

1975/33

DEPARTMENT OF
MINERALS AND ENERGY



BUREAU OF MINERAL RESOURCES,
GEOLOGY AND GEOPHYSICS

RECORD 1975/33

BMR 1975 PROGRAM



Compiled by

C.J. Watt

BMR
Record
1975/33
c.4

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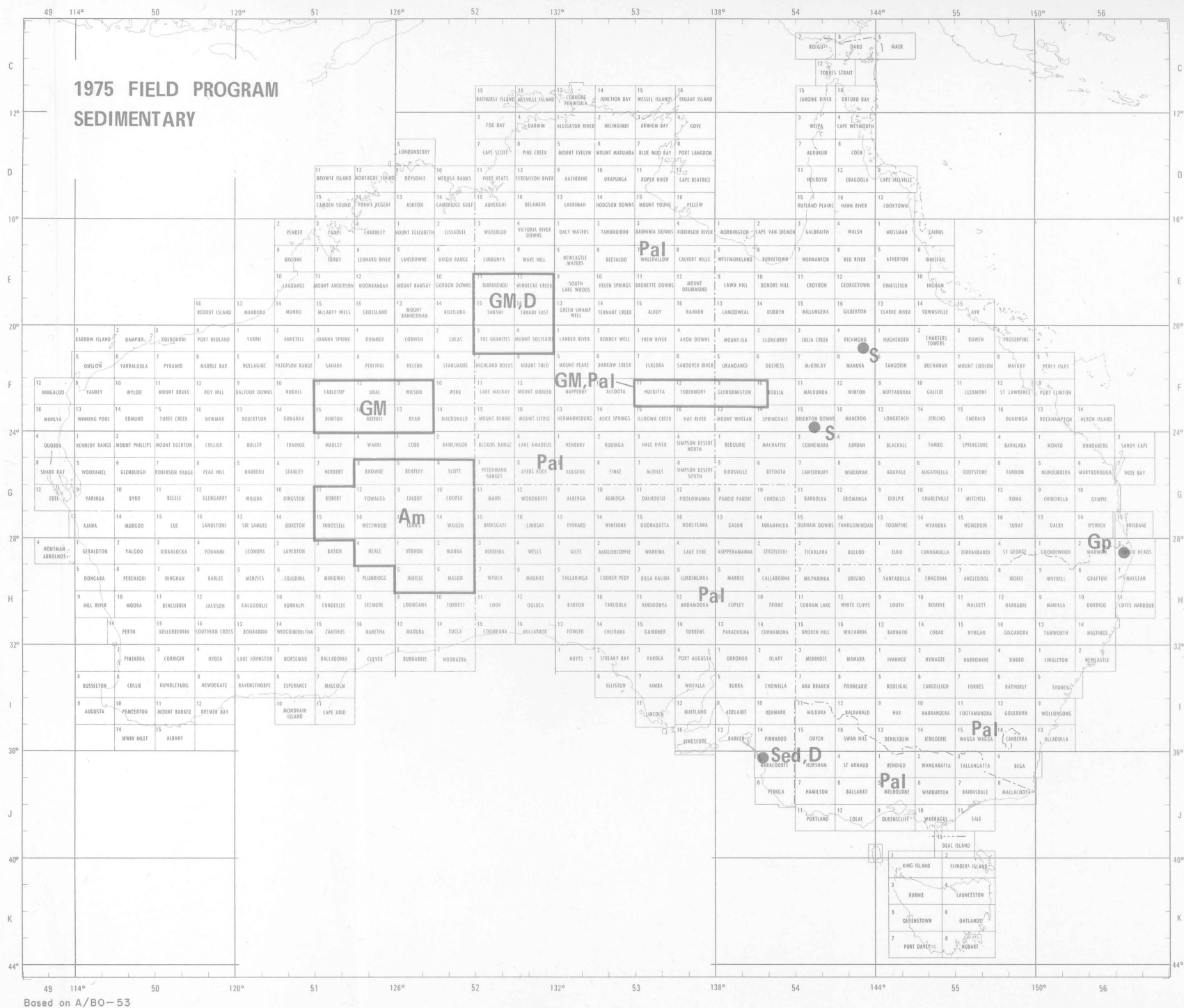
CONTENTS

	Page
SEDIMENTARY BASINS	1
METALLIFEROUS AREAS	3
CRUSTAL STUDIES	6
TECHNOLOGICAL SUPPORT	10
ENGINEERING	11
HYDROLOGY	12
TECHNICAL SERVICES	13
RESOURCES AND INDUSTRY	14
PUBLICATIONS IN PROGRESS	Appendix

NOTES

The program does not list the preparation of BMR Records on the results of current projects; however, it can generally be assumed that such Records will be prepared for most projects. A list of Records released on Open File is brought out regularly by BMR.

The dates given in brackets after each field operation refer to time actually spent in the field. In most cases office work on the project continues to the end of the current year or early in the following year.



LEGEND

Am Aeromagnetic

D Drilling
(stratigraphic)

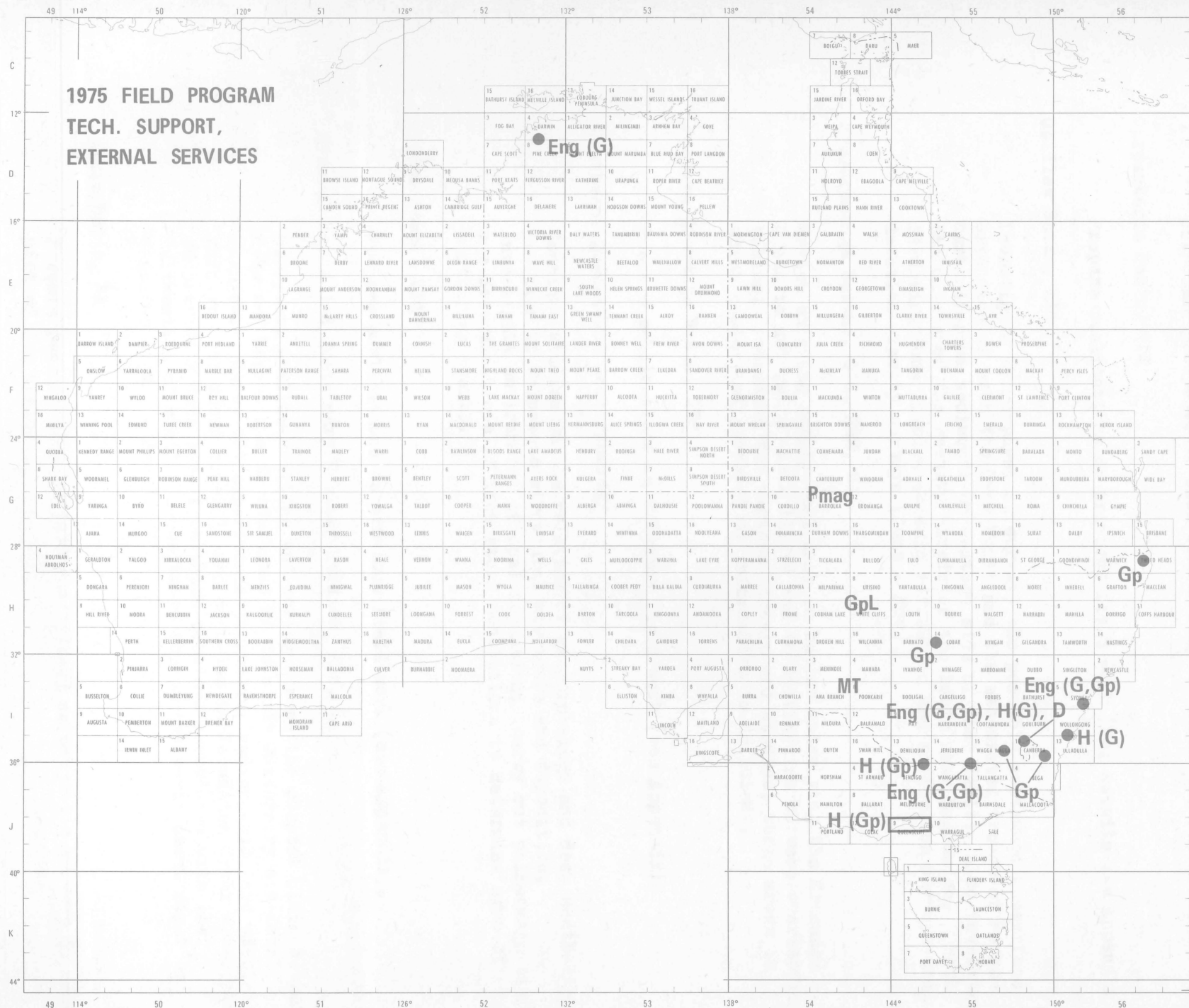
GM Geological Mapping

Gp Detailed Ground
Geophysics

Pal Palaeontology

Sed Sedimentology

S Seismic



**1975 FIELD PROGRAM
TECH. SUPPORT,
EXTERNAL SERVICES**

LEGEND

- D** Drilling (stratigraphic)
- Eng(G,Gp)** Engineering (geology, geophysics)
- Gp** Detailed Ground Geophysics
- GpL** Geophysical Logging (boreholes)
- H(G,Gp)** Hydrology (geology, geophysics)
- MT** Magneto-Telluric
- Pmag** Palaeomagnetism

SEDIMENTARY BASINS

Regional Basin Studies

Review all available results of petroleum exploration activities in Australia and prepare and maintain a current assessment of the petroleum prospects of each sedimentary basin.

Carpentaria Basin, Qld

Prepare publications on previous field work (for details see Appendix).

Galilee Basin, Qld

Investigate by geophysical surveys the possible southward subsurface extension of both the Cork Fault and the associated trough of Permo-Carboniferous sediments on western side of that fault; also investigate the nature of the western margin of the basin near Hughenden. Both investigations involve seismic refraction and reflection surveys and detailed gravity surveys (June - Nov).

Pre-Eromanga Basins, Qld, NSW, SA

Review existing geophysical data on basins underlying the Eromanga Basin to determine their limits and to distinguish between overlapping basins; recommend for further surveys and studies, those areas in which geological/geophysical information is deficient.

Western Eromanga Basin, Qld

Prepare publications on previous field work (see Appendix).

Southwest Queensland Geomorphology

Continue studies on the relation of geomorphology and deep weathering profiles to Cainozoic structural movements and deposition; investigate environment of opal formation; carry out palaeomagnetic age determinations of iron stone concretions to determine ages of weathering events.

Broad Sound, Qld

Prepare publications on previous field work (see Appendix).

Mineral Sands and Quaternary Eustasy Studies, NSW, SA

Carry out shallow drilling and coring across the coastal plain between Robe and Naracoorte in southeast SA to study Quaternary sea level changes. Carry out experimental magnetic, radiometric, and electric surveys over known mineral sand deposits in Jerusalem Creek area, NSW, to provide a data base from which problems associated with the delineation of similar deposits in the marine environment might be considered (May - June).

Eucla Basin, SA

Prepare publications on 1970 and 1972-73 aeromagnetic surveys of SA part of the basin.

Lake Frome, SA

Complete final report on study of metal accumulation in an internal drainage basin.

Officer Basin, WA

Prepare publications on previous field work (see Appendix).
Supervise aeromagnetic contract of Browne, Bentley, Scott, Robert, Yowalga, Talbot, Cooper, Throssel, Westwood, Lemnis, Waigen, Neale, Vernon, Wanna, Jubilee, and Mason 1:250 000 Sheet areas; survey scheduled to be flown at 1.5 to 3 km line spacing.

Canning Basin, WA

Geologically map Tabletop, Ural, Ryan, Wilson, Morris, Percival, and Runton 1:250 000 Sheet areas; joint project with WA Geol. Survey (June - Dec).

Complete isopach, lithofacies, structure contour, and environment maps and commence writing of basin study report.

Prepare publications on previous field work (see Appendix)

Wiso Basin, NT

Geologically map Winnecke Creek, South Lake Woods, Tanami East, Green Swamp Well, Mt Solitaire, and Lander River 1:250 000 Sheet areas (May - Aug) and carry out shallow stratigraphic drilling (Mar - May).

Review and reprocess results of previous seismic survey in Lander Trough.

Ngalia Basin, NT

Prepare publications on previous field work (see Appendix).

Georgina Basin, NT, Qld

Continue geological mapping and study of the Lower Palaeozoic carbonate sequences, Late Cambrian trilobite biostratigraphy, Ordovician conodonts, and stromatolite biostratigraphy of the basin (May - Sept).

Palaeontology

Provide palaeontological support for field projects and carry out systematic studies of Australian fossils. Projects include studies of Tertiary foraminifera from PNG; larger foraminifera and planktonic foraminifera from Northwest Cape, Ashmore Reef, Capricorn Basin, and Victoria; Lower Carboniferous ostracods; stromatolite biostratigraphy and associated microfossils from the Amadeus, Georgina, McArthur, and Nabberu Basins; conodonts from Fitzroy, Carnarvon, and Georgina Basins, and eastern Australia; Tertiary vertebrates from SA, NT, Qld, and NSW; Silurian enorinurid trilobites and brachiopods of the Canberra region; Cambrian and Ordovician trilobites and molluscs of northern Australia; and palaeogeography of the Australian Cretaceous. (See Appendix for publications in preparation).

Petroleum Studies

Continue research into the processes of petroleum generation in Australia, including the diagenesis of organic matter in relation to oil and gas occurrences in the Amadeus Basin, the composition of the asphaltic matter associated with oil shale and phosphorite from Qld and NT, source rock geochemistry of various oil and gas/condensate discoveries in Carnarvon, Perth, and Gippsland Basins, and the characteristics of coastal bitumen from SA and NT, including evaluation of possible sources in the Otway Basin and Timor Sea.

Carry out porosity, permeability, density, fluid saturation, pore-size distribution, and capillary pressure analyses of petroleum reservoir rocks obtained from wells drilled under Petroleum (Submerged Lands) Act, and from BMR field parties, State Mines Departments, and private sources.

Carry out thermodynamic studies of hydrocarbons from Australian petroleum accumulations.

Undertake laboratory investigations into recovery of hydrocarbons from Australian reservoirs under various natural drive mechanisms to assist in the evaluation of recoverable petroleum reserves.

METALLIFEROUS AREAS

Georgetown, Qld

Geologically map Precambrian and Palaeozoic rocks of the Gilberton 1:100 000 Sheet area; joint project with Geol. Survey of Qld (May - Oct). Sampling for isotopic dating. Prepare publications on previous field work (see Appendix).

Complete geological mapping of Newcastle Range Volcanics in the Mt Surprise and Galloway 1:100 000 Sheet areas, and carry out two detailed gravity/magnetic traverses across the Newcastle Range to provide information on the structure of the volcanics. Extend mapping of Robertson River Metamorphics into the North Head and Forest Home 1:100 000 Sheet areas (May - Oct).

Investigate the nature and genesis of the gold deposits of the Etheridge Goldfield, including the geophysical and geochemical expression of several gold deposits and the evaluation of the effectiveness of various geophysical techniques in this type of study (June - July). Contract drilling of selected lodes to ascertain source of geophysical and geochemical anomalies.

Westmoreland, Qld

Undertake geochemical survey of stream sediments in the Seigal and Hedleys Creek 1:100 000 Sheet areas (May-Oct).

Prepare publications on previous field work (see Appendix).

Mt Isa - Cloncurry, Qld

Geophysically map Precambrian rocks under shallow sediment cover in a

30 km x 20 km area within the Clonagh 1:100 000 Sheet area (Apr-July).

Prepare publications on previous field work (see Appendix).

Continue petrological and geochemical study of basic intrusives, granite plutons, and other rocks, including Marraba Volcanics, Leichhardt Metamorphics, and Argylla Formation.

Isotopic dating, especially zircon dating.

Duchess, Qld

Commence detailed geological mapping of Duchess, Oban, Malbon, and Mt Angelay 1:100 000 Sheet areas (May - Oct).

Undertake an airborne magnetic and radiometric survey of the Duchess 1:250 000 Sheet area (Oct - Nov).

Broken Hill, NSW

Undertake an airborne magnetic and radiometric survey of the Broken Hill 1:250 000 Sheet area including a detailed survey of an area in support of 1:25 000 geological mapping by NSW Geol. Survey (May - July).

Lachlan Geosyncline, NSW, Vio.

Prepare publications on previous field work (see Appendix).

Check problem areas in Tantangara and Brindabella 1:100 000 Sheet areas and carry out shallow stratigraphic drilling (Apr - May); commence geological mapping of Canberra 1:100 000 Sheet area (July - Dec).

Undertaken an airborne magnetic and radiometric survey of Cootamundra and Bairnsdale 1:250 000 Sheet areas (June - Aug).

Gawler Block, SA

Carry out an airborne magnetic and radiometric survey of Whyalla, Port Augusta, Lincoln (part), and Maitland (part) 1:250 000 Sheet areas (March - May).

Kimberley Region, WA and Granites-Tanami, WA, NT

Prepare publications on previous field work (see Appendix).

McArthur Basin, NT

Prepare publications on previous field and laboratory work, and on the recent discovery of Cambrian trilobites on Elcho Island (see Appendix).

Arunta Block, NT

Prepare publications on previous field work (see Appendix).

Complete geological mapping of MacDonnell Ranges and Narwietooma 1:100 000 Sheet areas (June - Sept); carry out a field check to reconcile aeromagnetic and geological data on Mt Liebig and Mt Rennie 1:250 000 Sheet areas (April - May). (Joint project with staff and students of Monash University in MacDonnell Ranges area).

Continue petrological study of basic granulites and anatectic relations in the Mt Hay - Mt Chapple - Red Bank Hill areas; continue Rb-Sr age determinations of rock units.

Tennant Creek, NT

Complete the geochemical study of Tennant Creek mineralization, based on interpretation of analytical results for ironstones, granites, porphyries, lamprophyres, and Warramunga sediments; continue dating the rock units in the Tennant Creek mineral field using total rock isochrons.

Prepare publications on previous field work (see Appendix).

Alligator River, NT

Undertake semi-detailed geological mapping, geophysical surveys, and stratigraphic drilling within the Kapalga 1:100 000 Sheet area. (June - Oct).

Commence petrological, geochemical, and geochronological study of igneous, metamorphic, and sedimentary rocks in the Alligator River 1:250 000 Sheet area to determine relationships of uranium, gold, and copper mineralization to these rocks.

Prepare publications on previous field work (see Appendix).

Rum Jungle, NT

Carry out semi-detailed geological mapping of parts of the Batchelor and McKinlay River 1:100 000 Sheet areas supported by stratigraphic drilling in the southern part of the Batchelor Sheet area (June - Oct).

Prepare publications on previous field work (see Appendix).

Darwin - Katherine, NT

Conduct an airborne magnetic and radiometric survey of Fergusson River, Katherine, Pine Creek (part), Cape Scott (part), and Mt Evelyn (part) 1:250 000 Sheet areas (August - Oct).

Ore Genesis Investigations

Study the mineralogy and the geochemistry of the mineralized Lower Proterozoic sediments from the area between Rum Jungle and the Alligator Rivers.

Investigate organo-metallic complexes derived from algal material, and the interaction of metals with organic matter in the presence of soluble and particulate inorganic material in the sediments.

Antarctica

Carry out reconnaissance geological mapping in Enderby Land, and take gravity measurements between Mawson and Knuckey Peak Base (Jan - March); interpret gravity data in terms of crustal structure and correlate with geology.

Continue study of relationships between lithology, metamorphic grade, and regional geochemistry of rocks from the Southern Prince Charles

Mts and determine their metamorphic history.

Prepare publications on previous field work (see Appendix).

Papua New Guinea

Prepare publications on previous field work (see Appendix).

Volcanology and Ore Genesis (PNG)

Carry out trace element analyses of Cainozoic volcanic rocks in co-operation with ANU and prepare reports on volcanic geology, petrology, and geochemistry.

Petrology, Mineralogy, and Mineragraphy

Provide general laboratory support for BMR projects and carry out related research, using optical microscopes, X-ray powder camera, X-ray diffraction equipment, electron probe microanalyser, and X-ray energy dispersive system.

Carry out trace element characterisation of volcanic and intrusive rocks from the Pilbara region as part of the International Geological Correlation Program on Archaean Igneous Geochemistry (August - Sept).

Prepare reports on research results.

Geochemistry

Provide general laboratory support for BMR projects, and carry out related research, using direct reading and photographic optical spectrographs, automatic X-ray fluorescence spectrometer, gamma-ray spectrometers, atomic absorption spectrophotometers, and various other spectrophotometers.

Prepare reports on results.

Geochronology

Provide isotopic age determination support for BMR projects and carry out related research; projects include dating of vein deposits and mineralized and non-mineralized bodies of greisen in the Herberton - Mt Garnet areas, U-Pb zircon geochronology of the volcanic rocks of the Mt Isa basement succession and intrusive granites, and Rb-Sr age investigations in the Rum Jungle complex and Waterhouse Granite, the Arunta Block, and the Tennant Creek and Georgetown areas.

CRUSTAL STUDIES

Heat Flow Studies

Complete the collation of borehole temperature profile data and commence thermal conductivity measurements; review the heat flow studies in Australia and formulate future survey proposals.

Gravity Maps of Australia

Prepare publications on reconnaissance helicopter gravity survey of Australia (see Appendix).

Continue the compilation of data from BMR, private company, and other organizations' gravity surveys to standard datum and add this to the gravity repository magnetic tapes.

Undertake the production of an integrated coloured Bouguer anomaly map of Australia at 1:5,000,000 scale and prepare publication to accompany the map describing control networks, density of coverage, field techniques and accuracy, interpretation by provinces, trends and spectral analysis, and geodetic applications; update the preliminary Bouguer anomaly maps of Australia and PNG. Continue the interpretation of the gravity maps in terms of crustal thickness and continental tectonics.

Calibration of Gravity Meters

Calibrate all the available gravity meters in Australia using the Soviet tile apparatus. Outside organizations are invited to bring their meters to BMR for evacuation and calibration.

Isogal Project and Calibrations

Establish an extended calibration range near Canberra to enable linearity and reliability tests of gravity meters to be carried out.

Prepare a Bulletin on the Australian Isogal Network.

Earth Tides

In co-operation with other Australian authorities and the International Centre for Earth Tides in Belgium, conduct measurements of variations in intensity of the Earth's gravity field.

Operate horizontal pendulum apparatus for continuous measurements of the deflections of the vertical caused by solid earth tides; the equipment is installed near Armidale and is operated jointly with the University of New England.

Regional Magnetic Surveys

Continue the 3rd order magnetic coverage of central Australia using helicopters; density of stations is approximately one per 730 km² or about 24 per standard 1:250 000 Sheet area (April - August).

Conduct 3rd order magnetic observations in Mawson-Enderby Land region, Antarctica (Jan - Mar, Dec).

Reoccupy most 1st order magnetic stations in Australia (Sept - Dec).

Magnetic Map of Australia

Continue compilation and production of 1:2 500 000 scale magnetic contour map of Australia based on all available aeromagnetic data; prepare accompanying Bulletin.

Papua New Guinea Crustal Studies

Develop computer techniques to analyse the seismic information recorded during the East Papua Crustal Survey; this includes synthetic seismogram and seismic modelling techniques. Prepare interpretation of crustal structure based on gravity, magnetic, seismic, and geological data.

Take precise gravity measurements at crustal movement stations in Markham Valley and St George's Channel (May). This is a long-term project in which the stations will be reoccupied after several years to test the effects of crustal movements; periodic distance measurements between stations are carried out by Div. of National Mapping.

Stress Measurement

Participate in CSIRO/BMR stress measurement program to investigate regional stress fields in the continent; four sites in Meckering (WA) area have been chosen for first observations.

Continental Margins Survey

Analyse and report on results of the contract marine geophysical survey of the Australian continental margin; traverses were made along lines 30-40 km apart between the 20 m and 4000 m isobaths and the survey determined, on a reconnaissance basis, the geological and bathymetric nature and extent of the continental margin.

Continue the processing of bathymetric, gravity, magnetic, and navigation data to produce 450 free air, Bouguer, and magnetic anomaly maps at 1:250 000 scale, and 50 maps at 1:1 000 000 scale of ships tracks, bathymetry, and free air, Bouguer, and magnetic anomalies (see Appendix).

Marine Geophysics

Acquire, prepare, and conduct marine tests of new on-line seismic equipment in preparation for proposed surveys in 1976; resume the integration of non-BMR data into the marine data bank; organize and support magnetic surveys on Division of National Mapping bathymetric surveys.

Marine Geology

Prepare publications on previous field surveys (see Appendix).

Carry out a reconnaissance marine survey of the continental shelf between Geraldton and Cape Leeuwin (WA); this is part of the systematic coverage of the continental shelf and involves shallow seismic profiling and sea-bed sampling along traverses spaced at approximately 15 km intervals between the 20 m and 500 m isobaths (Sept - Dec).

Conduct a reconnaissance survey in the Tasman Sea to study the composition and distribution of manganese nodules (May - June).

Geomagnetic Data Processing - Canberra Group

Maintain the Australian Geomagnetic Standards and prepare publications (see Appendix).

Analyse quiet day and other variations at Australian geomagnetic observatories.

Seismological Data Processing - Canberra Group

Prepare phase and epicentral data tapes for the International Seismological Centre and produce monthly phase and time sorted bulletins;

maintain regional earthquake data files and prepare seismicity maps. The seismological data are supplied by BMR, universities in Hobart, Adelaide, Brisbane, and Canberra, and from Rabaul and Honiara.

Strong Earth Motion Studies - Canberra Group

Maintain a network of accelerographs, prepare earthquake risk maps and study techniques of seismic zoning; carry out field studies of felt or damaging earthquakes and also ground accelerations near large explosions as required.

Seismograph Stations - Canberra Group

Maintain and calibrate stations for 3-component SP recording at Alice Springs, Manton (NT), Giles (WA) and Cooney (NSW); test and select a site for a short-period vertical seismograph at Mt Isa or Cloncurry and install a telemetered test facility from Kowen Forest to BMR Canberra.

Toolangi Observatory (Vic)

Record, analyse, and report on geomagnetic and seismic observations at the observatory and continue normal SP seismic recording at Bellfield Reservoir (Vic), Norfolk Island, and Stephens Creek (NSW); investigate resiting of the visual recording system SE of Melbourne.

Mundaring Observatory (WA)

Continue recording, analysing, and reporting on geomagnetic, seismic, and ionospheric observations made at the observatory; train personnel for Antarctic projects; continue the normal program of SP recording at Kalgoorlie, Meekatharra, Kununurra, Marble Bar, and Swan View; upgrade Kalgoorlie and Marble Bar seismographs and test Gascoyne Junction for suitability as a seismograph site.

Install and operate USGS Seismological Research Observatory in a borehole at Narrogin and provide a telemeter link at Mundaring.

Carry out micro-earthquake studies, short-term SP recording and accelerograph recordings in the southwest seismic zone and carry out attenuation studies from Meckering to Mundaring.

Port Moresby Observatory

Record, analyse, and report on geomagnetic and seismic observations made at the observatory; continue the normal program of SP recording at Wabag, Lae, Momote, Talasea, Kavieng, Madang, and Wewak to study regional seismicity.

Maintain accelerographs at Port Moresby, Lae, Musa Damsite, Ramu Damsite, Wewak, Rabaul, Frieda River, and Star Mountains and install accelerographs at Madang or Kimbe; carry out field studies of important earthquakes and record after-shocks in the field.

Macquarie Island Observatory

Record and analyse geomagnetic and seismic observations and resite seismometer; operate tide gauge for Flinders University.

Mawson Observatory

Record and analyse geomagnetic and seismic observations.

TECHNOLOGICAL SUPPORT

Marine Systems Development

Continue the development of shallow marine equipment including the use of magnetic tape recording for analysing field data; investigation of bubble suppression, sonobuoy, and compact energy sources; and the development of towfish and transducer systems for high resolution seismic profiling.

Continue the preparation for future marine geophysical surveys by studying the performance of marine systems and equipment.

Seismic Systems

Test and integrate new digital seismic recording equipment with existing equipment; prepare computer programs for processing digital seismic data through BMR mini-computers and the CSIRO Cyber 76.

Continue with development of non-explosive energy sources for shallow seismic investigations in built-up areas.

Magneto-Telluric Investigations

Study the magneto-telluric method applied to mining geophysics and select a suitable area for experimental work.

Carry out experimental traverses across gravity lows in the Murray Basin near Pooncarie to delineate low resistivity zones and seek correlation between resistivity and porosity; in co-operation with Macquarie University (June - July).

Down-Hole Geophysical Investigations

Field evaluation of Scintrex DHP-4 electro-magnetic drill-hole system at Woodlawn, Tumut, Cobar, and Braidwood (Jan - Feb).

Develop and test time-domain IP techniques; field tests at Woodlawn, Tumut, Cobar, and Braidwood (Mar - Apr); develop and test continuous IP logging equipment.

Ground Magnetic Techniques

Investigate the feasibility of developing a continuous recording magnetometer to give 'magnetic signatures' of near-surface rocks in addition to deeper data.

Airborne Systems, Techniques, and Data Analysis

Install and flight test in the Canberra-Wagga area new equipment in the Twin Otter aircraft comprising a lighter mini-computer, new timing system including a new doppler digitiser and frame camera intervalometer, and proton precession magnetometer; investigate suitability of Twin Otter for offshore magnetic surveys.

Install and flight test proton precession magnetometer in Aero Commander aircraft.

Develop gamma-ray survey techniques and test suitability for detecting mineral sand deposits.

Design and implement computer programs to allow magnetic and spectrometer modelling in 2-D.

Rock Measurements

Manufacture and install an alternating-field rock demagnetiser for palaeomagnetic measurements; develop heat conductivity measurement equipment; develop instrumentation to measure the velocity of sound in unconsolidated sediments; install a gamma-ray spectrometer for analysis of rock and soil samples.

Undertake study to compare point load strength and uniaxial compressive strengths of rock samples; carry out feasibility study of fault detection in advance of rock tunnelling operations.

Observatory Equipment and Maintenance

Provide maintenance and testing facilities for seismic and magnetic observatories; install digital magnetic recorders for magnetic observatories and design and construct a control interface for a magnetogram digitizer.

Drilling Engineering

Provide drilling and drilling support services for BMR operations and, if requested, other Government Departments.

ENGINEERING

Damsite and Reservoir Investigations, ACT, NSW

Provide geological and geophysical support services to Department of Housing and Construction (DHC) and National Capital Development Commission (NCDC) projects. Services comprise detailed geological mapping, core and auger drilling, detailed magnetic and resistivity surveys, and shallow seismic profiling. These are presently required for the Googong Dam project, the Tuggeranong Town Centre Water Feature investigation, a number of stormwater pond sites, and preliminary investigations of a site for Canberra's next water supply storage.

Carry out hydrological surveillance of Corin Dam and other dams in the ACT.

Sewerage Investigations, ACT

Provide geological and geophysical services as outlined above and make general assessments for DHC and NCDC on the Tuggeranong sewer tunnel and outfall connection, Molonglo Valley interceptor sewer, Ginninderra outfall sewer, Murrumbidgee west trunk sewer, Village Creek trunk sewer, and Lanyon trunk sewer.

Reservoir and Water Mains Investigations. ACT

Undertake geological mapping, drilling, and seismic surveys of 15 possible sites, mainly in the Tuggeranong area; carry out geological and seismic surveys on bulk water-supply mains in the Tuggeranong, Gungahlin, Woden, and Belconnen areas.

Major Buildings, ACT

Conduct site investigations and map excavations and provide geological advice as required for major buildings of national importance, including Canberra City Centre sites and Belconnen, Woden, and Tuggeranong town centres.

Roadworks Investigations. ACT

Provide preliminary assessments and continuing advice to NCDC on the Molonglo Parkway interchange and the Gungahlin Parkway route.

Refuse Disposal Sites

Conduct preliminary investigations for six refuse disposal sites in the Tuggeranong area.

Construction Materials Investigations. ACT. NSW

Evaluate the resources of sand and gravel in the ACT and environs; estimate the reserves of sand in the East Basin area, and sand and topsoil reserves in terrace deposits of the Murrumbidgee Valley at Tuggeranong.

Urban and Regional Development Areas

Co-ordinate and provide liaison for engineering geological and geophysical studies relating to urban planning including Albury - Wodonga, Darwin East, Geelong, and Holsworthy.

Compile a series of 1:10 000 engineering geotechnical maps of the ACT and 1:50 000 geological maps of Canberra and Hall. Geologically map excavations in Woden and Belconnen; geotechnically map the Queanbeyan area and parts of Tuggeranong; drill stratigraphic holes at Fyshwick and at Gooromon Ponds.

Investigate a potential airport site at Murrumbateman and study drainage problems and excavation difficulties in northwest Gungahlin.

Captains Flat, NSW

Provide advice and support for the rehabilitation of Captains Flat tailings dumps and the Molonglo River upstream of Carwoola, in particular study quarry sites and monitor groundwater levels.

HYDROLOGY

Great Artesian Basin. Qld. NSW. SA. NT

Continue analysis of hydrogeological data of the Basin and refine the mathematical model of its hydraulic and groundwater characteristics. The Australian Water Resources Council nominated BMR as the co-ordinating body for the project, which is drawing on information held by BMR and relevant State Water Authorities and Mines Departments.

Carry out short field visits to inspect outcrop areas and carry out geophysical logging of water bores (Mar - Nov).

Australian Capital Territory

Maintain and monitor groundwater characteristics in observation bores in the ACT and Jervis Bay; monitor the water level and quality of Lake George; monitor leakage from Lake Windermere.

Investigate the characteristics of fractured rock aquifers in the ACT; investigate the groundwater inflows in tunnels and the effects of de-watering and concreting; undertake a groundwater investigation in the Majura Valley for possible re-use of reclaimed water.

Monitor piezometers at Isabella Plains and Lanyon to assess the effects of construction of drainage works.

N.B. ACT hydrological activities are generally carried out in liaison with NCDC, DHC, and the Agricultural Branch of the Department of the Capital Territory (DCT).

Norfolk Island

Provide advice on the hydrological potential of the Island.

TECHNICAL SERVICES

Planning and Coordination

Review and investigate short and long term program proposals in terms of priorities, manpower requirements, financial resources, cost effectiveness, and co-ordination of interrelated projects.

Information Services

Prepare and disseminate information concerning BMR to government, industry, the public, and the news media; answer queries from Ministers and Parliament as required.

Prepare the BMR Annual Report, Pictorial Index of Activities, List of Maps, List of Geoscience Events, and Open File Circulars, for distribution; organise the annual BMR Symposium and other various lectures and displays for Universities and Schools.

Continue feasibility studies on an information storage and retrieval system for BMR.

Library

Maintain and operate a comprehensive library for use by BMR personnel and visitors.

Museum

Maintain and operate a comprehensive museum of geological material; provide informational and educational services to the public and teaching organizations; arrange exchange or purchase of desirable specimens. Field collecting trip to central Australia for tektite and mineral specimens (May - June).

Core and Cuttings Laboratory

Receive, catalogue, and store core and cuttings obtained under the provisions of the Petroleum (Submerged Land) Act, and from State Mines Departments, private companies, and BMR field parties; provide facilities for examination and testing of samples.

Geological Services

Provide map compilation and editing services for BMR publications. Current compilation projects include the 1:2 500 000 Geological Map of PNG, 1:2 500 000 Geological Map of Australia, and several other maps for the Atlas of Australian Resources.

Prepare and revise Mineral Reports; maintain indexes and technical data files for use by BMR personnel; maintain the Central Register of Stratigraphic Names.

Photogeology and Remote Sensing

Complete the final report to NASA on the evaluation of Skylab photography of the Alice Springs and Canberra areas. Provide Secretariat for ACERTS Interdepartmental Committee. The Skylab program is due to conclude in 1975 and the responsibility for administration of future NASA projects is expected to be taken over by the Department of Science.

Undertake photogeological interpretation and compilation of Mesozoic geology, cultural features, and drainage of: North Head, Forest Home, Esmeralda, Gilbert River, Croydon, Galloway, Lyndhurst, Einasleigh, and Mt. Surprise 1:100 000 Sheet areas in support of BMR field parties in these areas.

Automatic Data Processing

Provide ADP facilities and advice to BMR activities. Present projects include: pilot programs for information and retrieval systems, integration of laboratory instruments with mini-computer for on-line data acquisition and processing, pilot study of field geological data collection and processing, and cartographic applications.

Publications and Editing

Edit BMR publications and papers for scientific journals.

RESOURCES AND INDUSTRY

Petroleum Search Subsidy Act

Examine final reports and make recommendations for subsidy payments. The subsidy scheme terminated on 30 June 1974 but final payments and preparation of report on the scheme will continue during 1975.

Petroleum (Submerged Lands) Act

Examine and advise on applications to carry out operations, follow progress of operations and examine final reports.

Maintain a register of all operations undertaken in offshore areas.

Petroleum Economics

Carry out investigations and research into economics of petroleum exploration, development, and production, and prepare statistics; estimate petroleum discoveries, reserves, and resources; investigate oil shale resources; prepare Petroleum Newsletter.

Mineral Economics Studies

Study long-range production and consumption patterns of metals and minerals including secondary (re-cycled) metals, new techniques of mineral extraction, processing, and utilization; and assess the contribution made by the mining and mineral processing industries to the GNP. These studies contribute towards departmental advice and to the BMR publication 'Australian Mineral Industry Review'.

Continue assessment of Australian resources of copper, lead and zinc and undertake a revision of the previous minerals sands resources survey.

Study the problems of export controls and Government policy related to the domestic gemstone industry particularly opals and sapphires. In collaboration with the Minerals Policy Division, study long-term trends of mineral production and demand in relation to known domestic reserves in order to provide a basis for mineral exploration priorities.

Mining Engineering

Continue studies of the mineral industry in terms of feasibility of proposed mining projects, inter-industry relationships of the mining industry, and legislative aspects. Cooperate with Mineral Economics Section in assessment of mineral resources and continue an in-depth study of Australian mining costs.

Report on operations of gold mines receiving assistance under the Gold Mining Industry Assistance Act. Provide participation to the Conference of Chief Inspectors of Mines and the Standards Association of Australia.

APPENDIX

PUBLICATIONS IN PROGRESS

Authors: Superscripts after an author's name indicate the following :

1. Formerly with BMR
2. With, or formerly with, State Geological Survey
3. With, or formerly with, university or other institution.

SEDIMENTARY BASINS

<u>Project</u>	<u>Title (Publication)</u>	<u>Author</u>
Carpentaria Basin, Qld	Geology of the Carpentaria Basin (Bulletin)	Doutch, H.F. Smart, J.
	Palynology and stratigraphy of the Cretaceous, Carpentaria Basin (Bulletin)	Grimes, K.G. ² Burger, D.
	Hann River (1:250,000 map 1st ed.)	Grimes, K. ²
	Holroyd (1:250,000 map 1st ed.)	Grimes, K. ²
	Coen (1:250,000 map 1st ed.)	Gibson, D.
	Ebagoola (1:250,000 map 1st ed.)	Gibson D.
	Weipa " " "	Smart, J.
	Cape Weymouth " " "	Doutch, H.F.
	Croydon " " "	Doutch, H.F.
	Aurukun " " "	Smart, J.
	Southern Carpentaria (1:1,000,000 map 1st ed.)	Doutch, H.F.
	Northern Carpentaria (1:1,000,000 map 1st ed.)	Doutch, H.F.
	Galilee Basin seismic and gravity survey, Qld, 1971 (Report No. 175)	Moss, F.J. Harrison, P.L. Anfiloff, W.A.
	Palynology, Galilee Basin (Report)	Norvick, M.
Eromanga Basin, Qld	Notes on the Eromanga Basin (Bulletin No. 167 in 3 parts)	
	Notes on the geology of the northern part of the Eromanga Basin (Bulletin)	Senior, B., Harrison, P. Mond, A.
	Geology of the northwestern Eromanga Basin (Bulletin)	Mond, A. Harrison, P.
	Northern Eromanga Basin (1:1,000,000 map 1st ed.)	Senior, B.
	Northwestern Eromanga Basin " " "	Mond, A.
	Central Eromanga Basin " " "	Senior, B.

SEDIMENTARY BASINS

<u>Project</u>	<u>Title (Publication)</u>	<u>Author</u>
Bowen Basin, Qld	Bowen Basin sedimentation (Bulletin No. 154)	Jensen, A.R.
	Rangal Coal Measures (Report No. 171)	Burgis, W.A. ¹
Surat Basin, Qld	Geology of the Surat Basin (Bulletin No. 166)	Exon, N.F.
	Palynology and stratigraphy of the Early Cretaceous Surat Basin, Qld (Bulletin)	Burger, D.
	Surat Basin (1:1,000,000 map 1st ed.)	Exon, N.F.
	Wireline logging of water bores in the Surat Basin (Report No. 188)	Exon, N.F. Morrissey, J.A.
Broad Sound, Qld	Sedimentation of Broad Sound, Qld (Bulletin No. 170)	Cook, P.J. Mayo, W.
	Geological History of Broad Sound, Qld (Bulletin)	Cook, P.J. Mayo, W.
	Geochemistry of Broad Sound, Qld (Bulletin)	Cook, P.J.
	Cainozoic History of the Torilla Peninsula, Broad Sound, Qld. (Report No. 172)	Burgis, W.A. ¹
Lake Frome, SA	The sediments and geochemistry of Lake Frome (Report)	Draper, J. Jensen, A.R.
Officer Basin, WA	Geology of the Officer Basin, WA (Bulletin)	Jackson, M.J. Van de Graaff, W.J.E. ²
	Minigwal (1:250,000 map 1st ed.)	Boegli, J.C. ²
	Rason " " "	Boegli, J.C. ²
	Cundeelee " " "	Van de Graaff, W.J.E. ²
	Vernon " " "	Van de Graaff, W.J.E. ²
	Madley " " "	Kennewell, P.J.
	Warri " " "	Jackson, M.J.
	Browne " " "	Jackson, M.J.
	Robert " " "	Jackson, M.J.

SEDIMENTARY BASINS

<u>Project</u>	<u>Title (Publication)</u>	<u>Author</u>
Officer Basin, WA (Cont'd)	Yowalga (1:250,000 map 1st ed.)	Kennewell, P.J.
	Wanna " " "	Kennewell, P.J.
	Westwood " " "	Kennewell, P.J.
	Lennis " " "	Jackson, M.J.
	Neale " " "	Jackson, M.J.
	Waigen " " "	Jackson, M.J.
	Throssel	Jackson, M.J.
Canning Basin, WA	Canning Basin Conodonts (Bulletin No. 158)	Druce, E.C.
	The Late Devonian and Early Carboniferous geology of the Lennard Shelf, Canning Basin, WA (Bulletin)	Druce, E.C. Radke, B.M. Nicoll, R.S.
	Devonian conodonts from the Oscar and Napier Ranges, Canning Basin, WA (Bulletin)	Nicoll, R.S.
	Upper Devonian and Lower Carboniferous conodonts from the Canning Basin, WA (Bulletin)	Nicoll, R.S. Druce, E.C.
	Geochemistry of the Fairfield Group, Canning Basin, WA (Report)	Druce, E.C. Radke, B.M.
	Petrology of the Fairfield Group, Canning Basin, WA (Report)	Radke, B.M.
	Cornish (1:250,000 map 1st ed.)	Crowe, R ²
	Mt Bannerman " " "	Yeates, A.N. Muhling, P. ² Yeates, A.N.
	Helena " " "	
	Crossland " " "	Towner, R.
	Dummer (1:250 000 map 1st ed.)	Wyborn, D.
Ngalia Basin, NT	Geology of the Ngalia Basin, NT (Bulletin)	Wells, A.T. Moss, F.J.

SEDIMENTARY BASINS

Project

Title (Publication)

Author

Palaeontological Studies

Xystridurid Trilobites (Bulletin No. 121)

Opik, A.A.

Palaeontological Papers 1972/73 (Bulletin No. 150)

-

Bathurst Is. palynology (Bulletin No. 151)

Burger, D.
Norvick, M.

Correlation chart for the Permian system in Australia
(Bulletin No. 156B)

Dickins, J.M.

Cymbric Vale Fauna of NSW and Early Cambrian
biostratigraphy (Bulletin No. 159)

Opik, A.A.

Agnostid trilobites in Australia

Opik, A.A.

Late Cambrian trilobites from the Chatsworth area,
western Queensland

Shergold, J.H.

Lower Carboniferous Ostracoda from the Bonaparte Gulf
Basin, NW Australia

Jones, P.J.

Studies of larger Foraminifera from Oligo-Miocene sediments
from NW Western Australia

Chaproniere, G.C.H.

Cambrian and Ordovician Rostroconchia (Mollusca)
of north Australia

Pojeta, J.³
Gilbert-Tomlinson, J.
Shergold, J.H.

Early Ordovician pelecypods of northern Australia

Pojeta, J.³
Gilbert-Tomlinson, J.

Magnetic Maps of Australia

Melville Island, Cobourg-Peninsula (1:250 000
aeromagnetic maps Prelim. ed.)

Miscellaneous

Geology and Mineral Occurrences of Bathurst Island,
Melville Island and Cobourg Peninsula, NT (Report)

Hughes, R.

Amadeus Basin airborne survey (Report No. 187)

Young, G.A.
Shelley, E.P.

METALLIFEROUS AREAS

<u>Project</u>	<u>Title (Publication)</u>	<u>Author</u>
Georgetown, Qld.	Geochemistry and petrology of acid igneous rocks - N.E. Queensland (Bulletin No. 169)	Sheraton, J.W. Labonne, B. ¹
	Forsayth (1:100 000 map Prelim. ed.)	Bain, J.H.C. Oversby, B.S. Withnall, I.W. ²
	Georgetown (1:100,000 map Prelim. ed.)	Bain, J.H.C. Oversby, B.S. Withnall, I.W. ²
Westmoreland, Qld.	Westmoreland (1:250 000 map 2nd ed.)	Sweet, I.P.
	Hedleys Creek (1:100 000 map Prelim. ed.)	Sweet, I.P. ² Slater, P.J. ² Mitchell, J.E.
	Seigal (1:100 000 map Prelim. ed.)	Sweet, I.P. ² Slater, P.J. ²
Mount Isa - Cloncurry, Qld.	Geology of the Cloncurry - Mt. Isa region (Bulletin)	Wilson, I.H. ² Derrick, G.M. Glikson, A.Y. Hill, R.M.
	Geology of the Cloncurry 1:100 000 sheet area (Report)	Derrick, G.M. Glikson, A.Y.
	Geology of the Mt Isa 1:100 000 sheet area (Report)	Wilson, I.H. ² Derrick, G.M. Hill, R.M.
	Cloncurry (1:250 000 map 2nd ed.)	Wilson, I.H. ² Grimes, K. ² Hill, R.M.
	Kennedy Gap (1:100 000 map Prelim. ed.)	Wilson, I.H. ² Grimes, K. ² Hill, R.M.

METALLIFEROUS AREAS

<u>Project</u>	<u>Title (Publication)</u>	<u>Author</u>
Mount Isa - Cloncurry, Qld (cont'd)	Prospector (1:100 000 map Prelim. ed.)	Wilson, I.H. ² Grimes, K. ² Hill, R.M.
	Quamby (1:100 000 map Prelim. ed.)	Wilson, I.H. ² Grimes, K. ² Hill, R.M.
Lachlan Geosyncline, NSW	Aeromagnetic survey of Tottenham, NSW (Report No. 182)	Rees, J.E. Taylor, F.J.
	Brindabella (1:100 000 map Prelim. ed.)	Owen, M.
	Tantangerera (1:100 000 map Prelim. ed.)	Owen, M.
Kimberley Region, WA	Geology of Landsdowne (Bulletin No. 152)	Gellatly, D.C. ¹ Derrick, G.M. Plumb, K.A.
	Geochronology of the East Kimberley Region (Bulletin)	
	Precambrian geology of the Kimberley Region, WA - The West Kimberley (Bulletin)	Gellatly, D.C. ¹ Sofoulis, J. ² Derrick, G.M.
	Kimberley Basin (1:500 000 map 1st ed.)	Plumb, K.A.
	West Kimberley (1:500 000 map 1st ed.)	Plumb, K.A.
	Geology of the Carpentaria Proterozoic Province : Arnhem Land, NT (Bulletin)	Roberts, H.G. ¹ Plumb, K.A.
McArthur Basin, NT	Geology of the Carpentaria Proterozoic Province : Roper River to Queensland border (Bulletin)	Plumb, K.A. Dunn, P.R. ¹ Roberts, H.G. ¹ Smith, J.W. ¹
	Progress Report - McArthur River/Roper River area (Report)	Roberts, H.G. ¹ Plumb, K.A.

METALLIFEROUS AREASProjectTitle (Publication)Author

Arunta Block, NT

The Arltunga Nappe Complex, NT (Bulletin)

Stewart, A.J.
Shaw, R.D.
Yar Khan, M.³
Funk, J.L.³

Ringwood evaporites (Report No. 186)

Stewart, A.J.

Geology of the Reynolds Range area and adjoining
parts of the Arunta Complex (Bulletin)Stewart, A.J.
Glikson, A.Y.
Offe, L.A.
Warren, R.G.

Geology of the Denison 1:100 000 Sheet area (Bulletin)

Stewart, A.J.
Offe, L.A.Precambrian geology of the Alice Springs 1:250 000
Sheet area (Bulletin)

Shaw, R.D.

Burt (1:100 000 map Prelim. ed.)

Langworthy, A.P.

Alice Springs

" " "

Offe, L.A.

Laughlen

" " "

Shaw, R.D.

Langworthy, A.P.

Undoolya

" " "

Shaw, R.D.

Offe, L.A.

Riddoch

" " "

Shaw, R.D.

Rickard, M.J.³

Fergusson Range

" " "

Shaw, R.P.

Stewart, A.J.

Reynolds Range

" " "

Khan, M.³

Stewart, A.J.

Offe, L.A.

Tea Tree

" " "

Stewart, A.J.

Offe, L.A.

Glikson, A.Y.

METALLIFEROUS AREAS

Project

Title (Publication)

Author

Arunta Block, NT
(cont'd)

Aileron (1:100 000 map Prelim. ed.)

Glikson, A.Y.
Warren, R.G.

Hermannsburg (1:100 000 map Prelim. ed.)

Marjoribanks, R.W.³

Mount Peake (1:250 000 map Prelim. ed.)

Stewart, A.J.
Offe, L.A.

Tennant Creek, NT

Geochemistry of the Tennant Creek mineral field
(Bulletin)

Haldane, A.D.
Smith, S.E.

Tennant Creek (1:250 000 map Prelim. ed.)

Dodson, R.G.

Alligator River, NT

Geology of the Alligator Rivers region
(Bulletin)

Needham, R.S.
Smart, P.S.

Junction Bay (1:100 000 map Prelim. ed.)

Needham, R.S. et al.

Goomadeer " " "

Needham, R.S. et al.

Cahill " " "

Needham, R.S. et al. A-8

Wellington Range " " "

Needham, R.S. et al.

Gilruth " " "

Needham, R.S. et al.

Jim Jim " " "

Needham, R.S. et al.

Oenpelli " " "

Needham, R.S. et al.

Howship " " "

Needham, R.S. et al.

Field Island " " "

Needham, R.S. et al.

Rum Jungle, NT

Geology of the Rum Jungle Special sheet
area (Report)

Johnson, K.

Rum Jungle Special (1:100 000 map 2nd ed.)

Johnson, K.

Granites-Tanami, NT, WA

Geology of The Granites-Tanami area, NT and
WA (Bulletin)

Blake, D.H.
Hodgson, I.M.
Muhling, P.C.²

METALLIFEROUS AREAS

Project

Title (Publication)

Author

Granites-Tanami, NT, WA

Geology of Birrindudu and Tanami 1:250 000 Sheet areas (Report No. 174)

Blake, D.H.
Hodgson, I.M.
Smith, P.A.

Geology of the Webb 1:250 000 Sheet area, WA

Blake, D.H.

Geology of Highland Rocks, The Granites and Precambrian parts of the Billiluna, Lucas, and Stansmore 1:250 000 Sheet areas, NT and WA

Blake, D.H.
Hodgson, I.M.

Granites-Tanami (1:500 000 map 1st ed.)

Blake, D.H.
Hodgson, I.M.²
Muhling, P.C.²

Highland Rocks (1:250 000 map 1st ed.)

Hodgson, I.M.

The Granites " " "

Hodgson, I.M.

Lucas (1:250 000 map 2nd ed.)

Crowe, R.W.A.²
Muhling, P.C.²

Billiluna (1:250 000 map 2nd ed.)

Muhling, P.C.²
Passmore, V.L.
Blake, D.H.

Antarctica

Geology of the Prince Charles Mts. Antarctica (Bulletin)

Tingey, R.J.

Prince Charles Mountains (1:500 000 map 1st ed.)

Tingey, R.J.

Stinear Nunataks (1:250 000 map Prelim. ed.)

Tingey, R.J.

Crohn Massif

" " "

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Beaver Lake

" " "

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Mount Hicks

" " "

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Fisher Massif

" " "

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Mount Creswell

" " "

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Mawson Escarpment North

" " "

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Mawson Escarpment South

" " "

"

METALLIFEROUS AREAS

<u>Project</u>	<u>Title (Publication)</u>	<u>Author</u>
Antarctica (cont'd)	Mount Menzies (1:250 000 map Prelim. ed.)	Tingey, R.J.
	Cumpston Massif " " "	"
	Wilson Bluff " " "	"
	Mount Twigg " " "	"
	Scullin Monolith " " "	"
Petrology, Mineralogy Mineragraphy	Chemical analysis of Australian rocks - Igneous and Metamorphic supplement (Bulletin No. 146)	Joplin, G.A. ³
Papua New Guinea	Geology of the Kubor anticline (Bulletin No. 155)	Bain, J.H.C. Mackenzie, D.E. Ryburn, R.J.
	Geochronology of Igneous and Metamorphic rocks in New Guinea Highlands (Bulletin No. 162)	Page, R.W.
	Geology of the Southeast Papuan Mainland (Bulletin No. 165)	Smith, I.E. ¹ Davies, H.L. ¹
	Geology of the North Sepik region (Bulletin)	Hutchison, D.S. Norvick, M.S.
	Geology of New Britain, PNG (Bulletin)	Mackenzie, D.E. Ryburn, R.J.
	Petrology and major element geochemistry of South Bismarck Sea volcanoes (Bulletin)	Johnson, R.W.
	Offshore New Ireland volcanoes (Bulletin)	Johnson, R.W.
	Geology of New Ireland (Report)	Hohnen, P.D.
	Ambunti (1:250 000 map 1st ed.)	Hutchison, D.S. Davies, H.L. ¹
	Wabag " "	Hutchison, D.S. Davies, H.L. ¹
	Highlands Volcanoes (Bulletin)	Mackenzie, D.E.

METALLIFEROUS AREAS

<u>Project</u>	<u>Title (Publication)</u>	<u>Author</u>
Papua New Guinea (cont'd)	May River (1:250 000 map 1st ed.)	Hutchison, D.S. Davies, H.L. ¹
	Vanimo (1:250 000 map Prelim. ed.)	Norvick, M.S. Hutchison, D.S.
	Wewak-Sepik " "	Norvick, M.S. Hutchison, D.S.
	Papua New Guinea (1:2 500 000 map)	Dow, D.B. Skwarko, S.K.
	New Britain (1:500 000 map)	Mackenzie, D.E. Ryburn, R.J.
	West Sepik (1:500 000 map)	Davies, H.L. ¹
Magnetic Maps of Australia	Perenjori, Bencubbin, Ninghan, Nabberu, Robinson Range, Peak Hill, Moura, Stanley, Glenburgh, Perth, Pinjarra, Kellerberrin, Corrigin, Bendigo, Wangaratta, Tallangatta, Alligator River, Mount Evelyn, Plumridge, Rason, Minigwal, Cundeelee (1:250 000 aeromagnetic maps Prelim. ed.)	
Miscellaneous	Precambrian geology of Victoria River Region (Bulletin No. 168)	Sweet, I.P.
	Victoria River (1:500 000 map 1st ed.)	Sweet, I.P.
	Geology and petrology of the Antrim Plateau Volcanics (Bulletin)	Bultitude, R.J.
	Antrim Plateau Volcanics (1:100 000 map 1st ed.)	Bultitude, R.J.

CRUSTAL STUDIES

<u>Project</u>	<u>Title (Publication)</u>	<u>Author</u>
Gravity Maps of Australia	Gravity survey of WA, 1971-72 (Report)	Fraser, A.R.
	Gravity survey of the southwest of WA (Report)	Fraser, A.R.
	Gravity survey of the northwest of WA (Report)	Fraser, A.R.
	BMR ADP gravity data storage and retrieval system	Murray, A.S.
	Tasmania; SJ55-14, SJ55-15, SK55-1, SK55-2, SK55-3, SK55-5, SK55-6, SK55-7, SK55-9, SK55-10, SK55-11, SK55-14, SK55-15 (1:250 000 prelim. Bouguer anomaly maps)	
Isogal Project	NSW/Vic/SA; Ana Branch, Bairnsdale, Ballarat, Balranald, Bathurst, Bega, Bendigo, Broken Hill, Cargelligo, Cobham Lake, Colac, Deniliquin, Forbes, Hamilton, Horsham, Ivanhoe, Jerilderie, Mallacoota, Manara, Melbourne, Menindee, Mildura, Milparinka, Narrandera, Narromine, Nymagee, Ouyen, Pinaroo, Pooncarie, Portland, Queenscliff, Renmark, St Arnaud, Sale, Swan Hill, Sydney, Tallangatta, Urisino, Wagga, Wangaratta, Warburton, Warragul, White Cliffs, Wilcannia, Wollongong. (1:250 000 prelim. Bouguer anomaly maps)	
	Bouguer Anomalies of Australia (1:5 000 000 map prelim. ed.)	
	Australian isogal network (Bulletin)	Barlow, B.C. McCracken, H.W.
Papua New Guinea Crustal Studies	The New Britain - New Ireland crustal survey (Bulletin)	Barlow, B.C. et al.
	Earthquake focal mechanisms in the New Guinea/Solomon Islands (Report No. 178)	Ripper, I.D.

CRUSTAL STUDIES

<u>Project</u>	<u>Title (Publications)</u>	<u>Author</u>
Continental Margins Survey	Marine geophysics of the Gulf of Papua (Report No. 179)	Mutter, J.
	Geophysical results from the Great Australian Bight (Report)	Wilcox, J.B.
Marine Geology	Marine geology - Capricorn Channel area (Bulletin No. 163)	Marshall, J.F.
	Geology of the NSW continental shelf (Bulletin)	Davies, P.J.
	Geology of the Tasmanian shelf and Bass Strait	Davies, P.J.
Geomagnetic Data Processing	Magnetic MHV Toolangi, 1957-70 (Report)	Small, G. et al.
	Magnetic MHV Mawson, 1957-70 (Report)	Small, G. McGregor, P. et al.
	Magnetic MHV Macquarie Island, 1957-70 (Report)	McGregor, P. Small, G. et al.
Seismology	Seismicity and earthquake risk in S.E. Australia (Bulletin No. 164)	Denham, D.
	Seismological report on the Madang earthquake (Report No. 176)	Everingham, I.B.
	Effects of the 1973 Picton and other earthquakes in eastern Australia	
	Seismicity of PNG, 1970	Ripper, I.
	Seismicity of PNG, 1971	Ripper, I.
	Micro earthquakes in southwest WA (Report)	Gregson, P. Smith, R.
Miscellaneous	Seismic and gravity investigations along the Geotraverse, 1969 (Report)	Branson, J. Moss, J. Mathur, S.
	Rockbursts at Kalgoorlie (Report)	Gregson, P.

TECHNOLOGICAL SUPPORT

<u>Project</u>	<u>Title (Publication)</u>	<u>Author</u>
Development of Techniques	Standard curves for the interpretation of magnetic anomalies due to thin finite dykes (Bulletin No. 152)	Haigh, J.E. ¹ Smith, M.J. ¹
	Experience with the transient electromagnetic method in Australia (Report)	Spies, B.