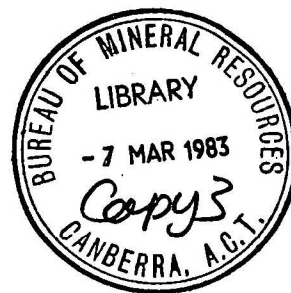


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BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

RECORD

Record 1982/22

Abner Range 1:100 000 compilation sheets,
McArthur Basin, Northern Territory

by

M.J. Jackson

Record 1982/22

Abner Range 1:100 000 compilation sheets,
McArthur Basin, Northern Territory

by

M.J. Jackson

Abner Range Compilation Sheets

The following geological maps reproduced at 1:100 000 scale, are preliminary field compilations covering the Abner Range region of the southern McArthur Basin. They are based on detailed mapping of the region done between 1977 and 1981 by members of the BMR McArthur Project, supplemented by unpublished company mapping in the Emu Fault Zone (CEC., 1966, 1978). Colour air photographs at a nominal scale of 1:25 000, flown in 1976 for the Commonwealth of Australia, were used for photo-interpretation and locality control. The results were compiled on 1:25 000 scale blow-ups of 1:100 000 scale base maps supplied by National Mapping, Canberra, using drainage patterns as the major control for position location. Copies of these photo-scale compilation sheets are available through the Government Printer*. Additional compilation and drafting of the 1:100 000 scale map covering the Abner Range area is in progress.

Petrographic and other laboratory studies are in progress, and may lead to some changes being made to these maps. Any such changes will be incorporated into the 1:25 000 scale transparencies held by the Australian Government Printer, and in the 1:100 000 scale Preliminary edition map.

The legend accompanying the map follows the previously published stratigraphy of the basin (e.g. Plumb & Brown, 1973), with minor amendments. A new group - 'Nathan Group' - has been introduced between the Roper and McArthur Groups; the Masterton Formation has been split up into several new formations including the 'Masterton

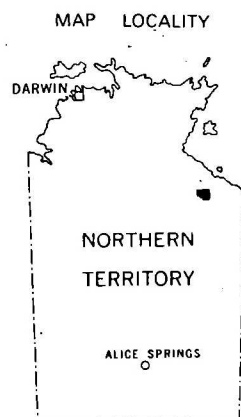
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Sandstone' and 'Gold Creek Volcanics' and has been moved up from the Tawallah Group into the McArthur Group; the Billengarah Formation, Smythe Sandstone and Stott Formation are no longer recognized; and a lower subdivision of the Lynott Formation ('Lagoon Member') has been introduced. Publication and formal stratigraphic definition of these changes is planned but until then these modifications should be considered informal.

Notification of any errors or omissions in these maps, and supply of any information to improve the Preliminary edition map would be greatly appreciated, and should be communicated to the Director, BMR, P.O. Box 378, Canberra City, ACT 2601.

References

- PLUMB, K.A. & BROWN, M.C., 1973 - Revised correlations and stratigraphic nomenclature in the Proterozoic carbonate complex of the McArthur Group, Northern Territory. Bureau of Mineral Resources, Bulletin 139 (pp 103-115).
- CEC 1966 - McArthur River Series Geological Maps. Carpentaria Exploration Company (unpublished).
- CEC 1978 - McArthur Northern Territory MR 581 Geology, sheets 1 & 2. Carpentaria Exploration Company (unpublished).



INDEX TO ADJOINING SHEETS

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WARRAMBA 5664	AMUNGE MUNGE 5764	OCTOBER 5864	OT DOWNS 5964	MALLAPINIA 6064	CLYDE 6164
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ELLIOTT 5662	UCHARONIDE 5762	SHANDON DOWNS 5862	MONGALA 5962	CRESWELL DOWNS 6062	PUZZLE 6163

- Geological boundary
 Anticline, showing trend of plunge of axis
 Syncline, showing trend of plunge of axis
 Overturned syncline
 Fault
 Normal fault, tick on downthrow side, indicates direction of dip
 Fault (U,D indicate relative movement; up, down)
 Where location of boundaries, folds and faults is approximate, line is broken; where inferred, queried; where concealed, boundaries and folds are dotted, faults are shown by short dashes

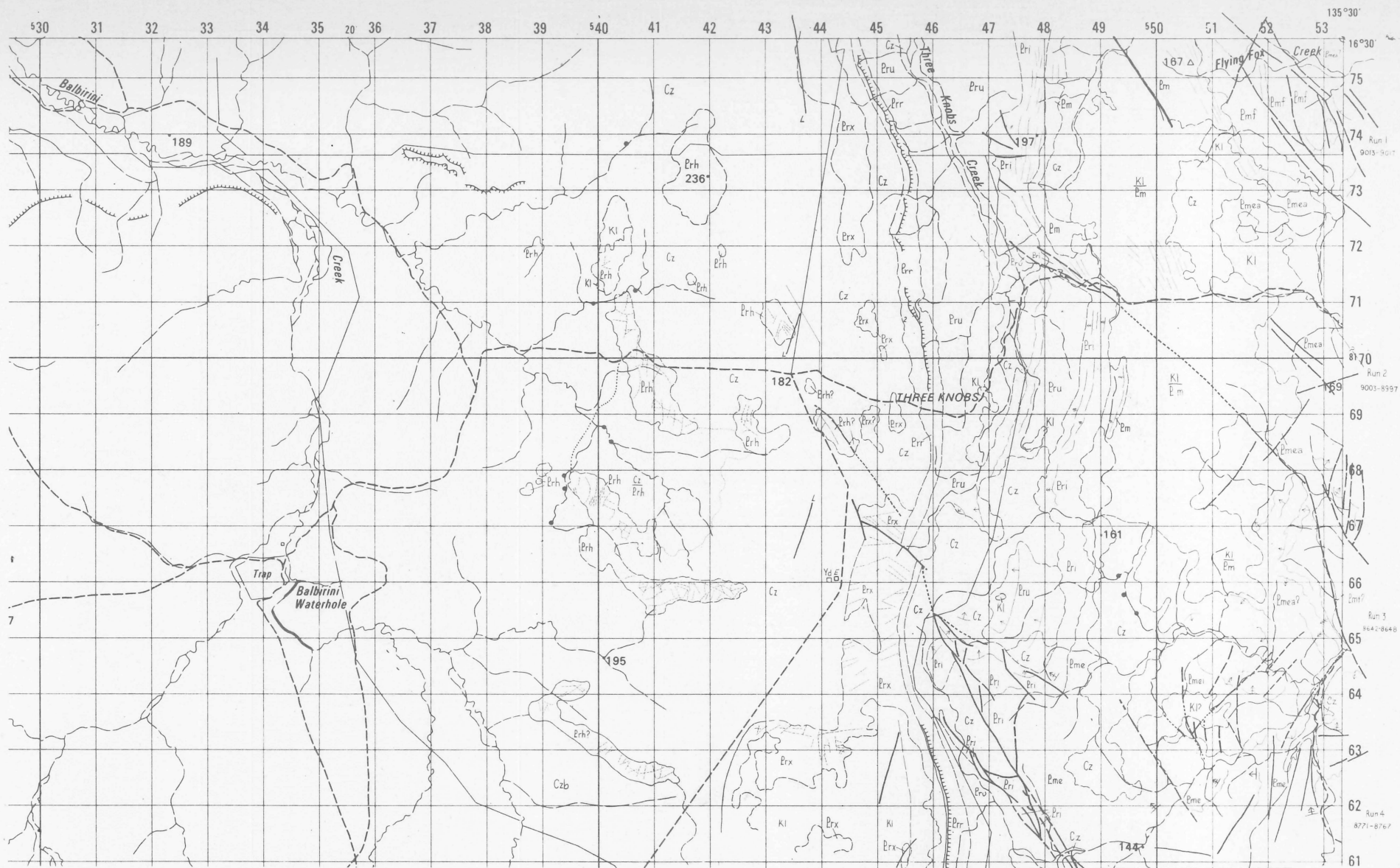
- Shear zone
 Plunge symbol on trend-line
 Strike and dip of strata, dip not measured
 Strike and dip of strata
 Strike and dip of strata, facing not known
 Vertical strata
 Horizontal strata
 Strike and dip of overturned strata
 Strike and dip of strata dip less than 5°
 Strike and dip of strata dip 5°-15°
 Strike and dip of strata dip 15°-45°
 Strike and dip of strata dip greater than 45°
 Horizontal strata
 Trend-line
 Trend-line showing dip
 Trend-line showing dip of 5°-15°
 Joint pattern
 Lineament
- airphoto interpreted

- Type section
 Measured section
 Diamond-drillhole
 Minor mineral occurrence; Ba-barite, Cu-copper, Fe-iron, Pb-lead
 Prospect or mine with little production
 Mine, minor
 Costean
 Wind pump
 Earth tank or dam
 Highway
 Minor road
 Vehicle track
 Homestead
 Building
 Yard
 Fence
 Bench Mark
 Elevation in metres

INDEX TO COMPILATION SHEETS

OT DOWNS 135°30' MALLAPUNYAH		136°00' GLYDE		16°30'
2	1	2	1	
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2	1	2	1	17°00'
BLOOWOOD CREEK		3	3	
KILGOUR		LANCEWOOD		

		Cz	Unconsolidated sand, silt, clay, cobbles. Alluvial, colluvial and aeolian deposits	CAINOZOIC
		Czb	Black soil; earthy grey-black clay-rich soil	
		Czi	Laterite and deflated lateritic soil with ironstone pisoliths	
		Kl	Friable yellow sandstone, siltstone, massive well-sorted fine-grained quartz sandstone and conglomerate; ferruginized sandstone; white leached siltstone	EARLY CRETACEOUS } MESOZOIC
ROPER GROUP	TOP SPRINGS LIMESTONE	Elf	Pale grey micritic limestone, karstic-weathering. Commonly vuggy also oncolitic, pisolitic textures. Surface commonly potholed. Rare large domal stromatolites	EARLY CAMBRIAN } PALAEOZOIC
	BUKALARA SANDSTONE	Elb	Fine to very coarse grained friable quartz sandstone. Thin to very thick bedded, low angle cross-stratified. Trace fossils	
		Er	Undivided Roper Group	
	BESSIE CREEK SANDSTONE	Erre	Jointed, medium-grained quartz sandstone	
	CORCORAN FORMATION	Ero	Flaggy brown siltstone, medium-grained quartz sandstone, ferruginous sandstone	
	ABNER SANDSTONE	Era	Strongly jointed, medium-grained quartz sandstone	
	Hodgson Sandstone Member		Undivided Abner Sandstone	
	Jalboi Member		Purple ferruginous sandstone; minor shale (section only)	
	Arnold Sandstone Member	Erx	Strongly jointed, medium grained quartz sandstone	
	CRAWFORD FORMATION	Err	Thick bedded glauconitic sandstone, feldspathic sandstone, flaggy micaceous siltstone	
NATHAN GROUP	MAINORU FORMATION	Ern	Flaggy purple and green micaceous siltstone; fine grained glauconitic sandstone, feldspathic sandstone, shale	
	Kilgour Sandstone Member	Erj	Fine to medium grained quartz sandstone, siltstone	
	LIMMEN SANDSTONE	Eri	Fine to medium grained quartz sandstone, flaggy micaceous sandstone and siltstone	
		En	Undivided Nathan Group	
BATTEN SUBGROUP	DUNGAMINNIE FORMATION	Eng	Upper: Laminated sandy dolarenites and dololutes. Stratiform and leaning conical stromatolites. Erosion contacts, channels, slumped intervals, intraclasts, oolites, ripples. Lower: Thin bedded fine sandstone and siltstone with rare conglomeratic lenses	PROTEROZOIC
	BALBIRINI DOLOMITE	Enz	Thick sequence of dolarenites and dololutes with prominent stromatolitic marker beds. Evaporite pseudomorphs common in lower part (after gypsum and halite). Siderite botryoidal quartz nodules. Dolarenites commonly cross-stratified and intraclastic. Conical, large-columnar, stratiform, and domal stromatolites present. Thin sandstone interbeds	
		Em	Undivided McArthur Group	
	AMOS FORMATION	Emm	Upper: Massive karstic-weathering dark grey to yellow grey, pseudobrecciated, stylolitic, recrystallised dolostone, oncolitic and pisolitic textures common. Lower: Red siltstone, fine sandstone, sandy dolarenite and dololite with pink K-rich beds	
	LOOKING GLASS FORMATION	Emo	Dolostone and interbedded sandstone, everywhere intensely chertified. Stromatolites and intraclasts rarely visible	
	STRETTON SANDSTONE	Emr	Fine to medium grained quartz sandstone. Laminated, flaggy and fissile. Small ripples, streaming lamination, tool marks common. Rare channels, ferruginous concretions, claystone clasts	
	YALCO FORMATION	Emj	Thinly interbedded stromatolitic dololite and intraclastic dolarenite with abundant chert nodules and laminae	
	Donnegan Member	Emnd	Purple-brown dolomitic siltstone, fine-grained sandstone. Thin bedded, commonly ripple laminated, small botryoidal quartz nodules (after sulphate evaporites)	
	LYNOTT FORMATION	Emn	Dolomitic siltstone and fine sandstone interbedded with resistant stromatolitic dololutes. Plane bedding, ripple lamination and lenticular bedding characterise siltstones. Stromatolites include stratiform, domal and rare conical forms. Rare interbeds of coarse dolomitic sandstone. Pseudomorphs after 'irona', sulphate evaporites, halite	
	Lagoon Member	Emnl	Laminated to thin bedded dolomitic and hematitic siltstone. Ripples, slump fold and lenses of breccia	
McARTHUR SUBGROUP	REWARD DOLOMITE	Emx	Wide range of rock types and textures including dololite, dolarenite, dolovite and sandstone. Laminated, thin bedded, massive bedded, cross-bedded, brecciated and slumped. Rapid facies changes characteristic. Various types of stromatolites, pseudomorphs after sulphate evaporites, oncolites, oolites, channels, small silica spheroids	
	BARNEY CREEK FORMATION	Emq	Laminated to thin bedded dolomitic, bituminous and pyritic shales with tuffaceous beds. Very poorly outcropping. Mineralized (Zn, Pb, Ag, Cu) at McArthur River Mine. (Several members recognized in mine area)	
	Coxco Dolomite Member	Emc	Grey crystalline dololite (cf. Emei but thin bedded) with thin pink K-rich beds and radiating gypsum crystal pseudomorphs. Rare small conical stromatolites	
	TEENA DOLOMITE	Emp	Thin sequence of cherty stromatolitic dololite (cf. Emea) with dolomitic shales, oolitic and intraclastic dolarenites and dolomitic sandstone. Ripples, rare halite casts	
	EMMERUGGA DOLOMITE	Eme	Undivided Emmerugga Dolomite	
	Mitchell Yard Member	Emei	Massive dark-grey karstic-weathering crystalline dololite, lacking obvious internal sedimentary structures, stromatolites and chert. Sparry dolomite vughs common; pseudobrecciated textures visible	
	Mara Member	Emea	Upper: dolomitic siltstone with interbeds of stromatolitic dololite, intraclastic dolarenite and flake breccias. Columnar, domal and conical stromatolites often forming bioherm series. Chertification common. Rare sandstone beds. Halite casts, locally thick ex-evaporitic sections. Lower: Shoaling cycles of dark grey stromatolitic dololite and dolomitic siltstone with quartz nodules after evaporites	
	Myrtle Shale Member	Emf	Thin bedded to laminated red-brown dolomitic siltstone, mudstone, very fine grained sandstone and dololite, numerous halite casts and moulds, nodules after sulphate evaporites, rare oolitic interbeds. A thin solution collapse breccia is common near the top. Generally poorly outcropping. Rarely micaceous	
	Leila Sandstone Member	Emi	Either white silicified medium-grained dolomitic sandstone with small scale cross-stratification, or grey to black-weathering, very coarse grained trough cross-stratified poorly-sorted dolomitic sandstone. Thin interbeds of fan, stromatolitic sandy dolostones. Halite casts and moulds, dolomite-lined vughs	
	TOOGANINNIE FORMATION	Emt	Thick sequence of dolomitic siltstone and shale with resistant interbeds of yellow stromatolitic dololite and sandy dolarenite. Domal, stratiform and conical stromatolites dominant. Intraclasts and oolites common in dolarenites; siltstone levels commonly dolomitized. Evaporite pseudomorphs of halite, and gypsum very common; desiccation cracks, tepees	
UMBLOOCCA SUBGROUP	TATOOLA SANDSTONE	Emd	Upper: medium to coarse grained vuggy dolomitic sandstone: medium to thick bedded with trough cross-stratification and intraclasts. Halite casts, baryte vughs and channels common, rare tuffaceous beds. Lower: flaggy, thin-bedded, fine-grained, white quartz sandstone with small scale planar cross-stratification, pinch and swell, tool marks and ripples, channels	
	AMELIA DOLOMITE	ema	Red and grey chertified stromatolitic dololite interbedded with intraclastic and rippled dolarenites or shales. Stratiform, domal, columnar and conical stromatolites; oolitic, oncolitic and sandy intervals common especially in upper part. Localized development of sideritic and magnesitic marbles (replacing sulphate evaporites)	
	MALLAPUNYAH FORMATION	Eml	Mainly red and purple dolomitic siltstone and shale with thin interbeds of cross-bedded dolomitic sandstone. Dolomite- and baryte-lined vughs common in lower part, large botryoidal quartz nodules (californian cherts) common in upper part. Stromatolitic dololite interbeds at top. Ripples, desiccation cracks, halite casts and moulds common	
	MASTERTON SANDSTONE	EmS	Pale red, brown, purple, pink and white fine to medium grained well-sorted quartz arenite. Variably silicified. Thin to very thick bedded but internally cross-stratified (planar and trough). Ripples and shale clasts common, rare pebbly interbeds. Upper most beds distinctly ferruginous with desiccation cracks, halite casts and moulds, and gypsum pseudomorphs. Chertified stromatolite at top of unit	
		Et	Undivided Tawallah Group	
	GOLD CREEK VOLCANICS	Etg	Red-pink intermediate igneous rocks comprising lenticular extrusives (ie. pyroclastic trachyte, agglomerate, tuff, lava) and irregularly-shaped intrusives of altered microsyenite	
	WOLLOGORANG FORMATION	ETO	Mainly dark grey to black-weathering dolomitic siltstone-silty dolostone. Red shales with evaporite casts and stromatolitic dolostone present near base; ferruginous and dolomitic cross-bedded sandstones and dololutes with evaporite casts common near top. Ovoid nodules, thin breccias and regular lamination characteristic. Pyritic and bituminous	
	SETTLEMENT CREEK VOLCANICS	ETE	Reddish-brown to dark grey spheroidally-weathering basic to intermediate, fine to medium-grained igneous rocks. Extrusive and intrusive varieties including flow-banded basalt, dolerite, quartz dolerite. Commonly altered (especially polished metasomatised). Contains intercalated hornfelsed sediments. Thin laminated siltstone at top and bottom	
	SLY CREEK SANDSTONE	ETI	Pale grey, pink, brown and white well-sorted quartz arenite. Mainly fine to medium grained, but some conglomeratic interbeds. Distinctly thick bedded and commonly strongly surface-silicified. Small to large scale planar cross-bedded, commonly rippled. Shale clast impressions, rare glauconite	
	McDERMOTT FORMATION	ETd	Red-purple coarsely recrystallised wavy-bedded dolostone and thin bedded dolomitic fine grained sandstone. Poorly outcropping. Rare pseudomorphs after evaporites	
TAWALLAH GROUP	PETERS CREEK VOLCANICS	ETp	Amphydoidal basalt (section only)	



OT DOWNS

	2

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OT DOWNS

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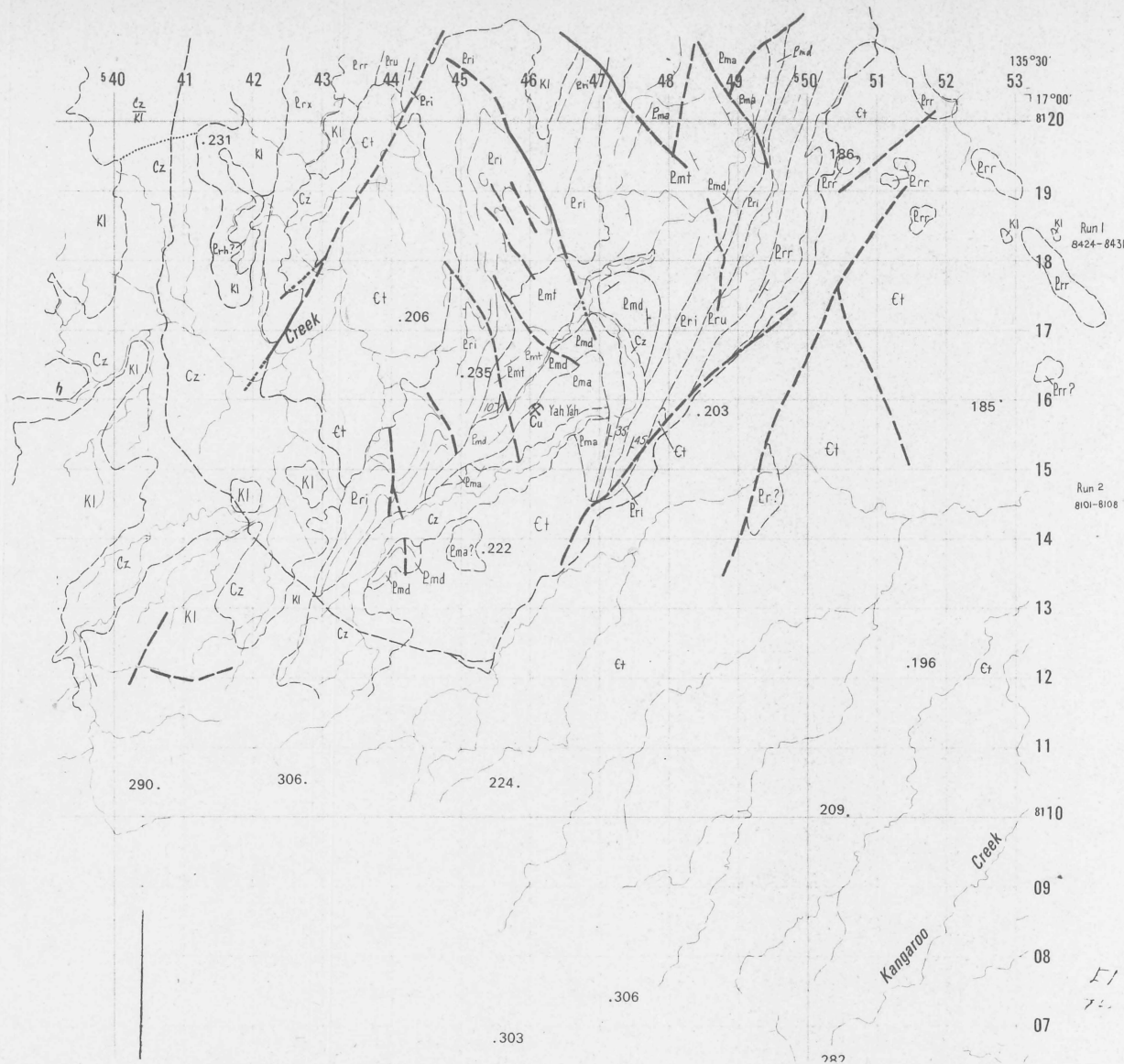
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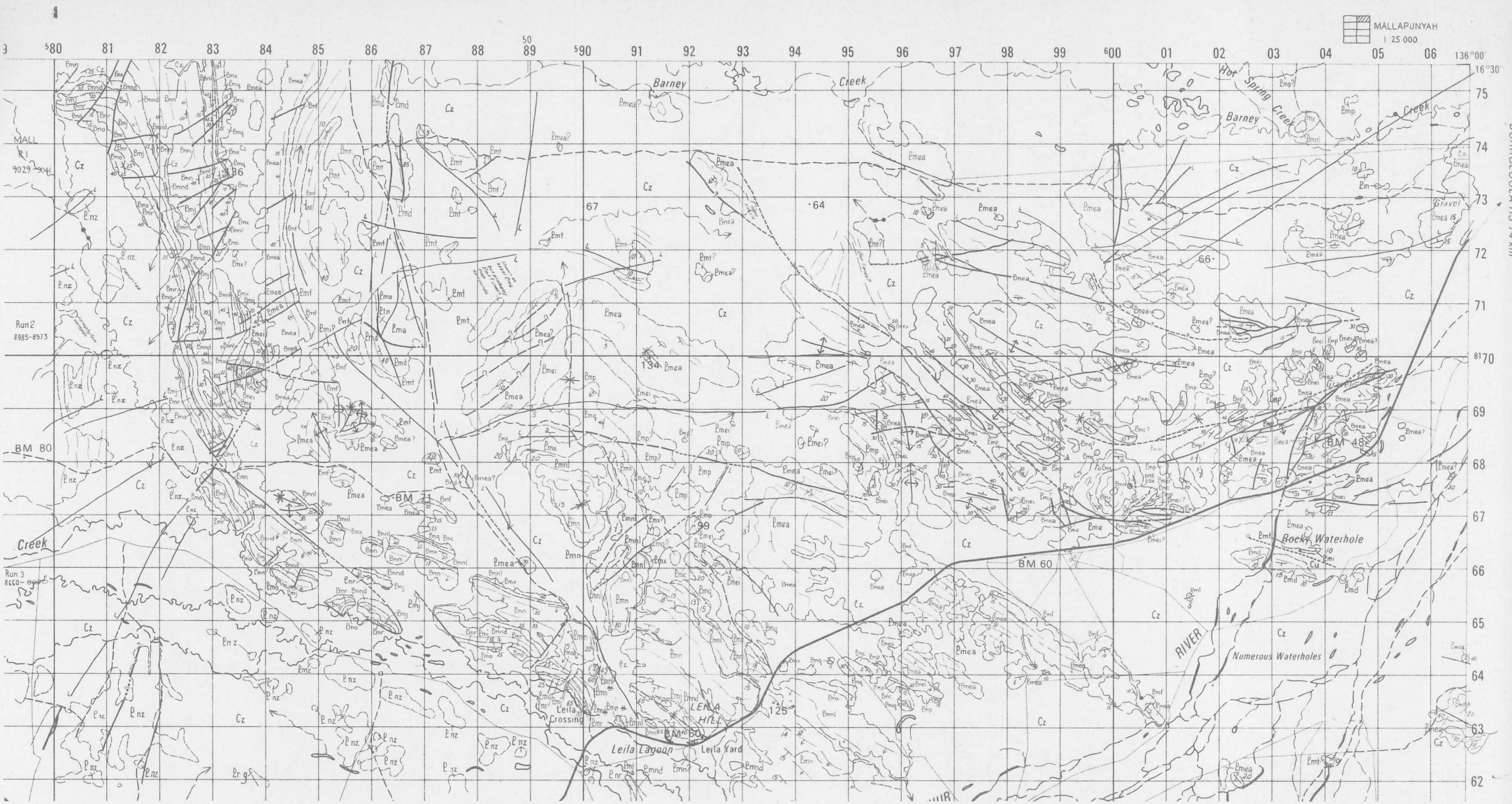


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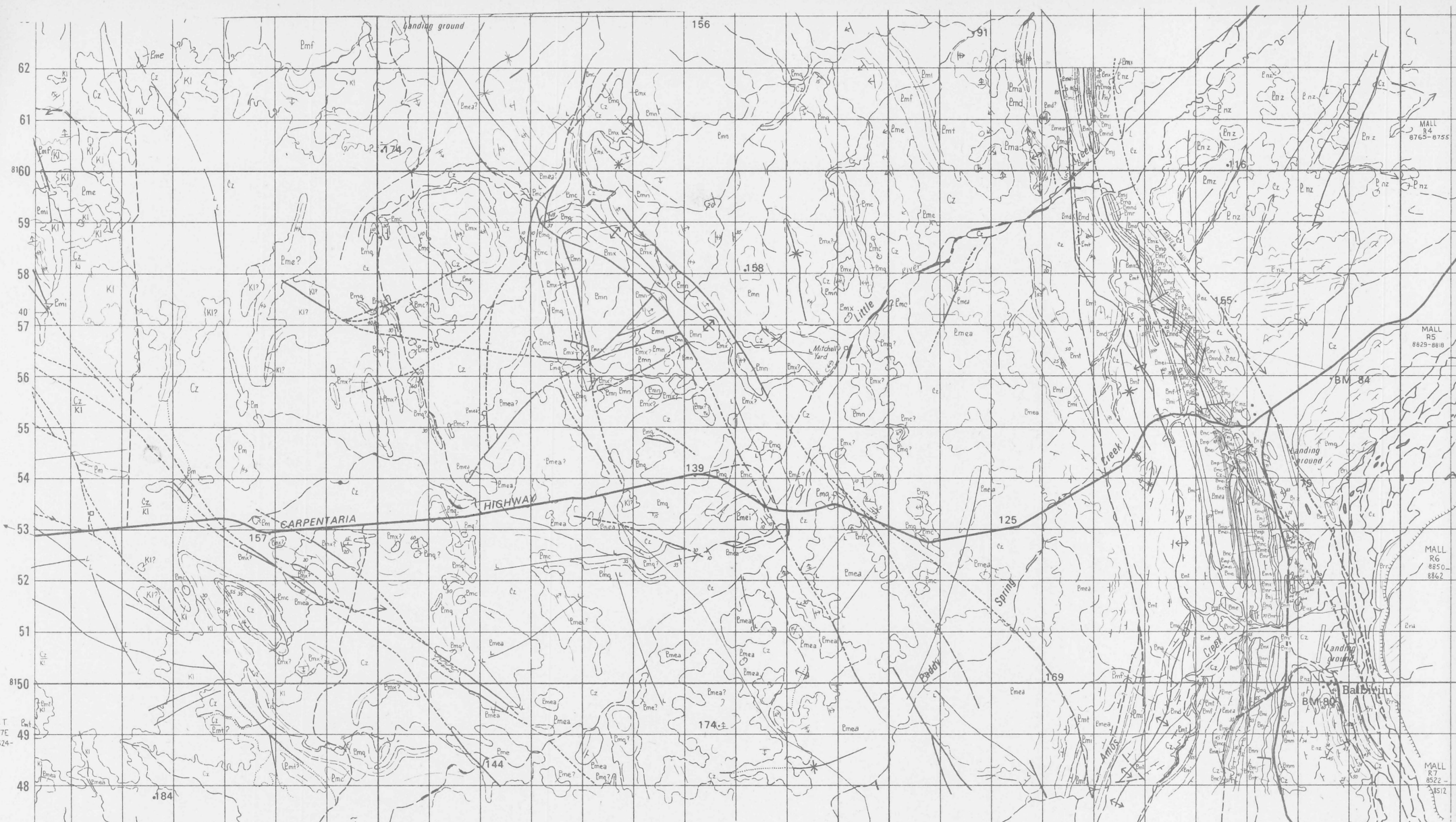


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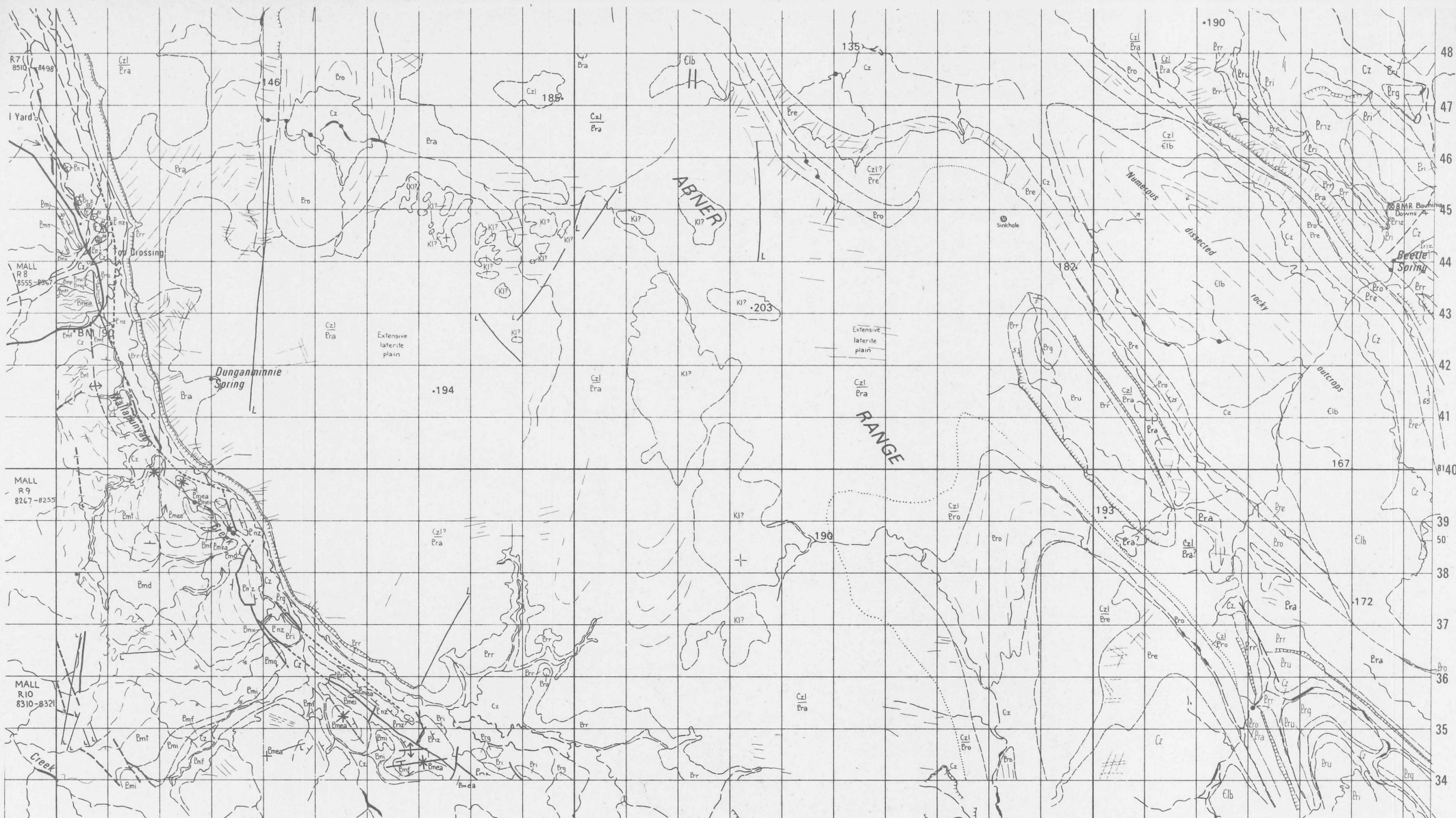
MALLAPUNYAH

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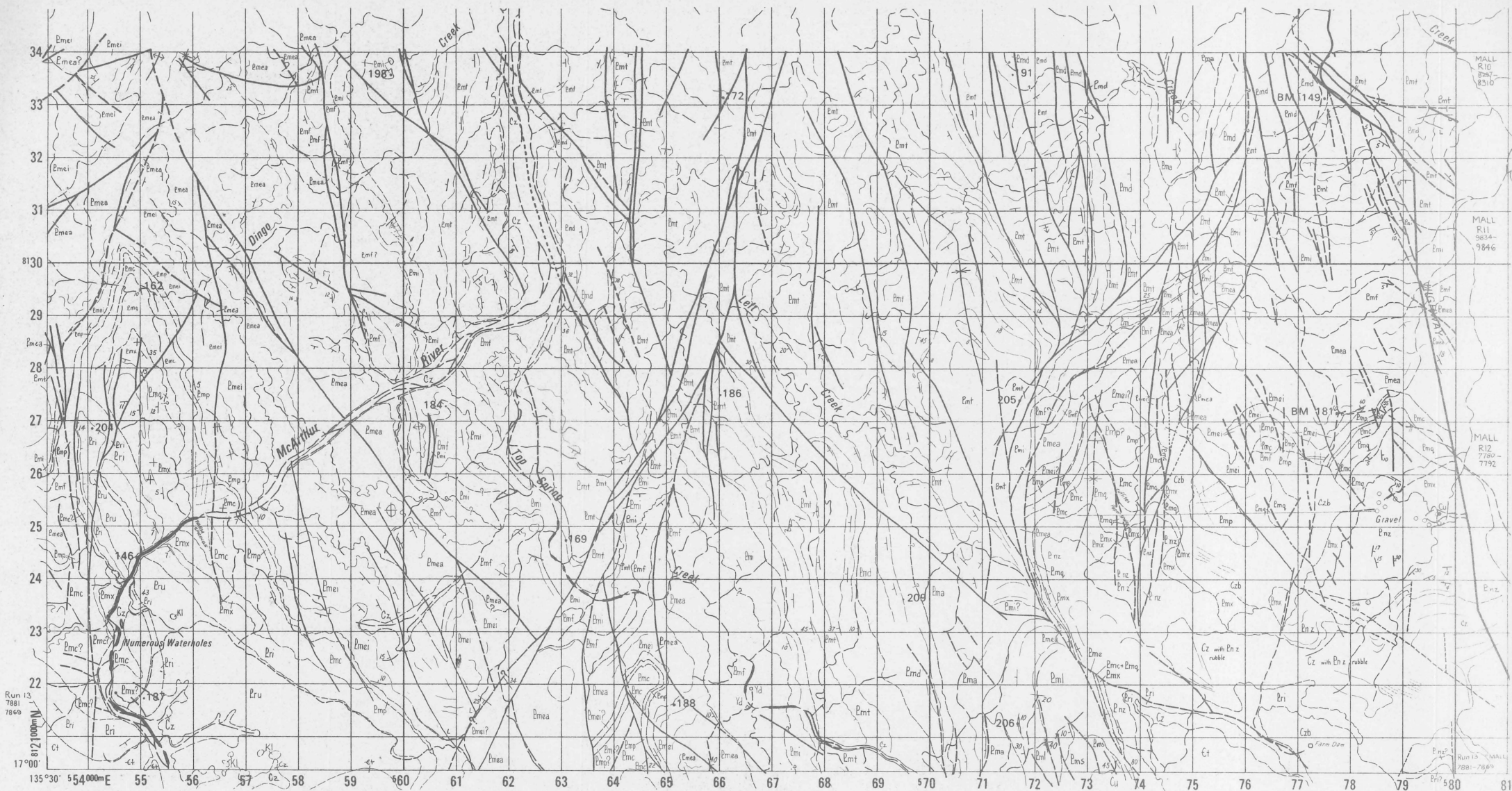
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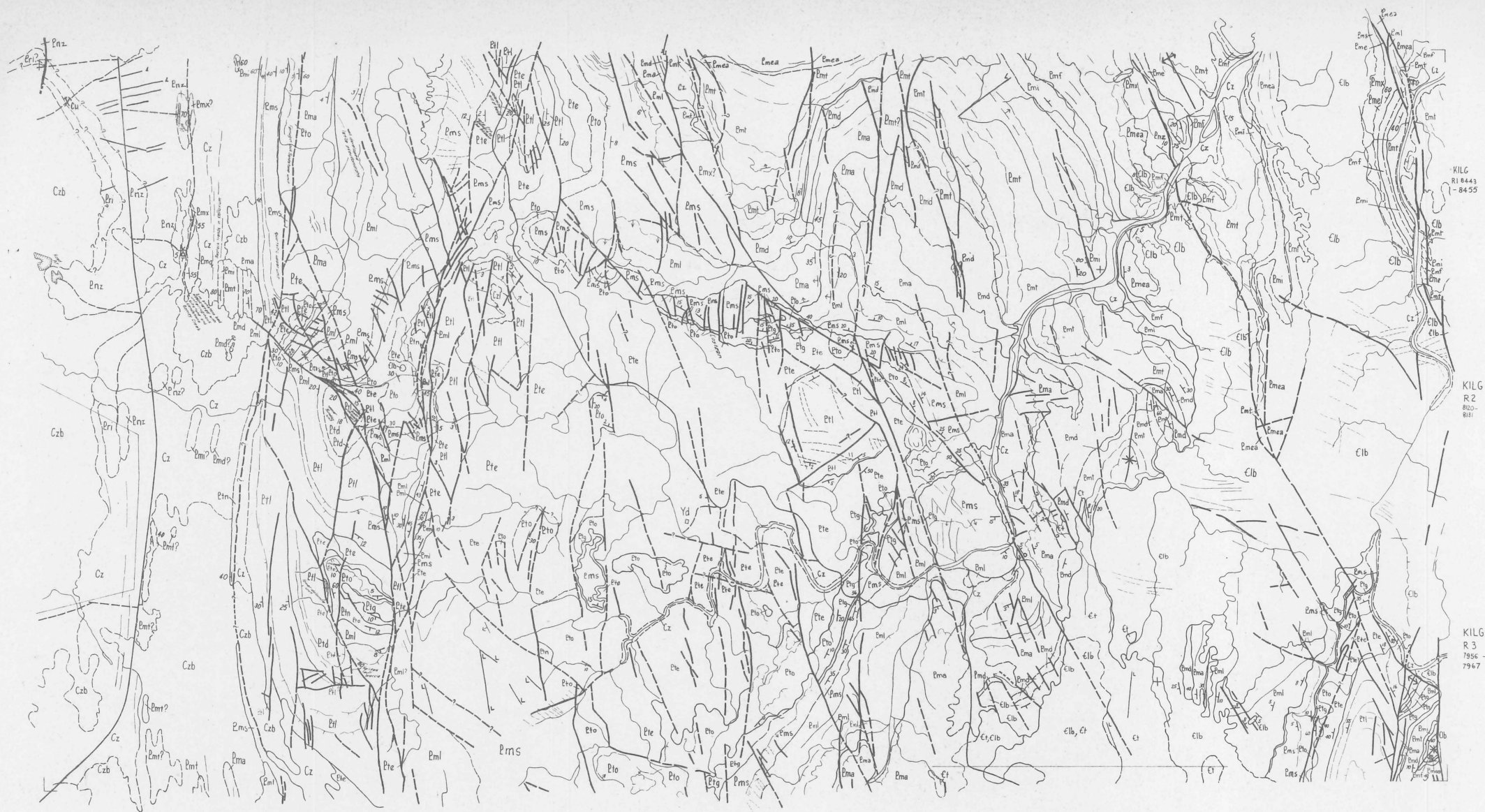


MALLAPUNYAH

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ABNER RANGE REGION N.T.
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 Scale: 1:100,000

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ABNER	RANGE	REGION	N.T
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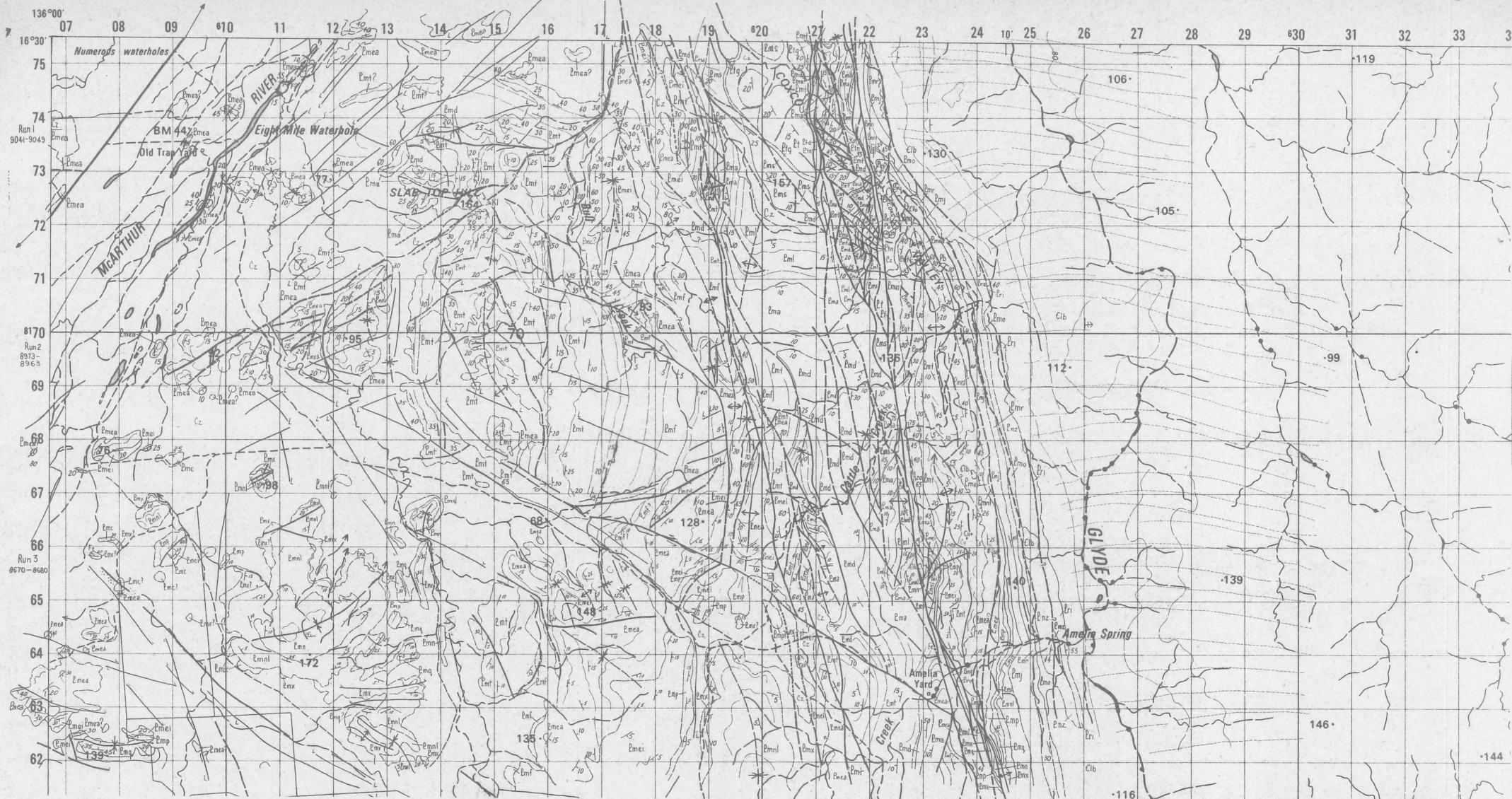
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V

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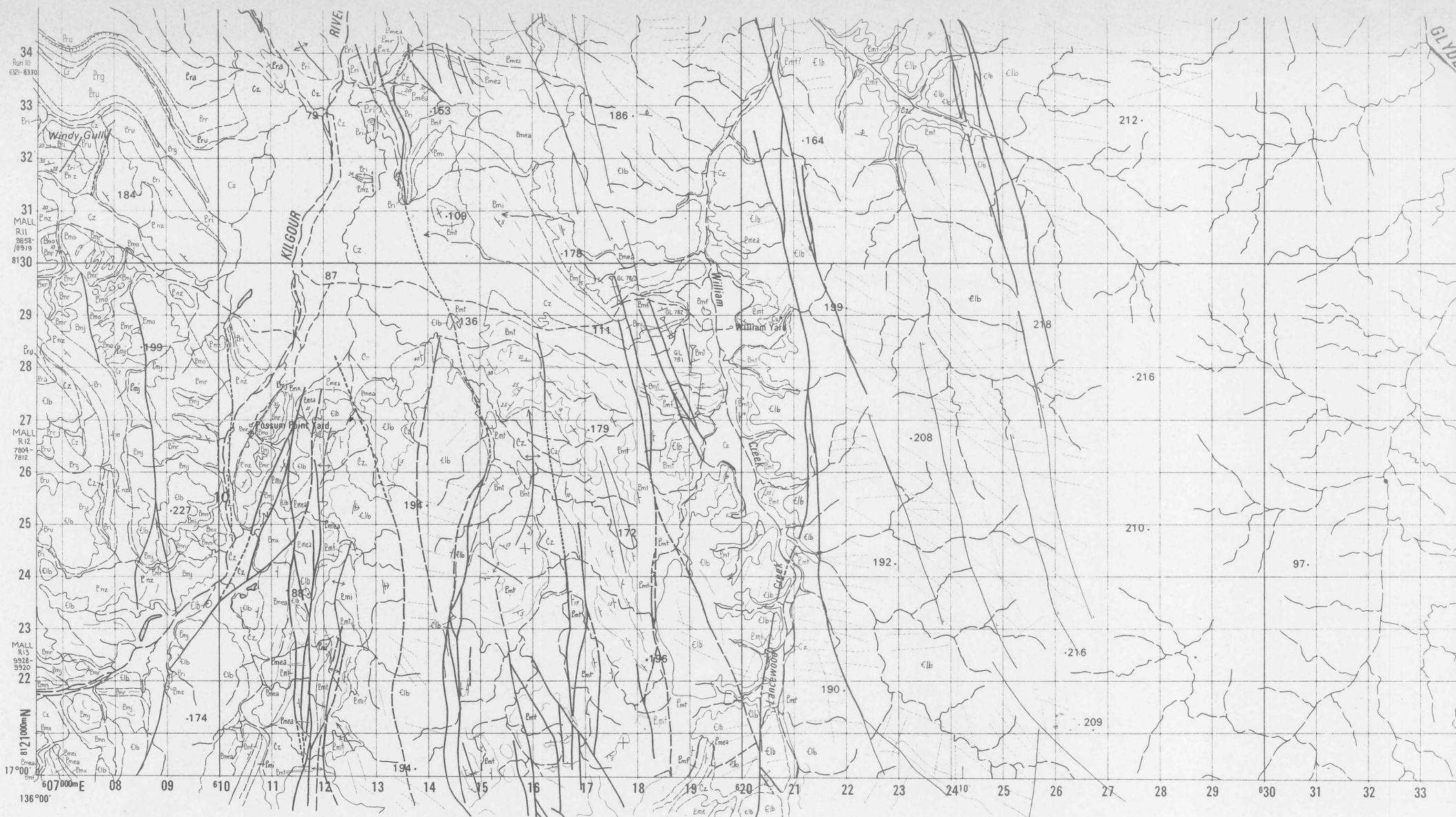
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LANCWOOD

1	

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