INTERPRETATIVE STRATIGRAPHY and SANDSTONE PETROGRAPHY
of the BURRA GROUP in the PORT GERMEIN GORGE AREA.

by

P. J. McCarthy.

This thesis is submitted as partial fulfilment of the
requirements of the Honours Degree of Bachelor of Science
in Geology at the University of Adelaide, 1974.
ABSTRACT.

The stratigraphy of a clastic-dolomite sequence of the Burra Group and the unconformably overlying tillitic sequence of the Yudnamutana Sub-group, in the Nelshaby Anticline, are described and interpreted. A petrological study of arkosic and dolomitic arkosic sandstones of the Burra Group, indicate these sediments were derived from an igneous plutonic source. It is suggested the arkosic sediments accumulated in response to active tectonism in the source area, rather than aggradation on a peneplaned surface, under adverse climatic conditions. Field and petrological evidence indicated these sediments were deposited in a high energy environment. This has resulted in the tectonic arkoses being texturally mature and not immature as normally expected in tectonic arkoses.
CONTENTS

ABSTRACT.  i
INTRODUCTION.  1

DESCRIPTIVE and INTERPRETATIVE STRATIGRAPHY.

  General.  2
  Rhynie Sandstone.  2
  Skillogalee Dolomite.  6
  Undalya Quartzite.  10
  ? lower Auburn Dolomite Equivalent.  11
  Apilla Tillite.  12

PETROGRAPHY.

  Introduction.  14
  Details of sandstone composition.  15
  Quartz.  16
  Feldspar.  18
  Rock fragments.  19
  Mica.  19
  Accessory minerals.  19
  Matrix.  19

INTERPRETATION.  21

CONCLUSION.  24

Selected photographs and photo-micrographs.  25-30

ACKNOWLEDGEMENTS.  31

REFERENCES, (Including secondary sources).  32

APPENDICES.

  1. Descriptions of measured stratigraphic sections.  A.1
  11. Results of point counting.  A.5
  111. Rock and thin section descriptions.  A.8
  1V. Location of samples and sections.  A.14
Contents. (contd.)

List of Figures.

Figure 1 : Locality Map.
Figure 2 : Geological and Lithofacies Map: (located in folder at the back of the thesis).
Figure 3 : Regional Geology.
Figure 4 : Stratigraphic Correlation.
Figure 5 : Vertical variation in sandstone composition.
Figure 6 : Composition of framework grains.
Figure 7 : Composition of Sandstones.