

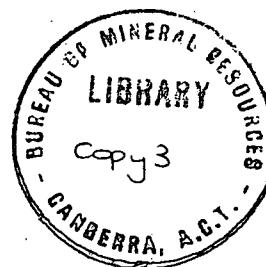
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DEPARTMENT OF
MINERALS AND ENERGY



BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

Record 1973/58



BMR
1973 PROGRAM

Compiled by

A. Driessen

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**BMR
1973 PROGRAM**

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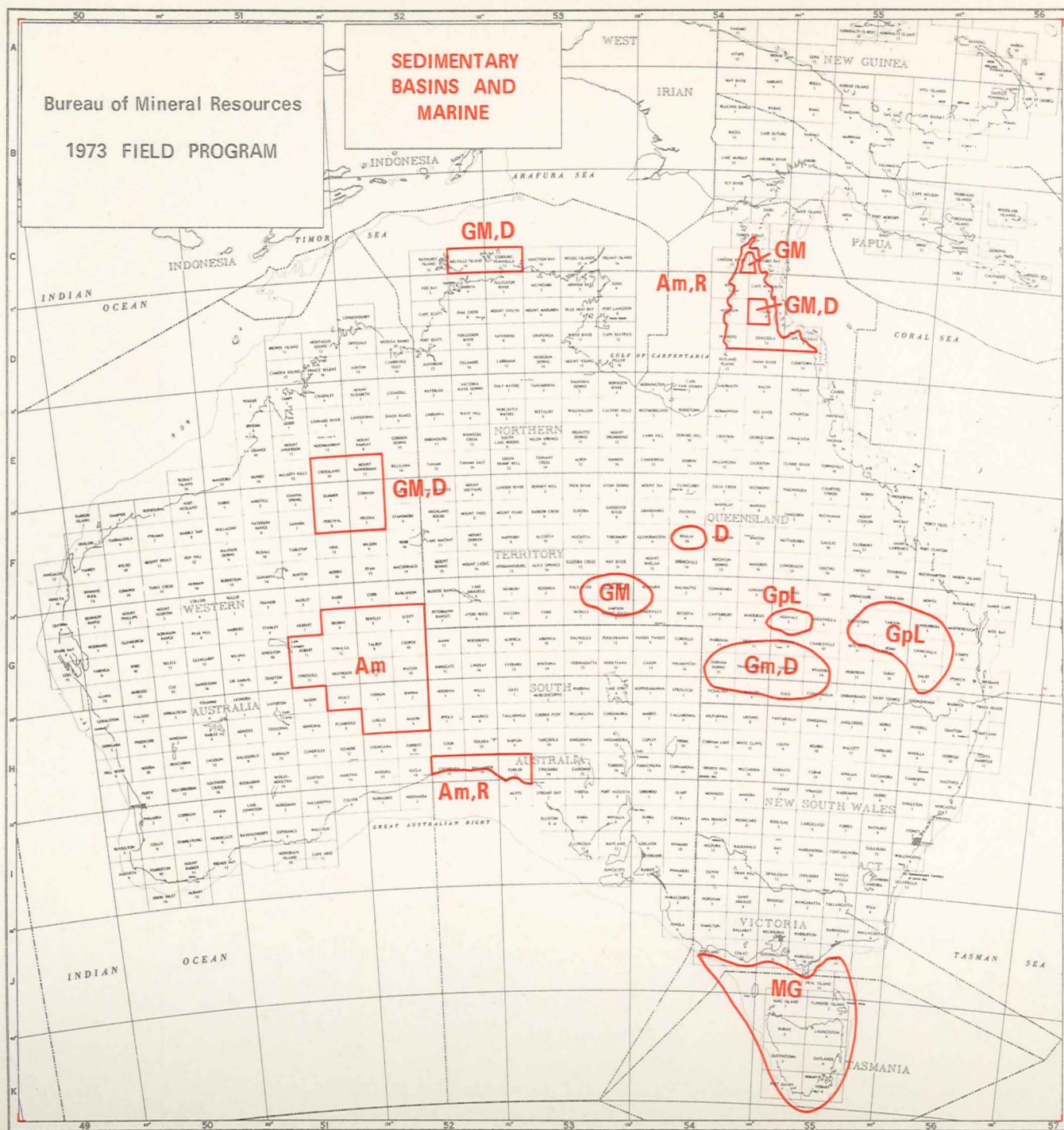
A. Driessen

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NOTES

1. The program does not list the preparation of BMR Records (unpublished) on the results of current projects; however, it can generally be assumed that such Records will be prepared for most projects.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.
2. Publications in preparation (BMR Bulletins, Reports, etc) are listed at the end of this program and not under individual projects. A list of publications released is brought out regularly by BMR.
3. The dates given in brackets after each field operation refer to the 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.
4. Geological mapping at 1:250 000 scale and airborne surveys of 1:250 000 Sheet areas are both part of the long term objective of providing regional geological and geophysical coverage of Australia. The aims of other projects are described under "Nature of Work".



LEGEND

- Am Aeromagnetic
- D Drilling (Stratigraphic)
- GM Geological Mapping
- Gm Geomorphology
- GpL Geophysical Logging (Boreholes)
- MG Marine Geology
- R Radiometric
- S Seismic

SEDIMENTARY BASINS

PROJECT

NATURE OF WORK

**Carpentaria Basin,
Qld**

Continue geological mapping, jointly with the Geological Survey of Queensland, of Jardine River, Orford Bay, Coen and Torres Strait 1:250 000 Sheet areas (July-Oct), also field checks of problem areas on Holroyd, Aurukun, Weipa, Ebagoola and Cape Weymouth 1:250 000 Sheet areas; this work will complete fieldwork coverage of the Cape York Peninsula. Sub-surface stratigraphic information will be obtained from about 12 drill holes, each approx. 180m-300m deep.

Prepare map of South Carpentaria at 1:1 000 000 scale (to cover 18 1:250 000 Sheet areas south of latitude 15°S).

Study the sedimentological characteristics of the Bulimba Formation.

Complete aeromagnetic coverage of onshore parts of Torres Strait, Jardine River, Orford Bay, Weipa, Cape Weymouth, Aurukun, Coen, Holroyd, Cape Melville and Ebagoola 1:250 000 Sheet areas at 1.5 and 3.0 km line spacing; also some coverage offshore at 6.0 km line spacing. Concurrent radiometric coverage is being restricted to the Peninsula Ridge on the Cape Weymouth, Coen and Ebagoola 1:250 000 Sheet areas (May-Oct).

**Northern Eromanga
and Galilee Basins,
Qld**

Continue preparation of Bulletin and 1:1 000 000 geological map (a preliminary edition of the latter is already available); the Bulletin will incorporate interpretations of existing aeromagnetic, seismic and gravity data.

Study Cretaceous palynology of the Springvale, Hay River and Boulia 1:250 000 Sheet areas; sub-surface information is to be augmented by 2 drill holes on the Boulia Sheet area.

Prepare paper on systematic palynology of the Galilee Basin.

Western Eromanga Basin, Qld, NT	Field check problem areas of previous mapping for revision of the 1:1 000 000 geological map (issued as Preliminary Edition). A summary of geology, incorporating some geophysical interpretation, is also being prepared.
Surat Basin, Qld	Continue preparation of Bulletin and First Edition 1:1 000 000 geological map (a Preliminary Edition of map is available); the Bulletin will incorporate interpretation of seismic work completed over the Roma Shelf in 1967/68 and the results of a current systematic study of the stratigraphic palynology of the lower Cretaceous.
Moura Coalfield, Qld	<p>Complete additional magnetic traverses to fill gaps in 1970 survey data (Apr). This work, requested by the Qld Mines Department, is largely an experimental survey to assess the method's suitability for establishing continuity of coal seams.</p> <p>Continue studies of the seismic absorption characteristics of coal to assess the feasibility of applying seismic techniques to measure the continuity of seams.</p>
Southwest Queensland Geomorphology	Investigate the relation of geomorphology and deep weathering profiles to geologic structure as a basis for the interpretation of Cainozoic structural movements and deposition, and study economic implications. A drilling program of about 5 holes to depths of 100 m will support current studies (July-Sept). This is a co-operative project with the University of NSW.
Sydney Basin, NSW	Prepare the review on the Sydney Basin for publication as a Bulletin.
Eucla Basin, SA	Complete aeromagnetic and radiometric coverage of the Coompana, Nullarbor (both partly) and Fowler 1:250 000 Sheet areas at 1.5 km line spacing (Jan-Feb). The interpretation of data from this and previous surveys (1970, 1972) will be incorporated in a Bulletin.

Officer Basin, WA

Supervise aeromagnetic and radiometric coverage, by contract, of Browne, Bentley, Scott, Robert, Yowalga, Talbot, Cooper, Throssel, Westwood, Lennis, Waigen, Neale, Vernon, Wanna, Jubilee and Mason 1:250 000 Sheet areas, (July-Dec).

Continue preparation of Bulletin and 1:1 000 000 map based on previous geological mapping; joint project with Geological Survey of Western Australia. The Bulletin will include the results of previous stratigraphic and evaporite drilling, and interpretations of the 1972 detailed seismic reflection/refraction and gravity surveys of the southwest portion of the Basin.

Canning Basin, WA

Commence geological mapping of Crossland, Dummer, Percival and Helena 1:250 000 Sheet areas, and re-map Mount Bannerman, Cornish, Billiluna, Lucas and Stansmore 1:250 000 Sheet areas (the latter four sheets will be published as 2nd Editions); a joint project with GSWA (May-Sept). Sub-surface stratigraphic information will be obtained from up to 6 drill holes, each approx. 300 m deep.

Continue palaeontological studies of conodonts, Permian brachiopods, molluscs and gastropods, and Upper Devonian antiarchs and arthrodires.

Study the sedimentological features, including carbonate petrology and geochemistry, clay mineralogy and heavy minerals of Devonian and Carboniferous units of the Lennard Shelf.

Review, correlate and integrate available seismic, gravity and aeromagnetic data into isochron, isopach, structure contour and lithofacies maps of selected areas.

Melville Island -
Cobourg Peninsula, NT

Field check problem areas of previous mapping (June-Sept); interpret offshore geophysical data and prepare Records and Preliminary Editions of the Bathurst Island, Melville Island, Cobourg Peninsula and Fog Bay 1:250 000 Sheet areas.

Study the stratigraphic palynology of Cretaceous rocks of this region.

Ngalia Basin, NT

Continue preparation of Bulletin and 1:500 000 map incorporating results of 1971 stratigraphic drilling, the 1967-69 seismic surveys and revised interpretations of aeromagnetic data.

Evaporite Study

Study evaporite occurrences generally and review geophysical methods which could be used in their investigations. Report on results of evaporite drilling in the Officer Basin for incorporation in a Bulletin of that Basin.

Petroleum Subsidy
Administration

Administer the Petroleum Search Subsidy Act; viz process applications, monitor progress, assess final reports and check cost statements; publish PSSA Reports on selected wells/surveys.

Inspect the offshore operations in the Northern Territory and Papua New Guinea, under the Petroleum (Submerged Lands) Act.

Core & Cutting
Laboratory

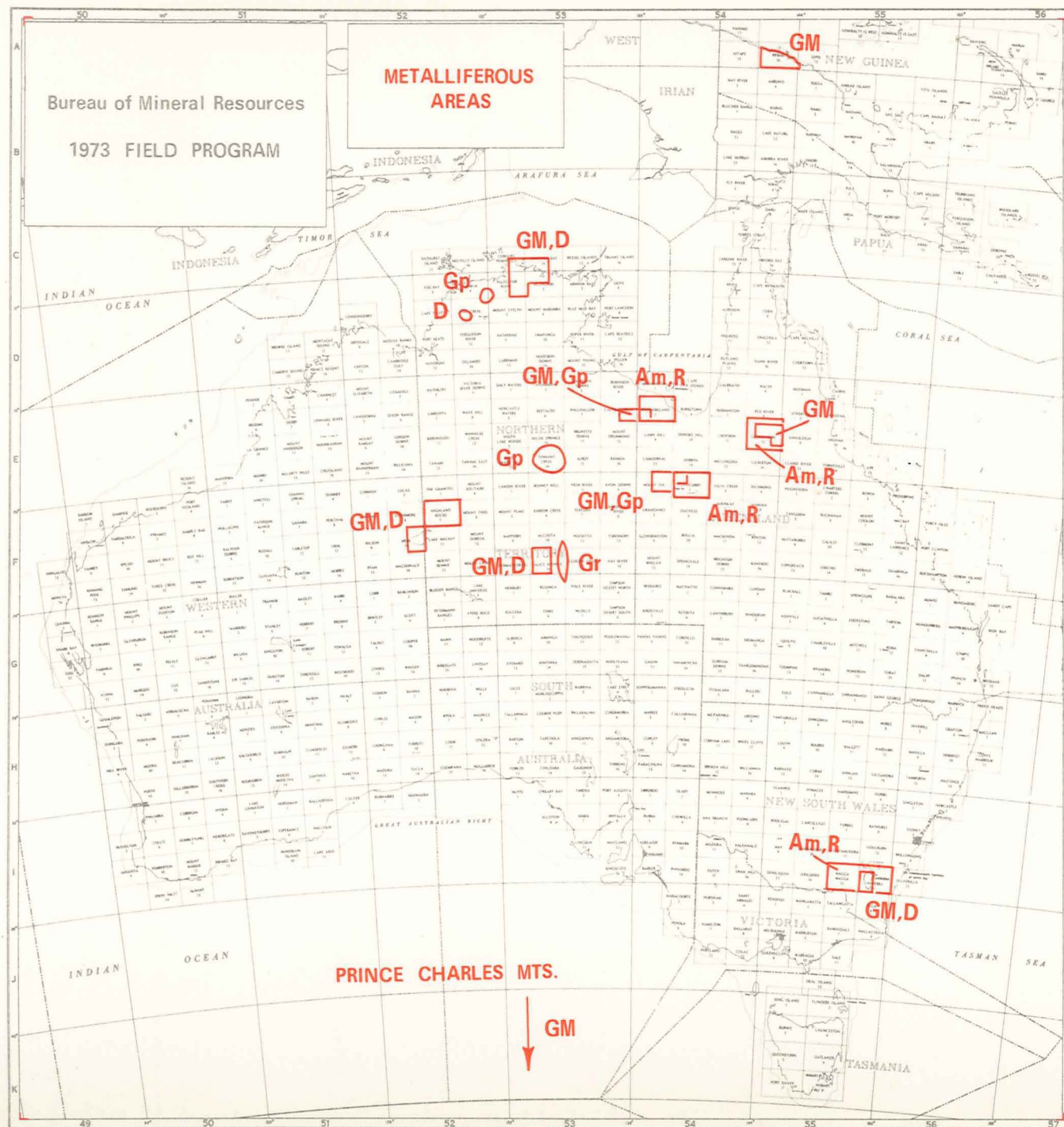
Store and catalogue all core and cuttings from BMR drilling programs and those operations covered by the Petroleum Search Subsidy and Petroleum (Submerged Lands) Acts. These specimens are generally available for examination and non-destructive testing to outside organizations.

MARINE SURVEYS

Continental Margin
Survey

Analyse and report on results of the contract marine geophysical survey of the Australian continental margin; the survey involved bathymetric, seismic, gravity and magnetic recording on lines 30-40 km apart between the 20 m and 4 000 m isobaths and was designed to determine, on a reconnaissance basis, the bathymetric and geological nature, and extent, of the Australian continental margin.

	Administer and supervise the contract aspects of digital processing and presentation of data.
Gulf of Papua and Bismarck Sea Survey 1970.	Analyse and report on results of this contract marine geophysical survey.
Magnetic Measurements on National Mapping Surveys	Take magnetic measurements on bathymetric surveys conducted by the Division of National Mapping, north and northeast of Port Hedland and south of the Timor Trough.
Marine Data Compilation	Prepare computer programs to facilitate the integration of all marine data, from BMR and elsewhere, into a marine data bank.
Marine Systems Development	Analyse and evaluate future system requirements, from data collection through to presentation stages, for the marine program.
Marine Geology	<p>Complete reconnaissance shallow seismic profiling and sea bed sampling of Bass Strait and the Tasmanian Shelf (Feb-Apr). Traverses are spaced at approximately 15 km intervals between the 20m and 500m isobaths and generally run normal to the coast line; the sampling interval along the traverses is also approximately 15 km. Samples are subject to XRD analyses to determine clay and carbonate contents and to general mineralogical and sedimentological studies.</p> <p>Study morphology of the eastern Australian continental shelf, using Department of National Mapping bathymetric survey data, to assess its potential for heavy mineral accumulations.</p>
Joides	Prepare publication on the results of laboratory investigations, carried out cooperatively with Scripps Oceanographic Institute, of samples collected from the Indian Ocean off the N.W. Australian continental margin.



LEGEND

- Am Aeromagnetic
- D Drilling
- GM Geological Mapping
- Gr Gravity
- R Radiometric
- Gp Detailed Ground Geophysics

METALLIFEROUS AREAS

PROJECT	NATURE OF WORK
Westmoreland, Qld.	<p>Complete geological mapping, jointly with the GSQ, of Hedleys Creek and Seigal 1:100 000 Sheet areas; commence work on Bowthorn, Musselbrook and Lawn Hill Sheets if time permits. This work is being supported by a geochemical drainage sampling program, petrological studies and geochronological work (May-Sept). Coverage of the region at 1:250 000 scale is already available; the more detailed work is directed to assessing the economic mineral potential of this province.</p> <p>Complete airborne magnetic and radiometric coverage of Hedleys Creek 1:100 000 Sheet area at 0.5 km line spacing and of Westmoreland 1:250 000 Sheet area at 1.5 km line spacing (Mar-June).</p>
Georgetown, Qld.	<p>Continue geological mapping of Georgetown and Forsayth 1:100 000 Sheet areas and of the base-ment rocks on Red River 1:250 000 Sheet area. The 1:100 000 scale mapping is being supported by a geochemical drainage and rock sampling program, petrological studies and geochronological work (May-Sept). Coverage of the region at 1:250 000 scale is already available, as is a 1:500 000 map and Bulletin on the Georgetown Inlier; the 1:100 000 mapping, together with more detailed mapping over known mineral occurrences, will provide more accurate assessments of the economic mineral potential of this province. Joint project with GSQ.</p> <p>Prepare Bulletin on petrology and geochemistry of acid rocks of Georgetown Inlier, Queensland.</p> <p>Complete airborne magnetic and radiometric coverage of Georgetown and Red River 1:250 000 Sheet areas at 1.5 km line spacing (July-Aug).</p>

Mount Isa -
Cloncurry, Qld

Commence geological mapping of Kennedy Gap, Prospector and Quamby 1:100 000 Sheet areas; this work is being supported by diamond drilling (contract) for stratigraphic information (June-Sept). Special reports in preparation on previous field investigations of the region are: The Geology and Geochemistry of Proterozoic Basic Meta-volcanic successions (Bulletin); the Evolution of Early Proterozoic Fault Structures and Associated Basic Volcanism of the Mount Isa Trough (Record); and The Geochronology of Rock Units of the Eastern Succession and Granites (Record). Joint project with GSQ.

Study the correlation between base metal and organic material content of the Corella Formation; joint study with Baas Becking Laboratory.

Complete airborne magnetic and radiometric coverage of Prospector 1:100 000 Sheet area at 0.5 km line spacing and of Cloncurry 1:250 000 Sheet area at 1.5 km line spacing.

Continue studies of ground geophysical techniques to assess their value as an exploration tool in areas of deep leaching, as an aid to geological interpretation and as a method of mapping Precambrian rocks under younger sediments.

Tantangara, ACT,
NSW

Complete geological mapping of Tantangara, and extend work onto Brindabella, 1:100 000 Sheet areas. This work is being supported by shallow drilling for stratigraphic information (Jan-Apr).

Study the taxonomy and stratigraphic distribution of Late Ordovician to Middle Devonian invertebrate faunas; study taxonomy of conodonts of this region.

Complete airborne magnetic and radiometric coverage of Canberra and Wagga 1:250 000 Sheet areas at 1.5 km line spacing.

Northeast Victoria Airborne Survey (1972)	Continue interpretation and reporting of magnetic and radiometric survey data of Tallangatta, Bendigo and Wangaratta 1:250 000 Sheet areas (Record).
Western Australia (Contract) Airborne Survey (1972)	Continue interpretation and reporting of magnetic and radiometric survey data of Pinjarra, Corrigin, Perth, Kelleberrin, Moora, Bencubbin, Perenjori, Ninghan, Glenburgh, Robinson Range, Peak Hill, Nabberu and Stanley 1:250 000 Sheet areas (Records).
West Kimberley, WA	Prepare First Edition geological map of Yampi 1:100 000 Sheet area; continue preparation of Bulletin and 1:500 000 map.
Kimberley Basin, WA	Continue preparation of this Bulletin and 1:500 000 geological map; 1:250 000 map coverage is available.
Granites - Tanami, WA, NT	Continue geological mapping of Proterozoic rocks of Mount Bannerman, Webb and Highland Rocks 1:250 000 Sheet areas for publication as Second Editions. This work is being supported by stratigraphic drilling and geochronological work (June-Sept). Geochronological studies here and in adjacent areas should provide some correlation between the geology of this region with that of the adjoining Kimberley, Victoria River and Arunta areas.
Victoria River Basin, NT	Continue preparation of this Bulletin and 1:500 000 geological map; map coverage of the area at 1:250 000 is available.
Antrim Plateau Volcanics, WA, NT, Qld	Continue preparation of Bulletin, 1:500 000 and 1:1 000 000 geological maps; continuing geochronological support will be provided to assist in correlating these rocks across northern Australia.

- Alligator River, NT
- Complete geological mapping of Oenpelli, Wellington Range, Goomadeer, Junction Bay and Howship 1:100 000 Sheet areas (May-Sept); fieldwork will be supported by a program of drilling for stratigraphic information (20-50 holes to 60 m), petrological studies and geochronological work.
- Conduct gravity and magnetic surveys over portions of the Nanambu Complex to investigate the relationship of uranium mineralisation to the Complex.
- Complete reporting of the 1972 airborne magnetic and radiometric survey of the region.
- Mary River, NT
- Contribute ground geophysical support to the NT Mines Branch to locate further drilling targets in Government Mining Reserve No. 275. Continue field testing and development of down-hole EM and IP logging techniques. (June-Sept).
- Rum Jungle, NT
- Carry out field checks prior to revision of the Rum Jungle Special Geological Map (1:63 360); this work includes detailed petrological, geochemical and sedimentological studies, in co-operation with Baas Becking Laboratory, of the stratigraphic succession of the area, to determine the environment of deposition, the source of metals in the Golden Dyke Formation and the controls of mineralisation; sub-surface information will be augmented by one drill hole to approximately 225 m depth in the Beeston Formation to obtain samples for detailed petrological work.
- McArthur Basin, NT
- Prepare Bulletins on Geology of the Carpentaria Proterozoic Province, Arnhem Land, NT; and on Geology of the Carpentaria Province, Roper River to Queensland Border, NT.
- Prepare Reports on Petrology of the Arnhem Land Basement Rocks; on McArthur River-Roper River Area; and on the results of isotopic dating of rocks from the McArthur Basin.

Tennant Creek, NT

Complete Record and Preliminary Edition geological map of Tennant Creek 1:250 000 Sheet area and Tennant Creek 1:100 000 Special Map; the Record will incorporate ground geophysical data and a review of existing (1956-70) airborne survey data.

Extend gravity coverage over the mineral field; reassess geophysical interpretations of previous surveys and field check these with geology and any known mineralisation (June-Sept).

Continue investigation into geochemistry of the Tennant Creek mineralisation; complete progress report on geochemical and mineralogical analysis of Warramunga sediments and continue analysis of ironstones.

Arunta Complex, NT

Continue geological mapping of Alice Springs, Burt and small uncompleted portions of Laughlen and Undoolya 1:100 000 Sheet areas (May-Sept). Fieldwork is being supported by petrological and geochronological work and by a program of shallow (to 60 m) drilling of 20 to 50 holes in the Burt Plain area for stratigraphic information (Apr-June).

Prepare geological maps at 1:250 000 and 1:100 000 scale of areas mapped in previous years; prepare a 1:1 000 000 map of mineral occurrences of the region.

Prepare Bulletin on Arltunga Nappe Complex incorporating geological results and data from 1972 detailed airborne magnetic and radiometric survey.

Papua New Guinea

Complete geological mapping of Mesozoic and Lower Tertiary rocks of Wewak and Sepik 1:250 000 Sheet areas; field check oil company mapping of the Upper Tertiary and Quaternary sediments; collect samples for isotopic dating. Prepare Report on geology of Bewani and Torricelli Mountains.

Prepare 1:250 000 geological maps of areas previously mapped in West Sepik, Eastern Papua and New Britain regions.

Prepare Bulletins on West Central Range, Southeast Papuan mainland, and New Britain.

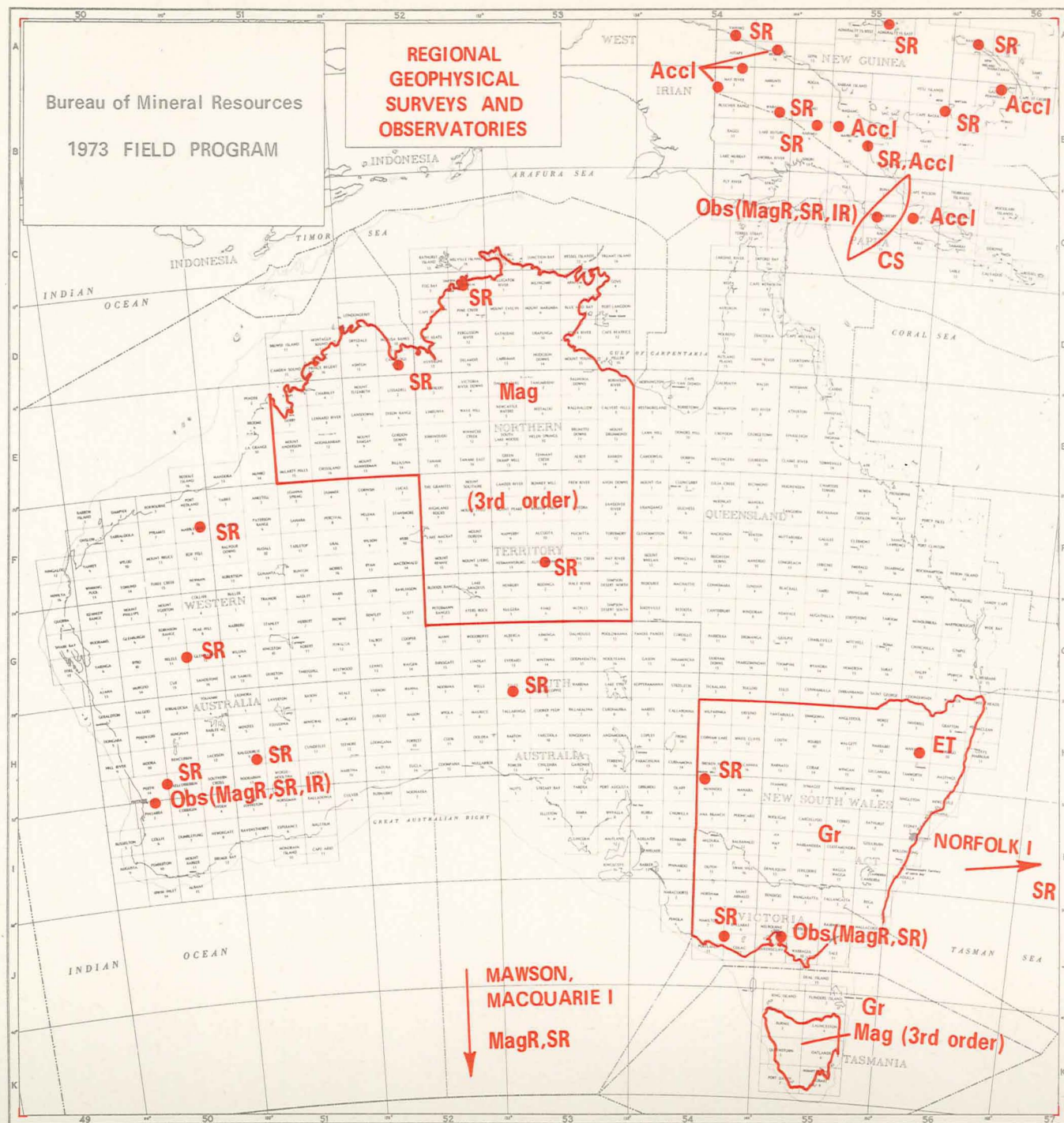
Antarctica

Complete geological mapping in the Southern Prince Charles Mountains and, weather permitting, carry out a brief reconnaissance survey of the Grove Mountains; take opportunity gravity measurements (Jan-Mar).

Prepare reports and geological maps at 1:250 000 and 1:500 000 scale of areas mapped during previous surveys.

1973 FIELD PROGRAM

REGIONAL GEOPHYSICAL SURVEYS AND OBSERVATORIES



LEGEND

Accel	Accelerograph
CS	Crustal Studies
ET	Earth Tides
Gr	Gravity
IR	Ionospheric Recording
Mag	Magnetic
MagR	Magnetic Recording
Obs	Observatory
SR	Seismic Recording

REGIONAL GEOPHYSICAL SURVEYS

PROJECT	NATURE OF WORK
Helicopter Gravity Survey NSW, VIC, TAS.	Complete gravity coverage, by contract, of southeastern Australia on an 11 km grid spacing; coverage of Tasmania will be on a 6-7 km grid spacing. (Sept 1973 - Mar 1974). This survey is the final stage in the long term program to provide gravity coverage of Australia at a station density of one station per 125 km ² or better.
Gravity Map of Australia	<p>Continue compilation and preparation of free air and Bouguer anomaly maps of Australia at 1:2 500 000 scale. This work involves continual development of ADP programs to recompute gravity data from early BMR and company surveys and for storage and retrieval of gravity data. Publication is scheduled for 1976, to coincide with the International Geological Congress.</p> <p>Maintain gravity data files for use by BMR, industry and other organisations. Maintain and check gravity meters.</p>
Isogal Project	Complete analysis of results from net-work of isogal datums; prepare report.
Australian Calibration Line	Take gravity measurements using Russian and BMR gravity meters along the ACL which extends from Hobart, via the eastern seaboard, to Mount Hagen in Papua New Guinea (Apr-June). This project is being carried out jointly with Russian scientists.
Sydney-Christchurch- McMurdo Gravity Tie	Complete a gravity tie between Sydney, Christchurch (NZ) and McMurdo (Antarctica) and, if possible, other Antarctic bases (Dec).

**Earth Tides - Deflection
of the Vertical**

Operate horizontal pendulum apparatus for continuous measuring of solid earth tides. The equipment is presently installed in a mine tunnel near Armidale and is operated jointly with the University of New England.

**Earth Tides - Variations
in Intensity**

Operate and maintain continuous gravity measuring equipment at Canberra, Armidale and other sites, to determine elastic properties of the earth.

Canberra Gravity Surveys

Continue interpretation and reporting of gravity data from previous ACT surveys.

Complete a semi-detailed gravity survey over Lake George to investigate the thickness of sediments in the Lake and features of the Lake George Fault.

**Interpretation of 1972
Trans-Australia Seismic
Survey**

Continue interpretation and reporting of seismic data obtained from the 1972 blasts at Kunanalling, Mt Fitton and Bass Strait. These data will be integrated with similar data from blasts at Maralinga (1956) and Ord River (1970, 1971) to provide information on crustal structure in two directions across the Australian Shield.

**Bowen Basin Crustal
Survey**

Investigate the earth's crust and upper mantle under the Bowen Basin by seismic refraction techniques utilising energy from various open cut mine blasts (May-June). This project is also providing opportunities for field testing of seismic recording equipment prior to use in the East Papua Crustal study project.

PNG Crustal Surveys

Investigate the nature and structure of the earth's crust in East Papua, particularly the ultramafic belt, by seismic refraction and reconnaissance gravity surveys (Sept-Oct); the project involves the detonation of some 60 shots in the seas surrounding East Papua, and is being done in conjunction with various Australian universities and the PNG Geological Survey.

Continue preparation of interpretative reports of the 1967-69 New Britain - New Ireland crustal surveys.

- | | |
|--|--|
| Central Australia Crustal Survey | Review geological and geophysical information in an area of major regional deformation across the Ngalia and Amadeus Basins. Carry out model studies and write preview report for proposed seismic refraction/reflection, gravity and magneto-telluric survey. |
| Third Order Magnetic Survey of Australia | Record magnetic observations in Tasmania, Northern Territory and north east Western Australia at 15 km intervals along roads and tracks. This program will complete coverage of all readily accessible parts of the continent. |
| Isomagnetic Survey of Australia | Commence repeat of 1st order magnetic (D) survey of some 60 stations throughout Australia, for publication of the 1975 Isogonic map (Aug-Oct). |

OBSERVATORIES

CANBERRA GROUP

- | | |
|--|--|
| Geomagnetic Data Processing and Reductions | Maintain Australian Geomagnetic Standards; convert magnetic results to IAGA format; digitise magnetograms; overhaul and redesign scaling machine; prepare and distribute Geophysical Observatory Report (Vol 21). |
| Digital Magnetic Recorders | Operate and evaluate "Elsec" automatic observatory at Kowen Forest. |
| Conjugate Point Project | Study magnetic data from Kowen Forest (ACT) and Kamchatka (USSR) to investigate the Sq effects at magnetically conjugate points. |
| Seismology Data Processing and Reductions | Prepare phase and epicentral data tapes for the International Seismological Centre. Maintain regional earthquake data files and prepare seismicity maps; data are also contributed by Australian National University, University of Tasmania, Brisbane, Riverview College, Rabaul and Honiara. |

Prepare monthly phase and time sorted bulletins for distribution.

Maintain and calibrate seismograph stations at Alice Springs and Manton, NT and analyse data. Install high-gain SP-Z seismographs at Broken Hill, NSW and Giles, SA; these will be run co-operatively with University of NSW and Bureau of Meteorology respectively.

Strong Earth Motion

Maintain an accelerograph network; digitise and analyse accelerograms; carry out field studies of felt or damaging events.

TOOLANGI OBSERVATORY, VIC

Standard Program

Record and analyse geomagnetic and seismic observations made at the observatory.

Regional Seismology

Maintain and calibrate seismograph stations at Bellfield Reservoir and Norfolk Island, and analyse data.

MUNDARING OBSERVATORY, WA

Standard Program

Record, analyse and report on geomagnetic, seismic, and ionospheric observations made at the observatory; train personnel for Antarctic projects.

Regional Seismology

Continue normal program of SP recording at Kalgoorlie, Meekatharra, Kununurra, Swan View and Marble Bar, and analyse results.

Take short term (4 months) SP recordings at Wongan Hill, Mt Baker and Wagin to study microtremor characteristics of shield areas.

Take accelerograph recordings at Meckering and undertake field studies of felt or damaging earthquakes and record aftershock tremors.

Take 'opportunity' seismic refraction recordings of various mine blasts to study P wave residuals and travel times.

PORT MORESBY OBSERVATORY, PNG

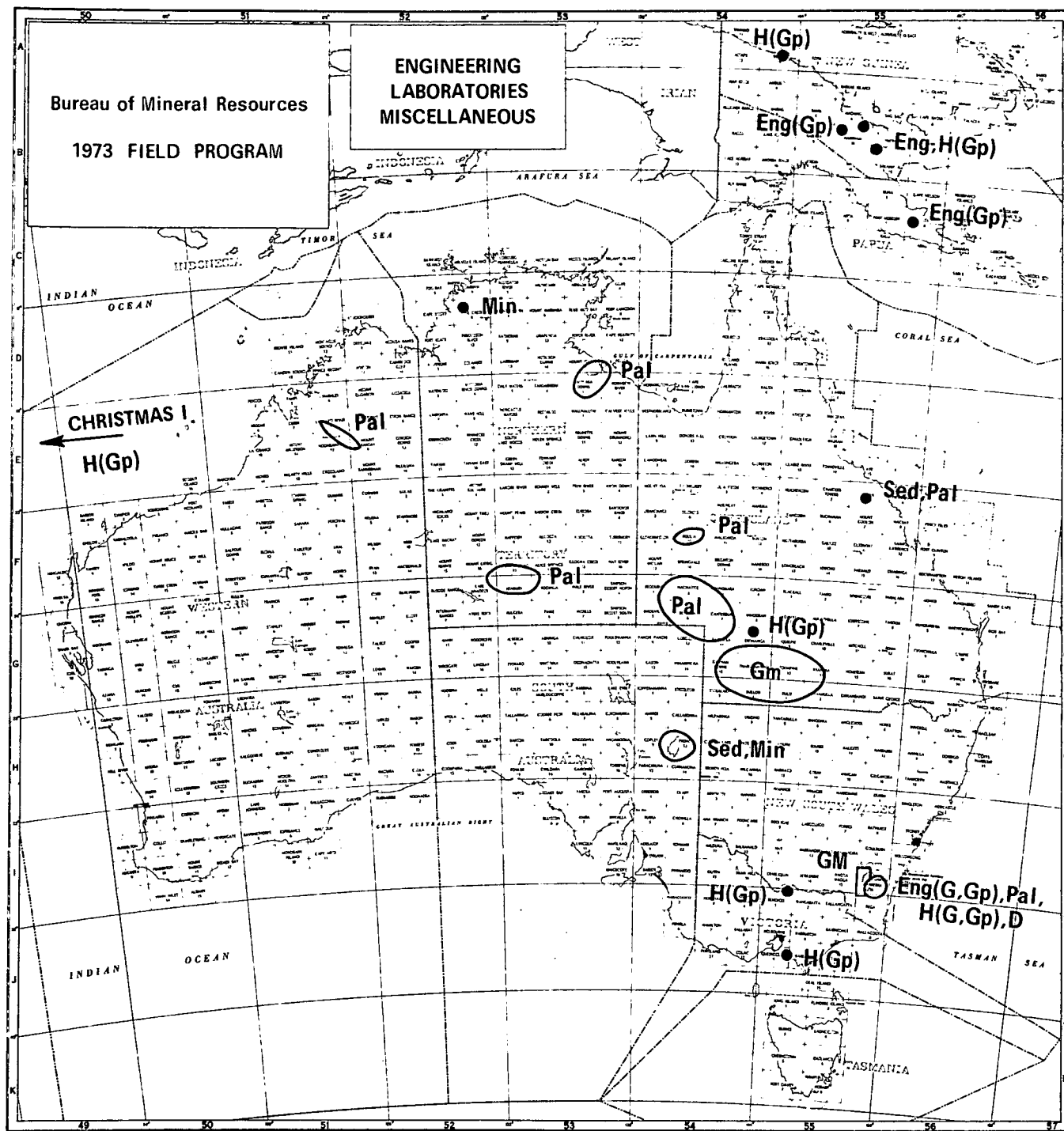
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| Standard Program | Record, analyse and report on geomagnetic, seismic and ionospheric observations made at the observatory; maintain PNG seismicity files. |
| Regional Seismology | Continue normal program of SP recording at Wabag, Lae, Goroka, Vanimu, Momote, Talasea, Kavieng and Kobuan and analyse results. Maintain accelerographs at Lae, Ramu, Wewak, Rabaul, Frieda River, Star Mountains and Musa. |

MACQUARIE ISLAND OBSERVATORY

Record and analyse geomagnetic and seismic observations; improve and modify telemetry seismic system; operate tide gauge and micro-pulsation recorders.

MAWSON OBSERVATORY

Record and analyse geomagnetic and seismic observations; install SP-Z seismometer in underground chamber.



LEGEND

D	Drilling (Stratigraphic)
Eng(G,Gp)	Engineering (Geology, Geophysics)
GM	Geological Mapping
Gm	Geomorphology
H(G,Gp)	Hydrology, (Geology, Geophysics)
Min	Mineralogy
Pal	Palaeontology
Sed	Sedimentology

ENGINEERING

PROJECT	NATURE OF WORK
Damsite Investigations, ACT, NSW	Provide geological and geophysical services to NCDC and CDW on the general and detailed design stages of the Googong Dam and Belconnen Lake Projects. Geological assessments involve detailed geological mapping, core and auger drilling, resistivity and shallow seismic profiling and provide information on the soil, weathered rock, fresh rock and groundwater characteristics of the site.
Watermains Investigations, ACT, NSW	Provide geological and geophysical advice and services to NCDC and CDW on general feasibility study of the optimum placement of Canberra watermains, and on detailed design stage of the Googong-Queanbeyan pipeline.
Sewer Tunnel Investigations, ACT, NSW	<p>Provide geological services, progress reports and maps during the construction stage of the Tuggeranong sewer tunnel.</p> <p>Provide geological and geophysical advice and services to NCDC and CDW on the general and detailed feasibility study stages of the Molonglo Valley interceptor, Canberra trunk and City sewer augmentation, Jerrabomberra trunk sewer, Harmen-Queanbeyan sewer and the lower Molonglo pollution control centre.</p>
Roadworks Investigations, ACT	Provide geological and geophysical advice and services to NCDC and CDW on the detailed design and construction stages of the Tuggeranong Freeway and Parkes Way-Kings Avenue interchange, and the feasibility study to detail design stages of the Tuggeranong-Molonglo Freeway interchange, Molonglo Freeway-Commonwealth Avenue interchange, Eastern and Western distributors, Ginninderra arterial crossing and the Murrumbidgee road/sewer bridge projects.

Urban Development and
Major Buildings Site
Investigations, ACT

Provide geological and geophysical advice and services and conduct terrain evaluation surveys (the latter co-operatively with CSIRO) for both design and construction stages of various residential, urban and industrial development projects in the ACT; current projects include the High Court, Art Gallery and Parliamentary Triangle, the PMG tower on Black Mountain, the development of town centres at Tuggeranong, Belconnen, Woden, Kingston and City, the development of the Gungahlin-Mulligans Flat residential area and the development of industrial areas at West Belconnen, Crace and Jerrabomberra. These investigations provide information on the foundation characteristics of the various sites; terrain evaluations are more regional.

Papua New Guinea

Carry out reconnaissance seismic survey and measure seismic attenuation in Lae area; aim is to obtain bedrock profiles and foundation properties over town sites, and to classify ground response to earthquakes; requested by PNG Geological Survey.

Theoretical Studies

Continue studies on the feasibility of using conventional geophysical techniques to identify incipient landslides.

HYDROLOGY

Australian Capital
Territory

Maintain and monitor ground water characteristics in observation bores in the ACT and at Jervis Bay, and observe water level and water quality at Lake George; ACT data will contribute to a hydrogeological map of the territory and the Representative Basins Study Project being conducted by the Australian Water Resources Council; Jervis Bay data are being used to study leakage from Lake Windemere.

Provide general hydrogeological advice, on request, to rural landholders and the various engineering projects of CDW and NCDC. Technical information is also supplied to various government departments, committees of the Australian Water Resources Council, etc.

Great Artesian Basin,
Qld, NSW, SA, NT

Continue the review and collation of all hydrogeological data from the Basin and construct a working, hydraulic, mathematical model of the Basin in order to develop an understanding of its groundwater characteristics, including recharge, hydraulics and chemistry. The Australian Water Resources Council nominated BMR as the co-ordinating body for this study which will draw on data held by BMR and the relevant State Water Authorities and Mines Departments.

Supervise the program of geophysical logging of bores by contractors and log those bores unsuitable for letting by contract.

Analyse and abstract geothermal data from bore logs of the Basin to study its heat flow characteristics; develop heat conductivity measuring equipment for use on drill core.

Canaway Ridge, Qld

Conduct experimental resistivity surveys to establish a technique of locating shallow aquifers, up to a depth of 300 meters. Control bores are available for data interpretation in terms of water quantities and salinity (May-Apr).

Murray-Goulburn Rivers
Valley, Vic

Continue geophysical surveys to locate shallow aquifers, viz water bearing sands and gravels of prior stream channels of the Murray and Goulburn Rivers now buried under alluvium to depths of up to 300 meters. Regional gravity coverage is being completed to outline the limits of basement (Jan-Feb); experimental work is continuing to assess the value of using conventional marine seismic profiling equipment (sparkers and boomers) in the numerous irrigation

channels to locate shallow aquifers (July); seismic refraction coverage is being extended (Sept-Oct); an airborne magnetic survey was completed in 1972 and data interpretation is continuing. This is a co-operative project with the Victorian Mines Department, and the State Rivers and Water Supply Commission.

Westernport Bay, Vic

Carry out seismic profiling survey in conjunction with Victorian State Rivers and Water Supply Commission. Its aim is to follow the extension of an onshore aquifer under Westernport Bay and to experiment with variations of systems parameters to optimise penetration and resolution; sub-bottom geological control will be available from a number of drill holes being put down by the State authority.

CSIRO Groundwater Survey, WA

Provide technical assistance and advice to the Land Division, CSIRO.

Christmas Island

Carry out seismic refraction, resistivity and magnetic surveys on the island to detect groundwater in limestone overlying basalt; in conjunction with British Phosphate Commission.

Papua New Guinea

Carry out various groundwater searches at Lae, Wewak and the Markham Valley using seismic, resistivity, magnetic and gravity techniques; requested by PNG Geological Survey.

Theoretical Studies

Continue studies directed at identifying cavities, particularly in limestone, from various geophysical data.

LABORATORIES AND WORKSHOPS

PROJECT	NATURE OF WORK
Micropalaeontology	<p>Provide palaeontological support for field projects, including studies of the stratigraphic palynology of the Cretaceous of the North Eromanga Basin, the Permian of the Galilee Basin, the lower Cretaceous of the Surat Basin and the Cretaceous of Melville Island/Cobourg Peninsula; studies of foraminifera of the Wabag area (PNG), of conodonts from the Canning Basin and the Canberra region, and of Lower Carboniferous ostracoda from the Bonaparte Gulf Basin.</p> <p>Study Precambrian stromatolites, microfossils and metazoan trace and body fossils.</p> <p>Study the fluorescent palynology of Cainozoic pollen grains of Australian regions generally.</p>
Macropalaeontology	<p>Provide palaeontological support for field projects, including studies of Permian faunas from the NE Canning Basin, antiarchs and orthodires from the East Canning Basin, antiarchs from Antarctica, Cainozoic molluscs from PNG and Late Ordovician to Middle Devonian corals, trilobites and brachiopods of the Canberra region; describe Permian fossils from the Warwick 1:250 000 Sheet area and Lower Devonian arthrodires and antiarchs from Taemas/Wee Jasper NSW.</p> <p>Study the systematic palaeontology of vertebrates from Bullock Creek NT, Riversleigh Qld and from the Pleistocene of PNG; search for Cretaceous/early Tertiary vertebrates in SW Queensland and Nerriga NSW.</p> <p>Search for and study Devonian vertebrate faunas from the Mereenie Sandstone and Parke Siltstone of the Amadeus Basin; continue research into the biostratigraphy and geographic distribution of Devonian vertebrates.</p>

Study and describe the systematic palaeontology of Ordovician fossils, especially trilobites, and relate the findings to palaeogeography and palaeoecology.

Study the comparative palaeontology of Permian marine faunas from India and Australia.

Describe Cambrian and Ordovician trilobites and study any stratigraphic implications.

Sedimentology

Provide sedimentological support for field projects including Carpentaria Basin, Canning Basin and Rum Jungle.

Study in detail the Permian stratigraphy of the Bowen Basin at Exmoor; a contribution to the comparative studies of Permian marine faunas from India and Australia.

Study recent sediments of Lake Frome and its inland drainage basin to provide a sedimentological framework for continuing geochemical studies; a joint project with Baas Becking Group and ANU.

Continue investigations of samples from offshore NSW to assist in assessment of heavy mineral accumulations.

Petrology, Mineralogy and Mineragraphy

Provide general laboratory support for BMR projects, using X-ray diffractometer (XRD), electron probe microanalyser (EPM), X-ray powder camera and optical microscopes.

Provide petrological support for field projects including the Westmoreland, Mt Isa/Cloncurry, Arunta Complex and Antarctic projects.

Investigate the geochemistry, and any associated mineralisation, of granites in Herberton-Mount Garnet and Westmoreland areas; work includes trace element analyses and isotopic age determinations.

Study relationships between lithology, metamorphic grade and regional geochemistry of rocks from the Prince Charles Mts, Antarctica, as indicated by major and trace element contents of rocks.

Continue petrological and mineralogical studies of Hart Dolerite and other volcanic and plutonic rocks from the Arunta Complex and PNG areas.

Study distinctions between para- and ortho-amphibolites of Precambrian rocks of NW Queensland.

Establish a type specimen and thin section reference collection of igneous and metamorphic rocks and rock forming minerals, as part of a BMR information storage and retrieval system.

Prepare Records on chromite bearing ultra-basic rocks from Eastman's Bore, Mount Ramsay 1:250 000 Sheet area and on the petrography of carbonatite specimens from WA.

Geochemistry

Provide general laboratory support for BMR projects, using direct reading optical spectrograph (DROS), Hilger photographic optical spectrograph, automatic X-ray fluorescence spectrometer (XRF), atomic absorption spectrometer (AAS), gamma ray spectrometer, various spectrophotometers and polarographic equipment; provide laboratory and field support for the geochemical surveys of the Georgetown and Westmoreland projects; provide analytical services for monitoring of Zn in the Molonglo River system.

Continue investigations and development of methods of Hg detection for application under Australian conditions.

Continue investigations into applied methods and techniques of major instruments such as DROS, XRF, and AAS; develop a system of tape output for XRF, XRD, DROS and EPM to facilitate data computations. Report values for analytical standards as a commitment to the Bauxite Standards Committee.

Prepare Records on trace element assemblages in carbonate sequences of the McArthur River area, NT, on the solubility of apatite and the synthesis of hydroxy and carbonate apatites, and on statistical analyses of geochemical data from the Eastern Creek Volcanics and Soldiers Cap Formation of the Mt Isa-Cloncurry area, Queensland.

Geochronology

Provide isotopic age determination support to BMR investigations including the dating of rocks from the Georgetown Inlier, minerals associated with mineralisation of the Herberton-Mount Garnet area, rock units of the Eastern succession and granites of the Mount Isa-Cloncurry region, rock units of the Arunta Complex, Tennant Creek, Alligator River, Granites- Billiluna areas, the Antrim Plateau Volcanics, units of the type Carpentarian succession, and rocks from PNG projects particularly those associated with porphyry copper mineralisation. Many of the current investigations are by Rb - Sr methods but K-Ar and Pb isotope methods are also available. Laboratory facilities are shared with ANU; some work is also done by Amdel at Adelaide and some radio carbon dating work is carried out at Sydney University.

Prepare Bulletin on geochronology of the East Kimberley region, WA, and Records on the results of geochronological work completed on metamorphic and igneous rocks from Cape York Peninsula Qld, Antrim Plateau Volcanics, Victoria River Basin glauconites, Tertiary basalts from Maude and Aireys Inlet Vic, and volcanic and intrusive rocks from New Guinea, the Solomon Islands and New Britain.

Geobiology (Baas Becking Laboratory)

Continue investigations of the genesis of base metal mineralisation particularly that associated with the Golden Dyke Formation at Rum Jungle, the HYC Member and Barney Creek Formation of McArthur River and the Corella Formation of the Mount Isa-Cloncurry area.

Study the chemistry and sedimentology of recent sediments of Lake Frome SA.

Continue studies of the behaviour of base metal ions in brines, the co-precipitation of heavy metal ions with Ca/Mg carbonates, and of the organic metallic complexes derived from algal material.

Continue biological investigations related to the concentration of metal sulphides by bacteria, the fractionation of stable sulphur isotopes, the physiology, taxonomy and chemistry of sulphate reducing bacteria and the deposition of carbonate by algae.

Volcanology

Study the geochemical and petrological aspects of volcanoes and near surface intrusives of PNG particularly those associated with porphyry copper mineralisation.

Prepare Bulletin on the geology and petrology of late Cainozoic volcanoes along the southern margin of the Bismarck Sea, PNG.

Prepare Records on geology and petrology of Cape Hoskins area, Willaumez Peninsula, the Witu Islands and associated volcanic centres of New Britain, St Andrew Strait Islands, and Highlands volcanoes of PNG; also on Sr 87/86 ratios in late Cainozoic rocks from PNG, on basaltic rocks from the Bismarck Sea, and volcanic rocks from the offshore islands off eastern Papua.

Photogeology and Remote Sensing

Provide photogeology support and interpretations, as required, for BMR projects.

Evaluate and research the application of remote sensing techniques such as multispectral photography, infra-red imagery and side looking airborne radar (SLAR). Current evaluations are being carried out on data from Captain's Flat and Orroral Valley, Bowen Basin, Mount Isa-Cloncurry, Laverton and Rabaul.

Evaluate and study ERTS imagery and participate in ERTS and Skylab projects.

Instrument and Systems Development

Develop instrumentation and systems for geophysical airborne, marine and ground surveys, crustal study projects and the geophysical observatories; programmed activities include the construction of fluxgate and proton magnetometers, a digital data acquisition system for magnetometers and a tape playback system for remote seismograph systems.

Investigate seismic digital recording systems and assess requirements for a system for BMR.

Continue development of ADP programs to facilitate storage, retrieval and interpretation of seismic and gravity data.

Electronic Maintenance

Carry out equipment evaluation and maintenance, and acceptance testing of new equipment; programmed activities include the rebuilding of gamma ray and neutron well-logging facilities, the evaluation and development of marine geophysical deep survey equipment and shallow marine profiling equipment, the integration of various laboratory instruments with data conversion computer, and the installation of a digital data acquisition system in the Aero Commander aircraft.

Mechanical Services

Provide mechanical engineering facilities and advise as required; much of the work is carried out co-operatively with the Instrument and Systems Development and Electronic Maintenance Groups. Programmed activities include assistance for the installation of seismograph stations at Giles and Broken Hill, the rebuilding of a well-logger, feasibility studies on the acquisition of a coring drill for marine sediments, a study of transmit transducers for high resolution shallow seismic profiling work, and mechanical design aspects of instrument and systems development projects.

Rock Measurements

Carry out measurements of rock properties such as sonic and magnetic properties; install a rock mechanics press and develop auxiliary equipment for static elastic moduli measurements; install gamma ray spectrometry equipment, and introduce resistivity and IP measuring techniques.

Develop heat conductivity measuring equipment; develop sound absorption measuring equipment for use on unconsolidated sediments.

Petroleum Technology Laboratory

Carry out porosity, permeability, density, fluid saturation, pore size distribution and capillary pressure analyses of petroleum reservoir rocks; core samples are obtained from wells drilled under the Petroleum Search Subsidy Act and Petroleum (Submerged Lands) Act as well as State Mines Departments, private companies and BMR parties.

Carry out thermodynamic (PVT) studies of hydrocarbons from Australian petroleum accumulations; investigate the recovery of petroleum reservoir fluids at simulated reservoir temperatures.

Carry out research on the processes of the generation of petroleum. This work will commence with studies of organic matter in the Precambrian and Palaeozoic sediments of the Amadeus Basin.

Carry out studies on the structure of kerogens as a source of petroleum hydrocarbons, the organic matter of phosphorites as a potential source of petroleum, and the role and effect of micro-organisms in the generation and alteration of petroleum precursors; the latter project is being done co-operatively with Baas Becking Laboratory Group.

REVIEW AND INFORMATION SERVICES

PROJECT	NATURE OF WORK
Planning and Co-ordination	Review and investigate short and long term program proposals in terms of priorities, man power requirements, financial resources, cost effectiveness, and co-ordination of interrelated projects.
Mineral Economics	<p>Study long-range production and consumption trends in metals and minerals; evaluate new techniques in mineral extraction and processing; study utilisation, and cost factors.</p> <p>Study the Australian mineral industry and produce assessments of Australian resources including tin, copper, iron ore, lead-zinc and construction materials.</p>
Mining Engineering	<p>Carry out econometric studies of the mineral industry; evaluate feasibility studies of proposed mining projects; examine interindustry relationships of the mining industry and its contribution to national income and export earnings.</p> <p>Examine the operations of mines receiving assistance under the Gold Mining Industry Assistance Act; participate in committee work of the Standards Association of Australia and the Conference of Chief Inspectors of Mines.</p>
Petroleum Technology	Provide continuing assessments of Australian petroleum resources; participate in work of the Oil Advisory Committee; provide drilling services for the Bureau's operations.
Information Services	<p>Prepare and disseminate information to the Government, industry, the public and the news media. Answer queries from Ministers and Parliament.</p> <p>Continue feasibility studies of an information indexing and retrieval system for BMR.</p>

- Library Maintain and operate an efficient and comprehensive library for use by BMR personnel and visitors.
- Editing Edit BMR publications; edit papers for various journals.
- Geological Services Prepare and revise Mineral Reports; maintain indexes and technical data files for BMR use; maintain the Central Register of Stratigraphic Names.
- Provide map compilation and editing services for BMR publications. Current compilation projects include the 1:10 000 000 Geological History Map of Australia, the 1:10 000 000 Sketch Tectonic Map of Australia, 1:2 500 000 Mineral Deposits Map of PNG and 1:2 500 000 Geology of Australia.
- Maintain and operate a comprehensive museum for use by BMR personnel, visitors and teaching organisations.

PUBLICATIONS IN PROGRESS

1973

- Note: 1 Formerly with BMR
2 With, or formerly with, State Geological Survey
3 University or other institution

Publication	Author	Status at April 1973
Bulletins		
Petrology of Basic Rocks Mt Isa/Cloncurry	Glikson, A Y Derrick, G M Wilson, I H ²	in preparation
Geology of the Cloncurry/Mt Isa Region	Derrick, G M Wilson, I H ² Hill, R M Glikson, A Y	in preparation
Petrology and Geochemistry of Acid Rocks of the Georgetown Inlier	Sheraton, J W Labonne, B ¹	in preparation
Geology of the Central Eromanga Basin	Senior, B R	in preparation
Permo-Triassic Sedimentology, Bowen Basin	Jensen, A R	with editors
Geology of the Rouchel District	Roberts, J ¹ Oversby, B S	with editors
Sydney Basin Review	Mayne, S J Nicholas, E Bigg-Wither, A L	in press
Canning Basin Review	to be decided	on program
Bonaparte Gulf Basin	to be decided	on program

Publications	Author	Status at April 1973
Geology of the Northern Territory	D'Addario, G W	in preparation
Geology of the Victoria River Basin	Sweet, I P	in preparation
Precambrian Geology of the Kimberley Region - the West Kimberley	Gellatly, D ₂ C ¹ Sofoulis, J ² Derrick, G M	in preparation
Geochronology of the East Kimberley Region	Bofinger, V M ¹	in preparation
Precambrian Geology of the Kimberley Region - the Kimberley Basin	Plumb, K A	on program
Geology of the Carpentaria Proterozoic Province, Arnhem Land	Roberts, H G ¹ Plumb, K A	in preparation
Geology of the Carpentaria Proterozoic Province, Roper River to Queensland Border	Dunn, P R ¹ Roberts, H ₁ G ¹ Smith, J W ¹ Plumb, K A	on program
Geology of the Antrim Plateau Volcanics	Bultitude, R J	in preparation
Geology of the Ngalia Basin	Wells, A T et al.	in preparation
The Arltunga Nappe Complex	Stewart, A J Shaw, R D Yar Khan ₃ N ³ Funk, J L	on program

Publication	Author	Status at April 1973
Geology of Tennant Creek	Mendum, J R ¹ Tonkin, P C ¹	in preparation
Geochemistry of the Tennant Creek Mineral Field	Haldane, A D Smith, S E	on program
Geology of the Northwest Shelf	Jones, H A	in press
Geology of the Arafura Sea	Jongsma, D	with editors
Mineral Deposits of Papua New Guinea	Grainger, D J ¹ Grainger, R L ¹ Palfreyman, W D	in preparation
Geology of Southeastern Papua	Smith, I E ¹ Davies, H L Belford, D J	in preparation
Geology of the Western Central Range, PNG.	Davies, H L Norvick, M S Hutchison, D S	in preparation
Geology of the Kubor Anticline	Bain, J H et al.	with editors
Geochronology of the New Guinea Highlands	Page, R W	with editors
Geology of New Britain	Ryburn, R J Mackenzie, D E Johnson, R W	in preparation
Geology of the Prince Charles Mountains, Antarctica	Tingey, R J	on program
Chemical Analyses	Joplin, G A ³	in press

Publication	Author	Status at April 1973
Earth Science Abstracts, PNG	Manser, W ³	in press
Palaeontological Papers		with editors
- Tertiary foraminifera, West Irian	Belford, D J	
- Marine Triassic cephalopods of Australia and PNG	(Skwarko, S ³ K (Kummel, B ³	
- Some Ordovician graptolites from the Canning Basin, WA part 2	Skwarko, S ³ K Kummel, B ³	
Conodonts from the Bugle Gap Area	Druce, E C	with editors
Cambrian and Ordovician Trilobites	Shergold, J H	with editors
Dikelocephalinid Trilobites from Northern Australia	Gilbert-Tomlinson, J	in preparation
Cambrian Trilobites	Opik, A A	in preparation
Palynology of the Lower Cretaceous, Surat Basin, Qld	Burger, D	in preparation
Cenomanian Spores and Pollen from Bathurst Island, NT	Burger, D	in preparation
The Jurassic Fossils of Western Australia Part 1	Skwarko, S K	with editors
Geophysical Survey of the Burdekin Delta	Wiebenga, W et al.	with editors
Gosses Bluff	Barlow, B C	on program
Amadeus Basin Airborne Survey	Young, G A Shelley, P	with editors

Publication	Author	Status at April 1973
Diurnal Variations in the Earth's Magnetic Field	Parkinson, D ¹	with editors
Standard Curves for Magnetic Anomalies over Thin Dykes	Haigh, J E ¹ Smith, M S ¹	with editors
Reports		
Cainozoic Geology of Broad Sound, Qld	Burgis, W	with editors
Geology of the Mount Isa 1:100,000 Sheet Area	Wilson, I H ² Hill, R M Derrick, G M	in preparation
Geology of the Mary Kathleen 1:100,000 Sheet Area	Derrick, G M ² Wilson, I H ² Hill, R M Glikson, A Y Mitchell, J E	in preparation
Geology of the Marraba 1:100,000 Sheet Area	Derrick, G M et al.	in preparation
Geology of the Cloncurry 1:100,000 Sheet Area	Glikson, A Y Derrick, G M et al.	in preparation
Bowen Basin Thermal Infrared Imagery	Simpson, C J	in preparation
Geology of the North Bowen Sheet	Paine, A G L ¹	in press

Publication	Author	Status at April 1973
Palaeozoic Geology of Warwick - Goondiwindi 1:250,000 Sheet Areas	Olgers, F ¹ Flood, P G ¹	in press
Post Palaeozoic Geology of Warwick 1:250,000 Sheet Area	Exon, N F ² Reiser, R E ² Casey, D J ² Brunker, R L ²	in press
Geology of the Woden-Weston Creek Urban Areas, ACT	Henderson, G A M	in preparation
Geology of the Charnley 1:250,000 Sheet Area	Gellatly, D C ¹	with editors
Geology of the Lansdowne 1:250,000 Sheet Area	Gellatly, D C ¹	with editors
Geology of the Lennard River 1:250,000 Sheet Area	Gellatly, D C ¹	with editors
Geology of The Granites 1:250,000 Sheet Area	Blake, D H	in preparation
Geology of the Northern Victoria River Region	Sweet, I P et al.	with editors
Geology of the Southern Victoria River Region	Sweet, I P et al.	with editors
Geology of the Auvergne 1:250,000 Sheet Area	Sweet, I P	with editors

Publications	Author	Status at April 1973
Petrography of the Igneous and Metamorphic Rocks of Arnhem Land	Plumb, K A	in preparation
Progress Report - McArthur River/ Roper River Areas	Roberts, H G ¹ Plumb, K A ¹ Dunn, P R ¹	on program
Geology of New Ireland	Hohnen, P	in preparation
Catalogue of Type Specimens	Crespin, I	with editors
Isotopic Age Catalogue	Page, R W ¹ Bennet, R ¹	with editors
The Great Australian Bight, Geophysical Interpretation	Willcox, J B Petkovic, J Tilbury, L A	in preparation
The Northwest Continental Margin, Geophysical Interpretation	Hogan, A Jacobson, E	in preparation
The Naturaliste Plateau, Geophysical Interpretation	Cameron, P Petkovic, J	in preparation
The Timor Trough, Geophysical Interpretation	Watt, C J	on program
The Coral Sea Plateau, Geophysical Interpretation	Mutter, J Watt, C J	in preparation
AFMAG Records	Almond, R A	with editors
The Isogal Project	Barlow, B C	in preparation

Publication	Author	Status at April 1973
Third-order Magnetic Survey of Eastern Australia	van der Linden, J	on program
Atlas of Australian Isoseismal Maps	Denham, D Petkovic, J	in preparation
A.C.L. Gravity Data	Barlow, B C Wellman, P	on program
Catalogue of Tsunamis	Everingham, I B	in preparation
Magnetic MHV Toolangi 1959-1970 (6 biennial Reports)	Small G R et al.	on program
Magnetic MHV Gngangara 1957-1970 (7 biennial Reports)	McGregor, P M Gregson, P J	on program
Officer Basin Seismic Survey	Harrison, P	on program
East Canning Basin Earthquakes 1970-1972	Denham, D Everingham, I B Gregson, P J	in preparation
East Papua Crustal Survey - Results	Wiebenga, W Finlayson, D Cull, J Drummond, B	on program
Magnetic MHV Port Moresby 1957-1970 (7 biennial Reports)	Wilkie, et al.	on program
Seismicity of PNG, 1968	Denham, D	with editors
Seismicity of PNG, 1969	Ripper, I D	in preparation

Publication	Author	Status at April 1973
Seismicity of PNG, 1970	to be decided	on program
Seismicity of PNG, 1971	to be decided	on program
Focal Mechanisms of PNG - Solomon Is. Earthquakes 1963-1970	Ripper, I D	in preparation
Madang Earthquake 1970	Everingham, I B	in preparation
Strong Motion Results from Yonki, PNG 1967-72	Denham, D Small, G R Everingham, I B	in preparation
Solomon Sea Earthquakes 1971	Everingham, I B	in preparation
Magnetic MHV Mawson 1957-1970 (7 biennial Reports)	Small, G R McGregor, P M	on program
Magnetic MHV Macquarie Island 1957-1970 (7 biennial Reports)	McGregor, P M Small, G R	on program

PSSA Reports

Gippsland Shelf No. 4 Well)	
Rankin Trend Wells, Northwest Shelf)	
Trimouille-Dillon Seismic Survey)	
Montebello-Turtle Seismic Survey)	
Scott Reef No 1 Well)	
Heron No. 1 Well)	
Edel No. 1 and/or Pendock No. 1 Wells)	
Summary of Wells in Cooper Basin)	
	Subsidy Section	in preparation

Publication	Author	Status at April 1973
Papers		
Stratigraphic Nomenclature Carpentaria Basin	Doutch, H F et al.	on program
Recent Geological and Geophysical Work in the Officer Basin	Jackson, M J Harrison, P	in preparation
Stratigraphic Nomenclature Melville Island	Senior, B R Hughes, R J	in preparation
Permian Pollen and Spores, Galilee Basin, Qld	Norvick, M	in preparation
Palynological Observations on DR 27 and GSQ Roma 3 Holes, Surat Basin, Qld	Burger, D	in preparation
Revision of the Silurian Encrinurid Trilobites of S.E. Australia	Strusz, D L Shergold, J H	in preparation
Upper Devonian Fish Faunas from Knobby Hills Sandstone, E. Canning Basin, WA	Young, G C	in preparation
Ordovician Arthropod Trace Fossils from Northern Australia	Gilbert-Tomlinson, J	in preparation
Tertiary Pollen from the Ngalia Basin	Burger, D	in preparation
Foraminifera, Christmas Island	Belford, D J ₃ Adams, C G	in preparation

Publication

Author

Status at
April 1973

Upper Devonian Antiarch Fishes
from Victoria Land, Antarctica

Young, G C

in preparation

Miscellaneous

The Petroleum Newsletter

Petroleum Technology
Section

Distributed Feb/May/Aug/Nov.

Petroleum Exploration Contractors,
Service Companies and Consultants

"

Distributed July/Feb. 1974

Petroleum Exploration and Development
Companies

"

Distributed March/Aug.

Petroleum Exploration and Development
Titles Map and Key

"

Distributed Apr/Sept.

A.M.I. Annual Review, 1972

Mineral Economics
Section

in preparation

A.M.I. Quarterly Reviews, 1973

"

in preparation

Reference	Sheet	Preliminary Edition	First Edition	Remarks
1:250,000 Series and Explanatory Notes				
SC/52 - 15	Bathurst Island	June		
- 16	Melville Island	"		
SC/53 - 13	Cobourg Peninsula	"		
SC/54 - 12	Torres Strait	available		2nd Prelim. Ed. due mid 1974
SC/54 - 15	Jardine River	mid 1974		
- 16	Orford Bay	available		2nd Prelim. Ed. due mid 1974
SD/52 - 3	Fog Bay	June		
SD/54 - 3	Weipa	"		
- 4	Cape Weymouth	available		2nd Prelim. Ed. due August
- 7	Aurukun	June		
- 8	Coen	available		2nd Prelim. Ed. due mid 1974
- 11	Holroyd	June		
- 12	Ebagoola	available		2nd Prelim. Ed. due August
- 15	Rutland Plains	"	August	
- 16	Hann River	"		2nd Prelim. Ed. due July
SE/51 - 3	Yampi	"	August	
- 16	Crossland	late 1974		
SE/52 - 3	Waterloo	available	September	
- 4	Victoria River Downs	"	early 1974	
- 7	Limbunya	"	April	
- 8	Wave Hill	"	June	
- 11	Birrindudu	"	late 1974	
- 12	Winnecke Creek	available		additional mapping programme for 1974-75
- 13	Mount Bannerman		available	2nd Prelim. Ed. due mid 1974

Reference	Sheet	Preliminary Edition	First Edition	Remarks
SE/52 - 14	Billiluna		available	2nd Prelim. Ed. due December
- 15	Tanami	available	late 1974	
- 16	Tanami East	"		additional mapping programmed for 1974-75
SE/53 - 9	South Lake Woods	"		" " "
- 13	Green Swamp Well	"		" " "
- 14	Tennant Creek	Indefinite		
SE/54 - 1	Mornington	available		1st Ed. not on 1973 program
- 2	Cape van Dieman	"		" " "
- 3	Galbraith	"	July	
- 4	Walsh	"		1st Ed. not on 1973 program
- 6	Burketown	"	July	
- 7	Normantown	"	"	
- 8	Red River	"		1st Ed. not on 1973 program
- 10	Donors Hill	"	July	
- 11	Croydon	"		1st Ed. not on 1973 program
- 14	Dobbyn		available	2nd Ed. due July
- 15	Millungera	available	August	
- 16	Gilberton		available	2nd Ed. available April
SF/51 - 4	Dummer	late 1974		
- 8	Percival	late 1974		
SF/52 - 1	Cornish		"	2nd Prelim. Ed. due late 1974
- 2	Lucas		"	2nd Prelim. Ed. due December
- 3	The Granites	September		
- 4	Mount Solitaire	available		1st Ed. not on 1973 program
- 5	Helena	late 1974		
- 6	Stansmore		available	2nd Prelim. Ed. due December

Reference	Sheet	Preliminary Edition	First Edition	Remarks
SF/52 - 7	Highland Rocks	late 1974		
- 8	Mount Theo	"		
- 10	Webb	mid 1974		
SF/53 - 1	Lander River	available		1st Ed. not on 1973 program
- 10	Alcoota	"	mid 1974	
SF/55 - 1	Hughenden	"	early 1974	
- 10	Galilee	"	August	
- 14	Jericho	"	"	
SF/56 - 9	Port Clinton	"	mid 1974	
- 13	Rockhampton	"	"	
SG/51 - 3	Madley	"	late 1974	
- 4	Warri	"	"	
- 7	Herbert	"	mid 1974	
- 8	Browne	"	"	
- 11	Robert-Kingston	June		
- 12	Yowalga	available		1st Ed. not on 1973 program
- 15	Throssel	early 1974		
- 16	Westwood	June		
SG/52 - 1	Cobb	available	mid 1974	
- 7	Petermann Ranges	available	April	
- 13	Lennis	October		
- 14	Waigen	September		
SG/53 - 4	Simpson Desert North	available	mid 1974	
- 8	Simpson Desert South	"	"	
SG/56 - 5	Mundubbera	available		1st Ed. not on 1973 program
- 13	Dalby	available	July	
SH/51 - 4	Neale	August		
SH/52 - 2	Wanna	August		
SH/56 - 1	Goondiwindi	available	July	

Reference	Sheet	Preliminary Edition	First Edition	Remarks
SH/56 - 2	Warwick	available	July	
SA/54 - 11	Vanimio	late 1974		
- 15	Aitape	"		
SB/54 - 3	May River	October		
- 4	Ambunti	"		
- 7	Blucher Range	available	mid 1974	
- 8	Wabag	October		
SB/55 - 5	Ramu	available	early 1974	
- 8	Cape Raoult-Arawe	August		
- 14	Wau	available	mid 1974	
- 15	Salamaua	"	late 1974	
SB/56 - 5	Talasea	"	mid 1974	
- 6	Pomio	"	early 1974	
- 9	Gasmata	available	mid 1974	
SC/55 - 3	Buna	August		
- 8	Tufi-Cape Nelson	available	early 1974	
SR 41-42/ 6	Stinear Nunataks	available	late 1974	
/10	Crohn Massif	"	"	
/11	Beaver Lake	"	"	
/14	Mount Hicks	"	"	
/15	Fisher Massif	"	"	

1:100,000 Series

Series R 611 (Western Australia)

3665	Yampi	available
3962	Leopold Downs	"

Reference	Sheet	Preliminary Edition	First Edition	Remarks
Series R 621 (Northern Territory)				
5474	Murgenella	Incorporated in Cobourg Peninsula 1:250,000 Sheet		
5574	Wellington Range	1974-75		
5674	Junction Bay	1974-75		
5473	East Alligator	December		
5573	Oenpelli	late 1974		
5673	Goomadeer	late 1974		
5472	Cahill	December		
5572	Howship	1974-75		
5371	Mundogie (partly)	1974-75		
5471	Jim Jim (partly)	1974-75		
6462	Seigal	mid 1974		
5355	Studholme	Partly mapped; will be presented as Bulletin text fig.		
5454	Mount Peake	late 1974		
5453	Reynolds Range	late 1974		
5553	Tea Tree	"		
5452	Napperby	Partly mapped; will be presented as Bulletin text fig.		
5552	Aileron	late 1974		
5651	Burt	1975		
5751	Laughlen	1974-75		
5851	Riddoch	"		
5450	Hermannsburg	"		
5650	Alice Springs	"		
5750	Undoolya	"		
5850	Fergusson Range	"		

Reference	Sheet	Preliminary Edition	First Edition	Remarks
Series R 631 (Queensland)				
6562	Hedleys Creek	early 1974		
6561	Bowthorn	late 1974		
6560	Musselbrook	1974-75		
6660	Lawn Hill	"		
6757	Kennedy Gap	late 1974		
6857	Prospector	"		
6957	Quamby	"		
6756	Mount Isa	July		
6856	Mary Kathleen	available	late 1974	
6956	Marraba	"	"	
7056	Cloncurry	"	"	
7661	Georgetown	late 1974		
7760	Forsayth	"		
Other Scales				
South Carpentaria Basin	1:1,000,000	September		
Cape York - Torres Strait	1:500,000	available		
Burdekin River Region	1:500,000	August		
Northern Eromanga Basin	1:1,000,000	available		2nd Prelim. Ed. due September
Western Eromanga Basin	1:1,000,000	"	late 1974	
Central Eromanga Basin	1:1,000,000	"	"	
Surat Basin	1:500,000	"	mid 1974	
West Kimberley	1:500,000	June		
Kimberley Basin	1:500,000	July		
Ord River Region	1:500,000	available		1st Ed. not on 1973 program

Reference	Sheet	Preliminary Edition	First Edition	Remarks
Victoria River Region	1:500,000	December		
Wiso Basin	1:1,000,000	available		for Bulletin only; following add. mapping
Ngalia Basin	1:500,000	December		1974/75
Central Australia (Metamorphic)	1:1,000,000			Compilation has yet to commence