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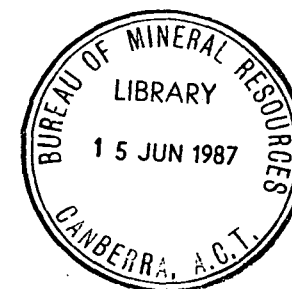
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BMR PUBLICATIONS COMPACTUS  
(NON-LENDING-SECTION)

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

RECORDS 1967 / ~~1968~~ 60



1967 PROGRAMME

AND

1968 TENTATIVE PROGRAMME

Canberra A.C.T.

1967/60  
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BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS.

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1967 PROGRAMME

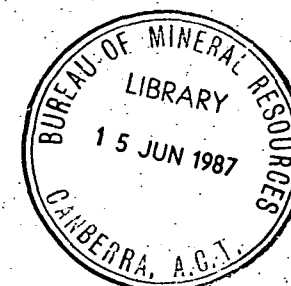
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1968 TENTATIVE PROGRAMME

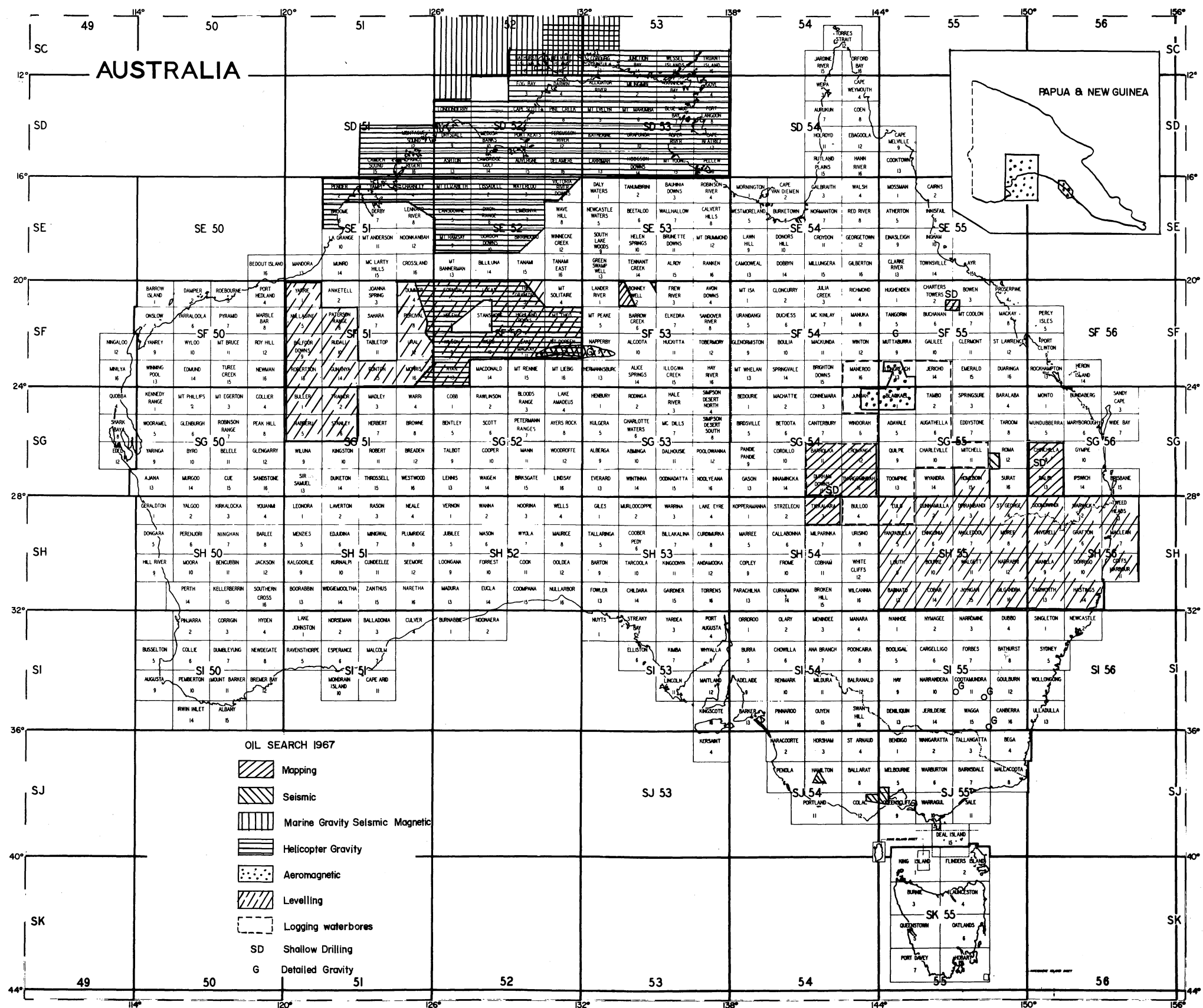
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**BMR PUBLICATIONS COMPACTUS  
(NON-LENDING-SECTION)**

1967. Publication Programme is included under headings Oil Search, Metals Search, etc.



## OIL SEARCH

## GEOLOGICAL BRANCH

.1.

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Bonaparte Basin N.T./W.A. 6022 63/48 <u>Results:</u>	Complete the reporting on field and laboratory work, and preparation of maps.  Preparation of maps and various publications (see under Publications)	Continuous (see remarks)	J.J. Veevers J. Roberts	1 F/Hand (R.W. Brown)	Nil	Roberts proposed to attend Devonian Symposium in Canada Aug. 1967 and Carboniferous Congress in Sheffield Sept. 1967; awarded Harkness Fellowship for 21 months at Smithsonian Institute, Washington to work on brachiopods from Oct. 1967. Visits to Australian Museums and Libraries to obtain reference material may be necessary.
Wiso-Daly Waters N.T. 60E023 65/1306 <u>Results:</u>	Complete the reporting on field and laboratory work, and preparation of maps from 1966 mapping.  Record on 1966 mapping, petrology, hydrology. Explanatory Notes on Newcastle Waters, Daly Waters and Larrimah.	Continuous	M.A. Randal M. Brown	1 F/Hand (Armstrong)	Nil	F/H required for continuous help in assembling hydrological information, handling, sorting and preparation of rocks for laboratory study.
Ngalia Basin N.T. 60E024 67/424 <u>Results:</u>	Combined Geological-Geophysical survey of Basin, covering parts of 1:250,000 sheets of Lake Mackay, Mt. Doreen, Napperby.  Geological party :-  Record on results 1967 work  Completing Amadeus Basin Bulletin and Notes.	Continuous  May.-Sept. Oct.-Dec.  Jan.-Apr.	D.J. Guppy  A.T. Wells T. Evans  T. Nicholas (part time) A.T. Wells	  Cook Mechanic 2 F/Hands Draftsman	1 Holden 1 Panel van  1 4 x 4 truck 1 4-wheel trailer 4 SWB L/R 1 water trailer 1 2-wheel trailer 1 office caravan 4 transceivers	Will visit the field on several occasions throughout survey. First year of a 3 year project. The overall Ngalia Basin project is to be coordinated by a Committee - J.J. Guppy (convener) E.R. Smith, J. Quilty. About 20 hours light aircraft charter and shallow core hole drilling using Geophysical drills from seismic party in August - September. \$5000 provided in 1966/67 Estimates.
Bonney Well N.T. 6033 67/426 <u>Results:</u>	Complete the mapping of Bonney Well 1:250,000 Sheet.  Complete editing Bulletin on Georgina Basin. Record and Explanatory Notes on Bonney Well.	Apr.-June.  Jan.-Mar. July.-Nov.	K.G. Smith T. Evans.	1 F/Hand	2 L/R 1 2-wheel trailer 1 office caravan 1 transceiver	Smith has mapped most of it in previous years; short season to complete mapping. Evans for field work only.
Northern Eromanga Q'ld. 63/47	Report and Explanatory Notes writing. Field inspection S.W. Eromanga and Surat Basin. Report writing on gamma ray logging of water bores.	Jan.-Apr. May and August June.-July. Sept.-Dec.	R.R. Vine	1 F/Hand	*1 Holden Panel Van	*Field inspection to Julia Creek area to examine results of company drilling in Toolebuc Member will require short term hire vehicles (Holden P.V.) for 2 - 3 weeks.

OIL SEARCH  
GEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
S.W. Eromanga Q'ld. 6038 65/1657 67/ 533 <u>Results:</u>	Continue mapping S.W. part of Eromanga Basin in Q'ld. by covering 1:250,000 sheets of Barrolka, Durham Downs, Tickalara, Eromanga, Thargomindah.  Reporting 1966 field work Reporting 1967 field work	Apr.-Sept.  Jan.-Mar. Oct.-Dec.	M. Galloway J. Ingram B. Senior	Cook Mechanic 2 F/Hands Draftsman	1 4 x 4 truck 3 SWB L/R 1 SWB L/R 1 Holden Panel van 1 Kitchen caravan 1 Living caravan 1 Office caravan 1 Water trailer 5 Transceivers 1 Two-wheel trailer	Light aircraft charter 70 hours, \$3000. Shallow drilling by B.M.R. Mayhew - about 300 ft., coring and geo- physical logging of holes. Visit to S.A. Mines Dept. to discuss adjacent geology. Visit by geomorphologist Prof. Mabbutt 3 weeks in August, and by M. Plane to investigate mammals. Shallow seismic to trace silcrete below alluvium by Geophysical Section. \$2000 provided in 1966/67 Estimates.
Surat Basin Q'ld. 6039 64/707 <u>Results:</u>	Continue mapping in the Surat basin by covering 1:250,000 Sheets of Chinchilla and Dalby.  Complete reporting 1966 field work. Report on 1967 field work	May.-Sept.  Jan.-Apr. Oct.-Dec.	N. Exon B. Thomas R. Jensen D. Burger A. Gray (G.S.Q.) R. Reiser (G.S.Q.) N. Exon N. Exon B. Thomas	Cook Mechanic 3 F/Hands Draftsman	*1 4 x 4 truck 3 SWB L/R 1 SWB L/R 1 Holden Panel van 1 Kitchen Caravan 1 Water Trailer 1 Two-wheel trailer 1 Office Caravan 1 Living Caravan 3 Transceivers	Jensen, Burger and Gray part time, Burger from May - June, Gray from June-July; Jensen from August - September, *Arrangements may be made with Supply to move party to and from the field; if this is the case no truck required. Shallow Mayhew drilling by B.M.R., about 4,000 feet with coring and geophysical logging of holes. Field visits by Vine and Casey. Visit by palaeontologists (R. Day, A.H.U., and M. Plane) for 3 weeks in August and by Dr. Conybeare, A.H.U. on sedimentary structures; visit by H.S.W. Geol. Survey Geologist of 4 weeks to be arranged.
Drummond Basin Q'ld. 6040 65/1658 <u>Results:</u>	Examine problem areas of Drummond Group sediments on Charters Towers and Bowen 1:250,000 Sheets as a result of mapping in 1966 on Buchanan Sheet to the south.  Complete report on 1966 mapping Complete report on 1967 mapping	Apr.-Sept.  Jan.-March Sept.-Dec.	F. Olgers J. Binnekamp D. Strusz E. Druce	Cook Mechanic 2 F/Hands	1 4 x 4 truck 3 SWB L/R 1 2-wheel Trailer 1 Office Caravan 1 Water Trailer 1 4-wheel Trailer 1 Living Caravan 1 Transceiver	Strusz and Druce part time; Strusz to collect from Devonian limestones and Druce to look for conodonts from May-June (see Mobile Conodont Laboratory). Shallow Mayhew drilling about 2,000 feet with coring and Geophysical logging.
Mobile Conodont Laboratory Q'ld. 6037 67/427	Collect suitable material in Herberton, Drummond and Boulia- Davenport areas for conodonts.	Apr.-Sept.	E. Druce P. Jones Dr. Opik	2 F/Hands 1 Mechanic	1 4 x 4 3-ton truck 1 F. Control L/R 1 SWB L/R 1 Caravan as Laboratory 1 Water Trailer 1 2-Wheel Trailer 1 Transceiver	Devonian rocks involved in Herberton and Drummond and Cambrian-Ordovician in Boulia area of Georgina Basin. Jones part time from July-August. Visit by Dr. Opik to consult on stratigraphy and fossils of Boulia area.
Bowen Basin Q'ld. 64/705	Complete writing of Bulletin on the Bowen Basin.	Continuous	E.J. Malone* J. M. Dickins			Duaranga Explanatory Notes to be written by A. Kirkegaard, Q.G.S., by June 1967. *To resign.

## GEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Geology and Palaeontology A.C.T.  6031 65/1655  <u>Results:</u>	Detail mapping and collecting of palaeontological and museum material from sedimentary areas of A.C.T. and environs.  Various notes and records as required. Compilation of Canberra 4 mile Explanatory Notes.	Continuing	D. Strusz J. Shergold C. Gatehouse E. Druce S. Skwarko T. Nicholas C. Branch	3 F/Hands	1 LWB L/R	All except Strusz part time. Includes organization of collections in Fyshwick rock store, and student training.
New Guinea Mammals  6034 67/428  <u>Results:</u>	1. Collect Tertiary mammal fauna in Wau-Watut valleys, New Guinea.  2. Visits to various museums for comparative material.  3. Visits to S.W. Eromanga and Surat parties to collect vertebrate remains if necessary.  Prepare systematic publications on the faunas and notes as necessary.	June-Aug.  As required  As required	M. Plane	1 F/Hand		Use of other field party vehicles when necessary; help from Wau office in New Guinea for transport and native labour.
Christmas Island Palaeontology 6041 67/429 <u>Results:</u>	Collect necessary material for forams to solve Tertiary problem of sequence.  Report and description of faunas.	July-Aug.	D. Belford			Transport and accommodation to be arranged with British Phosphate Commission. Trip depends on final results of 1966 collection by Phosphate Party.
Northern Territory  6042 67/448	1. Investigate Mesozoic outcrops on Victoria River 1:250,000 Sheet in conjunction with the Vic. River Party.  2. Investigate Mesozoic outcrops on Coburg Peninsula and Bathurst Island.	Aug.  Mid Aug- Sept.	S. Skwarko	1 F/Hand	1 L/R ex Darwin	1. Use of helicopter for 1 to 2 days when Vic. R. Party has contract.  2. Boat hire required. Visit by Dr. B. Daly of Adelaide University, who has done mapping on the island.

OIL SEARCH  
GEOLOGICAL BRANCH  
PUBLICATIONS  
BULLETINS

Subject	Author	Timetable to Complete		Remarks
		Writing	Editing	
Upper Devonian and Lower Carboniferous brachiopoda from the Bonaparte Basin	J. Roberts	June 1968		1966 programme gave Dec. 1966 as date, but delayed 18 months because Thomas' manuscript not received, and comparative material required at Smithsonian Institute.
Geology of the Bonaparte Gulf Basin N.T./W.A.	J.J. Veevers J. Roberts	*		*To be completed after other parts written on the Basin are in press, probably late 1968.
Geology of the Bowen Basin, Qld.	E.J. Malone J.M. Dickins	Dec. 1967(1)		(1) 1966 Programme gave Dec. 1966, delayed 12 months partly because of report on Fitzroy Region for Res. & Inf. Branch.
Upper Devonian and Lower Carboniferous Sedimentology of Bonaparte Basin Part 1 - Coarse Terrigenous Sediments Part 2 - Carbonates	J.J. Veevers(2)	Apr. 1967 Mar. 1968		(2) Maybe more suitable for outside publication.
Upper Devonian and Lower Carboniferous Geology of the Bonaparte Gulf Basin	J.J. Veevers J. Roberts	Mar. 1967		Record prepared and issued, internal editing in progress before submitting to Editor.
Amadeus Basin Bulletin	A.T. Wells etc.	Mar. 1967		
Permian and Mesozoic geology of the Bonaparte Gulf Basin	J.M. Dickins J. Roberts & J. Veevers	June 1967		
<u>REPORTS</u>				
Subject	Author	Timetable to Complete		Remarks
		Writing	Editing	
Algae and Trace Fossils from Upper Devonian and Lower Carboniferous of Bonaparte Basin.	J.J. Veevers	Mar. 1968		Deferred 12 months waiting for publication of algae of Fitzroy Basin by outside author.
Detailed stratigraphy and petrology of the Upper Permian-Triassic of the Bowen Basin	R. Jensen	July 1967		
Groundwater of N.W. Barkly Tableland	M. Randal	Sept 1967		
Geology of the Tambo-Augathella area, Qld.	N. Exon	June 1967		
Geology of the Eddystone-Taroom Mundubbera 1:250,000 areas Qld.	R. Mollan N. Exon R. Jensen	Apr. 1967		

## OIL SEARCH

## GEOLOGICAL BRANCH

## PUBLICATIONS (Ctd.)

## EXPLANATORY NOTES

.5.

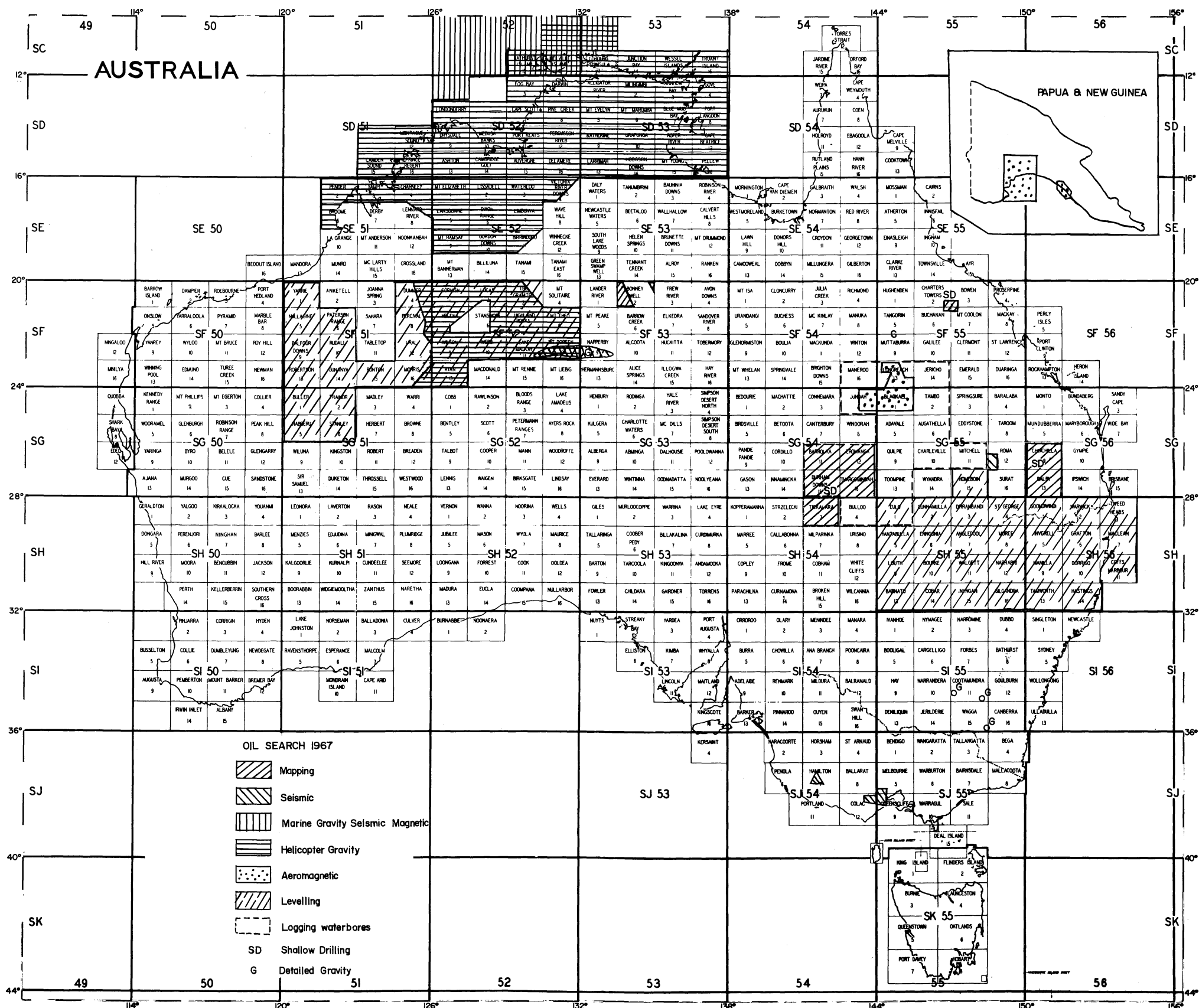
Subject	Author	Writing	Timetable	Editing	Remarks
<u>Artesian Basin</u>					
Richmond	R. Vine	Sept. 1967			
Hughenden	R. Vine & A.G.L. Paine	Oct. 1967			
Muttaborra	R. Vine	Dec. 1967			
Longreach	R. Vine	Dec. 1967			
Blackall	D. Casey (QGS)	Aug. 1967 *			*Deferred from July 1966 (1966 programme) because sheet to south being mapped.
Tambo	N. Exon	Apr. 1967			
Augathella	M. Galloway	May. 1967			
Connemarra	B. Senior	Apr. 1967			
Jundah	B. Senior	Apr. 1967			
<u>Drummond Basin</u>					
Buchanan	F. Olgers	Dec. 1967			
Galilee	F. Douth & R. Vine	Aug. 1967			
Jericho	F. Olgers & R. Vine	Nov. 1967			
<u>Bowen Basin</u>					
Duaringa	A.G. Kirkegaard (QGS)	June. 1967			
Emerald	F. Olgers	Jan. 1967			
Clermont	F. Olgers	Jan. 1967			
<u>Amadeus Basin</u>					
Finke	A.T. Wells	Mar. 1967			
Macdonald	A.T. Wells	Feb. 1967			
Alice Springs	A.T. Wells	Apr. 1967			
Illogwa Creek	R. Shaw & E. Milligan	Feb. 1967			
<u>Bonaparte Gulf</u>					
Cambridge Gulf	J.J. Veevers & K. Plumb	Mar. 1967			
<u>Georgina-Daly Basin</u>					
Helen Springs	M. Randal & F. Douth	July. 1967			
Beetaloo	M. Randal & M. Brown	Aug. 1967			
Newcastle Waters	M. Randal	Nov. 1967			
Daly Waters	M. Brown	Sept. 1967			
Larrimah	M. Brown	Aug. 1967			



OIL SEARCH  
GEOLOGICAL BRANCH  
PUBLICATIONS  
MAPS

.6.

Subject	Author	Timetable to Complete Compilation	Fair Drawing	Remarks
<u>Artesian Basin 1:250,000</u>				
Richmond*	R. Vine	Sept. 1967		<u>FOR ALL MAPS</u> Estimated time to complete fair drawing is five months after date of compilation. * Indicates preliminary black and white 1:250,000 sheet made and distributed.
Hughenden*	R. Vine & A. Paine	Oct. 1967		
Muttaborra*	R. Vine	Dec. 1967		
Longreach*	R. Vine	Dec. 1967		
Blackall*	D. Casey (QGS)	Aug. 1967		
Tambo*	N. Exon	Apr. 1967		
Augathella*	M. Galloway	May. 1967		
Connemarra	B. Senior	Apr. 1967		
Jundah	B. Senior	Apr. 1967		
<u>Drummond Basin 1:250,000</u>				
Buchanan	F. Olgers	Dec. 1967		
Galilee	F. Douth & R. Vine	Aug. 1967		
Jericho	F. Olgers & R. Vine	Nov. 1967		
<u>Bowen Basin 1:250,000</u>				
Duarina*	A.G. Kirkegaard (QGS)	June 1967		
Emerald*	F. Olgers	Jan. 1967		
Clermont*	F. Olgers	Jan. 1967		
<u>Amadeus Basin 1:250,000</u>				
Finke*	A.T. Wells	Mar. 1967		
Macdonald*	A.T. Wells	Feb. 1967		
Alice Springs*	A.T. Wells	Apr. 1967		
Illogwa Creek*	R. Shaw & E. Milligan	Feb. 1967		
<u>Bonaparte Gulf 1:250,000</u>				
Cambridge Gulf*	J.J. Veevers & K. Plumb	Mar. 1967		
<u>Georgina-Daly Basin 1:250,000</u>				
Helen Springs*	M. Randal & F. Douth	July 1967		
Beetaloo*	M. Randal & M. Brown	Aug. 1967		
Newcastle Waters	M. Randal	Nov. 1967		
Daly Waters	M. Brown	Sept. 1967		
Larrimah	M. Brown	Aug. 1967		
<u>Bonaparte Basin 1:250,000</u>				
	J.J. Veevers & J. Roberts	Compiled	In progress	1 Sheet. Southern part of Basin only
<u>Northern Eromanga Basin 1:1,000,000</u>				
	R. Vine	Compiled		will have overprint of gravity results. Preliminary Edition.
<u>Drummond Basin 1:500,000</u>	F. Olgers	Apr. 1967		
Bowen Basin 1:500,000	E.J. Malone	Completed	In progress	2 Sheets
1:1,000,000	"	"		Solid geology; will have structural and geophysical results as overprints.
<u>Tambo-Augathella 1:500,000</u>	N. Exon	Completed		



## OIL SEARCH

.7.

## GEOPHYSICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Seismic Party No. 1 Otway Basin Survey. Vic. 70S15 67/414	(a) Investigation of extent and thickness of Upper Cretaceous sediments in the Bellarine Peninsula and Colac areas of the Otway Basin. (b) Reconnaissance structural investigation of the Dartmoor - Heywood - Hamilton area to complete reconnaissance knowledge of this area.	February - June (4 months)	C. S. Robertson J. Branson D. Tucker (P. Jones)	Observer Clerk Field Assistant (shooter) 5 Drillers 2 Mechanics 14 Field Hands	Seismic Amplifiers (T.I.8000) Magnetic Recorder (DS-7) Oscillograph (TRO-6) 900 Geophones (HS-J) 3 Transceivers 2 Mayhew Drills (inc. vehicles) 1 Carey Drill (inc. vehicles) 2 International AB126, 4 x 4. 7 Bedfords, 5 ton, 4 x 4. 4 Landrovers 1 Holden 1 Office Caravan 1 Workshop & accessories 3 Trailers, 4 wheel	This programme has been suggested by the P. E. Branch, following their study of the Otway Basin, as being desirable to extend the sub-surface, knowledge of the Otway Basin in areas which are still relatively unknown. Part (b) will only be attempted if part (a) is completed well ahead of schedule.
<u>Results:</u>	Preparation of Record	June to November.	J. Branson			
Ngalia Basin Joint 70S15 67/424	Complete geological and geophysical investigation of the Ngalia Basin	Commence July continuous through 1968 & 1969. Field work 2 months Sept - Nov in 1967.	P. Jones full time. Other geophysicists as required for field work.	As above plus Cook Cook's off-sider.	As above, plus 3 Transceivers 1 Landrover 1 Kitchen trailer 2 Trailers, 4 wheel 1 Generator trailer mounted and less 1 Holden.	A joint project group has been proposed in a separate submission to undertake complete geological and geophysical investigation of an area. This represents the Seismic Section's proposed contribution to such an investigation of the Ngalia Basin.
Seismic Party No.2 70SED12 67/430	An experimental programme to determine if the careful use of seismic reflection work in conjunction with synthetic reflection records made from sonic logs, can assist in solving the stratigraphic problems of the Roma Shelf area.	May to November (6 months)	A. Turpie J. S. Davies A. Brown	2 Observers Clerk Field Assistant (shooter) 5 Driller Assist. 2 Mechanics Cook Cook's off-sider 14 Field Hands	Seismic Amplifiers (S.I.E. PT-700) Magnetic Recorder (PMR-20), Magnetic Recorder (DS-7), Oscillograph (TRO-6) 900 Geophones (EVS-2) 3 Transceivers 2 Mayhew Drills (inc. vehicles) 1 Carey Drill (inc. vehicles) 2 Inter. 1-ton, 4 x 4 5 Landrovers 5 Bedford 5-ton, 4 x 4 1 Office caravan 1 Kitchen trailer 1 Workshop and accessories 5 Trailers, 4 wheel 1 Generator, trailer mounted	
<u>Results:</u>	Preparation of Record	December 1967 - June 1968.	E.R. Smith J.S. Davies A. Brown			

## OIL SEARCH

.8.

## GEOPHYSICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Contract Survey Marine Gravity, Seismic and Magnetic Survey  70GEO24 67/431  <u>Results:</u>	Reconnaissance marine surface gravity, magnetic and seismic sparker survey in the Timor Sea Arafura Sea area to investi- gate offshore sedimentation and structure.  Preparation of Record	June- November   December 67 - June 68.	<u>B. Jones</u>   B. Jones		E.G.&G. Seismic sparkarray equip- ment. (20000joules) 1 Utility	The 1966 survey was not undertaken due to failure to obtain a suitable tender. Jones will join N.S.F. vessel Eltanin on the trip from Auckland to McMurdo to gain experience on gravity and navigation equipment. \$260,000 provided on 1965/66 & 1966/67 Estimates.
Seismic Playback Centre  70S12 65/1309	Production of seismic record sections and processing of experimental work for the current seismic programme and previous surveys, and for review work of Seismic Group and Basins Study Group.	Continuous	<u>F. J. Moss</u>	G. L. Abbs W. Trenchuk	Playback Centre Equipment	
Logging Artesian Basin  70G31 64/879	Supervision of contract work, gamma-ray logging and resistivity when possible.	April - Sept.	<u>P. Mann</u>	Radeski		Requested by Sedimentary Section and Irrigation and Water Supply Commission of Queensland. \$100,000 provided on 1966/67 Estimates.
VH-MIN Queensland  70AF12 67/409  <u>Results:</u>	Aeromagnetic survey of parts of Longreach, Jundah, Blackall, 1:250,000 areas.  Preparation of Record	October - mid November  Dec-Jan	<u>D. Tipper</u> D. Waller  D. Waller	P. Ryan K. Mort D. Park 1 Geop. Ass. 1 Draftsman	1 Mobile darkroom 1 Station sedan 2 1-ton pick-up trucks 4 x 4 Airborne magneto- meter Navigation equip- ment Cameras.	
Contract Papuan Basin T.P.N.G.  70AEO2 65/1666	Aeromagnetic survey (including also Papuan Basic Belt and Astrolabe Area.)	Expected to commence early 1967.	Supervised by G. Young			\$301,000 provided on 1966/67 Estimates.

## OIL SEARCH

.9.

## GEOPHYSICAL BRANCH (cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Helicopter Gravity Arnhem Land, the Kimberleys, the Ngalia Basin and the eastern part of the Canning Basin.  70G28 65/1583 66/2073	Coverage of the following 1:250,000 areas : Pellew*, Mt. Young*, Hodgson Downs*, Urapunga*, Roper River*, Cape Beatrice*, Port Langdon*, Blue Mud Bay*, Mt. Marumba*, Millingimbi*, Arnhem Bay*, Gove*, Truant Island Wessel Islands*, Junction Bay*, Cobourg Peninsula*, Alligator River*, Mt. Evelyn, Katherine, Larrimah, Victoria River Downs (part), Delamere, Fergusson River, Pine Creek, Darwin, Melville Island, Bathurst Island, Fog Bay, Cape Scott, Port Keats, Auvergne, Waterloo, Limbunya, Birrindudu (part), Gordon Downs, Dixon Range, Lissadell, Cambridge Gulf, Medusa Banks, London- berry, Drysdale, Ashton, Mt. Elizabeth, Lansdowne, Mt. Ramsay, Lennard River (part), Charnley, Prince Regent, Montague Sound, Camden Sound, Yampi, near shore parts of C.53.9, D52.6, C52.12, C.52.11, D.51.11, Broome (island stations only), Derby (island stations only), Pender (island stations only). The Granites (part). Highland Rocks., Lake Mackay, Mt. Doreen, Mt. Theo, Cornish, Helena, (part), Wilson, Lucas, (part) Stansmore (part), Webb, Morris (part), Ryan, Ural (part), Percival (part), and Dummer (part).	February - December.	R. Whitworth D. Watts (1 month)		International 4 x 4	Contract Survey. *Denotes sheets which are on the 1966 programme. Estimated cost \$270,000.
<u>Results:</u>	Preparation of Record	Dec. 1967 Mar. 1968.	R. Whitworth			
Detailed and semi detailed Gravity. Q'ld.  70G29 67/420	Gravity readings along seismic lines in the North and Central parts of the Eromanga Basin.	June - Oct.	M.D. Watts	K.W. Kirby 1 field asst.	1 Worden Gravity meter, 2 Mechanisms microbarometers, 1 Watts microptic level and staff. 2 Inter. 4 x 4.	Kirby will be on the party for not more than 2 months. By the appli- cation of such techniques as stripping it is hoped to delineate Bouguer Anomaly features originating from the pre-Permian section and to relate these to structure in any pre- Permian sediments.
<u>Results:</u>	Preparation of Record	Nov.-Dec.	M.D. Watts			
Detailed and semi detailed Gravity. N.T.  70G29 67/424	Gravity readings along levelled traverses across the Ngalia Basin.	Aug.-Sept.	R. Whitworth	K.W. Kirby 1 field asst.	1 Worden Gravity meter, 2 Mechanisms microbarometers, 1 Inter. 4 x 4, 1 SWB Landrover	The degree to which sedimentary structure is reflected by gravity will be tested.
<u>Results:</u>	Preparation of Record	Dec.67-Jan.68	R. Whitworth			

## GEOPHYSICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Fill-in work, Canberra training survey area.  70G24 65/1331	Gravity readings in the area of the 1966 helicopter gravity training survey area. This is work required to fill in "holes" in the coverage in south west Canberra, south east Wagga and north west Cootamundra and to further delineate a prominent Bouguer anomaly high feature on south east Cootamundra.	Mid Jan.- mid Feb.	M. D. Watts	2 University Vacation stu- dents.	1 Worden gravity meter 3 Mechanisms microbar- ometers, 1 Station Wagon, 4 x 2, 1 Landrover, 4 x 4.	Some semi-detailed E-W profiles will be run on south-east Cootamundra across the feature. It appears likely that the feature correlates with a horst block of highly metamorphosed sediments with serpentinite along the fault zones. The serpentinite is mineralised in known scattered outcrops.
Bouguer anomaly map of Australia  70G30 67/435	Compilation of existing Bouguer anomaly data at a scale of 40M = 1" Recomputation of data where nec- essary.	Continuous	J. E. Shirley or other available staff. J. E. Shirley	K. W. Kirby	1 Worden gravity meter 3 Mechanisms microbar- ometers. 2 Inter. 4 x 4.	Field ties between surveys may be necessary from time to time. In general this work will be done by other gravity field parties.
Results:	Explanatory Notes	Feb.	J. E. Shirley			
Collation of Density data  67/403	Initially existing density deter- minations on cores from boreholes will be collected. Mean formation densities and density depth vari- ations will be computed. It is also expected that the density information obtainable from gamma- gamma logs will be utilised.	Continuous	A. J. Flavelle	K. W. Kirby		
Results:	Progress Records		A. J. Flavelle			
Development of interpretational Programmes and automatic data handling techniques	The development of a computing system containing at least the following programmes are required. 1. Three dimensional surface fitting (this programme is 75% developed) 2. Terrain Correction Programme 3. Orthogonal polynomial programme 4. Regional-residual programmes using various grid sizes and shapes 5. Derivative programmes 6. Body producing and body fitting programmes (the inverse of the gravitational attraction pro- grammes which are already in use in the group.) 7. Data digitization programme. 8. Automatic contouring programme. 9. Digital plotting programme. It is essential that these programmes be developed as an integrated system of data handling.		A. J. Flavelle in co-operation with the Regional Gravity Group		At present there is little likelihood that this system of programmes will be developed in reasonable time within the Gravity Group. Some of the programmes are available commercially. Means of acquiring a suitable system is being investigated. Estimated cost is \$15,000.	

## OIL SEARCH

.11.

## GEOPHYSICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Dept. of Interior Levelling	Levelling required for the 1968 Helicopter Gravity on the following 1:250,000 sheets.					Areas 2 and 3 will be done early in the season.
64/974	Area 1, N.S.W. : Tweed Heads, Warwick, Goondiwindi, St. George, Dirranbandi, Homebain, Cunnamulla, Eulo, Enngonia, Angledool, Moree, Inverell, Grafton, Maclean, Coff's Harbour Dorrigo, Manilla, Narrebri, Walgett, Bourke, Louth, Yantabulla, Barnato, Cobar, Nyngan, Gilgandra, Tamworth and Hastings.					
	Area 2, N.T. : The Granites, Highland Rocks, Lake Mackay, Mt. Doreen and Mt. Theo.					
	Area 3, W.A. : Lucas, Stanmore, Webb, Wilson, Helena and Cornish, Morris, Ryan, Ural, Percival and Dummer.					
	Area 4, W.A. : Runton, Stanley, Nabberu, Trainor, Buller, Gunanya, Robertson Rudall, Balfour Downs, Paterson Range, Nullagine and Yarrrie.					
Dept. of Interior Levelling	Levelling of 9 lines on south-east Cootamundra for the Canberra training survey, follow up.					
64/974	Levelling of 4 lines on Napperby, Mt. Doreen and Lake Mackay for the Ngalia Basin Survey.					

OIL SEARCHGEOPHYSICAL BRANCHPUBLICATIONS

.12.

BULLETINS

Subject	Author	Timetable to complete:		Remarks
		Writing	Editing	
Canning Basin Gravity	A.J. Flavelle	Feb. 67	1968	
REPORTS				
Helicopter Gravity, 1965	A.J. Flavelle	Dec. 67		
Thargomindah/Noccundra seismic, 1962-63	J.S. Davies C.S. Robertson	Completed	Dec. 67	
South-east Georgina Basin seismic	C.S. Robertson P. Jones	Fe. 67	1968	
Timor Sea/Joseph Bonaparte Gulf marine gravity and seismic Sparkarray, 1965	E.R. Smith	Mar. 67	1968	
Complete report on "Vibroseis" survey and follow-up comparison work	E.H. Schwing R.J. Moss	Jun. 67	1968	
Surat Basin compilation and review	E.R. Smith	Dec. 67	1968	
Giles-Carnegie seismic survey, 1961-62	A. Turpie	Feb. 67	1968	
North Bowen Basin gravity survey, 1963	F. Darby	Completed	Jul. 67	
NT and Qld helicopter gravity, 1965	A.J. Flavelle	Dec. 67	1968	
North Qld helicopter gravity, 1966	J.E. Shirley	Mar. 68	1968	
North Eromanga & Drummond Basins reconnaissance gravity surveys, 1959-63	R. Gibb	Completed	Jul. 68	
Carnarvon Basin aeromagnetic, 1957-61	J.H. Quilty	Mar. 67	1968	
Amadeus Basin aeromagnetic, 1965	G.A. Young	Dec. 66	1968	
Georgina Basin aeromagnetic, 1963-64	R. Wells D.B. Tipper	Jun. 67	1968	



## OIL SEARCH

.13.

## PETROLEUM EXPLORATION BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
<u>Subsidy Section</u>						
Drilling Group	Process applications, inspect operations, edit reports of drilling operations	Continuous	N.H. Towie F.H. Lepine J.A. White E.E. Young	Hodgins	Short term vehicle hire as required	Visits to State Mines Departments and Company Offices.
Geology Group	Assess geological aspects of applications; Edit geological parts of all final reports	Continuous	S. Marchant J. Hays	Garton	Short term vehicle hire as required	Visits to State Mines Departments and Company Offices.
Geophysics Group	Assess applications, inspect operations. Edit final reports of geophysical operations.	Continuous	K.B. Lodwick P.W. Brown G.A. Allen W. Mcavoy		Short term vehicle hire as required	Visits to State Mines Departments and Company Offices.
<u>Subsurface Section</u>						
Sedimentary Basins Study Group	Collect, collate, compile and review available data on following basin;					
90E01 65/1280	1. Sydney Basin	Oct. 1966-1967	M.A. Reynolds J.D.T. Scorer R. Bryan A.I. Bigg-Wither P.J. Hawkins R.P.B. Pitt Alcock		Short term vehicle hire as required	Sydney Basin review will last until June 1969. Other Branches will assist in various aspects of the work. P.R. Evans (Geol. Branch) will contribute a palynological report to the Sydney Basin project.
<u>Results:</u>	Preparation of Records Sydney Basin.					
Core and Cuttings Laboratory	Receive, catalogue and store cores and cuttings.			Kraitsowits Brown Ozimec Hunter		
90E02 67/437	Examine material from selected wells as requested by Subsidy Group and S.E.S.G.	Continuous	R. Bryan		Panel Van Lab. equipment	Visit Mines Department Core Stores to select material when offered.

OIL SEARCHPETROLEUM EXPLORATION BRANCH (Cont'd)PUBLICATIONSREPORTS

Subject	Author	Timetable to Complete		Remarks
		Writing	Editing	
Otway Basin	Reynolds, Scorer, Bigg-Wither, Hawkins, Bryan	Dec. 1966	Oct. 1967	
Papua-New Guinea Tectonics Project	R. P. B. Pitt	Dec. 1966	Nov. 1967	Time allowed for decision on thesis and clearing of data by Company.
Summary of Oil Search Activities in Australia and New Guinea	S. Marchant	Mid. 1967	End 1967	Completion of this report is dependent on contributions from other branches.

P.S.S.A. PUBLICATIONS

Subject	Company	Technical Editing	Timetable to Complete		Remarks
			Technical Editing	Final Editing	
GinGin No. 1.	WAPET	J. Hays F. H. Lepine	Dec. 1966	Feb. 1967	
Summary Kulshill No. 1.	Subsidy Group	J. Hays	Jan. 1967	May 1967	
Bass No. 1	Esso	J. Hays J.A.W. White	Feb. 1967	July 1967	
Summary Marine Seismic Surveys, Gippsland Basin	Haematite Esso	K.B. Lodwick F.W. Brown	Mar. 1967	May 1967	
Summary S.E. Kidson Seismic Survey	WAPET	K. Lodwick	June 1967	Aug. 1967	
Yowalga No. 2	Hunt	J. Hays F. Lepine	July 1967	Sept. 1967	
Kidson Gravity Group	WAPET	F.W. Brown	Apr. 1967	June 1967	

OIL SEARCHMINERAL RESOURCES BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>PETROLEUM TECHNOLOGY SECTION</u>						
Seismic Party No. 1	Seismic Shot-Hole Drilling	Mid Feb-end June	A.T. Churchill (Intermittently)	J. Brennan (Intermittently) Driller Grade 2 Two Drillers Grade 1 Two Drill Assistants (See Note IV)	Two Mayhew 1000 Drills (ZDA 506, ZDA 379) 1 Carey/Mobile Drill (See Note I) ZSU 142 1 Drill Trailer C15210 (4-wheel) 1 Flat Top Tanker ZSU 156 Drilling equipment as required. See Note (ii) and (iii)	Note (i) During 1967 the replacement of all Carey Drills by Mobile B40 Drills is programmed. (ii) Camping Equipment, Messing facilities to be provided by Geophysical Party as required. (iii) Two additional water tankers to be provided by Geophysical Party as required. (iv) Three field hands to be provided by Geophysical Branch as required.
(1) East Otway Basin. (Geelong-Colac- Dartmoor) Victoria 8038 67/421		July-Aug. (See Note V)				(v) Drills, equipment & staff, not required for Phosphate Search, Stratigraphic Drill- ing, Marion Downs, or to assist No.2, Seismic Party, while Mayhew Drills are being mounted on New Vehicles in Sydney, would return to Canberra.
(2) Ngalia Trough N.T. 8038 67/424	As above	Sept-Nov	As above	As above	as above	
Seismic Party No.2	Seismic Shot-Hole Drilling	May-Nov	A.T. Churchill (Intermittently)	J. Brennan (Intermittently) 1 Driller Grade 2. 2 Drillers Grade 1. Two Drill Assist. (See Note iv)	2 Mayhew 1000 (See note vi) 1 Carey/Mobile Drill (See note i) 1 Drill Trailer (4-wheel) 1 Flat top Tanker Drill equipment as required. (See Note ii and iv)	(vi) The two Mayhew Drills for No.2 Seismic Party are being remounted on New Vehicles. This remounting will unavoidably overlap the start of No. 2 Seismic Party. No. 2 Seismic Party will always have one Mayhew Drill. The second Mayhew Drill may have to be replaced for short periods by a Mobile or Carey Drill or Shift Work worked.
Experimental Programme Surat Basin (Roma Area) Stratigraphic studies Precipice sandstone. 803808 67/417						

OIL SEARCH  
MINERAL RESOURCES BRANCH (Continued)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Stratigraphic Drilling Party No. 1.  80SD3 67/418						
(1) Surat Basin, Q'ld. (Roma area)	Stratigraphic Drilling and coring as re- quired by Field Geologist to obtain Sedimentary inform- ation for Mapping Programme.	June	A.T. Churchill (Intermittently)	J. Brennan (Intermittently) Driller Grade II (Intermittently) Driller Grade I  Drill Assistant 1 Field Hand 1 Mechanic 1 Cook	1 L/R LWB. 1 Drill 1 3-ton 4 x 4 1 Water Tanker 4 x 4 Flat Top 1 Drill Trailer (4-wheel) 1 Kitchen Caravan with annex. Camping Equipment for 7 men Radio (Charleville-Mt. Isa bases). Independent of Geological Party.	Type of Drill available depends when new rigs are completed or a rig becoming available. ex No. 1. Seismic in July.
(2) Drummond Basin, Q'ld. (West of Claremont)	As above	July 1-15	As above	As above	As above.	
(3) S.W. Bromanga, Q'ld. (Durham Downs)	As above	July 16- end Aug.	As above	As above	As above.	
(4) Surat Basin, Q'ld As above (Chinchilla area)	As above	Sept-Oct.	As above	As above	As above.	
Abandonment of Deep Stop water flow, Seismic shot-hole remove existing (Flowing water) shot small bore casing, point 247 Marion run 6" casing, Downs Station, plug and abandon Q'ld. hole.  80X  64/711 66/1917		6 weeks	A.T. Churchill	J. Brennan (Intermittently) 1 Driller Grade 2 1 Driller Grade 1 1 Drill Assistant 1 Field Assistant	1 L/R (LWB) 1 Mayhew 1000 Drill 1 Water Tanker 4 x 4 (Flat Top) 1 3-ton 4 x 4 Camping equipment for 5 men. Radio (Mt. Isa-Charleville).	During this survey some stratigraphic drilling will be carried out on the phosphate region, Duchess. (See Non- Metals Search. P. 27).

OIL SEARCH  
MINERAL RESOURCES BRANCH

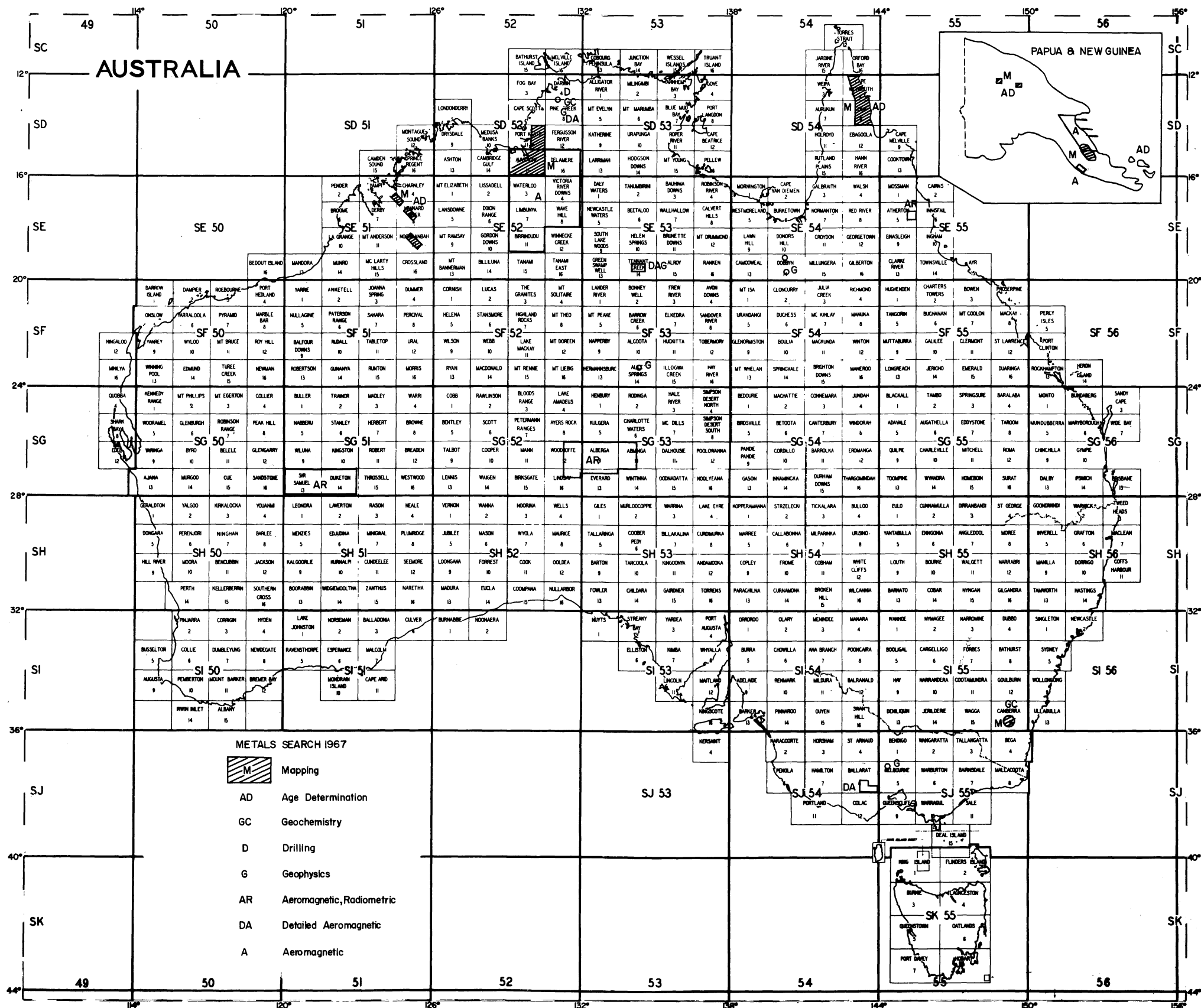
.17.

PUBLICATIONS

Subject	Author	Writing	Editing	Remarks
<u>PETROLEUM</u> <u>TECHNOLOGY SECTION</u>				
Petroleum Newsletter	J.M. Henry	January April July October	January-February April-May July-August October-November	Ready for distribution (750 copies) in February " " " " " in May " " " " " in August " " " " " in November
Petroleum Exploration Contractors, Service Companies & Consultants	J.M. Henry	March June September December	March June September December	" " " (400 " ) in March " " " " " in June " " " " " in September " " " " " in December
Petroleum Exploration Companies	J.M. Henry	January July	January July	" " " (900 " ) in March " " " " " in September

MAPS

Subject	Author	Compilation	Fair Drawing	Remarks
<u>PETROLEUM</u> <u>TECHNOLOGY SECTION</u>				
Petroleum Titles Map and Key	J.M. Henry	January July	February August	Ready for distribution (900 copies) in March. " " " " " in September.



METALS (INCL. URANIUM) SEARCH  
GEOLOGICAL BRANCH

.18.

Party/Project Symbol File	Nature of Work	Timetable.	Staff	Non-professional Staff	Vehicles Equipment	Remarks
West Kimberley 6M60 67/404 67/404A <u>Results:</u>	Complete regional mapping Lennard River, Charnley, Yampi and small inlier Nookanbah 1:250,000 areas.  Explanatory Notes, Yampi Lennard River.  Bulletin - West Kimberley	Mid June- mid Aug.  1967-68  1967-68	D.C. Gellatly G.M. Derrick J. Sofoulis (GSWA)  Sofoulis Gellatly Playford Derrick Gellatly Sofoulis Derrick	1 mechanic 1 f/h	2 SWB L/R 2 L/R Trailer 2 Traegar Transceivers 2 Portable Porta- gas refrigerators 2 - 3 cft.	10 hrs. light aircraft hire @ £16 per hour. 14 days 40 hours helicopter hire - G4 & \$4,000 in June or July; co-ordinate flying with Victoria River Party.  M. Bofinger of Geology Group to visit.
Cape York, Q'ld. 6M61 67/416 67/416A <u>Results:</u>	Regional geological mapping Coen, Cape Weymouth 1:250,000 areas, and coastal islands.  Record	May-Sept.  Oct. 67- April 68.	D.S. Trail D. Palfreyman W. Willmott W. Whitaker (G.S.Q.) D.S. Trail	1 cook 1 mechanic 5 f/h's	5 SWB L/R's 2 4 x 4 Bedfords 2 L/R Trailers 2 L/R Water Trailers 3 Traegar transceivers 1 chain saw Light weight camping gear 1 Portable electric welder 1 Inflatable dinghy and outboard motor	Boat hire - 4 weeks Helicopter hire - 2 weeks 30 hours. Light aircraft - 16 hours. Hire of horses - up to 3 months (2 strings of 5)  \$15,000 provided in 1966/67 Estimates.
Sepik Party 6M62 65/1660 <u>Results:</u>	Regional geological mapping 1. April River - Leonard Schultze River area and recce to border. 2. Lower Ramu - Schrader Range. Collection age determination samples Record (April River) Record (Lower Ramu)	Aug.-Oct.  March	D.B. Dow  J. Bain P. Macnab R. Page* Ryburn  D. Dow J. Bain	2 f/h's 1 mechanic/ driver 24 Native carriers.	2 LWB/LR for one month 3 Hamilton Turbocraft 1 Transceiver Light weight camping gear 6 shotguns 2 x .22 rifles.	Helicopter hire 42 days 70 - 80 hours. Light aircraft hire 20 hours @\$50 per hour.  *Geochronology Group.  \$500 provided in 1966/67 Estimates.
Papuan Basic T.P.N.G. 6M63 65/1308 <u>Results:</u>	1. Complete regional geological mapping of Papuan Ultramafic Belt; Mt. Suckling - Mt. Oriana block, Mt. Chalmers - Jaure - Ormond (148°E, 9°30'S) area; Didana Range-Wowo Gap. 2. Collect samples in De Entre- casteaux Group for age deter- mination.  Progress Record	May-Sept.  March.  Oct. 67 - May 68.	H.L. Davies   H.L. Davies	15 Native carriers (1 Boss boy)	Contractor Light weight camping gear	Helicopter hire 40 days (135 hours) est. cost \$12,500. Light aircraft hire (\$1,500) De Entrecasteaux programme with J. Wilson Geophysical Branch.  \$5,200 provided in 1966/67 Estimates.
Darwin Uranium Group. 6 UD 62/541 63/557 64/733 64/843 67/446 <u>Results:</u>	Complete compilation and asses- sment of existing geological, geochemical and geophysical data in Hundred of Goyder. Auger drilling/geochemical sampling Rum Jungle east 29,000 feet (1) Diamond drilling, Woodcutters 14,000 feet (2) Geobotanical investigation (3). Rotary per- cussion drilling at Waterhouse No. 2 Prospect and Woodcutters for 1 month (4) Record	Continuous  Oct. 67- Apr. 68.	C.E. Prichard 1 Geologist Cl.2 J. Willis D. Semple (ex Canberra) Y. Miezitis (ex Canberra) L. Kerec (Draftsman)  Prichard	As per establ- ishment  As per establishment B.M.R. Gemcodrill 1 Falcon Utility	Contract surveying by Dept. of Interior. 75 miles. (1) Can be handled by B.M.R. Gemcodrill (2) 7000 feet by N.T. Mines Branch drills balance by Contractor. (3) Mr. W. Ridley G.S.Q. (April & Nov. four weeks in each.) (4) With Petroleum Technology Section. Geophysical Investigation to be co-ordinated with the results assessed in conjunction with the geology and geochemistry.	

METALS (INCL. URANIUM) SEARCH

.19.

GEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicle Equipment	Remarks
Age Determination 6M5 64/993	1. Complete dating Ayr-Townsville- Charters Towers, Cape York area (6); 2. Complete East Kimberleys, collection West Kimberleys; 3. State Circle Shale Bore Cores (100' weathered and 100' un- weathered) and Recent muds for initial ratio studies; 4. Dating, granites and volcanics from New Guinea (38) and new samples for Sepik area; 5. Complete dating of Antarctic rocks (30). 6. Ad hoc.	Continuous	A. Webb V. M. Bofinger R. Page	4 f/h's (E. Woodhead) (T. Woodhead) W. Pascoe)	Short term vehicle hire 3 Atlas Copco rockdrills	In co-operation with A.N.U.; Bofinger to visit West Kimberley Party; visit to Cape York Party by Webb; 3. with W. Compston (A.N.U.)
<u>Results:</u>	Geochronology of igneous rock - central eastern Queensland. East Kimberley Region Antarctic rocks Catalogue of Age Determination	1967 1967 1967 1967	A. Webb V. Bofinger R. Harding R. Page			
Canberra 6M50 67/438	Continue regional geological mapping and geochemical sampling of selected areas.	Continuous	C.D. Branch	R. Moon Z. Roksandic 1 f/h	On short-term hire from Dept of Interior 1 SWB L/R 1 4 x 4, 3-ton truck	Non-professional staff to assist in laboratory when not in field.
Victoria River Party, N.T. 6M64 67/415 <u>Results:</u> 67/404A	Commence regional geological mapping Port Keats (part) and Auvergne (part) 1:250,000 sheet areas. Record	May-Sept. Oct-Mar.	I. Pontifex I. Sweet A.G. Read M. Morgan I.R. Pontifex	4 f/h's 1 mechanic 1 cook	4 SWB L/R's 1 Holden Utility? Station Sedan 1 4 x 4 Bedford 1 L/R Water Trailer 1 L/R Trailer 2 Transceiver-Traegar	30 hrs. (14 days) Helicopter G4 @ \$3,740 - Sept.62. 20 hrs. light aircraft 3 weeks boat hire. Some drilling might be needed in 1968. Vehicles to be left in Darwin \$11000 provided in 1966/67 Estimates.
Herberton/Mt. Garnet Q'ld. 6M65 63/522	Preliminary sampling of haloes of mineralization around selected tin lodes to assess possibility of dis- covering large disseminated deposits; Preliminary investigation of a list of areas for 1 mile to 1 inch or 1:50,000 scale mapping. Record	July Dec. 67	W.B. Dallwitz W.B. Dallwitz	2 f/h's	1 Utility 1 Petrol driven jaw crusher 1 sample splitter	W.B.D. to investigate possibility of project during 1967.
Geological map of Northern Territory	Commence compilation of Geological map of Northern Territory.	as time permits	P.R. Dunn K.G. Smith		Short term vehicle hire.	* To be commenced when Carpentaria Bulletins are completed.



METALS (INCL. URANIUM) SEARCH

GEOLOGICAL BRANCH

.20.

PUBLICATIONS

BULLETINS

Subject	Author	Writing	Timetable to Complete	Editing	Remarks
The Geology of the Katherine Darwin Region	B.P. Walpole, 2 P.R. Dunn P.W. Crohn	Completed		with Editor	Bulletin No.82; Economic Geology by P.W. Crohn
Geology of the Carpentaria Proterozoic Province, N.T. Part I - Roper River to Queensland Border	P.R. Dunn, H.G. Roberts	Feb. 67			Roper River and MacArthur River 1:000,000 Sheet areas.
Geology of the Carpentaria Proterozoic Province, N.T. Part II - Arnhem Land	H.G. Roberts, K.A. Plumb and P.R. Dunn	Dec. 66			Arnhem Land 1:500,000 Sheet area.
Precambrian Geology of the Kimberley Region - The East Kimberley	D.B. Dow and I. Gemuts 2	Dec. 66			
Precambrian Geology of the Kimberley Region - The Kimberley Basin	K.A. Plumb	Dec. 67			
Precambrian Geology of the Kimberley Region - The West Kimberley	D.C. Gellatly, J. Sofoulis 1 G.M. Derrick	Dec. 68			Complete mapping in 1967
Hodgkinson Basin	F. de Keyser, 2 G. Lucas	?			Bulletin No. 84. Lucas' contribution on Laura Basin not received and if not in our hands by December 66 will be left out of Bulletin.
The Geology of the Mt. Garnet/ Herberton 1 mile Sheet area.	D. Blake, J.W. Smith 2, K.R. Yates 2	May 67			
Ore Mineralogy Reports 1964-65	I.R. Pontifex	Completed		In progress	
Charters Towers	A.G.L. Paine	end 68			
<u>REPORTS</u>					
Adelaidean and Cambrian Stratigraphy of the t.t. Ramsay 1:250,000 Sheet area.	H.G. Roberts, I. Gemuts 2, R. Halligan 2	Completed		In progress	Being edited in Section
Palaeozoic Rocks of the East Kimberley Region	D.B. Dow	Mar. 67			With Author.
Catalogue of the Age Determinations 1966	R. Harding (?)	Apr. 67			
Geology at the Townsville 1:250,000 Sheet area.	D. Wyatt, A.G. Paine, R. Harding, D. Clarke.			With Editor In progress	Report No. 127
The Geology of North-East of the Hughenden 1:250,000 Sheet area	A.G. Paine, R. Harding, D. Clarke 3			With Editor In progress	Report No. 126
The Geology of part of the Charters Towers; 1:250,000 Sheet area	D. Wyatt, A.G. Paine, D. Clarke, 3 C.M. Gregory	mid 1967			with Supervisor since June 66.
The Geology of the Ayr 1:250,000 Sheet area	A.G. Paine, C.M. Gregory D. Clarke 3			In progress	Report No. 128
Regional Geochemical Sampling Ayr 1:250,000 Sheet area.	N.J. Marshall	Open			To be issued as a Record.

METALS (INCL. URANIUM) SEARCH

21.

GEOLOGICAL BRANCH

PUBLICATIONS

REPORTS (Cont'd)

Subject	Author	Writing	Timetable to Complete	Editing	Remarks
Catalogue of Age Determinations - 1962-65	?	end 67			
The Geology of the Northern Half of the Bowen 1:250,000 Sheet area.	A.G. Paine, G.M. Gregory D. Clarke <sub>3</sub>	end 67	2		Draft 50% complete
The Geology of the Northern Half of the Proserpine 1:250,000 Sheet area.	D. Clarke <sub>3</sub> , R. Jensen, A.G. Paine	end 67			not started
Laura Basin	G. Lucas	No date can be given			Lucas in England.
	1. Geological Survey of Western Australia 2. With industry 3. Geological Survey of Queensland.				

MAPS

Subject	Author	Compilation	Timetable to Complete	Fair Drawing	Remarks
<u>1:50,000 and 1 ml to 1 inch Sheets</u>					
Mt. Garnet Herberton	D. Blake, R. Yates <sub>2</sub> , D. Blake, J. Smith <sub>2</sub>	May 67 May 67			
<u>1:250,000 Sheet Areas</u>					
Cambridge Gulf	K.A. Plumb, J. Veevers	?			P.E. Issued Map and Notes to be revised. Subject to K.A.P.'s other commitments. P.E. and Record compiled.
Mt. Elizabeth	H.G. Roberts, J. Perry	Jan. 67			P.E. issued;
Ashton	G.M. Derrick	Feb. 67			P.E. issued;
Drysdale-Londonderry	D.C. Gellatly, J. Sofoulis <sup>1</sup>	Feb. 67			Text to be sent to Allen.
Montague Sound	A.D. Allen <sup>1</sup>	Dec. 67			P.E. to Printers 18/10 Record not received.
Prince Regent-Cambden Sound	I. Williams <sup>1</sup> , J. Sofoulis <sup>1</sup>	Mid 67			
Charnley	R. Halligan <sup>2</sup> , D.C. Gellatly	Late 68			
Medusa Banks	K.A. Plumb, J. Perry	Aug. 67			
Yampi	J. Sofoulis <sup>1</sup> , D.C. Gellatly	68			
Lennard River	D. Playford <sup>1</sup> , G.M. Derrick	68			
Hughenden	R. Vine, A.G. Paine	March 67			
Charters Towers	D. Clarke <sub>3</sub>	68			Hold until completion of mapping of Drummond Basin.
Townsville	D. Wyatt <sup>3</sup>	Nov. 66			
Bowen	A.G. Paine, D. Clarke <sup>3</sup> C.M. Gregory	Sep. 67			
Proserpine	D. Clarke <sub>3</sub>	Sep. 67			
Bougainville	D. Blake, Y. Mizietis	Complete		Complete	with Printer
<u>1:500,000 Sheet Areas</u>					
East Kimberley	D.B. Dow, I. Gemmets <sup>2</sup>	Dec. 66			
Kimberley Basin	K.A. Plumb	Dec. 67			
West Kimberley	D.C. Gellatly, J. Sofoulis <sup>1</sup>	July 68			
Charters Towers	A.G.L. Paine et al	Apr. 68			Examine possibility of production at 1:100,000 scale
Papuan Ultramafic Belt	H.L. Davies	68			

METALS (INCL. URANIUM) SEARCH

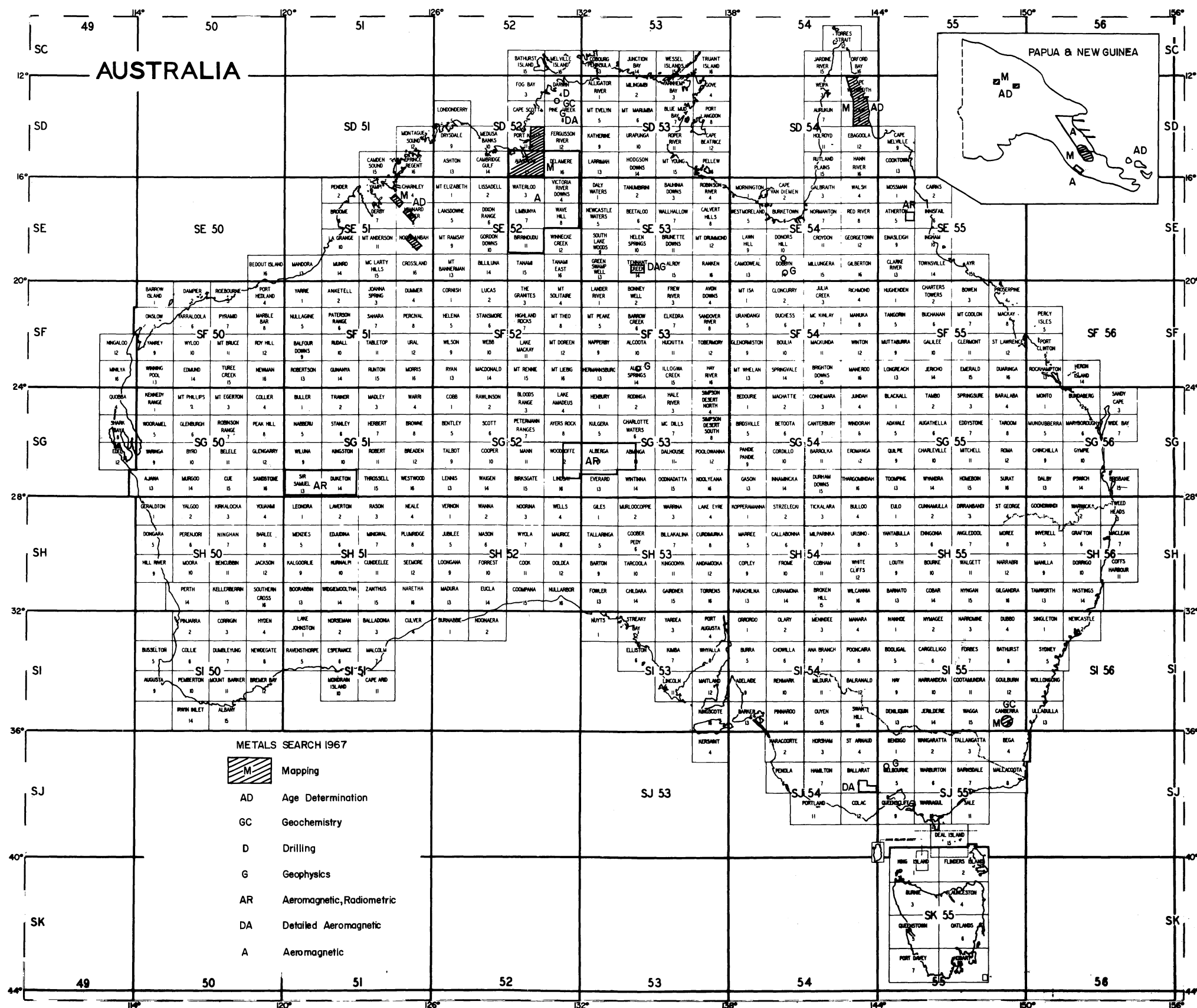
GEOLOGICAL BRANCH

PUBLICATIONS

.22.

MAPS (Cont'd)

Subject	Author	Compilation	Timetable to Complete	Fair Drawing	Remarks
<u>1:500,000 Sheet Areas</u>					
Cape York	D.S. Trail	69			Examine possibility of production at 1:1,000,000 scale
Arnhem Land		Completed			To Contract Drafting
Hodgkinson/Laura		"			To Printer July 66
Katherine/Darwin 2nd Edition		"			To Contract Drafting (Oct. 66).
<u>1:1,000,000 Sheet Areas</u>					
Geological Map of New Guinea	D.B. Dow	As time permits			



METALS (INCL. URANIUM) SEARCH

.23.

GEOPHYSICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Turam Model Tests A.C.T.  7M 65/1669 Results:	Completion of EM scale model experiments and compilation of results  Progress Record Report	Jan-Mar  May-June July-Dec	<u>J. Williams</u> J. Haig  J. Williams J. Williams & E. Sedmik	N. Ashmore	1 Landrover 1 Recorder Truck Turam model test equipment	
Laboratory Measure- ments of Samples, A.C.T.  7MG 30 Results:	Measurement of IP conductivity & suscep- tibility properties of drill cores  Preparation of Record	Jan-Feb.  Mar-Apr	<u>J. Haig</u>  J. Haig	B. Mayfield		Continuation of measurements commenced in 1966. Includes modifications to existing equipment and construction of new equipment.
Tennant Creek N.T. 7 MG33 64/747 Results:	Magnetic ground follow-up of 1966 detailed aero- magnetic results.  Preparation of Record	Aug-Oct  Oct-Nov	<u>J. Haig</u>  J. Haig	N. Ashmore 2 Field Hands 1 Cook	1 3-ton Bedford 2 LWB Landrovers 2 Magnetometers Camping equipment 1 Transceiver	Co-operation with Resident Geologist, Tennant Creek. Surveying by Department of Interior.
Strangways Ranges N.T. 7MG33 64/1322 Results:	Ground follow up of light aircraft results using IP, EM and magnetic methods.  Preparation of Record	May-July  Dec-Jan 68	<u>J. Haig</u> D. Quick J. Haig	N. Ashmore G. Blincoe 2 Field Hands 1 Cook 1 Mechanic	1 3-ton Bedford 2 LWB Landrovers Magnetometer, IP 1 30 cwt Inter 1 Transceiver	Detailed Geological mapping required prior to geo- physical survey.  Surveying by Department of Interior.
Compilation Rum Jungle Data.  Results:	Compilation of all geophysical data in the Rum Jungle area, prior to assessment  Preparation of Report	Jan-Dec  June-June 68	W. Langron  (W. Langron J. Gardener K. Duckworth B. Farrow			In co-operation with J. Gardener Darwin Office.
Darwin Uranium Group N.T. 7MG33 62/118 64/733 64/843 Results:	Laboratory services, log- ging, field surveys, mainly in Rum Jungle East area. Compilations & analysis of geophysical data from Rum Jungle area.  Preparation of Record on Rum Jungle East survey	Continuous  Nov-Mar 68	<u>J. Gardener</u> K. Duckworth J. Williams (June-Oct)  K. Duckworth J. Williams	J. Zeroni C. Braybrook E. Tomlinson	Vehicles listed under Darwin Establishment.	J. Williams from Canberra to supplement Darwin staff for period shown. K. Duckworth party leader for Rum Jungle East surveys.
Dobbyn-Kamileroi QLD. 7MG33 64/739	(1) Experimental IP, EM in Kamileroi area (2) Experi- mental EM near Dobbyn (3) IP, EM follow up of B.M.R. gravity work near Dobbyn.	Aug-Oct	<u>R.J. Smith</u> D. Quick	G. Blincoe 2 Field Hands 1 Cook 1 Mechanic	1 3-ton bedford 1 LWB Landrovers IP, EM (Turam) AFMG Equipment Camping equipment 1 Transceiver 1 30 cwt. Inter	Surveying by Department of Interior
Chewton-Castlemaine Vic. 7MG31 67/444 Results:	IP and EM survey  Preparation of Record	Feb-Mar  Apr-May	<u>B. Farrow</u> D. Quick B. Farrow	G. Blincoe	2 LWB LR's IP, EM (Slingram Turam) equipment	Eureka Gold Mining Syndicate to supply surveyors & field assistants.

METALS (INCL. URANIUM) SEARCH

.24.

GEOPHYSICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
VH-MIN Western Australia  7MAF20 Results: 67/407	Aeromagnetic and radiometric survey of Duketon and Sir Samuel at 1 mile spacing  Preparation of Record	Mid Apr.- mid July  Aug.	P. Shelley D. Waller  P. Shelley	P. Ryan K. Mort D. Park 1 Geop. Asst. 1 Draftsman	1 Mobile darkroom 1 Station sedan 2 1-ton pick-up trucks 4 x 4 Airborne magnetometer Scintos, navigation equipment Cameras	Requested by W.A. Mines Department to assist regional mapping and mineral investigation.
VH-MIN S.E. Musgrave Block S.A.  7MAF20 67/408 Results:	Aeromagnetic and radiometric survey of Alberga, Abminga (part), Woodroofe (part), Lindsay (part), Everard (part) at 1 mile spacing.  Preparation of Record	Mid July- Sept.  Oct.- Dec	D. Tipper P. Browne- Cooper (from mid Aug.)  D. Tipper P. Browne- Cooper	P. Ryan K. Mort D. Park 1 Geop. Asst.	1 Mobile darkroom 1 Station sedan 2 1-ton pick-up trucks 4 x 4 Airborne magneto- meter Scintos, navigation equipment Cameras	Requested by S.A. Mines Department to assist mineral investigation.
VH-MIN Herberton, Qld  7MAF20 67/410 Results:	Aeromagnetic and radiometric survey of Herberton 1-mile area at 1-mile spacing  Preparation of Record	Mid Nov.- end Nov.  Jan 68.	D. Tipper D. Waller  D. Tipper	P. Ryan	1 1-ton pick-up truck 4 x 4 Airborne magneto- meter Scintos, navigation equipment Cameras	Requested by Geological Branch
VH-GEO Tennant Creek, N.T.  7MAF21 67/411 Results:	Detailed aeromagnetic survey of selected parts of Tennant Creek field.  Preparation of Record	Mid Feb.- mid April  May	P. Shelley P. Browne- Cooper R. Gerdes (from mid Mar.) P. Shelley	P. Evans B. Tregallis 2 Draftsmen	2 1-ton pick-up trucks 4 x 4 Airborne magneto- meter Ground magnetometer Cameras	
VH-GEO Rum Jungle, N.T.  7MAF21 67/412 Results:	Detailed aeromagnetic survey of selected area Rum Jungle. To include experimental colour photography  Preparation of Record	Mid Apr.- June  July	P. Browne - Cooper R. Gerdes  P. Browne- Cooper	P. Evans B. Tregallis 2 Draftsmen	"	
VH-GEO Ngalia Basin N.T. 7MAF21	Experimental colour photography	July				
VH-GEO Western Victoria  7MAF21 67/413 Results:	Detailed aeromagnetic survey of Skipton, Lismore, Rokewood 1-mile areas  Preparation of Record	Mid July- September  October	R. Gerdes  R. Gerdes	P. Evans B. Tregallis 1 Draftsman		Requested by Victorian Department
Contract Victoria River Basin N.T. No.2. 7MAC2 67/443	Aeromagnetic survey of Delamere, Victoria River Downs, Wave Hill		Supervised by R. Wells.			Tenders close on 9th March \$100000 provided in 1966/67 Estimates
Contract Victoria River Basin N.T. No.1 7MAC1 65/1654	Aeromagnetic survey of Auvergne, Limbunya, Waterloo, Birrindudu.	October 66- ? June 67	Supervised by R. Wells			Contract let to Adastra Hunting Geophysics Pty.Ltd. in August 1966 and flying commenced October 1966. The work will continue into 1967. \$100000 provided in 1965/66 Estimates.
Contract Papuan Basic Belt and Astrolabe Area T.P.N.G. 7MAC3 65/1666	Aeromagnetic survey, included in major contract with Papuan Basin q.v. under Oil Search	Expected commence early 1967	Supervised by G. Young			\$253000 for Papuan Basin \$31000 for Papuan Basic Belt \$17000 for Astrolabe Total \$301000 provided in 1966/67 Estimates.

METALS (INCL. URANIUM) SEARCHGEOPHYSICAL BRANCHPUBLICATIONSBULLETINS

Subject	Author	Timetable to Complete		Remarks
		Writing	Editing	
Magnetic Surveys for Iron Ore Deposits Savage River Tasmania	E. Eadie	-Mar.		
Geophysical Surveys Mt. Lyell Field Tasmania	J. Williams	Dec.-May 1968		

REPORTS

Geophysical Surveys (Incl. Drilling) Dobbyn Area Queensland	J. Gardener	Jan.-May		
Geophysical Activities to December 1967 Rum Jungle N.T.	W. Langron J. Gardener K. Duckworth B. Farrow	June-June 1968		

METALS (INCL. URANIUM) SEARCHMINERAL RESOURCES BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-Professional Staff	Vehicles & Equipment	Remarks
<u>Petroleum Technology Section</u> Drilling Party No.3 Rum Jungle, N.T. 8 MSD1 67/446	Stratigraphic Drilling and coring as required by Field Geologist	July August	A.T. Churchill (intermittent)	J. Brennan (intermittent) Driller Gr. 1 Drill Assistant Field Assistant	1 Mayhew 1000 1 Flat top tanker Drilling Equipment Camping Equipment	Operational during period when No.1 Seismic Party is not operating in the field.

NON-METALS SEARCH  
GEOLOGICAL BRANCH

.26.

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicle Equipment	Remarks
<u>Phosphate Search</u> Eastern Australia 6 P.1 66/1778	(A) <u>Continental</u> Assessment of phosphate potential of selected areas in eastern Australia - principally eastern Queensland	Continuous	(Part time) Geologist Class 3 * Geologist Class 1 *	Technical Officer 1*	'Ad hoc' hiring from Brisbane.	
<u>Results:</u>	Records - assessment of phosphate potential of selected areas					
Cambrian Province of north-west Queensland 6 P 2 67/447	1:50,000 mapping and detailed investigations of Cambrian phosphorite sequences.	May-Nov.	Geologist Class 3 * (Part time) Shergold Barrett (Qld. Geol. Survey)?	T.A.2 * 2 F.A. 1 Mechanic 1 Cook	1 Bedford - 3 ton 4 L/R's 1 Water Trailer 1 2-wheel tractor	Palaeontologist to assist field investigations. C. Gatehouse J. Tomlinson
<u>Results:</u>	Record on the progress of the investigation.					
Radiometric prospecting 6 P 3 67/447 <u>Results:</u>	Study of aerial radiometric pro- specting for phosphorite - Cambrian Province - Duchess Area, north-west Queensland	March Or April (2 weeks)				Joint investigation with Geophysical Branch. VH-MIN to carry out one or two experimental flights over known phosphorite deposits using scintillometers magnetometer.
<u>Results:</u>	Record on the project.					
Setting up of the Marine Geology Group 6Z1 66/2144	(B) <u>Marine Geology</u> Chartering and equipping research vessel.	Continuous	L.C. Noakes & H. Jones			
North-West Australian shelf 6Z1 66/2144	Survey of the morphology and surface sediments of the continental shelf.	Oct.-Dec.	H. Jones Geologist Class 2*	2 Tech. Officers* T.A. 2*	Chartered vessel; bottom sampling, echo-surrounding seismic profiles and submarine photographic equip- ment.	\$100000 provided in 1966/7 estimates
<u>Results:</u>	Record on the project					
Solomon Sea 66/2144 6Z1 <u>Results:</u>	Survey of the morphology and surface sediments of the banks on the eastern and southern flanks of the Solomon Sea.	Dec.-Mar. 1968	Geologist Class 3* J. Kaulback	Same as for N.W. shelf cruise.	As above	Dr. van Andel of Scripps will probably take part in this exercise.

\* New positions to be filled.



NON-METAL SEARCH  
MINERAL RESOURCES BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicle, Equipment	Remarks
<u>Petroleum Technology Section</u>						
Stratigraphic Drilling	Stratigraphic Drilling	July-Aug.	A.T. Churchill	J. Brannan (Intermittently)	1 L/R L.W.B.	<u>NOTE</u> This drill will become available on completion of the Seismic 1 Party's operations in Victoria and will be required for Seismic 1 Party in September for Ngalia Trough, N.T.
Cambrian Province N.W. Qld. (Duchess area).	and coring as required by Field Geologist.			1 Driller Grade 2 (Intermittently)	1 Mayhew 1000	
				1 Driller Grade 1	1 3-Ton Tanker (4 x 4 Flat Top)	
				1 Drill Assistant	1 Kitchen Caravan with annex	
8 Pl				1 Field Hand	1 Drill Trailer (4-wheel)	The Driller, Drill Assistant, Drill Trailer, Water Tanker, could be ex Seismic Party also.
67/422				1 Mechanic	Camping Equipment for 7 men	
				1 Cook	Radio (Mt. Isa Base) Independent of Geological Party.	

## ENGINEERING AND HYDROLOGY

.28.

## GEOLOGICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Corin Dam, Cotter River, A.C.T. 6Sl. 64/991 <u>Results:</u>	Geological services during construction. Preparation of completion report. Completion report in progress 1967, completed 1968, probably for publication.	Throughout year	E.J. Best	1 F/H (not part of A.C.T. Engin. Geol. Group)	Ø 1 L/R (part of A.C.T. Eng. Geology car fleet)	Services for C.D.W. Canberra; construction will continue into 1968. Seismic testing of foundations.
* Damsite, Gudgenby River, A.C.T. 6Sl. 64/991 <u>Results:</u>	Geological feasibility investigation for city water supply dam. Record on completion of investigation.	See +		1 F/H or T/A (A.C.T. Eng. Geol. Group - see +)	1 L/R	Requested by C.D.W. Canberra, as "Probable" investigation*.
*Damsite near Vanity's Crossing, Cotter River A.C.T. 6Sl. 64/991 <u>Results:</u>	Geological feasibility investigation for city water supply dam. Record on completion of investigation.	See +		1 F/H or T/A (as above)	1 L/R	Requested by C.D.W., Canberra, as "Probable" investigation*.
*Damsite near Point Hut, Murrumbidgee River, A.C.T. 6Sl. 64/991 <u>Results:</u>	Geological feasibility investigation for city water supply dam. Record on completion of investigation * Experience suggests the three investigations will not be needed in 1967. Further advice expected from C.D.W. in next two weeks; allow for two feasibility investigations.	See +		1 F/H or T/A	1 L/R	Requested by C.D.W., Canberra, as "Probable" investigation*. Will probably be done by S.M.H.E.A.
Bendora pipeline A.C.T. 6Sl. 64/754 <u>Results:</u>	Geological services and mapping of exposures during construction; possible slope stability problems. Record on completion of project in 1968.	Discontinuous during year.	D.E. Gardner G.A.M. Henderson	1 F/H or T/A (as above)	1 L/R	For C.D.W., Canberra, and as mapping project.
Deep outfall sewer tunnel, C/wealth Ave. Bridge to Weston Creek. 6Sl. <u>Results:</u>	Surface mapping of tunnel route and advice to C.D.W. on probable tunneling conditions. At least 5 miles long. Report to Department of Works.	Early 1967	See +	See +	1 L/R or Holden utility	Requested by C.D.W., Canberra, required early in 1967.
Tantangara - Corin Dam link for Canberra water supply. 6Sl. <u>Results:</u>	Geological mapping and advice to C.D.W., and N.C.D.C., re excavation and tunnelling conditions. Report to C.D.W., Canberra and N.C.D.C.	?	See +	See +	1 L/R	Requested by C.D.W., Canberra, "Possible" investigation, related to S.M.H.E.A. Study of feasibility of proposed link.
Service reservoirs and trunk mains in Woden & Belconnen Districts. 6Sl. <u>Results:</u>	Geological mapping, seismic timer investigations, logging of drill and auger holes, as required. Report to C.D.W. Canberra	Discontinuous, as required	See +	See +	1 L/R and/or 1 Holden Utility	Requested by C.D.W. Canberra, 2 reservoirs and 1 trunk main investigated in 1966; possibly more in 1967 (2 reservoirs and 1-5,000 foot main in Belconnen area indicated by N.C.D.C.)

+ Staff for projects drawn from the following:- E.K. Carter, D.E. Gardner, G.A.M. Henderson, J.C. Braybrook, Buckhorn and 5 vacation students. Non-professional staff: 2 F/A or T/A; 1 F/H part time. If Geological staff increased one more F/H or T/A may be needed. Ø All vehicles are from A.C.T. Engineering Geology car fleet which consists of 3 L/R, 1 Holden Utility; may need 1 other L/R if staff increased.

## ENGINEERING AND HYDROLOGY

## GEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Mapping of development & possible development areas (a) Belconnen (b) Tuggeranong & Village Gks, area - (c) Gungahlin (d) Western Ck. 6S1 64/754  <u>Results:</u>	(a) Continuing of current mapping of Belconnen areas in advance of planning and of trenches; etc. as development progress. student. (b) and (c) Inspection and evaluation of Tuggeranong Ck. - Village Ck & Gungahlin areas as possible future development areas. (d) Mapping as for Belconnen Reports to N.C.D.C. as required and Records when investigations completed.	(a) Discontinuous through year; in-cludes use of vac. (b) Late 1967 (c) As required	See +	See +	1 L/R &/or 1 Holden Utility	Requested by National Capital Development Commission
Minor engineering geology investigations, A.C.T. 6S1 64/754 and others	Foundations investigations for buildings and other engineering structures, roads, etc; investigation of construction materials and soils. Building investigations expedited for Camp Hill, Capital Hill, Russel War Memorial, and possibly Woden District Centre, & Ring Road, Capital Hill.	Discontinuous through year as requested	See +	See +	1 L/R and/or 1 Holden Utility	AdHoc requests emanate from C.D.W., N.C.D.C. Department of Interior, contractors consultants and prospectors. Also some other Government Departments.
Geology of Canberra Central area. 6S1, 64/754.  <u>Results:</u>	Production of outcrop map and report, by collection of existing information; report on engineering geology and hydrology conditions. Record	Completed by July, 1967.	D.E. Gardner	-	-	Requested by N.C.D.C. September, 1966.
Building Stones, A.C.T. & General.  6S1 64/754  <u>Results:</u>	(a) Laboratory testing of, and search for, rock suitable for building stone. (b) Maintenance of catalogue of stone used in Canberra buildings and monuments. Laboratory reports on lab. investigations. Record on testing of slate.	(a) Continuous through year.	(a) Miss C. Newbigin (b) Miss R.G. Warren	-	1 L/R and/or 1 Holden Utility	Most requests from N.C.D.C.
Petrography for engineering geology & miscellaneous investigations.  <u>Results:</u>	Petrography of rocks, particularly of construction materials, as required by engineering geologists and hydrologist. Laboratory reports; commonly also as Appendices to Records.	Continuous through year	Miss C. Newbigin	-	-	-
Scrivener Dam, A.C.T. Secretariat Building 6S1	Write records on completed projects.	As other work permits	E.J. Best G.A.M. Henderson	See +	1 L/R and/or 1 Holden Utility	-
Sewerage works and trunk main, Weston Creek and Belconnen Areas 6S1	Except for sewer trunk main, probably little geological component in proposed developments	-	See +	See +	1 L/R and/or 1 Holden Utility	Requested by N.C.D.C. Includes extensions to Weston Creek works, possible new works d/s of Weston Creek and at Belconnen. Connecting main for new Molonglo Plant.

## ENGINEERING AND HYDROLOGY

## GEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Jervis Bay resources survey including groundwater. 6S1 65/1612  Results:	Map and evaluate resources including groundwater, of Jervis Bay area.  Record on completion of investigation.	Early 1967	K.A. Townley (part-time)	-	1 L/R	Requested by C.D.W. Sydney (Groundwater) and Dept. of Interior, Canberra.
Search for dune sand, A.C.T. 6S1	Locate, evaluate, and report on deposits of unexploited dune sand (fine builders' sand) in and around A.C.T.	-	D.E. Gardner	See +	1 L/R	Requested by Department of Interior.
Miscellaneous investig- ations (hydrology and drainage), A.C.T. and environs. 6X1 64/735	Sitting of bores, test pumping of bores; in- vestigation of drain- age problems; measure- ments of water levels and quality in bores, Lake George and Lake Burley Griffin. Automatic processing of data. Miscellaneous queries A.C.T., and elsewhere.	As required through year	G.M. Burton H.F. Douth	1 T/A (Temporarily) F/H	1 L/R 1 Jeep trailer Pump & measuring equipment	Carried out concurrently with map editing and map compilation duties.
*Port Moresby No.3 Power Station, Laloki River, T.P.N.G. 6S3  Results:	Possible preliminary geological investigation for power development below Port Moresby No.1. H.E. power station.  Record					Requested by C.D.W., Melb.; "possible" only. Engineering planning may not be far enough advanced for the geological investigation to proceed.
*Sirinumu Dam extension, Laloki River. T.P.N.G. 6S3 Results:	Preliminary investigation of second stage construction of dam. Record					Requested by C.D.W. Melb. possibly geophysical work.
Sogerri balancing pondage, Laloki River T.P.N.G. 6S3	Possible preliminary geological investigations for additional pondage above No.2. power station.	?	Geologist from A.C.T. Eng. Geology group if required	To be provided by C.D.W., Port Moresby as re- quired	To be provided by C.D.W., Port Moresby as re- quired.	Requested by C.D.W., Melb.; "possible" only. See remarks for Port Moresby No.3 Power Station.
New Major H.E. Scheme for Port Moresby, T.P.N.G. 6S3.	Preliminary geological investigations. Could involve inspection on ground and pre- liminary work on more than one scheme.	Mar-Apr.	E.K. Carter? J.C. Braybrooke	Provided by C.D.W. Port Moresby as required.	Provided by C.D.W. Port Moresby as required.	Requested by C.D.W., Melbourne Aerial inspection of possible sites being made in November, 1966.
*Upper Ramu Hydro- electric scheme, T.P.N.G. 6S3 67/448	Design report may not be com- pleted by end of 1966. Poss- ibly minor additional geol- ogical field work.	-	-	-	-	Construction not likely to start before 1968.
*Minor hydro-electric projects, T.P.N.G. 6S3.	Brief inspection and advice on 3 minor hydro-electric projects under construction	-	-	-	-	Advice may possibly be sought by C.D.W. Port Moresby, for schemes at Naprik, Mendi and Finschafen.
*Lower Warangoi Hydro- electric Scheme, New Britain, T.P.N.G. 6S3. 64/752	Writing of Record on geological feasibility investigation.	Jan-Feb.	J.R.L. Read	-	-	This scheme has proved, because of geological problems, not to be economically viable and will not be proceeded with.

\*Provision has been made for these projects in the programme of the Port Moresby Resident Geological Section. Technical supervision will be provided from Canberra and some assistance from Canberra may be needed. D.E. Gardner (Canberra) is joint author of the Upper Ramu design report.

ENGINEERING AND HYDROLOGYGEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Adelaide River damsite, N.T. 6S2 65/1332	Drilling and minor geological work may extend into 1967.	-	J.C. Braybrooke	Supplied by Geological Section, Darwin.		Requested by Water Resources Branch, N.T.A.
<u>Results:</u>	Record on feasibility investigations, when complete					
Stapleton Creek, damsite, N.T. 6S2 65/1679	Preliminary geological investigation.	Feb-Mar. 1967	J.C. Braybrooke	-	-	Requested by Water Resources Branch, N.T.A.
<u>Results:</u>	Record on investigation in 1967.					
Miscellaneous engineering geology, invest- igations, places other than C/wealth Territories 6 x 1	Investigations and advice of consultative nature, as re- quested by C.D.W. and others. Could involve paper and/or field studies of possible nuclear excavation projects.	As required	E.K. Carter			

## ENGINEERING AND HYDROLOGY

.32.

## GEOPHYSICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Coastal Erosion 7S23 - 66/1780	Study of erosion of sediments on Gold Coast. Salinity and temperat- ure measurements	January February March	Wiebenga Polak Hart Cifali	Radeski Tarlington	Ship (supplied by C.G.D.) Sonar Boomer S.I.E. Seismic Equip- ment Station Wagon	Requested by C.G.D. as the geophysical part of a large project. Salinity and temperature will be trial for similar measurements at Rabaul.
Infra-red Photo- graphy 7S21 67/441	Development of a new technique for finding salt water encroachment.	Occasion- ally	Wiebenga			Photography to be done by Airborne Section, in particular photos of Burdekin Delta on way to and from Mr. Garnet area.
Rabaul Crustal Investigation T.P.N.G. 7R011 66/2008	Seismic velocity determination thickness of sediments, location of vents and general crustal structure of Rabaul area.	October- December	Wiebenga Polak Mann Cifali Hart	Radeski	2 Ships (supplied by Administration) 2 Landrovers 1 Utility (preferably hired) 2 sets S.I.E. Seismic equipment	Requested by volcanological observatory to assist in prediction of volcanoes. This should be treated as a crustal investigation of the area. Willmore recording by P.M.G.O. also involved. To be dis- cussed with volcanological observatory staff.
Flow through porous media 7S25 62/211	Radioactive tracers in porous media, in collaboration with A.A.E.C.	Jan-June	Kevi Wiebenga			Continuing B.M.R. investigation
Coal seam investigation 7S25 67/442	Development of techniques for shallow reflection exploration.	June-Aug.	Polak Hart	Tarlington 1 Field Hand	2 Internationals 1 Landrover Seismic Amp TI 8000 Magnetic Recorder (DS-7) Oscillograph (Vt-6) Geophones	Work requested by Joint Coal Board but is fund- amentally a B.M.R. investigation of techniques.
Digitalisation of Gamma Ray logs 7S21 64/879	Develop equipment to record gamma ray counts directly onto magnetic tape in digital form	When possible		Radeski		B.M.R. Development
Effect of grouting 7S21	Determination of porous flow and seismic velocities before and after grouting	Not yet known (2 weeks)		1 Field Hand	1 International Truck S.I.E. equipment	Joint project with Engineering Geology Group.
Deep resistivity investigation 7S21	To evaluate deep resistivity as a Technique for tracing aquifers in the Artesian Basin	July- August	Mann	Tarlington 3 Field Hands	I.P. Equipment Proline&2 other Landrovers with trailers.	B.M.R. Techniques investigation
Resistivity models 7S21	Scale model experiments to improve interpretation of resistivity surveys.	As time permits	Polak			Continuing B.M.R. investigation.
I.P. in Hydrology 7S25	To investigate polarisation effects in sand-clay mixtures	As time permits	Cifali Kevi			Continuing B.M.R. investigation.
Vibration Tests 7S21		As re- quested				
Magnetometer Christmas Island	Training of B.P.C. Staff on use of magnetometer and assistance in inter- pretation of results.					

ENGINEERING AND HYDROLOGY  
MINERAL RESOURCES BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>Petroleum Technology</u> <u>Section</u>						
Test Well Fyshwick, A.C.T.  8S2 66/1781	Continue drilling well to 500' for testing of Geophysical and geological down hole survey tools.	3 weeks	A.T. Churchill (Intermittently)	J. Brennan (Intermittently) Driller Grade 2 (Intermittently) Driller Grade 1 Drill Assistant Field Assistant	1 Mayhew 1000 drill 1 Water Tanker	Drilled to 100' in early 1966, 6" casing to be set at 50' (see p.35 of 1966 programme). The carrying out of this programme during 1967 is conditional on the availability of a Mayhew Drill and Staff.
Lake George, N.S.W.  8S2 66/1781	Drill and mainly core two 350' holes near the southern end of Lake George	1 month	As above	As above	1 Mobile drill 1 Water tanker 4x4 1 L/R or utility for crew and materials trans- port.	These will be observation and test holes, cored over most of their depth to obtain samples suit- able for grain size determination. Sampling will be experimental using auger coring techniques. (See p.35 of 1966 programme). This programme is conditional on the availability of drilling rigs and staff.  These bores are only included in case other commitments are curtailed during the field season.

## REGIONAL GEOPHYSICAL SURVEYS

.34.

## GEOPHYSICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Isogal Regional Gravity Survey, WA, NT, SA, NSW, VIC, QLD. 7RG11 64/763 <u>Results:</u>	Fly remaining E-W traverses across Australia and N-S traverses along west coast and through central Australia  Preparation of Record	June-Aug.  Feb.68	New Class I(?) or R. Cooke or D. Townsend	-	Chartered Light aircraft (approx. \$15,000) 3 Gravity meters	Needed to control 1967 helicopter work, Required construction some landing strips by ground party - see next entry. \$15,000 available in 1966/67 Estimates.
Isogal airstrip and follow-up ground party 7RG11 67/406 <u>Results:</u>	Prepare E-W traverses for Isogal aircraft by selecting and improv- ing landing sites, making all necessary ground ties and marking stations. Preparation of Record	March- August  Feb.68	J. van Son  J. van Son	Bannerman 1 F/A	Bedford 4 x 4 2 Inter. 30cwt. 4 x 4 3 gravity meters	See above
G.S.I. Pendulum Survey 7RG12 <u>Results:</u>	Field tests of G.S.I. pendulum apparatus after repair in Japan. Measurements at Melbourne, Sydney, Brisbane, Mackay and Cairns. Preparation of Record	Mar- May  July 67	R. Cooke J. Shirley (2 weeks)  R. Cooke	1 F/H	2 x 30 cwt. Inters.	Mr. Seto an officer of G.S.I. Japan will be attached to the Regional Gravity Group for several months and will assist with part of this work. A simultaneous swing with Japanese pendulums will be made in Sydney in March.
WPCL Pendulum Survey 7RG12 63/39 <u>Results:</u>	Pendulum measurements (using Cambridge equipment) from Tokyo-Manila-Darwin-Brisbane- Melbourne and return. Preparation of Record Preparation of Report	Approx. mid-July to mid- Oct.  -Feb.68 -April.68	R. Cooke  R. Cooke R. Cooke	1 F/H	1 x 30 cwt. Inter	Vehicle to be made available Darwin approximately end August. Survey postponed from 1966. Timing depends on overseas co-operating organisations.
Gravity Meter performance tests 7RG11 64/763 <u>Results:</u>	Laboratory tests to supplement existing performance data Preparation of Record	Dec.66-Feb. 67  -Dec.67	B.C. Barlow J. van Son  "		All available gravity meters.	
Computing 7RG11 64/763	Development of peripheral programmes for use with Master programmes GRAVHTS on CDC 3600. Continuing re-computation of all Australian gravity data to Isogal datum.	Continuous	New Class I(?) D. Townsend Y. Zatorski L. Tussell			Will take several years to complete this project.
Gravity Map 7RG11 64/763	Free air and Bouguer anomaly maps of Australia on Isogal datum	Continuous				
Isogal follow-up Survey 7RG11 64/763	Continuing station marking and local gravity ties at established Isogal stations	Intermittent				Continuing using staff as available from existing survey in various areas.
Earth Tide 7RG11	Earth tide recording.	Jan onwards	R. Cooke		1 x 30 cwt. Inter 2 quartz horizontal pendulums N.A. gravimeter Heiland gravimeter	Site Selected at Fyshwick.
Isogal and WPCL Data Analysis 64/763 <u>Results:</u>	Integration of results of all con- trol measurements made in Australia by local and overseas organisation Preparation of Record Preparation of Report	Continuous  Dec. 67 May. 68	B.C. Barlow  B.C. Barlow B.C. Barlow			



## REGIONAL GEOPHYSICAL SURVEYS

## GEOPHYSICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Regional Gravity Connections 7RG11	Gravity and elevation ties in southern Queensland as required to integrate results of various surveys	Intermittent	van Son	Bannerman	2 x 30 cut Inter 1 LaCoste Gravity meter	May not be required and will be left till late in year if needed. Vehicles are especially fitted for LaCoste.
Regional Gravity survey of Eastern Papua 7RG11 67/401	Reconnaissance helicopter gravity survey to assist structural investigation of part of Papua east of 149° E.	February-May	Milson	1 F/H	Chartered heli- copter, 1 LaCoste gravity meter	Flying season November-May. \$25,000 helicopter hire-period contract.
Isogal Gravity survey of T.P.N.G.	Establish Isogal gravity base stations at airstrips throughout T.P.N.G. Should be extended to Honiara if O.V.C. allows.	June-Aug.	Milson		Chartered light aircraft, 3 gravity meters	Necessary to control existing and proposed surveys in T.P.N.G. \$15,000 aircraft hire - contract with Contract Board 16/1/67. \$25,000 available in 1966/1967 Estimates.
Development of fluxgate magnet- ograph 7RM9	Field tests of magnetograph at Toolangi and south coast of Victoria.	January-May	Finlayson van der Linden	1 F/H	Panel-van Fluxgate	
Third order traverse Queens- land 7RM10	Observations of D,H,F, at 10 mile intervals in Central Queensland.	May-September	van der Linden	1 F/H	Panel-van Theodolite proton mag. QHm etc.	
Numerical Invest- igation of induct- ion problems 7RM8	Development of numerical solutions of the induction equation appropriate to the earth.	Continuous	Briggs			
First order re- occupations 7RM10	4 to 6 stations in Victoria and Tasmania	November	Finlayson van der Linden	1 F/H	Fluxgate proton mag. QHm etc. Panel-Van	
Terrella 7LX4	Model experiments to solve induction problems	Intermittent	I. Briggs K. Seers		Terrella GRO etc.	
CRUMP 7R011	Analysis of results	June-October	Finlayson			
West Aust. shield geo-traverse 7R010	Refraction seismology in Western Australia	To be decided	Finlayson	1 driver	Land-rover Willmore	Depending on decision to collaborate with Academy of Science.

OBSERVATORIESGEOLOGICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Rabaul, T.P.N.G. 6GR 64/990	Continued surveillance of volcanic centres, including the following programme.  Completion of Rabaul tele- metric seismic system  Completion of instrumentation Mamui and Ese'ala - observations.  Collection of data on thermal areas.  Mapping of volcanic areas - Rabaul and Kimbe Bay (Talasea)  Preparation of files on volcanic areas.  Collection and application of gas analyses  Rabaul crustal study	Continues	D'Addario  Heming	I.S.T.O. 1 T.O. 2 readers (part time) 3 Volc.Asst. } Indigenous 1 T.A.		
<u>GEOPHYSICAL BRANCH</u>						
Magnetogram Analysis 7R013	Scaling of magnetograms from all observatories, processing and publication of data	Continuous	Cook(to April) G.Small E. Muir Towson Taylor G. Holloway	Miss Malmberg Mrs. Lee 2 others (part time)	Scaling machine	
Antarctic Observatories 7R012	Training of recruits for coming year	July-August	G. Small Connelly 1 other			
	Preparation of Reports	January- November	E. Muir Towson Taylor			
Toolangi Observatory 7R01	Geomagnetic and seismic recording	Continuous	C.van der Waal C.van Erkelens	Miss Woolley	Station Wagon	
Melbourne office 7R010	Collection and distribution of results from Toolangi and Antarctic observatories	Continuous	ditto	ditto		
Macquarie Island 7R06	Geomagnetic and seismic recording	Continuous	Major			
Mawson 7R07	ditto	ditto	Dent			
Wilkes 7R08						To be closed down at end of 1966.

OBSERVATORIES  
GEOPHYSICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-Professional Staff	Vehicles, Equipment	Remarks
<u>MUNDARING OBSERVATORY</u>						
Observatory Operation 7R04 64/906	Geomagnetic and seismic and ionospheric recording	Continuous	Everingham Gregson Connolly	Parkes Woad	Station Wagon Sedan	
Field Seismic	Recording at Kalgoorlie and Wittenoom Gorge	Continuous	ditto	ditto	2 Willmores	Second Willmore to be installed at Wittenoom.
	Field recording	Occasionally	Everingham	ditto	Observatory vehicles Willmore	Collaboration with Navy, quarries etc. Includes project FRUMP Feb. 1967.
W.A. Shield Geo-traverse	Refraction seismology	Not yet known	Everingham	ditto		Depends on decision to collaborate with Academy of Science.
	Surface Wave seismology	Not known	Everingham	ditto		ditto
Magnetotellurics	Investigations of techniques and equipment	November-	McGregor	not yet known	not yet known	Possibly deferred until 1968.
<u>PORT MORESBY OBSERVATORY</u>						
Observatory Operation 7R05	Geomagnetic, seismic and Ionospheric recording	Continuous	Denham Wilkie Ripper	Jones Ciszek Mrs. Byrne	Station wagon Sedan	
Field Seismology	Surface wave recording	January- June	Denham Wilkie Ripper	Jones Ciszek	long period seismometers	
	Body Wave recording	July- December	ditto	ditto	short period seismometers	

## RESIDENT GEOLOGICAL STAFF

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## GEOLOGICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Darwin, N.T.  6GD 64/773	Services to Northern Territory Administration including the following programmes:  (a) Supervision of diamond drilling at mineral pros- pects and stratigraphic drill hole sites.  (b) Evaluation of mineral pros- pects.  (c) Report on mineral prospects for which application for assistance has been made under the Mining Develop- ment Ordinance.  (d) Reports on mineral and rock specimens submitted by members of the public and company officials.  (e) Advice on prospecting to company and individual prospectors.  (f) Continued search for additional deposits of iron ore.  (g) Geochemical and Geological survey of the Daly River Copper mineralization, as follow-up work to the 1966 aeromagnetic survey.  (h) Appraisal of copper mineraliz- ation in the Antrim Plateau Volcanics. (Some data already derived from geochemical analyses of samples from bore cuttings).  <u>Non-Metals</u>  (i) Evaluation of Barite deposits at Dorisvale station  (j) Continued investigation of Cretaceous sediments in search of economic phosphorite, iron ore.  <u>Engineering Geology</u>  (k) Adelaide River dam site invest- igation (with Canberra based staff)  (l) Stapleton Creek dam site (with Canberra based staff).  (m) Victoria River Bridge Site	Continuous	R.G. Dodson J.W. Shields A. Taube A. Laws M. Daly (?)   			

RESIDENT GEOLOGICAL STAFFGEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Darwin, N.T.	<u>Engineering Geology Cont'd</u>					
	(n) Logging and recording data obtained from water bore cuttings supplied by Water Resources Branch. Geochemical appraisal of water bore cuttings and samples from oil wells provided by companies.					
	<u>Water Supply</u>					
Tennant Creek, N.T.  6GT 64/773	(o) Hydro-geological survey of the Tipperary land system		A. Taube			
	(p) Selection of bore sites on pastoral holdings and reserves.		A. Laws			
	(a) Continuation of mapping of Red Bluff Area when possible.		B. Tapp			
	(b) Examination of mines and mineral prospects. Report on prospects for which application for assistance has been made under the Mine Development Ordinance.					
	(c) Supervision of Mines Branch Drilling at Red Bluff, Comet, Wheal Doria, Susan and other mineral prospects.					
Alice Springs  6GA 64/773	(d) Appraisal of the Tennant Creek gold/copper mineralization, recording all prospects worked in the field.					
	(a) Supervision of Mines Branch Diamond drilling programme to investigate mineral prospects.		I. Faulks K. Edworthy D. Grainger			
	(b) Reports on areas for which application for assistance has been made under the Mines Branch Ordinances.		R. Shaw			
	(c) Evaluation of Mineral Prospects.					
	(d) Reports on mineral and rock specimens submitted by members of the public.					
	(e) Geological surveys in the Strangways area preparatory to further diamond drilling.					
	(f) Geological survey, preparatory to diamond drilling at Yuendumu Settlement.					

## RESIDENT GEOLOGICAL STAFF

## GEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Alice Springs, N.T. (Cont'd)	<u>Water Supply</u>					
	(g) Third stage of investigation of the groundwater potential of the Mereenie Sandstone.					
	(h) Continued investigation of the Tennant Creek Town water supply.					
	(i) Continued investigation of groundwater potential of the Ti-Tree basin.					
	(j) Investigation of the groundwater potential of the Dulcie Sandstone.					
	(k) Selection of bore sites on pastoral holdings and in reserves.					
	(l) Compilation of water bore data and logging of water bore cuttings.					
Port Moresby T.P.N.G. 6CMO 63/477	Services and advice to Administration including the following programmes: <u>Regional Mapping and Mineral Resources Investigations</u>		A. Renwick			
	Purari River Bentonite	January	R.P. McNab			
	Brown River - Geological mapping	February				
	Gazelle Peninsula - New Britain - Geological mapping	Mar.-May	R.P. McNab + Class 1 geologist (R.J. Tingey(?))			
	Sepik River Regional Party	July-Nov.	J.A. Smit (act. Class 2) see Metalliferous Section R.P. McNab			
Wau 6GW	Porgera Goldfield	January	R.G. Horne			
	Mt. Victor Gold Mine	February				
	Completion of Wau 1:250,000 Sheet	May-Sept.				
	Index of Geological mapping in P.N.G.	January	R.J. Tingey (?)			
	Mori River Central District (Papua) Geological mapping	May-July				
	Liaison with Eastern Papua Regional Investigations					
<u>Results:</u>	<u>Records</u>					
	Gazelle Peninsula Wau Geochemical Explanatory Notes. Wau Sheet.					

RESIDENT GEOLOGICAL STAFFGEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Port Moresby T.P.N.G. (Cont'd)	<u>Engineering Geology</u> Investigation of engineering schemes and water supplies will include:-					
	Ramu Hydro-Electric Scheme (design report)	Jan.-Feb.	J.P. MacGregor			
	Finchhafen-Maprik Hydro-Electric scheme	April	" "			
	Gulf District - village water supplies	May-July	" "			
	Sepik District - village water supplies	January	J.R. Reid			
	Western District (Papua) village water supplies	Sept-Nov.	" "			
	Warangoi Hydro-Electric Scheme final report	by July	" "			
	Rabual Water Supply	July-Dec.	Hydro-geologist (when appointed)			
	Port Moresby No.2 Hydro- Electric Scheme (?)	July-Aug.	I.S. Cumming			
<u>Results</u>	<u>Records</u> Warangoi H/E Sepik District Survey Gulf " " Western " "					
	<u>Publication</u> (Papua) on District Water Supply Investigations.					

## LABORATORY AND WORKSHOPS

.42.

## GEOLOGICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>PALAEONTOLOGY</u>	1. Bowen Basin Regional Survey (see under Oil Search)	Continuing	J.M. Dickens	H. Doyle	-	Attend 2nd Symposium on Sydney Basin April, 1967.
Macrofossils	2. Permian and Mesozoic of Bonaparte Gulf Basin					
6LMA	3. Examine, identify and des- cribe macrofossils from surface and cores, part- icularly Upper Palaeozoic Molluscs.					
64/755	4. Administrative duties con- nected with the Section.					
<u>Results:</u>	Records and notes will be prepared where necessary. See under Oil Search - Publications					
	1. Lower Palaeozoic palaeontology and stratigraphy of Northern Australia, especially the Ordovician.	Continuing	Miss J. Gilbert- Tomlinson	D.C. Kennedy	-	Some visits to museums and Survey collections may be necessary for comparative study of their material.
	2. Examine, identify and describe macrofossils from outcrop and cores, particularly the Ordovician trilobites.					Dikelocephalinidae family of trilobites is the earliest Ordovician trilobites described in Austr. and they have many affinities with overseas forms that may be used for long range correlations.
<u>Results:</u>	Records and notes will be prepared where necessary.					
	1. Continue to describe the Triassic ammonites of New Guinea.	Continuing	S. Skwarko	H. Doyle		See N.T. Palaeontology field party under Oil Search
	2. Continue the description of Lower Cretaceous faunas from the Northern Territory.					
	3. Describe the marine Jurassic from W.A.					
	4. Ordovician graptolites from the Canning Basin, W.A.					
<u>Results:</u>	Prepare reports on these studies when completed.					
	1. Palaeontological research on Cambrian trilobites, brachiopods and sponge spicules	Continuing	C. Gatehouse	*	*	* See Geology and Palaeontology A.C.T. field party. Proceeding overseas to New York University College for 2 years from June 1967.
	2. Identification of fossils from outcrop and cores.					
	3. Work on A.C.T. Palaeontology.					
	4. Complete work for party on 1966 field work in Daly Waters, N.T.					
<u>Results:</u>	Prepare reports on these studies when completed.					



LABORATORY AND WORKSHOPS

GEOLOGICAL BRANCH (Cont'd)

.43.

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>PALAEONTOLOGY</u> Macrofossils Cont'd.	Vertebrate palaeontology of (a) New Guinea (b) Wave Hill area N.T.	Continuous	M. Plane	*	*	* See New Guinea mammals field party.
<u>Results:</u>	Prepare reports on these studies.					
	Description and stratigraphical application of Upper Devonian and Lower Carboniferous brachio- pods from Bonaparte Gulf Basin*.	Continuous	J. Roberts	*	*	* See under Oil Search - Bonaparte Basin.
	1. Detailed mapping and collection of fossils from sedimentary area of A.C.T. and environs*. 2. Taxonomic and biostratigraphic research on Ordovician to Devonian corals of the Tasman Geosyncline with emphasis on those from Canberra area. 3. Brief field visit to Drummond Basin (May-June).	Continuous	D. Strusz	*	*	* See under Oil Search - Geology and Palaeontology A.C.T. Field Party. Will provide student training during University vacation. Collecting trip to Victorian Palaeozoic Jan. 1967 for 2 weeks to get com- parative material. Other collecting trips and trips to Museums may be necessary later in year.
<u>Results:</u>	Various notes and reports as necessary.					
	1. Middle Cambrian trilobites of the family Oryctocephalidae from Australia. 2. Take Upper Cambrian trilobites from the Bonaparte Gulf Basin.	Part-time	J. Shergold			Field visit with Duchess Phosphate Party.
<u>Results:</u>	Preparation of notes and reports.					
Microfossils 6IMI 64/775	1. Study of samples collected by B.M.R. field parties and com- panies. 2. Examine Lower Cretaceous forams from water bores and shallow drilling in Queensland. 3. Examine Mesozoic and Permian forams from oil wells. 4. Supervision of micropalaeontology laboratory. *5. Arrange and catalogue slide coll- ection in Section. 6. Handle processing of Specialist Mrs. White's reports.	Continuous	G.R.J. Terpstra	F. Hadzel Mrs. L. Kraciuk		* Extra assistant required to help catalogue this material.
<u>Results:</u>	Preparation of notes and records as required.					
	1. Visit Christmas Island (see under Oil Search) 2. Taxonomic and biostratigraphic studies of Tertiary forams from Christmas Island. 3. Detailed study of Carboniferous forams from Bonaparte Gulf Basin. 4. Study Tertiary forams of New Guinea.	Continuous	D.J. Belford	F. Hadzel		Field trip of 6 weeks to Christmas Island.
<u>Results:</u>	Preparation of reports and notes as required.					

## LABORATORY AND WORKSHOPS

.44.

## GEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>PALAEONTOLOGY</u>	1. Continue systematic palaeontology on: a) Lower Carboniferous Ostracoda from the Bonaparte Basin. b) Lower Ordovician Conodonts from the Bonaparte, Georgina and Daly Basins. c) Cambrian Conodonts from the Georgina Basin. d) Ordovician Conodonts from the Amadeus Basin. 2. Prepare species - card catalogue of conodonts. 3. Complete ostracod library. 4. Carry out routine identification from surface and subsurface when required.	Continuous	P.J. Jones	- A. Wilson		Field trip to Boullia-Black Mountain area of Georgina Basin for 6 weeks. (See Oil Search Mobile Conodont Laboratory).
<u>Results:</u>	Preparation of necessary reports and notes when required.					
	1. Continue the study of the systematic palaeontology of: a) Upper Devonian and Lower Carboniferous Conodonts of the Bonaparte Basin. b) Devonian and Carboniferous Conodonts of the Yarrol Basin. c) Lower Ordovician Conodonts of the Amadeus Basin. 2. Complete Conodont library. 3. Routine examination of surface and core material. 4. Field work in Drummond and Boullia area.	Continuous	E.C. Druce	A.T. Wilson		Field work (see Oil Search - Mobile Conodont Laboratory)
<u>Results:</u>	Necessary reports and notes as required.					
	1. Continue research on the Mesozoic and Upper Palaeozoic spores and microplankton in Eastern Australia and New Guinea, including those from B.M.R. drilling and oil well samples. 2. Study the Permian palynology of the Sydney Basin in conjunction with the Basins Study Group. 3. Examine the subsurface palynology of selected wells.	Continuous	P.R. Evans D.J. Burger	Miss H. McKenzie 1 Field Hand		Field trips by Evans to Sydney Basin, and to Newcastle Symposium in April; field trips by Burger to Surat party. Field hand required to help in processing and registration of samples now that 2 palynologists are working full time. Evans to Great Artesian Party.
<u>Results:</u>	Prepare papers and notes as required.					
	1. Study of Miocene forams from Wreck Is. and Heron Is. bores Qld. 2. Miscellaneous samples examined as required.	Continuous	A. Lloyd			Lloyd resigns from Bureau in June.

## LABORATORY AND WORKSHOPS

## GEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>Specialist Contracts</u>	Continue the preparation of catalogues on fossil type-specimens in Australia.		Dr. I. Crespin			
S248	Sorting out, arranging and systematic description of Tertiary macrofossils in our collection from New Guinea		Dr. R.O. Brunnschweiler			
S297	<ol style="list-style-type: none"> <li>1. Description of the Dolichometopidae of Q'ld and N.T. (First stage completed).</li> <li>2. Monograph of the Ptychagnostinae and Diplagnostidae of Q'ld., N.T., and N.S.W.</li> <li>3. Redlichia in Australia.</li> <li>4. Middle Cambrian polymerid trilobites, except Ptychopariidae.</li> <li>5. Part 2 of Bulletin 81 - Phanerozoic of N.W. Q'ld.</li> </ol>	Continuing	Dr. A.A. Öpik			Some of these are carried over from the 1966 programme; all are in various stages of progress. Field trip to Georgina Basin in July to collect samples to fill gaps in knowledge.
S249	Determine and report on plant fossils collected by field parties.		Mrs. M.E. White			
S295	Examine and report on the stratigraphic results of Cretaceous molluscs of the Artesian Basin collected by B.M.R. field parties.		R.W. Day (A.N.U.)			Limited field work in Surat Basin and to State Museums.
Sedimentary Petrology 6 LP 64/996	Continue sedimentary petrology of samples from Bowen, Artesian, Daly River, Amadeus, Ngalia Basins.	Continuing	J. Jensen M. Brown M. Galloway	1 T.O. 1 T.A.		Associated with visits to various field parties when required. Jensen completing his petrological analyses of Permian-Triassic sediments of the Bowen Basin.

LABORATORY AND WORKSHOP

.46.

GEOLOGICAL BRANCH (Cont'd)

PUBLICATIONS

BULLETINS

Subject	Author	Timetable to Complete		Remarks
		Writing	Editing	
The microvertebrates of the Otibanda Formation, N.G.	M. Plane	Dec. 1967		Depends on result of N.G. trip.
The Bullock Creek vertebrate fauna, Wave Hill, N.T.	M. Plane	June 1967		
Inarticulate Brachiopods from the Litchfield area, N.T.*	C. Gatehouse	Feb. 1967		* Contribution to Bulletin on palaeontological papers.
Some new Ptychopariid trilobites from Alroy Downs, N.T.*	C. Gatehouse	April 1967		
Ptychopariid trilobites from the Daly River Basin, N.T.*	C. Gatehouse	June 1967		
Taxonomy and stratigraphic significance of Wreck Is. and Heron Is. forams	A. Lloyd	Feb. 1967		Contribution to a palaeontological bulletin.
Lower Carboniferous Ostracoda from Bonaparte Basin	P. Jones	Dec. 1967		
Ordovician Conodonts from the Amadeus Basin	P. Jones & E. Druce	Dec. 1967		
Upper Devonian and Lower Carboniferous Conodonts from the Bonaparte Basin	E.C. Druce	May 1967		
Devonian and Lower Carboniferous conodonts from the Yarrol Basin and Monto area, Q'ld.	E.C. Druce	Nov. 1967		A series of 3 separate papers which may be suitable for outside publication, or combining as a Bureau Bulletin.
Palynology with systematics of key fossils of the Great Artesian Basin and related Basins in Eastern Australia				
Part 1 Jurassic-basal Cretaceous	P.R. Evans	Mar. 1967		
Part 2 Triassic	"	July 1967		
Part 3 Permian-Upper Carboniferous	"	Oct. 1967		
Carboniferous forams from the Bonaparte Gulf Basin	D.J. Belford	June 1967		
Ordovician graptolites from the Canning Basin, W.A. (1)	S.K. Skwarko	Mar. 1967		(1) As contribution to a palaeontological Bulletin, or in outside publication.
Triassic ammonites from New Guinea (1)	"	Apr. 1967		
Jurassic macrofossils from W.A. (1)	"	July 1967		
Some Devonian corals from the Tasman Geosyncline	D. Strusz	June 1967		Several papers, probably more suited for outside publication.

## LABORATORY AND WORKSHOPS

## GEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicle, Equipment	Remarks
Petrology, Mineralogy and Mineragraphy  6 LP 65/1330	1. Petrology as required 2. Distribution of Minerals and zoning problems Herb- erton/Mr. Garnet Region 3. Mineral identification as required.	Continuous	D. Palfreyman I.R. Pontifex	T. Zapasnik (T&2) 1 T/41	Short term vehicle hire	Additional assistance needed to speed-up thin section preparation. Palfreyman attached to Cape York Party.
Direct Reading Optical Spectrograph Laboratory   6LC	1. Continue development of Direct Reader for analysis of silicates; development of volatile elements pro- gramme. 2. Complete Mt. Isa trace ele- ment studies. 3. Distribution of elements with progressive meta- morphism. 4. Complete Hart dolerite pro- ject. 5. Chemistry of Australian granites. 6. Ad hoc projects.	Continuous	K.R. Walker S.E. Smith	1 T/O) 1 T/A) 2 F/H's if not avail- able	Direct Reader	3. In co-operation with Baas Becking Geobiological Research Group. 4. In co-operation with K.A. Plumb and D.C. Gellatly. 5. In co-operation with C.D. Branch. Visits to areas where geological background necessary for project e.g., Mt. Isa Mines for discussions.
<u>Results:</u>	Progress Record	Dec. 67	K.R. Walker and S.E. Smith			
X-ray Laboratory  6LC 66/1983	<u>X-ray Diffraction</u> 1. Identification of minerals as required. <u>X-Ray Spectroscopy</u> 2. Silicate and trace element analyses of granites from North Queensland as part of the 'Geochemistry of Australian Granites' project (400 samples)	Continuous	C.D. Branch	1 T/A	Short term vehicle hire 1210 Automatic X-Ray Spectrograph. 1010 Manual spectrograph and diffractometer. 1008 X-ray powder camera	Visit to north Queensland to collect additional granite samples if required. 2. with K.R. Walker for some trace element analyses.
<u>Results:</u>	'Preliminary report on the geochemistry of granites from north Queensland, Australia	end 1967	C.D. Branch and K.R. Walker			

## LABORATORY AND WORKSHOPS

## GEOLOGICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
Chemistry  6LC 65/1330	1. Study distribution mercury and other elements in various soil and weathered rock horizons in mineralized areas in the Northern Territory.  2. Trace element studies of dolomitic rocks in Precambrian (Northern Territory); Victorian River Basin.  3. Routine chemical analyses as required.  4. Chemistry of phosphate deposition.	Continuous	A.D. Haldane J.R. Beevers 1 Chemist Cl.2* 1 Chemist Cl.1 D. Bennett	J. Fisher (T/Al) 2 f/h's	1 Holden Utility (Canberra) 1 SWB L/R (Short term hire) Hilger quartz spectrograph; A.A.S. Flame photometer; polarographic equipment.	Short term visits to field; 2f/h's to run mineral separation section; *1 chemist Class 2 seconded to geobiology; 8 hours. O/T per week; assistant for phosphate analyses to be provided by Phosphate Group
Results:	Progress Record Laboratory Reports		Beevers Haldane			
Geobiology; Low Temperature Mineral Research Group  6LGR 63/346	Study of formation of sulphide minerals at low temperatures and behaviour under conditions of deposition and subsequent formation as ore; study textural and chemical changes of a deformed portion Mt. Isa Orebody; effects of metamorphism on iron content of sphalerite; behaviour trace elements in progressively metamorphosed rocks; sulphide synthesis; adsorption and desorption of metal ions on clays.	Continuous	W.M. Roberts A.S. Joyce H. Zeissink J. MacDonald (C.S.I.R.O.) 1 chemist (C.S.I.R.O.) Sparks		1 Station Sedan 1 Electron probe microanalyser	

LABORATORIES AND WORKSHOPSGEOPHYSICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>DEVELOPMENT GROUP</u>						
	Integration of equipment to use common depth point methods for Spark Array equipment	January-April	Barlow Morton	Scherl & others	Commer van Laboratory equipment	
7LXL	Investigation of navigation equipment for offshore surveys	January-December	Barlow	—	"	
	Continued development of proton magnetometer. Units suitable for portable and marine use to be constructed.	January-June	Seers	Scherl & others	"	
	Continue design and construction of automatic digital magnetic observatory	January-June	Morton	Scherl	"	
	Modification of observatory magnetic scaler to use 8-hole punched paper tape	May-June	Morton	As available	"	
	Redesign of electronic units of GSI pendulum equipment (subject to tests rebuilt pendula being satisfactory)	As available	Seers	Scherl Cook (part time)	"	
	Electronic drafting and production of handbooks	January-December	Barlow Seers Morton	Gan	"	

LABORATORIES AND WORKSHOPS

.50.

GEOPHYSICAL BRANCH (Cont'd)

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>MAINTENANCE GROUP</u>						
7LX5	Overhaul, repairs and testing of geophysical and laboratory equipment as required.	January-December	Spence Sutton	Turner Harkness	Commer van Laboratory equipment	
	Integration of new SIE seismic amplifiers with existing equipment and installation in new seismic cab	January-April	Spence	Seismic Observer(s)	"	
	Repair and reinstallation of fire-damaged Widco logging equipment in new vehicle	January-March	Spence Sutton	Harkness	"	
	Continue investigation into replacement of obsolescent equipment in VH-MIN particularly navigation equipment	As available	Spence Airborne Staff	—	"	
	Investigation feasibility of more flexible and convenient installations of equipment in VH-MIN to allow simple addition of new equipment for experimental projects	"	"	"	"	
	Design installations of new equipment in new aircraft to replace VH-GEO (subject to new aircraft being placed on 1967-68 estimates)	"	Spence, Barlow and Airborne Staff	—	"	
	Assist in setting up testing facilities at geophysical test site in Kowen Forest. The co-operation of the Petroleum Technology Section will be requested to drill a test bore for use in checking logging equipment	"	Spence, Sutton	—	"	
	Measurement of physical rock properties as required. Design, construction and maintenance of equipment to be used for this purpose.	"	Spence, Haig?	Mayfield	"	
<u>WORKSHOP 7H</u>	Design, construction, maintenance and repair of instruments and equipment as required	Continuous	H. Mulder	Mechanical Design and Workshop Groups	Commer van, Workshop tools and equipment	



LABORATORY AND WORKSHOPS

MINERAL RESOURCES BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>PETROLEUM TECHNOLOGY SECTION</u>						
Laboratory	Laboratory investigation:	Continuous	M.C. Konecki P.G. Duff B.A. McKay	R. Williams		Full complement of appropriate laboratory equipment including high temperature gas chromatograph spectrophotometer, Podbielniak fractional distillation apparatus, high-pressure and temperature drilling mud testing equipment, full range of core analysis equipment, variable speed viscometer etc.
8LX	(a) Petrophysical -  Determination of physical characteristics of core, cuttings and outcrop rock material (porosity, permeability density, fluid content, capillary pressure, pore size distribution etc.					
	(b) Reservoir engineering -  Flow of fluids through porous media, relative permeability.		B.A. McKay	R. Williams		
	(c) Drilling fluids -  Evaluation of mud materials and additives, and of drilling muds produced therefore;  drilling mud mechanics;  drilling mud (filtrate, cake) electrical properties etc.					
	(d) Analyses of reservoir fluids -  Gas and condensate by Gas Chromatography, fractional distillation and spectrophotometry;  oil and gas liquids by fractional distillation and spectrophotometry waters;  evaluation of crude oils and gas liquids;  electro-chemistry of formation waters		J. Puchel	R. Williams		
<u>MINING ENGINEERING SECTION</u>						
Hatches Creek 6LC	Leaching tests to separate bismuth and copper from Wolfram concentrates	April	AMDEL			
Characterization of Australian clays	Complete tests on ceramic materials		AMDEL			

## OFFICE AND MISCELLANEOUS

.52.

## OPERATIONS BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Remarks
<u>PLANNING &amp; CO-ORDINATION SECTION</u>					
	General study, preparation and co-ordination of programme. Advice to and liaison with States and companies on programme activities. Examination of contract specifications for field operations. Processing and preparation of correspondence to the Secretary and Minister as required. Supervision and preparation of Pictorial Index, supervision of preparation of Programme maps.  Secretariat of Technical Committee on Underground Water.	Continuous	D.A. White G.F. Clarke Class II K. Smith		Visit to field parties.
<u>PUBLICATIONS AND INFORMATION SECTION</u>					
	1. Attend to matters concerning publications as follows:- (a) submit policy proposals (b) administer publications programme (c) recommend approval (d) supervise distribution	Continuous	K.M. Kennedy R.W. Haynes P.M. Stott Class II Class I	2 Clerks	
	2. Prepare press statements and technical articles	As required			
	3. Answer technical Enquiries	Continuous			
	4. Attend to matters concerning Records as follows: (a) Recommend approval (b) Recommend classification (c) Supervise distribution to Open File Centres				
	5. Review past technical information and suggest appropriate classification.	Continuous			
	6. Prepare Open File Circulars in January, March, June, September and December.	Continuous			If staff available
	7. Review and prepare Catalogue of Publications	Continuous			
	8. Operate Library Cataloguing, Indexing, Integration	Continuous		Miss E. Newman (Librarian) Librarian Library Officer  3 Clerks	Insufficient staff to provide desired services or overcome outstanding work.

Miscellaneous Transport  
5X

## PUBLICATIONS

Subject	Author	Writing	Timetable to Complete	Editing	Remarks
Open File Circular	-	Quarterly		Quarterly	Circulars No. 7, and 8 to be produced
Catalogue of Publications		Oct.		Oct.	Revision and updating of existing catalogue.

## OFFICE AND MISCELLANEOUS

## GEOLOGICAL BRANCH

.53.

Party/Project Symbol File	Nature of work	Timetable	Staff	Non-professional Staff	Vehicles Equipment	Remarks
Stratigraphic Indexing and Lexicons	Maintenance of stratigraphic index and Technical Files on all 1:250,000 Sheet areas.  Preparation of Vol. 5H (Australia General) of the Stratigraphic Lexicon	Continuous	Mrs. Townsend Miss L. Yendall	-	-	-
Map Editing	Editing of geological maps for publication	Continuous when maps ready	G.M. Burton F. Douth	-	-	-
Editing	Editing all manuscripts for publication.	Continuous	K.A. Townley R. Jacobsen			Contract proof readers as available.
General	Prepare statements, collect and record information on stratigraphy of basins, completion reports, current drilling information on geology and water supply; keep up to date map showing location of all Bureau records.	Continuous as material available	J.N. Casey D.J. Cuppy J.E. Thompson Miss B. Graham	Clerk (when available)		
Photogeological Group 6X4	Preparation of base maps where not available from National Mapping. Photo-interpretation and geological interpretation for use by field parties particularly in Carpentaria, Surat and Victoria River Basins.	Continuous	W.J. Perry C. Maffi Field Party geologists part time.	3 draftsmen 1 photographer 1 assistant	-	Field visits necessary for control on interpretation. Provide instruction to students and new recruits.
Mineral Resources 8X	Prepare and keep up to date the index of mineral deposits, and mineral maps, and prepare answers to queries.  Prepare map of Metallogenic provinces.	Continuous	I. McLeod Miss G. Warren	-	-	
Museum	Receive, catalogue, index and store collections; arrange displays; identify routine mineral samples; arrange exchange collections; make local collections as required; take charge of the Fyshwick rock store.	Continuous	T. Nicholas	G. Mundy	Utility	
Data Storage	Sample registration, data storage and retrieval, punching cards for computer work, advising on use of computers for geological analyses.	Continuous	T. Quinlan	F. Kousal Mrs. J. Pridham Mrs. Barich 1 Assistant		Carry out work for Branches other than Geological.

OFFICE AND MISCELLANEOUSGEOLOGICAL BRANCH (Cont'd)PUBLICATIONSMAPS

Subject	Author	Timetable to Complete		Remarks
		Compilation	Fair Drawing	
Australia and Oceania 1:5,000,000	Miss B. K. Graham	Completed	Continue in 1967	Checking of fairdrawing when available.
Sheets 8	"			
" 10	"	Completed	" " "	
" 1 (General Legend for Series)	"	"		
" 9	New Zealand			*Depends on all sheets being available. N.Z. Survey preparing these, but co-ordination by Miss. Graham necessary; these sheets required before Sheet 1 can be completed.
" 13	Survey			
Geological map of Australia 1:10,000,000 (International Geol. Atlas)	Miss B.K. Graham	Mid 1967		Compilation will be forwarded to Commission for the geological map of the world in Paris for drawing and publication.
Metallogenic Map of Australia 1:5,000,000	I. R. McLeod Miss R. G. Warren	Will continue throughout 1967	End 1967	
Burdekin-Townsville 1:1,000,000	I. R. McLeod A. G. L. Paine	End 1967		Geological sheet for R.I. and D. Branch. Limits 18° - 22° 10'S; 144° - 149° 35'E; base being prepared by R.I. & D. Branch but not available until late 1967. Help required from other field parties.
Groundwater Resources of Australia 2nd Edition 1:6,000,000 for Atlas of Australian Resources	G. M. Burton	Starts end 1967		Revision of 1st Edition and commentary by B.M.R. Help required from field parties and State surveys in compilation.
Fitzroy Basin, Mining and Minerals 4 @ 1:2,000,000	R. I. & B. Branch I. R. McLeod			Help required to check compilation; commentary by McLeod; solid geology base prepared by Malone (BMR)
Fitzroy Basin, Underground Water 4 @ 1:2,000,000	I. W. S. C. and Q. G. S.			Prepared with commentary by Queensland Geological Survey and Irrigation Commission; Bureau will be asked for comments.

## OFFICE &amp; MISCELLANEOUS

.55.

## GEOPHYSICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicle Equipment	Remarks
Rock Magnetism	Continuation of rock magnetism studies Collection and measurement of samples from field studies	February-March September-October	R. Gerdes			
Aeromagnetic Maps of Australia	Compilation of aeromagnetic contour map and basement contour map of Australia at scale of 1" = 40 miles. Liaison with Drafting Office	February-July	D. Tipper			
Computer Programme for Airborne Reductions	Supervision of contract aeromagnetic reduction programme for use in C.D.C. 3600 computer at C.S.I.R.O. Canberra.	As required	R. Wells Miss C. Leary			
Palaeomagnetism 7LX4	Collection of rock samples in Bowen Basin. Palaeomagnetic measurement of rock samples. Construction of B.M.R. astatic magnetometer	June-August	E. Manwaring	1 Field assistant (June-August)	1 LWB Landrover 1 Box trailer with water tank 1 Portable drill Camping eqpt.	
Magnetic Model Studies by Digital Computer	Continuation of development of programmes for calculating anomalies from 3-dimensional bodies. Application of programmes in interpretation of aeromagnetic survey data.	As time available	G. Young			
Power Spectral Analysis of Aeromagnetic Anomalies	Application of power spectral analysis to results of Tasmanian high-altitude aeromagnetic survey, and similar data.	As time available	P. Shelley			
Radiometric Equipment and Techniques	Investigation of radiometric equipment developments in techniques	June-December	P. Browne- Cooper			
Interpretation of Contract Aeromagnetic Survey Northern Gt. Artesian Basin Qld.		As time available	D. Waller			
Interpretation of Contract Aeromagnetic Survey Victoria River Basin		November- December (to be continued in 1968)	P. Shelley R. Gerdes			

OFFICE AND MISCELLANEOUSMINERAL RESOURCES BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>MINERAL ECONOMIC SECTION</u>						
Commodity Studies 8X	Surveys of industry	As required	As available	-	Short-term hire	
Regional Studies	Studies of world mineral industry	As required	As available	-		
Basic Investigations	Investigation of:					
	(1) Long-range production and consumption trends in lead and zinc.	Continuous	J. Ward and others are available	Clerk/Draftsman		
	(2) New techniques in mineral extraction, processing, utilization.	As required	As available		Short-term hire	
	(3) Cost factors	As required	As available			
International Commodity Problems	Preparation of appropriate advices	As required	As available	As available		
General	Preparation of advices, briefs, papers etc. Preparation and circulation of specialized information. Dealing with enquiries and visitors.		As required	As required		

Non-professional staff excludes two officers of C.B.C.S. stationed in Section

PUBLICATIONS

Subject	Author	Writing		Timetable	Editing	Remarks
A.M.I. Annual Review, 1965	Section	June-Oct			July-Nov.	Followed by proof-reading by P. & I. Section
A.M.I. Quarterly Review	Section	Vol. 19	No. 3 Feb.		Feb.	Followed by proof-reading
			No. 4 May		May	"
		Vol. 21	No. 1 Aug.-(Sept.)		Aug.-(Sept.)	"
			No. 2 Nov.		Nov.	"

OFFICE & MISCELLANEOUSMINERAL RESOURCES BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>MINING ENGINEERING SECTION</u>						
Gold Mining Assistance	Reports on operations of mines receiving assistance under the Gold Mining Industry Assistance Act.	As required	G.F. Mead		Short-term hire Department of Supply, Perth.	
Export Control	Processing technical aspects of applications to export iron and manganese ores.	As required	R.W.L. King G.F. Mead			
Wire Rope Research	Representation on AMIRA Committee on wire rope research	Intermittently	G.F. Mead			Work is carried on at University of New South Wales by Professor J.P. Morgan and Dr. E.E.J. Symes.
Conference of Chief Inspectors of Mines	Representation on Conference and preparation of codes of safe practice in mining.	As required	G.F. Mead			Mr. Mead is Secretary of the Conference.
I.S.O. Australian Sub-Committee on iron ore sampling	Consideration of international proposals and preparation of Australian standard.	Intermittently	G.F. Mead			
Committee on code of practice on radiological protection in mining and milling.	Adaption of I.L.O. = I.A.E.A. code to Australian conditions.	Intermittently	G.F. Mead			

PUBLICATIONS REPORTS

Subject	Author	Writing
Open cut mining techniques and mineral industry research in U.S.A. and Canada.	R.W.L. King	October-November

## OFFICE AND MISCELLANEOUS

## MINERAL RESOURCES BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Non-professional Staff	Vehicles, Equipment	Remarks
<u>PETROLEUM TECHNOLOGY SECTION</u>						
Drilling	Supervision of seismic shot-hole drilling, stratigraphic and scout-hole drilling including contracts, ordering maintenance etc. of drilling equipment and materials.	Continuous	A. Churchill	J. Brennan K. Suehle A. Vituskins	As-required	
Petroleum Engineering	(a) Estimation of petroleum reserves and valuation work. (b) Witnessing of and participation in company-conducted formation tests etc. and reporting thereon. (c) Preparation of reports and papers on results of laboratory and field petroleum engineering investigations. (d) Liaison with P.E. Branch on drilling and policy matters in connection with subsidy operations.	Continuous	M.C. Konecki J.M. Henry			
Statistics	Preparation of - (a) Drilling and exploration statistics (b) Rig activity (c) Other information for Government publications and trade journals.	Continuous	J.M. Henry	P. Sutton		
Petroleum (Policy) General	Through the Assistant Director, Mineral Resources Branch, advise the Director on matters and legislation concerning exploration, discovery, development and conservation of petroleum resources. Attend conferences and important meetings concerned with these matters. Prepare submission reports and answers to Ministerial correspondence and Parliamentary questions on these matters.	As required	H.S. Taylor-Rogers M.C. Konecki J.M. Henry			
Oil Advisory Committee	All matters of Oil Advisory Committee. (Mr. H.S. Taylor-Rogers Convenor/Secretary/Member of Oil Advisory Committee).	Continuous	H.S. Taylor-Rogers M.C. Konecki (part-time)	P. Sutton (As required)		



1968 TENTATIVE PROGRAMME

OIL SEARCH  
GEOLOGICAL BRANCH

Party/Project	Nature of Work	Approximate Timetable	Staff	Remarks
Ngalia N.T.	Continue mapping of the Ngalia Basin as a co-ordinated programme with Geophysics.	1968	D.J. Guppy A.T. Wells	Shallow core hole drilling. Light aircraft hire.
S.W. Eromanga	Continue geological mapping of 1:250,000 areas of Thargomindah, Bulloo, Eulo, Toompine, Quilpie.	1968	M. Galloway	Light aircraft charter; shallow core drilling.
Surat	Continue mapping of 1:250,000 areas of St. George, Goondiwindi and Dalby	1968	N. Exon	Shallow core drilling.
Texas High	Commence mapping of the Texas High area of S.E. Q'ld. on the Warwick 1:250,000 sheet.	mid 1968	F. Olgers	
Drummond	Complete writing of the results of mapping and examine surface extent of basin to west.	mid 1968	F. Olgers	Consider the subsurface extension as a combined geological-geophysical appraisal.
N.T. 1:1,000,000 map	Commence the compilation of the geological map of the N.T. with explanatory notes.	1968	K.G. Smith P.R. Dunn	
Mobile Conodont Laboratory	Continue the field collection and processing of samples for conodonts in the Cambrian and Ordovician of the Georgina Basin.	1968	E. Druce P. Jones	
Barkly Tableland - Hydrology	Extend this study to the east and south-east.	1968	M.A. Randal	
Great Artesian Basin	Continue the supervision and compilation of data from this basin, including the results of the gamma-ray logging of water bores.	1968	R.R. Vine	
Geology and Palaeontology of the A.C.T.	Continue the mapping, collection and compilation of material from the A.C.T.	1968	D. Strusz	
Eastern Papua	Integrated geological and geophysical study of Cape Vogel Basin	1968 (Jan-May) 1968 (May-Oct.)	?	East of 149°E.

OIL SEARCH  
GEOPHYSICAL BRANCH

.61.

Party/Project	Nature of Work	Approximate Timetable	Staff	Remarks
Port Phillip Bay Sparker Survey	Continuation of the investigation of the Otway Basin in the Bellarine Peninsula area.	Depends on availability of Sparker equipment Jan-Feb.		The programme of land work in this area scheduled for early 1967 could be extended offshore by use of the sparker. This could be done in 1967 if contract survey falls through. Boat hire \$10000 on 1967/68 Estimates.
No. 1 Seismic Party	Short investigations of the following basins or Bouguer anomaly features : (a) <u>Ngalia Basin</u> : Reconnaissance traverses across the Ngalia Trough. (b) <u>Cobb Gravity Depression</u> : Reconnaissance investigation. (c) <u>Amadeus Basin</u> : Investigation of basin development inferred from geological, gravity and aeromagnetic work.	March-December		These suggestions would be dependent on whether the joint project in the Ngalia Basin (see 1967 programme) gets under way. The idea would be to do a brief survey in each area so that an assessment could be made of the desirability of future work.
No. 2 Seismic Party Experimental Refraction work	Estimation of thickness of refractors from rate of attenuation of energy	March-December	A.T. Turpie	
Contract Operations Marine Gravity and Sparker surveys	Continuation of combined gravity and sparker surveys on the continental shelf areas.	July-October		\$520000 provided in 1967/68 Estimates. All cash deferred to 1968/69. Priorities are Timor Sea (Sahul Shelf), West Coast.
Water Bore Logging Great Artesian Basin	Gamma-ray Logging of water bores			\$100000 on 1967/68 Estimates.
Clarence and Artesian Basins, Qld. & N.S.W. South Canning Basin, W.A.	Helicopter gravity coverage of the following 1:250,000 areas: Area 1, N.S.W.: Tweed Heads, Warwick, Goondiwindi, St. George, Dirranbandi, Homebain, Gunnamulla, Eulo, Enngonia, Angledool, Moree, Inverell, Grafton, Maclean, Coff's, Harbour, Dorrig, Manilla, Narrabri, Walgett, Bourke, Louth, Yantabulla, Barnato, Cobar, Nyngan, Calgandra, Tamworth, and Hastings. Area 2, N.T.: The Granites, Highland Rocks, Lake Mackay, Mt. Doreen and Mt. Theo. Area 3, W.A.: Lucas, Stanmore, Webb, Wilson, Helena and Cornish Morris, Ryan, Ural, Percival and Dummer Area 4, W.A.: Rinton, Stanley, Nabbaru, Trainer, Buller, Cunanya, Robertson, Radall, Balfour Downs, Paterson Range, Nullagine and Yarric.	March-November	M.D. Watts	It is expected that the major part of areas 2 and 3 will be covered in 1967. \$240000 on 1967/68 Estimates.
Detailed and semi-detailed gravity	Gravity readings along seismic lines OR Semi-detailed gravity investigations of a selected area. (e.g. Cobb Gravity Depression in W.A.)	June-November		This project depends on the availability of staff. The possibility of doing it by contract will be investigated.
Bouguer anomaly map of Australia	Compilation of bouguer anomaly data at a scale of 40M = 1".	Continuous	M.D. Watts.	

## OIL SEARCH

.62.

GEOPHYSICAL BRANCH Cont'd.

Party/Project	Nature of Work	Timetable	Staff	Remarks
Collation of density data	Collation of density data from cores and log records	Continuous	A.J. Flavelle	
Automatic data processing	The development of a system of programmes to be used as an aid for interpreting gravity data will be continued.	Continuous	A.J. Flavelle	
Department of Interior Levelling	Levelling required for the 1969 helicopter gravity survey over the following areas : <u>Area 1.</u> In W.A., west of longitude 120° between latitudes 19° and 32°. *			Area 1 includes the Carnarvon and north Perth Basins and is preferred to Area 2.  * Revised to take in southern part of Precambrian Shield (geo-traverse area).
Department of Interior Levelling	Levelling by Department of Interior surveyors will be required if a semi-detailed gravity investigation is undertaken.			
<u>PETROLEUM EXPLORATION BRANCH.</u>				
Subsidy Section	Normal subsidy programme similar to 1967, if Act is extended.			
Subsurface Section	(a) Sedimentary Basin Study Group. Complete Basin Studies on : 1. Sydney Basin 2. Clarence - Ipswich Basin (b) Core and Cuttings Lab. As for 1967 but directed to (a) above.			

METALS (INCL. URANIUM) SEARCH

.63.

GEOLOGICAL BRANCH

Party/Project Symbol File	Nature of Work	Timetable	Staff	Remarks
Cape York, Q.	Regional geological mapping parts of Orford Bay, Torres Strait 1:250,000 Sheet areas and islands; and any follow-up work required to complete mapping.	May-Sept.	D.S. Trail + 2 geologists 1 G.S.Q.	Boat hire - 12 weeks. Helicopter hire - 2 weeks Light aircraft - 16 hours.
Sepik Party	1. Complete Leonard Schultze River to border * Lower Jimmi - Schrader Mountains. 2. South of Markham River - Lower Watut.	1968	D.B. Dow 3 geologists	
Papuan Basin, T.P.N.G.	Regional mapping. Papuan Ultramafic Belt if required.	May	H.L. Davies 15 Carriers (1 Boss Boy)	Helicopter hire.
Victoria River Party, N.T.	Continue regional mapping Victoria River area. Delamere Victoria River Downs, Waterloo, Limbunya.	May-Sept.	3 geologists.	Stratigraphic drilling. Twelve holes at 200 ft. Some core drilling fresh samples of volcanics.
The Granites, N.T.	Regional geological mapping Granites-Tanami and Billiluna 1:250,000 Sheet areas.	1968	3 geologists	200 hour helicopter hire.
(?) Cloncurry - Mt. Isa.	1-mile geological mapping in area to be selected from; (a) Cloncurry-Mount Isa	May-Sept.	2 geologists 1 G.S.Q.	Depends on staff availability

GEOPHYSICAL BRANCH

Laboratory Measurements of Sample, A.C.T.	Measurements of I.P. conductivity, susceptibility properties of drill cores.	As required	J. Haig B. Mayfield	
Turam Model Tests, A.C.T.	Assimilation of field problems	As required	J. Williams	
Blue Tiers Tas.	Investigation of tin-bearing granites.	Jan.-Mar.	E. Sedmik 1 Class 1 N. Ashmore	Depends upon arrangements with Tasmanian Mines Department
Tennant Creek N.T.	Ground magnetic follow-up of airborne anomalies			Work at request of Resident Geologist, Tennant Creek.
Darwin Uranium Group	Laboratory services etc., field	Continuous	J. Gardener K. Duckworth J. Zeroni G. Braybrook	

METALS (INCL. URANIUM) SEARCH

GEOPHYSICAL BRANCH (Cont'd)

Party/Project	Nature of Work	Timetable	Staff	Remarks
VH-MIN South Australia	Aeromagnetic and Radiometric survey			
VH-MIN Western Australia	Aeromagnetic and Radiometric survey			
Contract East New Guinea	Aeromagnetic Survey			Money required in 1968/69 Estimates. Alternative area is Gizelle Peninsula
Light Aircraft	Detailed aeromagnetic and scintillometer surveys			
VH-MIN Victoria	North-eastern highlands			Request from Victorian Mines Department.

NON-METAL SEARCH.

GEOLOGICAL BRANCH

<u>Phosphate</u>	- 1967 North-west Queensland party will continue. Deployment of 2nd Party - Eastern Australia Phosphate - will depend on activities and results in 1967.			
<u>Continental</u>				
<u>Marine</u>	- Recce. of portions of Solomons and Coral Seas.	Dec.-Mar.		\$100000 in 1967/68 Estimates
	- Second tour on north-western shelf - Australia.	Sept.-Dec.		

ENGINEERING AND HYDROLOGYGEOLOGICAL BRANCH

Party/Project	Nature of Work	Approximate Timetable	Staff	Remarks
<u>AUSTRALIAN CAPITAL TERRITORY</u>				
Corin Dam, Cotter River	Finish completion report.	Mid 1968	E.J. Best	
Unspecified damsite	Start design investigation	?	?	Probably Gudgenby, Varsity's Crossing at Googong damsite
Bendora pipeline	Complete mapping and geological services; write Record.		D.E. Gardner	
Mapping of development areas	Probably trench mapping Belconnen and Western Creek areas and detailed pre-development mapping of at least one other area.			
Engineering geology, general	Ad hoc services as in the past; investigation of minor and some major engineering projects, construction materials, petrography, etc.	Continuous	All staff	Volume of work is unlikely to be less than for 1967.
Miscellaneous (hydrology and drainage)	As for 1967.	Discontinuous through year	G.M. Burton H.F. Douth	
<u>PAPUA-NEW GUINEA</u> (Services may be largely supplied by Port Moresby Resident Staff)				
Upper Ramu hydro-electric scheme	Construction services.	Throughout year	Project geologist	Probably construction will start early 1968.
*Laloki River Hydro-electric development	Additional work arising out of 1967 investigations.	?	?	Could include construction services Sirimumu Dam 2nd stage and detailed studies for No. 3 power station and/or Sogeri balancing pond.
*Minor H.E. Projects in various parts of P.N.G.	Probably investigation and advice aspects only.			
<u>NORTHERN TERRITORY</u>				
No requested received but probably further damsite investigations.				
<u>REGIONAL GEOPHYSICAL SURVEYS</u>				
<u>GEOPHYSICAL BRANCH</u>				
W.P.C.L. Gravity meter survey	Gravity meter measurements along W.P.C.L. to Alaska and return and to Antarctica and return	July-Aug.	van Son	Money required in 1967/68 Estimates O.V.C. approval required.