 63024
Dry density = 2.69	from 0 to 565, SD= 140	Ch.2= 2169 .56 X K20
Grain density = 2.81	Laboratory susceptibility = 12	Ch.3= 1329 8.55 ppm U
Porosity = 4.3	Remanence = .10	Ch.4= 1047 19.85 ppm Th
	Koenigsberger ratio = .14	U/Th= .43
		8.80 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	74.16	0.66	15.45	3.85	(0.01)	2.97	0.18	0.79	0.01	0.07	0.04	1.50	99.69
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	14	-6	79	.2	98	9	52	4	9	109	-5	-3	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	12	-20	108	6	17	4	89	12	46	15	162		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Altered ?dacite
15.	Quartz	FABRIC:	Relict porphyritic
85.	Groundmass		Relict phenocrysts, and ?vesicles pseudomorphed by a mosaic of secondary quartz grains, which are set in a non-resolvable, brown, highly-altered, fine-grained groundmass.

Location 0856

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0856
Road cutting

SAME LOCATION AS 0855

FORBES

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-1883

6290537 m N

33.51942 S latitude

605506 m E

148.1361 E longitude

Illustrations :

Age/Unit= Upper Ordovician-Lower Silurian

Topography: GENTLY SLOPING RISE

dip=56E strike=030

Structure : MODERATELY DIPPING

Field Geology: Muscovite-chlorite slate interbedded with mudstone and rare micaceous quartzite. Thin to medium bedding defined by cleaved slate interbedded with uncleaved mudstone, and by low-angle cross bedding and ripple cross-lamination in mudstones. Intraformational folding in places.

Field Rockname: SAMPLE FB0856 SPOTTED MICACEOUS QUARTZITE

PHYSICAL PROPERTIES: TUFF

DENSITIES
Whole rock density = 2.71
Dry density = 2.72
Grain density = 2.74
Porosity = 1.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 251
Remanence = .20
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Micaceous quartzite
Est. %	MINERAL FABRIC:	Laminated; non foliated; relict microphyroblastic
40.	Quartz	Bedding defined by variations in abundance of quartz, & consequent grain-size differences. Scarcely discernible porphyroblasts with quartz inclusions are pseudomorphed by sericite. They are fringed by discontinuous patches of brown biotite, set amidst a mosaic of equant quartz grains with interstitial muscovite & biotite. In places there are scattered muscovites forming large crystals. Scattered chlorite amongst the more quartzose layers. Scattered opaque mineral.
35.	Muscovite	
20.	Biotite	
3.	Chlorite	
2.	Opaque	

Location 0857

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0857
Outcrop

FORBES NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-2105
6257143 m N 33.81908 S latitude
619301 m E 148.2891 E longitude

Illustrations :

Age/Unit= Upper Silurian ILLUNIE RHYOLITE
Topography: GENTLY SLOPING LOWLAND WITH OUTCROP dip= strike=
Structure :

Field Geology: Andesite. Very large phenocrysts of pink plagioclase up to 1 cm long.
Numerous collapsed vesicles of tiny chlorite aggregates set in a fine-
grained groundmass. Small boxwork patches of leached sulphide mineral
aggregates.

Field Rockname: SAMPLE F80857 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES
Whole rock density = 2.76
Dry density = 2.74
Grain density = 2.79
Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 12821
from 3267 to 18723 ,SD= 3456
Laboratory susceptibility = 14237
Remanence = 2500.00
Koenigsberger ratio = 2.93

GAMMA-RAY SPECTROMETRY

Ch.1= 44557
Ch.2= 1557 .46 % K2O
Ch.3= 976 8.06 ppm U
Ch.4= 618 11.47 ppm Th
U/Th= .70
7.05 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Andesite	
			Porphyritic; orthopyric
15.	Plagioclase		Large phenocrysts of plagioclase, often fractured & broken, and partially altered to epidote. Rare epidote pseudomorphs of a former, ferro-magnesian microphenocryst. Scattered vesicles filled mainly with chlorite & minor quartz & epidote. Scattered magnetite microphenocrysts. The groundmass consists of fine-grained plagioclase in stumpy crystals with few laths, as well as epidote, interstitial chlorite, & rare magnetite.
5.	Chlorite		
2.	Epidote		
1.	Quartz		
75.	Groundmass		
1.	Magnetite		

Location 0858

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0858

Outcrop

GOULBURN

1:250,000 sheet area 1:100,000 sheet area NSW GDM=1
6198257 m N air-photo:run-no.= 3-5040
642588 m E 34.34708 S latitude
148.5503 E longitude

Illustrations :

Age/Unit=

YOUNG GRANODIORITE

Topography: GENTLY SLOPING UPLAND WITH OUTCROP

dip= strike=

Structure : PLUTON

Field Geology: Granodiorite. Inequigranular. Sparsely porphyritic in plagioclase.
Medium-grained. Melanocratic with clusters of small hornblende and
biotite aggregates, some resembling relict xenoliths. No thin section.

Field Rockname: SAMPLE GB0858 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES
Whole rock density = 2.74
Dry density = 2.73
Grain density = 2.76
Porosity = 1.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 30569
from 18032 to 41720 .SD= 7381
Laboratory susceptibility = 23700
Remanence = 450.00
Koenigsberger ratio = .32

GAMMA-RAY SPECTROMETRY

Ch.1= 40070
Ch.2= 1544 .80 X K2O
Ch.3= 682 4.43 ppm U
Ch.4= 534 10.12 ppm Th
U/Th= .44
4.65 Heat generation units

Location 0859

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0859
Outcrop

SAME LOCATION AS 0860

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5040
6198258 m N 34.34707 S latitude
642588 m E 148.5503 E longitude

Illustrations :

Age/Unit= Lower Devonian

MOUNTAIN CREEK VOLCANICS

Topography: GENTLY SLOPING UPLAND WITH OUTCROP

dip= strike=

Structure : PLUTON (AT EDGE)

Field Geology: Ignimbrite. Occurring either on margin of, or as a marginal phase of granodiorite at 0858. Porphyritic with phenocrysts of quartz, plagioclase, and biotite set in a fine-grained groundmass. The rock is cut by veins of monomineralic magnetite.

Field Rockname: SAMPLE GB0859 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.69
Dry density = 2.69
Grain density = 2.71
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 0
from to .SD=
Laboratory susceptibility = 188
Remanence = 35.00
Koenigsberger ratio = 3.10

GAMMA-RAY SPECTROMETRY

Ch.1= 48652
Ch.2= 1877 .86 % K20
Ch.3= 873 4.86 ppm U
Ch.4= 752 14.36 ppm Th
U/Th= .34
5.65 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.14	0.64	14.75	4.03	0.05	2.05	2.38	2.12	4.52	0.16	0.05	1.10	100.00

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	667	-6	105	14	38	18	59	3	12	43	19	192

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	13	12	135	8	-5	-3	84	9	29	33	203

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Ignimbrite	Porphyritic
10.	Plagioclase	Phenocrysts of fractured to rounded & resorbed, highly-strained, volcanic quartz, euhedral strained plagioclase, & biotite largely altered to aggregates of small secondary biotites which fray into the groundmass. The groundmass consists of devitrified quartzo-feldspathic glassy material with alteration to sericite & secondary biotite.	
4.	Biotite	Minor opaque mineral, some derived from alteration of biotite. Rare zircon & apatite often as inclusions in biotite	
.05	Apatite		
1.	Opaque		
.05	Zircon		
70.	Groundmass		

Location 0860

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0860
Outcrop

SAME LOCATION AS 0859

GOULBURN

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5040
6198252 m N 34.34713 S latitude
642570 m E 148.5501 E longitude

Illustrations :

Age/Unit= Lower Devonian

MOUNTAIN CREEK VOLCANICS

Topography: GENTLY SLOPING UPLAND WITH OUTCROP

dip= strike=

Structure: DYKE

Field Geology: Ignimbrite. Occuring either on margin of, or as a marginal phase of
granodiorite at 0858. Porphyritic with phenocrysts of quartz,
plagioclase, and biotite set in a fine-grained groundmass. The rock is
cut by veins of monominerallic magnetite.

Field Rockname: SAMPLE GB0860 MAGNETITE

PHYSICAL PROPERTIES:

MAGNETITE

DENSITIES
Whole rock density = 4.44
Dry density = 4.67
Grain density = 4.83
Porosity = 3.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 4 in-situ readings = 970752
from 667274 to 1255380, SD= 247353
Laboratory susceptibility = 1800000
Remanence = 999000.0
Koenigsberger ratio = 16.65

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2=
Ch.3= % K20
Ch.4= ppm U
ppm Th
U/Th=
Heat generation units

Location 0861

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0861

Road cutting

GOULBURN

1:250,000 sheet area 1:100,000 sheet area

6189440 m N

655663 m E

NSW GDOM=1

air-photo:run-no.= 4-5024

34.42468 S latitude

148.6940 E longitude

Illustrations :

Age/Unit= Middle-Upper Silurian DOURO GROUP

Topography: GENERALLY FLAT TO ROLLING LOWLAND

dip= strike=

Structure :

Field Geology: Dacite. Densely porphyritic in quartz, feldspar and ferromagnesian minerals which are set in a very fine-grained groundmass. Well developed planar igneous layering. The lighter bands have less dark minerals.

Field Rockname: SAMPLE GB0861 DACITE

PHYSICAL PROPERTIES:

DACITE

DENSITIES

Whole rock density = 2.69

Dry density = 2.67

Grain density = 2.69

Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.+000001)

Mean of 6 in-situ readings = 0

from to SD=

Laboratory susceptibility = 75

Remanence = 1.00

Koenigsberger ratio = .22

GAMMA-RAY SPECTROMETRY

Ch.1= 34507

Ch.2= 1206 .32 % K20

Ch.3= 657 2.19 ppm U

Ch.4= 690 13.35 ppm Th

U/Th= .16

3.70 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.85	.63	15.60	4.66	.08	2.31	3.6	2.44	2.30	.14	.09	2.20	99.96

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	535	-6	81	18	62	39	57	4	11	19	29	117

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	15	-20	249	-5	14	-3	86	11	29	56	217

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
35.	Quartz	Dacite	Fragmental
51.	Plagioclase	A mush of fractured, resorbed, unstrained quartz & sericitised plagioclase, with lesser biotite completely altered to chlorite, rare epidote, & muscovite, with accompanying liberation of zircon with opaque fringes. The crystal fragments are tightly packed & are set in interstitial chlorite & sericitised glass. Rare apatite inclusions in the larger biotites.	
1.	Zircon		
3.	Biotite		
10.	Chlorite		
.1	Opaque		
.1	Muscovite		
.1	Epidote		
.01	Apatite		

Location 0862

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0862

Road cutting

CANBERRA
1:250,000 sheet area

BRINDABELLA
1:100,000 sheet area

ACT GDOM=1
air-photo:run-no.= 5-38

6088401 m N
678786 m E

35.33153 S latitude
148.9671 E longitude

Illustrations :

Age/Unit= Silurian

MOUNT PAINTER PORPHYRY

Topography: LOW STRIKE RIDGE IN UPLAND AREA

dip= strike=

Structure: INDETERMINATE, MASSIVE

Field Geology: Ignimbrite, with abundant quartz, plagioclase and minor ferromagnesian mineral phenocrysts together forming 40% of the rock. Numerous small joints lined by epidote.

Field Rockname: SAMPLE CA0862 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.65
Dry density = 2.67
Grain density = 2.68
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I. *.000001)

Mean of 15 in-situ readings = 8913
from 5403 to 13194, SD= 2319
Laboratory susceptibility = 402
Remanence = 2.00
Koenigsberger ratio = .08

GAMMA-RAY SPECTROMETRY

Ch.1= 46678
Ch.2= 1839 .78 % K2O
Ch.3= 878 4.41 ppm U
Ch.4= 797 15.28 ppm Th
U/Th= .29
5.51 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.57	.51	13.74	2.86	.04	2.04	1.36	3.65	3.69	.12	.11	1.90	99.59

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1240	-6	70	10	18	30	66	-3	9	7	104	170

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	-20	158	-5	17	-3	49	-5	34	179	201

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Ignimbrite	
15.	Quartz	Porphyritic; devitrified eutaxitic	
15.	Plagioclase	Shattered phenocrystic fragments of resorbed, unstrained volcanic quartz, together with strongly sericitised plagioclase, & biotite	
8.	Biotite	completely altered to chlorite with accompanying liberation of epidote	
2.	Chlorite	& opaque mineral along cleavage. Minor fragments of chlorite which	
1.	Opaque	could be xenolithic or pseudomorphs of another ferromagnesian	
2.	Epidote	phenocryst. Rare quartz-epidote xenoliths. The groundmass consists of	
1.	Rock fragments	devitrified ultrafine quartz & feldspar with small crystal fragments	
56.	Groundmass	& opaque dust. Rare epidote in groundmass & in veinlets.	
.01	Apatite		

Location 0863

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.-(7962)0863

Road cutting

CANBERRA BRINDABELLA ACT GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-108
 6075549 m N 35.45000 S latitude
 663358 m E 148.8000 E longitude

Illustrations :

Age/Unit= SHANNONS FLAT ADAMELLITE
 Topography: RISING UPLAND WITH OUTCROP dip= strike=
 Structure : PLUTON
 Field Geology: Adameellite. Equigranular, non-porphyritic, coarse-grained, leucocratic with minor biotite. Quartz occurs in large patches. Slightly altered with chlorite pseudomorphs of a ferromagnesian mineral. Minor pegmatite.

Field Rockname: SAMPLE CA0863 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
DENSITIES		Mean of 9 in-situ readings = 167	Ch.1= 79361
Whole rock density = 2.63		from 0 to 376 ,SD= 125	Ch.2= 3248 1.37 X K20
Dry density = 2.59		Laboratory susceptibility = 1030	Ch.3= 1675 11.78 ppm U
Grain density = 2.59		Remanence = .40	Ch.4= 1234 23.26 ppm Th
Porosity = 1.5		Koenigsberger ratio = .01	U/Th= .51
			11.57 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.84	.15	12.25	1.34	.05	.21	.74	2.90	4.96	.05	.04	.20	99.73
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	219	-6	73	4	5	56	52	4	13	-5	35	340	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	9	7	34	-5	30	12	11	15	67	11	113		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Adamellite FABRIC: Hypidiomorphic granular
30.	Quartz	Globular to ragged interconnected patches of highly strained quartz
24.	Plagioclase	amidst variably sericitised plagioclase & large crystals of inter-
40.	Orthoclase	stitial orthoclase, both slightly deformed. Minor hornblende, largely
3.	Biotite	altered to epidote & chlorite. Patchy brown biotite variably altering
2.	Chlorite	to chlorite, muscovite, & rare opaque mineral. Rare apatite inclusions
.1	Hornblende	in chloritised biotite. Scattered patchy muscovite aggregates.
.1	Epidote	
.01	Apatite	
.5	Muscovite	
.1	Opaque	

Location 0864

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0864

Road cutting

CANBERRA TANTANGARA ACT GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-134
 6069678 m N 35.50105 S latitude
 674303 m E 148.9218 E longitude

Illustrations :

Age/Unit= SHANNONS FLAT ADAMELLITE
 Topography: RUGGED DISSECTED UPLAND WITH TORS dip= strike=
 Structure : PLUTON
 Field Geology: Adamellite. Inequigranular, coarse-grained, leucocratic and spotted due
 to minor biotite in clusters. Slightly porphyritic in plagioclase.
 Large patches of quartz. Rare pegmatite phases and small chlorite-
 muscovite-tourmaline patches.

Field Rockname: SAMPLE CA0864 ADAMELLITE

PHYSICAL PROPERTIES:

	ADAMELLITE		
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density =	2.68	Mean of 12 in-situ readings =	942
Dry density =	2.66	from 125 to 2638 ,SD=	674
Grain density =	2.67	Laboratory susceptibility =	691
Porosity =	.0	Remanence =	40.00
		Koenigsberger ratio =	.96
			Ch.1= 63731
			Ch.2= 3462 2.23 % K2O
			Ch.3= 1203 6.86 ppm U
			Ch.4= 1022 19.49 ppm Th
			U/Th= .35
			8.08 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.39	.46	14.82	3.23	.05	.98	2.52	4.21	4.50	.13	.05	.40	99.73

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	804	-6	84	10	21	68	55	-3	12	7	27	225

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	13	19	149	-5	24	4	53	5	48	34	188

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Adamellite
	FABRIC:	Hypidiomorphic granular
Est. %	MINERAL	
25.	Quartz	Scattered large patches of unconnected quartz considerably strained,
30.	Orthoclase	amidst euhedral plagioclase with variably sericitised & epidotised
33.	Plagioclase	cores. Abundant biotite with numerous apatite inclusions. The biotite
8.	Biotite	in mainly brown-green & lightly altered to secondary green biotite
.2	Muscovite	aggregates, chlorite, & rarely to muscovite, with associated
.1	Apatite	liberation of epidote. Rare opaque mineral frequently accompanying
.5	Opaque	biotite. Patchy interstitial anhedral orthoclase. Rare zircon. Trace
2.	Epidote	sillimanite within a biotite-rich micro-xenolith.
.001	Zircon	
1.	Chlorite	
.01	Xenoliths	

Location 0865

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0865

Road cutting

CANBERRA	TANTANGARA	ACT	GDOM=1
1:250,000 sheet area	1:100,000 sheet area	air-photo:run-no.= 1-136	
6066030 m N		35.53528 S latitude	
666413 m E		148.8356 E longitude	

Illustrations :

Age/Unit= Ordovician
Topography: STEEP RUGGED DISSECTED UPLAND dip=52SW strike=128
Structure: MAINLY STEEPLY DIPPING WITH OUTCROP-SCALE SMALL SCALE FOLDING
Field Geology: Quartzose sandstone, quartzite, pyritic quartzite, pebbly quartzite and slate. Thin to thick bedded. Sequence pyritic in places with pure pyritic concretions, patches and disseminations.

Field Rockname: SAMPLE CA0865 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES: SANDSTONE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.63	Mean of 12 in-situ readings = 94	Ch.1= 37887
Dry density = 2.62	from 0 to 376 ,SD= 118	Ch.2= 2103 1.29 % K2O
Grain density = 2.63	Laboratory susceptibility = 138	Ch.3= 764 4.22 ppm U
Porosity = .0	Remanence = .50	Ch.4= 661 12.62 ppm Th
	Koenigsberger ratio = .06	U/Th= .33
		5.06 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Quartzose sandstone
Est. % MINERAL FABRIC:	Moderately sorted; tightly compacted
89. Quartz	Subangular to rounded quartz grains of sand-size with lesser sand- to granule-sized fragments of quartzite, chert, & sericite. Rare
5. Rock fragments	opaque mineral ?pyrite, altering to limonite. Grains have prominent
1. Opaque	opaque coatings & are cemented by quartz in optical continuity with
5. Cement	adjacent grains.

Location 0866

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7762)0866

Road cutting

CANBERRA TANTANGARA ACT GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-136
6065417 m N 35.54052 S latitude
668097 m E 148.8543 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: STEEP DISSECTED UPLAND

dip=7 \square W strike=002

Structure : STEEPLY DIPPING

Field Geology: Slate. Slightly laminated due to tiny compositional changes from graphitic clay to siliceous graphitic clay. Planar bedded with disseminated pyrite. Minor quartz veins a few mm thick. Thin to thick infrequent quartzite beds. Section contains about 90% slate.

Field Rockname: SAMPLE CA0866 SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 2.72
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 106
from 0 to 376 ,SD= 115
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 79479
Ch.2= 4382 3.00 % K20
Ch.3= 1394 7.59 ppm U
Ch.4= 1215 23.22 ppm Th
U/Th= .33
9.34 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Slate
FABRIC: Laminated
Est. % MINERAL
24. Quartz Laminae & thin beds of greywacke-like siltstone, consisting of quartz,
1. Opaque opaque mineral, detrital muscovite, chlorite, & mud, inter-laminated
3. Muscovite with sericitic massive mud.
2. Chlorite
70. Mud

Location 0867

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0867
Road cutting

CANBERRA MICHELAGO ACT GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-132
6064534 m N 35.54495 S latitude
687761 m E 149.0713 E longitude

Illustrations :

Age/Unit= THARWA ADAMELLITE

Topography: MODERATELY STEEP, RUGGED UPLAND dip=90 strike=155

Structure : PLUTON WITH FOLIATION ALONG PLANAR FLOW BANDING

Field Geology: Adamellite. Inequigranular. Mainly porphyritic in quartz and plagioclase
foliated, but minor massive non-porphyritic phases are also present.
Mesocratic. Foliation caused by alignment of biotites. Numerous fine-grained, dark-coloured xenoliths.

Field Rockname: SAMPLE CA0867 FOLIATED PORPHYRITIC ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 12 in-situ readings = 15		Ch.1= 59464	
Whole rock density = 2.69		from 0 to 125, SD= 39		Ch.2= 2512	1.14 % K2O
Dry density = 2.67		Laboratory susceptibility = 50		Ch.3= 1261	9.47 ppm U
Grain density = 2.71		Remanence = .40		Ch.4= 878	16.46 ppm Th
Porosity = 1.5		Koenigsberger ratio = .13		U/Th= .58	
				8.93	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.04	.45	14.33	3.30	.05	1.16	2.75	2.60	4.31	.11	.05	.40	99.56
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	724	-6	98	12	24	171	64	-3	11	11	26	177	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	14	8	167	-5	22	-3	63	9	42	41	192		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Rhyodacitic microadamellite
15.	Quartz	FABRIC:	Porphyritic; flow banded; porphyroblastic
20.	Orthoclase		Unconnected phenocrysts with rare resorption & lenticular crystals of strained quartz, with variably sericitised & epidotised
26.	Plagioclase		plagioclase phenocrysts or porphyroblasts, & similarly occurring orthoclase which is slightly kaolinised. Abundant lenticular streaks of epidote, biotite, chlorite, & rare muscovite define flow banding.
5.	Epidote		The groundmass is a fine, though uneven-grained mosaic of strained quartz & feldspar with tiny ferromagnesian minerals. In places, it has rare micrographic texture. Accessory euhedral zoned allanite, and trace zircon and apatite.
2.	Biotite		
1.	Chlorite		
1.	Opaque		
.1	Muscovite		
.001	Allanite		
.01	Zircon		
30.	Groundmass		
.1	Apatite		

Location 0868

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)1868

Road cutting

CANBERRA

CANBERRA

ACT

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-110
6069913 m N 35.49620 S latitude
689218 m E 149.0861 E longitude

Illustrations :

Age/Unit= Silurian

MOUNT PAINTER PORPHYRY

Topography: GENTLY SLOPING ROCKY RISES IN LOWLAND

dip= strike=

Structure :

Field Geology: Ignimbrite. Phenocrysts of quartz both bipyramidal and resorbed together with stubby altered feldspar set in a fine-grained slightly altered groundmass which is distinctly green.

Field Rockname: SAMPLE CA0868 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.65
Dry density = 2.65
Grain density = 2.67
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 14 in-situ readings = 3119
from 376 to 6031 SD= 2100
Laboratory susceptibility = 5303
Remanence = 230.00
Koenigsberger ratio = .72

GAMMA-RAY SPECTROMETRY

Ch.1= 52475
Ch.2= 2330 1.23 % K20
Ch.3= 994 5.99 ppm U
Ch.4= 817 15.54 ppm Th
U/Th= .39
6.64 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.49	.51	14.19	3.72	.06	1.64	1.82	2.84	3.98	.12	.12	2.00	99.50

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	684	-6	82	15	26	36	66	-3	9	10	24	196

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	14	-20	174	-5	16	4	69	7	47	50	178

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Ignimbrite
FABRIC: Porphyritic

Est. %	MINERAL	DESCRIPTION
15.	Quartz	Phenocrysts of rounded & fractured, resorbed volcanic quartz, as well as lightly altered orthoclase, sericitised plagioclase, and skeletal biotite altering to muscovite & non-resolvable opaque material. Xenolith of plagioclase-epidote rock. Accessory magnetite, much of it occurring in the xenolith. The groundmass is fine-grained & consists of quartz & altered feldspar.
15.	Plagioclase	
20.	Orthoclase	
5.	Biotite	
5.	Muscovite	
3.	Xenoliths	
37.	Groundmass	
.01	Sphene	
.5	Magnetite	

Location 0869

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0869
 Quarry

CANBERRA	CANBERRA	ACT	GDOM=1
1:250,000 sheet area	1:100,000 sheet area	air-photo:run-no.= 7-112	
6073554 m N	693862 m E	35.46250 S latitude	
		149.1364 E longitude	

Illustrations :

Age/Unit= Silurian
 Topography: MODERATE SLOPING UPLAND WITH OUTCROP dip= strike=
 Structure : STEEP,CURVILINEAR TO LENTICULAR IGNEOUS LAYERING WHERE NOT MASSIVE
 Field Geology: Ignimbrite. Abundant phenocrysts of quartz, plagioclase and orthoclase
 set in a devitrified glassy quartzo-feldspathic groundmass which is
 green due to chlorite and epidote. Numerous closely-spaced fractures and
 veinlets filled by secondary quartz and epidote.
 Field Rockname: SAMPLE CA0869 IGNIMBRITE

PHYSICAL PROPERTIES: IGNIMBRITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.64	Mean of 13 in-situ readings = 86	Ch.1= 63274
Dry density = 2.66	from 0 to 376 .SD= 139	Ch.2= 2613
Grain density = 2.66	Laboratory susceptibility = 0	Ch.3= 1358 6.56 ppm U
Porosity = .0	Remanence = .50	Ch.4= 1254 24.06 ppm Th
	Koenigsberger ratio = *****	U/Th= .27
		8.37 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.39	0.16	12.58	1.41	0.02	1.08	0.30	5.10	1.37	0.05	0.05	1.40	99.91
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	96	-6	36	-1	-1	-5	20	-3	9	23	-5	78	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	5	11	93	8	23	-3	9	10	39	24	98		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Ignimbrite
45.	Quartz	FABRIC:	Porphyritic
25.	Plagioclase		Abundant phenocrysts of fractured & slightly resorbed volcanic quartz, strong sericitised plagioclase, & lightly kaolinised orthoclase. Rare microphenocrysts of biotite altered to chlorite and with liberation of opaque mineral along cleavages. Minor apatite inclusions in chloritised biotite. The groundmass consists of very fine-grained quartz & feldspar with tiny crystal fragments. Minor quartz veinlets.
1.	Biotite		
5.	Orthoclase		
.5	Opaque		
24.	Groundmass		
.01	Apatite		

Location 0870

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0870
Road cutting

CANBERRA CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-112
6072849 m N 35.46795 S latitude
698413 m E 149.1867 E longitude

Illustrations :

Age/Unit= Silurian COLINTON VOLCANICS
Topography: LOW ROCKY RISE IN OPEN LOWLAND dip=81E strike=002
Structure : VERY WEAK FOLIATION

Field Geology: Ignimbrite. Phenocrysts of rounded and fractured quartz and less obvious altered feldspar set in a fine-grained groundmass with thin planar, closely-spaced sericitic selvages defining weak foliation parallel to flow banding.

Field Rockname: SAMPLE CA0870 IGNIMBRITE

PHYSICAL PROPERTIES:

	IGNIMBRITE		
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.=.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density =	2.71	Mean of 15 in-situ readings =	67
Dry density =	2.68	from 0 to 251, SD=	104
Grain density =	2.85	Laboratory susceptibility =	201
Porosity =	6.5	Remanence =	6.00
		Koenigsberger ratio =	.50
			5.53 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.63	0.55	13.64	3.87	0.08	1.61	2.45	2.53	3.76	0.13	0.05	2.10	99.40
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	634	-6	69	9	20	17	74	-3	11	29	15	166	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	13	-20	151	7	21	-3	78	6	58	36	180		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Ignimbrite
Est. %	MINERAL FABRIC:	Porphyritic; devitrified eutaxitic
25.	Quartz	Phenocrysts of fractured, rounded & resorbed, slightly-strained volcanic quartz, as well as feldspar, which is just discernible as sericitised plagioclase & difficult to distinguish from the groundmass. Minor biotite, considerably altered to secondary green biotite, chlorite, epidote, & opaque mineral. Minor patchy calcite frequently close to quartz phenocrysts. Rare accessory apatite and zircon. The groundmass consists of extensively sericitised, fine-grained quartz-feldspathic material & fine crystal fragments.
15.	Plagioclase	
10.	Biotite	
1.	Epidote	
.001	Zircon	
.01	Apatite	
2.	Calcite	
2.	Opaque	
45.	Groundmass	

Location 0871

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0871

Road cutting

CANBERRA CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-80
6078769 m N 35.41367 S latitude
703087 m E 149.2367 E longitude

Illustrations :

Age/Unit= Silurian

COLINTON VOLCANICS

Topography: GENTLY SLOPING UPLAND WITH OUTCROP dip=80SE strike=031

Structure : CLEAVAGE OF STEEP DIP, PARALLEL TO PLANAR FLOW BANDING

Field Geology: Crystal-lithic tuff. Phenocrysts of rounded and fractured volcanic quartz, and altered feldspar, set in a cleaved groundmass containing abundant chlorite as thin foliae. Scattered xenoliths of chlorite, microgranite, and dacite.

Field Rockname: SAMPLE CA0871 IGIMBRITE

PHYSICAL PROPERTIES:

IGIMBRITE

DENSITIES
Whole rock density = 2.65
Dry density = 2.65
Grain density = 2.68
Porosity = 1.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 11
from 0 to 125, SD= 37
Laboratory susceptibility = 188
Remanence = 6.00
Koenigsberger ratio = .53

GAMMA-RAY SPECTROMETRY

Ch.1= 29870
Ch.2= 915 .00 % K20
Ch.3= 828 4.53 ppm U
Ch.4= 720 13.76 ppm Th
U/Th= .33
5.10 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.68	.64	14.16	3.78	.03	6.47	.31	5.33	.06	.15	.12	3.00	99.73

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	80	-6	46	13	56	28	26	5	9	19	-5	-3

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	20	62	-5	16	-3	91	12	25	19	178

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Ignimbrite	
5.	Quartz	Porphyritic; devitrified eutaxitic	
15.	Plagioclase	Phenocrysts of fractured, rounded & resorbed volcanic quartz, and fractured, lightly altered plagioclase. Minor cognate xenoliths of granophyre, dacite, & chloritite formed by dismembering of layers of groundmass chlorite by flow. The groundmass consists of ultrafine quartzo-feldspathic material with interwoven streaks of chlorite and chlorite aggregates which define the planar eutaxitic fabric.	
4.	Rock fragments		
15.	Chlorite		
1.	Opaque		
.001	Zircon		
.1	Sericite		
60.	Groundmass	Scattered opaque mineral.	

Location 0872

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0872 BMG QUARRY. SAME LOCATION AS 0873
 Quarry CANBERRA CANBERRA ACT GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-82
 6084256 m N 35.36595 S latitude
 694448 m E 149.1403 E longitude

Illustrations :

Age/Unit: Silurian MUGGA MUGGA PORPHYRY
 Topography: MODERATELY SLOPING STRIKE RIDGE WITH OUTCROP dip= strike=
 Structure : MODERATELY DIPPING; LARGE-SCALE, PLANAR IGNEOUS LAYERING
 Field Geology: Ignimbrite. Phenocrysts of quartz and pink and greenish altered
 feldspars set in a fine-grained groundmass containing patches of
 chlorite and sericite. Natural volcanic red-hematite oxidation in
 places. Cut by fissures of galena-pyrite-chlorite tuffisite.
 Field Rockname: SAMPLE CA0872 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 15 in-situ readings = 259		Ch.1= 95784	
Whole rock density = 2.69		from 0 to 1005, SD= 274		Ch.2= 5044 3.47 X K20	
Dry density = 2.64		Laboratory susceptibility = 351		Ch.3= 1645 10.48 ppm U	
Grain density = 2.72		Remanence = 9.00		Ch.4= 1305 24.75 ppm Th	
Porosity = 3.0		Koenigsberger ratio = .43		U/Th= .42	
				11.50 Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.24	.50	13.07	3.57	.06	.94	1.71	1.00	5.80	.14	.08	2.90	99.99
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	710	-6	64	10	40	33	38	-3	10	11	33	315	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	12	49	55	-5	17	5	51	10	47	52	187		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Ignimbrite
		FABRIC:	Porphyritic
20.	Quartz		Large phenocrysts of fractured, rounded & resorbed volcanic quartz,
20.	Feldspar		smaller feldspar, very ragged & corroded & considerably altered to
5.	Biotite		sericite, calcite, & minor chlorite. Microphenocrysts of biotite
2.	Opaque		considerably oxidised to opaque mineral, sericite, & muscovite, as
3.	Rock fragments		well as rare apatite crystals. Numerous small xenoliths of iron-
5.	Calcite		charged altered ignimbrite. Scattered fragments of calcite in places.
.1	Apatite		Rare euhedral zircon. The groundmass consists of extensively
.001	Zircon		sericitised quartzo-feldspathic material which is ultrafine-grained.
45.	Groundmass		As well there are small patches of calcite within it & patches of
.1	Chlorite		chlorite adjacent to quartz phenocrysts.

Location 0873

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0873 SAME LOCATION AS 0872
 Quarry CANBERRA CANBERRA NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-82
 6084256 m N 35.36595 S latitude
 694448 m E 149.1403 E longitude

Illustrations :

Age/Unit: Silurian MUGGA MUGGA PORPHYRY
 Topography: MODERATELY SLOPING STRIKE RIDGE WITH OUTCROP dip= strike=
 Structure : MODERATELY DIPPING; LARGE-SCALE, PLANAR IGNEOUS LAYERING
 Field Geology: Ignimbrite. Phenocrysts of quartz and pink and greenish altered
 feldspars set in a fine-grained groundmass containing patches of
 chlorite and sericite. Natural volcanic red-hematite oxidation in
 places. Cut by fissure of galena-pyrite-chlorite tuffisite.
 Field Rockname: SAMPLE CA0873 GALENA-PYRITE-CHLORITE ROCK.CROSS CUTTING FISSURE

PHYSICAL PROPERTIES:

DENSITIES		TUFFISITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.93	Mean of 0 in-situ readings =		Ch.1=			
Dry density =	2.94	from to ,SD=		Ch.2=		X K20	
Grain density =	2.95	Laboratory susceptibility =	766	Ch.3=		ppm U	
Porosity =	.0	Remanence =	3.00	Ch.4=		ppm Th	
		Koenigsberger ratio =	.07	U/Th=		Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	62.57	.32	9.10	12.14	.14	2.98	.05	.42	1.90	.09	.17	4.40	94.27
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	393	23	86	33	26	836	61	-3	5	-5	14009	80	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	11	-20	6	-5	-5	5	53	95	37	35566	121		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME: Tuffisite
	FABRIC:	Porphyritic
10.	Quartz	Phenocrysts of fractured, rounded & sparingly-embayed volcanic quartz & smaller former feldspars pseudomorphed by cryptocrystalline
4.	Galena	quartz & patchy chlorite. Scattered glassy lava fragments occur as xenoliths. Scattered patches of galena and sphalerite often with
1.	Pyrite	associated pyrite cubes. These sulphides are also disseminated throughout the groundmass which consists of abundant chlorite &
25.	Chlorite	sericitised quartzo-feldspathic glass & fine crystal fragments.
15.	Xenoliths	Scattered hematite occurs as ultrafine disseminations which give reddish colour. The rock is from a dyke which intrudes ignimbrite from which
2.	Hematite	sample 79620872 was collected.
15.	Feldspar	
23.	Groundmass	
5.	Sphalerite	

Location 0874

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0874
Road cutting

HAGGA HAGGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 12-5117
6022594 m N 35.93285 S latitude
625279 m E 148.3888 E longitude

Illustrations :

Age/Unit= GREEN HILLS GRANITE
Topography: STEEPLY SLOPING UPLAND dip= strike=
Structure : PLJTON
Field Geology: Microadamellite. Porphyritic in altered feldspar. Quartz rich.
Metacratitic due to abundant biotite. Fine to medium grain size.

Field Rockname: SAMPLE WA0874 MICROADAMELLITE

PHYSICAL PROPERTIES:

GRANITE
DENSITIES
Whole rock density = 2.57
Dry density = 2.58
Grain density = 2.67
Porosity = 3.4
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 213
Remanence = 3.00
Koenigsberger ratio = .23
GAMMA-RAY SPECTROMETRY
Ch.1= 56599
Ch.2= 3114 1.84 % K2O
Ch.3= 1201 7.26 ppm U
Ch.4= 986 18.75 ppm Th
U/Th= .39
8.11 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	71.02	.68	13.82	4.41	.06	1.79	.10	.62	4.01	.14	.05	2.90	99.60
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	766	-6	54	11	77	217	56	-3	11	25	27	179	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	7	77	-5	20	5	77	10	42	39	2.0		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
65.	Quartz	Microadamellite	Porphyritic
15.	Orthoclase		Phenocrysts of highly sericitised feldspar set in a slightly-altered groundmass which has layering defined by quartz layers and oriented micas. The quartz is strained & occurs in connected lenticular bodies.
10.	Plagioclase		The biotite is red-brown & in places is altered & bleached with
5.	Biotite		with accompanying chlorite & muscovite. Scattered aggregates of cordierite altered to pinite. Rare opaque mineral.
5.	Muscovite		
.2	Opaque		

Location 0875

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0875

Road cutting

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 11-5169

6027217 m N

35.89100 S latitude

626699 m E

148.4038 E longitude

Illustrations :

Age/Unit= Tertiary

Topography: HILL TOP TERRACES

dip= strike=

Structure : HORIZONTAL FLOW

Field Geology: Basalt, Porphyritic in olivine set in a basaltic groundmass. Small basaltic xenoliths present.

Field Rockname: SAMPLE WA0875 BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.88
Dry density = 2.90
Grain density = 2.93
Porosity = 1.1

MAGNETIC SUSCEPTIBILITY (S.I.*.0.00001)

Mean of 15 in-situ readings = 1843
from 628 to 2764, SD= 689
Laboratory susceptibility = 4084
Remanence = 880.00
Koenigsberger ratio = 3.59

GAMMA-RAY SPECTROMETRY

Ch.1= 24907
Ch.2= 905 .15 X K20
Ch.3= 608 3.92 ppm U
Ch.4= 478 9.06 ppm Th
U/Th= .43
4.01 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Fst. X	MINERAL	NAME:	FABRIC:
15.	Olivine	Basalt	Porphyritic
10.	Augite		Scattered large phenocrysts of olivine altering to bowlingite. Micro-
57.	Plagioclase		phenocrysts of smaller olivine & pink titaniferous augite. The
5.	Nepheline		groundmass consists of interlocking plagioclase microlites with inter-
3.	Magnetite		stitial augite & minor nepheline. The groundmass is patchily altered
10.	Clay		to clay in places. Scattered titaniferous magnetite throughout.

Location 0876

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0876

Road cutting

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 11-5173

6027098 m N 35.89203 S latitude

627013 m E 148.4073 E longitude

Illustrations :

Age/Unit=

TUMUT PONDS SERPENTINITE

Topography: HILLSIDE.

dip= strike=

Structure : CONFORMABLE IN ONE DIMENSION

Field Geology: Serpentinite. Massive light grey to lustrous green schistose varieties, each occurring as lenticular pods within the other. West contacted concealed by basalt. East contact conformable to bedding in adjacent sediments. Minor garnierite gossan where patchily pyritic.

Field Rockname: SAMPLE WA0876 MASSIVE SERPENTINITE

PHYSICAL PROPERTIES:

SERPENTINITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.67

Dry density = 2.63

Grain density = 2.72

Porosity = 3.3

Mean of 15 in-situ readings = 90402

from 37196 to 129810 ,SD= 27112

Laboratory susceptibility = *****

Remanence = 12500.00

Koenigsberger ratio = 1.83

Ch.1= 2963

Ch.2= 49 .00 % K2O

Ch.3= 49 .52 ppm U

Ch.4= 21 .37 ppm Th

U/Th= 1.41

.39 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
85.	Antigorite	Serpentinite	Massive
10.	Chrysotile	A mass of antigorite with minor chrysotile. Scattered magnetite altering to ilmenite along fractures & margins. Minor scattered	
3.	Magnetite	ilmenite & pyrrhotite.	
1.	Ilmenite		
1.	Pyrrhotite		

Location 0877

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0877

Road cutting

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 11-5173

6026853 m N

35.89420 S latitude

627308 m E

148.4106 E longitude

Illustrations :

Age/Unit= Lower Silurian

TUMUT PONDS GROUP

Topography: HILLSIDE SLOPE

dip=83E strike=175

Structure : STEEPLY DIPPING, SLIGHTLY CLEAVED

Field Geology: Slate. Massive, but variably siliceous and micaceous, and these variations delineate bedding. Rare conformable lenticular white quartz bodies, and thin veins.

Field Rockname: SAMPLE WA0877 SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 2.60
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 259
from 0 to 1005, SD= 321
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 25675
Ch.2= 1223 .81 % K2O
Ch.3= 413 2.38 ppm U
Ch.4= 349 6.65 ppm Th
U/Th= .36
2.79 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
70.	Mud	Slate	Massive to laminated
20.	Quartz		Bedding defined by beds of greywacke with the slate & lamination defined by slight variations in the percentage of quartz from one lamina to the next. The slate consists entirely of silt- to clay-sized quartz & mud. The greywacke consists of unsorted, randomly-distributed variably-sized quartz & feldspar grains set in a two-component matrix of biotitic mud & cherty silica.
4.	Plagioclase		
5.	Biotite		
1.	Opaque		

Location 0878

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0878

Road cutting

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 11-5173

6027403 m N

35.88888 S latitude

630033 m E

148.4407 E longitude

Illustrations :

Age/Unit= Lower Silurian

TUMUT PONDS GROUP

Topography: STEEPLY SLOPING, DEEPLY DISSECTED UPLAND

dip=84E strike=175

Structure : STEEPLY DIPPING

Field Geology: Greywacke, siltstone, and slate. The greywackes are variably siliceous and slightly feldspathic. Medium and planar bedded with sharp top and bottom contacts. Minor stratabound cross-cutting white quartz veinlets. Rare flute casts.

Field Rockname: SAMPLE WA0878 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES

Whole rock density = 2.57

Dry density = 2.55

Grain density = 2.66

Porosity = 4.4

MAGNETIC SUSCEPTIBILITY (S.I.+000001)

Mean of 12 in-sit. readings = 20

from 0 to 125 SD= 48

Laboratory susceptibility = 289

Remanence = .60

Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 51083

Ch.2= 2940 1.94 % K20

Ch.3= 979 5.16 ppm U

Ch.4= 868 16.61 ppm Th

U/Th= .31

6.47 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
64.	Quartz	Greywacke	Massive
1.	Opaque		Angular to subrounded slightly-strained sand-sized grains of quartz, randomly scattered throughout a mud matrix partially resolvable as sericite, biotite, & chlorite. Rare quartzite laminae through which incipient cleavage is refracted. Rare detrital muscovite & tourmaline.
.1	Muscovite		
.01	Tourmaline		
35.	Mud		Minor opaque mineral.

Location 0879

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0879

Road cutting

HAGGA HAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 11-5173

6030194 m N

35.86307 S latitude

634897 m E

148.4941 E longitude

Illustrations :

Age/Unit= Ordovician

KIANDRA BEDS

Topography: STRIKE RIDGE

dip=85W strike=011

Structure : STEEPLY DIPPING

Field Geology: Siltstone, brecciated in places and sparingly pyritic. Cut by quartz veins.

Field Rockname: SAMPLE WA0879 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.74
Dry density = 2.71
Grain density = 2.73
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 77
from 0 to 502, SD= 158
Laboratory susceptibility = 427
Remanence = 16500.00
Koenigsbarger ratio = 644.03

GAMMA-RAY SPECTROMETRY

Ch.1= 25363
Ch.2= 1384 .97 % K2O
Ch.3= 518 5.47 ppm U
Ch.4= 227 4.01 ppm Th
U/Th= 1.36
4.30 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Siltstone	
			Chaotic; slumped
80.	Mud	Beds of siltstone, mudstone, & feldspathic sandstone with mud matrix	
14.	Plagioclase	all chaotically interbedded & microbrecciated. Numerous veinlets of	
1.	Opaque	cherty silica often accompanied by opaque mineral.	
5.	Quartz		

Location 0880

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0880

Outcrop

HAGGA HAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 10-5066

6035686 m N 35.81350 S latitude

635433 m E 148.4991 E longitude

Illustrations :

Age/Unit= Ordovician

NINE MILE VOLCANICS

Topography: STRIKE RIDGE

dip=90 strike=010

Structure : STEEPLY CLEAVED

Field Geology: Andesite. Variably altered and highly cleaved. Variably vesicular and epidote-rich. Minor lenticular calcite segregations. Planar flow banding. Minor limonite pseudomorphs of a sulphide mineral.

Field Rockname: SAMPLE WA0880 ANDESITE

PHYSICAL PROPERTIES:

ANDESITE

DENSITIES

Whole rock density = 2.70

Dry density = 2.63

Grain density = 2.69

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 7752

from 251 to 29656 ,SD= 8118

Laboratory susceptibility = 39257

Remanence = 22000.00

Koenigsberger ratio = 9.34

GAMMA-RAY SPECTROMETRY

Ch.1= 7836

Ch.2= 377 .26 % K2O

Ch.3= 120 .66 ppm U

Ch.4= 104 1.99 ppm Th

U/Th= .33

.81 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Andesite

FABRIC: Vesicular;

Est. % MINERAL

81. Plagioclase

5. Epidote

2. Calcite

5. Quartz

4. Ilmenite

.01 Hematite

3. Chlorite

A mildly altered rock with scarce phenocrysts of plagioclase & rare ilmenite altering to & exsolving hematite. Scattered vesicles with fillings of quartz, calcite, & epidote. The bulk of the rock consists of interlocking small plagioclase laths. Scattered ilmenite or titanomagnetite. Streaks of chlorite present throughout. Scattered epidote granules.

Location 0881

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0881

Road cutting

CANBERRA TANTANGARA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-120
6026732 m N 35.89398 S latitude
637002 m E 148.5180 E longitude

Illustrations :

Age/Unit= Ordovician KLANDRA BEDS dip= strike=
Topography: HILLSLOPE UPLAND
Structure : STEEPLY DIPPING WITH DISTURBED CHAOTIC SLUMPING IN PLACES
Field Geology: Graphitic mudstone. Lacks cleavage. Massive, except for thin interbeds
of light-coloured shale and massive chert in places.

Field Rockname: SAMPLE CA0881 GRAPHITIC MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE
DENSITIES
Whole rock density = 2.62
Dry density = 2.59
Grain density = 2.64
Porosity = 2.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 20
from 0 to 62, SD= 31
Laboratory susceptibility = 540
Remanence = .80
Koenigsberger ratio = .02

GAMMA-RAY SPECTROMETRY

Ch.1= 40778
Ch.2= 2175 1.42 % K2O
Ch.3= 705 2.91 ppm U
Ch.4= 693 13.36 ppm Th
U/Th= .22
4.40 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Mudstone
Est. % MINERAL FABRIC: Porphyroblastic
20. Andalusite Porphyroblasts of incipient ?andalusite altering to sericite. The
75. Mud remainder of the rock consists of mud darkened by graphite and
.5. Quartz partially resolvable as sericite & fine-grained biotite. Network of
interspersed microveinlets of quartz.

Location 0882

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)08&2
Dozer scrape

CANBERRA TANTANGARA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-120
6025373 m N 35.90583 S latitude
639851 m E 148.5498 E longitude

Illustrations :

Age/Unit= BOGGY PLAIN ADAMELLITE
Topography: DISSECTED UPLAND, AND LOWLAND dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Equigranular, medium to coarse-grained, non porphyritic,
mesocratic with scattered hornblende and biotite. Trace pyrite. Contains
small micaceous xenoliths.

Field Rockname: SAMPLE CA08&2 BIOTITE ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.67 Mean of 15 in-situ readings = 12960 Ch.1= 49289
Dry density = 2.63 from 9927 to 15896, SD= 2239 Ch.2= 2546 1.41 % K2O
Grain density = 2.64 Laboratory susceptibility = 15230 Ch.3= 988 4.34 ppm U
Porosity = .0 Remanence = 140.00 Ch.4= 949 18.26 ppm Th
Koenigsberger ratio = .15 U/Th= .24
6.12 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.21	.38	14.03	3.32	.06	1.58	2.70	2.99	4.29	.12	.04	.01	99.72
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	729	-6	58	14	58	157	52	-3	9	15	14	167	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	13	16	320	6	28	3	65	8	22	25	142		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adameellite
FABRIC: Porphyritic; aplitic groundmass
Est. % MINERAL
20. Quartz Phenocrysts of anhedral quartz, zoned plagioclase with sericirised
45. Plagioclase & lightly epidotised cores, green hornblende altering to blue-green
25. Orthoclase hornblende, & rare biotite with liberation of ilmenite & sphene,
5. Hornblende & brown biotite altering to green biotite with liberation of rare
4. Biotite sphene & hematite. The groundmass consists of an equigranular mass
.1 Sphene of equant medium-grained quartz & kaolinised orthoclase, with
.5 Magnetite accessory euhedral allanite, rare zircon & sphene. Scattered
.001 Hematite magnetite with exsolution lamellae of ilmenite.
.01 Ilmenite
.1 Allanite
.01 Zircon

Location 0883

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0883

Dozer scrape

CANBERRA	TANTANGARA	NSW	GDOM=1
1:250,000 sheet area	1:100,000 sheet area	air-photo:run-no.= 10-5089	
6019009 m N		35.96133 S latitude	
652244 m E		148.6883 E longitude	

Illustrations :

Age/Unit= Ordovician
Topography: GENTLY SLOPING DISSECTED LOWLAND & UPLAND dip=53SE strike=035
Structure: MODERATELY DIPPING
Field Geology: Greywacke, siltstone, slate, mudstone and quartzite. Thin to medium bedded, planar bedded. Rare conformable, white quartz lenses.

Field Rockname: SAMPLE CA0883 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES

Whole rock density = 2.63
Dry density = 2.64
Grain density = 2.65
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 427
Remanence = .10
Koenigsberger ratio = .00

GAMMA-RAY SPECTROMETRY

Ch.1= 42029
Ch.2= 2252 1.32 % K2O
Ch.3= 870 5.01 ppm U
Ch.4= 735 14.01 ppm Th
U/Th= 36
5.79 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME:	Greywacke
Est. % MINERAL FABRIC:	Massive; poorly sorted
50. Quartz	Subrounded to angular fine-sand-sized quartz grains variably strained,
2. Muscovite	together with minor detrital muscovite plates, plagioclase & opaque
1. Opaque	mineral. These are set in a mud matrix which occupies about half the
.5 Plagioclase	rock, & which is partially resolvable as green biotitic material and
47. Mud	patchy streaks of graphite.

Location 0884

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0884
 Outcrop

CANBERRA TANTANGARA NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 10-5089
 6015945 m N 35.98837 S latitude
 655861 m E 148.7290 E longitude

Illustrations :

Age/Unit= GINGERA GRANITE
 Topography: GENTLY SLOPING UPLAND WITH OUTCROP dip= strike=
 Structure : PLUTON
 Field Geology: Granodiorite. Equigranular, non porphyritic, coarse-grained,
 melanocratic with abundant biotite. Abundant fine-grained biotite-
 bearing xenoliths up to 15 cm long.

Field Rockname: SAMPLE CA0884 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE
 DENSITIES
 Whole rock density = 2.74
 Dry density = 2.71
 Grain density = 2.71
 Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
 Mean of 12 in-situ readings = 52
 from 0 to 628 ,SD= 181
 Laboratory susceptibility = 238
 Remanence = .10
 Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 40437
 Ch.2= 2521 1.89 % K20
 Ch.3= 707 4.05 ppm U
 Ch.4= 599 11.42 ppm Th
 U/Th= .35
 4.89 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	67.22	.66	14.32	4.77	.07	2.23	2.53	3.10	3.38	.17	.04	.60	99.09
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	544	-6	78	15	64	227	52	-3	10	19	18	189	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	14	10	139	-5	18	-3	86	9	37	55	193		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
40.	Quartz	Granodiorite	Hypidiomorphic granular
35.	Plagioclase		Large globular to ragged patches of strained quartz aggregates.
15.	Orthoclase		Euhedral plagioclase, often with sericitised cores & zoned with clear rims. Abundant red-brown biotite, bleached & slightly altered
8.	Biotite		to lighter-coloured biotite, chlorite, & rare muscovite with
.3	Muscovite		accompanying patchy liberations of epidote. Minor muscovite pseudo-
1.	Cordierite		morphs of former ?cordierite. Accessory zircon & apatite both
.01	Zircon		occurring as inclusions in biotite. Rare opaque mineral. Abundant
.5	Opaque		anhedral orthoclase forms interstitially between quartz and
.2	Chlorite		plagioclase.
.01	Apatite		
.1	Epidote		

Location 0885

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0885

SAME LOCATION AS 0886

Road cutting

CANBERRA

CANBERRA

NSW

GDOM=1

1:250,000 sheet area

1:100,000 sheet area

air-photo:run-no.= 6-78

6084229 m N

35.36295 S latitude

710466 m E

149.3165 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLE RISE IN GENTLY UNDULATING UPLAND

dip=85E strike=005

Structure : NEAR VERTICAL

Field Geology: Quartz greywacke, quartzose sandstone, siltstone and slate. Thin to thick and planar bedded. Each rock is internally massive and lacks well defined laminations. Both sharp and gradational tops to coarser units.

Field Rockname: SAMPLE CA0885 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.56

Mean of 13 in-situ readings = .86

Ch.1= 39819

Dry density = 2.51

from 0 to 753, SD= 213

Ch.2= 2391 1.63 % K2O

Grain density = 2.64

Laboratory susceptibility = 0

Ch.3= 732 3.03 ppm U

Porosity = 5.0

Remanence = .60

Ch.4= 719 13.86 ppm Th

Koenigsberger ratio = *****

U/Th= .22

4.61 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Quartzose sandstone
	FABRIC:	Moderately sorted
Est. %	MINERAL	
85.	Quartz	Subangular to subrounded quartz grains, variably-sized from fine- to coarse-sand size, with minor plagioclase, opaque mineral, & quartzite rock fragments. Rare smaller detrital zircon. The matrix consists of mud partially resolvable as chloritic & biotite-bearing material.
1.	Plagioclase	
1.	Opaque	
.01	Zircon	
1.	Rock fragments	
12.	Mud	

Location 0886

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0886

SAME LOCATION AS 0885

Road cutting

CANBERRA

CANBERRA

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-78

6084231 m N

35.36293 S latitude

710466 m E

149.3165 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLE RISE IN GENTLY UNDULATING UPLAND

dip=85E strike=005

Structure : NEAR VERTICAL

Field Geology: Quartz greywacke, siltstone and slate. Thin to thick and planar bedded.

Each rock is internally massive and lacks well defined laminations.

Both sharp, and gradational tops to coarser units.

Field Rockname: SAMPLE CA0886 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.63

Dry density =

Mean of 0 in-situ readings =

Grain density =

from to ,SD=

Porosity =

Laboratory susceptibility =

0

Remanence =

.00

Koenigsberger ratio =

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Siltstone
	FABRIC:	Poorly sorted
Est. %	MINERAL	
20.	Quartz	Bedding defined by slumped, fine-grained greywacke beds. The bulk of
1.	Plagioclase	the rock consists of mud with scattered fine-sand to silt-sized quartz,
4.	Muscovite	rare feldspar, & minor muscovite grains. Scattered opaque mineral
2.	Graphite	& minor graphite laminae tightly intraformationally folded at micro-
1.	Biotite	scopic scale. The greywacke beds are of similar composition apart from
1.5	Opaque	their greater quartz content.
72.	Mud	

Location 0887

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.-(7962)0887
Road cutting

SAME LOCATION AS 0888

CANBERRA CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-76
6080878 m N 35.39210 S latitude
715314 m E 149.3707 E longitude

Illustrations :1 Colour slide

Age/Unit= Upper Silurian CAPTAINS FLAT FORMATION
Topography: GENTLY SLOPING DISSECTED LOWLAND dip=78W strike=007
Structure : STEEPLY DIPPING WITH STRATABOUND OUTCROP-SCALE AND MESOSCOPIIC FOLDS
Field Geology: Slate interbedded with quartzite containing conformable lenses and
stratabound cross-cutting veins of white quartz. Both sharp and
gradational contacts with adjacent rocks. Bedding in slate defined by
variations in graphite content.
Field Rockname: SAMPLE CA0887 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.57
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 20
from 0 to 125 ,SD= 48
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 42495
Ch.2= 1634 .26 X K20
Ch.3= 1075 6.03 ppm U
Ch.4= 922 17.60 ppm Th
U/Th= .34
6.79 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Slate
20. Quartz FABRIC: Delicately laminated to thin bedded
20. Sericite Prominent beds & laminae of undeformed greywacke consisting of
58. Biotite quartz & rare muscovite grains of fine-sand size amidst a sericitic
& biotite-rich mud matrix. These beds have planar contact with
1. Muscovite interbeds of slate consisting of mixed sericite & biotite with a
1. Opaque prominent cleavage at right angles to bedding which is deformed by a
second strain slip cleavage at angle to bedding. Both cleavages
terminate abruptly at the contact of interbeds & laminae of
greywacke indicating the cleavages are stratabound.

Location 0888

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0888
Road cutting

SAME LOCATION AS 0887

CANBERRA

CANBERRA

NSW GDDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-76
6080878 m N 35.39210 S latitude
715314 m E 149.3707 E longitude

Illustrations :1 Colour slide

Age/Unit= Upper Silurian

CAPTAINS FLAT FORMATION

Topography: GENTLY SLOPING DISSECTED LOWLAND dip=78W strike=007

Structure : STEEPLY DIPPING WITH STRATABOUND OUTCROP-SCALE AND MESOSCOPIC FOLDS&FAUL

Field Geology: Slate interbedded with quartzite containing conformable lenses and
stratabound cross-cutting veins of white quartz. Both sharp and
gradational contacts with adjacent rocks. Bedding in slate defined by
variations in graphite content.

Field Rockname: SAMPLE CA0888

PHYSICAL PROPERTIES:

DENSITIES

Whole rock density = 2.58
Dry density = 2.62
Grain density = 2.62
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to SD=
Laboratory susceptibility = 12
Remanence = .10
Koenigsberger ratio = .14

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
97.	Quartz	Quartzite	
1.	Opaque	Massive	
1.	Plagioclase		
.01	Zircon		
.001	Apatite		
1.	Chlorite		

A mosaic of fine grained quartz with minor plagioclase. The quartz has grown from formerly finer material but has been inhibited from further coarsening by chlorite impurities which have expelled to grain boundaries forming discontinuous sheaths around quartz grains. Rare opaque mineral, zircon, & apatite.

Location 0889

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0889
 Dozer scrape

CANBERRA CANBERRA NSW GDOM-1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-118
 6075912 m N 35.43405 S latitude
 727841 m E 149.5099 E longitude

Illustrations :

Age/Unit= BORO GRANITE
 Topography: MCDERATELY SLOPING RUGGED UPLAND dip= strike=
 Structure : PLUTON
 Field Geology: Granophyre. Inequigranular. Porphyritic in quartz. Medium to coarse-grained apart from scattered clots of tiny chloritised biotite aggregates. Leucocratic. Trace sulphide mineral oxidised to limonite.

Field Rockname: SAMPLE CA0889 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 12 in-situ readings = 932		Ch.1= 39909	
Whole rock density = 2.58		from 0 to 4775 ,SD= 1288		Ch.2= 2383	1.61 % K20
Dry density = 2.57		Laboratory susceptibility = 779		Ch.3= 750	3.51 ppm U
Grain density = 2.75		Remanence = .20		Ch.4= 702	13.48 ppm Th
Porosity = 6.4		Koenigsberger ratio = .00		U/Th= .26	
				4.84	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.42	.09	12.44	1.50	.02	.02	.96	4.60	2.83	.03	.01	.20	99.12
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	675	-6	77	4	10	78	65	-3	12	6	14	105	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	11	-5	112	-5	17	-3	2	10	63	7	125		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Granophyre
	FABRIC:	Granophyric; porphyritic
Est. %	MINERAL	
25.	Quartz	Scattered clusters of slightly strained quartz aggregates. Euhedral
30.	Plagioclase	plagioclase, altered in cores to sericite, muscovite, & minor epidote,
41.	Orthoclase	but zoned with clear rims. Patchy slightly kaolinised orthoclase and
3.	Biotite	microcline. Abundant interstitial quartz & alkali feldspar,
.1	Muscovite	graphically & micrographically intergrown. Scattered green-brown
.5	Epidote	biotite, slightly limonitised by weathering, & frequently in
.1	Hornblende	clusters with epidote, & limonite pseudomorphs of an opaque ?sulphide
.01	Limonite	mineral. Rare hornblende altering to epidote. Rare opaque mineral.
.1	Opaque	

Location 0890

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0890 SAME LOCATION AS 0891
Road cutting CANBERRA CANBERRA NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-118
6076861 m N 35.42588 S latitude
726202 m E 149.4916 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: MODERATELY SLOPING UPLAND AND LOWLAND dip=80E strike=164
Structure : STEEPLY DIPPING EAST.?OVERTURNED
Field Geology: Siltstone, micaceous quartzite, and slate, all lacking sharp contacts so
each grades into the other and appears internally massive. Some
graphitic laminae in slate.

Field Rockname: SAMPLE CA0890 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES: QUARTZITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.67	Mean of 12 in-situ readings = 94	Ch.1= 47616
Dry density = 2.66	from 0 to 251, SD= 108	Ch.2= 2628 1.76 % K2O
Grain density = 2.71	Laboratory susceptibility = 590	Ch.3= 854 4.36 ppm U
Porosity = 1.8	Remanence = .20	Ch.4= 769 14.73 ppm Th
	Koenigsberger ratio = .01	U/Th= .30
		5.61 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Biotite-muscovite quartzite	
		Massive; porphyroblastic	
83.	Quartz	Ovoid porphyroblasts of strained quartz & strained quartz aggregates	
10.	Biotite	& rare porphyroblastic plagioclase & biotite. The quartz porphyro-	
5.	Muscovite	blasts have grown from the aggregation of fine-grained quartz from	
.01	Tourmaline	lenses to an ovoid cluster. The aggregate has undergone grain growth to	
1.	Opaque	single quartz crystals or coarser crystal aggregates. The porphyroblasts	
1.	Plagioclase	are set in a matrix of finer-grained quartz, minor muscovite flakes &	
		interstitial much finer muscovite & fine biotite. Accessory tourmaline.	
		Microveinlets of clear quartz.	

Location 0891

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0891

SAME LOCATION AS 0890

Road cutting

CANBERRA

CANBERRA

NSW

GDOM=1

1:250,000 sheet area

1:100,000 sheet area

air-photo:run-no.= 7-118

6076861 m N

35.42588 S latitude

726202 m E

149.4916 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: MODERATELY SLOPING UPLAND AND LOWLAND

dip=80E strike=164

Structure : STEEPLY DIPPING EAST.?OVERTURNED

Field Geology: Siltstone, micaceous quartzite and slate, all lacking sharp contacts so each grades into the other and appears internally massive. Some graphitic laminae in slate.

Field Rockname: SAMPLE CA0891 MICACEOUS QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES

Whole rock density = 2.55

Dry density = 2.54

Grain density = 2.63

Porosity = 3.4

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)

Mean of 0 in-situ readings =

from to SD=

Laboratory susceptibility =

Remanence =

Koenigsberger ratio =

263

.10

.01

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

X K20

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	81.65	.56	8.65	2.95	.03	1.13	.03	1.07	1.62	.08	.05	2.20	100.02

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	347	-6	94	15	55	50	84	-3	8	20	84	79

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	12	-20	23	-5	17	-3	41	8	37	145	408

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Micaceous quartzite

FABRIC: Porphyroblastic

Est. %	MINERAL	DESCRIPTION
94.	Quartz	Ovoid to lenticular porphyroblasts of single quartz crystals or equant quartz grain aggregates coarsened from formerly finer material.
3.	Muscovite	Minor plagioclase porphyroblasts. The matrix consists of a mosaic of fine quartz grains, variably strained, and inhibited from further coarsening by abundant impurities of fine muscovite and lesser biotite. Minor randomly scattered opaque mineral. Very rare muscovite microporphyroblasts.
1.	Plagioclase	
1.	Biotite	
1.	Opaque	

Location 0892

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0892

Outcrop

CANBERRA CANBERRA NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-118
 6077097 m N 35.42418 S latitude
 724309 m E 149.4707 E longitude

Illustrations :

Age/Unit= Middle Silurian KOHINOOR VOLCANICS
 Topography: STRIKE RIDGE IN MODERATELY UNDULATING LOWLAND dip=70E strike=162
 Structure : STEEPLY DIPPING; INCIPIENT CLEAVAGE
 Field Geology: Ignimbrite. Phenocrysts of quartz and plagioclase set in a slightly altered, fine-grained, slightly coarsened groundmass. Thin discontinuous streaks and fine foliae of tiny biotite aggregates define cleavage parallel to flow banding.
 Field Rockname: SAMPLE CA0892 IGNIMBRITE

PHYSICAL PROPERTIES:

	IGNIMBRITE		
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density =	2.59	Mean of 8 in-situ readings =	0
Dry density =	2.58	from to ,SD=	
Grain density =	2.63	Laboratory susceptibility =	238
Porosity =	1.9	Remanence =	.20
		Koenigsberger ratio =	.01
			Ch.1= 26727
			Ch.2= 1207 .51 % K20
			Ch.3= 581 3.04 ppm U
			Ch.4= 517 9.89 ppm Th
			U/Th= .31
			3.68 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.03	0.71	14.67	3.36	0.07	0.68	0.41	7.09	1.31	0.20	0.08	1.20	99.80
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	273	-6	60	10	-1	-5	14	-3	6	29	12	43	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	16	-20	320	7	9	-3	41	-5	38	67	219		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Dacite
	FABRIC:	Porphyritic
Est. %	MINERAL	
5.	Quartz	Abundant phenocrysts of euhedral plagioclase often in clusters and lightly altered to ultrafine sericite. Rare quartz phenocrysts.
20.	Plagioclase	
10.	Biotite	Abundant brown-green to yellow-green biotite in fine-crystal clusters which may be secondary after larger biotites. Rare apatite & zircon and minor opaque mineral. Trace muscovite amidst clusters of biotite. The groundmass consists of ultrafine quartz & feldspar, locally with patches of quartz aggregates.
.001	Zircon	
.5	Opaque	
65.	Groundmass	
.1	Apatite	
.1	Muscovite	

Location 0893

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0893
Creek

CANBERRA CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-118
6073663 m N 35.45502 S latitude
724741 m E 149.4764 E longitude

Illustrations :2 Colour slides

Age/Unit= Middle Silurian KOHINOOR VOLCANICS
Topography: GENTLY SLOPING UNDULATING DISSECTED LOWLAND dip=75E strike=175
Structure : STEEPLY DIPPING
Field Geology: Slate, siltstone, minor greywacke and quartz greywacke. Conformable
white quartz ellipsoids in places. Slates are internally massive and
well bedded with siltstone. Planar bedded with sharp top and bottom
contacts. Minor soft-sediment bedding disturbances.
Field Rockname: SAMPLE CA0893 SLATE

PHYSICAL PROPERTIES: SHALE

DENSITIES
Whole rock density = 2.65
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 40591
Ch.2= 2244 1.55 % K2O
Ch.3= 703 3.84 ppm U
Ch.4= 612 11.69 ppm Th
U/Th= .33
4.72 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
50.	Quartz	Slate	Laminated to thin bedded
49.	Biotite		Scattered silt-sized grains of quartz amidst mud from which fine green biotite has developed. Trace muscovite. Minor opaque mineral. The rock also consists of abundant fine-grained quartz mixed with the biotite.
1.	Opaque		
.2	Muscovite		Variations in quartz content define bedding.

Location 0894

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0894

Outcrop

CANBERRA

ARALUEN

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5231

6060336 m N 35.57040 S latitude

744443 m E 149.6973 E longitude

Illustrations :

Age/Unit= Silurian

LONG FLAT VOLCANICS

Topography: LOWLAND WITH SPARSE OUTCROP

dip strike=

Structure :

Field Geology: Ignimbrite. Phenocrysts of quartz and sericitised feldspar set in a fine-grained altered groundmass with trace limonite after a sulphide mineral. Numerous quartz veins.

Field Rockname: SAMPLE CA0894 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

Whole rock density = 2.61

Dry density = 2.62

Grain density = 2.72

Porosity = 3.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 0

Remanence = 3.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 27758

Ch.2= 1303 .86 % K20

Ch.3= 442 2.59 ppm U

Ch.4= 370 7.05 ppm Th

U/Th= .37

3.00 Heat generation units

CHEMISTRY:

MAJOR ELEMENT

Weight % SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM

85.18 0.06 8.61 1.28 0.02 0.10 0.01 0.01 2.66 0.02 0.07 1.60 99.61

TRACE ELEMENT

p.p.m. Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb

266 -6 17 -1 -1 -5 12 4 6 23 8 149

TRACE ELEMENT

p.p.m. Sc Sn Sr Ta Th U V W Y Zn Zr

3 -20 -3 5 6 -3 19 8 19 21 59

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Altered ignimbrite

FABRIC: Porphyritic

Est. %

20.

Quartz

Phenocrysts of rounded resorbed volcanic quartz & ghosted

15.

Plagioclase

plagioclase pseudomorphed by ultrafine sericite & rare opaque

.1

Opaque

mineral. The groundmass consists of ultrafine quartz & sericitised

65.

Groundmass

feldspar. Rare opaque mineral aggregates possibly pseudomorphing a

former ferromagnesian mineral microphenocryst

Location 0895

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0895
Outcrop

CANBERRA ARALUEN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5231
6059519 m N 35.57793 S latitude
743758 m E 149.6900 E longitude

Illustrations :

Age/Unit= Silurian LONG FLAT VOLCANICS
Topography: GENTLY SLOPING LOWLAND WITH SPARSE OUTCROP dip= strike=
Structure :
Field Geology: Ignimbrite. Phenocrysts of quartz and altered feldspar set in a
slightly-altered, fine-grained groundmass with trace limonite after a
sulphide mineral.

Field Rockname: SAMPLE CA0895 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.63
Dry density = 2.60
Grain density = 2.67
Porosity = 2.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = 3.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 41940
Ch.2= 1973 1.14 X K20
Ch.3= 764 4.18 ppm U
Ch.4= 664 12.69 ppm Th
U/Th= .33
5.01 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	78.91	0.12	13.09	1.47	0.01	0.15	0.03	0.01	3.67	0.03	0.07	2.50	100.05
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	110	-6	50	2	22	-5	36	7	11	17	42	146	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	5	-20	5	-5	17	-3	8	-5	31	24	129		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Altered ignimbrite
Est. %	MINERAL FABRIC:	Porphyritic
15.	Quartz	Phenocrysts of rounded resorbed volcanic quartz & ghosted relicts
10.	Plagioclase	of euhedral to corroded plagioclase pseudomorphed by a mass of ultra-
2.	Opaque	fine sericite, & scattered opaque mineral. Opaque coatings to
73.	Groundmass	phenocrysts. Scattered opaque mineral is limonite after a sulphide.
		The fine-grained groundmass is quartz & sericitised feldspar stained
		red by earthy hematite formed from weathering.

Location 0896

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0896

Outcrop

CANBERRA ARALUEN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5231
6059429 m N 35.57882 S latitude
743429 m E 149.6864 E longitude

Illustrations :

Age/Unit= Upper Devonian

MINUMA BEDS

Topography: MODERATELY SLOPING UPLAND

dip=16W strike=012

Structure : GENTLY DIPPING

Field Geology: Quartzose sandstone. Medium sand to granule grade. Sorting varies.
Coarse units are poorly sorted, contain feldspar and have clay matrix.
Finer units have more silica cement. Minor clay pellets. No thin
section.

Field Rockname: SAMPLE CA0896 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.75
Dry density = 2.48
Grain density = 2.63
Porosity = 5.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 0
from to SD=
Laboratory susceptibility = 138
Remanence = 2.00
Koenigsberger ratio = .24

GAMMA-RAY SPECTROMETRY

Ch.1= 28883
Ch.2= 1120 .38 % K2O
Ch.3= 599 3.06 ppm U
Ch.4= 539 10.32 ppm Th
U/Th= .30
3.74 Heat generation units

Location 0897

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0897

Road cutting

CANBERRA

ARALUEN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5231
6059947 m N 35.57525 S latitude
738926 m E 149.6366 E longitude

Illustrations :

Age/Unit= Silurian

BOMBAY VOLCANICS

Topography: STRIKE RIDGE

dip=78E strike=016

Structure : STEEPLY DIPPING

Field Geology: Sandstone, siltstone, and slate. The greywacke contains abundant quartz and feldspar, and is a poorly sorted massive rock. The finer rocks are internally massive and cleaved.

Field Rockname: SAMPLE CA0897 SANDSTONE

PHYSICAL PROPERTIES:

SANDSTONE

DENSITIES
Whole rock density = 2.41
Dry density = 2.42
Grain density = 2.72
Porosity = 11.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 150
Remanence = 2.00
Koenigsberger ratio = .22

GAMMA-RAY SPECTROMETRY

Ch.1= 40622
Ch.2= 1817 .94 % K²⁰
Ch.3= 775 4.30 ppm U
Ch.4= 669 12.77 ppm Th
U/Th= .34
5.05 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Feldspathic sandstone	
			Poorly sorted
65.	Quartz		Angular to subrounded medium- to coarse sand-sized clasts of quartz,
2.	Rock fragments		kaolinised plagioclase & orthoclase, minor quartzite, detrital
25.	Plagioclase		biotite & muscovite. Very rare detrital zircon. The clasts are
1.	Biotite		tightly packed & set in a thin matrix of quartz cement & clay.
.5	Muscovite		Poor sorting & abundance of labile constituents indicate rapid short
5.	Orthoclase		transport & deposition close to a dacitic to rhyodacitic volcanic
2.	Matrix		source region.
.001	Zircon		

Location 0898

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0898

Road cutting

CANBERRA ARALUEN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5233
6058482 m N 35.58905 S latitude
736402 m E 149.6092 E longitude

Illustrations :

Age/Unit= BORO GRANITE
Topography: GENTLE ROUNDED RISE IN SMOOTH UPLAND dip=90 strike=060
Structure : DYKE
Field Geology: Dolerite. Medium-grained, equigranular. Onion weathering where weathered. Slightly altered with veins of epidote, some containing traces of a leached sulphide mineral.

Field Rockname: SAMPLE CA0898 DOLERITE

PHYSICAL PROPERTIES:

DOLERITE

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.98	Mean of 10 in-situ readings =	9286	Ch.1=	17929
Dry density =	2.95	from 1507 to 15079, SD=	4909	Ch.2=	864 .59 % K2O
Grain density =	3.00	Laboratory susceptibility =	21224	Ch.3=	283 1.83 ppm U
Porosity =	1.8	Remanence	550.00	Ch.4=	222 4.21 ppm Th
		Koenigsberger ratio	= .43	U/Th=	.44
				1.99	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Dolerite	
		Subophitic	
75.	Plagioclase	Interlocking randomly-oriented laths of sericitised plagioclase.	
7.	Augite	Abundant augite, partially unaltered & altered to blue-green hornblende, fibrous green to colourless hornblende & epidote.	
8.	Hornblende		
5.	Epidote	Scattered ilmenite & magnetite with ilmenite exsolution lamellae.	
.05	Apatite	Rare pyrite as scattered large crystals & as small inclusions in ilmenite. Minor interstitial quartz. Accessory apatite euhedra.	
1.	Quartz		
4.	Ilmenite		
.5	Pyrite		
1.	Magnetite		

Location 0899

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0899
Creek

CANBERRA ARALUEN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-5233
6057594 m N 35.59792 S latitude
732742 m E 149.5691 E longitude

Illustrations :

Age/Unit= BORO GRANITE
Topography: GENTLY UNDULATING UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Inequigranular. Porphyritic in quartz. Coarse-grained.
Leucocratic with scattered large chlorite plates. Trace oxidised
sulphide mineral. Xenoliths of dark-coloured igneous rock.

Field Rockname: SAMPLE CA0899 ADAMELLITE

PHYSICAL PROPERTIES: ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.63 Mean of 15 in-situ readings = 1767 Ch.1= 44248
Dry density = 2.64 from 376 to 8796 .SD= 2273 Ch.2= 2994 2.37 X K2O
Grain density = 2.64 Laboratory susceptibility = 2211 Ch.3= 706 2.60 ppm U
Porosity = .0 Remanence = 9.00 Ch.4= 721 13.93 ppm Th
Koenigsberger ratio = .07 U/Th= .19
4.52 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 71.65 .48 13.18 4.12 .08 1.80 .54 2.53 3.86 .10 .03 1.50 99.87

TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 576 -6 91 12 10 129 67 -3 10 7 11 187

TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zr Zr
p.p.m. 17 5 72 -5 17 -3 62 9 36 48 181

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
Est. % MINERAL FABRIC: Hypidiomorphic granular
50. Quartz Very large globular patches of quartz, slightly strained with slightly
25. Plagioclase resorbed margins. Abundant euhedral strongly-sericitised plagioclase,
14. Orthoclase surrounded by interstitial kaolinised anhedral orthoclase. Large
10. Chlorite plates of euhedral chlorite with liberations of opaque mineral along
.001 Zircon cleavages are probably alteration products of former biotite.
1. Opaque

Location 0900

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0900
Dozer scrape

SAME LOCATION AS 0901
CANBERRA

1:250,000 sheet area
6053526 m N
727289 m E

ARALUEN
1:100,000 sheet area

NSW GDOM=1
air-photo:run-no.= 3-5197
35.63583 S latitude
149.5101 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: STEEPLY SLOPING DISSECTED UPLAND

dip= strike=

Structure :

Field Geology: Quartzite, chlorite quartzite, and slate. The quartzites are pyritic, massive and have stratobound, cross-cutting white quartz veins randomly oriented within them.

Field Rockname: SAMPLE CA0900 CHLORITE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE
DENSITIES
Whole rock density = 2.70
Dry density = 2.70
Grain density = 2.74
Porosity = 1.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 150
Remanence = 2.00
Koenigsberger ratio = .22

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	83.86	.32	5.59	4.96	.04	1.63	.06	.03	.96	.10	.10	1.70	99.34

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	184	-6	68	7	27	44	38	-3	6	12	17	48

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-20	4	-5	11	4	20	8	31	53	259

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
81.	Quartz	Chlorite quartzite	Massive with microveinlets
10.	Chlorite		Microporphyroblasts of chlorite frequently as fibrous spherulitic masses surrounded by ovoid microporphyroblasts of strained quartz.
5.	Biotite		Interstitial finer quartz with selvages of chloritised biotite.
.005	Zircon		biotite, & sericite inhibiting further grain growth. Minor scattered
1.	Opaque		opaque mineral. Rare accessory zircon.
3.	Sericite		

Location 0901

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0901
Dozer scrape

SAME LOCATION AS 0900

CANBERRA

ARALUEN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-5197

6053526 m N

35.63583 S latitude

727280 m E

149.5100 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: STEEPLY SLOPING DISSECTED UPLAND

dip= strike=

Structure :

Field Geology: Quartzite, chlorite quartzite, and slate. The quartzites are pyritic, massive and have stratabound, cross-cutting white quartz veins randomly oriented within them.

Field Rockname: SAMPLE CA0901 SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES

Whole rock density = 2.63

Dry density = 2.63

Grain density = 2.81

Porosity = 6.4

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 314

Remanence = 1.00

Koenigsberger ratio = .05

GAMMA-RAY SPECTROMETRY

Ch.1= 59136

Ch.2= 3510 2.23 % K20

Ch.3= 1214 6.19 ppm U

Ch.4= 1094 20.96 ppm Th

U/Th= 30

7.91 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	48.86	1.05	26.20	8.02	0.03	1.76	0.01	0.17	6.84	0.10	0.07	6.40	99.51

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1130	-6	71	5	151	101	39	-3	18	91	17	292

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	23	52	10	6	19	-3	163	9	48	360	126

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Slate

Est. % MINERAL FABRIC: Microporphyroblastic; massive

20. Quartz Microporphyroblasts of sericitised ?andalusite, euhedral to ovoid with selvages of tiny biotite aggregates limonitised by weathering.

30. Muscovite Scattered contorted lenses of stratabound quartz aggregates often with included layers of opaque mineral. The remainder of the rock consists of clusters of randomly oriented green-brown to near colourless pleochroic biotite, partially limonitised by weathering, as well as massive fine sericite & muscovite.

30. Andalusite

15. Biotite

5. Opaque

Location 0902

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0902

Road cutting

CANBERRA MICHELAGO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-04
6056558 m N 35.60943 S latitude
723305 m E 149.4653 E longitude

Illustrations :

Age/Unit= Middle Silurian KOHINOOR VOLCANICS
Topography: MODERATELY SLOPING DISSECTED UPLAND dip=85NE strike=156
Structure : STEEPLY CLEAVED
Field Geology: Sericite slate. Massive and cleaved.

Field Rockname: SAMPLE CA0902 SERICITE SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.29
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 8 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY
Ch.1= 30459
Ch.2= 1354 .63 % K2O
Ch.3= 659 4.72 ppm U
Ch.4= 478 9.00 ppm Th
U/Th= .53
4.60 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	81.23	0.52	9.83	1.38	0.02	0.61	0.01	0.01	2.50	0.12	0.08	2.70	98.99

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1085	-6	74	6	86	-5	51	4	15	23	-5	121

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	12	-20	30	6	14	-3	238	10	19	21	148

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Slate	
4.	Quartz		Massive to weakly layered
90.	Sericite		Scattered silt-sized quartz & rare opaque grains amidst a mass of fine sericite with rare lamination defined by lightly-coloured biotite laminae.
5.	Biotite		
1.	Opaque		

Location 0903

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0903

Outcrop

CANBERRA MICHELAGO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-04
6057448 m N 35.60157 S latitude
722584 m E 149.4571 E longitude

Illustrations :

Age/Unit: Middle Silurian

KOHINOOR VOLCANICS

Topography: STRIKE RIDGE IN UPLAND

dip=78W strike=172

Structure : STEEPLY DIPPING PLANAR FLOW BANDING PARALLEL TO BEDDING

Field Geology: Ignimbrite and sericite slate. The ignimbrite has phenocrysts of quartz and feldspar set in a fine-grained groundmass. Rare tiny pyrite crystals. Crude flow layering is planar, and parallel to bedding. The slate is massive and cleaved.

Field Rockname: SAMPLE CA0903 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.68
Dry density = 2.67
Grain density = 2.68
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 178
from 0 to 251 .SD= 80
Laboratory susceptibility = 150
Remanence = 150.00
Koenigsberger ratio = 16.67

GAMMA-RAY SPECTROMETRY

Ch.1= 34295
Ch.2= 1421 .49 % K2O
Ch.3= 801 5.58 ppm U
Ch.4= 595 11.22 ppm Th
U/Th= .50
5.48 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.50	0.57	15.26	5.00	0.06	2.05	1.63	6.54	1.03	0.14	0.12	1.70	99.60

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	357	-6	58	16	9	32	46	-3	12	38	17	28

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	34	6	153	-5	-5	-3	99	6	21	62	170

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Dacite
FABRIC: Porphyritic trending porphyroblastic; flow-banded

Est. %	MINERAL	DESCRIPTION
1.	Quartz	Rare phenocrysts of volcanic quartz, slightly strained, with abundant smaller lightly-kaolinised euhedral plagioclase phenocrysts, glomeroporphyritic in places. Scattered streaky lenticles of chlorite interwoven throughout groundmass & aligned parallel to flow banding.
12.	Plagioclase	Scattered small epidote granules occur throughout the groundmass and in minor lenticular clusters. Rare xenolithic andesitic lava fragments some of which are epidotised. The groundmass consists mainly of fine-grained quartz & feldspar with subordinate patches of calcite. Some calcite fringes quartz phenocrysts.
3.	Chlorite	
2.	Opaque	
2.	Calcite	
4.	Epidote	
75.	Groundmass	
1.	Rock fragments	

Location 0904

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0904
Outcrop

SAME LOCATION AS 0905

CANBERRA CANBERRA ACT GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-32
6088761 m N 35.32338 S latitude
704387 m E 149.2485 E longitude

Illustrations :

Age/Unit= Middle Ordovician PITTMAN FORMATION
Topography: STRIKE RIDGE IN DISSECTED LOWLAND dip=90 strike=175
Structure : STEEPLY DIPPING WITH OUTCROP-SCALE FOLDS
Field Geology: Slate, siltstone, and quartzose sandstone. Medium to thick and planar bedded. Interbedded with clayey sandstone. Slate is cleaved and slightly chloritic. Sandstone contains quartz, feldspar, and muscovite, and has a clay matrix. Minor folding present.
Field Rockname: SAMPLE CA0904 QUARTZOSE SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.58	Mean of 10 in-situ readings =	0	Ch.1=	47.42
Dry density =	2.56	from to .SD=		Ch.2=	21.5 .98 % K2O
Grain density =	2.66	Laboratory susceptibility =	100	Ch.3=	103.1 6.73 ppm U
Porosity =	3.7	Remanence =	.20	Ch.4=	80.1 15.25 ppm Th
		Koenigsberger ratio =	.03	U/Th=	.44
					6.99 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
82.	Quartz	Quartzose sandstone	Moderately sorted
2.	Plagioclase	Subangular to subrounded fine to medium sand-sized clasts of abundant quartz, & minor plagioclase, muscovite, opaque mineral, lithic fragments of chert & quartzite, & very rare zircon. The clay matrix is partially resolvable as biotite, which forms scattered large crystals in places.	
2.	Muscovite		
2.	Biotite		
1.	Opaque	The quartz grains are variably strained.	
1.	Rock fragments		
10.	Matrix		
.001	Zircon		

Location 0905

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0905

SAME LOCATION AS 0904

Outcrop

CANBERRA

CANBERRA

ACT

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-32

6088761 m N 35.32338 S latitude

704387 m E 149.2485 E longitude

Illustrations :

Age/Unit= Middle Ordovician

PITTMAN FORMATION

Topography: STRIKE RIDGE IN DISSECTED LOWLAND

dip=90 strike=175

Structure : STEEPLY DIPPING WITH OUTCRP-SCALE FOLDS

Field Geology: Slate, siltstone, and quartzose sandstone. Thin to thick and planar bedded. Slate is cleaved and slightly chloritic. Quartz sandstone is fine to medium-grained. It contains minor feldspar and detrital muscovite, and has a clay matrix. Minor folds are present.

Field Rockname: SAMPLE CA0905 SLATE

PHYSICAL PROPERTIES:

SLATE

DENSITIES
Whole rock density = 2.65
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Slate
Est. %	MINERAL FABRIC:	Laminated; cross-laminated
20.	Quartz	Lamination & cross-lamination defined by slight variation in grain size & consequent differences in abundance of quartz, as well as by rare graphite laminae. The bulk of the rock consists of a mixture of sericite & biotite with scattered minor small clots of chlorite.
40.	Sericite	
1.	Graphite	
3.	Chlorite	
35.	Biotite	Slight microfaulting present with graphite linings to fault surfaces.
1.	Opaque	

Location 0906

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0906

MOUNT PLEASANT

Outcrop

CANBERRA

CANBERRA

ACT GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-34

6091986 m N 35.29588 S latitude

696589 m E 149.1620 E longitude

Illustrations :

Age/Unit= Lower Devonian

AINSLIE VOLCANICS

Topography: GENTLY SLOPING CONICAL HILL

dip= strike=

Structure :

Field Geology: Andesite. Phenocrysts of altered plagioclase and ?altered hornblende set in a slightly altered, fine-grained groundmass containing abundant (up to 5%) pyrite which is both disseminated and present in narrow veinlets.

Field Rockname: SAMPLE CA0906 ALTERED ANDESITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.77

Ch.1= 21577

Dry density = 2.69

Mean of 10 in-situ readings = 12

Ch.2= 833

Grain density = 2.72

from 0 to 125, SD= 39

Ch.3= 573 .10 % K2O

Porosity = 1.1

Laboratory susceptibility = 502

Ch.4= 476 3.40 ppm U

Remanence = 100.00

U/Th= .38

Koenigsberger ratio = 3.32

3.67 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	47.40	.42	11.13	21.77	.11	7.38	.11	1.29	.27	.10	.41	9.60	100.00

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	141	7	66	89	440	363	40	3	6	99	37	9

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	25	-20	29	-5	12	-3	122	-5	19	64	105

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:
20.	Plagioclase	Altered andesite
20.	Chlorite	Porphyritic; orthopyric
2.	Rock fragments	Phenocrysts of euhedral, lightly kaolinised & sparingly chloritised plagioclase, with abundant euhedral chlorite pseudomorphs of ? hornblende. Scattered xenoliths of chloritite, feldspar rock and andesite. Scattered pyrite & smaller less common goethite. The groundmass is highly felsic with both laths & stumpy rectangular plagioclase, together with interstitial chlorite. The chlorite is light-coloured.
3.	Pyrite	
55.	Groundmass	
.5	Goethite	

Location 0907

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0907 MOUNT AINSLIE
Road cutting CANBERRA CANBERRA ACT GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-16
6095190 m N 35.26697 S latitude
696796 m E 149.1635 E longitude

Illustrations :

Age/Unit= Lower Devonian AINSLIE VOLCANICS
Topography: MODERATELY SLOPING UPLAND WITH OUTCROP dip= strike=
Structure :
Field Geology: Altered dacite. Phenocrysts of altered plagioclase, altered
ferromagnesian mineral and minor quartz set in a fine-grained ground-
mass with scattered pyrite. The pyrite-bearing rocks often occur as
random lenses within less pyritic rock.
Field Rockname: SAMPLE CA0907 ALTERED DACITE

PHYSICAL PROPERTIES: ALTERED DACITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.75 Mean of 11 in-situ readings = 137 Ch.1= 46601
Dry density = 2.70 from 0 to 628 ,SD= 190 Ch.2= 3107 2.78 % K2O
Grain density = 2.73 Laboratory susceptibility = 188 Ch.3= 562 2.73 ppm U
Porosity = 1.1 Remanence = 20.00 Ch.4= 513 9.5 ppm Th
Koenigsberger ratio = 1.77 U/Th= .28
4.04 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 58.88 .55 14.26 9.31 .04 4.83 .20 5.48 .23 .09 .34 5.60 99.80
TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 138 24 61 48 147 72 35 -3 7 19 19 9
TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 30 -20 103 -5 5 -3 137 -5 20 25 118

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Altered dacite
Est. % MINERAL FABRIC: Porphyritic
1. Quartz Euhedral phenocrysts of slightly sericitised plagioclase, minor
45. Plagioclase chlorite pseudomorphs of former ferromagnesian mineral, & rare
5. Pyrite quartz. Scattered pyrite, frequently as cubes & often in
.3 Goethite clusters. Rare scattered goethite often with epidote granules and
1. Epidote probably alteration products of another ferromagnesian mineral. The
4. Chlorite groundmass consists mainly of cryptocrystalline felsic material,
44. Groundmass frequently with interwoven streaky patches of chlorite, & less
common patches & veinlets of secondary quartz. The chlorite is light
coloured.

Location 0908

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0908

Outcrop

CANBERRA

CANBERRA

ACT

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-34

6086655 m N 35.34447 S latitude

693790 m E 149.1325 E longitude

Illustrations :

Age/Unit= Silurian-Devonian

MUGGA MUGGA PORPHYRY

Topography: MODERATELY SLOPING UPLAND WITH OUTCROP

dip= strike=

Structure : GENTLY DIPPING IGNEOUS LAYERING

Field Geology: Ignimbrite. Phenocrysts of rounded volcanic quartz and altered feldspar set in a fine to medium-grained groundmass. Rare phenocrysts of garnet and chloritised ferromagnesian mineral in places. Traces of fine disseminated sulphide mineral in groundmass. Minor cognate xenoliths.

Field Rockname: SAMPLE CA0908 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.70
Dry density = 2.67
Grain density = 2.67
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 62
from 0 to 251, SD= 100
Laboratory susceptibility = 314
Remanence = 6.00
Koenigsberger ratio = .32

GAMMA-RAY SPECTROMETRY

Ch.1= 58182
Ch.2= 4315 3.70 % K20
Ch.3= 896 4.91 ppm U
Ch.4= 778 14.86 ppm Th
U/Th= .33
6.42 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	64.90	.67	13.87	5.30	.08	2.74	1.97	1.27	4.79	.15	.16	3.80	99.71

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mn	Nb	Ni	Pb	Rb
p.p.m.	566	-6	81	23	76	51	55	-3	10	23	14	204

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	19	-20	50	-5	18	-3	96	8	34	81	193

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
20.	Quartz	Ignimbrite Porphyritic; devitrified & altered vitrophyric
7.	Plagioclase	Phenocrysts of angular to rounded, resorbed volcanic quartz, with euhedral plagioclase variably altering to calcite, and minor orthoclase
3.	Orthoclase	& abundant biotite now almost completely altered to chlorite, minor muscovite & ilmenite. Rare microphenocrysts of apatite. Xenoliths
.1	Biotite	include abundant cognate chloritite & less common accidental sedimentary material. Minor pyrite specks often occurring as
.5	Chlorite	inclusions in biotite. The ultrafine groundmass consists mainly of quartz & altered feldspar. In places it is weakly chloritised.
.5	Muscovite	
.1	Apatite	
.5	Ilmenite	
.2	Pyrite	
4.	Calcite	
5.	Xenoliths	
55.	Groundmass	

Location 0909

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0909
Road cutting

CANBERRA MICHELAGO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-04
6057989 m N 35.59677 S latitude
722253 m E 149.4533 E longitude

Illustrations :

Age/Unit= Upper Silurian CAPTAINS FLAT FORMATION
Topography: DISSECTED UPLAND dip=W strike=
Structure : STEEPLY DIPPING
Field Geology: Chlorite slate, in places pyritic and graphitic. Mainly massive but
rare beds of slight variants in places. Small stratabound, white quartz
occurrences lacking regular shape. No thin section.

Field Rockname: SAMPLE CA0909 CHLORITIC SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.46
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 0
from to SD=
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 53333
Ch.2= 2711 1.68 X K2O
Ch.3= 998 6.02 ppm U
Ch.4= 820 15.60 ppm Th
U/Th= .39
6.77 Heat generation units

Location 0910

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0910 SAME LOCATION AS 0911 0912 AND 0913. CAPTAINS FLAT WORKINGS
Old workings CANBERRA MICHELAGO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-04
6058509 m N 35.59225 S latitude
721540 m E 149.4453 E longitude

Illustrations :5 slides; Photomicrograph

Age/Unit= Upper Silurian CAPTAINS FLAT FORMATION
Topography: STEEPLY DISSECTED, STRIKE-RIDGE UPLAND dip=85W strike=000
Structure : NEAR VERTICAL TO STEEPLY WEST DIPPING
Field Geology: Dacite, ignimbrite, quartz-eye porphyry, slate, and mudstone. Thin to thick and planar bedded. Mudstones lack cleavage but slates and some altered volcanics have conspicuous cleavage. Dacite is two-phased with the more altered chaotically folded within the other. Pyritic throughout
Field Rockname: SAMPLE CA0910 DACITE

PHYSICAL PROPERTIES: DACITE
DENSITIES
Whole rock density = 2.66
Dry density = 2.63
Grain density = 2.67
Porosity = 1.5
MAGNETIC SUSCEPTIBILITY (S.I. *.000001)
Mean of 11 in-situ readings = 34
from 0 to 125 ,SD= 51
Laboratory susceptibility = 25
Remanence = .30
Koenigsberger ratio = .20
GAMMA-RAY SPECTROMETRY
Ch.1= 50876
Ch.2= 2707 1.54 X K20
Ch.3= 1046 5.29 ppm U
Ch.4= 946 18.13 ppm Th
U/Th= .29
6.72 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 78.62 0.19 10.99 1.36 0.04 0.82 0.68 4.32 0.77 0.05 0.06 1.20 99.11

TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 331 -6 51 4 -1 11 186 3 9 22 4165 32

TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 5 10 284 12 9 -3 8 24 32 2597 134

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Dacite
FABRIC: Porphyritic
Est. % MINERAL
10. Quartz
10. Plagioclase
2. Epidote
1. Opaque
75. Groundmass
.5 Siderite
1. Sericite
1. Chlorite
Phenocrysts of volcanic quartz, variably strained with subgrain formation. Smaller phenocrysts of strongly-sericitised euhedral plagioclase crystals. Scattered opaque mineral. The groundmass is highly felsic & has differentiated weakly into microlenses of variable mineralogy which define flow banding. The most common component is a mosaic of tiny quartz & feldspar grains within which are patches and microlenses of secondary quartz, sericite, sericite-epidote, chlorite & rare siderite. Epidote is also scattered randomly throughout in small amounts.
Photograph subgrains n quartz

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0911

SAME LOCATION AS 0910 0912 AND 0913

Old workings

CANBERRA

MICHELAGO

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-04

6058509 m N

35.59225 S latitude

721540 m E

149.4453 E longitude

Illustrations :5 Colour slides

Age/Unit= Upper Silurian

CAPTAINS FLAT FORMATION

Topography: STEEPLY DISSECTED, STRIKE-RIDGE UPLAND

dip=85W strike=000

Structure : NEAR VERTICAL TO STEEPLY WEST DIPPING

Field Geology: Dacite, ignimbrite, quartz-eye porphyry, slate and mudstone. Thin to

thick and planar bedded. Mudstones lack cleavage but slates and some

altered volcanics have conspicuous cleavage. Dacite is two-phased with

the more altered chaotically folded within the other. Pyritic throughout

Field Rockname: SAMPLE CA0911 DACITE

PHYSICAL PROPERTIES:

DACITE

DENSITIES

Whole rock density = 2.60

Dry density = 2.58

Grain density = 2.69

Porosity = 3.9

MAGNETIC SUSCEPTIBILITY (S.I. x .000001)

Mean of 0 in-situ readings =

from to ,SD=

Laboratory susceptibility = 50

Remanence = 1.00

Koenigsberger ratio = .33

GAMMA-RAY SPECTROMETRY

Ch.1=

Ch.2=

Ch.3=

Ch.4=

x K20

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT

Weight %

SiO2

TiO2

Al2O3

Fe2O3

MnO

MgO

CaO

Na2O

K2O

P2O5

SO3

LOI

SUM

74.82

0.24

13.19

1.74

0.04

0.96

0.81

4.50

1.31

0.05

0.08

1.50

99.24

TRACE ELEMENT

p.p.m.

Ba

Bi

Ce

Co

Cr

Cu

La

Mo

Nb

Ni

Pb

Rb

400

7

53

6

-1

7

43

3

13

26

1498

53

TRACE ELEMENT

p.p.m.

Sc

Sn

Sr

Ta

Th

U

V

H

Y

Zn

Zr

5

8

314

9

14

-3

20

12

66

420

164

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Description
10.	Quartz	Dacite Porphyritic	Phenocrysts of rounded & embayed volcanic quartz variably strained
8.	Plagioclase		with formation of subgrains. Smaller phenocrysts of plagioclase,
2.	Epidote		extensively sericitised & difficult to discern without crossed
1.	Chlorite		nicols. Scattered epidote & opaque mineral. The groundmass is a
1.	Opaque		mosaic of fine-grained quartz & feldspar with frequent wavy lenses
78.	Groundmass		of sericite which define flow banding, & minor scattered platelets
			of chlorite.

Location 0912

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0912 SAME LOCATION AS 0910 0911 AND 0913
Old workings CANBERRA MICHELAGO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-04
6058507 m N 35.59227 S latitude
721531 m E 149.4452 E longitude

Illustrations :5 Colour slides

Age/Unit= Upper Silurian CAPTAINS FLAT FORMATION
Topography: STEEPLY DISSECTED, STRIKE-RIDGE UPLAND dip=85W strike=000
Structure: NEAR VERTICAL TO STEEPLY WEST DIPPING
Field Geology: Dacite, ignimbrite, quartz-eye porphyry, slate and mudstone. Thin to thick and planar bedded. Mudstones lgck cleavage but slates and some altered volcanics have conspicuous cleavage. Dacite is two-phased with the more altered chaotically folded within the other. Pyritic throughout
Field Rockname: SAMPLE CA0912 PYRITIC QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE
DENSITIES
Whole rock density = 2.49
Dry density = 2.94
Grain density = 3.00
Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 1 in-situ readings = 5026
from to SD=
Laboratory susceptibility = 0
Remanence = 1.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Pyrite-chlorite quartzite
58.	Quartz	FABRIC:	Layered
10.	Chlorite		A mass of coarse pyrite cubes often in clusters & with fringes of palest green to colourless chlorite, both amidst a mosaic of strained quartz grains. Rare goethite. A product of hydrothermal alteration of dacite, which has differentiated from its host during flow.
30.	Pyrite		
.1	Goethite		
2.	Sericite		

Location 0913

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0913
Old workings

SAME LOCATION AS 0910 0911 AND 0912
CANBERRA MICHELAGO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= Z-04
6058509 m N 35.59225 S latitude
721531 m E 149.4452 E longitude

Illustrations :5 Colour slides

Age/Unit= Upper Silurian CAPTAINS FLAT FORMATION
Topography: STEEPLY DISSECTED, STRIKE-RIDGE UPLAND dip=85W strike=000
Structure : NEAR VERTICAL TO STEEPLY WEST DIPPING
Field Geology: Dacite, ignimbrite, quartz-eye porphyry, slate and mudstone. Thin to thick and planar bedded. Mudstones lack cleavage but slates and some altered volcanics have conspicuous cleavage. Dacite is two-phased with the more altered chaotically folded within the other. Pyritic throughout
Field Rockname: SAMPLE CA0913 QUARTZ-EYE PORPHYRY

PHYSICAL PROPERTIES:

SCHIST
DENSITIES
Whole rock density = 2.58
Dry density = 2.57
Grain density = 2.77
Porosity = 7.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 13 in-situ readings = 14
from 0 to 125 SD= 37
Laboratory susceptibility = 113
Remanence = 100.00
Koenigsberger ratio = 14.75

GAMMA-RAY SPECTROMETRY
Ch.1= 33198
Ch.2= 1599 .79 % K20
Ch.3= 733 4.82 ppm U
Ch.4= 569 10.77 ppm Th
U/Th= .45
5.00 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.69	0.47	11.61	3.23	0.01	0.58	0.01	0.08	3.61	0.06	0.10	2.40	99.85

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	810	-6	45	-1	49	54	31	4	9	42	660	146

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	15	24	15	-5	8	-3	48	-5	28	57	249

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartz-eye porphyry
FABRIC: Porphyritic
Est. % MINERAL
15. Quartz Phenocrysts of rounded & resorbed volcanic quartz, moderately strained.
2. Opaque Secondary quartz mosaics pseudomorph original former plagioclase
81. Groundmass phenocrysts which have been leached by alteration. Layering in ground-
mass defined by microlenses of secondary quartz, and by streaks of
2. Biotite biotite, oxidised & largely opacitised by weathering. The groundmass
consists of microcrystalline quartz & feldspar with numerous streaks
of sericite defining flow foliation.

Location 0914

 * LACLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0914
 Road cutting

CANBERRA MICHELAGO NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-04
 6058853 m N 35.58912 S latitude
 721676 m E 149.4467 E longitude

Illustrations :2 slides, Photomicrograph

Age/Unit= Upper Silurian CAPTAINS FLAT FORMATION
 Topography: DISSECTED, STRIKE-RIDGE UPLAND dip=90 strike=000
 Structure : VERTICAL TO SLIGHTLY EAST-DIPPING
 Field Geology: Dacite, altered dacite, quartzite and slate. Mainly thick bedded. Rocks grade laterally into each other. Dacite is two-phased and chaotically folded with dismembered layering causing apparent breccia appearance. Many rocks have disseminated pyrite and white quartz occurrences.
 Field Rockname: SAMPLE CA0914 DACITE

PHYSICAL PROPERTIES:

DACITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 10 in-situ readings = 0		Ch.1= 43837	
Whole rock density = 2.70		from to SD=		Ch.2= 2568	1.77 % K2O
Dry density = 2.67		Laboratory susceptibility = 2123		Ch.3= 847	5.62 ppm U
Grain density = 2.71		Remanence = 10.00		Ch.4= 653	12.36 ppm Th
Porosity = 1.2		Koenigsberger ratio = .08		U/Th= .45	
				5.99 Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	63.30	.64	14.74	5.48	.08	2.67	2.13	5.10	1.59	.14	.50	2.80	99.17
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	545	-6	37	17	12	24	36	3	8	8	8	79	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	28	-20	148	-5	9	-3	98	-5	35	82	149		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL NAME:	FABRIC:
20.	Plagioclase	Porphyritic; porphyroblastic; flow banded
20.	Biotite	Flow banding defined by alternating layers of variably altered dacite.
3.	Chlorite	One phase has well preserved lava texture with plagioclase phenocrysts & similarly sized calcite patches set in a highly felsic, quartzo-
1.	Epidote	feldspathic groundmass containing scattered opaque mineral. The other
1.	Opaque	phase has an apparent metamorphic appearance. It consists of ovoid,
3.	Calcite	but similarly-sized plagioclase phenocrysts & porphyroblasts set in
1.	Sericite	a micaceous groundmass of fine green biotite, chlorite & variable
51.	Groundmass	amounts of plagioclase laths & epidote. The less micaceous variants
		have partially separated into lenticular foliae during flow, & together
		with the character of the micaceous layers, they produce an apparent
		schistosity. Pull-aparts present in places.

Location 0915

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0915

Road cutting

CANBERRA

MICHELAGO

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-54
6042368 m N 35.73808 S latitude
719609 m E 149.4284 E longitude

Illustrations :

Age/Unit=

JERANGLE GRANITE COMPLEX

Topography: GENTLY SLOPING, UNDOULATING, WITH TORS

dip= strike=

Structure: PLUTON

Field Geology: Adameellite. Inequigranular, non porphyritic, leucocratic rock with equigranular quartz and plagioclase set in a similar, slightly finer groundmass with scattered large chlorite clots. Minor ?tuffisite veinlets and breccia.

Field Rockname: SAMPLE CA0915 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.64

Dry density = 2.58

Grain density = 2.64

Porosity = 2.2

Mean of 11 in-situ readings = 0

from to SD=

Laboratory susceptibility = 125

Remanence = 1.00

Koenigsberger ratio = .13

Ch.1=

Ch.2=

Ch.3=

Ch.4=

% K2O

ppm U

ppm Th

U/Th=

Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.26	.03	13.48	1.28	.04	.08	.25	2.53	5.01	.11	.03	.60	99.70

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	194	12	13	2	6	85	8	-3	7	-5	45	375

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	-1	51	33	5	10	17	3	26	26	16	41

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adameellite

Est. %	MINERAL	FABRIC:
35.	Quartz	Hypidiomorphic granular tending slightly granophyric
42.	Plagioclase	Large patches of unstrained to slightly-strained quartz, amidst euhedral to subhedral lightly sericitised plagioclase & abundant interstitial altered orthoclase. Scattered chlorite often in clusters
23.	Chlorite	& pseudomorphous after one or more ferromagnesian minerals. Trace epidote, apatite, & rare allanite & zircon. Essentially lacking in opaque minerals in this thin section.
.001	Zircon	
.1	Epidote	
.01	Allanite	

Location 0916

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0916

Road cutting

CANBERRA MICHELAGO NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-04
6059055 m N 35.58743 S latitude
721073 m E 149.4400 E longitude

Illustrations :

Age/Unit= Upper Silurian CAPTAINS FLAT FORMATION
Topography: DISSECTED LOW BETWEEN STRIKE RIDGES dip= strike=
Structure : CHAOTIC STRATABOUND FOLDING IN REGIONAL STEEP TILTED SEQUENCE
Field Geology: Pyritic, graphitic, and sericitic shale. Planar inter-laminated
and thinly interbedded, with stratabound slump folding. Minor creep
indicated by slump lobes of lighter-coloured rock occurring as beds.
Minor graphitic quartzite.
Field Rockname: SAMPLE CA0916 BLACK SHALE

PHYSICAL PROPERTIES:

	MUDSTONE				
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.31	Mean of 10 in-situ readings =	0	Ch.1=	54489
Dry density =		from to ,SD=		Ch.2=	3493 2.46 % K2O
Grain density =		Laboratory susceptibility =	0	Ch.3=	1164 9.02 ppm U
Porosity =		Remanence =	.00	Ch.4=	787 14.71 ppm Th
		Koenigsberger ratio =		U/Th=	.61
				8.66	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Black shale
Est. %	FABRIC:	Laminated
10.	MINERAL	Graphite
5.		Quartz
85.		Mud

Lamination defined by presence of graphite & variation in its abundance. Scattered silt-sized quartz grains are set randomly amidst variable proportions of graphite & sericitic, chloritic & biotite-rich mud. Rare stratabound quartz veinlets.

Location 0917

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0917
Road cutting

CANBERRA CANBERRA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-32
6086105 m N 35.34692 S latitude
706291 m E 149.2701 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: GENTLY SLOPING UNDULATING COUNTRY dip= strike=
Structure : MODERATELY DIPPING
Field Geology: Greywacke and slaty mudstone. Greywacke is thick bedded, massive and
interbedded with mudstone which is medium bedded. Each have sharp top
and bottom contacts. Narrow planar quartz veinlets preferentially in
greywacke, which contains detrital muscovite.
Field Rockname: SAMPLE CA0917 GREYWACKE

PHYSICAL PROPERTIES:

DENSITIES
Whole rock density = 2.58
Dry density = 2.57
Grain density = 2.68
Porosity = 4.3

GREYWACKE

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 10 in-situ readings = 0
from to SD=
Laboratory susceptibility = 150
Remanence = .60
Koenigsberger ratio = .07

GAMMA-RAY SPECTROMETRY

Ch.1= 46635
Ch.2= 2846 1.92 % k20
Ch.3= 902 4.36 ppm U
Ch.4= 833 15.99 ppm Th
U/Th= .27
5.86 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Greywacke Poorly sorted
76.	Quartz		Angular to subrounded quartz grains, mostly strained & variably-sized,
1.	Muscovite		with minor detrital plagioclase, muscovite, quartzite clasts, opaque
.1	Tourmaline		mineral & rare tourmaline & zircon. The mud matrix is mostly resolvable
1.	Plagioclase		as biotite, sericite, & fine crystal detritus.
1.	Rock fragments		
1.	Opaque		
.001	Zircon		
20.	Matrix		

Location 0918

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0918
Creek

SAME LOCATION AS 0919 AND 0920

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5020
6180584 m N 34.50152 S latitude
674306 m E 148.8986 E longitude

Illustrations :

Age/Unit=

RYE PARK GRANITE

Topography: SLIGHTLY DISSECTED UNDULATING LOWLAND dip= strike=

Structure : ROOF OF PLUTON FLANKED BY IGIMBRITES WHICH ARE SUB-HORIZONTAL

Field Geology: Granite and greisen adjacent to ignimbrite. Greisen is andalusite-,
tourmaline-, and wolframite-bearing, and is a marginal phase of the
equigranular, coarse-grained, muscovite-rich, leucocratic granite. The
ignimbrite is gently dipping against granite roof.

Field Rockname: SAMPLE GB0918 MUSCOVITE GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.44
Dry density = 2.53
Grain density = 2.60
Porosity = 2.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 9 in-situ readings = 0
from to SD=
Laboratory susceptibility = 150
Remanence = 15.00
Koenigsberger ratio = 1.67

GAMMA-RAY SPECTROMETRY

Ch.1= 60919
Ch.2= 4001 3.13 % K2O
Ch.3= 1343 16.46 ppm U
Ch.4= 395 6.43 ppm Th
U/Th= 2.56
12.02 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.06	.24	12.97	1.89	.02	.94	.21	6.16	1.46	.08	.02	.80	99.84

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	157	-6	78	6	3	76	49	-3	8	5	9	81

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	8	-5	48	-5	17	4	20	10	48	18	130

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granite	
35.	Quartz	Hypidiomorphic granular	
48.	Orthoclase	Globular to ragged patches of strained quartz, often connected and showing minor resorption. Scattered subhedral plagioclase variably sericitised. Abundant large crystals of, & intersitial orthoclase	
10.	Plagioclase	lightly fractured with muscovite fillings in places. Abundant	
5.	Muscovite	muscovite often in aggregates with rare small light-green chlorite.	
2.	Opaque	Rare biotite largely altered to opaque mineral. Scattered opaque	
.1	Chlorite	mineral filling fractures, & occurring as grains. Patchy limonite	
.1	Biotite	probably is a weathering product of a disseminated sulphide mineral.	

Location 0919

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0919

SAME LOCATION AS 0918 AND 0920

Outcrop

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5020

6180589 m N

34.50148 S latitude

674306 m E

148.8986 E longitude

Illustrations :

Age/Unit=

RYE PARK GRANITE

Topography: SLIGHTLY DISSECTED UNDULATING LOWLAND

dip= strike=

Structure : ROOF OF PLUTON FLANKED BY IGNIMBRITES WHICH ARE SUB-HORIZONTAL

Field Geology: Granite and greisen adjacent to ignimbrite. Greisen is andalusite-, tourmaline-/and wolframite-bearing, and is a marginal phase of the equigranular, coarse-grained, muscovite-rich, leucocratic granite. The ignimbrite is gently dipping against granite roof.

Field Rockname: SAMPLE GB0919 GREISEN

PHYSICAL PROPERTIES:

GREISEN

DENSITIES
Whole rock density = 2.31
Dry density = 2.80
Grain density = 2.84
Porosity = 1.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 8 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 138
Remanence = 1.00
Koenigsberger ratio = .12

GAMMA-RAY SPECTROMETRY

Ch.1= 56074
Ch.2= 2502 1.35 % K2O
Ch.3= 1346 16.55 ppm U
Ch.4= 391 6.35 ppm Th
U/Th= 2.61
11.65 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	52.45	.03	35.01	.88	.03	.01	.24	.01	6.11	.46	.02	4.10	99.33

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	102	178	19	4	8	60	2	21	38	-5	8	622

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	42	16	9	-5	22	7	2461	36	-5	48

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Greisen	
		Massive	
20.	Quartz	Patches of globular quartz aggregates, variably strained & with sutured grain contacts. Massive randomly-oriented muscovite frequently in radiating clusters, & of variable size. Scattered andalusite	
37.	Muscovite	often disaggregated & surrounded by muscovite. Rare garnet and euhedral opaque wolframite. Rare relict biotite altered to muscovite	
40.	Andalusite		
1.	Wolframite		
1.	Limonite	with liberation of an opaque mineral along cleavages. Scattered limonite is probably a weathering product of scattered sulphide.	
.1	Biotite		
1.	Garnet		

Location 0920

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0920
Creek

SAME LOCATION AS 0918 AND 0919

GOULBURN

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5020
6180584 m N 34.50152 S latitude
674306 m E 148.8986 E longitude

Illustrations :

Age/Unit= Middle-Upper Silurian DOURO GROUP

Topography: SLIGHTLY DISSECTED UNDULATING LOWLAND dip= strike=

Structure : ROOF OF PLUTON FLANKED BY IGNIMBRITES WHICH ARE SUB-HORIZONTAL

Field Geology: Granite and greisen adjacent to ignimbrite. Greisen is andalusite-,
tourmaline- and wolframite-bearing, and is a marginal phase of the
equigranular, coarse-grained, muscovite-rich, leucocratic granite. The
ignimbrite is gently dipping against granite roof.

Field Rockname: SAMPLE GB0920 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.72	Mean of 6 in-situ readings = 58	Ch.1= 40771
Dry density = 2.70	from 0 to 125, SD= 51	Ch.2= 1588 .65 % K2O
Grain density = 2.73	Laboratory susceptibility = 125	Ch.3= 864 7.00 ppm U
Porosity = 1.2	Remanence = .50	Ch.4= 558 10.38 ppm Th
	Koenigsberger ratio = .07	U/Th= .67
		6.26 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.43	0.71	15.37	5.61	0.08	3.16	1.65	3.99	2.32	0.16	0.08	1.40	99.95
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	276	-6	48	15	65	10	39	3	11	48	8	129	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	16	-20	67	-5	26	4	118	-5	32	52	200		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: Ignimbrite
12.	Quartz	FABRIC: Porphyritic
10.	Plagioclase	Phenocrysts of fractured to rounded volcanic quartz & euhedral to corroded, variably-sericitised plagioclase. Rare scattered micro-phenocrysts of apatite. Abundant biotite altered to clusters of secondary green-brown to colourless biotite. The groundmass is slightly altered & consists of a fine-grained highly felsic mosaic of quartz, feldspar & interstitial fine secondary biotite. Patchy minor chlorite aggregates in places. Rare zircon & opaque mineral.
.1	Apatite	
.01	Zircon	
1.	Chlorite	
10.	Biotite	
.1	Opaque	
67.	Groundmass	

Location 0921

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0921 SAME LOCATION AS 0922
Outcrop GOULBURN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5020
6180693 m N 34.50045 S latitude
674813 m E 148.9041 E longitude

Illustrations :

Age/Unit= Middle-Upper Silurian DOURO GROUP
Topography: DISSECTED GENTLY UNDULATING LOWLAND dip= strike=
Structure : PLUTON WITH ADJACENT MARGINAL ROCKS
Field Geology: Granite. Medium-grained. Equigranular, non-porphyrific very leucocratic
with clusters of muscovite aggregates. Cut by quartz veins. Magmatic
quartz xenoliths in places. Lies adjacent to magnetite skarn with
chlorite, fluorite, scheelite, a sulphide mineral, and garnet.
Field Rockname: SAMPLE GB0921 SKARN

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	3.6j	Mean of 15 in-situ readings =	525709	Ch.1=	31024
Dry density =	3.65	from 1130 to 1207628 ,SD=	478119	Ch.2=	1306 .70 % K2O
Grain density =	3.69	Laboratory susceptibility =	*****	Ch.3=	675 7.58 ppm U
Porosity =	1.3	Remanence	15000.00	Ch.4=	257 4.43 ppm Th
		Koenigsberger ratio	.78	U/Th=	1.71
					5.62 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Skarn	Massive
40.	Magnetite		Scattered evenly-distributed magnetite with interstitial quartz.
33.	Biotite		Abundant large plates & fine aggregates of biotite, deep-green to pale yellow in pleochroism. Minor garnet. Scheelite and minor wolframite replacing magnetite.
1.	Garnet		
1.	Scheelite		
.1	Wolframite		

Location 0922

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0922
Outcrop

SAME LOCATION AS 0921

GOULBURN

NSW GDM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-5020
6180693 m N 34.50045 S latitude
674813 m E 148.9041 E longitude

Illustrations :

Age/Unit=

RYE PARK GRANITE

Topography: DISSECTED GENTLY UNDULATING LOWLAND

dip= strike=

Structure: PLUTON WITH ADJACENT MARGINAL ROCKS

Field Geology: Granite. Medium-grained. Equigranular, non-porphyrific very leucocratic with clusters of muscovite aggregates. Cut by quartz veins. Magmatic quartz xenoliths in places. Lies adjacent to magnetite skarn with chlorite, fluorite, scheelite, a sulphide mineral and garnet.

Field Rockname: SAMPLE GB0922 MUSCOVITE GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.56
Dry density = 2.56
Grain density = 2.61
Porosity = 1.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 7 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 0
Remanence = 300.00
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 76271
Ch.2= 3824 2.23 % K20
Ch.3= 2008 26.62 ppm U
Ch.4= 420 6.11 ppm Th
U/Th= 4.36
18.06 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.69	.02	14.00	.87	.02	.01	.36	2.49	4.40	.20	.02	.80	99.88
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	66	34	20	2	5	56	9	-3	10	6	31	417	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	6	19	12	-5	8	22	-1	27	21	-5	39		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
40.	Quartz	Granite	Hypidiomorphic granular
45.	Orthoclase		Globular to jagged connected patches of slightly-strained quartz with rare minor resorbition. Euhedral, variably fractured plagioclase with preferential sericitisation along fractures. Abundant large anhedral crystals & patches of interstitial lightly-kaolinised orthoclase and microcline. Minor plates & fine crystal aggregates of muscovite.
10.	Plagioclase		Trace opaque mineral altering to limonite.
5.	Muscovite		
.01	Opaque		

Location 0923

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0923

Outcrop

CANBERRA

BRAIDWOOD

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-62

6070349 m N 35.47602 S latitude

760966 m E 149.8762 E longitude

Illustrations :

Age/Unit=

BRAIDWOOD GRANODIORITE

Topography: MODERATELY UNDULATING LOWLAND WITH RISES dip= strike=

Structure : PLUTON

Field Geology: Altered diorite. Atypical phase of Braidwood Granodiorite. Equigranular, medium-grained, non porphyritic. Abundant pink plagioclase and scattered fine chlorite and epidote aggregates pseudomorphing a ferromagnesian mineral. Minor hornblende. Minor epidote veinlets.

Field Rockname: SAMPLE CA0923 ALTERED DIORITE

PHYSICAL PROPERTIES:

DIORITE

DENSITIES

Whole rock density = 2.72

Dry density = 2.71

Grain density = 2.75

Porosity = 1.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 3476

from 1256 to 6408, SD= 1615

Laboratory susceptibility = 4976

Remanence = 90.00

Koenigsberger ratio = .30

GAMMA-RAY SPECTROMETRY

Ch.1= 31919

Ch.2= 2809 2.45 % K20

Ch.3= 528 1.97 ppm U

Ch.4= 537 10.37 ppm Th

U/Th= .19

3.55 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	55.66	.89	17.74	7.58	.15	3.69	4.68	3.77	2.68	.25	.04	2.50	99.63

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	475	8	80	27	52	115	54	-3	9	16	8	90

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	33	6	328	-5	10	-3	161	6	39	63	203

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
79.	Plagioclase	Diorite Hypidiomorphic granular
5.	Hornblende	Large subhedral euhedral grains of interlocking plagioclase. Large plates of chlorite with inclusions of epidote pseudomorphing a former ferromagnesian mineral. Scattered ragged hornblende altering to epidote.
.01	Apatite	Abundant chlorite pseudomorphs of biotite with accompanying liberation of opaque mineral & infillings of rare ?allanite. Scattered anhedral opaque mineral. Rare interstitial quartz. Accessory apatite euhedra.
10.	Chlorite	
5.	Epidote	
1.	Opaque	
.01	Allanite	
.1	Quartz	

Location 0924

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0924
Creek

CANBERRA ARALUEN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5253
6063297 m N 35.53812 S latitude
766233 m E 149.9365 E longitude

Illustrations :

Age/Unit= Upper Devonian COMERONG VOLCANICS
Topography: RUGGED STRIKE RIDGE LOWLAND AND UPLAND dip= strike=
Structure :
Field Geology: Rhyodacite and rhyolitic breccia. Minor quartz and altered feldspar
phenocrysts set in a fine-grained groundmass. Numerous small rhyolitic
xenoliths. Closely jointed; some joints curved.

Field Rockname: SAMPLE CA0924 RHYOLITIC BRECCIA

PHYSICAL PROPERTIES:

DENSITIES RHYOLITE
Whole rock density = 2.63
Dry density = 2.61
Grain density = 2.65
Porosity = 1.6
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 1352
from 879 to 1759, SD= 271
Laboratory susceptibility = 1080
Remanence = 600.00
Koenigsberger ratio = 9.26
GAMMA-RAY SPECTROMETRY
Ch.1= 44544
Ch.2= 3102 2.18 % K2O
Ch.3= 867 2.32 ppm U
Ch.4= 959 18.62 ppm Th
U/Th= .12
5.11 half generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	79.16	0.22	10.95	1.41	0.01	0.22	0.07	0.50	5.46	0.05	0.09	1.30	99.46
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	1588	-6	79	-1	2	-5	56	5	22	16	63	214	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	10	-20	32	-5	20	-3	16	11	87	52	303		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Rhyolitic breccia
Est. % MINERAL FABRIC: Fragmental; sparsely porphyritic
2. Quartz Phenocrysts of euhedral to rounded, resorbed volcanic quartz and
70. Rock fragments fractured to corroded sericitised feldspar. Abundant angular to sub-
5. Feldspar rounded clasts of rhyolite & rhyodacite with variable kaolinisation.
.1 Biotite The groundmass consists of ultrafine quartz & feldspar, variably
.1 Opaque devitrified, with spherulites & fine crystal fragments in places.
23. Groundmass Many clasts have eutaxitic structure.

Location 0925

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0925

Road cutting

CANBERRA sheet area 1:250,000
6067537 m N
766014 m E

ARALUEN sheet area 1:100,000
air-photo:un-no.= 1-5253
35.50000 S latitude
149.9327 E longitude

NSW GDOM=1

Illustrations :1 Colour slide

Age/Unit= Ordovician
Topography: GENTLY SLOPING RISES IN DISSECTED AREA dip=57E strike=002
Structure : STEEPLY DIPPING WITH OUTCROP-SCALE FOLDS
Field Geology: Andalusite slate. Really semi-slate as cleavage poorly defined. Massive with visible muscovite defining cleavage. Grades into thin beds of black graphitic shale. Cut by small weathered aplitic dyke.

Field Rockname: SAMPLE CA0925 ANDALUSITE SLATE

PHYSICAL PROPERTIES:

SLATE
DENSITIES
Whole rock density = 2.52
Dry density = 2.40
Grain density = 2.60
Porosity = 7.7

MAGNETIC SUSCEPTIBILITY (S.I. = .000001)

Mean of 10 in-situ readings = 389
from 0 to 565, SD= 200
Laboratory susceptibility = 276
Remanence = 4.00
Koenigsberger ratio = .24

GAMMA-RAY SPECTROMETRY

Ch.1= 53324
Ch.2= 4633 3.93 X K20
Ch.3= 903 2.56 ppm U
Ch.4= 994 19.29 ppm Th
U/Th= .13
5.77 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Slate	Laminated to thin bedded; microfaulted
5.	Andalusite		Lamination & thin bedding defined by variations in grain size and restriction of randomly-oriented scattered andalusite porphyroblasts to the finest-grained layers. Andalusite euhedra are altered to fine sericite & biotite especially on fringes where it is opacitised by weathering. The remainder of the finest layers consists of quartz, muscovite & pale green pleochroic biotite with scattered opaque mineral & a closely spaced cross-cutting cleavage delineated by graphite which terminates abruptly against coarser layers. The coarse layers of silt grade consist of internally massive quartz, muscovite, pale green biotite & opaque mineral. They lack graphite & are also lacking cleavage.
50.	Quartz		
10.	Muscovite		
31.	Biotite		
4.	Opaque		

Location 0926

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0926

Road cutting

CANBERRA ARALUEN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5253
6062737 m N 35.54312 S latitude
766380 m E 149.9383 E longitude

Illustrations :

Age/Unit= Upper Devonian COMERONG VOLCANICS

Topography: SLIGHT RISE IN LOWLAND AREA WITHIN HIGH dip= strike=

Structure :

Field Geology: Basalt. Varying degrees of alteration, some parts with vesicles and others lack them. Phenocrysts of plagioclase in places. Minor epidote and chlorite present. Oxidation of ferromagnesian minerals to hematite in places. Minor net-vein fracturing on hand-specimen scale.

Field Rockname: SAMPLE CA0926 VESICULAR BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.96
Dry density = 2.88
Grain density = 2.88
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I. *.000001)

Mean of 10 in-situ readings = 3367
from 0 to 6660 ,SD= 1870
Laboratory susceptibilit, = 7690
Remanence = 100.00
Koenigsberger ratio = .22

GAMMA-RAY SPECTROMETRY

Ch.1= 13561
Ch.2= 831 .57 % K2O
Ch.3= 244 .84 ppm U
Ch.4= 254 4.91 ppm Th
U/Th= .17
1.49 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION:

NAME: Altered basalt
FABRIC: Vesicular; non porphyritic; subophitic
Est. X MINERAL FABRIC: Laths of plagioclase amidst anhedral pink titaniferous augite, minor
45. Plagioclase skeletal magnetite altering to goethite, & interstitial glass
25. Augite pseudomorphed by chlorite. Scattered vesicles filled mainly with
20. Chlorite epidote & minor quartz. Slight epidotisation of basalt immediately
5. Epidote surrounding vesicles & accompanying development of hematite & red
1. Hematite earthy hematite. Rare pyrrhotite & calcite.
2. Magnetite
2. Goethite
.01 Pyrrhotite
.1 Calcite
.1 Quartz

Location 0927

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0927
Road cutting

SAME LOCATION AS 0928

CANBERRA ARALUEN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5253
6061638 m N 35.55288 S latitude
766900 m E 149.9444 E longitude

Illustrations :

Age/Unit= Upper Devonian MERIMBULA FORMATION
Topography: GENTLY SLOPING DISSECTED UPLAND dip=57E strike=023
Structure : MODERATELY DIPPING WITH STEEPLY DIPPING CLEAVAGE IN SILTSTONE 80F.
Field Geology: Quartzose sandstone and siltstone interbedded. The sandstone is medium to coarse-grained, poorly sorted and slightly feldspathic. Minor silica component in matrix. Clasts include chert and argillaceous chert. The siltstone is red and massive.
Field Rockname: SAMPLE CA0927 SANDSTONE

PHYSICAL PROPERTIES:

DENSITIES		SANDSTONE		MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.30	Mean of 15 in-situ readings =	0	Ch.1=	34821		
Dry density =	2.59	from to ,SD=		Ch.2=	2738	2.13 % K2O	
Grain density =	2.61	Laboratory susceptibility =	113	Ch.3=	621	.81 ppm U	
Porosity =	.0	Remanence =	6.00	Ch.4=	759	14.82 ppm Th	
		Koenigsberger ratio =	.88	U/Th=	.05		
				3.5% Heat generation units			

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Quartzose sandstone	
76.	Quartz		Moderately sorted; tightly packed grains
15.	Rock fragments		Subangular to subrounded sand-sized clasts of quartz with lesser plagioclase, orthoclase, microcline, & lava & sedimentary rock fragments, & rare detrital opaque mineral. The clasts are cemented by quartz, presumably derived from dissolution of quartz grains, which do not have grain coatings. Weak sutured grain contacts in places.
3.	Plagioclase		
.1	Opaque		
5.	Orthoclase		
1.	Cement		

Location 0928

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0928
Road cutting

SAME LOCATION AS 0927

CANBERRA ARALUEN NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-5253
6061639 m N 35.55288 S latitude
766882 m E 149.9442 E longitude

Illustrations :

Age/Unit= Upper Devonian

MERIMBULA FORMATION

Topography: GENTLY SLOPING DISSECTED UPLAND dip=57E strike=023

Structure : MODERATELY DIPPING WITH CLEAVAGE IN SILTSTONE DIPPING 80E

Field Geology: Quartzose sandstone and siltstone interbedded. The sandstone is medium to coarse-grained, poorly sorted and slightly feldspathic. Minor silica component in matrix. Clasts include chert and argillaceous chert. The siltstone is red and massive.

Field Rockname: SAMPLE CA0928 RED SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.38
Dry density = 2.34
Grain density = 2.71
Porosity = 13.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 0 in-situ readings =
from to ,SD=
Laboratory susceptibility = 138
Remanence = 4.00
Koenigsberger ratio = .48

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Siltstone Massive
15.	Quartz		Scattered angular to subrounded randomly distributed quartz and feldspar
1.	Plagioclase		grains with abundant detrital muscovite & ?diagenetic opaque mineral,
5.	Muscovite		all set in a mud matrix stained red by fine particles of earthy
1.	Orthoclase		hematite.
2.	Opaque		
3.	Hematite		
73.	Mud		

Location 0929

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0929
Road cutting

ULLADULLA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-38
6061315 m N 35.55447 S latitude
228262 m E 150.0022 E longitude

Illustrations :

Age/Unit= Upper Devonian COMERONG VOLCANICS
Topography: DISSECTED,RUGGED UPLAND dip=90 strike=012
Structure : SOME UNITS INTENSELY JOINTED AND CLEAVED.PLANAR FLOW BANDING
Field Geology: Rhyolite and cleaved rhyolitic tuff. The rhyolite has planar flow
banding, is mainly massive, and sparsely brecciated. Sparsely
porphyritic in quartz and feldspar.

Field Rockname: SAMPLE UD0929 RHYOLITE

PHYSICAL PROPERTIES: RHYOLITE

DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.59 Mean of 14 in-situ readings = 1059 Ch.1= 77646
Dry density = 2.57 from 125 to 4523,SD= 1413 Ch.2= 6617 5.52 X K2O
Grain density = 2.59 Laboratory susceptibility = 87 Ch.3= 1353 3.99 ppm U
Porosity = .0 Remanence = 35.00 Ch.4= 1466 28.43 ppm Th
Koenigsberger ratio = 6.70 U/Th= 14
8.57 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	77.46	0.20	12.34	1.00	0.01	0.06	0.07	2.41	5.31	0.04	0.06	0.90	99.86
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	552	-6	134	-1	-1	-5	84	3	20	15	33	232	
TRACE ELEMENT	Sc	Sr	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	12	-20	52	-5	24	3	-1	9	92	39	257		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Rhyolite
FABRIC: Porphyritic; sparingly microstylolitic
Est. % MINERAL
1. Quartz Rare phenocrysts of fractured rounded & resorbed volcanic quartz,
.5 Plagioclase surrounded by narrow micrographic reaction rims. Lesser but larger
.1 Muscovite phenocrysts of extensively sericitised plagioclase. The groundmass
10. Sericite consists of densely packed microglobules of feldspar, slightly
89. Groundmass sericitised, which may formerly have been spherulites. They have
.1 Opaque margins with frequent larger sericite. Rare flattened cavities lined
& filled with muscovite, sericite, quartz, & plagioclase microlites
of random orientation. Rare microstylolites delineated by fill of
opaque material & muscovite. Very rare scattered opaque mineral.

Location 0930

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0930

Road cutting

ULLADULLA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
6058974 m N air-photo:run-no.= 6-38
231835 m E 35.57653 S latitude
150.0408 E longitude

Illustrations :

Age/Unit: Ordovician

Topography: STEEPLY DISSECTED HIGHLAND

dip=33N strike=080

Structure : GENTLY DIPPING CLEAVAGE WITH STEEP PLUNGING MINERAL LINEATION

Field Geology: Lustrous muscovite-rich slate with prominent lineation. Massive. Deeply weathered.

Field Rockname: SAMPLE UD0930 SLATE

PHYSICAL PROPERTIES: SLATE

DENSITIES
Whole rock density = 2.43
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 11 in-situ readings = 22
from 0 to 125 ,SD= 50
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 49125
Ch.2= 2978 1.78 % K20
Ch.3= 999 2.13 ppm U
Ch.4= 1151 22.40 ppm Th
U/Th= .10
5.54 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Slate	
		Microcrenulated;	laminated
10.	Quartz	Lamination defined by variable proportions of the different mineral constituents. Muscovite with minor biotite are the dominant minerals present. Quartz occurs in microlenticular bodies between mica foliae.	
70.	Muscovite		
16.	Biotite		
4.	Opaque	Randomly scattered opaque mineral. The rock is moderately ferruginised by weathering.	

Location 0931

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.-(7962)0931
Road cutting

ULLADULLA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-38
6057429 m N 35.59072 S latitude
232889 m E 150.0519 E longitude

Illustrations :

Age/Unit= NELLIGEN GRANODIORITE
Topography: STEEPLY DISSECTED HIGHLAND REGION dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Mainly equigranular, non-porphyrific, and coarse-grained.
Quartz-rich. Leucocratic, with minor small biotite crystals. Small
biotite-rich xenoliths in places.

Field Rockname: SAMPLE UD0931 BIOTITE ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.61
Dry density = 2.62 Mean of 13 in-situ readings = 4359
Grain density = 2.01 from 1382 to 5529, SD= 1075
Porosity = .0 Laboratory susceptibility = 4636
Remanence = 20.00
Koenigsberger ratio = .07
Ch.1= 48495
Ch.2= 4000 3.45 X K20
Ch.3= 798 3.84 ppm U
Ch.4= 738 14.16 ppm Th
U/Th= .27
5.59 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	F2O5	SO3	LOI	SUM
Weight %	72.40	.38	13.86	2.63	.07	.75	1.71	3.69	3.80	.13	.02	.40	99.83
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	667	-6	44	8	8	73	34	-3	9	-5	16	144	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	8	46	200	-5	12	4	27	5	30	39	167		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL
25. Quartz Isolated to slightly connected patches of slightly strained quartz
30. Orthoclase amidst euhedral variably-sericitised zoned plagioclase with clear rims
37. Plagioclase & often in clusters. Interstitial kaolinised orthoclase. Abundant
7. Biotite dark brown to deep yellow pleochroic biotite, some specimens of which
.1 Muscovite are lightly to considerably altered to dark green chlorite with rare
.05 Apatite accompanying liberation of sphene & muscovite. Rare apatite euhedra
01 Sphene frequently as inclusions in biotite. Scattered magnetite anhedra
.2 Magnetite frequently adjacent to, or as inclusions in biotite. Rare ilmenite and
.001 Pyrite trace pyrite liberated in the most altered biotites. Trace zircon.
.01 Ilmenite
.001 Zircon

Location 0932

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0932
Dozer scrape

UL:ADULLA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-36
6050422 m N 35.65613 S latitude
241573 m E 150.1454 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: GENTLE RISE IN DISSECTED LOWLAND dip=90 strike=158
Structure : STEEPLY CLEAVED; MASSIVE
Field Geology: Sericite-rich slate grading imperceptibly to fine greywacke. Mostly massive.

Field Rockname: SAMPLE UD0932 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES
Whole rock density = 2.47
Dry density = 2.44
Grain density = 2.68
Porosity = 8.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 0
from to SD=
Laboratory susceptibility = 62
Remanence = .10
Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 48759
Ch.2= 4301 3.59 X K20
Ch.3= 925 4.13 ppm U
Ch.4= 883 16.98 ppm Th
U/Th= .24
6.27 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Greywacke
FABRIC: Poorly sorted to weakly porphyroblastic
15. Quartz Angular to subrounded clasts of variably strained quartz with less
.1 Rock fragments common detrital muscovite, plagioclase, & quartzite & sericitite
3. Biotite lithic fragments. Scattered porphyroblasts of ovoid biotite granules,
3. Muscovite muscovite aggregates & similarly shaped clusters of biotite together
1. Opaque with muscovite. The matrix consists of cherty silica mixed with
78. Matrix micaceous mud in slightly variable proportions which define weak
.01 Tourmaline bedding. The matrix also has wavy discontinuous sheaths of ?former
.5 Plagioclase graphite now limonitised by weathering, but which define a cleavage.
Rare pygmatically folded quartz veinlets consisting of variable
coarsened, strained cherty quartz.

Location 0933

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0933

Outcrop

ULLADULLA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-32
6061699 m N 35.55995 S latitude
263058 m E 150.3858 E longitude

Illustrations :

Age/Unit= Mesozoic
Topography: ROCKY HEADLAND
Structure : PLUTON
Field Geology: Gabbroic rock. Melanocratic. Inequigranular, medium and coarse-grained,
and porphyritic in augite. Slightly micaceous.

TERMEIL ESSEXITE

dip= strike=

Field Rockname: SAMPLE UD0933 GABBRO

PHYSICAL PROPERTIES:

GABBRO

DENSITIES
Whole rock density = 2.97
Dry density = 2.94
Grain density = 2.95
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 82251
from 72005 to 93493, SD= 7398
Laboratory susceptibility = 84144
Remanence = 1500.00
Koenigsberger ratio = .30

GAMMA-RAY SPECTROMETRY

Ch.1= 16827
Ch.2= 1824 1.83 % K20
Ch.3= 199 .86 ppm U
Ch.4= 192 3.70 ppm Th
U/Th= .23
1.59 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Gabbro
FABRIC: Subophitic

Est. %	MINERAL	
50.	Plagioclase	Interlocking laths of plagioclase between abundant unaltered augite anhedral often in clusters. Scattered smaller ragged hornblende, altered to actinolite with liberation of chalcopyrite specks variably altered to bornite. Scattered dark brownish-yellow biotite and magnetite anhedral. Rare apatite euhedral & interstitial orthoclase.
35.	Augite	
3.	Biotite	
5.	Hornblende	
.05	Apatite	
3.	Orthoclase	
4.	Magnetite	
.1	Chalcopyrite	
.2	Bornite	

Location 0934

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0934

Road cutting

ULLADULLA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-80
6089621 m N 35.30928 S latitude
266623 m E 150.4331 E longitude

Illustrations :

Age/Unit= Mesozoic MILTON MONZONITE
Topography: INSELBERG UPLAND IN BROAD TOPOGRAPHIC LOW dip= strike=
Structure : PLUTON
Field Geology: Monzonite. Melanocratic. Inequigranular, medium-to coarse-grained, and
porphyritic in augite and plagioclase set in a medium-grained groundmass
of the same minerals, and which is slightly green altered. Rare quartz
and calcite veins.
Field Rockname: SAMPLE UDO934 MONZONITE

PHYSICAL PROPERTIES:

MONZONITE
DENSITIES
Whole rock density = 2.74
Dry density = 2.67
Grain density = 2.71
Porosity = 1.5

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 39223
from 27143 to 49008 ,SD= 6835
Laboratory susceptibility = 40840
Remanence = 680.00
Koenigsberger ratio = .28

GAMMA-RAY SPECTROMETRY

Ch.1= 47731
Ch.2= 4866 4.67 % K2O
Ch.3= 675 3.20 ppm U
Ch.4= 629 12.08 ppm Th
U/Th= 26
5.11 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
47.	Plagioclase	Monzonite	Porphyritic; gabbroic
30.	Orthoclase		Large phenocrysts of euhedral plagioclase amidst a much finer mass of interlocking plagioclase laths with uniformly scattered anhedral orthoclase, ferromagnesian & lesser opaque minerals. The ferromagnesian minerals consist of garnet altering to actinolitic hornblende, with abundant smaller augite & rare phlogopite.
2.	Garnet		
10.	Augite		
1.	Phlogopite		
2.	Xenoliths		Scattered magnetite frequently altered along margins & fractures to goethite. Rare hematite anhedral often adjacent to phlogopite. Rare specks of bornite, & apatite euhedra.
2.	Magnetite		
.05	Apatite		
5.	Hornblende		
.01	Bornite		
.1	Hematite		
1.	Goethite		

Location 0935

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0935
Outcrop

ULLADULLA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 7-38
6044486 m N 35.71190 S latitude
250549 m E 150.2426 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: GENTLY SLOPING LOWLAND AT SEA LEVEL dip=79W strike=003
Structure : STEEPLY DIPPING WITH MINOR MESOSCOPIC-SCALE SLUMP FOLDING.
Field Geology: Mudstone, slightly slaty in places. Massive and sparsely micaceous.
Bedding defined by graphite-rich layers. Minor intraformational slump
folding of mesoscopic- to outcrop-scale.

Field Rockname: SAMPLE UD0935 MUDSTONE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.51	Mean of 15 in-situ readings =	0	Ch.1=	49767
Dry density =	2.41	from to ,SD=		Ch.2=	4308 3.59 % K2O
Grain density =	2.75	Laboratory susceptibility =	12	Ch.3=	899 3.11 ppm U
Porosity =	12.2	Remanence =	.10	Ch.4=	535 18.09 ppm Th
		Koenigsberger ratio =	.14	U/Th=	.17
				5.83	Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
20.	Quartz	Mudstone	Massive; microslumping present
3.	Muscovite		Scattered silt-sized quartz grains & muscovite fragments, with small microporphyroblasts of light green biotite amidst mud partially
4.	Biotite		resolvable as clay-mica material much of which is oxidised by weathering. The rock has a cleavage defined by discontinuous laminae
72.	Mud		of ?graphite. Slight variations in abundance of quartz define weak bedding, though coarser quartzose layers tend to be dismembered by
1.	Opaque		slumping.

Location 0936

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0936

Outcrop

ULLAGULLA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-78
6040043 m N 35.74742 S latitude
233429 m E 150.0521 E longitude

Illustrations :

Age/Unit=

BUCKENBOWRA GRANODIORITE

Topography: GENTLY SLOPING LOWLAND SURROUNDED BY ABRUPT UPLAND dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Equigranular, non-porphyrific. Medium- to slightly coarse-grained. Mesocratic with scattered biotite and hornblende. Visible accessory sphene. Contains minor phases of porphyritic biotite microadamellite nearby.

Field Rockname: SAMPLE UD0936 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Whole rock density = 2.70
Dry density = 2.65
Grain density = 2.70
Porosity = 1.8

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 14 in-situ readings = 12261
from 9801 to 16336, SD= 1457
Laboratory susceptibility = 14614
Remanence = 100.00
Koenigsberger ratio = .11

GAMMA-RAY SPECTROMETRY

Ch.1= 32986
Ch.2= 2795 2.28 X K20
Ch.3= 576 2.83 ppm U
Ch.4= 528 10.13 ppm Th
U/Th= .28
4.00 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	S.O2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	67.00	.60	16.06	4.02	.09	1.25	3.19	3.91	2.76	.20	.05	.60	99.73

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	606	-6	78	9	5	112	59	-3	11	6	18	99

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	13	-5	374	-5	7	-3	55	-5	25	58	180

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL: Variably sized patches of strained quartz aggregates. Euhedral, 20. Quartz
40. Plagioclase lightly sericitised plagioclase zoned with clear rims. Abundant
33. Orthoclase interstitial orthoclase poikilitically enclosing sericitised
7. Biotite plagioclase also zoned with clear rims. Orthoclase is very lightly
.1 Chlorite kaolinised. Abundant biotite with dark brown to light yellow
.005 Allanite pleochroism, & rarely altering to dark green chlorite with rare
.01 Apatite liberation of muscovite, ilmenite & leucoxene. Rare free allanite,
.01 Muscovite zircon, & sphenc. Scattered magnetite. Numerous apatite inclusions
.2 Magnetite in biotites. Rare traces of pyrite rimmed by goethite.
.01 Ilmenite
.005 Pyrite
.001 Goethite
.005 Sphene
.01 Zircon

Location 0937

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0937

Road cutting

ULLADULLA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1
air-photo:run-no.= 8-78

6035726 m N

35.78788 S latitude

239359 m E

150.1162 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLY SLOPING, CLOSELY DISSECTED UPLAND

dip=87E strike=005

Structure : STEEPLY DIPPING

Field Geology: Greywacke, massive, fine-grained, and slightly cleaved, grading
imperceptibly to slate. Infrequent quartz-rich laminae define bedding.
Minor muscovite on bedding surfaces. Minor white quartz veins.

Field Rockname: SAMPLE UD0937 GREYWACKE

PHYSICAL PROPERTIES:

GREYWACKE

DENSITIES
Whole rock density = 2.57
Dry density =
Grain density =
Porosity =

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 54
from 0 to 251 ,SD= 78
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =

GAMMA-RAY SPECTROMETRY

Ch.1= 54563
Ch.2= 4050 3.27 % K2O
Ch.3= 903 2.96 ppm U
Ch.4= 953 18.45 ppm Th
U/Th= .16
5.72 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Greywacke

Est. %

MINERAL

FABRIC:

Massive; poorly sorted

25.

Quartz

Randomly scattered fine sand-sized subangular to subrounded clasts of quartz with minor detrital plagioclase, muscovite, opaque mineral and zircon. The matrix consists of mud, partially resolvable as sericite, impure cherty silica & oxidised graphite platelets which define a weak cleavage. Slight limonite staining caused by weathering.

1.

Muscovite

4.

Opaque

.01

Zircon

.5

Biotite

1.

Plagioclase

69.

Mud

Location 0938

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0938
Outcrop

ULLADULLA NSW CSOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-58
6025938 m N 35.87562 S latitude
238608 m E 150.1047 E longitude

Illustrations :

Age/Unit= POLLWOMBRA GRANODIORITE
Topography: GENTLY UNDULATING LOWLAND dip= strike=
Structure : PLUTON
Field Geology: Granodiorite. Equigranular, medium-grained, leucocratic, quartz-rich.
Minor biotite, and biotite-rich xenoliths. Minor small phases of
pegmatite. Rare discontinuous layering in places.

Field Rockname: SAMPLE UD0938 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.64 Mean of 10 in-situ readings = 0 Ch.1= 31045
Dry density = 2.60 from to SD= Ch.2= 2471 2.06 % K2O
Grain density = 2.64 Laboratory susceptibility = .12 Ch.3= 539 2.59 ppm U
Porosity = 1.7 Resonance = 2.00 Ch.4= 499 9.58 ppm Th
Koenigsberger ratio = 2.78 3.71 U/Th= .27 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	76.26	.12	13.29	1.44	.04	.20	1.21	5.03	1.72	.06	.02	.40	99.79
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	299	-6	85	-1	5	46	56	-3	14	-5	14	66	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	-5	164	-5	14	-3	8	10	23	32	96		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Granodiorite	Hypidiomorphic granular
25.	Orthoclase		Scattered irregular patches of slightly strained quartz aggregates.
46.	Plagioclase		Abundant plagioclase, zoned & with sericitised cores with rare liberation of muscovite & chlorite. These have clear unaltered rims.
4.	Biotite		Lesser orthoclase surrounds & forms interstitially between plagioclase & other constituents. Brown to light yellow unaltered biotite with rare radioactive zircon & apatite inclusions. Rare opaque mineral.
.001	Zircon		
.005	Apatite		
.1	Opaque		
.01	Muscovite		

Location 0939

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0939
Quarry

CANBERRA sheet area 1:250,000
ARALUEN sheet area 1:100,000
NSW GDOM=1
air-photo:run-no.= 6-5180
6032674 m N
499846 m E
35.85000 S latitude
***** E longitude

Illustrations :

Age/Unit= Upper Devonian
Topography: STEEPLY DISSECTED UPLAND AND LOWLAND dip= strike=
Structure : MASSIVE,JOINTED
Field Geology: Rhyodacite. Porphyritic with quartz, plagioclase and K feldspar
phenocrysts set in a very fine-grained groundmass. Subchondoidal
fracture. Planar wispy flow banding in places. Mainly massive. Trace
oxidised pyrite smears on some microjoint faces.
Field Rockname: SAMPLE CA0939 RHYODACITE

PHYSICAL PROPERTIES: RHYOLITE

DENSITIES
Whole rock density = 2.63
Dry density =
Grain density =
Porosity =
MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 3585
from 1005 to 7665 ,SD= 1904
Laboratory susceptibility = 0
Remanence = .00
Koenigsberger ratio =
GAMMA-RAY SPECTROMETRY
Ch.1= 64027
Ch.2= 5458 4.57 % K2O
Ch.3= 1162 5.02 ppm U
Ch.4= 1124 21.64 ppm Th
U/Th= .23
7.84 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.81	.02	12.32	2.19	.01	.22	.10	3.34	4.88	.04	.08	.70	99.71
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	739	-6	115	-1	5	9	94	-3	20	-5	32	234	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	-20	65	-5	24	7	2	17	97	57	258		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Rhyodacite
FABRIC: Porphyritic; flow banded microstylolitic
Est. # MINERAL
2. Quartz
1. Orthoclase
1. Plagioclase
3. Opaque
94. Groundmass
Scattered phenocrysts of rounded & embayed volcanic quartz with lesser orthoclase & plagioclase. The quartz phenocrysts are fringed by weak reaction rims. The highly felsic groundmass has undergone recovery & grain growth to form an equant mass of lightly sericitised feldspar grains with opaque impurities expelled to grain boundaries. Flow banding delineated by planar discontinuous bands of opaque mineral. Rare microstylolites delineated by opaque mineral fillings.

Location 0940

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0940

Outcrop

ULLADULLA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-60

6026349 m N

35.87097 S latitude

234321 m E

150.0574 E longitude

Illustrations :

Age/Unit=

MOLFNDOORA GRANODIORITE

Topography: GENTLY UNDULATING LOWLAND

dip= strike

Structure : PLUTON

Field Geology: Granodiorite. Equigranular, non-porphyrific, medium- to slightly coarse-grained, leucocratic, with minor biotite. Rare small biotite-rich xenoliths.

Field Rockname: SAMPLE UD0940 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES

Whole rock density = 2.69

Dry density = 2.65

Grain density = 2.68

Porosity = 1.0

MAGNETIC SUSCEPTIBILITY (S.I.=.000001)

Mean of 12 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 314

Remanence = 2.00

Koenigsberger ratio = .11

GAMMA-RAY SPECTROMETRY

Ch.1= 27623

Ch.2= 2183 1.81 X K20

Ch.3= 479 2.22 ppm U

Ch.4= 450 8.65 ppm Th

U/Th= .26

3.27 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.14	.42	15.06	3.47	.09	1.50	2.63	4.08	2.72	.16	.03	.50	99.80

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	708	-6	45	9	7	119	52	-3	14	-5	10	84

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	8	295	-5	8	-3	37	-5	26	52	172

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
25.	Quartz	Granodiorite	Hypidiomorphic granular
25.	Orthoclase		Scattered unconnected patches of variably strained quartz aggregates amidst euhedral strongly-sericitised plagioclase with clear rims,
45.	plagioclase	P	often poikilitically enclosed in orthoclase. Scattered brown to light yellow pleochroic biotite, rarely altering to chlorite and sphene.
5.	Biotite		Rare apatite inclusions and infrequent larger free crystals in places.
.1	Apatite		Very rare hornblende slightly altered to green ?biotite. Essentially free of opaque minerals in this thin section.
.01	Opaque		
.01	Sphene		
.01	Chlorite		
	Hornblende		

Location 0941

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0941
Quarry

ULLADULLA NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-58
6022677 m N 35.90543 S latitude
239527 m E 150.1138 E longitude

Illustrations :

Age/Unit= MORUYA TONALITE
Topography: GENTLY SLOPING LOWLAND dip= strike=
Structure : PLUTON
Field Geology: Granodiorite. Equigranular, coarse-grained, prominently spotted with large euhedral hornblende crystals and lesser smaller biotites. Mesocratic. Numerous biotite-rich, and dioritic xenoliths up to 50cm long in places. Trace oxidised sulphide mineral in places.
Field Rockname: SAMPLE UD0941 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.72 Ch.1= 31262
Dry density = 2.69 Mean of 15 in-situ readings = 929 Ch.2= 2634 2.26 % K2O
Grain density = 2.70 from 0 to 3769 .SD= 928 Ch.3= 581 4.23 ppm U
Porosity = .0 Laboratory susceptibility = 741 Ch.4= 416 7.82 ppm Th
Remanence = 2.00 U/Th= .54
Koenigsberger ratio = .04 4.47 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	65.64	.58	16.19	4.10	.08	1.83	4.12	4.06	2.36	.18	.04	.20	99.38
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	543	-6	31	16	29	84	44	-3	10	12	10	65	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	16	-5	355	-5	5	-3	71	-5	22	49	162		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granodiorite	
		Hypidiomorphic granular	
25.	Quartz	Scattered patches of quartz in aggregates with relict subgrain boundaries indicating crystallisation from formerly much finer material. Euhedral zoned plagioclase, often in aggregates or amidst interstitial kaolinised orthoclase. Scattered green hornblende, and brown to yellow pleochroic biotite rarely altering to chlorite and sphene. Small apatite inclusions in biotite & hornblende. Scattered free zircon. Rare clusters of euhedral allanite. Rare ilmenite, magnetite & very rare chalcopyrite.	
40.	Plagioclase		
28.	Orthoclase		
3.	Hornblende		
4.	Biotite		
.1	Apatite		
.01	Zircon		
.01	Sphene		
.01	Allanite		
.01	Magnetite		
.02	Ilmenite		
.001	Chalcopyrite		

Location 0942

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0942
 Road cutting

ULLADULLA NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 9-58
 6019959 m N 35.92958 S latitude
 238307 m E 150.0994 E longitude

Illustrations :

Age/Unit= MORUYA TONALITE
 Topography: GENTLY SLOPING LOWLAND WITH LOCAL HIGHS dip= strike=
 Structure : PLUTON
 Field Geology: Tonalite. Equigranular, coarse-grained, with abundant euhedral plagioclase. Mesocratic and prominently spotted owing to euhedral hornblende, and biotite. Slightly altered adjacent to minor diorite dykes, where trace epidote, chlorite and sulphide. Xenoliths.
 Field Rockname: SAMPLE UD0942 TONALITE

PHYSICAL PROPERTIES:

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.76	Mean of 13 in-situ readings =	15282	Ch.1=	18206
Dry density =	2.73	from 11:84 to 20106 .SD=	3092	Ch.2=	1665 1.47 % K2O
Grain density =	2.75	Laboratory susceptibility =	14476	Ch.3=	299 1.07 ppm U
Porosity =	.8	Remanence =	300.00	Ch.4=	308 5.95 ppm Th
		Koenigsberger ratio =	.35	U/Th=	.18
				Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	61.19	1.03	16.72	5.97	.10	2.59	4.74	4.52	1.88	.29	.07	.60	99.71
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	537	-6	46	20	24	111	32	-3	11	18	25	62	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	-5	447	-5	-5	-3	126	6	33	69	232		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Granodiorite
	FABRIC:		Hypidiomorphic granular
15.	Quartz		Euhedral to anhedral plagioclase in clusters, often zoned & variably sericitised particularly in cores. Scattered green-brown pleochroic hornblende, generally euhedral where free but anhedral adjacent to abundant yellow-brown pleochroic biotite. Hornblende is very slightly altered to blue-green pleochroic hornblende with liberation of minor sphene. Biotite contains rare zircon inclusions. Minor apatite both free & as inclusions in biotite. Scattered euhedral to anhedral magnetite with minor euhedral ilmenite, rare pyrite fringed by goethite, & very rare chalcopyrite occur often in clusters as inclusions in the altered biotites.
66.	Plagioclase		
6.	Orthoclase		
8.	Biotite		
4.	Hornblende		
.005	Apatite		
1.	Magnetite		
.1	Ilmenite		
.001	Pyrite		
.001	Goethite		
.001	Chalcopyrite		
.005	Sphene		
.01	Zircon		

Location 0943

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0943

Road cutting

BEGA

NSW

GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-149

6008098 m N

36.03633 S latitude

238110 m E

150.0933 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLY UNDULATING LOWLAND

dip=75W strike=002

Structure : STEEPLY DIPPING

Field Geology: Greywacke and slightly-slaty mudstone. Poorly cleaved. Planar laminated, thin to thick bedded, but massive within individual beds. Muscovite in greywacke. Minor intraformational slump folding. Immature, poorly sorted, labile, rapidly deposited.

Field Rockname: SAMPLE BG0943 MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE

DENSITIES

Whole rock density = 2.57

Dry density = 2.45

Grain density = 2.82

Porosity = 13.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 11 in-situ readings = 114

from 0 to 251, SD= 88

Laboratory susceptibility = 439

Remanence = .70

Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY

Ch.1= 44103

Ch.2= 3729 3.12 X k20

Ch.3= 752 1.95 ppm U

Ch.4= 837 16.26 ppm Th

U/Th= .12

4.69 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. #	MINERAL	NAME:	Mudstone
20.	Biotite	FABRIC:	Massive; microporphyroblastic
1.	Opaque		Ovoid microporphyroblasts of pale yellowish-green variably pleochroic biotite, & scattered opaque mineral randomly distributed throughout
5.	Quartz		a muddy matrix partially resolvable as randomly-oriented finer pale green to colourless pleochroic biotite with patchy finer interstitial
74.	Mud		chalcedonic quartz.

Location 0944

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0944
 Road cutting

BEGA NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air photo:run-no.= 2-61
 5997713 m N 36.12978 S latitude
 237916 m E 150.0877 E longitude

Illustrations :

Age/Unit= BODALLA ADAMELLITE
 Topography: GENTLY UNDULATING LOWLAND WITH LOW RISES dip= strike=
 Structure : PLUTON
 Field Geology: Adamellite. Leucocratic, medium to slightly coarse-grained,
 equigranular, sparsely porphyritic in plagioclases which are slightly
 larger than in groundmass. Quartz rich. Some xenoliths of fine-
 grained diorite, and biotite-rich rock up to 30 cm long.
 Field Rockname: SAMPLE BG0944 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 13 in-situ readings = 19		Ch.1= 30826	
Whole rock density = 2.57		from 0 to 125 ,SD= 47		Ch.2= 3286	3.21 % K2O
Dry density = 2.64		Laboratory susceptibility = 326		Ch.3= 429	2.31 ppm U
Grain density = 2.66		Remanence = 2.00		Ch.4= 376	7.19 ppm Th
Porosity = .0		Koenigsberger ratio = .10		U/Th= .32	
				3.39	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.48	.33	14.63	2.68	.06	.62	2.22	4.90	2.54	.13	.06	1.00	99.67
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	732	-6	44	8	2	75	31	3	12	-5	231	69	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	7	-5	276	5	6	-3	20	8	16	44	158		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	Adamellite
	FABRIC:		Hypidiomorphic granular
40.	Quartz		Strain-free quartz often in clusters with embayed margins. Abundant
25.	Orthoclase		plagioclase, as phenocrysts & small euhedral crystals, variably
30.	Plagioclase		sericitised in cores but with clear rims. The smaller plagioclases are
3.	Biotite		poikilitically enclosed in interstitial anhedral, lightly kaolinised
1.	Chlorite		orthoclase. Scattered dark brown to brownish-yellow biotite, rarely
1.	Muscovite		altering to chlorite, minor epidote & sphene. Accessory muscovite
.1	Epidote		in clusters within rare cavities, & as plates in strongly sericitised
.001	Zircon		plagioclase. Accessory opaque mineral & rare zircon.
.1	Opaque		

Location 0945

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0945

Road cutting

BEGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-251
5977743 m N 36.30947 S latitude
237465 m E 150.0760 E longitude

Illustrations :

Age/Unit= Cretaceous DROMEDARY IGNEOUS COMPLEX
Topography: STEEP SMOOTHLY SLOPING ABRUPT UPLAND dip= strike=
Structure : PLUTON
Field Geology: Monzonite. Medium to coarse-grained, equigranular, non porphyritic.
Abundant hornblende and biotite. Weak layering defined by
discontinuous planar streaks of dark minerals in places. Melanocratic.
Layering strikes east and dips vertically.
Field Rockname: SAMPLE BG0945 MONZONITE

PHYSICAL PROPERTIES:

MONZONITE		GAMMA-RAY SPECTROMETRY	
DENSITIES		Ch.1= 43400	
Whole rock density = 2.85	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	Ch.2= 4799	4.78 % K2O
Dry density = 2.79	Mean of 13 in-situ readings = 45074	Ch.3= 557	2.64 ppm U
Grain density = 2.82	from 10807 to 57805 ,SD= 15509	Ch.4= 519	9.97 ppm Th
Porosity = 1.0	Laboratory susceptibility = 52791	U/Th= .26	
	Remanence = 1500.00	4.43 Heat generation units	
	Koenigsberger ratio = .47		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Monzonite	
		Gabbroic; slightly monzonitic	
36.	Plagioclase		Large randomly-oriented, euhedral plagioclase laths with abundant
40.	Orthoclase		interstitial anhedral orthoclase poikilitically enclosing small
15.	Augite		plagioclase crystals in places. Abundant pale green augite with
.1	Hypersthene		numerous inclusions of apatite & biotite. Scattered plates of
.1	Hornblende		biotite with inclusions of apatite, augite & magnetite. Rare
6.	Biotite		hypersthene, green hornblende & interstitial quartz. Scattered
1.05	Magnetite		magnetite, in places intergrown with & exsolving ilmenite. Rare
.5	Ilmenite		chalcocopyrite.
.01	Chalcocopyrite		
.2	Apatite		
.5	Quartz		

Location 0946

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0946

Outcrop

BEGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-161
5986706 m N 36.23033 S latitude
243285 m E 150.1437 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: HEADLAND dip=90 strike=152
Structure : STEEPLY INCLINED,SUBTLE IGNEOUS LAYERING WITH CLEAVAGE PARALLEL TO IT
Field Geology: Altered basalt, with deformed flattened elongate pillows. Phenocrysts of altered plagioclase set in a fine, light green groundmass. Some units have thin layering; others are massive but have large vesicles of calcite up to 2.5 cm.
Field Rockname: SAMPLE BG0946 ALTERED BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.82
Dry density = 2.79
Grain density = 2.84
Porosity = 1.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 393
from 0 to 628 ,SD= 176
Laboratory susceptibility = 502
Remanence = .20
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 32994
Ch.2= 3753 3.79 X K20
Ch.3= 408 1.98 ppm U
Ch.4= 376 7.21 ppm Th
U/Th= .27
3.33 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
50.	Calcite	Altered basalt
15.	Plagioclase	Vesicular
5.	Chlorite	A highly altered rock with abundant vesicles of calcite & less frequent smaller vesicles of chlorite, minor sericite & rare muscovite. Scattered laths of plagioclase. The groundmass is highly altered & calcitised. Stumpy plagioclase crystals & scattered opaque minerals form part of it.
3.	Opaque	
26.	Groundmass	
.5	Muscovite	
1.	Sericite	

Location 0947

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0947
Outcrop

BEGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-161
5978770 m N 36.30165 S latitude
242764 m E 150.1353 E longitude

Illustrations :1 slide, Photomicrograph

Age/Unit= Ordovician
Topography: HEADLAND dip=75SW strike=130
Structure : CHAOTICALLY FOLDED SEQUENCE TRENDING NORTHWEST
Field Geology: Black chert, well bedded in planar thin to medium beds. Interbeds of planar white quartz which become veins along bedding. Numerous cross-cutting white quartz veins which swell into "blows" in places. Cut by small altered basaltic dyke.
Field Rockname: SAMPLE BG0947 BLACK CHERT

PHYSICAL PROPERTIES: CHERT

DENSITIES
Whole rock density = 2.61
Dry density = 2.58
Grain density = 2.63
Porosity = 2.0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 12
from 0 to 125 ,SD= 35
Laboratory susceptibility = 62
Remanence = 4.00
Koenigsberger ratio = 1.08

GAMMA-RAY SPECTROMETRY

Ch.1= 22435
Ch.2= 1471 1.05 % K20
Ch.3= 561 6.43 ppm U
Ch.4= 203 3.47 ppm Th
U/Th= 1.85
4.81 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
95.	Quartz	Chert	Stylolitic; laminated; microveinlets
5.	Graphite		Bedding defined by graphite laminae & stylolaminae & by variation in its abundance from layer to layer. The most quartzose laminae and thin beds contain ovoid chalcidonic quartz aggregates pseudomorphing radiolarians which are surrounded by fine cherty silica. The rock is crossed by veinlets of quartz, some of which are pygmatically folded. Photograph stylolites adjacent to pygmatic folds.

Location 0948

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0948

Outcrop

BEGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-161

5978121 m N

36.30757 S latitude

243044 m E

150.1382 E longitude

Illustrations :3 Colour slides

Age/Unit= Ordovician

Topography: HEADLAND

dip=80SW strike=135

Structure : HIGHLY CONTORTED MESOSCOPIC-SCALE FOLDING

Field Geology: Phyllite, Graphitic and slaty with lenticular discontinuous laminae and thin beds of ultrafine white quartz. Cut by narrow basaltic dykes which are highly altered and weathered. Cut also by white quartz veins, some of which are layered.

Field Rockname: SAMPLE BG0948 PHYLLITE

PHYSICAL PROPERTIES:

PHYLLITE

DENSITIES

Whole rock density = 2.35

Dry density = 2.32

Grain density = 2.75

Porosity = 15.9

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 226

Remanence = 60.00

Koenigsberger ratio = 4.42

GAMMA-RAY SPECTROMETRY

Ch.1= 29413

Ch.2= 2496 2.08 % K2O

Ch.3= 601 4.60 ppm U

Ch.4= 411 7.69 ppm Th

U/Th= .60

4.64 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. % MINERAL NAME: Phyllite
FABRIC: Crenulated

60. Quartz
1. Muscovite
8. Chlorite
30. Sericite
1. Graphite

Crinkled layers of cherty quartz with variable degrees of coarsening, interlayered with sericite & minor light brown chlorite. Minor muscovite & disseminated opaque graphite. The thickest quartz-rich layers have developed lenticular forms of boudin-like character.

Location 0949

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0949
Outcrop

BEGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-161
5978236 m N 36.30655 S latitude
243122 m E 150.1391 E longitude

Illustrations :

Age/Unit= Cretaceous DROMEDARY IGNEOUS COMPLEX
Topography: HEADLAND dip= strike=
Structure : INTRUSION OF INDETERMINATE GEOMETRY
Field Geology: Augite lamprophyre. Phenocrysts of augite up to 1 cm diameter set in
medium-grained groundmass of plagioclase, pyroxene, biotite and minor
pyrite.

Field Rockname: SAMPLE BG0949 LAMPROPHYRE

PHYSICAL PROPERTIES:

LAMPROPHYRE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density = 1.66		Mean of 15 in-situ readings =	5853	Ch.1=	28055
Dry density = 2.77		from 879 to 45238 ,SD=	12179	Ch.2=	3296 3.46 % K2O
Grain density = 2.77		Laboratory susceptibility =	2048	Ch.3=	301 2.28 ppm U
Porosity = .0		Remanence =	170.00	Ch.4=	208 3.90 ppm Th
		Koenigsberger ratio =	1.38	U/Th=	.59
					2.87 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Lamprophyre	
5.	Augite	Gabbroic; porphyritic	
73.	Plagioclase	Scattered phenocrysts of euhedral augite with narrow marginal alteration to secondary amphibole, set amidst abundant randomly-oriented, interlocking plagioclase laths between scattered actinolite & phlogopite. Minor interstitial kaolinised orthoclase & less common quartz. Accessory apatite. Scattered skeletal pyrite & less common magnetite with exsolution lamellae of ilmenite. Trace tiny chalcocopyrite.	
5.	Actinolite		
5.	Phlogopite		
2.	Quartz		
5.	Orthoclase		
.01	Apatite		
5.	Pyrite		
.001	Chalcocopyrite		
.1	Magnetite		
.001	Ilmenite		

Location 0950

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0950
Road cutting

BEGA NSW GDM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 4-249
5969592 m N 36.38343 S latitude
760438 m E 149.9034 E longitude

Illustrations :

Age/Unit= BEGA BATHOLITH
Topography: GENTLY UNDULATING LOWLAND WITH RISES dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Moderately leucocratic, coarse-grained, inequigranular,
glomeroporphyritic in chloritised hornblende. Groundmass is medium to
coarse-grained with bladed hornblende euhedra and small biotites.
Small fine-grained xenoliths. Minor felsic dykes.
Field Rockname: SAMPLE BG0950 ADAMELLITE

PHYSICAL PROPERTIES: ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.04 Ch.1= 46935
Dry density = 2.67 Mean of 15 in-situ readings = 10832 Ch.2= 3578 2.83 X K20
Grain density = 2.70 from 9424 to 12817 SD= 1047 Ch.3= 856 3.57 ppm U
Porosity = 1.0 Laboratory susceptibility = 37 Ch.4= 839 16.17 ppm Th
Remanence = 65.00 U/Th= .22
Koenigsberger ratio = 29.28 5.61 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 65.28 .63 15.31 4.13 .05 2.02 3.69 4.42 2.69 .18 .08 1.50 99.99
TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 510 7 64 16 26 145 47 -3 13 18 14 125
TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 10 7 406 -5 9 4 80 9 19 38 165

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
20. Quartz Lenticular to blocky interconnected patches of quartz amidst strongly
43. Plagioclase sericitised euhedral plagioclase with narrow clear rims. Interstitial
30. Orthoclase anhedral orthoclase is lightly kaolinised. Scattered large blue-green
3. Hornblende pleochroic hornblende lightly altered to pale green hornblende, and
3. Biotite containing inclusions of sphene. Scattered biotite usually extensively
1. Epidote altered to dark-green chlorite, bright yellow epidote & minor
.001 Zircon leucoxene. Rare pyrite, scattered titanmagnetite & ilmenite. Very
.2 Pyrite rare apatite & zircon.
.1 Magnetite
.01 Ilmenite
.1 Sphene
.01 Apatite

Location 0951

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0951

Road cutting

BEGA

1:250,000 sheet area 1:100,000 sheet area NSW GDOM=1

5938961 m N

air-photo:run-no.= 7-123

738630 m E

36.66493 S latitude

149.6700 E longitude

Illustrations :

Age/Unit=

BEGA BATHOLITH

Topography: GENTLY UNDULATING DISSECTED LOWLAND

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Mesocratic, coarse-grained, inequigranular, porphyritic in plagioclase and hornblende set in a quartz-feldspathic groundmass with small biotites. Numerous small xenoliths of dioritic rocks, some with plagioclase phenocrysts. Minor chlorite veinlets.

Field Rockname: SAMPLE BG0951 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Who'e rock density = 2.71

Dry density = 2.69

Grain density = 2.69

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 8367

from 6031 to 10807, SD= 1593

Laboratory susceptibility = 8645

Remanence = 25.00

Koenigsberger ratio = .05

GAMMA-RAY SPECTROMETRY

Ch.1= 49014

Ch.2= 4027 3.33 % K2O

Ch.3= 873 3.55 ppm U

Ch.4= 863 16.64 ppm Th

U/Th= .21

5.80 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.30	.62	14.94	4.81	.08	1.59	3.75	3.45	2.83	.14	.04	1.10	99.67

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	663	-6	65	11	17	68	37	4	10	12	14	129

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	25	128	207	-5	13	4	93	11	43	51	214

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Adamellite	
20.	Quartz	Hypidiomorphic granular	
30.	Orthoclase	Scattered globular patches & interstitial fillings of slightly-strained embayed quartz amidst abundant variably-sized, euhedral, zoned	
43.	Plagioclase	strongly-sericitised plagioclase often in clusters surrounded by	
3.	Hornblende	lightly kaolinised orthoclase. The ferromagnesian minerals occur in	
2.	Biotite	scattered clusters & consist of brown-green pleochroic hornblende	
1.	Chlorite	altering to light blue-green pleochroic hornblende, together with	
.1.	Epidote	brown-yellow pleochroic biotite somewhat altered to dark-green	
.1	Apatite	chlorite & bright yellow epidote. Rare accessory apatite. Scattered	
.5	Ilmenite	large pyrrhotite aggregates in biotite clusters, scattered smaller	
.001	Pyrite	ilmenite & very rare pyrite & zircon.	
.5	Pyrrhotite		
.001	Zircon		

Location 0952

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0952

Road cutting

BEGA

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 6-89

5945522 m N

36.61223 S latitude

711599 m E

149.3660 E longitude

Illustrations :

Age/Unit=

BEGA BATHOLITH

Topography: MODERATELY RUGGED ROCKY UPLAND

dip= strike=

Structure: PLUTON

Field Geology: Adamellite. Coarse-grained, equigranular, non porphyritic, mesocratic. Consists of large quartz, greenish sericitised plagioclase, orthoclase, hornblende, with smaller biotite and minor oxides. Xenoliths of dioritic rocks.

Field Rockname: SAMPLE BG0952 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

Whole rock density = 2.63

Dry density = 2.69

Grain density = 2.71

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 14 in-situ readings = 11857

from 10555 to 13446 .SD= 867

Laboratory susceptibility = 967

Remanence = 80.00

Koenigsberger ratio = 1.38

GAMMA-RAY SPECTROMETRY

Ch.1= 39745

Ch.2= 3404 2.86 X K20

Ch.3= 672 1.50 ppm U

Ch.4= 769 14.96 ppm Th

U/Th= .10

4.13 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.06	.60	15.14	5.15	.08	1.48	4.42	3.20	2.88	.12	.04	.60	99.77

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	500	-6	58	16	19	76	42	-3	7	9	9	137

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	22	-5	152	-5	16	-3	108	-5	37	47	166

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
 FABRIC: Hypidiomorphic granular

Est. % MINERAL

15. Quartz Scattered unconnected patches of lightly fractured & strained quartz with euhedral plagioclase zoned & variably altered to minor sericite muscovite & epidote. Abundant euhedral hornblende & lesser, smaller plagioclase & epidote.

20. Orthoclase Abundant small zircon euhedra & less common apatite. Abundant interstitial orthoclase & microcline. Scattered pyrrhotite & rare pyrite, magnetite & ilmenite, all occurring in clusters associated with ferromagnesian minerals.

24. Plagioclase

15. Hornblende

5. Biotite

.05 Zircon

.1 Epidote

20. Xenoliths Microxenolith of medium-grained diorite with abundant small pyrite crystals.

.01 Apatite

.1 Magnetite

.1 Ilmenite

.1 Pyrite

.7 Pyrrhotite

Location 0953

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0953
Outcrop

BEGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-83
5955721 m N 36.52453 S latitude
691843 m E 149.1427 E longitude

Illustrations :

Age/Unit= Tertiary
Topography: FLAT TERRACED PLATEAU; LITTLE ERODED dip= strike=
Structure : HORIZONTAL FLOWS
Field Geology: Basalt, fine-grained with microphenocrysts of olivine and augite set in
a groundmass rich in plagioclase. Some olivine nodules and other
xenoliths present.

Field Rockname: SAMPLE BG0953 BASALT

PHYSICAL PROPERTIES: BASALT

DENSITIES
Whole rock density = 2.37
Dry density = 2.87
Grain density = 2.87
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 15 in-situ readings = 6266
from 1382 to 10053, SD= 2440
Laboratory susceptibility = 238
Remanence = 850.00
Koenigsberger ratio = 59.52

GAMMA-RAY SPECTROMETRY
Ch.1= 19923
Ch.2= 1338 .99 % K20
Ch.3= 370 1.70 ppm U
Ch.4= 349 6.71 ppm Th
U/Th= .25
2.42 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Basalt
FABRIC: Porphyritic; intergranular
Est. % MINERAL
10. Olivine Small phenocrysts of olivine, variably altering to bowlingite & set
20. Augite within a groundmass of fine-grained interlocking plagioclase laths
67. Plagioclase with interstitial pink titaniferous augite often in clusters.
3. Magnetite Scattered titaniferous magnetite.

Location 0954

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0954

Outcrop

BEGA

1:250,000 sheet area 1:100,900 sheet area air-photo:run-no.= 6-79

5955161 m N

36.53243 S latitude

677050 m E

148.9777 E longitude

Illustrations :

Age/Unit=

BUCKLEYS LAKE ADAMELLITE

Topography: ROCKY RISE IN GENTLY UNDULATING AREA

dip= strike=

Structure : PLUTON

Field Geology: Granite, Very leucocratic, equigranular, medium-grained, non-porphyrific. Abundant quartz, orthoclase and plagioclase, with minor smaller biotite. Minor aplite dykes.

Field Rockname: SAMPLE BG0954 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES
Whole rock density = 2.63
Dry density = 2.62
Grain density = 2.63
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 2697
from 1256 to 4523, SD= 993
Laboratory susceptibility = 6533
Remanence = 70.00
Koenigsberger ratio = .18

GAMMA-RAY SPECTROMETRY

Ch.1= 59885
Ch.2= 4685 3.82 % K20
Ch.3= 1071 4.92 ppm U
Ch.4= 1011 19.43 ppm Th
U/Th= .25
7.23 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.66	.21	12.93	1.15	.03	.18	1.03	3.99	4.15	.05	.07	.50	99.95

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	593	-6	67	3	3	43	53	-3	17	-5	18	213

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	6	-5	101	-5	5	4	8	10	36	-5	119

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
FABRIC: Hypidiomorphic granular tending slightly granophyric

Est. %	MINERAL	DESCRIPTION
20.	Quartz	Quartz occurs as scattered globular patches, ragged to skeletal bodies with prominent embayed margins partially intergrown with albite & as thin interstitial fillings.
50.	Orthoclase	Scattered subhedral to euhedral plagioclase often in clusters & variably altered to sericite. Abundant lightly-kaolinised perthitic orthoclase. Minor biotite often altered to chlorite & rare muscovite with rare liberation of fluorite. Minor secondary muscovite. Scattered magnetite & rare ilmenite. Minor zircon frequently close to biotite.
26.	Plagioclase	
1.	Muscovite	
1.	Biotite	
1.	Chlorite	
.02	Zircon	
.01	Fluorite	
.7	Magnetite	
.3	Ilmenite	

Location 0955

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0955

Outcrop

BEGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-75
 5958225 m N 36.50617 S latitude
 669631 m E 148.8942 E longitude

Illustrations :

Age/Unit: DALGETY ADAMELLITE

Topography: ROCKY RISES IN GENTLY UNDULATING UPLAND dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Leucocratic, coarse-grained, moderately equigranular, slightly porphyritic in large biotite plates causing spotted appearance. Small groundmass biotite also. Numerous dark, fine-grained igneous rock xenoliths and white magmatic quartz xenoliths.

Field Rockname: SAMPLE BG0955 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
 Whole rock density = 2.44
 Dry density = 2.67
 Grain density = 2.68
 Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 1683
 from 1005 to 2261 ,SD= 382
 Laboratory susceptibility = 2463
 Remanence = 10.00
 Koenigsberger ratio = .07

GAMMA-RAY SPECTROMETRY

Ch.1= 46297
 Ch.2= 3244 2.50 X K20
 Ch.3= 795 2.57 ppm U
 Ch.4= 842 16.30 ppm Th
 U/Th= .16
 4.94 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.36	.60	14.38	4.30	.07	1.67	2.81	2.75	3.76	.16	.06	.90	99.81

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	592	-6	71	16	37	74	44	-3	9	12	23	190

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	21	-5	165	-5	20	6	83	7	40	55	188

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Description
15.	Quartz	Adamellite	Hypidiomorphic granular Scattered patches of lightly strained quartz with rare embayments and poikilitically enclosing small plagioclase & biotite crystals in places. Scattered euhedral sericitised plagioclase with rare liberations of muscovite, & surrounded by clear rims. Scattered dark brown to light yellow pleochroic biotite either unaltered or altered to chlorite with liberations of yellowish epidote & rare muscovite. Abundant interstitial anhedral orthoclase rarely poikilitic with small plagioclases. Scattered accessory apatite & rare zircon. Minor opaque mineral.
23.	Plagioclase		
50.	Orthoclase		
6.	Biotite		
3.	Chlorite		
1.	Muscovite		
1.	Epidote		
.1	Apatite		
1.	Opaque		
.01	Zircon		

Location 0956

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0956
 Road cutting

CANBERRA MICHELAGO ACT GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 3-38
 6053483 m N 35.64562 S latitude
 681912 m E 149.0093 E longitude

Illustrations :

Age/Unit= CLEAR RANGE GRANODIORITE
 Topography: DISSECTED, STEEP, RUGGED UPLAND dip= strike=
 Structure : PLUTON
 Field Geology: Granodiorite. Equigranular, coarse-grained, non porphyritic, mesocratic
 due to scattered biotite. Numerous xenoliths of biotite-rich fine-
 grained rocks.

Field Rockname: SAMPLE CA0956 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
DENSITIES		Mean of 12 in-situ readings = 214		Ch.1= 65313	
Whole rock density = 2.73		from 125 to 314 .SD= 62		Ch.2= 3707	2.37 % K2O
Dry density = 2.70		Laboratory susceptibility = 301		Ch.3= 1232	5.04 ppm U
Grain density = 2.70		Remanence = 8.00		Ch.4= 1215	23.42 ppm Th
Porosity = .0		Koenigsberger ratio = .44		U/Th= .22	
				7.65 Heat generation units	

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	67.94	.61	14.93	4.68	.08	2.10	2.70	2.27	3.47	.16	.07	.90	99.81
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	491	-6	79	16	56	96	56	-3	11	21	21	174	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	17	8	134	-5	19	3	83	11	45	57	201		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Granodiorite	
34.	Quartz	Hypidiomorphic granular tending slightly layered	
48.	Plagioclase	Interconnected globular to lenticular patches of highly strained quartz defining weak layering. Scattered euhedral plagioclase and minor microcline. Aggregates of sericite & pale green muscovite are pseudomorphs after ?cordierite. They are elongated in the direction of weak layering, & have rare inclusions of zircon & tourmaline.	
5.	Orthoclase		
2.	Sericite		
1.	Muscovite		
7.	Biotite	Abundant red-brown to near colourless pleochroic biotite with quinked cleavage, & radioactive inclusions in addition to zircon & apatite.	
1.	Chlorite		
.01	Zircon	The biotite shows slight marginal alteration to chlorite. Minor interstitial secondary muscovite. Very rare opaque mineral and tourmaline. Scattered large crystals of apatite.	
.1	Apatite		
.05	Epidote		
.01	Opaque		
.01	Tourmaline		

Location 0957

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0957
Outcrop

CANBERRA sheet area 1:250,000
6046083 m N
681091 m E

TANTANGARA sheet area 1:100,000
35.71245 S latitude
149.0019 E longitude

ACT GDOM=1
air-photo:run-no.= 4-62

Illustrations :

Age/Unit= SHANNONS FLAT ADAMELLITE
Topography: STEEPLY INCISED RUGGED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Adameellite. Moderately equigranular. Slightly porphyritic in orthoclase.
Coarse-grained. Mesocratic and spotted due to aligned clusters of small
biotites into aggregates. Slightly bluish quartz. Phases of biotite
aplite and pegmatite present in places.
Field Rockname: SAMPLE CA0957 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.65	Mean of 15 in-situ readings = 523	Ch.1= 57388
Dry density = 2.63	from 0 to 1256 SD= 378	Ch.2= 4321 3.53 X K20
Grain density = 2.67	Laboratory susceptibility = 766	Ch.3= 858 .24 ppm U
Porosity = 1.4	Remanence = 30.00	Ch.4= 1124 22.02 ppm Th
	Koenigsberger ratio = .65	U/Th= .01
		4.70 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	69.91	.51	14.47	3.25	.04	1.06	2.77	3.04	3.77	.12	.06	.70	99.69

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	543	-6	82	8	19	52	52	-3	12	9	20	210

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	18	-5	154	-5	22	-3	55	116	51	32	198

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Adameellite
Est. %	FABRIC:	Hypidiomorphic granular
35.	Quartz	Large globular to lenticular patches of highly strained quartz amidst
35.	Orthoclase	clusters of euhedral sericitised plagioclase & poikilitic to
24.	Plagioclase	interstitial orthoclase. Scattered red-brown to near colourless
4.	Biotite	pleochroic biotite, slightly bleached & altered to fine secondary
1.	Chlorite	biotite aggregates, & to chlorite, & epidote in places. Rare muscovite
.1	Apatite	and opaque mineral. Abundant accessory apatite & minor zircon.
.01	Zircon	
.1	Opaque	
.1	Muscovite	
1.	Epidote	

Location 0958

* LACHLAN FOLD BELT of New South Wales. ROCK PROPERTY DATA BASE *

NO.=(7962)0958
Outcrop

CANBERRA TANTANGARA ACT GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-86
6029364 m N 35.86315 S latitude
680804 m E 149.0025 E longitude

Illustrations :

Age/Unit= Ordovician
Topography: DISSECTED STEEPLY SLOPING UPLAND dip=73W strike=003
Structure : STEEPLY DIPPING
Field Geology: Slate, siliceous slate, siliceous greywacke and quartzite interbedded.
Thin to thick and planar bedded, with sharp top and bottom contacts to
beds. Massive within individual units. Specks of biotite and muscovite
present. Highly cleaved.
Field Rockname: SAMPLE CA0958 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE
DENSITIES
Whole rock density = 2.64
Dry density = 2.62
Grain density = 2.62
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
Mean of 11 in-situ readings = 0
from to SD=
Laboratory susceptibility = 62
Remanence = .80
Koenigsberger ratio = .22

GAMMA-RAY SPECTROMETRY
Ch.1= 50172
Ch.2= 3654 2.76 % K2O
Ch.3= 915 2.59 ppm U
Ch.4= 1000 19.40 ppm Th
U/Th= .13
5.54 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Quartzite
FABRIC: Massive
Est. % MINERAL
80. Quartz Lenticular to ovoid "clasts" of highly strained quartz, with scattered
.5 Muscovite plagioclase & rare muscovite, tourmaline & zircon. The matrix consists
.1 Tourmaline of cherty quartz mixed with very fine sericite.
.1 Zircon
1. Plagioclase
19. Matrix

Location 0959

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0959

Outcrop

CANBERRA

TANTANGARA

ACT GDMH-1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-112
 6020997 m N 35.93942 S latitude
 676011 m E 148.9513 E longitude

Illustrations :

Age/Unit=

SHANNONS FLAT ADAMELLITE

Topography: GENTLY UNDULATING WITH TORS

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Inequigranular. Porphyritic in pink orthoclase. Coarse-grained. Leucocratic but spotted due to large biotite plates and much smaller groundmass biotite.

Field Rockname: SAMPLE CA0959 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
 Whole rock density = 2.64
 Dry density = 2.58
 Grain density = 2.48
 Porosity = 2.6

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
 Mean of 15 in-situ readings = 2165
 from 879 to 3330, SD= 631
 Laboratory susceptibility = 1269
 Remanence = 16.00
 Koeningberger ratio = .21

GAMMA-RAY SPECTROMETRY
 Ch.1= 69235
 Ch.2= 4922 3.73 % K20
 Ch.3= 1201 2.69 ppm U
 Ch.4= 1373 26.71 ppm Th
 U/Th= .10
 7.07 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.83	.42	14.18	2.90	.05	.89	2.28	2.75	4.43	.11	.02	.80	99.58

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	644	-6	86	8	20	31	56	-3	11	10	22	229

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	-5	139	-5	23	-3	49	5	55	27	180

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINEERAL	NAME:	FABRIC:
		Adamellite	
45.	Quartz	Hypidiomorphic granular	
28.	Orthoclase	Large ragged interconnected patches of slightly strained quartz.	
23.	Plagioclase	Euhedral plagioclase, variably sericitised with rare liberation of muscovite. In places, plagioclase is poikilitically enclosed in abundant anhedral interstitial orthoclase. Minor large scattered biotite crystals with quinked cleavage, & dark reddish-brown to light yellow pleochroism are slightly bleached & slightly altered to chlorite, yellow epidote & rare stringers of ilmenite. Numerous zircon & larger apatite inclusions in biotite. Very minor scattered magnetite.	
3.	Biotite		
.5	Chlorite		
.1	Apatite		
.3	Epidote		
.01	Zircon		
.01	Muscovite		
.02	Magnetite		
.001	Ilmenite		

Location 0960

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0960

Road cutting

BEGA

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-89

6003771 m N

NSW GDOM=1

669001 m E

36.09588 S latitude

148.8773 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: GENTLY UNDULATING PERCHED LOWLAND

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Siliceous, dark grey, mudstone interbedded with less siliceous variants. Planar, thin to thick bedded, but each rock type is internally massive. Cleaved. Siliceous rocks break with angular blocky fracture.

Field Rockname: SAMPLE BG0960 MUDSTONE

PHYSICAL PROPERTIES:

MUDSTONE

DENSITIES
Whole rock density = 2.74
Dr. density = 2.73
Grain density = 2.73
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)
Mean of 11 in-situ readings = 245
from 0 to 502, SD= 133
Laboratory susceptibility = 301
Remanence = .20
Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 54848
Ch.2= 4450 3.55 % K20
Ch.3= 986 2.20 ppm U
Ch.4= 1128 21.94 ppm Th
U/Th= .10
5.91 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Mudstone
Est. %	MINERAL FABRIC:	Laminated to thin bedded; minor soft-sediment micro-slumping.
20.	Quartz	Bedding defined by small variations in grain size & accompanying
1.	Opaque	greater abundance of quartz in the coarser layers. The quartz grains
1.	Muscovite	are of silt size with interstitial mud partially resolvable as
78.	Mud	sericitic & chloritic material. The interlaminated mud layers are
		similar though lacking in quartz. They also have minor detrital
		muscovite & opaque mineral.

Location 0961

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0961

Outcrop

BEGA NSW GDOM=1
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-89
 6000840 m N 36.12218 S latitude
 669656 m E 148.8852 E longitude

Illustrations :

Age/Unit= CADDIGAT DYKES
 Topography: GENTLY UNDULATING, PERCHED LOWLAND dip= strike=
 Structure :
 Field Geology: Dacitic microgranite. Porphyritic in quartz and plagioclase set in a
 medium-grained groundmass of quartzo-feldspathic material with specks of
 biotite often altering to chlorite that is clustered into aggregates.
 Small micaceous xenoliths.
 Field Rockname: SAMPLE BG0961 DACITIC MICROGRANITE

PHYSICAL PROPERTIES:

DENSITIES
 Whole rock density = 2.72
 Dry density = 2.69
 Grain density = 2.69
 Porosity = .0

MICROGRANITE
 MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 33
 from 0 to 251, SD= 74
 Laboratory susceptibility = 163
 Remanence = .10
 Koenigsberger ratio = .01

GAMMA-RAY SPECTROMETRY

Ch.1= 33328
 Ch.2= 1800 .86 % K2O
 Ch.3= 765 2.77 ppm U
 Ch.4= 785 15.17 ppm Th
 U/Th= .18
 4.49 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.43	.62	15.01	4.10	.04	2.00	3.34	3.43	.78	.15	.07	1.70	99.66

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	341	-6	81	20	57	16	54	-3	8	23	12	36

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	17	-20	370	-5	19	-3	32	8	41	34	211

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
25.	Quartz	Dacitic microgranite
62.	Plagioclase	Porphyritic with slightly micrographic groundmass
3.	Biotite	Phenocrysts of ragged to rounded, strained & mildly resorbed volcanic quartz, as well as extremely sericitised & epidotised euhedral plagioclase, & red-brown biotite altering to chlorite. The groundmass is fine to medium-grained quartz & alkali feldspar, graphically intergrown in places, & with small acicular chlorite pseudomorphs of a ferromagnesian mineral, & accessory sphene, epidote & opaque mineral. Rare micaceous xenoliths. Secondary cavities filled with radiating chlorite occur in groundmass. Accessory zircon & apatite often occur as inclusions in biotite.
.5	Opaque	
.1	Sphene	
.1	Apatite	
.01	Zircon	

Location 0962

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0962
Outcrop

BEGA NSW GDOM-1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-89
5995782 m N 36.16800 S latitude
668271 m E 148.8709 E longitude

Illustrations :

Age/Unit= BERRIDALE BATHOLITH
Topography: VERY GENTLY UNDULATING UPLAND WITH TORS dip= strike=
Structure : PLUTON
Field Geology: Adamellite. Medium to coarse-grained, equigranular, non porphyritic,
spotted due to abundance of large biotite plates and clusters of fine
biotite aggregates.

Field Rockname: SAMPLE BG0962 ADAMELLITE

PHYSICAL PROPERTIES: ADAMELLITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.=.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.64 Mean of 12 in-situ readings = 62 Ch.1= 49460
Dry density = from 0 to 251 .SD= 84 Ch.2= 4490 4.17 % K2O
Grain density = Laboratory susceptibility = 0 Ch.3= 880 9.13 ppm U
Porosity = Remanence = .00 Ch.4= 399 7.09 ppm Th
Koenigsberger ratio = 7.83 U/Th= 1.29 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 74.14 .22 13.34 2.00 .07 .59 .98 2.67 4.86 .13 .12 .90 100.02
TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 362 6 53 12 20 40 28 -3 9 10 45 280
TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 12 11 65 6 10 7 25 12 39 36 101

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Adamellite
FABRIC: Hypidiomorphic granular
Est. % MINERAL FABRIC: Scattered large patches of slightly strained quartz with weakly
25. Quartz embayed margins. Scattered relict euhedral plagioclase pseudomorphed
50. Orthoclase by an aggregate of fine-grained sericite crystals. Abundant anhedral
21. Plagioclase orthoclase & minor interstitial quartz. Minor red-brown to light
3. Biotite yellow pleochroic biotite, slightly bleached & altering to minor
.5 Chlorite chlorite & rare muscovite. Scattered free apatite & smaller crystals
.1 Apatite of it occur as inclusions in biotite. Rare opaque mineral and zircon.
.1 Muscovite
.001 Zircon
.1 Opaque

Location 0963

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0963
Outcrop

BEGA NSW GDOM=1
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-89
5992656 m N 36.19668 S latitude
665251 m E 148.8380 E longitude

Illustrations :

Age/Unit= TARA GRANODIORITE
Topography: MODERATELY UNDULATING GENTLE UPLAND WITH TORS dip= strike=
Structure : PLUTON
Field Geology: Granodiorite. Medium-grained, equigranular, non-porphyratic, leucocratic
, spotted due to abundant biotite plates and lesser hornblende. Numerous
dark, fine, micaceous, biotite-rich xenoliths.

Field Rockname: SAMPLE BG0963 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES
Whole rock density = 2.40
Dry density = 2.69
Grain density = 2.70
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 11686
from 7665 to 15707, SD= 2083
Laboratory susceptibility = 12227
Remanence = 230.00
Koenigsberger ratio = .31

GAMMA-RAY SPECTROMETRY

Ch.1= 29932
Ch.2= 2225 1.80 % K2O
Ch.3= 513 2.26 ppm U
Ch.4= 492 9.47 ppm Th
U/Th= .24
3.43 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.36	.54	15.20	4.56	.09	1.90	4.26	3.74	2.29	.16	.05	.80	99.94
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	548	-6	55	12	15	85	39	-3	11	7	16	94	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	14	46	282	-5	11	4	75	6	27	55	147		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
	Quartz	Granodiorite	Hypidiomorphic granular
30.	Plagioclase		Globular to ragged, slightly interconnected patches of slightly strained quartz, rarely with small altered plagioclase euhedra.
59.	Orthoclase		Abundant euhedral & interlocking crystals of variably sericitised plagioclase, some of which is altered to epidote. Minor interstitial quartz & orthoclase, the latter poikilitically enclosing small plagioclase. Scattered dark brown to light yellow pleochroic biotite altering to chlorite & minor yellow epidote & leucoxene. Minor small scattered euhedral hornblende with green-brown pleochroism. Rare accessory apatite & zircon. Rare scattered magnetite & very rare ilmenite.
1.	Hornblende		
4.	Biotite		
1.	Chlorite		
.5	Epidote		
.1	Apatite		
.1	Magnetite		
.001	Ilmenite		
.01	Zircon		

Location 0964

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0964

Road cutting

BEGA

1:250,000 sheet area 1:100,000 sheet area NSW GDM=1

5973002 m N

air-photo:run-no.= 4-221

661934 m E

36.37435 S latitude

148.8052 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: MODERATELY UNDULATING PERCHED LOWLAND

dip=80NW strike=045

Structure: STEEPLY DIPPING

Field Geology: Black graphitic, andalusite quartzite with abundant graptolites. Medium bedded with thin partings. Lacks cleavage. Andalusite occurs in radiating rosettes. Some interbeds of more argillaceous siliceous rocks present.

Field Rockname: SAMPLE BG0964 ANDALUSITE QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density = 2.56
Dry density = 2.52
Grain density = 2.64
Porosity = 4.6

MAGNETIC SUSCEPTIBILITY (S.I.+0.000001)

Mean of 15 in-situ readings = 0
from to ,SD=
Laboratory susceptibility = 50
Remanence = .60
Koenigsberger ratio = .20

GAMMA-RAY SPECTROMETRY

Ch.1= 42717
Ch.2= 2446 1.37 % K2O
Ch.3= 1093 9.32 ppm U
Ch.4= 667 12.33 ppm Th
U/Th= .76
8.19 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Andalusite-graphite quartzite Porphyroblastic; microstylolitic
10.	Andalusite		Euhedral twinned chiasolite crystals & ovoid globular sericite bodies
10.	Sericite		are randomly distributed within graphitic chert. Lamination is defined
5.	Graphite		by variations in graphite abundance, & frequency of graphite micro-
75.	Quartz		stylolitic laminae.

Location 0965

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0965

Road cutting

BEGA

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 5-53

5966451 m N

36.43595 S latitude

645904 m E

148.6278 E longitude

Illustrations :

Age/Unit=

JINDABYNE TONALITE

Topography: GENTLY UNDULATING UPLAND, STEEPLY DISSECT

dip= strike=

Structure: PLUTON

Field Geology: Tonalite, Mesocratic, equigranular, coarse-grained, slightly porphyritic in hornblende. Spotted due to scattered hornblende and biotite. Small dark fine xenoliths, some occurring in clusters. Slight epidote alteration, and trace chalcopyrite and ?molybdenite on joints.

Field Rockname: SAMPLE BG0965 TONALITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES

MAGNETIC SUSCEPTIBILITY (S.I. x .000001)

GAMMA-RAY SPECTROMETRY

Whole rock density = 2.78

Dry density =

Grain density =

Porosity =

Mean of 15 in-situ readings = 15247

from 9299 to 24001 .SD= 4242

Laboratory susceptibility = 0

Remanence = .00

Koenigsberger ratio =

Ch.1= 53651

Ch.2= 4566 3.80 % K2O

Ch.3= 1057 6.81 ppm U

Ch.4= 832 15.77 ppm Th

U/Th= .43

7.78 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	64.15	.53	15.64	5.13	.09	2.61	5.03	2.75	2.51	.12	.07	.80	99.42

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	469	-6	68	18	26	40	44	-3	8	14	12	102

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	20	-5	211	5	13	-3	108	7	24	45	109

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Tonalite

Est. %	MINERAL	FABRIC:	DESCRIPTION
25.	Quartz	Hypidiomorphic granular	Scattered globular patches of unstrained quartz amidst abundant
5.	Orthoclase		euhedral strongly-sericitised plagioclase with minor interstitial
58.	Plagioclase		anhedral orthoclase showing slight kaolinisation. Scattered subhedral
4.	Hornblende		brown to blueish-green pleochroic hornblende, poikilitic with numerous
6.	Biotite		sericitised plagioclase inclusions. Abundant smaller scattered plates
1.	Chlorite		of dark green-brown to light yellow pleochroic biotite, variably
.2	Epidote		altered, some to minor chlorite, yellow epidote & leucoxene, & the
.1	Apatite		remainder is interleaved muscovite. Scattered accessory apatite and
.1	Muscovite		rare zircon. Scattered minor magnetite & very rare chalcopyrite.
.001	Zircon		
1.	Magnetite		
.001	Chalcopyrite		

Location 0966

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0966

Outcrop

TALLANGATTA

NSW GDDM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6E-303

5956752 m N

36.52778 S latitude

613258 m E

148.2651 E longitude

Illustrations :

Age/Unit=

KOSCIUSKO BATHOLITH

Topography: STEEPLY DISSECTED, RIGGED UPLAND

dip= strike=

Structure : PLUTON

Field Geology: Granodiorite. Equigranular, non-porphyrific, coarse-grained. Mesocratic with abundant biotite. Quartz-rich. Quartz is bluish. Slight layering in places. Numerous biotite-rich, and magmatic quartz xenoliths. Trace muscovite.

Field Rockname: SAMPLE TG0966 GRANODIORITE

PHYSICAL PROPERTIES:

GRANODIORITE

DENSITIES		MAGNETIC SUSCEPTIBILITY (S.I.*.000001)		GAMMA-RAY SPECTROMETRY	
Whole rock density =	2.74	Mean of 11 in-situ readings =	0	Ch.1=	51436
Dry density =	2.74	from to SD=		Ch.2=	3956 3.18 % K2O
Grain density =	2.76	Laboratory susceptibility =	263	Ch.3=	866 2.00 ppm U
Porosity =	2.1	Remanence =	6.00	Ch.4=	985 19.15 ppm Th
		Koenigsberger ratio =	.38	U/Th=	.10
				5.23	Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	68.76	.69	14.79	4.73	.06	1.85	2.28	2.29	3.51	.19	.16	.70	100.01
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Ho	Nb	Ni	Pb	Rb	
p.p.m.	563	-6	77	17	55	92	49	-3	12	21	36	204	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	13	-5	147	-5	18	4	82	8	43	66	215		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL FABRIC:	NAME:
		Granodiorite
		Hypidiomorphic granular
30.	Quartz	Globular to lenticular patches of highly strained quartz amidst
35.	Plagioclase	euhedral to subhedral plagioclase & anhedral orthoclase. Minor
10.	Orthoclase	interstitial fine-grained strained quartz. Abundant wavy to lenticular
20.	Biotite	plates of dark red-brown to light straw pleochroic biotite showing
3.	Muscovite	marginal alteration to green biotite & muscovite. Scattered clots of
2.	Sericite	sericite aggregates probably pseudomorphs of a former mineral. Minor
.1	Apatite	accessory apatite, rare zircon & very rare tourmaline occurring as
.001	Zircon	inclusions in sericite aggregates. Rare opaque mineral.
.1	Opaque	
.001	Tourmaline	

Location 0967

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0967
Road cutting

SAME LOCATION AS 0968

TALLANGATTA

1:250,000 sheet area 1:100,000 sheet ar
5955789 m N
609271 m E

NSW GDOM=2

air-photo:run-no.= 6E-303
36.53692 S latitude
148.2207 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: STEEPLY DISSECTED, RUGGED UPLAND

dip=72E strike=004

Structure : STEEPLY DIPPING

Field Geology: Slate, greywacke, quartzite and minor basalt flow. Medium to thick and planar bedded. Sediments have cleavage parallel to bedding. Basalt has stubby plagioclase phenocrysts and groundmass laths as well as large calcite-filled vesicles.

Field Rockname. SAMPLE TG0967 QUARTZITE

PHYSICAL PROPERTIES:

QUARTZITE

DENSITIES
Whole rock density =
Dry density = 2.48
Grain density = 2.64
Porosity = 6.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 25
from 0 to 125 .SD= 56
Laboratory susceptibility = 0
Remanence = .10
Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 49138
Ch.2= 3232 2.10 % K2O
Ch.3= 1015 3.14 ppm U
Ch.4= 1087 21.06 ppm Th
U/Th= .15
6.01 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Quartzite
Est. %	MINERAL FABRIC:	Massive; microbrecciated; laminated
90	Quartz	Lamination defined by layers of fine muscovite, & bedding defined by presence & absence of muscovite from different layers. Units of massive equigranular slightly strained quartz grain aggregates with scattered ovoid bodies of clay, are interbedded with laminated muscovite quartzite, some of which has slumped to form microbreccia.
.01	Muscovite	
.001	Tourmaline	
.1	Zircon	
7.	Opaque Clay	Rare scattered tourmaline & zircon.

Location 0968

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0968

SAME LOCATION AS 0967

Road cutting

TALLANGATTA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6E-303

5955797 m N

36.53685 S latitude

609262 m E

148.2206 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: STEEPLY DISSECTED, RUGGED UPLAND

dip=72E strike=004

Structure : STEEPLY DIPPING

Field Geology: Slate, greywacke, quartzite and minor basalt flow. Medium to thick and planar bedded. Sediments have cleavage parallel to bedding. Basalt has stubby plagioclase phenocrysts and groundmass laths as well as large calcite-filled vesicles.

Field Rockname: SAMPLE TG0968 VESICULAR BASALT

PHYSICAL PROPERTIES:

BASALT

DENSITIES
Whole rock density = 2.90
Dry density = 2.90
Grain density = 2.94
Porosity = 1.3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 24931
from 2261 to 51899, SD= 18348
Laboratory susceptibility = 51547
Remanence = 2500.00
Koenigsberger ratio = .81

GAMMA-RAY SPECTROMETRY

Ch.1=
Ch.2= % K20
Ch.3= ppm U
Ch.4= ppm Th
U/Th=
Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:
3.	Olivine	Basalt Porphyritic; sparsely vesicular; altered vitrophyric
25.	Plagioclase	Scattered microphenocrysts of augite & olivine, both partially to completely altered to serpentine minerals, as well as sericitised plagioclase & hypersthene, completely altered to muscovite and chlorite. The relict orthopyroxene is resorbed & has a narrow iron-charged reaction rim. Abundant sericitised plagioclase & augite as smaller microphenocrysts in groundmass, which is highly altered to non-resolvable clay-like constituents. Scattered titaniferous magnetite & minor patchy pyrite. Rare vesicles filled with calcite, quartz and sericite in variable proportions.
15.	Augite	
.1	Calcite	
.1	Quartz	
4.	Hypersthene	
50.	Groundmass	
.5	Pyrite	
3.	Magnetite	

Location 0969

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0969
Road cutting

TALLANGATTA NSW GDOM=2
1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6E-307
5955389 m N 36.54105 S latitude
604601 m E 148.1686 E longitude

Illustrations :

Age/Unit= GRASS FLAT GRANITE
Topography: STEEPLY DISSECTED RUGGED UPLAND dip= strike=
Structure : PLUTON
Field Geology: Tonalite. Equigranular, non-porphyrific, medium-grained. Leucocratic,
quartz-rich with minor biotite. Slight layering in places.

Field Rockname: SAMPLE TG0969 TONALITE

PHYSICAL PROPERTIES: GRANODIORITE
DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
Whole rock density = 2.70 Ch.1= 60412
Dry density = 2.65 Mean of 13 in-situ readings = 154 Ch.2= 4726 3.70 % K2O
Grain density = 2.67 from 0 to 1256 SD= 374 Ch.3= 1070 1.85 ppm U
Porosity = 1.0 Laboratory susceptibility = 201 Ch.4= 1270 24.75 ppm Th
Remanence = 3.00 U/Th= .07
Koenigsberger ratio = .25 6.20 Heat generation units

CHEMISTRY:
MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
Weight % 71.47 4.7 14.24 3.49 .05 .96 2.64 3.79 1.35 .16 .04 1.30 99.96
TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
p.p.m. 390 -6 36 9 12 74 26 -3 6 6 13 60
TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
p.p.m. 18 6 257 -5 6 -3 41 5 19 41 248

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Tonalite
Est. % MINERAL FABRIC: Hypidiomorphic granular tending slightly foliated
35. Quartz Interconnected lenticular patches of strained quartz aggregates amidst
61. Plagioclase abundant strongly sericitised & finely-epidotised euhedral plagioclase.
3. Chlorite Scattered interstitial altered brown biotite largely altered to chlorite
.5 Epidote & minor epidote. Rare opaque mineral and accessory apatite. Very rare
.05 Apatite zircon.
.05 Opaque
1. Biotite
.001 Zircon

Location 0970

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0970

Road cutting

TALLANGATTA

NSW GDOM=2

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-67

6000174 m N

36.13742 S latitude

604197 m E

148.1581 E longitude

Illustrations :

Age/Unit= Ordovician

Topography: STEEPLY DISSECTED, MODERATELY SLOPING ULD

dip=85NE strike=145

Structure : STEEPLY DIPPING

Field Geology: Siltstone, largely massive with slight slaty cleavage. Slightly micaceous. Cut by small white quartz veins, segregations, and "blows". Bedding scarcely discernible.

Field Rockname: SAMPLE TG0970 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.42
Dry density = 2.37
Grain density = 2.72
Porosity = 12.7

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 15 in-situ readings = 0
from tc SD=
Laboratory susceptibility = 50
Remanence = .50
Koenigsberger ratio = .17

GAMMA-RAY SPECTROMETRY

Ch.1= 49976
Ch.2= 3697 2.85 % K20
Ch.3= 914 3.30 ppm U
Ch.4= 939 18.15 ppm Th
U/Th= 18
5.79 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
68.	Quartz	Siltstone	Massive to slightly bedded; microslumping; weakly graded
5.	Muscovite		Bedding defined by variable grain size & accompanying greater amount of quartz as grain size increases. Subangular to subrounded fine-sand to silt-sized clasts of quartz, together with randomly oriented detrital muscovite, are set in a matrix of mud now largely consisting of biotite.
2.	Opaque		Minor microporphyroblasts of biotite. Minor stratabound segregations of vein quartz are folded in places.
5.	Mud		

Location 0971

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0971
 Road cutting

TALLANGATTA NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 2-67
 6006339 m N 36.08153 S latitude
 607126 m E 148.1898 E longitude

Illustrations :

Age/Unit= WELLUMBA GRANITE
 Topography: STEEPLY DISSECTED,MOD SLOPING UPLAND dip= strike=
 Structure : PLUTON
 Field Geology: Granite. Mostly quite weathered. Mainly equigranular, though slightly porphyritic in quartz, and infrequent large biotites. Leucocratic. Muscovite-bearing.

Field Rockname: SAMPLE TG0971 GRANITE

PHYSICAL PROPERTIES: GRANITE
 DENSITIES MAGNETIC SUSCEPTIBILITY (S.I.*.000001) GAMMA-RAY SPECTROMETRY
 Whole rock density = 2.60 Mean of 12 in-situ readings = 0 Ch.1= 64249
 Dry density = 2.56 from to ,SD= Ch.2= 4696 3.80 X K20
 Grain density = 2.57 Laboratory susceptibility = 75 Ch.3= 1284 11.67 ppm U
 Porosity = .0 Remanence = 4.00 Ch.4= 722 13.23 ppm Th
 Koenigsberger ratio = .89 U/Th= .88
 10.36 Heat generation units

CHEMISTRY:
 MAJOR ELEMENT SiO2 TiO2 Al2O3 Fe2O3 MnO MgO CaO Na2O K2O P2O5 SO3 LOI SUM
 Weight % 76.08 .05 13.32 .76 .06 .05 .31 3.62 4.54 .06 .05 .90 99.79
 TRACE ELEMENT Ba Bi Ce Co Cr Cu La Mo Nb Ni Pb Rb
 p.p.m. 80 8 39 3 3 23 15 -3 20 -5 28 655
 TRACE ELEMENT Sc Sn Sr Ta Th U V W Y Zn Zr
 p.p.m. 8 25 9 -5 16 20 2 27 50 27 53

DESCRIPTION OF THIN OR POLISHED THIN SECTION

NAME: Granite
 Est. % MINERAL FABRIC: Hypidiomorphic granular
 30. Quartz Globular to ragged patches of variably-sized quartz aggregates with
 45. Orthoclase slight strain extinction. Scattered euhedral to subhedral sericitised,
 20. Plagioclase plagioclase. Minor scattered biotite largely altered to opaque mineral,
 3. Muscovite minor chlorite & rare fluorite. Scattered anhedral muscovite. Abundant
 1. Biotite interstitial anhedral orthoclase with extensive alteration to ?kaolin.
 .1 Fluorite Very rare garnet.
 1. Opaque
 .001 Garnet

Location 0972

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0972
 Outcrop

TALLANGATTA NSW GDOM=2
 1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 1-42
 6009731 m N 36.04993 S latitude
 616050 m E 148.2884 E longitude

Illustrations :

Age/Unit= GREYMARE GRANITE
 Topography: STEEPLY DISSECTED,SLOPING UPLAND:TORS dip= strike=
 Structure : PLUTON
 Field Geology: Adamellite, inequigranular, porphyritic in K-feldspar. Mesocratic with abundant biotite. Medium-to slightly coarse-grained. Numerous biotite-rich, and magmatic quartz xenoliths.

Field Rockname: SAMPLE TG0972 ADAMELLITE

PHYSICAL PROPERTIES:

	ADAMELLITE		
	DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density =	2.74	Mean of 11 in-situ readings =	0
Dry density =	2.71	from to ,SD=	
Grain density =	2.76	Laboratory susceptibility =	100
Porosity =	1.5	Remanence =	5.00
		Koenigsberger ratio =	.83
			5.08 Heat: generation units
			Ch.1= 43228
			Ch.2= 2889 2.06 x K20
			Ch.3= 818 2.99 ppm U
			Ch.4= 837 16.17 ppm Th
			U/Th= .18

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	66.92	.74	14.77	5.27	.07	2.26	2.71	2.40	3.30	.18	.05	1.10	99.77
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	525	-6	72	18	56	118	55	-3	13	25	24	176	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	21	7	156	-5	18	4	96	12	38	78	224		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

	NAME:	Adamellite
Est. %	FABRIC:	Hypidiomorphic granular
25.	Quartz	Scattered patches of variably-strained, weakly resorbed quartz.
28.	Plagioclase	Abundant plagioclase, euhedral with altered cores & clear zoned rims. Interstitial anhedral orthoclase & minor fine sericite aggregates. Abundant red-brown to near colourless pleochroic biotite, bleached & slightly altered to rare chlorite & epidote. Scattered associated minor muscovite, some of which is pseudomorphous after ?cordierite containing rare small inclusions of dark blue tourmaline.
25.	Orthoclase	
15.	Biotite	
.1	Chlorite	
1.	Muscovite	
.1	Apatite	
.01	Zircon	Accessory apatite & zircon occurs both free, & as inclusions in biotite which has abundant radioactive haloes surrounding smaller inclusions. Sericite aggregates pseudomorphous after an unknown pre-existing mineral. Minor opaque mineral.
1.	Opaque	
.001	Tourmaline	
5.	Sericite	
.01	Epidote	

Location 0973

 * LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0973

Road cutting

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 12-5117

6018575 m N

35.96907 S latitude

625339 m E

148.3901 E longitude

Illustrations :

Age/Unit=

GREEN HILLS GRANITE

Topography: STEEPLY DISSECTED, RUGGED UPLAND

dip= strike=

Structure : PLUTON

Field Geology: Adamellite. Inequigranular, medium-to slightly coarse-grained, porphyritic in K-feldspar. Mesocratic with abundant biotite. Numerous biotite-rich xenoliths. Minor fine muscovite.

Field Rockname: SAMPLE WA0973 ADAMELLITE

PHYSICAL PROPERTIES:

ADAMELLITE

DENSITIES
 Whole rock density = 2.69
 Dry density = 2.63
 Grain density = 2.67
 Porosity = 1.2

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)
 Mean of 12 in-situ readings = 10
 from 0 to 125 ,SD= 36
 Laboratory susceptibility = 226
 Remanence = .40
 Koenigsberger ratio = .03

GAMMA-RAY SPECTROMETRY
 Ch.1= 67113
 Ch.2= 6025 5.27 % K20
 Ch.3= 1207 7.15 ppm U
 Ch.4= 1003 19.10 ppm Th
 U/Th= .37
 8.89 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.06	.52	14.33	3.78	.05	1.46	1.61	2.45	3.68	.18	.01	1.70	99.84

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	479	-6	50	15	48	89	48	-3	13	19	37	216

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	16	7	140	-5	14	-3	64	9	31	63	178

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
30.	Quartz	Adamellite	Hypidiomorphic granular to slightly foliated; weakly porphyroblastic
38.	Orthoclase		Lenticular wavy aggregates of fine, strained quartz aggregates with
20.	Plagioclase		minor interwoven sericite, wrapping around poikilitic orthoclase
5.	Biotite		porphyroblasts. Euhedral plagioclase altered to sericite in cores, but
4.	Muscovite		with clear rims. Scattered red-brown to near colourless pleochroic
1.	Chlorite		biotite with quinked cleavage, zircon & apatite inclusions, together
.1	Apatite		with radioactive haloes surrounding smaller inclusions. The biotite
.5	Opaque		is slightly altered to chlorite along some edges. Aggregates of
.001	Topaz		muscovite & chlorite pseudomorphs after ?cordierite containing
2.	Sericite		scattered inclusions. Rare opaque mineral & one grain of ?topaz.
.005	Zircon		

Location 0974

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0974

Road cutting

CANBERRA

TANTANGARA

NSW GDOM=1

1:250,000

sheet area

1:100,000 sheet area

air-photo:run-no.= 4-72

6046927 m N

35.71192 S latitude

637315 m E

148.5180 E longitude

Illustrations :

Age/Unit= Middle Silurian

GOOBARRAGANDRA VOLCANICS

Topography: MODERATELY SLOPING UPLAND WITH OUTCROP

dip= strike=

Structure : STEEPLY DIPPING

Field Geology: Ignimbrite. Phenocrysts of quartz and altered light-green sericitised, and in places, epidotised plagioclase set in a fine-grained groundmass. Trace sulphide mineral.

Field Rockname: SAMPLE CA0974 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES
Whole rock density = 2.68
Dry density = 2.67
Grain density = 2.68
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 0
from to SD=
Laboratory susceptibility = 150
Remanence = 3.00
Koenigsberger ratio = .33

GAMMA-RAY SPECTROMETRY

Ch.1= 55064
Ch.2= 4306 3.38 % K2O
Ch.3= 981 2.12 ppm U
Ch.4= 1128 21.95 ppm Th
U/Th= .10
5.83 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	70.22	0.62	13.39	4.16	0.05	1.63	0.96	4.24	2.75	0.14	0.11	1.40	99.67

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	603	3	79	16	25	14	52	7	12	32	27	90

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	12	24	127	5	14	-3	68	-5	36	45	239

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
12.	Quartz	Ignimbrite	Porphyritic
8.	Plagioclase		Large phenocrysts of fractured to rounded, resorbed volcanic quartz, euhedral sericitised plagioclase often in clusters, as well as biotite showing considerable alteration to chlorite, opaque mineral & brown epidote. The groundmass consists of patchy to acicular chlorite pseudomorphs of ?biotite, small plagioclase laths & fine-grained quartz & feldspar. Minor accessory zircon. Minor xenoliths of chloritised andesite, some of which contain calcite.
4.	Biotite		
1.	Opaque		
73.	Groundmass		
2.	Xenoliths		
.001	Zircon		

Location 0975

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0975

Quarry

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5135

6052984 m N

35.65798 S latitude

632537 m E

148.4642 E longitude

Illustrations :

Age/Unit= Silurian

Topography: MODERATELY SLOPING,UNDULATING UPLAND

dip=26SW strike=142

Structure : GENTLY DIPPING

Field Geology: Mudstone, siltstone, and minor lithic and feldspathic sandstone. Thin to medium bedded with internal lamination in finer units. Closely jointed, with weak fracture cleavage.

Field Rockname: SAMPLE WA0975 SILTSTONE

PHYSICAL PROPERTIES:

SILTSTONE

DENSITIES
Whole rock density = 2.70
Dry density = 2.67
Grain density = 2.67
Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 13 in-situ readings = 309
from 0 to 628 ,SD= 215
Laboratory susceptibility = 816
Remanence = .20
Koenigsberger ratio = .00

GAMMA-RAY SPECTROMETRY

Ch.1= 53063
Ch.2= 4846 : 4.23 % K2O
Ch.3= 881 2.63 ppm U
Ch.4= 952 18.46 ppm Th
U/Th= .14
5.74 Heat generation units

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
		Siltstone	
15.	Quartz		Laminated to thin bedded
2.	Rock fragments		Bedding & lamination defined by interlayered fine sandstone and accompanying greater abundance of quartz, chloritised lithic fragments
3.	Plagioclase		& minor muscovite & plagioclase. The much finer silty layers
1.	Muscovite		consist largely of mud, partially resolvable as mixed sericite and
78.	Mud		chlorite, with minor larger detrital muscovite. Randomly scattered
1.	Opaque		opaque mineral.

Location 0976

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0976

Road cutting

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 8-5139
6061484 m N 35.58280 S latitude
621353 m E 148.3394 E longitude

Illustrations :

Age/Unit= Lower Devonian

BORAIG GROUP

Topography: GENTLY SLOPING, STEEPLY DISSECTED UPLAND

dip= strike=

Structure :

Field Geology: Rhyodacite. Part of a thick sequence of acid lavas, tuffs, conglomerates
, and mudstones. The rhyodacite is sparsely porphyritic in K-feldspar,
weakly flow-banded, and contains patches of siliceous sulphide material.

Field Rockname: SAMPLE WA0976 RHYODACITE

PHYSICAL PROPERTIES:

RHYOLITE

DENSITIES

Whole rock density = 2.58

Dry density = 2.56

Grain density = 2.57

Porosity = .3

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 12 in-situ readings = 0

from to SD=

Laboratory susceptibility = 0

Remanence = 2.00

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 49106

Ch.2= 4018 3.13 % K2O

Ch.3= 929 2.04 ppm U

Ch.4= 1066 20.74 ppm Th

U/Th= .10

5.51 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	73.29	.37	13.44	.81	.01	.52	.30	4.54	5.33	.07	.07	.80	99.54

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	1340	-6	69	4	3	-5	67	-3	10	-5	-5	124

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	10	-20	168	-5	19	4	22	10	37	7	215

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
10.	Plagioclase	Rhyodacite	Porphyritic
2.	Biotite	A slightly altered rock with phenocrysts of plagioclase sparingly altered to epidote & light green pleochroic biotite in places, and lesser orthoclase phenocrysts. The fine-grained quartzo-feldspathic groundmass contains scattered larger patches of quartz, as well as narrow veinlets of secondary light green biotite aggregates which also form rare vughs. Very rare quartz phenocrysts, & chlorite aggregates pseudomorph a former ferromagnesian mineral.	
.1	Epidote		
2.	Opaque		
5.	Quartz		
79.	Groundmass		
2.	Orthoclase		
.1	Chlorite		

Location 0977

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0977

Road cutting

WAGGA WAGGA

1:250,000 sheet area 1:100,000 sheet area

NSW GDOM=1

air-photo:run-no.= 7-5117

6063233 m N

35.56732 S latitude

619020 m E

148.3134 E longitude

Illustrations :

Age/Unit=

BOGONG GRANITE

Topography: STEEP DISSECTED MODERATE SLOPING UPLAND

dip= strike=

Structure : PLUTON

Field Geology: Granite. Very pink and leucocratic. Quartz-rich. Medium-grained, mostly equigranular and slightly porphyritic in feldspar. Minor biotite, and chloritised biotite aggregates. Trace epidote and an oxidised sulphide mineral.

Field Rockname: SAMPLE WA0977 GRANITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES

Whole rock density = 3.18

Dry density = 2.58

Grain density = 2.58

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.+.000001)

Mean of 15 in-situ readings = 1709

from 0 to 6660 .SD= 1924

Laboratory susceptibility = 7213

Remanence = 25.00

Koenigsberger ratio = .06

GAMMA-RAY SPECTROMETRY

Ch.1= 91445

Ch.2= 7349 5.74 % K2O

Ch.3= 1822 7.99 ppm U

Ch.4= 1752 33.72 ppm Th

U/Th= .24

12.00 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.42	.16	12.86	1.03	.01	.08	.40	3.75	4.95	.04	.01	.90	99.61

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	558	-6	113	5	8	28	77	-3	15	-5	21	284

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	5	-5	43	-5	26	8	3	12	61	5	172

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Description
20.	Quartz	Granite	Hypidiomorphic granular tending slightly granophyric
53.	Orthoclase		Ragged to skeletal & partly resorbed patches of quartz amidst euhedral to anhedral lightly-sericitised plagioclase & abundant
25.	Plagioclase		lightly altered anhedral orthoclase. Minor secondary interstitial
1.	Epidote		cavities filled with epidote, biotite or chlorite. Scattered green
.1	Chlorite		biotite, bleached & largely altered to chlorite, and secondary biotite
.1	Opaque		with opaque mineral liberations along cleavages. Minor scattered opaque
1.	Biotite		mineral.

Location 0978

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.=(7962)0978

Road cutting

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 6-5161

6075166 m N 35.46002 S latitude

616701 m E 148.2861 E longitude

Illustrations :

Age/Unit= Upper Silurian

BLOWERING BEDS

Topography: STRIKE RIDGE

dip= strike=

Structure :

Field Geology: Ignimbrite. Porphyritic in quartz and feldspar set in a coarsened quartzo-feldspathic groundmass containing abundant biotite.

Field Rockname: SAMPLE WA0978 IGNIMBRITE

PHYSICAL PROPERTIES:

IGNIMBRITE

DENSITIES	MAGNETIC SUSCEPTIBILITY (S.I.*.000001)	GAMMA-RAY SPECTROMETRY
Whole rock density = 2.59	Mean of 12 in-situ readings = 0	Ch.1= 65904
Dry density = 2.69	from tc ,SD=	Ch.2= 5615 4.74 % K2O
Grain density = 2.70	Laboratory susceptibility = 301	Ch.3= 1114 3.19 ppm U
Porosity = .0	Remanence = 3.00	Ch.4= 1215 23.57 ppm Th
	Koenigsberger ratio = .17	U/Th= .14
		7.07 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	67.74	.73	14.39	5.02	.06	2.11	2.20	2.53	3.45	.17	.08	1.40	99.88
TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb	
p.p.m.	591	-6	80	20	64	47	50	3	13	21	24	155	
TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr		
p.p.m.	18	34	164	-5	18	6	38	11	36	62	214		

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME:	FABRIC:
15.	Quartz	Ignimbrite	Porphyritic
55.	Plagioclase		Abundant densely packed phenocrysts with little groundmass. The phenocrysts include bipyramidal to rounded, corroded & embayed volcanic quartz, sericitised plagioclase, brown biotite altering to lighter coloured secondary biotite, chlorite & opaque mineral, as well as sericite & chlorite-calcite aggregates separately pseudo-morphing pre-existing primary phenocrysts. Rare garnet fragments and altered dacite xenoliths. Scattered opaque mineral. The groundmass consists of devitrified quartz & sericitised feldspar of fine to rarely medium grain size.
10.	Biotite		
1.	Sericite		
1.	Chlorite		
.01	Garnet		
2.	Opaque		
3.	Xenoliths		
13.	Groundmass		
.1	Calcite		

Location 0979

* LACHLAN FOLD BELT of New South Wales, ROCK PROPERTY DATA BASE *

NO.-(7962)0979

Road cutting

WAGGA WAGGA

NSW GDOM=1

1:250,000 sheet area 1:100,000 sheet area air-photo:run-no.= 5-5068

6089155 m N 35.33302 S latitude

624174 m E 148.3663 E longitude

Illustrations :

Age/Unit= BOGONG GRANITE

Topography: MODERATELY SLOPING DISSECTED UPLAND dip= strike=

Structure : PLUTON

Field Geology: Microadamellite. Leucocratic. Inequigranular, sparsely porphyritic in quartz and biotite. Medium-grained. Trace muscovite.

Field Rockname: SAMPLE WA0979 MICROADAMELLITE

PHYSICAL PROPERTIES:

GRANITE

DENSITIES

Whole rock density = 2.72

Dry density = 2.58

Grain density = 2.58

Porosity = .0

MAGNETIC SUSCEPTIBILITY (S.I.*.000001)

Mean of 10 in-situ readings = 0

from to ,SD=

Laboratory susceptibility = 0

Remanence = .10

Koenigsberger ratio = *****

GAMMA-RAY SPECTROMETRY

Ch.1= 51608

Ch.2= 4494 3.87 % K2O

Ch.3= 772 .07 ppm U

Ch.4= 1035 20.30 ppm Th

U/Th= .00

4.30 Heat generation units

CHEMISTRY:

MAJOR ELEMENT	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	LOI	SUM
Weight %	75.42	.12	13.05	1.07	.02	.16	.94	3.56	4.36	.05	.04	.70	99.49

TRACE ELEMENT	Ba	Bi	Ce	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Rb
p.p.m.	736	7	74	3	3	26	49	-3	12	-5	101	216

TRACE ELEMENT	Sc	Sn	Sr	Ta	Th	U	V	W	Y	Zn	Zr
p.p.m.	2	6	98	-5	28	4	4	7	25	8	103

DESCRIPTION OF THIN OR POLISHED THIN SECTION

Est. %	MINERAL	NAME: FABRIC:	Description
35.	Quartz	Microadamellite	Slightly porphyritic in orthoclase which poikilolitically encloses small plagioclases. Scattered small globular patches of quartz amidst zoned euhedral plagioclase with sericitised cores & clear rims. Interstitial quartz & anhedral orthoclase. Scattered former skeletal biotite now completely altered to chlorite & opaque mineral. Rare cavities with fillings of muscovite. Very rare epidote. In a few very altered, former biotites.
25.	Plagioclase	Aplitic	
35.	Orthoclase		
4.	Chlorite		
1.	Opaque		
.1	Muscovite		
.001	Epidote		

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LOC	CONTENT	LOC	CONTENT	LOC	CONTENT	LOC	CONTENT	LOC	CONTENT
C01	Location 0744	O04	Location 0798	M08	Location 0852	K12	Location 0906	I16	Location 0960
D01	Location 0745	P04	Location 0799	N08	Location 0853	L12	Location 0907	J16	Location 0961
E01	Location 0746	C05	Location 0800	O08	Location 0854	M12	Location 0908	K16	Location 0962
F01	Location 0747	D05	Location 0801	P08	Location 0855	N12	Location 0909	L16	Location 0963
G01	Location 0748	E05	Location 0802	C09	Location 0856	O12	Location 0910	M16	Location 0964
H01	Location 0749	F05	Location 0803	D09	Location 0857	P12	Location 0911	N16	Location 0965
I01	Location 0750	G05	Location 0804	E09	Location 0858	C13	Location 0912	O16	Location 0966
J01	Location 0751	H05	Location 0805	F09	Location 0859	D13	Location 0913	P16	Location 0967
K01	Location 0752	I05	Location 0806	G09	Location 0860	E13	Location 0914	C17	Location 0968
L01	Location 0753	J05	Location 0807	H09	Location 0861	F13	Location 0915	D17	Location 0969
M01	Location 0754	K05	Location 0808	I09	Location 0862	G13	Location 0916	E17	Location 0970
N01	Location 0755	L05	Location 0809	J09	Location 0863	H13	Location 0917	F17	Location 0971
O01	Location 0756	M05	Location 0810	K09	Location 0864	I13	Location 0918	G17	Location 0972
P01	Location 0757	N05	Location 0811	L09	Location 0865	J13	Location 0919	H17	Location 0973
Q02	Location 0758	O05	Location 0812	M09	Location 0866	K13	Location 0920	I17	Location 0974
R02	Location 0759	P05	Location 0813	N09	Location 0867	L13	Location 0921	J17	Location 0975
E02	Location 0760	Q06	Location 0814	O09	Location 0868	M13	Location 0922	K17	Location 0976
F02	Location 0761	D06	Location 0815	P09	Location 0869	N13	Location 0923	L17	Location 0977
G02	Location 0762	E06	Location 0816	C10	Location 0870	O13	Location 0924	M17	Location 0978
H02	Location 0763	F06	Location 0817	D10	Location 0871	P13	Location 0925	N17	Location 0979
I02	Location 0764	G06	Location 0818	E10	Location 0872	C14	Location 0926	O17	
J02	Location 0765	H06	Location 0819	F10	Location 0873	D14	Location 0927		
K02	Location 0766	I06	Location 0820	G10	Location 0874	E14	Location 0928		
L02	Location 0767	J06	Location 0821	H10	Location 0875	F14	Location 0929		
M02	Location 0768	K06	Location 0822	I10	Location 0876	G14	Location 0930		
N02	Location 0769	L06	Location 0823	J10	Location 0877	H14	Location 0931		
O02	Location 0770	M06	Location 0824	K10	Location 0878	I14	Location 0932		
P02	Location 0771	N06	Location 0825	L10	Location 0879	J14	Location 0933		
Q03	Location 0772	O06	Location 0826	M10	Location 0880	K14	Location 0934		
R03	Location 0773	P06	Location 0827	N10	Location 0881	L14	Location 0935		
E03	Location 0774	Q07	Location 0828	O10	Location 0882	M14	Location 0936		
F03	Location 0775	D07	Location 0829	P10	Location 0883	N14	Location 0937		
G03	Location 0776	E07	Location 0830	C11	Location 0884	O14	Location 0938		
H03	Location 0777	F07	Location 0831	D11	Location 0885	P14	Location 0939		
I03	Location 0778	G07	Location 0832	E11	Location 0886	C15	Location 0940		
J03	Location 0779	H07	Location 0833	F11	Location 0887	D15	Location 0941		
K03	Location 0780	I07	Location 0834	G11	Location 0888	E15	Location 0942		
L03	Location 0781	J07	Location 0835	H11	Location 0889	F15	Location 0943		
M03	Location 0782	K07	Location 0836	I11	Location 0890	G15	Location 0944		
N03	Location 0783	L07	Location 0837	J11	Location 0891	H15	Location 0945		
O03	Location 0784	M07	Location 0838	K11	Location 0892	I15	Location 0946		
P03	Location 0785	N07	Location 0839	L11	Location 0893	J15	Location 0947		
Q04	Location 0786	O07	Location 0840	M11	Location 0894	K15	Location 0948		
D04	Location 0787	P07	Location 0841	N11	Location 0895	L15	Location 0949		
E04	Location 0788	Q08	Location 0842	O11	Location 0896	M15	Location 0950		
F04	Location 0789	D08	Location 0843	P11	Location 0897	N15	Location 0951		
G04	Location 0790	E08	Location 0844	C12	Location 0898	O15	Location 0952		
H04	Location 0791	F08	Location 0845	D12	Location 0899	P15	Location 0953		
I04	Location 0792	G08	Location 0846	E12	Location 0900	C16	Location 0954		
J04	Location 0793	H08	Location 0847	F12	Location 0901	D16	Location 0955		
K04	Location 0794	I08	Location 0848	G12	Location 0902	E16	Location 0956		
L04	Location 0795	J08	Location 0849	H12	Location 0903	F16	Location 0957		
M04	Location 0796	K08	Location 0850	I12	Location 0904	G16	Location 0958		
N04	Location 0797	L08	Location 0851	J12	Location 0905	H16	Location 0959		