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FINAL REPORT FOR MINERAL CLAIM MCS 215
NOV 1997.

The claim area comprises 4 hectares on the northern side of the Harts Range on the Mt Riddock 1:100 000 scale map sheet in the Northern Territory. Access to the area is from the Plenty Highway by way of Kong Bore and thence southwards and eastwards following a dry creek bed. The claim is situated on Mt Riddock Pastoral Lease.

GEOLOGY

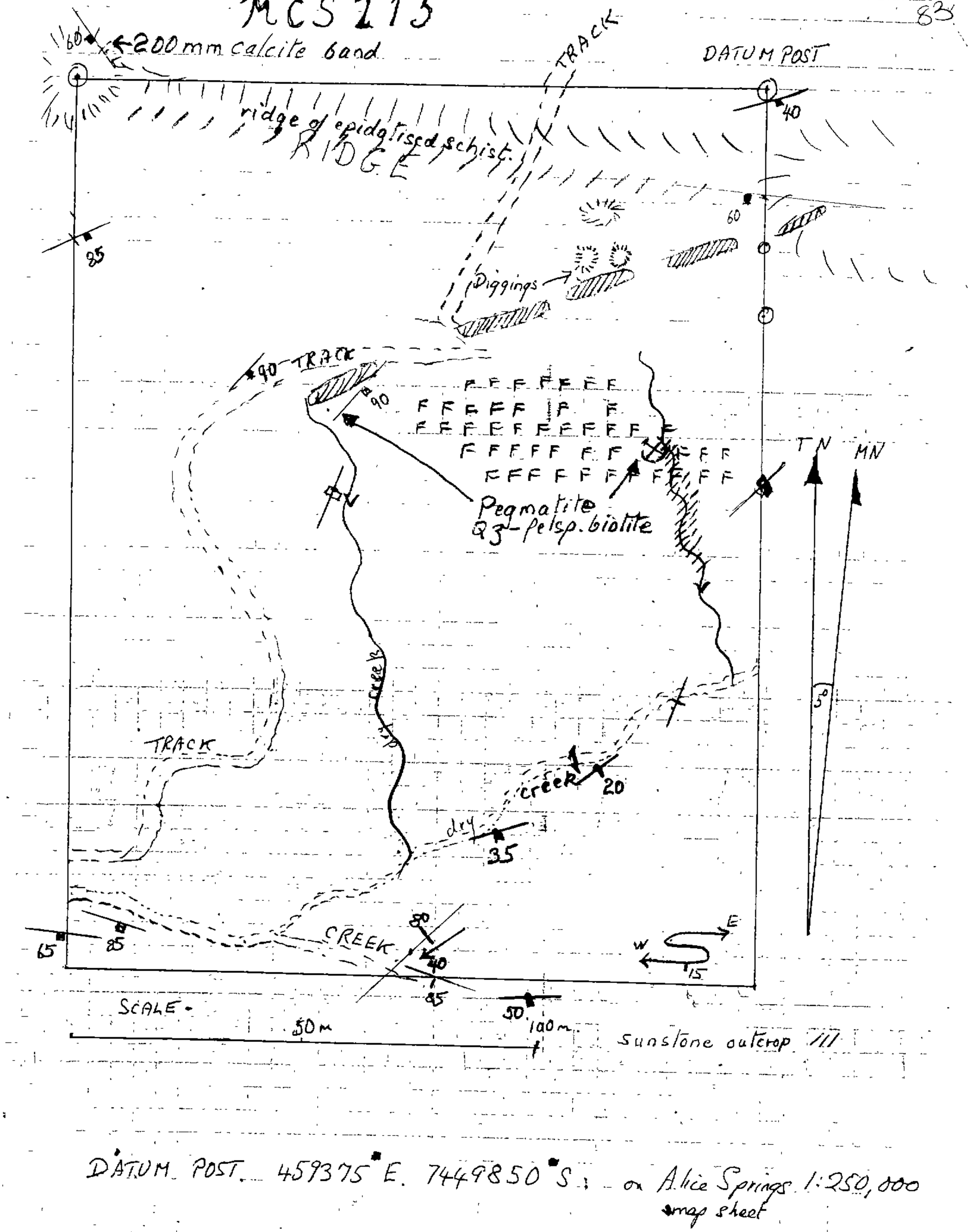
The underlying bedrock of the claim is the Proterozoic metamorphics of the Mount Riddock Amphibolites and is situated near the centre of the Arunta Complex. suite of regionally metamorphosed rocks . The Mount Riddock amphibolites contain thick layers of quartz -biotite- felspar schists separated by schists rich in black hornblendic or actinolitic amphiboles. Characteristic thin layers of recrystrallised limestone (calcite) help to give a true indication of the bedding orientation and commonly associated with the calcite layers are epidote rich zones.. One of the calcite bands, about 200 mm thick, can be found close to the north-east corner peg and dips south-west 60 degrees. Adjacent to it is a epidote rich zone which forms a ridge core extending from the north-east corner post to the highest part of the claim a point about 30 metres due west of the datum post .

The schists grade into gneiss where the contained felspar crystals have grown to porphyritic size (30 - 60 mm)

It is some of these felspar crystals which have crystallised with included very thin hemitite flakes on their internal cleavage planes, that form the sunstone . The Sunstone felspar tends to occur in zones in general parallel to the original bedding and perhaps coincides with an original composition zone which contained a suitable iron content.. An appropriate temperature and pressure enviroment to facilitate the inclusion of the hematite during crystallisation must have existed. Nodules of hematite within the rock, demonstrate that the original rock composition contained surplus iron to the requirements of the minerals in the crystallising gneiss

The sizeable body of quartz -felspar- pegmatite in the centre of the claim area interfingers with the gneiss and it has an apparent similar composition to pegmatitic stringers included in the folded gneiss. A pit in the pegmatite was dug by a early prospector to test for mica. It is thought that the whole area has been deeply buried at a temperature where partial melting was just commencing and the whole area has been affected by at least two phases of intense deformation. Without detailed microscopic study to confirm the field observations this must remain conjectural. Pyroxene and garnet were identified in the only thin section studied and from that scant evidence it is concluded that the local metamorphic grade was high, perhaps in the 600 - 700° C temperature field.

MCS 215



DATUM POST 459375°E. 7449850°S; on Alice Springs 1:250,000 map sheet

STRUCTURE.

The foliation dips are shown on the attached map and in general dip southerly or south westerly with local variations. Insufficient measurements were made to determine the local and regional structure. The attached photo taken in the creek bed along the south of the claim shows that the main foliation has been impressed on an earlier structure with very tight folding.

FIELD WORK

During the tenure of the claim it was planned to clear much of the scattered overburden using the bulldozer from Mt Riddock Station, which was working in the area at the time. Unfortunately this arrangement broke down and this clearing work did not proceed. Hand excavation was attempted around some of the pre-existing excavations but this work was not extensive enough to give a clear picture of the distribution of the sunstone and its quality.

The dips and strikes of the foliation and bedding, where exposed, have been measured and are shown on the attached sketch map. There area was visited at least .

OFFICE WORK

Material collected was tumble polished to determine its quality and samples were sent to some mineral wholesalers . The freight on shipping overseas rendered Australian material uncompetitive and Sunstone does not have a fashionable image in Australia.

EXPENDITURE

During 1997 three days work was done on the claim
Estimated cost $ 750
office work.....$ 400
Miscellaneous expenses ,fees etc.....$ 300
$1450

TRANSFER

The transfer of the claim was approved by the Department of Mines and Energy in November 1997.

PHOTO. Tight folding in Mount Riddock Amphibolites showing mineral partition. .The dark "S" shaped mineral aggregates were found to be garnet-pyroxene in feldspar.

KONG
PADDOCK
Dam
Kong Bore
U672
53
52
640
50
680
59
60
62
49
48
720
47
approximate
740
760
46
position
Old Station Well
(abandoned)