



**DEPARTMENT OF  
NATIONAL RESOURCES**

**BUREAU OF MINERAL RESOURCES,  
GEOLOGY AND GEOPHYSICS**

Record 1977/44

055856<sup>+</sup>



**CATALOGUE OF FIELD COMPILATION SHEETS OF THE  
NEWCASTLE RANGE VOLCANICS AND ASSOCIATED ROCKS  
IN THE MOUNT SURPRISE, GALLOWAY AND NORTHERNMOST  
GEORGETOWN 1:100 000 SHEET AREAS**

by

**B.S. Oversby**

The information contained in this report has been obtained by the Department of National Resources as part of the policy of the Australian Government to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus or statement without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

Record 1977/44

CATALOGUE OF FIELD COMPILATION SHEETS OF THE  
NEWCASTLE RANGE VOLCANICS AND ASSOCIATED ROCKS  
IN THE MOUNT SURPRISE, GALLOWAY AND NORTHERNMOST  
GEORGETOWN 1:100 000 SHEET AREAS

by

B.S. Oversby

Catalogue of field compilation sheets of the Newcastle Range Volcanics  
and associated rocks in the Mount Surprise, Galloway, and northernmost  
Georgetown 1:100 000 Sheet areas

The geological maps which are reproduced here at about 1:100 000 scale have been compiled directly from basic field data and supplementary photo-interpretation recorded on overlays to 1:25 000 (approx.) scale colour air photographs. The numbers of the photographs whose overlays have been used in this compilation are noted in the left-hand margins of the maps. Because of their preliminary nature, the maps will probably be revised from time to time as study of the Newcastle Range volcanics progresses; hopefully, any such revisions will only be relatively minor.

The fieldwork on which these maps are based was undertaken as part of the joint Bureau of Mineral Resources (BMR) - Geological Survey of Queensland (GSQ) Georgetown Project. Work was aimed specifically at completing coverage of the Newcastle Range Volcanics and closely associated Upper Palaeozoic rocks, the main outcrop areas of which had previously been examined during semi-detailed regional mapping in the Forsayth and Georgetown 1:100 000 Sheet areas (Fig. 1) (Bain, and others, 1976; Oversby, and others, in prep.). Map symbols (Figs. 2a, 2b) and rock unit notations (Figs 3, 4) used on the Preliminary Editions of the Forsayth and Georgetown 1:100 000 Geological Series maps (BMR, 1975 and 1976 respectively) have been retained as far as practicable or desirable.

Most of the fieldwork in the Mount Surprise Sheet area was done during September 1975; a small part of the Galloway Sheet area was mapped at about the same time, but most of that area was studied during late June and early September 1976. The work in the Galloway Sheet area showed up inadequacies in the then-current geological picture of the Newcastle Range in the northernmost part of the Georgetown 1:100 000 Sheet area (as shown on the appropriate Preliminary Edition of the Geological Series map - BMR, 1976), which had originally been mapped during the 1974 field season. Consequently, the area was remapped during September and October 1976. Some data collected during 1:250 000-scale reconnaissance mapping of relevant areas (see Branch, 1966; Smart & Bain, 1976) have also been incorporated in the maps.

The revisions made in the northernmost Georgetown Sheet area will be included in the proposed First Edition of that 1:100 000 Geological Series map, but the other two areas will not be shown on standard maps in the foreseeable future. However, it is hoped to eventually produce a special map showing the geology of the whole Newcastle Range as a single entity.

The basic data accumulated during fieldwork (notes, annotated photo-overlays, hand specimens, thin sections, etc.) are housed in the Bureau of Mineral Resources, Canberra, and can be examined there.

Copies of these maps at their original 1:25 000 (approx.) scale can be obtained from - The Copy Service, Commonwealth Government Printer (Production), P.O. Box 84, Canberra, A.C.T., 2600: price on application. Comments on the usefulness, or otherwise, of the maps would be appreciated by the author, as would notification of errors, omissions, and any additional data and interpretations which might increase geological understanding of the Newcastle Range Volcanics.

#### Acknowledgements

I am indebted to Georgetown Project co-workers John Bain (Project Leader), Ian Withnall, and Max Baker (both GSQ) for encouragement to continue work in the Newcastle Range beyond the boundaries of systematically mapped sheet areas. The encouragement of company geologists involved with the areas mapped is also appreciated. Fieldwork would have been virtually impossible without the help of numerous people, notably field hands Kjell Ellingsen, Gary Ferrie, Alan Hoey, Clair Jolliffe, Jim Pollard, and Robin Wills. The maps were drawn by Peter Blythe, Phil Jorritsma, and Joe Mifsud of the BMR Geological Drawing Office.



References

- BAIN, J.H.C., WITHNALL, I.W, and OVERSBY, B.S., 1976 - Geology of the Forsayth 1:100 000 Sheet area (7660), north Queensland. Bureau of Mineral Resources, Australia, Record 1976/4 (unpublished).
- BMR, 1975 - Forsayth, Queensland - 1:100 000 Geological Series. Bureau of Mineral Resources, Australia, Sheet 7660 (Preliminary Edition).
- BMR, 1976 - Georgetown, Queensland - 1:100 000 Geological Series. Bureau of Mineral Resources, Australia, Sheet 7661 (Preliminary Edition).
- BRANCH, C.D., 1966 - Volcanic cauldrons, ring complexes, and associated granites of the Georgetown Inlier, Queensland. Bureau of Mineral Resources, Australia, Bulletin 76.
- SMART, J., and BAIN, J.H.C., 1976 - Red River, Queensland - 1:250 000 Geological Series. Bureau of Mineral Resources, Australia Explanatory Notes SE/54-8.

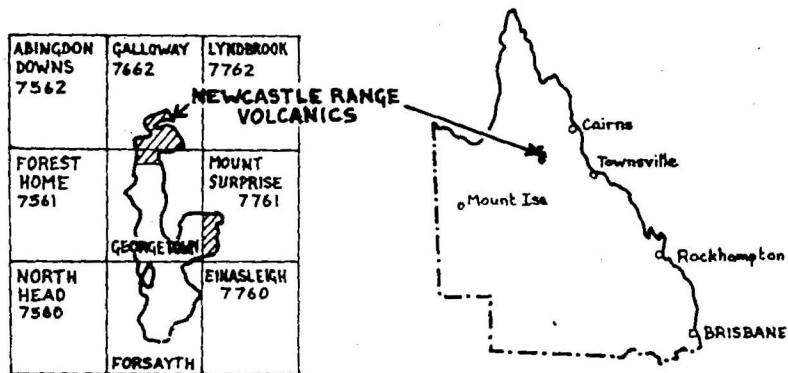


Fig. 1 Location of the outcrop area of Newcastle Range Volcanics in relation to 1:100 000 sheet areas. Diagonal shading denotes those parts of the outcrop area shown on the enclosed field compilation sheets

Record 1977/44

E54/A12/46


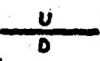
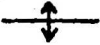








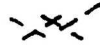
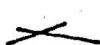


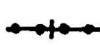











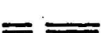



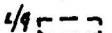


	Geological boundary	
	Fault (D, u indicate relative movement down, up)	
	Anticline	
	Syncline	
Where location of boundaries, faults, and folds is approximate, line is broken; where inferred, queried; where concealed, boundaries and folds are dotted, faults are shown by short dashes.		
	Strike and dip of strata	Air photo interpretation
	Dip < 5°	
	Dip 5°-15°	
	Dip 15°-45°	
	Dip > 45°	
	Horizontal strata	
	Trend lines	
	Joint pattern	
	Lineament	
	Strike and dip of eutaxitic foliation in ignimbrite	
	Dyke with dip, measured, interpreted from air photo	
	Vertical dyke	
Dykes are annotated according to rock type (queried where uncertain): rh = rhyolite; mg = porphyritic microgranite; apl = aplite; da = dacite		
	Location of rock sampled for isotopic age determination	
	Location of recorded field observation	
	Abandoned prospect	} Sn = tin (cassiterite); Pb = lead (galena)
	Abandoned alluvial workings	
	Minor mineral occurrence: Ch = chalcopyrite; Fl = fluorite	

Fig. 2(a) Geological symbols used on the compilation sheets  
Record 1977/44

E 54 /A12/47

	Bore with windpump
	Dam
	Spring
	River, creek
	Major waterhole, small, large
	Major waterfall
	Minor road, vehicle track
	Building
	Yard
	Telephone line
	Landing ground
	Summit
	Position approximate

Note: some topographic names are informal

Fig. 2 (b) Topographic symbols used on the compilation sheets  
Record 1977/44 E54/A12/48

# MOUNT SURPRISE SHEET AREA

CAINOZOIC	QUATERNARY		Qha	silt, sand, gravel: active channel deposits
			Qa	silt, sand, gravel: abandoned and occasionally active channel deposits
			Czs	clay, silt, sand: soil and colluvial deposits
		McBride volcanics <sup>1</sup>	Czm	undivided extrusive olivine basalts
PALAEOZOIC	CARBONIFEROUS	Eva Creek Microgranite	Cv	porphyritic biotite microgranite
			mg <sub>1</sub>	porphyritic microgranite
			rh	aphyric to porphyritic rhyolite: locally grades into microgranite
			dol	intrusive? aphyric dolerite
		Newcastle Range Volcanics	Cn <sub>6</sub>	grey rhyolitic ignimbrite with ≥50% phenocrysts about 4mm across, and hornblende
			Cn <sub>4</sub>	buff rhyolitic ignimbrite with about 40% phenocrysts about 4mm across
			Cn <sub>3</sub>	buff aphyric rhyolitic ignimbrite?
			Cn <sub>2a</sub>	buff to purple rhyolitic ignimbrite with about 25% phenocrysts about 2mm across
			Cn <sub>1</sub>	buff rhyolite and microgranite with about 40% phenocrysts up to 1cm across: may be intrusive
			Cnb	extrusive aphyric basalt and/or andesite
			Cns	undivided volcanoclastic and epiclastic sedimentary rocks
			Cns <sub>b</sub>	volcanoclastic sedimentary rocks
			Cns <sub>a</sub>	epiclastic sedimentary rocks
PROTEROZOIC		P	undivided granitoid and metamorphic rocks	

<sup>1</sup> informal name

Fig. 3 Key to rock unit notations used on the Mt Surprise compilation sheets

Record 1977/44

E54/A12/49

# GEORGETOWN and GALLOWAY SHEET AREAS

CAINOZOIC	QUATERNARY		Qha	silt, sand, gravel: active channel deposits
			Qa	silt, sand, gravel: abandoned and occasionally active channel deposits
		Undara basalt <sup>1</sup>	Qu	extrusive olivine basalt
			Czs	clay, silt, sand: soil and colluvial deposits
PALAEOZOIC	CARBONIFEROUS	Elizabeth Creek Granite	Ce	pink biotite leucogranite; minor microgranite, aplite, greisen
			mg,	porphyritic microgranite
			rh	aphyric to porphyritic rhyolite: locally grades into microgranite
			ag	intrusive? volcanic breccia
		Newcastle Range Volcanics	Cn <sub>VI</sub>	buff and purple rhyolitic ignimbrite with 40-75% phenocrysts up to 5mm across
			Cn <sub>Vc</sub>	grey and purple rhyolitic ignimbrite with 25-40% phenocrysts up to 2mm across
			Cn <sub>Vk</sub>	purple rhyolitic ignimbrite with 30% phenocrysts 2-4mm across: k = intensely "kaolinised"
			Cn <sub>xa</sub>	purple rhyolitic agglomerate and agglomeratic ignimbrite
			Cn <sub>IV</sub>	buff, rarely purple, rhyolitic ignimbrite and lava, airfall tuff, and agglomerate
			Cna	undivided aphyric andesitic lava
			Cna <sub>III</sub>	aphyric and slightly porphyritic andesitic and trachyandesitic? lava <sup>2</sup>
			Cna <sub>II</sub>	porphyritic andesitic lava
			Cna <sub>I</sub>	aphyric andesitic lava
			Cns <sub>b</sub>	volcaniclastic sedimentary rocks and/or airfall tuff
			Crs <sub>a</sub>	epiclastic sedimentary rocks
		PROTEROZOIC		P

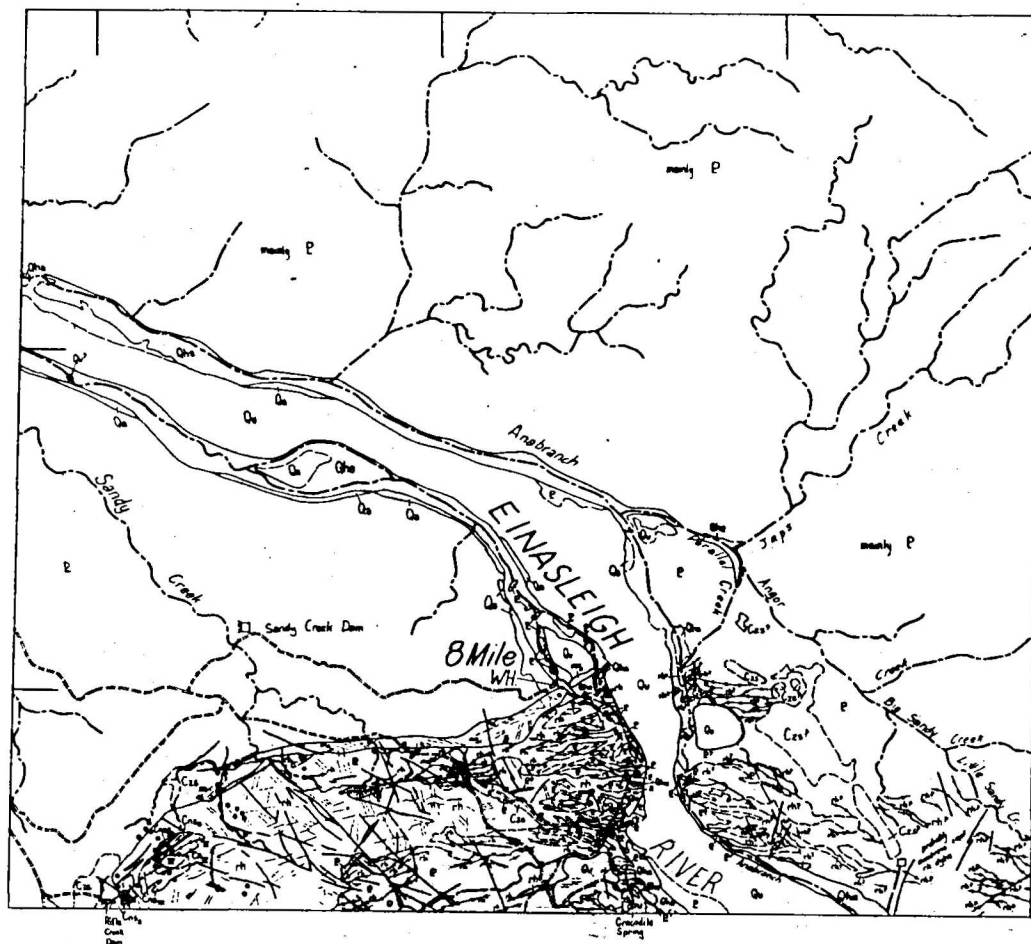
<sup>1</sup> informal name

<sup>2</sup> this unit designated Cn<sub>xa</sub> on Prelim. Ed. of Georgetown 1:100 000 Geological Series Sheet 7661

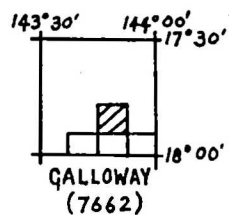
Fig.4 Key to rock unit notations used on the Galloway and Georgetown compilation sheets

Record 1977/44

E 54/A12/50

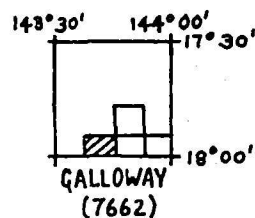
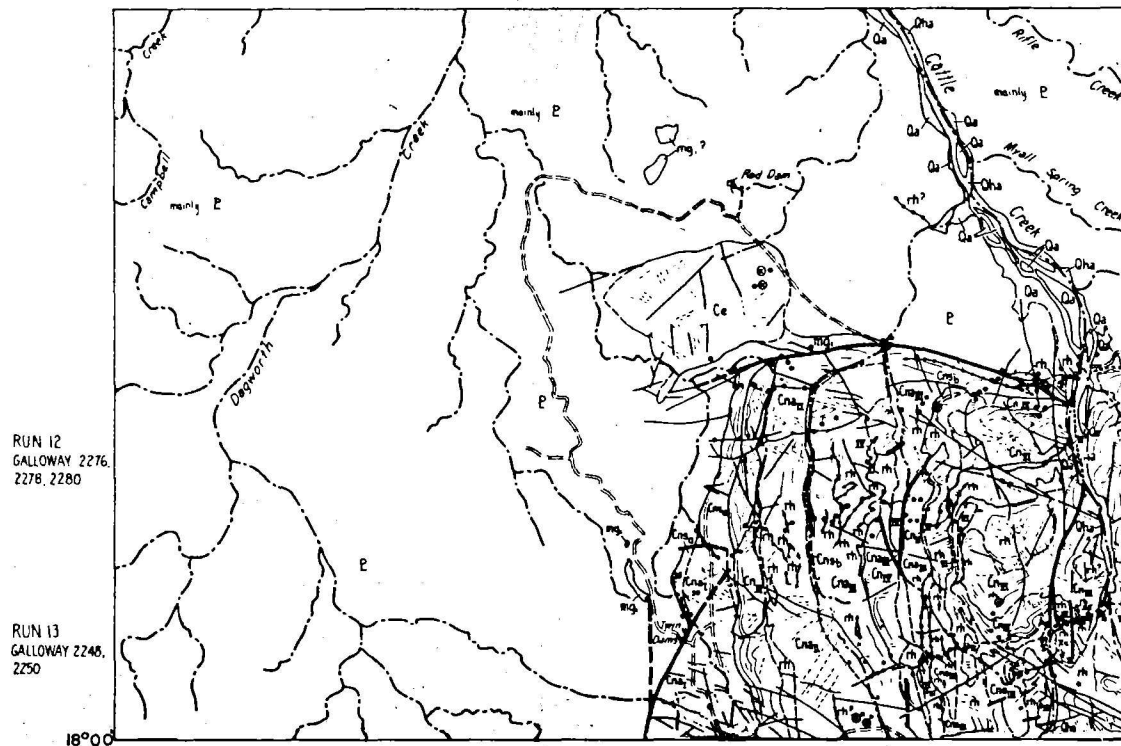


RUN II  
GALLOWAY 2238, 2240,  
2242, 2244



0 1 2 3 4 5 Km (approx.)

Mapped (1976) by B.S. Oversby (BMR)  
Drawn by P.J. Torritsma and  
J. Mifsud (BMR)

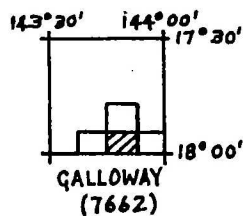


0 1 2 3 4 5 Km (approx.)

Mapped (1975, 1976) by B.S. Oversby (BMR)  
 Drawn by P.J. Torritsma and  
 J. Mifsud (BMR)



RUN 13  
 GALLOWAY 2350, 2352,  
 2354, 2356

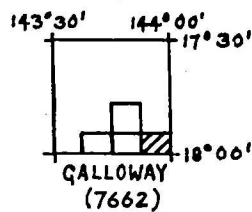
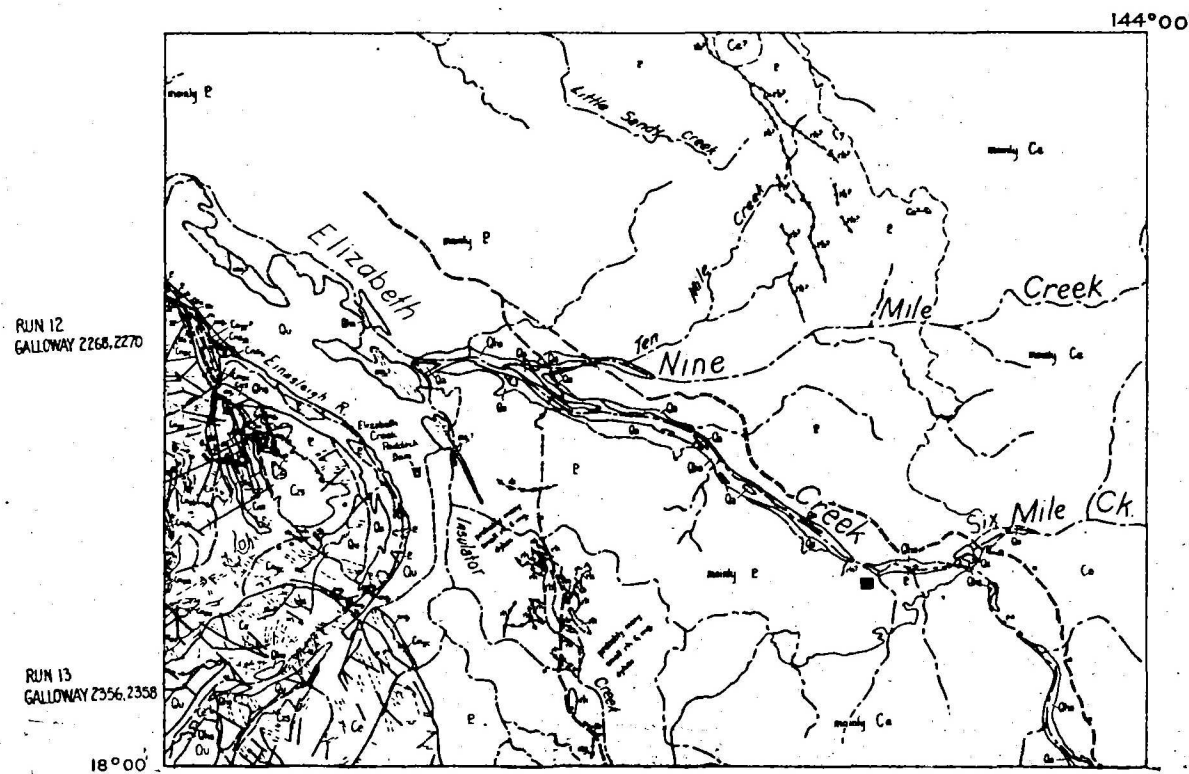


0 1 2 3 4 5 Km (approx.)

Mapped (1976) by B.S. Oversby (BMR)  
 Drawn by P.J. Jorritsma and  
 J. Mifsud (BMR)

BMR Record 1977/44 - Compilation Sheet 3

E 54/A12/41



0 1 2 3 4 5 Km (approx.)

Mapped (1976) by B.S. Oversby (BMR)  
 Drawn by P.J. Jorritsma and  
 J. Mifsud (BMR)





