

**WORKSHOP ON ENVIRONMENTAL RADIOCHEMISTRY
AND RADIONUCLIDE MEASUREMENT
PROGRAM**

TUESDAY 18 SEPTEMBER

8.00am to 9.30am Registration

9.30am to 10.00am Welcome and Opening address by Mr Peter Body,
SA Branch President, Royal Australian Chemical
Institute

10.00am to 10.45am SESSION ONE - Environmental Transport I

- (1) Dr. Doug Champ (Atomic Energy of Canada Limited) -
Radionuclide transport in groundwater: limitations to our
predictive capability (D.R. Champ and R.W.D. Killley)

10.45am to 11.05am MORNING TEA

11.05am to 12.30am SESSION TWO - Environmental Transport II
(Groundwater)

- (2) Dr. Bruce Dickson (CSIRO Exploration Geoscience)
Mobilization of natural radionuclides in the acid saline
groundwater of the Lake Tyrrell region, north-west Victoria
(B.L. Dickson and A.L. Herczeg).

- (3) Mr. Paul Martin (OSS Alligator Rivers Region Research Lab.)
Radium isotopes as seepage indicators in the vicinity of a uranium
tailings dam (P. Martin and R. Akber).

- (4) Mr. Tim Payne (ANSTO Isotope Technology Program)
Measurement of uranium in groundwaters: comparison of alpha
spectrometry, Icpms and kpa techniques (T.E. Payne and P.J.
Kenny).

- (5) Dr. Bruce Dickson (CSIRO Exploration Geoscience)
Surface radioactivity on the margin of Lake Tyrrell, north-west
Victoria, generated by recent land clearances (B.L. Dickson and
A.L. Herczeg).

12.30pm to 13.30pm LUNCH

TUESDAY 18 SEPTEMBER (cont.)

13.30pm to 15.00pm SESSION THREE - Environmental Transport III
(Sediments)

(6) Dr. Andrew Murray (CSIRO Water Resources Research)
The use of environmental radionuclides in determining sediment sources (A.S. Murray).

(7) Mr. Peter Wallbrink (CSIRO Water Resources Research)
The use of fallout radionuclides as indicators of surface and sub-surface erosion (P.S. Wallbrink and A.S. Murray).

(8) Mr. Jonathon Olley (CSIRO Water Resources Research)
Mechanisms controlling the distribution of radionuclides in modern sediments (J.M. Olley and A.S. Murray)

(9) Mr. Ray Stanton (CSIRO Water Resources Research)
Tracing sediment in an inaccessible cave system in an impounded karst; Jenolan caves, N.S.W. Australia (R.K. Stanton, J.M. Olley and A.S. Murray).

15.00pm to 15.20pm AFTERNOON TEA

15.20pm to 16.30pm SESSION FOUR - Environmental Transport IV
(Alborne)

(10) Dr. Murray Matthews (New Zealand National Radiation Laboratory)
Natural radioactivity in the atmosphere over New Zealand and Rarotonga (K.M. Matthews).

(11) Dr. Riaz Akber (OSS Alligator Rivers Region Research Laboratory)
A mobile station for automatic environmental radon measurements (R. Akber, S. Whittlestone, J. Pfitzner and R. Marten).

(12) Dr. Murray Matthews (New Zealand National Radiation Laboratory)
Estimation of ^{137}Cs deposition in New Zealand: 1953-1990 (K.M. Matthews).

TUESDAY 18 SEPTEMBER (cont.)

16.30pm to 17.00pm POSTER SESSION I

- (13) A continuous groundwater radon monitor (K.M. Matthews and R.M. Larkin).
 - (14) Radionuclide measurements in acid-saline groundwaters, Dutton River, South Australia (R.Lemard).
 - (15) Tidal mudflats and mangrove swamps - a natural 'sink' for uranium? (A.P. Summerton).
 - (16) Radionuclide uptake in a plant growing in radioactive residues at the former uranium plant, Pt. Pirie (A.P. Summerton and P. Haigh)
 - (17) Plant uptake - a monitor for environmental radionuclides (A.P. Summerton, T. Utteridge and P. Haigh)
- 17.15pm to 18.15pm Welcome Function - Conference Facility

WEDNESDAY 19 SEPTEMBER

9.00am to 10.15am SESSION FIVE - Radiological Impact I

- (18) Dr. Franz Schonhofer (Food Control & Research Institute, Austria)
The nuclear accident at Chernobyl (F. Schonhofer)
- (19) Dr. Malcolm Cooper (Australian Radiation Laboratory)
Radiocaesium in caribou in northern Canada: Impact of the Chernobyl accident (M.B. Cooper and H.M. Marshall).

10.15am to 10.45am MORNING TEA

10.45am to 12.30pm SESSION SIX - Radiological Impact II

- (20) Dr. John McKlveen (Arizona State University)
The Arizona State University Radiation Measurements Facility (J.W. McKlveen).
- (21) Mr. Ray Gliniski (Arizona State University)

The effect of Palo Verde nuclear generating station on its desert environment (R.L. Gliniski Jr. and J.W. McKlveen).

WEDNESDAY 19 SEPTEMBER

SESSION SIX (cont.)

- (22) Mr. Barry Stewart (Arizona State University)

Preparation of samples for alpha spectrometry by co-precipitation on cerous fluoride or barium sulfate (B.D. Stewart).

12.30pm to 13.30pm LUNCH

13.30pm to 14.45pm SESSION SEVEN - Radioecology

- (23) Dr. Steve Short (ANSTO Environmental Radiochemistry Lab.)

$^{210}\text{Pb}/^{226}\text{Ra}$ disequilibrium aging of orange roughy (S.A. Short and G.E. Fenton)

- (24) Dr. Ross Jeffree (ANSTO Environmental Science Program)

Experimental studies of ^{226}Ra and radio-calcium accumulation from the aquatic medium by freshwater turtles (R.A. Jeffree).

- (25) Mr. John Twining (ANSTO Environmental Science Program)

Levels of radionuclides in edible tissues of organisms from Australian coastal waters (R.A. Jeffree and J.R. Twining).

- (26) Dr. Alvin Summerton (SA Health Commission)

Unusual radioecological phenomena in environmental monitoring in South Australia (A.P. Summerton)

15.00pm to 15.20pm AFTERNOON TEA

15.20pm to 16.30pm SESSION EIGHT - Isotope Geology and Chronology

- (27) Mr. John Hutton (Physics Department, University of Adelaide)

Use of thick source alpha counting to study uranium disequilibrium in fossil bones (J.T. Hutton, S.A. Short and K. Newton).

- (28) Mr. Robert Edis (ANSTO Isotope Technology Program)

The distribution of uranium series radionuclides at Koongarra and uranium-element associations (Robert Edis).

- (29) Professor John Prescott (Physics Dept. University of Adelaide)

Field measurements of radionuclides and radiation doses in Australian dune systems (J.T. Hutton, J.R. Prescott, D.J. Huntley)

WEDNESDAY 19 SEPTEMBER (cont.)

16.30pm to 17.00pm POSTER SESSION II

- (30) Low level radiation counting facilities at Olympic Dam Operations (J. Davey).
- (31) ICP-MS Determination of uranium, thorium and rare earths in Samphire (I. Warner, L. Palmer and A.P. Summerton)
- (32) Determination of Ac-227 by alpha-particle spectrometry (G. Hancock, P. Martin and R. Akber).
- (33) Quality assurance for low level gamma spectroscopy using HPGE detectors (R. Marten).
- (34) The use of track detectors in quality assurance in radiation measurements (R. Akber).
- (35) Ranger Uranium Mines environmental monitoring programme (A. Reid)
- 19.30pm to 11.00pm WORKSHOP DINNER - *Peppo Restaurant in 12km out of + overlooking town \$28*

THURSDAY 20 SEPTEMBER

9.00am to 10.20am SESSION NINE - Radioanalytical Methods I

- (36) Mr. Chris Poletiko (French Atomic Energy Commission - LESE)
Chemical separation of Strontium-90 in environmental samples (C. Poletiko, P. Llug, R. Christiany and R. Lemercler).
- (37) Mr. Chris Poletiko (French Atomic Energy Commission - LESE)
Strontium-90 counting by liquid scintillation at environmental level (C Poletiko and P Llug).
- (38) Dr. John Head (Radiocarbon Dating Laboratory ANU)
High sensitivity detection of natural ^{14}C by liquid scintillation spectrometry (M.J. Head and S. Robertson).
- (39) Dr. Franz Schonhofer (Food Control & Research Institute, Austria)
Ultra low-level liquid scintillation counting (F. Schonhofer).

10.20am to 10.45am MORNING TEA

THURSDAY 20 SEPTEMBER (cont.)

10.45am to 12.30pm SESSION TEN - Radioanalytical Methods II

(40) Mr. Gary Hancock (OSS Alligator Rivers Research Institute)

A method for the analysis of all radium isotopes in groundwaters
(G. Hancock and P. Martin).

(41) Dr. David Smith (Inorganic Chemistry Dept. Uni. of Melbourne)

Electrodeposition of radium from solution with added platinum in
preparation for alpha-spectrometry (J.D. Smith, T.F. Hamilton and
V.M. McRae).

(42) Mr. Pat Garland (Olympic Dam Operations South Australia)

Radionuclide separations on environmental samples at Olympic Dam
(G.P. Garland).

(43) Dr. Malcolm Cooper (Australian Radiation Laboratory)

Procedures for the analysis of radium-228 in waters and other
environmental samples (M.B. Cooper, M.J. Wilks and M. Jamello).

12.30pm to 13.30pm LUNCH

13.30pm to 14.30pm SESSION ELEVEN - Quality Control and Other Issues

(44) Mr. Chris Poletiko (French Atomic Energy Commission - LESE)

Methodology of quality assurance in measuring radioactivity in
marine environments (C. Poletiko).

(45) Ms. Phebe Blitz (Qualitat Institute Arizona USA)

Creating consensus and communications on difficult societal issues
(P. Blitz and J.W. McKlveen).

14.30pm to 14.45pm SUMMARY AND CLOSE OF MEETING
