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C.R.A. EXPLORATION PTY. LIMITED

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THE McCLARM SYNDICATE'S E.L. 11/70, BEULAH
GEOLOGICAL - GEOCHEMICAL
RECONNAISSANCE

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Date: 20th December, 1973
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Copy to: McClarm Syndicate

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1. SUMMARY AND CONCLUSIONS

Exploration Licence 11/70 held by the McClarm Prospecting Syndicate embraces a Cambrian sequence which comprises rhyolitic pyroclastics and lavas, overlain by shales and sandstones which in turn underlie andesitic pyroclastics.

Known mineralisation is confined to a shear zone which defines the boundary between the intermediate extrusives and the sediments and takes the form of sulphide carrying barite veins following schistosity. Geochemical sampling returned only a few anomalous lead soil levels with only background values for copper and zinc.

As this mineralisation does not represent a primary stratiform deposit and bearing in mind the weak geochemical levels obtained, no further interest is warranted in this area.

2. INTRODUCTION

A geological - geochemical reconnaissance of the Beulah barite prospect was undertaken from August 18th to 25th at the invitation of the McClarm Prospecting Syndicate.

This work included geochemical drainage sampling and geological mapping of E.L. 11/70 while mapping at a scale of 1:1000 was carried out over the prospect area.

A total of 103 soil samples were collected along 4 lines covering the area of known Ba-Pb-Zn-Cu mineralisation, samples being spaced at 10 m intervals. This work was carried out by T. M. Porter and P. J. Ashton. The expenditure incurred during this investigation totalled \$1037.00

3. GEOLOGICAL SETTING

3.1 Regional

The Beulah Prospect occurs within a shear zone which defines the boundary between a sequence of andesitic intrusives to the north and underlying sandstones and shales to the south. These sediments in turn overlie a sequence of rhyolitic pyroclastics and lavas to the south. Ordovician and Permian sediments overlie the Cambrian in the northern part of the E.L.

3.2 Prospect Area

The main prospect area largely embraces schistose andesite and sheared sediments grading to the north and south into less metamorphosed equivalents. The schistose rocks within this shear zone are largely sheared sediments with schistose andesite being present mainly in the northern portions as well as discrete bands within the sheared sediments. Portions of the northern part of the shear zone are occupied by a ferruginous schist whose origin is difficult to determine.

The sheared sediments take the form of a white to brown muscovite schist with bands of a foliated medium grained quartz-feldspar-muscovite rock. The latter superficially resembles a sheared acid tuff but probably represents an original feldspathic sandstone of the type interbedded within shales to the south of the shear.

The overall dip of the unsheared sediments is to the north ranging from 60° to vertical.

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Post-shear faulting is evident within the prospect, probably being related to Tabberaban folding thus suggesting that the shearing took place during the Tyennan orogeny.

4. GEOCHEMISTRY

4.1 Drainage Sampling

This sampling failed to reveal any anomalous values, indicating only the background levels of the lithologies sampled. Both the andesite and underlying sediments returned consistent levels of from 15 to 20 ppm Pb, around 70 ppm Zn and 10 to 20 ppm Cu. Somewhat lower levels are indicated for the acid volcanics outcropping in the southern parts of the E.L.

4.2 Soil Sampling

Weathered bedrock soil sampling at a 10 m spacing of the areas exhibiting barite and base metal mineralisation yielded only a limited number of significantly anomalous levels. Values of from 100 to 400 ppm Pb were returned by a few samples in the immediate vicinity of mappable barite veins with one level of 1040 ppm Pb being recorded. These contrast to a background of from 20 to 70 ppm Pb. Zinc levels exhibited slight elevation in the same general vicinity although usually not being coincident with anomalous lead values. No elevated copper levels were obtained.

5. MINERALISATION

The known mineralisation of the Beulah Prospect is confined to sulphide-bearing barite veins following schistosity, mainly towards the margins of the shear-zone. These veins range in thickness from less than 1 cm to up to 1.3 m and

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carry varying amounts of galena, sphalerite, chalcopyrite and tetrahedrite. The group of veins adjacent to Sweet Water Creek (see Plan No. T.835) carry the highest concentration of sulphides observed, probably in some cases totalling up to 20% of the vein. Further north in the vicinity of the main shaft only traces of sulphides are encountered in the barite veins exposed.



T. M. Porter

TMP:ro's

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KEYWORDS

Copper, lead, zinc, barite, geochem-drainage, geochem-soil.

Locality: Burnie SK 55-3 1:250 000 map sheet

LIST OF PLANS

<u>Plan No.</u>	<u>Title</u>	<u>Scale</u>
T.835	Beulah Ba-Pb-Zn Prospect E.L. 11/70 North West Tasmania. Geological- Geochemical Plan.	1:1000

Attachment: Three Geochem. Soil Ledger Sheets.
One Geochem. Drainage Ledger Sheet.

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GEOCHEMICAL SOIL SAMPLING LEDGER

D.P.O. 16903.

AREA BELLAH.SAMPLE Nos. 245001 - 245103COLLECTED BY P. J. A.

MAP OR PHOTO REFERENCE

ANALYSED BY Zinc Corp. Broken Hill

Grid Co-ordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock		Metal content, p. p. m.										Geological observations						
		Rock %	Lignite %	Sand %	Silt %	Clay %		Depth C.M.	Colour (unsat.)	Chert No.	pH	Outcrop	Concealed	Est. Depth m	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag		Mo	As				
LINE 2.																													
120 S	245035	60	-	20	5	15	WB	80	gray	-	-	●	70	40	84	12	20	23									Bedrock brunschist,		
130 S	245036	65	-	15	5	15	"	70	gray	-	-	●	70	48	56	26	15	23									as above.		
140 S	245037	70	-	10	5	15	"	120	"	-	-	●	340	124	89	24	40										as above.		
160 S	245038	70	-	20	5	5	"	60	"	-	-	●	60	160	46	11	9	10									as above?		
170 S	245039	50	-	20	5	25	"	70	"	-	-	●	70	410	56	24	11	17									Brunschist, shale.		
180 S	245040	75	-	10	5	10	"	60	"	-	-	●	60	1040	68	48	11	5									Chertlike shale.		
190 S	245041	10	-	50	6	35	"	100	gray	-	-	●	100	290	132	20	12	7									as above.		
210 S	245042	30	-	40	5	25	"	70	gray	-	-	●	70	110	250	41	130	25									Mudstone.		
220 S	245043	-	-	30	10	60	"	110	"	-	-	●	110	24	64	20	79	13									Mudstone.		
230 S	245044	-	-	50	5	45	"	90	"	-	-	●	90	25	43	30	59	22									Mudstone.		
240 S	245045	30	-	30	5	35	"	60	red brown	-	-	●	60	32	63	80	210	68									Mudstone.		
250 S	245046	20	-	40	5	35	"	70	yellow brown	-	-	●	70	27	56	36	170	44									Micaceous sandstone.		
260 S	245047	60	-	10	10	20	"	70	gray	-	-	●	70	12	61	45	560	63									Mudstone.		
LINE 3																													
100 S	245048	5	-	55	10	30	B-WB	90	dark brown	-	-	●	90	66	51	20	27	29										Bedrock ferruginous material,	
90 S	245049	10	-	35	5	50	B-WB	80	"	-	-	●	80	46	43	17	23	26										as above.	
80 S	245050	-	-	25	5	70	B	120	"	-	-	●	120	27	31	61	15	13										as above.	
30 S	245051	5	-	20	5	70	B	120	"	-	-	●	120	49	48	44	26	25										as above.	
0 S	245052	-	-	10	10	80	B	125	"	-	-	●	125	48	59	50	31	32										as above.	
70 S	245053	10	-	50	5	35	WB	110	purple brown	-	-	●	110	18	27	6	11	14										Bedrock weathered andesite.	
80 S	245054	5	-	60	5	30	"	110	yellow brown	-	-	●	110	43	48	14	15	19										Bedrock possibly andesite.	
110 S	245055	5	-	30	5	60	B-WB	110	red brown	-	-	●	110	66	53	19	16	23										Bedrock ferruginous material.	
120 S	245056	5	-	45	5	45	B-WB	90	"	-	-	●	90	52	59	22	27	37										Bedrock ferruginous schist.	
130 S	245057	5	-	45	5	45	B-WB	100	"	-	-	●	100	27	51	14	15	13										Bedrock schistal andesite.	
140 S	245058	-	-	50	5	45	WB	105	brown	-	-	●	105	52	33	24	15	13										Possibly andesite bedrock.	
150 S	245059	-	-	40	5	55	"	90	yellow brown	-	-	●	90	27	23	16	10	9										As above. Ferruginous also.	
160 S	245060	-	-	40	5	55	"	100	yellow red	-	-	●	100	24	50	7	10	8										Bedrock possibly andesite.	
170 S	245061	-	-	45	5	50	"	120	yellow	-	-	●	120	18	19	7	5	7										-	
180 S	245062	-	-	50	5	45	"	100	light brown	-	-	●	100	59	34	13	5	17										Bedrock possibly andesite.	
190 S	245063	-	-	50	5	45	"	110	yellow brown	-	-	●	110	63	52	35	10	14										Bedrock - ferruginous material? brunschist?	
200 S	245064	10	-	35	5	50	B-WB	100	light brown	-	-	●	100	96	48	19	11	17										Bedrock brunschist?	
210 S	245065	60	-	20	5	15	WB	70	light gray	-	-	●	70	51	64	10	19	40											Bedrock schistal andesite.
220 S	245066	10	-	75	5	10	"	70	yellow	-	-	●	100	15	24	14	6	6											Bedrock brunschist?
230 S	245067	55	-	25	5	15	WB	90	yellow brown	-	-	●	90	36	53	13	12	22											Bedrock andesite?
240 S	245068	5	-	70	5	20	WB	90	"	-	-	●	90	34	63	14	10	9											Bedrock brunschist.

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GEOCHEMICAL SOIL SAMPLING LEDGER

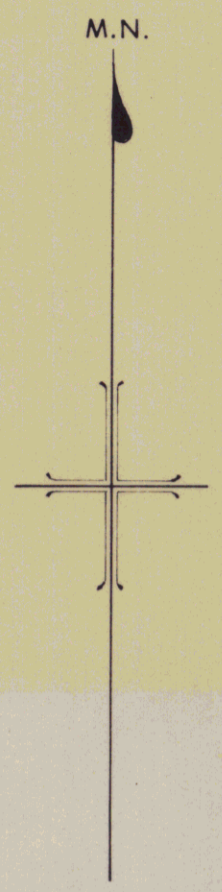
D.P.O. 16903.

AREA BUELAH.SAMPLE Nos. 245001 - 245103COLLECTED BY P. J. A.

MAP OR PHOTO REFERENCE

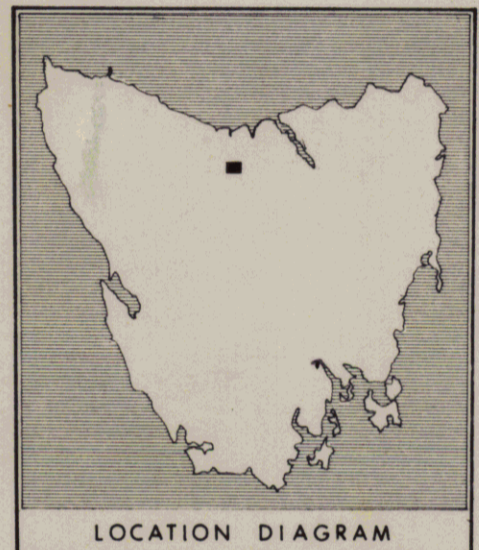
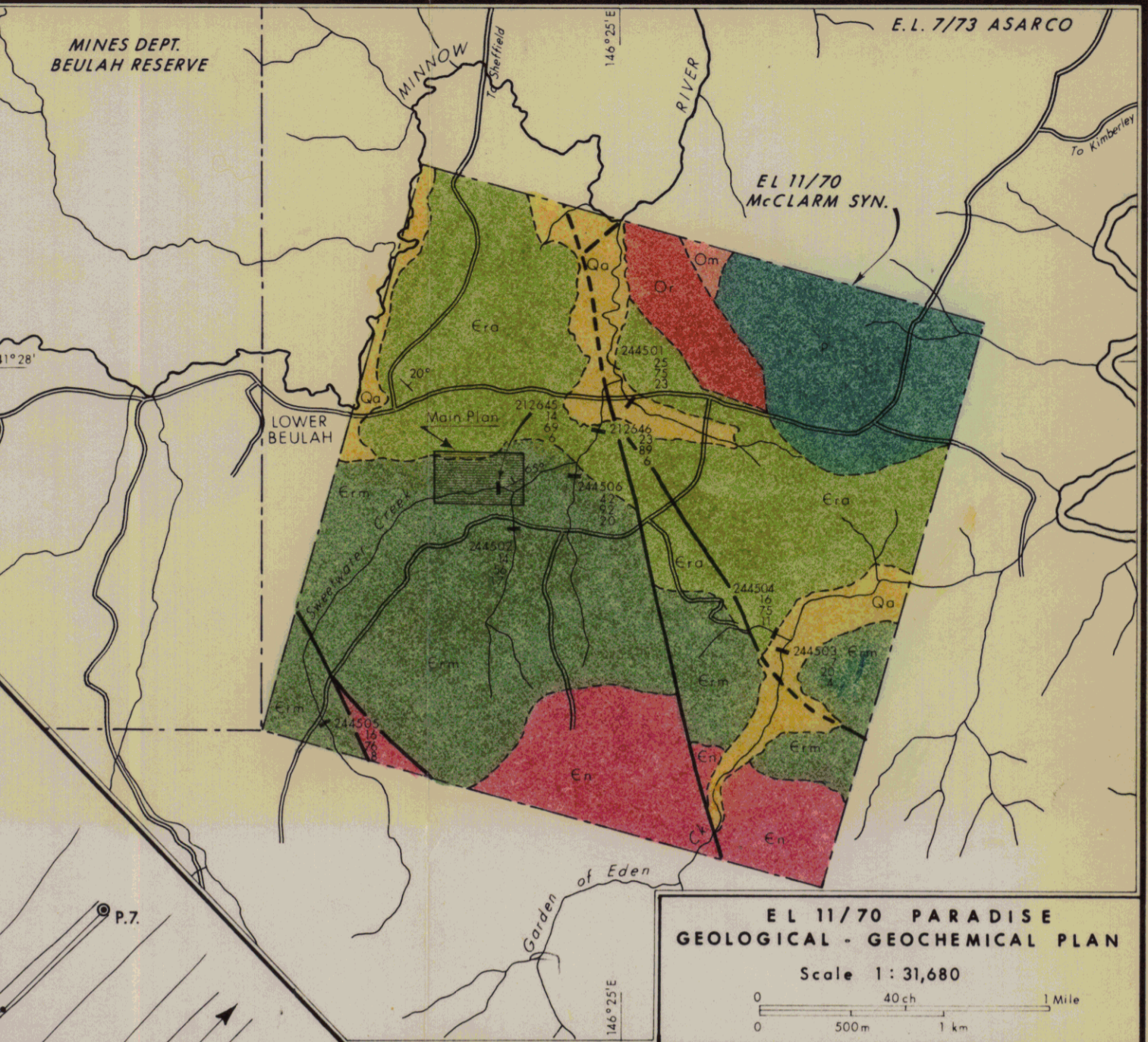
ANALYSED BY Zinc Corp. Broken Hill.

Grid Coordinate	Sample No.	Soil composition					Soil horizon	Sample			Bedrock		Metal content, p. p. m.										Geological observations	
		Rock %	Lignite %	Sand %	Silt %	Clay %		Depth (inches)	Colour (Munsell) Chart No.	pH	Outcrop	Concealed	Est. Depth ft	Pb	Zn	Cu	Ni	Co	Cr	Mn	Ag	Mo		As
LINE 3																								
250 S	245069	20	-	60	5	15	WB	80	yellow brown	-	-	✓	80	66	141	15	15	28					<1	Bedrock brown schist? Andesite talus
260 S	245070	50	-	25	5	20	B-WB	75	brown	-	-	✓	75	77	113	14	14	37					<1	Brown schist bedrock, St. Andesite?
270 S	245071	10	-	60	5	25	WB	115	purple brown yellow	-	-	✓	115	16	24	5	3	4					<1	Probably brown schist bedrock
280 S	245072	10	-	50	5	35	B-WB	90	brown grey brown	-	-	✓	90	51	97	11	9	11					<1	Bedrock brown schist
290 S	245073	25	-	50	5	30	B-WB	70	brown	-	-	✓	70	64	200	17	12	19					<1	Bedrock brown schist?
LINE 4																								
0	245074	10	-	40	5	45	WB	40	yellow brown	-	-	✓	40	27	35	4	4	4					1	Bedrock brown schist
10 N	245075	5	-	35	5	55	"	60	yellow orange	-	-	✓	60	68	195	12	14	19					1	as above?
20 N	245076	-	-	40	5	55	"	90	"	-	-	✓	90	61	54	11	6	8					<1	Bedrock indeterminate
30 N	245077	10	-	45	5	40	"	80	orange brown	-	-	✓	80	74	55	8	10	8					<1	Bedrock brown schist?
40 N	245078	-	-	30	5	65	"	80	yellow orange	-	-	✓	80	61	35	5	8	8					<1	Bedrock indeterminate
50 N	245079	-	-	25	5	70	"	70	"	-	-	✓	70	42	43	8	10	10					<1	Bedrock brown schist?
60 N	245080	5	-	25	5	65	"	65	"	-	-	✓	65	39	46	9	12	11					1	Bedrock ferruginous schist?
70 N	245081	-	-	25	5	70	"	110	"	-	-	✓	110	36	41	9	10	10					<1	Bedrock indeterminate
80 N	245082	-	-	25	5	70	"	85	orange brown	-	-	✓	85	30	38	8	11	10					4	Bedrock ferruginous material
90 N	245083	-	-	25	5	70	"	90	"	-	-	✓	90	25	36	9	11	7					<1	Bedrock indeterminate
100 N	245084	5	-	25	5	65	"	110	"	-	-	✓	110	21	24	6	8	8					<1	Bedrock ferruginous material
110 N	245085	5	-	30	5	60	"	110	red brown	-	-	✓	110	21	30	6	10	11					<1	Bedrock ferruginous material, andesite?
120 N	245086	5	-	25	5	65	"	110	"	-	-	✓	110	33	36	9	12	7					<1	Bedrock ferruginous schist
150 N	245087	-	-	35	5	60	"	110	yellow brown	-	-	✓	110	21	23	11	10	9					<1	Bedrock possibly still ferruginous zone
180 N	245088	10	-	40	5	45	B	110	brown	-	-	✓	110	24	22	5	9	9					<1	Bedrock ferruginous, schist andesite?
210 N	245089	10	-	45	5	40	B	80	"	-	-	✓	80	21	42	33	15	16					<1	Bedrock as above
240 N	245090	55	-	30	5	10	WB	90	light grey yellow brown	-	-	✓	90	13	31	11	11	11					<1	Bedrock unshist andesite
10 S	245091	20	-	50	5	25	"	50	yellow brown	-	-	✓	50	27	38	9	11	5					<1	Bedrock brown schist, gyp
20 S	245092	20	-	40	5	35	B	65	light brown yellow brown	-	-	✓	80	48	72	4	8	6					<1	Bedrock brown schist
30 S	245093	15	-	50	5	30	B-WB	50	brown	-	-	✓	50	130	136	9	11	10					<1	as above
40 S	245094	45	-	35	5	15	"	70	brown	-	-	✓	80	54	111	6	11	6					<1	as above
50 S	245095	30	-	40	5	25	"	70	"	-	-	✓	80	68	98	7	12	14					<1	as above
60 S	245096	30	-	30	5	35	WB	120	yellow	-	-	✓	120	49	52	13	4	2					<1	as above
70 S	245097	15	-	30	5	30	B-WB	100	yellow brown grey brown	-	-	✓	100	340	50	11	20	8					<1	as above
80 S	245098	60	-	20	5	15	WB	60	yellow brown	-	-	✓	60	270	46	17	14	5					<1	Bedrock stained sandstone
90 S	245099	50	-	30	5	15	"	70	yellow brown	-	-	✓	70	140	77	46	34	8					<1	Bedrock slightly schistified mudstone
100 S	245100	40	-	30	5	25	B-WB	50	"	-	-	✓	60	92	48	31	55	25					<1	Bedrock probably mudstone near contact
Line 2 - 140 S	245101	70	-	15	5	10	WB	120	"	-	-	✓		78	75	29	12	16					<1	Bedrock brown schist
Line 1 - 180 S	245102	70	-	10	5	15	"	120	"	-	-	✓		7	62	7	23	8					<1	as above
- 230 S	245103	75	-	10	5	10	"	180	"	-	-	✓		48	119	23	19	35					<1	as above



LEGEND

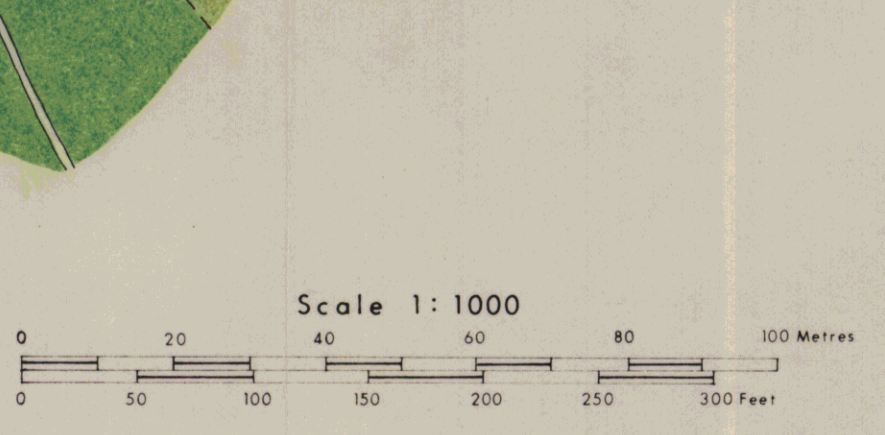
Quaternary	Qa	Alluvium
Tertiary	Ta	Basalt
Permian	Pm	Undiff. sediments
	Pm	Mono sandstone
Ordovician	Or	Rollad conglomerate
	Or	Basalt andesite
Cambrian	Ca	Mudstone with lesser feldspathic sandstone
	Ca	Acid volcanics - ruffs, agglomerates and shale



LEGEND

Ea	Andesite
E1s	Sheared andesite
E1	Ferruginous schist
E2	Muscovite schist - sheared shale and lesser sheared feldspathic sandstone
E3	Sheared quartz - feldspar sandstone
E4	Green shale and feldspathic sandstone

--- Geological boundary - interpreted
 - - - Geological boundary - inferred
 = Fault
 --- Margin of shear zone
 60° Dip and strike of bedding
 80° Dip and strike of schistosity
 80° Dip and strike of veins - follows schistosity
 0.20m Barite vein and thickness (in metres)
 Sph. Sulphides in barite veins
 gn galena
 sp sphalerite
 cp chalcopyrite
 tt tetrahedrite
 245007 Geochemical soil sample location and number
 280 Pb - ppm
 31 Zn - ppm
 26 Cu - ppm
 * Traverse point
 + Traverse
 P4 Marked survey station
 P Pit or trench
 S Shaft
 A Adit
 200 Topographic contours with value in metres
 --- Track



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BEULAH Ba-Pb-Zn PROSPECT
E.L. 11/70 - N.W. TASMANIA
 GEOLOGICAL - GEOCHEMICAL PLAN
 PORTION OF 1:250,000 SHEET 'BURNIE SK55-3' 011
 74-991

Date: FEB. 1974 Scale: 1:1000
 Geologist: T.M. Porter REPORT No 7468 PLAN No. T 835