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ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED  
West Coast Mines

Report on the Exploration Work Completed  
During 1971/1972 at Melba Flats

by C.C.J. Burton

March 1973

Report No. 109

73-940

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Summary

Report No. 106 entitled "Exploration Work Completed during 1970-1971 and Issued in October 1971", summarized work carried out over a number of years as well as providing details of exploration activity during that year. Recommendations for work to be undertaken during the 1971-1972 season were outlined and it was suggested that 2 years of fieldwork should suffice to determine if a potential for economic mineralisation exists within the licence area. Pressure of work in the Mt. Black licence and associated with the mine operation has delayed project completion and a further year will be required for a complete and thorough evaluation of the northern part of the area.

In report No. 106 the first recommendation proposed systematic diamond drilling of a geochemical and geophysical anomaly north east of Genets' Winze. This project was completed to a stage where the results were so discouraging that the drilling of second order anomalies was regarded as unjustified. Hence recommendations 2, 3, 4 and 5 were not undertaken. The Deveraux grid was mapped, surveyed with a magnetometer and soil samples taken and analyzed for copper, nickel, lead and zinc. No significant anomalies were recorded. Recommendation 7 proposed that selected parts of the northern half of the licence be mapped in detail. This is in progress.

Diamond Drilling

Five diamond drillholes with a total footage of 819 ft. were drilled northeast of Genets' Winze. The objective of the drilling was to test a first order copper, zinc and nickel geochemical anomaly which was in part coincident with a Turam geophysical anomaly. These anomalies suggested that the known erratic nickel-copper lodes at Genets' Winze might extend further north east.

The first drillhole M.F.P. 173 cut 9 ft. of 0.76% Cu and 0.94% Ni in a heavily leached and oxidized dolerite sill approximately 50 ft. below the surface. This intersection provided a heartening start to the program which was rapidly dampened by the failure of the succeeding drillholes to encounter any significant sulphides. These drillholes M.F.P. 174 and 175 all intersected the dolerite sill which was known to host the sulphide mineralization but only traces of pyrite were recorded. M.F.P. 176 was collared 100 ft. north east and penetrated a similar rock sequence but again without sulphide mineralization. M.F.P. 177 was located 600 ft. further north east away from the geophysical anomaly but close to an outcrop of weathered dolerite and designed to test a very marked copper-nickel geochemical anomaly. This drillhole intersected dolerite but again with no significant sulphides.

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The diamond drilling used the wireline method and B<sub>1</sub> core size which provided surprisingly good core recovery in the heavily leached oxidized zone which extends to 75 ft. below surface in places.

Since the diamond drilling tested the only first order anomalous zone resulting from the exploration work completed in 1969-1971 it is considered that there is no justification to drill second order anomalies. Exploration work to date indicated that the Ganets' Winze area had the greatest potential for 50,000 or more tons of copper-nickel ore. The other areas are considered to have limited lateral extent and unlikely to provide a useful increase in the ore reserves for the area.

Geochemical Results

An isolated occurrence of copper-nickel mineralization is located a mile west of Nickel Reward and is called the Deveraux Prospect. In order to test the extent of the Deveraux lode and explore the tract of ground between Nickel Reward and Deveraux and also to the west of Deveraux a grid was cut and pegged. The lines were at 200 ft. spacings and soil samples were taken at 50 ft. intervals along the lines. Following past practice at Melba the 'C' horizon was sampled for Cu, Ni, Zn and Pb. No significant anomalous values were recorded.

Concurrently with the mapping and soil sampling a reconnaissance magnetometer survey was run with the objective of detecting dolerite sills which in the Cuni field are host rocks to the sulphides. This work proved negative with uniformly low values recorded in a very quiet magnetic field.

The area is underlain by sandstones and siltstones of the Cambrian Crimson Creek formation. These rocks are truncated with a marked unconformity against the Crotty quartzite which forms a low range of hills to the south. No dolerites were observed except as dump material at Deveraux and one narrow sill at Nickel Reward.

Northern Area

It is considered that for the following reasons the northern part of the licence should be re-examined.

1. According to the available records the magnetometer survey carried out by a consultant J. Webb in 1967 did not cover the northern 2 sq. miles of the licence which is close to Renison Mines.

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- 2. The geochemical soil sampling undertaken in 1967-68 lacked adequate follow up although several marked lead zinc anomalies were recorded.
- 3. No detailed geological map of the northern part of the Melba licence has been produced.
- 4. Since this area is adjacent to Renison it is felt that the structure and stratigraphy should be thoroughly examined with a view to possible repetitions of cassiterite pyrrhotite bodies.

Discussion of Results

The results of the diamond drilling at Genets' Winze was most disappointing and call for some attempt at an explanation to account for the absence of sulphide mineralization underlying a first order geochemical anomaly.

The topography of this part of the Melba licence is flat with meandering streams interlacing swampy ground. The water table is at all times within a few feet of the surface and in periods of heavy rainfall much of the area is virtually swamp. The copper, nickel and zinc anomalies are adjacent to the course of Cornucopia creek which in turn is influenced by the structure. The creek flows south west parallel to the strike of the dolerite sills then downstream swings south again parallel to the bend of the formations. This creek drains part of the ultrabasic body of Serpentine Hill so some concentrations of nickel downstream is to be expected. Zinc is a mobile element and could be concentrated in the drainage as a dispersion from the Pb-Zn lodes at Lead Blocks and Argent Tunnel. The presence of copper is less readily explainable and it is assumed that some weak copper mineralization is associated with the dolerite sills upstream from Genets' Winze.

The Turam anomaly at Genets Winze is most likely an expression of both conductive sulphides and the puggy water bearing lode channel and the method may be unable to discriminate between these two sources.

Conclusions

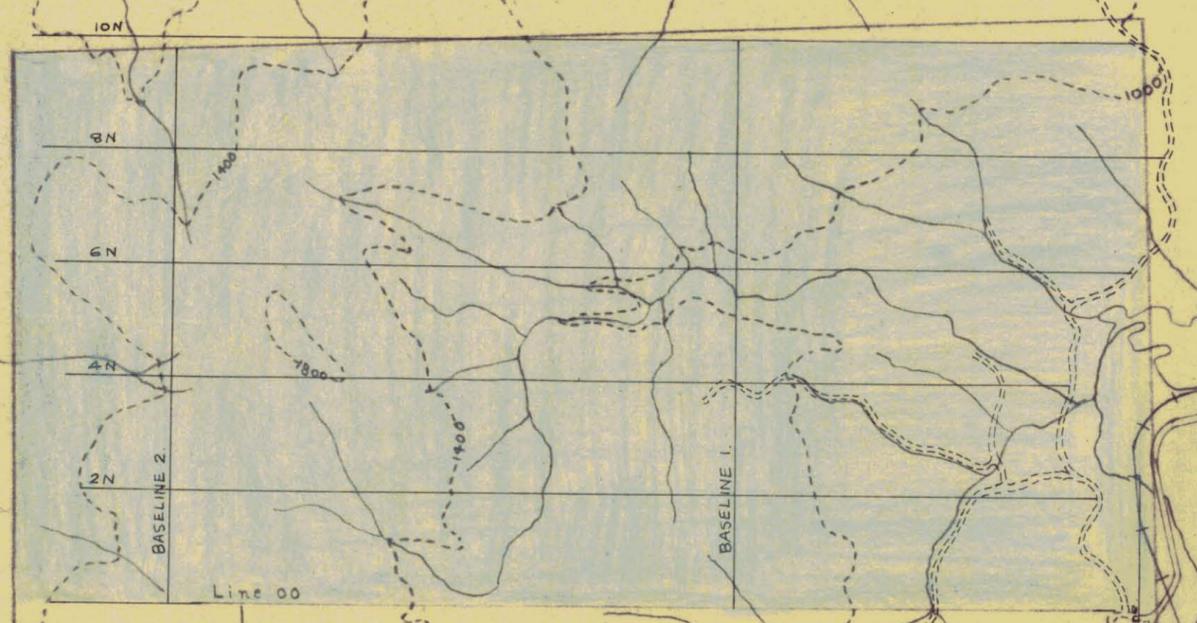
In the report for 1970-71 it was suggested that an exploration program spread over 2 years should provide sufficient information to enable a sound decision to be made on whether to relinquish the Melba licence area or take out mining leases over selected prospects. The results of the field work completed in 1970-71 and 1971-72 have suggested that the potential for an orebody of about 100,000 tons in the southern 5 sq. miles of the 10 sq. mile licence area is remote. It is doubtful if the combined tonnage remaining for all the lodes exceeds 30,000 tons with a grade of approximately 2% Cu and 3% Ni.

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The only lode which may yield some revenue is at Nickel Reward where reserves of 1200 tons of 2% Cu and 5.0% Ni have been estimated. In this case the ore may be mined by opencut methods whereas elsewhere an underground operation is required. If it is considered that a tonnage of this grade can be mined, treated and marketed profitably then the taking out of a mining lease would be recommended. Otherwise there is no object in undertaking further geological work in the southern 5 sq. miles of the Melba licence and it is recommended that the ground be relinquished. The northern 5 sq. miles should be retained until a thorough geological appraisal has been completed.

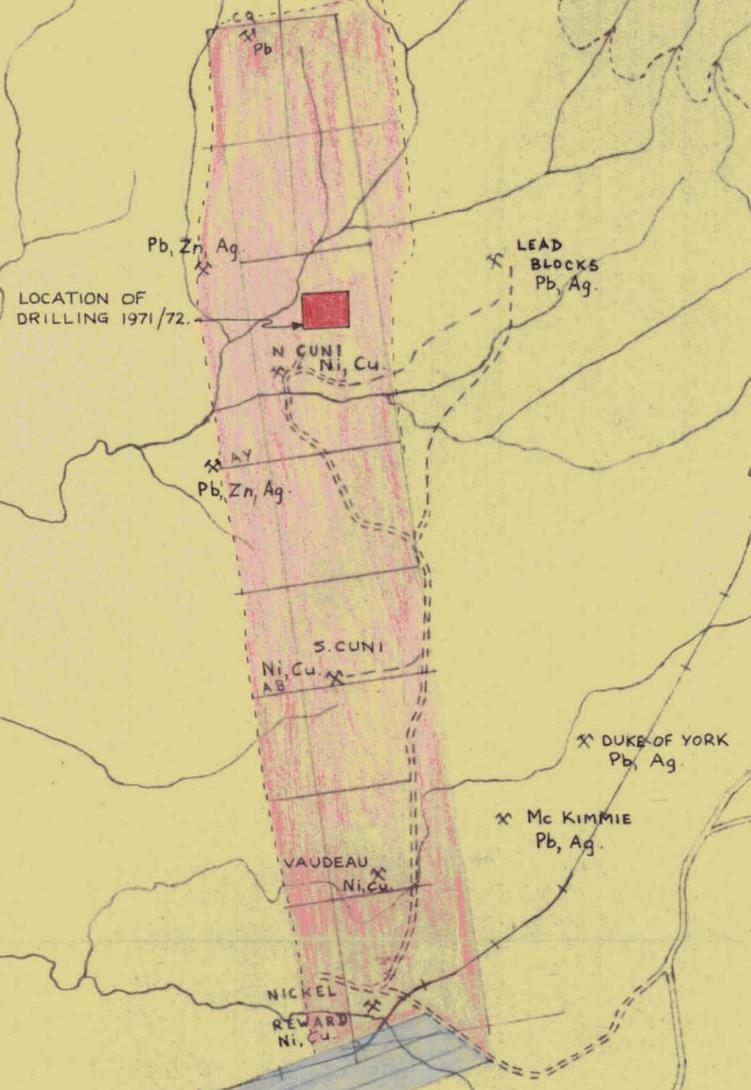
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LINE 105

Pb Geochemical Anomaly

Pb Geochemical Anomaly

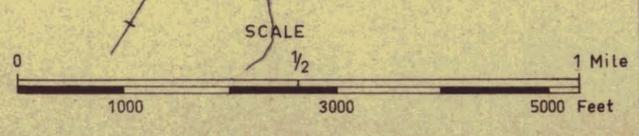
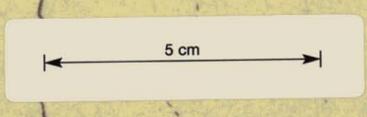


- Proposed Exploration Activity 1972-73
- Exploration Activity 1971-72.
- Exploration Activity 1970-71.

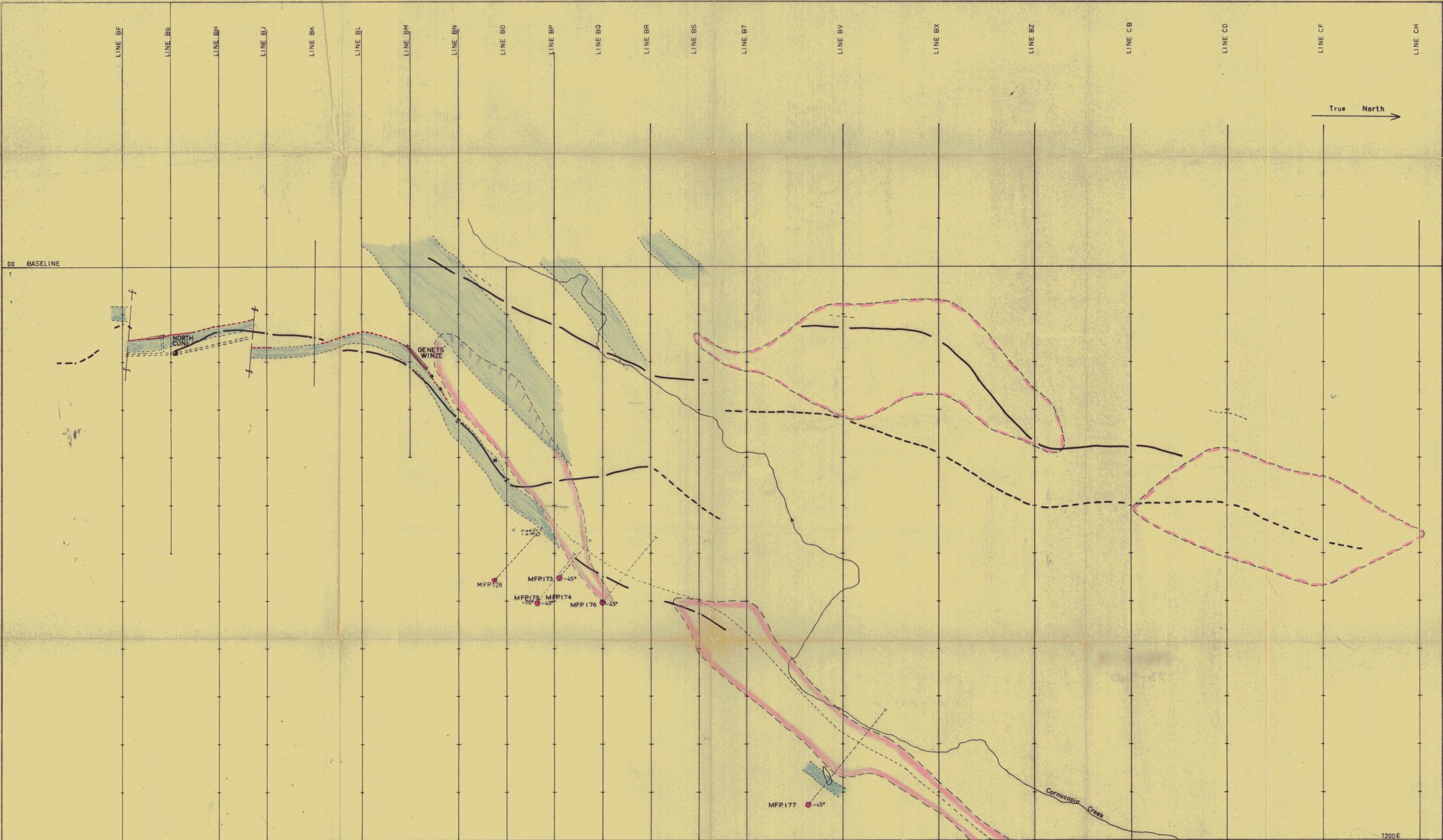
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**PROJECT: NORTH CUNI. MELBA FLAT.**

**EL 2/62 SHOWING LOCATION OF PROPOSED EXPLORATION ACTIVITY FOR 1972/73. 2096**



SCALE 1 : 15,840. Date 10/72 Traced CC.J.B



True North →

00 BASELINE

- KEY**
- Probable Conductors (Turam)
  - - - Possible Conductors (Turam)
  - Copper geochemical anomaly.
  - - - Copper low order geochemical anomaly.
  - Dolerite intrusive.
  - - - Projected surface location of lodes.
  - Diamond drillhole.
  - ⊥ Fault.

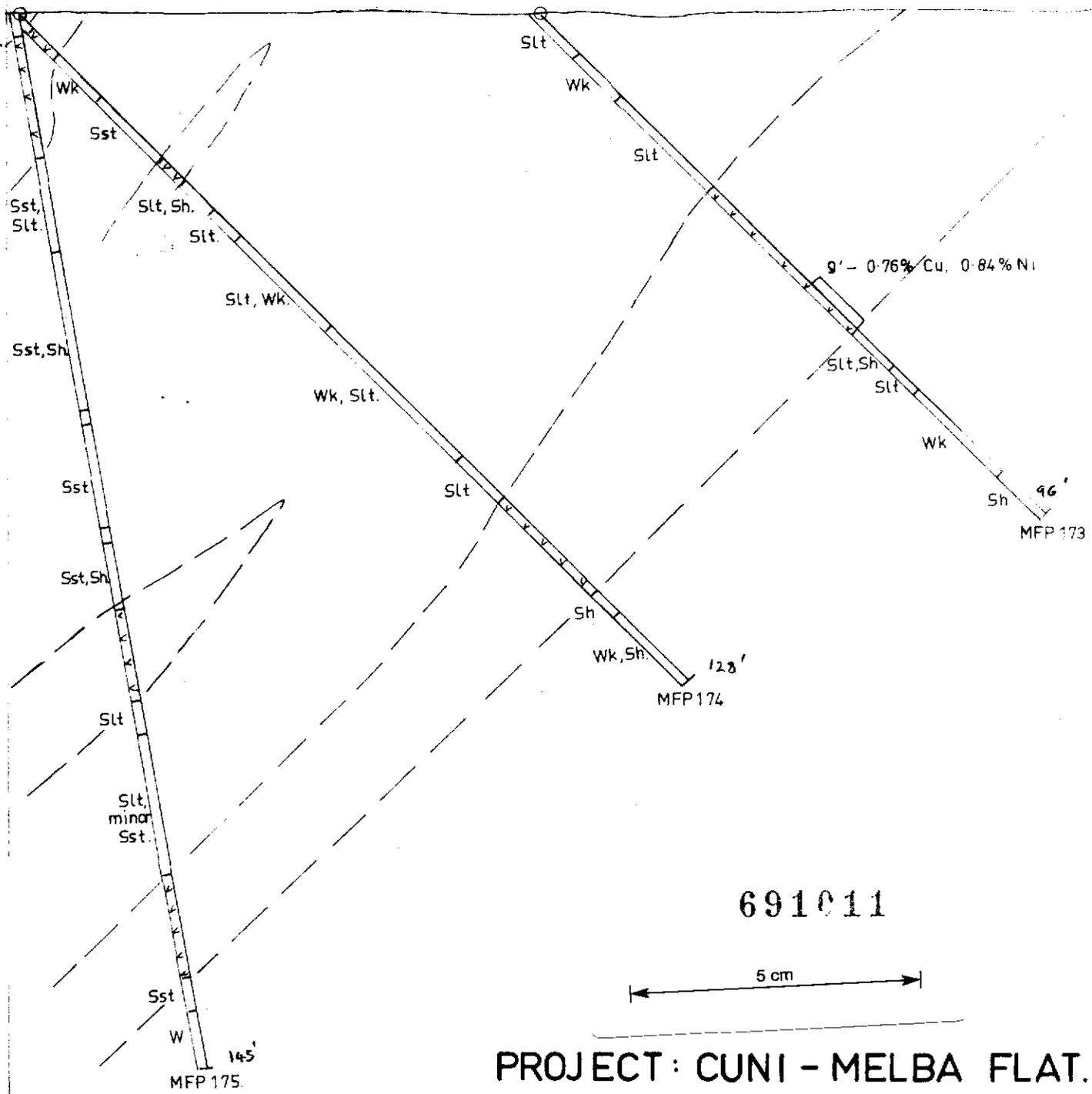
5 cm

PROJECT: CUNI FIELD - MELBA FLAT, TASMANIA  
 NORTH CUNI AND GENETS WINZE AREA.  
 PLAN SHOWING DIAMOND DRILLING  
 COMPLETED IN 1971-72. 2097  
 SCALE 1"=100' Melba Grid Date Traced W.V.T.





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9' - 0.76% Cu, 0.84% Ni

96'  
MFP 173

128'  
MFP 174

145'  
MFP 175

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5 cm

PROJECT: CUNI - MELBA FLAT.  
 SECTION SHOWING  
 DRILLHOLES MFP 173, 174, 175.

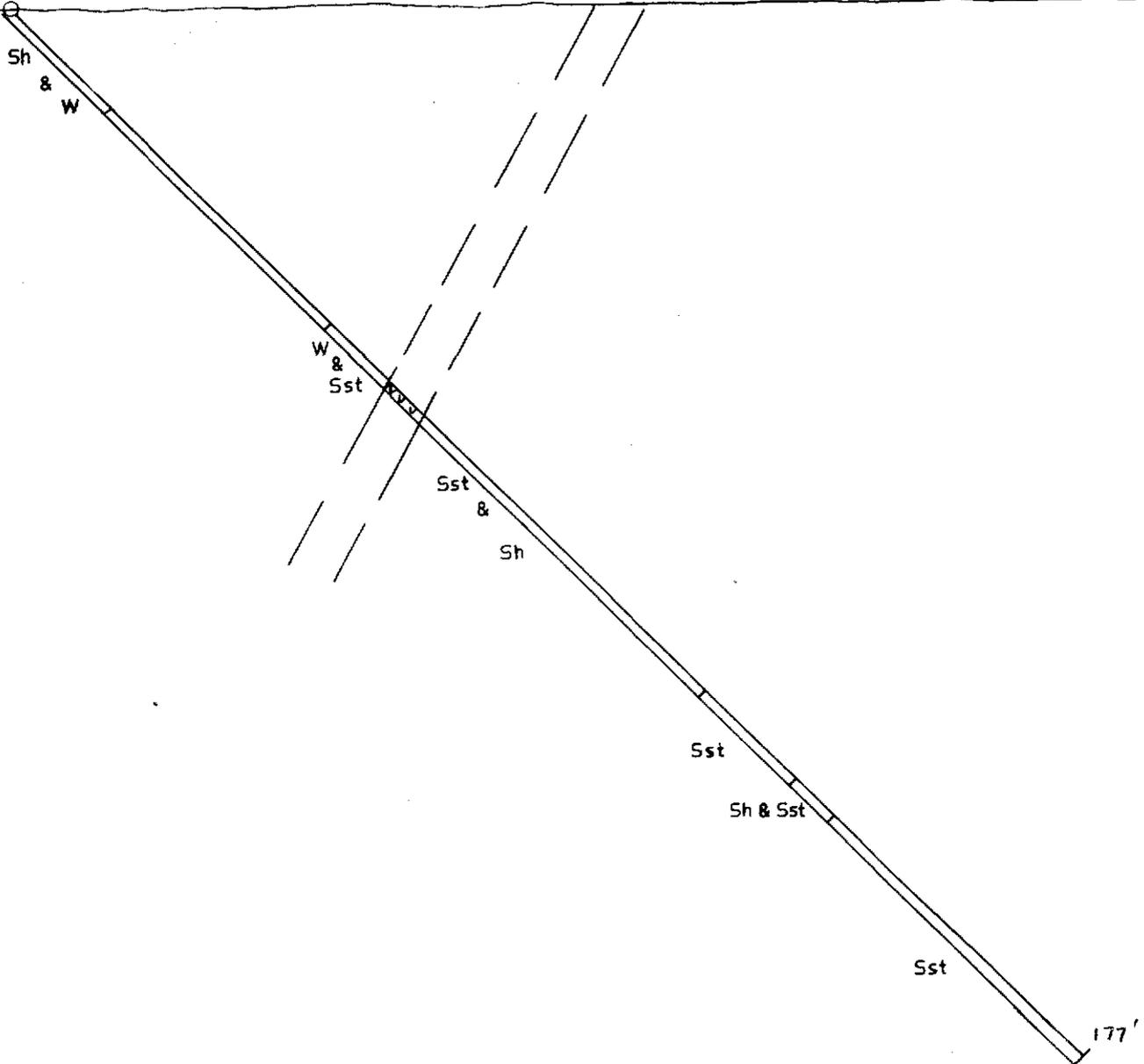
Date 10/72.

Scale 1"=20' Traced W.V.T.

- Sh. SHALE.
- Sst. SANDSTONE.
- Slit. SILTSTONE.
- W. WACKE.
- Py. PYRITE.
- Dolerite. DOLERITE.

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Tr. of Min.



PROJECT: CUNI-MELBA FLAT  
 SECTION SHOWING  
 DRILLHOLE MFP 176.

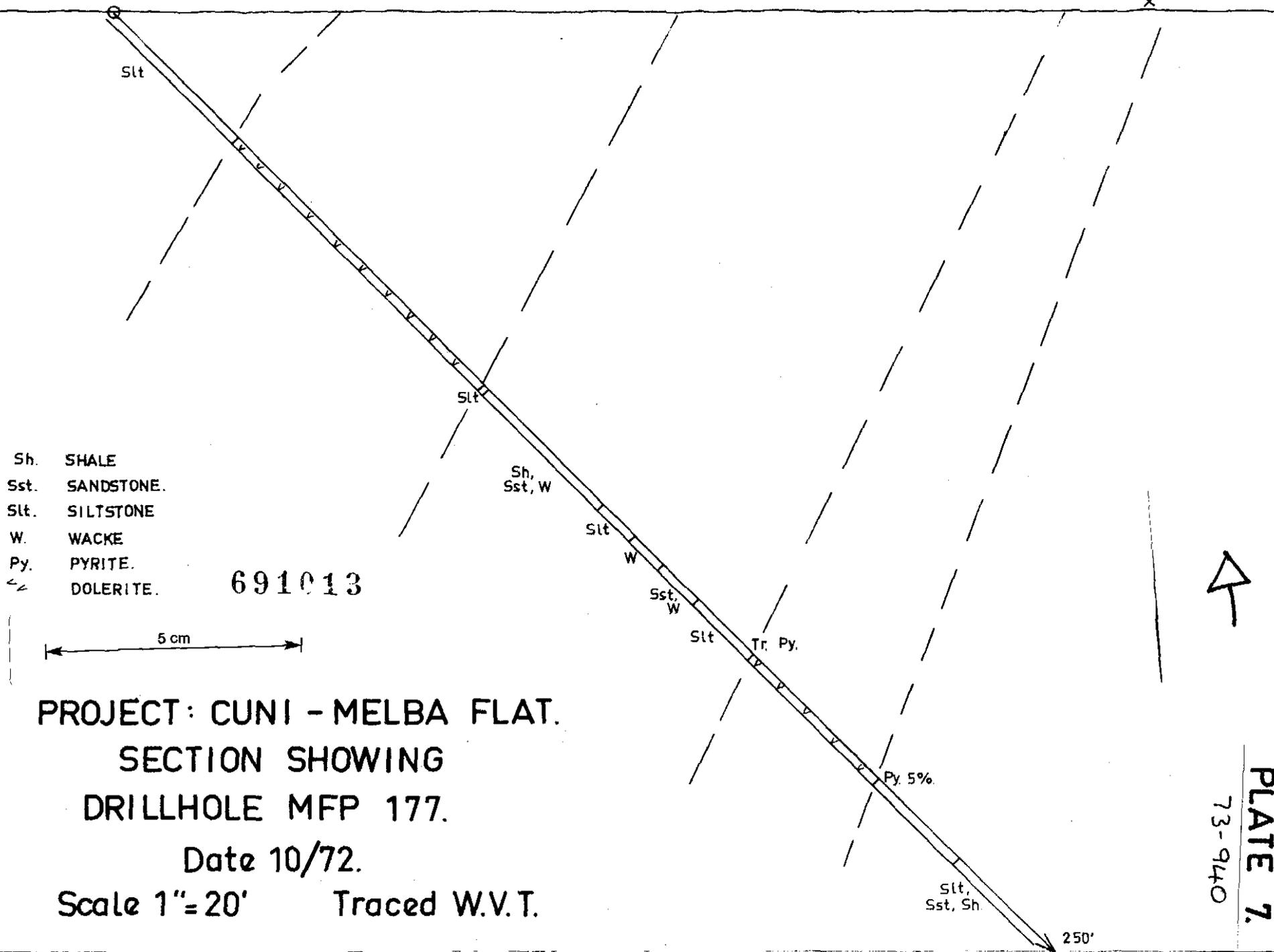
Date 10/72.

Scale 1"=20' Traced W.V.T.

5 cm

- Sh. SHALE.
- Sst. SANDSTONE.
- Slt. SILTSTONE.
- W. WACKE.
- Py. PYRITE.
- ∠ DOLERITE.

691012



- Sh. SHALE
- Sst. SANDSTONE.
- Slit. SILTSTONE
- W. WACKE
- Py. PYRITE.
- << DOLERITE.

691013

5 cm

PROJECT: CUNI - MELBA FLAT.  
 SECTION SHOWING  
 DRILLHOLE MFP 177.

Date 10/72.

Scale 1"=20'      Traced W.V.T.



PLATE 7.  
 73-940

250'