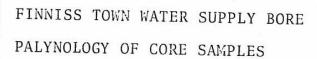
# ECHNICAL SERVICES SECTION

Rept.Bk.No. 78/127





W.K. HARRIS

Department of Mines and Energy
South Australia —

# DEPARTMENT OF MINES AND ENERGY SOUTH AUSTRALIA

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FINNISS TOWN WATER SUPPLY BORE PALYNOLOGY OF CORE SAMPLES

by

W.K. HARRIS BIOSTRATIGRAPHY DIVISION

> D.M. 192/78 G.S. 6090 Rept.Bk. 78/127 Biostrat. Rept. 11/78

### FINNISS TOWN WATER SUPPLY BORE PALYNOLOGY OF CORE SAMPLES

Request submitted: J. Weber, Engineering Division.

Troughbridge Basin (Permian), Murray Basin (Tertiary) Location:

BARKER 1:250 000 sheet (SI 54-13) Milang 1:100 000 sheet (6627-II)

Hundred Alexandrina, Railway Reserve, Finniss. Coordinates East 302350 North 608 0210

Borehole Unit No.: 6627 002 WW 01024

Core Samples and Sample Nos: 48.0-48.4 m S4629 76.0-76.3 m S4614 100.0-100.4 m S4630

Sample S4629 is a dark brown slightly calcareous Observations:

clayey siltstone and yielded the following moderately

well preserved assemblage.

Spores and pollen include:

- Arecipites sp. Cyathidites minor

Cupanieidites orthoteichus

Dilwynites granulatus

Graminidites sp.

Haloragacidites harrisii Lygistepollenites florinii

Malvacipollis diversus Myrtaceidites parvus Nothofagidites asperus

N. brachyspinulosus

N. emarcidus

N. falcatus

N. flemingii

Periporopollenites demarcatus Phyllocladidites mawsonii

Polypodiidites sp.

Proteacidites annularis

P. obscurus

P. pachypolus P. recavus

Retitriletes sp.

Santalumidites cainozoicus

Sapotaceoidaepollenites rotundus

Tricolporites leuros

Verrucosisporites kopukuensis

Microplankton:

- Areosphaeridium multicornutum A. pectiniforme Baltisphaeridium nanum

Chytroeisphaeridia sp. 1133

Cordosphaeridium fibrospinosum Cyclonephelium fibrospinosum

Cyclopsiella elliptica

Dinopterygium cladoides

Diphyes bulbosum

Emmetrocysta urnaformis

Hystrichosphaeridium muratum Impagidinium dispertitum

Membranilarnacia clathroderma

M. angustivela
Membralosphaera maastrichtia
Operculodinium centrocarpum
Palaeostomocystis pachytheca
Paralecaniella indentata
Polysphaeridium pseudocolligerum
Reticulodinium incompositum
Samlandia chlamydophora
S. aff. reticulata
Spiniferites adelaidensis
S. ramosus
Tectatodinium sp. 5131
T. sp. 5130
Thalassiphora pelagica

Microplankton comprise about 10% of the palynomorph assemblage.

Samples S4614 and S4630 are lithologically similar and are medium grey slightly calcareous claystones with scattered medium grained quartz sand. They yielded essentially similar assemblages.

- Calamospora sp.
Emphanisporites sp. (only in S4630)
Florinites ovatus
Ginkgocycadophytus cymbatus
Geminospora cf. lemurata (only in
S4630)
Granulatisporites micronodosus
Horriditriletes ramosus
Krauselisporites sp.
Microbaculispora tentula
Plicatipollenites spp.
Potoniesporites sp.
Protohaploxypinus sp.
Punctatosporites sp.
Retusotriletes sp.
Striatoabietes multistriatus

Spores and pollen include:

Microplankton:
- Leiofusa sp.
Micrhystridium sp.

Plicatipollenites spp. dominate and microplankton comprise about 2% of the assemblage.

### Conclusions:

- 1. Sample S4629 is clearly of early Tertiary age and belongs to the Late Eocene Upper Nothofagidites asperus zone of Stover and Partridge (1973). Both the terrestrial and microplankton components indicate this assignment. The microplankton component is marine and indicates a near shore perhaps tidal flat environment. Lithologically the sediments belong to the Buccleuch Beds.
- 2. Samples S4616 and S4630 are early Permian in age and belong to Stage 2 (Kemp et al. 1978). The assemblages are similar to those recorded elsewhere from the Cape Jervis Beds at Waterloo Bay, Yorke Peninsula, (Foster, 1974) and from Hallett Cove.

Of interest is the occurrence of reworked Devonian species, Emphanisporites sp., Geminospora sp. and Retusotriletes sp., that have been recorded previously from the Cape Jervis Beds at Waterloo Bay (Harris and McGowran, 1971).

The presence of acritarch at this level indicates a limited marine influence.

Lithologically the sediments are part of the Cape Jervis Beds.

W.K. HARRIS SUPERVISING GEOLOGIST.

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