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TENTH LEGION PROSPECT (IMI JOINT VENTURE)

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1. SUMMARY

Nine diamond drill holes were developed to test combined geological and geochemical targets on the Tenth Legion Tin prospect.

Two holes, TLC1, TLC9, intersected significant tin mineralisation in a magnetite-serpentinite skarn body within the metamorphic aureole of the Heemskirk granite.

Hole 81 TLC1 intersected 7.3 metres of 1.27 per cent Tin

Hole 81 TLC9 intersected an aggregate of 18.8 metres of 0.3 per cent tin, spread over a stratigraphic thickness of 30 metres.

Two holes were 60 metres apart (TLC9 60 metres east of TLC1). A further 150 metres strike length of potentially mineralised magnetite remains to be tested to the west of TLC1.

Low grade zinc mineralisation was also intersected below the tin mineralisation in holes TLC1 and TLC9.

Two other holes, TLC3 and TLC8, intersected similar low grade zinc mineralisation (up to 30 metres of 2 per cent Zinc), in another magnetite skarn unit. No tin mineralisation was associated with this magnetite body.

Additional diamond drilling is recommended to fully evaluate the zone of tin mineralisation already discovered.

2. INTRODUCTION

The Tenth Legion property comprises five mineral leases totalling 145 ha, held by Industrial and Mining Investigations Pty.Ltd. The leases are located some five kilometers west of Zeehan (see location map, Plan No. TASh 1).
The leases are surrounded by S.P.L. 129 which is held jointly by the Mt.Lyell Mining and Railway Co. and Renison Ltd.

The prospect comprises a number of outcropping magnetite bodies hosted by carbonate-calc silicate units, within an argillite-quartzite unit of probable Upper Proterozoic-lower Cambrian age. The Devonian Heemskirk Granite outcrops on the Western margin of the leases.

Apart from lead-zinc prospecting duringthe last century, the Tenth Legion prospect has only been tested as a potential iron ore resource. Early work included a series of adits into the larger magnetite bodies, but most of the adits are now inaccessible.

In 1958 the Tasmanian Mines Department put two shallow drill holes each approximately 100 metres in length, through the largest magnetite body, in Mineral Lease 53M/75. Industrial and Mining Investigations Pty.Ltd. have drilled thirteen vertical diamond drill holes each of 10-20 metres length to test nine of the larger magnetite bodies.

The holes were later assayed for tin, and returned sporadic values from 100 parts per million to 0.28 per cent Tin in magnetite and associated calc-silicates. The majority of the tin values came from the large magnetite body lease 53M/75.

In 1979, Industrial and Mining Investigations Pty.Ltd. approached CRAE with a proposal for a joint venture on their iron ore prospects in Western Tasmania. After inspection of these prospects, T.M.Porter concluded that Tenth Legion had exploration potential for tin mineralisation, and recommended that it be comprehensively tested.

Accordingly, an agreement was negotiated which required CRAE to spend a total of $100,000 by April 21st, 1981, prior to the establishment of a joint venture. That target has been reached, and CRAE is now the Manager of the joint venture, with the option of spending $2,100,000 to obtain a 66 2/3 per cent interest in the leases.

3.CONCLUSIONS

1. The zone of tin mineralisation intersected in holes TLC1 and 9 is significant, and should be tested by further drilling.

2. Further drilling could delineate a tin resource of 1 to 2 million tonnes with a grade of 0.7 to 1.0 per cent Tin. However, the tin occurs as a non-cassiterite, non-sulphide mineral phase and this could affect the economic significance of the deposit.

3. The deposit lies close to, and dips towards, the northern boundary of leases. This restricts the depth extent available to the Joint Venture and has created some problems with drill site access.

4. The recently completed pulse EM survey over lease 53M/75 disclosed a zone of weak to moderate conductors, coincident with a ground magnetic anomaly in the southern portion of the lease. This zone has some potential as a small skarn-type base metal accumulation.

4. RECOMMENDATIONS

1. That further diamond drilling be undertaken to the west of TLC1 at shallow depths (approximately 50-80 metres below surface) to outline the strike extent of the mineralisation. Deeper drilling will also be necessary to outline the resource potential.

2. Deep auger sampling for bedrock geochemical samples should be carried out over the narrow pulse EM anomalies on the southern margin of lease 53M/75.

3. The western half of lease 51M/75 needs to be mapped in detail, and hole TLC5 needs to be deepened by 20-30 metres.

5. DISCUSSION OF RESULTS

5.1 Outline of Work Programme

5.1.1. Gridding and Sampling

The boundaries of the leases were cleared and surveyed to Mines Department regulations by licensed surveyor Mr.K.Michell of Devonport. Wherever possible, the cut lease boundaries were incorporated into the grid. (See sample location Plan TASh 20). The north western corner of lease 53M/75 was assigned the grid co-ordinates 4990 North, 5000 East. Grid lines were made parallel to the North-south trending boundary lines, on an AMG bearing of eight degrees, forty three minutes (approximately 1 degree magnetic) and spaced a nominal 100 metres apart. The lines were set up and turned off with a WILD T16 theodolite, and kept on course with improvised range poles. A total of 15.5 line kiolmeters of grid was cut.

Soil samples were taken where possible at 25 metre intervals by hand or mechanical auger, at depths from 0.4 metres to 1.8 metres in 'C' horizon material. Samples were not taken in areas of deep swampy soil or impenetrable magnetite scree. Because of the large amount of magnetite scree the samples taken were small (less than 100 grams) in order to reduce contamination, and the conventional minus 80 mesh analysis procedure was not adopted. The samples were sent to AMDEL for total pulverisation to minus 80 mesh, and then analysed for Copper, Lead, Zinc, Silver, Cobalt, Manganese, Molybdenum by AAS, and Tin, Tungsten by XRF. A total of 518 samples were taken (Appendix V).

Following the soil sampling, the lines were geologically mapped and rock chip samples were taken wherever possible. A total of 244 rock samples were taken, and assayed for Copper, Lead, Zinc, Silver by AAS and Tin, Tungsten by XRF, with various batches also being assayed for Nickel, Cobalt, Chromium, Manganese, and Molybdenum. Due to long delays in processing of samples by AMDEL, Zinc Corporation, Analabs and Comlabs were used for some batches of rock samples; batch variations appeared to be minor.

Geochemical maps were compiled (see plans TASh 3 - TASh 10) and discrimination between background and anomalous values was obtained by the use of cumulative frequency VS log concentration graphs for the large batch of soil samples analysed by AMDEL. The rock chip results were used as an adjunct when contouring the soil results.

5.1.2. Geophysics

The major technique used on the prospect has been ground magnetics on a 5 metre or 10 metre station spacing. The results are discussed in section 5.4; the survey was not very successful, but had some use in more precisely locating magnetic bodies beneath surface cover.

A Crone pulse EM survey was tried on lease 51M/75; the results were not encouraging, and interpretation is in progress.

5.1.3. Drilling

Following the geochemical sampling programme, the results were sufficiently encouraging to drill nine shallow cored diamond holes into anomalous zones within the prospect. The rationale and results for each hole are discussed in turn in section 5.5. Core sizes used were HQ and NO for surface drilling, then BQ once good coring conditions were obtained. A total of 1339.3 metres was drilled in the programme.

Each hole was sampled for its entire length by splitting the more interesting portions, and grinding the rest. All samples taken were assayed by ANALABS for Copper, Lead, Zinc, Silver by AAS and Tin, Tungsten by XRF. At the conclusion of the programme, every fourth split sample was assayed for gold by fire assay.

In addition, sixteen composite samples were taken representing various rock types and alteration assemblages from the drill holes and were sent to AMDEL for 70 element semi-quantitative emission spectroscopy scans. The results are appended.

5.2 Geology

5.2.1. Rock Types and Alteration Assemblages

The Tenth Legion prospect lies between 500 metres and one kilometer from the contact with the Devonian Heemskirk Granite. The rock types of interest constitute a contact metamorphosed/metasomatised sequence of shales, siltstones and sandstones with interbedded dolomites and limestones, of probable Upper Proterozoic to lower Cambrian age.

The sequence has been truncated to the east by a down-faulted Cambrian gabbroic intrusive of unknown thickness, the contact trending diagonally through leases 54M/75, 52M/75 and 51M/75 (See plan TASh 2). The dip of the contact is not known, but is probably steep. In the north eastern corner of lease 51M/75, the sequence is terminated by the Tenth Legion Fault, and rests unconformably against Proterozoic Oonah quartzites and slates.

Samples of unweathered rock types were taken from the nine drill holes and submitted to Central Mineralogical Services for petrological description (Appendix 11). A further suite of eight tin bearing samples were submitted for petrological description; the results are reproduced in Appendix 111.

Host rocks for the tin and zinc mineralisation are mostly magnetite-serpentinite assemblages with minor diopside-chlorite-garnet-magnetite intervals. The serpentinites are believed to be of non igneous origin, and to represent altered 'humite' skarns which were in turn derived from dolomitic carbonate rich rocks. The metasomatism follows no structually coherent pattern but can loosely be described as 'stratabound', with rapid and chaotic changes in mineral assemblages within an original carbonate unit.

The sedimentary sequence has likewise been metamorphosed/metasomatized in successive stages. The typical assemblages for 'non-skarn' alteration in the pelites and psammopelites is quartz-sericite-cordierite-felspar-diopside. Metasomatic ('skarn') assemblages are dominantly diopside-tremolite-epidote-garnet with minor tourmalinisation in places.

Altered limestones and dolomites have been intersected in drill holes 6,7,3 and 8. They have been pervasively serpentinised after first being weakly metamorphosed to forsterite bearing marbles.

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Tin Distribution (Appendix III)

No optically detectable cassiterite was found in the samples sent for minerographic study. It has been suggested the tin bearing mineral could be paigeite $(Fe^{2+}, Mg)_2 Fe^{3+} Bo_5$ which can have a tin content of up to 15 per cent Tin Oxide (D.Cowan, pers comm) or the closely related minerals hulsite $(Fe^{3+}, Mg)_2 (Fe^{3+}, Sn) Bo_5 O_2$, vonsenite and ludwigite (isomorphous with paigeite). Electron microprobe analyses are being performed to establish the identity and distribution of the tin bearing mineral species. This will of course have an important bearing on the recovery and consequently the economic viability of the deposit.

5.2.2. Structure and Mineralisation

The surface outcrop on the prospect is poor, and vegetation cover is heavy. Surface mapping is therefore somewhat subjective and most dips and strikes shown on the sections have been obtained by correlation between drill holes and early mapping of trenches and adits by Blake, (1941).

The interpretation shown on Plan TASh 2 represents the best synthesis of the available data but is far from complete. The situation within the carbonate units is further complicated by the intense metasomatic/metamorphic alteration and it is apparent that there are rapid facies changes between the carbonate beds and the enclosing sediments.

The major structure appears to be an asymmetric anticline which trends approximately east-west at 100 degree grid and plunges to the east, the axis passing through the southern portion of lease 52M/75.

North from this axis, the sequence dips steeply north (with some minor folding), as shown by the sections for holes 81 TLC 7,6,1,2 and 9, (Plans TASh 19,18,11,12, and 13). The strike varies from 090 grid to 120 degree grid.

The Tin-Zinc mineralisation located to date, is within the major magnetite/serpentinite/calc silicate unit on the northern margin of lease 51M/75. This unit is approximately 85-90 metres thick and dips north at between 70 degrees and 80 degrees. The concentration of tin is in the hanging wall of this unit and in hole TLC1 is 7.3 metres thick grading 1.27 per cent Tin. In hole TLC9, 60 metres to the east, there is an aggregate of 18.8 metres of 0.3 per cent Tin, spread over a distance of 30 metres in discrete intervals of 0.9 - 7.4 metres length.

This indicates a possible concentration of high grade (better than one per cent) mineralisation to the west of hole TLC1. A total strike distance of 160m of magnetite remains untested, in this direction, and the zone is geochemically highly anomalous at surface. The indicated depth extent below surface, is 200 metres at hole TLC9 and possible 150 metres at 5050 East, before the extrapolated 70 degree dip passes beneath the northern boundary of the lease. Assuming a specific gravity of 3.6, there is therefore the potential for 1.5 - 2 million tonnes of material with between 0.5 to 1 per cent Tin. A resource of this potential size clearly warrants further drill testing even with possible problems due to the mineralogical form of the tin mineralisation.

The zinc mineralisation is mostly low grade, and occurs in the lower (footwall) portions of the magnetite-serpentinite-calc-silicate unit. TLC1 intersected 25 metres of 1.16 per cent zinc, with a small high grade section of 7.2 per cent zinc (over a 1.1 metre interval from 57.4 metres to 58.5 metres). TLC9 had 5.2 metres of 3.0 per cent zinc, at 110.1 metres to 115.3 metres, including a 1.1 metre interval of 14 per cent zinc. The overal zinc grade is low and although high grade sections are likely to be irregular and erratic, the zinc mineralisation is extensive and extremely interesting. It should be carefully evaluated along with the hanging wall tin mineralisation in any future drilling compaign.

South of the postulated anticlinal axis, drilling in the north eastern portion of lease 51M/75 has indicated a carbonate rich unit which dips south at 65 degrees. Along strike to the west the carbonate appears to change rapidly into a calc-silicate/sediment facies near 4900 East. In the easterly direction a rapid thickening is interpreted towards holes TLC 6 and 7.

In lease 51M/75, large and persistent magnetite and calc-silicate bodies have developed in this carbonate sequence and have associated disseminated low grade sphalerite. Hole TLC 3 intersected an aggregate of 32 metres of 2.0 per cent zinc in two distinct magnetite/serpentinite/calc silicate bodies. Hole TLC 8 intersected 22 metres of 1 - 2 per cent zinc in similar lithologies. Hole TLC 4 apparently intersected the western most extension of this unit, cutting only 2 metres of 1 per cent zinc. The values for the zone as a whole are interesting, but offer only limited exploration potential due to small size, low grade, and locally variable metal content.

The westernmost portion of lease 51M/75 is the closest section of the property to the granite contact. The sediments are much more folded and contorted, and progressively higher contact metamorphic effects are in evidence. Hole TLC 5 cut extensive epidote and phlogopite veining within discrete zones, and the enclosing sediments show abundant diopside and are weakly tourmalinised.

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009 Some low tin values (2000 ppm) were obtained in a zone of transgressive diopside-phlogopite. TLC5 was targeted towards a north-south trending magnetite-chlorite-phlogopite body which appears to be transgressive to bedding, but parallel to the granite contact in contrast to the strata-bound nature of the other skarn bodies. The hole failed to intersect the magnetite zone and should be deepened by 20 to 30 metres.

The geology in this section of the leases is difficult to interpret, and more detailed mapping with some costeaning should be done.

5.3 Geochemistry

Heavy reliance has been placed on surface geochemistry for determining the surface expression of any mineralisation. The sampling programme has been outlined in Section 5.1. Threshold values and distributions of the various elements are summarised below.

Computer processing of the geochemical data could have been a useful tool in the pre-drilling phase of the project, and would have enabled a more comprehensive interpretation, with better resolution of anomalies and element correlations. The interpretation may still benefit from techniques like discriminant analysis, now that precise subsurface geochemical results have been obtained by drilling, but this would be a fairly low priority option, unless prospects in similar environments are acquired.

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TIN

PLAN TASh 3

The combined soil and rock chip values for tin are shown on plan TASh 3. The general range of values over unmineralised rocks and gabbro is from 4 to 35 ppm. The general background in magnetite is 30-100 ppm.

The main tin anomaly is in the large magnetite bodies in the northern part of lease 53M/75 with peak values of +1000 ppm (soils and rock chips) within a narrow envelope of +500 ppm values. The anomalous threshold level appears to be 200 ppm. The drilling of holes TLC1, TLC2 and TLC9 confirmed substanial mineralisation beneath this anomaly.

The only other anomalies greater than 200 ppm are in the western half of lease 51M/75. They appear to be related to a set of magnetite bodies that are transgressive to strike and subparallel to the granite contact. The anomalies are diffuse and incoherent, a tendency also reflected in the drilling from this area (TLC 4 and 5), and the area is believed to have a low probability of developing ore grade and size tin concentrations.

ZINC

PLAN TASh 4

The background values for zinc ranged from 6 to 100 ppm in the sediments in lease 51M/75 to 50-300 ppm for the gabbro in leases 54M/75 and 51M/75. The major tin anomaly in the northern lease has a low level coincident anomaly of +300 ppm zinc. Indicated threshold levels for the calc silicate sequence are 300, 600 greater than 1500 ppm.

The major zinc anomalies are located in the north-western portion of lease 51M/75, and subsequent drilling indicated zones of low grade (1-2 per cent) mineralisation associated with magnetite, phlogopite and diopside-tremolite-garnet rocks in a broad zone trending from 3600 North, 4800 East, to 3800 North, 5400 East. The anomalies in the central lease (52M/75) appear to be associated with manganese rich soils as drilling has not revealed any low grade mineralisation.

A poorly defined anomaly in the south-western corner of lease 51M/75 may indicate the need for deeper and better quality sampling when considered in conjunction with the results of the EM survey (Section 5.4).

COPPER

Background (soil values) for copper ranged from 4 to 80 ppm in the calc-silicate rocks and sediments, and from 10 to 150 ppm in the gabbro. Anomalous threshold values are around 200 ppm and more than 450 ppm. The only anomalies of any substance appear to be in the north-eastern portion of lease 51M/75 (Diamond Drill Holes TLC 3 and 8) and in the central portion of lease 52M/75 (Diamond Drill Hole TLC7). Copper appears to be preferentially associated with lead, zinc, and tungsten on the surface. It is virtually absent from the major tin anomaly in lease 51M/75. Values recorded in drill holes were similar to those in soil and rock chip samples.

LEAD PLAN TASh 6

Background values for lead range from 10 to 80 ppm with anomalous thresholds being of the order of 100, 250 and plus 500 ppm. Most values appear to be correlable with high manganese values; the most coherent anomalies are in the central portion of lease 52M/75 (Hole TLC7) and the north eastern portion of lease 51M/75. The distribution of lead appears to be fairly low level, and unrelated to zinc, but slightly related to copper. The high values from the adit sampling in the south western portion of lease 51M/75 may be of some significance when considered in conjunction with the EM anomalies. There is a low-level anomaly on the eastern end of the major tin anomaly, towards the old Silver Stream mine, which may represent some primary metal zonation away from the granite.

MANGANESE, COBALT PLANS TASh 7 and 8

Manganese was analysed to obtain some idea of the amount of scavenging and secondary concentration for the various elements. Similar calc silicate environments (example Willi Willi) often have manganese haloes surrounding mineralisation.

The results indicated a strong concentration of manganese broadly associated with the anomalies in lease 52M/75 and 51M/75; this is best outlined by the 500 ppm contour.
It shows a strong correlation with secondary limonite/lateritic material, and may indicate part of a previous (Tertiary ?) land surface or weathering surface. The various base metal dispersion patterns appear to be more or less related to manganese concentrations and, significantly, so does the pattern of tungsten anomalies. This probably accounts for the poor tungsten values intersected in holes TLC 3 and 8. Cobalt appears to be directly related to high manganese concentrations.

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MOLYBDENUM PLAN TASh 9

Background levels for molybdenum range from less than 1 to 9 ppm; the element was only analysed for the sake of completeness and only one coherent 'anomaly' in lease 52M/75 can be distinguished (threshold level 12 ppm) , coincident with copper, manganese, and weakly coincident with lead, zinc and cobalt.

TUNGSTEN PLAN TASh 10

Background levels for tungsten are in the range less than 10 to 50 ppm, the threshold value is around 70 ppm and only one significant anomaly, in the northern portion of lease 51M/75 was defined. This anomaly was tested by holes TLC 3 and 8 (Section 5.5) and is apparently due to weakly disseminated primary scheelite being concentrated in the limonitic soil profile, in association with manganese.

5.4 Geophysics

5.4.1. Ground Magnetics

Because of the poor outcrop and heavy vegetation, together with substantial accumulations of surface magnetite rubble the surface mapping proved to be inadequate for designing drill holes. Accordingly, ground magnetics was chosen as the best technique to determine the subsurface geometry of the outcropping magnetite bodies. The survey was carried out using a Geometrics G816/826A proton precession magnetometer, on a 5 metre station interval over the entire grid. The sensor head was mounted on a 3 metre staff.

The magnetite proved to have very high remanent magnetism, and this, coupled with high noise (up to 3000 nt between stations) and high gradients (up to 12,000 nt between stations) made the results incapable of being modelled. The plots of uncorrected data proved useful in more precisely locating the surface outcrop of the bodies, and for indicating subsurface magnetic trends beneath swamp cover.

A low level aeromagnetic survey should provide noise free data which can be modelled and will be flown later this year.

5.4.2. Deep EM

A Crone pulse EM survey was tried on lease 53M/75. The object of the survey was twofold:

1. To determine the conductive properties of the magnetite bodies.

2. To investigate any possibility of stratabound mineralisation in Zinc, Lead, Copper along strike from the old Silver Stream mine.

The results were not encouraging; the magnetite proved to be non-conductive. A small response was detected on lines 5300 East at 4375 North; 5400 East at 4325 North and 5500 East at around 4275-4300 North. The indicated anomaly is a weak to moderate conductor, with a probable steep dip, and is being plotted and interpreted at the time of writing.

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5.5 Drilling

Nine diamond drill holes were developed during the programme, and will be described according to location, rather than the chronological order of drilling. Collar positions and elevations of the holes were determined by theodolite traverse connection from survey marks on the lease boundaries, and from previously existing traverse points established by Renison Ltd. Elevations quoted are relative to sea level.

Lease 53M/75

DD T.L.C. 1 Section 5200 East Plan No. TASh 11

Collar co-ordinates 4956.3 North 5198.9 East R.L. 241.3 metres.

Length: 88.4 metres.

Dip at collar: -50 degrees to 180 degrees grid.

This hole was planned to test the northern most magnetite lens at a depth of approximately 80 metres below surface. The surface chip sampling and soil sampling indicated a strong tin anomaly (Plan TASh 3) from 4950 North to 4860 North, with peak values of 1100 ppm in a chip sample of magnetite at 4890 North and 1300 ppm in soil from 4920 North.

The hole encountered bad ground and had high core losses, with a cavity from 58.5 to 63.9 metres. The rods bogged in at 88.4 metres and the hole was lost.

A series of magnetite lenses alternating with highly altered calc-silicate rocks was intersected from 13.2 metres to 88.4 metres with significant assay results summarised below.

Tin: 28.0 - 35.3 metres; 7.3 metres @ 1.27 per cent Tin
Core Recovery 30 per cent.

Zinc 46.4 - 71.5 metres; 25.0 metres @ 1.16 per cent zinc.

including
57.4 - 58.5 metres; 1.1 metres @ 7.2 per cent zinc.

Due to irregular and discontinuous nature of the magnetite lenses, and the limited information available, the best interpretation that can be placed on the tin and zinc intersections is that they are contained within a sequence that dips at 75 degrees to the north.
If we assume that the tin distribution has a lithological control (for example, a chemical characteristic associated with the original sediments), then the tin and zinc mineralisation can be considered to be stratabound, even though it may be irregular and discontinuous within the controlling lithology.

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DD 81 T L.C. 2 Section 5400 East Plan No. TASh 2

Collar co-ordinates 4923.5 North 5397.3 East R.L. 260.15 metres

Length: 133 metres

Dip at Collar -50 degrees to 180 degrees grid.

This hole was sited to investigate the eastward extension of the major tin anomaly (Plan TASh 3). The inferred geology and magnetite distribution was uncertain due to extensive magnetite and laterite rubble and scree.

(Plan TASh 2)

Although the dips obtained from the hole were variable, the interpretation of a steep dip (70 degrees) to the north appears to be valid when the old mapping of adit one (Blake 1940) is extrapolated to the east. Much less magnetite was intersected than anticipated, suggesting that the magnetite bodies lens out fairly rapidly to the east of adit one.

The extent of alteration and metasomatism also tends to decrease, some more recognisable pelitic rocks were noted in the logging, although clearly still very altered. A possible altered basic dyke was intersected between 50.5 and 65.0 metres (see Appendix Two - sample number 932282).

The entire sequence of potential host rocks appears to have been traversed and has a total thickness of 85-90 metres. The assay results were disappointing (Appendix 1); tin values ranged from 10 ppm to 450 ppm, which is slightly less than the surface soil values, so possibly some concentration has occurred in the laterite and surface rubble accumulations.

The only result of any significance was from:

80.4 - 84.1 metres - 3.7 metres @ 1.78 per cent zinc;

10.7 grams per tonne silver; 0.6 per cent lead; 0.2 per cent copper

The elevated lead and copper values may have some significance, as the old Kynance Lead-Silver-Zinc-Copper workings are along strike some 600 metres to the east; there may be a possibility of low grade disseminated base metal mineralisation in the sequence with increasing distance along strike from the major magnetite accumulation.

DD 81 TLC 9 Section 5260 East Plan No. TASh 13

Collar co-ordinates: 4982.3 North R.L. 249.3 metres easting? 5261. E (from log, App 1)

Length: 163 metres

Dip at collar: -48.5 degrees to 180 degrees grid

This hole was sited to investigate the eastward extension of the tin mineralisation intersected in hole TLC 1. It was originally planned to be sited to the west, on section 5100 East, but easy access proved to be impossible due to the onset of the winter rains.

The hole traversed the entire sequence of magnetite and calc-silicate rocks; the most significant body of magnetite/serpentinite was from 54.2 to 91.2 metres-a stratigraphic thickness of approximately 30 metres. Another smaller magnetite lens was intersected from 110.1 to 115.3 metres and had significant zinc mineralisation.

Significant assay results are as follows:

Tin	55.1 metres to 56.6 metres	1.1 metres @ 0.56 per cent Tin
	60.5 metres to 64.1 metres	3.6 metres @ 0. 2 per cent Tin
	65.9 metres to 72.6 metres	6.7 metres @ 0.34 per cent Tin
including		
	65.9 metres to 67.2 metres	1.3 metres @ 0.90 per cent Tin
	77.0 metres to 84.4 metres	7.4 metres @ 0.31 per cent Tin
Zinc	110.1 metres to 115.3 metres	5.2 metres @ 3.0 per cent Zinc
including		
	113.8 metres to 114.8 metres	1.0 metres @ 14.4 per cent zinc

The hole confirmed the overall steep dip to the north (65-70 degrees), but a comparison of old mapping in adit two and core angles indicates that the dip may flatten slightly at depth. The distribution of the tin indicates that the shoot of tin mineralisation is lensing out to the east, and becoming more diffuse. The potential to the west of TLC 1 is untested, and at least two, probably three shallow holes will be required on approximately 50 metre centres to determine the position and extent of deeper drilling.

Lease 51M/75

DD 81 TLC 3 Section 5180 East Plan No. TASh 14

Collar co-ordinates: 3669.9 North 5180.11 East R.L. 244.5 metres

Length: 142 metres

Dip at collar: -50 degrees to 260 degrees grid

The hole was sited to test the combined tungsten-copper-lead-zinc soil anomaly (Plans TASh 4,5,6) which extended from approximately 3700 North to 3800 North on line 5180 East, and was part of an overall geochemical trend striking at about 60-70 degrees grid.

The indicated geology is a sequence of calc silicate rocks with interbedded altered limestone beds and magnetite/calc-silicate skarn units striking at 065 degree grid, with a dip of 65 degrees to the south.

From 0 to 19.6 metres approximately, the hole traversed weathered magnetite rich calc silicate skarn rock; from 19.6 to 47.4 metres a diopside-garnet skarn rock with epidote, chloritised tremolite and/or disseminated magnetite and sphaletite; and from 47.4 to 64.9 metres a mixture of magnetite/pyrrhotite/sphalerite and diopside-garnet skarn rock. From 64.9 metres to end of hole, minor magnetite/serpentinite intervals to 2 metres thick occurred within heavily serpentinised limestones (carbonated serpentinites ?) or diopside-tremolite-garnet skarn rocks.

Tungsten assays were low-the best values ranged from 20-65 ppm, with one assay of 130 ppm. The high soil values appear to be the result of secondary enrichment in the manganese-rich surface soil (note the manganese values on Plan TASh 8). Soil,copper and lead values appeared to be consistent with the drill core results from the high pyrrhotite/magnetite zone, with ranges 100-1950 ppm and 20-400 ppm respectively.

The zinc mineralisation intersected in the hole was only indicated by a low - level surface anomaly (920 ppm peak value), but two zones of significant low grade zinc mineralisation were intersected in association with the magnetite rich intervals. Assay results are summarised below:

	15.5 metres to 30.9 metres	15.4 metres	@ 2.8 per cent zinc
including	22.4 metres to 23.4 metres	1.0 metres	@11.4 per cent zinc
	47.4 metres to 64.9 metres	17.5 metres	@1.58 per cent zinc

The significance of these results is difficult to assess.

Two points may be made:

1. Low grade zinc mineralisation was intersected in holes 1 and 9 stratigraphically below the tin mineralisation. However, a comparison of the surface geochemistry for Tin (Plan TASh 3) and Zinc (Plan TASh 4) gives no indication of this in the sequence intersected by TLC 3.

2. The Zinc mineralisation may be indicative of some potential for significant skarn-type base metal accumulations either along strike from the magnetite lenses, or at some stratigraphic level above or below the main lenses.

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DD 81 TLC 8 Plan No. TASh 15

Collar co-ordinates: 3688.7 North 5268.2 East R.L. 229.34 metres

Length: 150.9 metres

Dip at collar: - 50 degrees to 330 degrees grid.

The hole was planned to test the extension of the high pyrrhotite zone intersected in hole number TLC 3, and to establish the variation in zinc content along strike from the intersections in hole three. The overall structure was confirmed the lenses strike at 065 degrees and dip at 65 degrees to the south. Similar width of skarn rocks with magnetite and sphalerite were intersected, but the pyrrhotite content decreased in the lower interval.

Significant results are summarised below:

25.5 metres to 35.8 metres 10.3 metres @ 1 per cent zinc
53.6 metres to 65.0 metres 11.4 metres @ 1.81 per cent zinc

The result indicates the variability in mineralogy and extent of metasomatism over a short distance in these rocks, and points to the need for close spaced drilling to obtain good hole to hole correlation in this environment.

DD 81 TLC 4 Plan No. TASh 16

Collar co-ordinates : 3551.02 North 5029.1 East R.L. 223.6 metres

Length: 134 metres

Dip at collar: - 50 degrees to 315 degrees grid

This hole was sited to test the high zinc-anomaly (peak values 8300 ppm, 1.0 per cent, 1.2 per cent, over 75 metres) on line 5000 East, together with sporadic high Tin, Copper, and Lead values over 100 metres on the same line.

Values obtained were consistent with surface geochemistry - the high Zinc values appear to correlate with a small magnetite/diopside skarn interval intersected from 52.9 to 57.7 metres, which had some low grade Zinc mineralisation.

Significant assay values were : 54.9 metres to 56.9 metres - 2.0 metres @ 1.44 per cent Zinc.

Tin values obtained were mostly 10-100 ppm, with scattered values from 200 ppm and 300 ppm. Most Zinc values were in the 200 ppm to 1000 ppm range, with scattered values of several thousand ppm.

Copper and Lead values were generally below 100 ppm, with isolated values of 100-300 ppm.

The overall structure appears to be a sequence dipping at around 50 degrees to 145 degrees grid, the two small magnetite intervals within calc silicate skarn rocks appear to correlate with the sequence intersected in holes TLC 3 and 8, but with slightly less alteration, and a higher proportion of pelitic rocks-indicating that the carbonate facies rocks are possibly lensing out to the west.

DD 81 TLC 5 Plan No. TASh 17

Collar co-ordinates: 3439.17 North 4852.40 East R.L. 235 metres

Length: 119.5 metres

Dip at collar: -50 degrees to 315 degrees grid

This hole was drilled towards a set of high zinc and tin geochemistry (soil values to 300 ppm Tin) on line 4800 East, between 3475 North and 3575 North, and also high zinc and tin values in rock chips in unusual coarsely crystalline magnetite phlogopite-chlorite-sphalerite assemblages exposed in some old workings about 30 metres from the collar of the hole (See Plane TASh 3 and 4). Scattered high values of copper and lead were also evident (Plans TASh 5 and TASh 6).

The surface geology was confusing, with the magnetite-phlogopite rock apparently transgressive to the 'calc-silicates' exposed in the creek. Until the hole was drilled it was thought that these were local variations, so the hole was oriented at 315 degrees grid in an attempt to cover both options.

The drilling revealed that the alteration associated with the zinc mineralisation in the surface trench ('Daverns Prospect') was persistent, but the sphalerite at surface was not - this is consistent with earlier descriptions of the workings (Twelvetrees, 1919). Two small intervals of tin mineralisation were intersected,

17.1 metres to 18.2 metres 1.1 metres @ 0.17 per cent Tin
19.5 metres to 19.8 metres 0.3 metres @ 0.23 per cent Tin

Mineragraphic evidence revealed no cassiterite (Appendix Three) but possibly stanniferous sphene, therefore the tin mineralisation may be a local enrichment in a zone of phlogopitisation/ metasomatism, as has been recorded at the St.Dizier deposit (D.Cowan, pers comm). This would indicate that major magnetite bodies in the immediate area may be stanniferous.

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The large magnetite body associated with the low level tin anomaly on line 4800 East was not intersected where originally projected to be from the surface dips (45-50 degrees East). The drill hole was stopped too early to allow for a steeper dip than 60 degrees, and should be deepened 20-30 metres in the next phase of drilling. The planned aeromagnetic survey may resolve some of the ambiguities in the interpretation before drilling commences.

Lease 52M/75

DD 81 TLC 6 Plan No. TASh 18

Collar co-ordinates: 4273.19 North 5630.54 East R.L. 260.25 metres

Length: 208.5 metres

Dip at collar: 50 degrees to 210 degrees grid

This hole was drilled essentially as a stratigraphic hole to test known massive magnetite encountered in old adits beneath a capping of limonitic material up to 2 metres thick in places. The surface geochemistry was poor in all elements except zinc and manganese, which was thought to be due to the laterite preventing adequate sampling.

The hole encountered 90 metres of high prospective looking magnetite and skarn rocks, and from 90 metres to 208.5 metres was in massive crystalline, partially serpentinised,dolomites and marbles with 1-2 per cent finely disseminated magnetite and pyrrhotite. The sequence appears to strike at approximately 110 degrees grid, and dips 60-65 degrees north.

No significant assays were obtained, apart from one gold value of 1.34 ppm between 12.2 metres and 13.2 metres in banded magnetite and calcite. Copper values ranged from 10 to 200 ppm, with isolated values to 1500 ppm. Zinc was mainly 100 ppm to 600 ppm, with isolated values of several thousand ppm. Peak lead values were 1100 ppm and 1350 ppm.

should be checked!

DD 81 TLC 7 Plan No. TASh 19

Collar coordinates: 4080.43 North 5478.25 East R.L. 241.62 metres

Length: 200.0 metres

Dip at collar: 50 degrees to 220 degrees grid

This hole was also drilled as a stratigraphic hole to establish the size and presence of subsurface magnetite bodies beneath extensive laterite and iron oxides. Zinc and lead values were anomalous at surface, but appeared to be closely related to manganese values.

The hole only intersected magnetite at the surface, from 0 - 21.3 metres. The remainder of the sequence was monotonous massive dolomitic limestone with variable serpentinisation to 10 per cent of the rock, and occasional bands of pale yellow serpentinite or diopside/garnet skarn.

The indicated dip in the plane of the section is approximately 80 degrees to the north, which is consistent with a sequence tending at 100-120 degrees grid, with a steep dip to the north (70 degrees to 75 degrees).

Assay values were uniformly poor: - Copper less than 50 ppm; Lead less than 20 ppm; Zinc to 960 ppm; Tin less than 10 ppm; Tungsten less than 25 ppm., except in the magnetite from 6 metres to 19.5 metres (Copper several hundred ppm; Lead to 250 ppm; Zinc 2000-6000 ppm; Tin less than 15 ppm; Tungsten less than 50 ppm).

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KEYWORDS

Tin; Zinc; Calc-silicates; stratabound; replacement;drill-diamond; Geochem-rock; Geochem-soil.

Locality: Queenstown SK 55-5 1:250,000 map sheet

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LIST OF PLANS

PLAN NO.	TITLE	SCALE
TASh 1	Location Map	1:100 000
TASh 2	Tenth Legion Prospect, Western Tasmania Interpreted Geology	1:2500
TASh 11	Tenth Legion Prospect, Western Tasmania Diamond Drill Section 81 TLC 1	1:1000
TASh 12	Tenth Legion Prospect, Western Tasmania Diamond Drill Section 81 TLC 2	1:1000
TASh 13	Tenth Legion Prospect, Western Tasmania Diamond Drill Section 81 TLC 9	1:1000
TASh 14	Tenth Legion Prospect, Western Tasmania Diamond Drill Section 81 TLC 3	1:1000
TASh 15	Tenth Legion Prospect, Western Tasmania Diamond Drill Section 81 TLC 8	1:1000
TASh 16	Tenth Legion Prospect, Western Tasmania Diamond Drill Section 81 TLC 4	1:1000
TASh 17	Tenth Legion Prospect, Western Tasmania Diamond Drill Section 81 TLC 5	1:1000
TASh 18	Tenth Legion Prospect, Western Tasmania Diamond Drill Section 81 TLC 6	1:1000
TASh 19	Tenth Legion Prospect, Western Tasmania Diamond Drill Section 81 TLC 7	1:1000
TASh 3	Tenth Legion Prospect, Western Tasmania Tin Geochemistry	1:2500
TASh 4	Tenth Legion Prospect, Western Tasmania Zinc Geochemistry	1:2500
TASh 5	Tenth Legion Prospect, Western Tasmania Copper Geochemistry	1:2500
TASh 6	Tenth Legion Prospect, Western Tasmania Lead Geochemistry	1:2500
TASh 7	Tenth Legion Prospect, Western Tasmania Cobalt Geochemistry	1:2500

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LIST OF PLANS

PLAN NO.	TITLE	SCALE
TASh 8	Tenth Legion Prospect, Western Tasmania Manganese Geochemistry	1:2500
TASh 9	Tenth Legion Prospect, Western Tasmania Molybdenum Geochemistry	1:2500
TASh 10	Tenth Legion Prospect, Western Tasmania Tungsten Geochemistry	1:2500
TASh 20	Tenth Legion Prospect, Western Tasamania Sample Locations.	1:2500

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Appendix 11	Petrological Descriptions of Drill Core Samples
Appendix 111	Minerographic Descriptions of Tin Bearing Drill Core Samples
Appendix 1V	Rock and Soil Sampling Ledger
Appendix V	Results of 70 element emission spectroscopy scans of composite samples from drill core.

APPENDIX 1

DIAMOND DRILL LOGS - DD's 81 TLC 1 to 81 TLC 9

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 1

TENEMENT NAME TENTH LEGION No. 53M/75

PLAN – MAP REFERENCE TASH 2 TASH 11

CO-ORDINATES 4956·3 N / 5198·9 E AZIMUTH 180° Grid DRILLERS S. RIMAK COMMENCED 19·2·81 DEPTH 88·4 M HOLE No. TLC 1

RL COLLAR 241·3 m. INCLINATION -50° DRILL TYPE BOYLES 37 COMPLETED 24·2·81 CASING LEFT 27m BQ RODS; BQ BARREL/BIT (HOLE LOST.) DPO No(s) 26667

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au
0	3m				TRICONED – NO CORE.												
3·0	4·0	0·5	NQ	ss/sh	3·0 – 13·2 Dark Grey Thinly												
4·0	4·8	0·1	to		bedded SILTSTONES + SHALES	3·1m So 53°											
4·8	6·0	0·25	42m		Thinly bedded (10–20 mm) contorted	Extensively weathered – soft, crumbly											
6·0	7·0	0·45			black shaley beds with pale grey	and broken core with some pitting											
7·0	8·0	0·80			siltstones and ?some creamy coloured	and minor limonitic staining,											
8·0	9·0	0·35			calc-silicate laminae.	suggesting sulphides originally											
9·0	9·9	0·35			8·0–10·5 yellowish/pinkish soft	present 1–5%.											
9·9	11·1	0·50			rotten weathered ? calc silicate interval												
11·1	12·0	0·50			finely bedded and highly contorted.	12·2–34·5 Fault zone?											
12·0	13·0	0·45				Soft white cream and grey											
13·0	14·0	0·9				puggy clays ; some magnetite											
14·0	15·0	0·4		↓		intervals ; overall, the ground is											
15·0	16·5	0·6				soft, crumbly and rotten											
16·5	19·5	0·45		Css ?	13·2 – 16·5 CALC SILICATES	13·2–15·0 Traces of Mn oxides	877356	13·2	15·0	1·3	140	70	680	<1	120	–	0·025
19·5	22·5	0·4			White and pink soft greasy	along fine stringers.	357	15·0	16·5	0·6	220	310	1150	×	390	65	
					feeling calc silicates, shattered												
					and broken.												
					15–16·5 Pronounced pinkish												
					and orange tones, with some												
					weathered micaceous patches												
				↓	and small blebs of Mn oxides												
					to 2mm												
				M/Css ?	16·5 – 22·5 Mixed MAGNETITE	Magnetite 30–40% of	358	16·5	19·4	0·4	170	80	3050	×	150	30	
					and CALC SILICATES.	recovered core – porous and	359	19·4	22·5	0·4	125	305	1150	×	190	30	
					Porous crumbly magnetite	cellular ; locally massive											
					, highly weathered and friable	lengths to 20 cm.											
					pink and soft shattered calc-	Mn as coatings and black											
					silicate matrix. Some highly	soft crumbly wad 2–3%											
					Mn rich portions – black oxides												
				↓	assoc. with greenish calc silicates.												

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DRILL CORE LOG

SHEET No. 2

TENEMENT NAME TENTH LEGION No.

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. TLC1

RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s). 26667

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au
22.5	25.5	0.4	NQ to 42m	Cst/sh	?22.5 – ?25.5 CALC SILICATES with Grey SILTSTONE / SHALE. Finely bedded pink and white totally kaolinised calc silicates with thin laminae of greasy feeling rotten grey shale.	22.5 – 25.5 Highly weathered – totally leached.	877360	22.5	25.5	0.4	140	40	380	×	380	×	.017
25.5	28.0			LOST CORE	25.5 – 28.0 LOST CORE ZONE												
28.0	28.5	0.5		M	28.0 – 28.5? Soft crumbly massive granular MAGNETITE.	Weakly banded ± 45°, traces of white ? magnesite remnants.	361	28.0	28.5	0.5	35	30	470	×	9900	30	
28.5	31.5	0.6		Css/M	?28.5 – ?31.1 CALC-SILICATES with Dissem. MAGNETITE. Dark greeny grey calc silicate rock with finely dissem. mag 20-30%. Originally a serpentinite?	Highly weathered, shattered and crumbly. Dissem mag 20-30%.	362	28.5	31.1	0.3	60	30	750	×	3.3%	×	
							932309	28.6m.	Mineragraphic	Sample.							
31.5	31.8	0.2		M	?31.1 – 31.8 Massive MAGNETITE Granular crystalline mag (2-3mm grains) with 1-2% white weathered ?carbonates and a little greeny-grey talc	? Contact 42°	363	31.1	31.8	0.6	25	30	1050	×	3200	×	
31.8	34.3			LOST CORE	31.8 – 34.3? LOST CORE ZONE												
34.3	34.5	0.2		Css/M	?34.3 – 34.5 TALCOSE CALC-SILICATE ROCK WITH MAGNETITE. Pale greeny grey soft talcose ? carbonate rock with pinkish (Mn?) patches, some greenish serpentinite and granular dissem. mag. 20-30%.	Highly faulted, shattered + crumbly	364	34.3	34.5	0.2	40	75	1600	×	1150	30	×
34.5	37.5	2.0		M/S	34.5 – 35.3 Faulted MAGNETITE/SERPENTINITE. Olive green crumbly textured rock with abundant granular crystalline mag.	34.5 faulted contact, 80° Magnetite, variable 70-80% to 10%, average 40-50%.	365	34.5	35.3	0.8	290	55	4950	×	2500	×	
				Css	?35.3 – ?35.8 TALCOSE CALC-SILICATE ROCK White crumbly weakly talcy rock with small brownish spots in matrix.	Magnetite 10-20%, granular and disseminated.	366	35.3	37.3	2.0	45	25	420	×	130	×	

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3

TENEMENT NAME..... No. .....

PLAN – MAP REFERENCE.....

CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. TLC1

RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s) 26667

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au
37.5	40.0	3.0	NQ	Cst	35.8-?41.3 CALC SILICATE ROCK	35.8 Contact ?50°	877367	37.3	39.3	2.0	5	30	80	x	55	x	
40.0	43.4	3.3	42m		Very hard bone coloured fine	The entire fabric has been	368	39.3	41.3	2.0	10	55	95	x	70	x	0.008
43.4	46.5	3.0	↓		grained siliceous rock with	brecciated, with fine grained											
46.5	49.5	3.0	BQ		pale greeny grey crystalline patches	pinkish ?Mn silicates as irregular											
49.5	52.5	2.8			(? diopside). Some white ?magnesite	bands around breccia clasts. Traces											
52.5	55.3	2.8			as irregular cavity fillings. Lower	sp as clots in interstices; rare											
					down in interval, some pale green	irregular veinlets of bluish grey											
					?epidote veining.	serpentinite/chlorite											
				↓													
				ss/sh	?41.3-46.4 SILTSTONE/SHALE BRECCIA	Highly deformed, altered and	369	41.3	42.5	1.2	50	65	85	x	25	x	
					Finely laminated grey and pink	metasomatised, with irregular patches	370	42.5	43.5	1.0	25	50	80	x	30	x	
					argillaceous rock, highly deformed	of grey qtz, green chlorite and	371	43.5	44.4	0.9	20	50	105	x	40	x	
					and contorted. Some deformed laminae	serpentinite – calcite – py – sp veining	372	44.4	46.4	2.0	50	45	110	x	8	x	x
					and stringers of remobilised pyrite –		932279	44m	THIN	SECTION	SAMPLE.						
					originally a pyritic siltstone/shale, the												
					pinkish patches being due to later alteration?												
					Contact irregular.												
				↓													
				Css/M	46.4-48.6 CALC SILICATE ROCK WITH	Magnetite varying from 10-20% in	373	46.4	47.1	0.7	190	50	2.5%	x	420	x	
					MAGNETITE AND SERPENTINITE	calc-silicate rock to almost massive	374	47.1	48.2	1.1	310	50	1.75%	x	150	x	
					Alternating bands of magnetite/serpentinite	for 5-10 cm. Pyrrhotite dissem up to	375	48.2	48.6	0.4	155	55	1.8%	x	440	x	
					alternating with a grey siliceous rock with	30% locally, ave. 10%. Py, sp, finely											
					abundant f.gr. dissem po and mag with	dissem throughout, up to 2-5%.											
					serpentinite veining.												
					Contact 55°												
					48.6-54.3 DOLOMITE/TREMOLITE WITH	Mag, finely dissem. in small grains to	376	48.6	50.6	2.0	15	20	2700	x	6	x	x
					MAGNETITE.	3 mm, 10-20%. Trace py, sp in blebs	377	50.6	52.3	0.7	30	25	9100	x	20	x	
					Pale grey finely crystalline massive	to 2 mm.	378	52.3	52.7	0.4	100	30	3.5%	x	35	x	
					carbonate/tremolite with finely dissem. mag.		379	52.7	54.3	1.6	85	65	6000	x	20	x	
					and minor serpentinite alteration.												
					52.3-52.7 Mag 50-60% in pale green serp.	52.3-52.7 Sp intergrown with mag 3-5%											
					45° contact												
					53.0-53.55 Mag 20-30%, serp 65%, idocrase(?) 10%												

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 4

TENEMENT NAME ..... No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. TLC1

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) 26667

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au
					Contact 40°?												
55·3	57·4		BQ	M/S	54·3–58·5 MAGNETITE WITH SERPENTINITE.		877380	54·3	55·3	1·0	125	60	5·65%	×	120	×	×
57·4	58·5	1·1			Granular black magnetite 40-60%, with		381	57·4	58·5	1·1	145	100	7·2%	×	300	×	
58·5	63·9				patches of olive green serpentinite. Some												
					? pale brown garnets 54·3–54·6.												
					58·3–58·5 Grey crystalline calc silicates – see	48·6 – 54·3											
					58·5–63·9 – Cavity – LOST CORE												
63·9	64·2	0·3		Cst	63·9–67·0 CALC SILICATE ROCK	Traces py, sp in irregular	382	63·9	65·9	2·0	75	60	2950	×	100	×	
64·2	67·0	2·9			Pale white and grey f.gr. matrix	crystalline aggregates; some	383	65·9	67·0	1·1	95	20	5200	×	160	×	
67·0	70·3	3·3			-diopside/tremolite, patches of pale	minor green and black serpentinite											
70·3	73·4	3·0			green epidote, some pinkish Mn	with mag. along irregular fractures											
73·4	76·5	3·0			silicates and later whitish alteration	1-2%.											
76·5	79·2	2·9			around the margins of breccia clasts.												
79·2	82·4	3·1			Contact 45°												
				M/S	67·0–67·6 MAGNETITE WITH SERPENTINITE.	Mag 40-60%; py 1-2%.	384	67·0	67·6	0·6	95	20	1300	×	740	×	×
					Contact 45°												
				Cst	67·6–69·1 CALC SILICATE ROCK.	Mag 1-2%, finely disseminated in grey	385	67·6	69·1	1·5	90	15	4250	×	150	20	
					As above 63·9–67·0, minor pinkish	crystalline rock, and with patches of											
					garnets and patches of remnant	serpentinite. Po intergrown with py											
					grey tremolite/diopside.	in blebs and finely disseminated 2-3%.											
					Contact 30°, irregular.												
				M/S	69·1–71·5 MAGNETITE WITH SERPENTINITE.	Magnetite 30-40%; py 1-2%	386	69·1	70·3	1·2	40	20	3050	×	90	×	
					See 54·3–58·5 for description.	in upper 0.6 m. From 69·7–71·5, patches	387	70·3	71·5	1·2	95	30	3·8%	×	110	×	
					69·7–70·3 Altered bone white/green	dark brown sp intergrown with mag											
					mottled calc silicate rock with pervasive	locally 15-20%, overall 2-3%.											
					mag/sep alteration.												
				Css	71·5–80·7 CALC SILICATE (SKARN) ROCK	Traces of blue ?interstitial	388	71·5	73·5	2·0	20	85	1000	×	40	×	×
					Very altered/metasomatised rock – mottled	fluorite?; rare blebs magnetite	389	73·5	75·5	2·0	15	25	65	×	50	×	
					bone/pale greens – mostly diopside	py and po.	390	75·5	77·5	2·0	25	25	110	×	100	×	
					with patches Mn silicates, idocrase and		391	77·5	79·5	2·0	5	15	75	×	100	×	
					brownish garnets. Randomly and chaotically		392	79·5	80·7	1·2	15	15	130	×	150	×	×
					banded – original breccia fabric.		932280	75 m	THIN SECTION SAMPLE.								

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 5
TENEMENT NAME ..... No. .....
PLAN – MAP REFERENCE .....
CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. THC 1
RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) 26667

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Mo
82·4	85·4	2·4	BQ		Contact 50°?												
85·4	88·4	3·0		S/M	80·7 - 82·5 SERPENTINITE WITH MAGNETITE. Massive black serpentinite matrix, with black crystalline magnetite 20-40%	Py 5-7% as interstitial blebs, sometimes intergrown with fibrous magnetite. Traces sp.	877393	80·7	82·5	1·8	210	30	240	x	100	x	
					Contact ?45°												
				CSS	82·5 - 84·5 CALC SILICATE (SKARN) ROCK See 71·5 - 80·7 for description.	Minor pinkish garnets, epidote veining	394	82·5	84·5	2·0	40	55	175	x	140	x	
					Contact broken.												
				CSS/M	84·5 - 86·8 BANDED CALC SILICATE ROCK WITH MAGNETITE. Pale grey and white metasomatised breccia - tremolite/actinolite?, silicified with abundant dissem mag, giving the rock a grey colour.	Mag 20-30%; po/py 3%; clots of ultrafine pale brown sp.	395	84·5	86·8	1·7	95	25	1900	0·5	100	x	
				S/M	86·8 - 88·4 SERPENTINITE WITH MAGNETITE. Dark green serp. with with incipient talcose alteration and fibrous bluish grey mineral (? tremolite).	Mag. finely dissem 15-30%; py 2-3% as interstitial blebs; trace dark brown sp.	396	86·8	88·4	1·6	145	25	360	x	40	x	x
					END OF HOLE 88·4M.												

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031

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 1

TENEMENT NAME TENTH LEGION No. 53M/75

PLAN – MAP REFERENCE TASM 2 TASM 12

CO-ORDINATES 4923.5N 5397.3E AZIMUTH 180° GRID DRILLERS S. RIMAK COMMENCED 2.3.81 DEPTH 133.0m HOLE No. TLC2

RL COLLAR 260.15m INCLINATION -50° DRILL TYPE BOYLES 37 COMPLETED 3.3.81 CASING LEFT 21m NW DPO No(s) 26667/26668

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS.) Cu	Pb	Zn	Ag	Sn	W	Au			
			NQ		0-3.0m TRICONED - NO CORE		877574	7.5	10.5		85	730	2150	4.5	220	30	SLUDGE			
3.0	4.5	0.1	to	q/ss	3.0-7.5 QUARTZITES, minor SILTSTONES	Minor barren qtz 'sweatout' veins.	575	10.5	13.5		145	390	1550	4.0	140	130	SAMPLES.			
4.5	6.5	0.2	133m.		Fragments of very hard f.gr. pinkish brown		576	13.5	16.5		45	465	1400	3.0	140	25	x			
6.5	7.5	0.5			quartzite with qtz segregations, minor thinly	3.0 - 19.5 Highly fractured and	577	16.5	19.5		55	360	1550	3.0	150	65				
7.5	10.5	1.0		↓	bedded contorted grey siltstone interbeds	broken - weathered - no obvious														
10.5	13.5	0.9		Cst	?7.5-10.5 CALC SILICATE ROCK.	mineralisation.	877397	7.6	10.5	1.0	120	50	1850	1.5	270	x				
13.5	16.5	0.2			Highly altered chlorite-actinolite-?talc															
16.5	19.5	0.7			rock - soft, mottled dark greens and greys															
19.5	22.5	2.7			with white tremolite (dolomite?) remnants.															
22.5	25.0	2.5			?10.5-16.5 ? CALC SILICATE ROCK		398	10.5	13.5	0.7	5	360	1850	0.5	240	x				
25.0	27.8	3.0			Highly weathered soft white puggy rock															
27.8	30.9	3.1			with slightly speckled appearance															
				↓	LOST CORE 13.5 - 16.5 m.															
				q/s Cst	?16.5 - 19.5 QUARTZITES/CALC SILICATES.		399	13.5	16.5	0.1	10	55	405	0.5	15	x				
					Most recovered core brownish pink		400	16.5	19.5	0.5	5	50	250	0.5	120	x	x			
					quartzite frags in a matrix of soft															
					shattered rock, some pale green epidote.															
				Css/M	19.5-20.0 DIOPSIDE/TREMOLITE ROCK WITH	Mag 30-35%, ? trace sp.	877501	19.5	20.0	0.5	5	70	330	x	200	x				
					MAGNETITE. Pale greeny grey rock with															
				↓	dissem crystalline mag to 3mm.															
				Csd	20.0-22.5 DIOPSIDE/TREMOLITE ROCK	Small clots of dissem magnetite	502	20.0	22.0	1.7	x	45	260	x	40	x				
					Greyish green crystalline rock, with irregular	with the more fibrous minerals.														
					patches of grey-green tremolite/actinolite in															
					a granular diopside mass. Some green ?hornblende.															
				↓	Contact 70°															
				Cst	22.5-24.4 CALC SILICATE ROCK	1-2% Magnetite along fine fracturing.	503	22.0	24.4	2.4	5	390	350	5.0	25	x				
					Bone coloured f.gr. diopside/tremolite	Traces po, py.														
					rock, well fractured, with epidote veining															
					and talcose alteration along fractures.															
				↓	Contact 50°															
				M	24.4-28.05 MAGNETITE — see next page.															

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2
TENEMENT NAME TENTH LEGION No. 53 M/75
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. TLC 2
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s) 26667/26668

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au
			NQ		24.4 - 26.4 60% f.gr. mag. with irreg.		877504	24.4	26.4	2.0	20	30	165	0.5	230	10	×
					white diopside/tremolite, patches serpentinite, minor veining.													
					26.4-28.05 Mag 50-60% in a matrix of dark green serpentinite. - py 1-2%; trace sp, ga		505	26.4	28.05	1.65	115	40	270	×	60	20		
				↓	Contact 50° from fragment													
30.9	34.0	3.1		Cst	28.05-30.1 CALC SILICATE ROCK	Mag 10% as fine stringers and laminae	506	28.05	30.1	2.05	25	20	70	×	35	×	
34.0	37.0	3.0			Hard base - white tremolite rock with	within calc silicates. Traces dissem po											
37.0	40.5	3.5		↓	corroded remnants of grey crystalline dolomite.	at base of interval.											
40.5	43.5	3.0		S/M	30.1-31.8 SERPENTINITE WITH MAGNETITE.	Py 1-2% as interstitial blebs in 30-35%	507	30.1	31.8	1.7	85	30	180	×	45	10	
43.5	46.5	3.0		↓	Grey-green serpentinite with dissem mag.	disseminated magnetite											
46.5	49.5	3.0		Cst/Dol	31.8-36.5 CALC SILICATE WITH DOLOMITE	31.8-32.4 Mag 5-15% dissem in 'dolomite'											
49.5	52.5	3.4			31.8-32.4 White crystalline dolomitic rock with		508	31.8	33.8	2.0	5	25	85	×	25	×	×
					spots of serpentinous alteration near upper contact.		509	33.8	36.5	2.7	×	60	115	×	35	×	
					32.4-36.5 Yellowish grey f.gr. calc silicate	32.4-36.2 Mag dissem along fine stringers with											
					rock (tremolite/diopside), spotted with	yellowish green serpentinite 3-5%.											
					dissem. black magnetite. Last 30cm mag	36.2-36.5 Mag dissem. 20%.											
					rich, some serpentinite alteration.												
				↓	Contact 35°												
				M/S	36.5-37.2 MAGNETITE WITH SERPENTINITE.		510	36.5	37.2	0.7	5	20	160	×	60	×	
				↓	Mag. 50-60% grey serpentinite with green? hornblende.												
				Cst/Dol	37.2-38.9 Calc silicate rock; as for		511	37.2	38.9	1.7	5	50	135	×	45	×	
					32.4-36.5m												
				↓	Contact 75°												
				ss/sh	38.9-43.6 GREY SILTSTONE/BLACK SHALE	Py, diosam along bedding as	512	38.9	39.6	0.7	55	60	120	×	15	×	×
					Hard hornfelsed grey and black highly	contorted laminae, veinlets and	513	39.6	41.6	2.0	75	25	65	×	7	×	
					deformed matrix of f.gr sediments.	stringers 10-12%.											
					41.3-43.6 Metasomatised - irregular patches	39.3 Bedding 70°	514	41.6	43.6	2.0	15	100	230	×	30	×	
					of tremolite, carbonates etc.		515	43.6	45.0	1.4	5	95	250	1.0	450	×	
				↓	Gradual change		516	45.0	46.5	1.5	35	70	390	×	100	×	×
				Css	43.6-50.5 CALC SILICATE (SKARN) ROCK.	No magnetite; fabric originally	517	46.5	48.5	2.0	×	10	110	×	230	×	
					- Amphibolite? Mottled greens, greys, minor	brecciated/deformed; now metasomatised	518	48.5	50.5	2.0	×	10	120	×	180	×	
				↓	pinks and whites - Highly altered/metasomatic	with crude replacement banding about	932281	45	THIN SECTION SAMPLE.								
						breccia clasts.											

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 3

TENEMENT NAME TENTH LEGION No. 53M/25

PLAN – MAP REFERENCE

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. TLC2

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) 26667/26668

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au			
					43.6-50.5 Cont....															
52.5	55.5	2.8	NQ		crystalline fabric with epidote, chlorite, ?diopside	46.1-46.5 Magnetite/Serpentinite														
55.5	58.5	3.1			? hornblende; actinolite; qtz; dolomite	; mag 30-40%														
58.5	61.2	2.8			; pink Mn silicates and patches of residual black															
61.2	64.4	3.2			cherty material.															
64.4	67.3	3.0			Contact 50° 46.5-47.7 Pink matrix with spots of															
67.3	70.5	3.2			green ? hornblende.															
70.5	73.5	3.0			47.7-50.5 Gradually becomes more spotted															
73.5	76.5	2.9			- diopside/hornblende calc silicate hornfels?															
76.5	79.2	2.7		V	Contact 20°															
79.2	82.5	3.3		Csd	50.5-65.0 SPOTTED CALC SILICATE ROCK	Fabric massive/granular; some	877519	50.5	52.5	2.0	5	50	75	0.5	75	x				
					Pinkish brown and white speckled	veinlets and streaks of ?hornblende and	520	52.5	54.5	2.0	5	50	70	0.5	45	x	x			
					matrix, fine grained and hard; spotted	epidote. Minor ≒ 5mm qtz-calcite	521	54.5	56.5	2.0	5	25	80	x	30	x				
					with 1-2 mm green clots of ?hornblende	veining at low angles to LCA.	522	56.5	58.5	2.0	5	15	70	x	30	x				
					and paler green fibrous ? actinolite.		523	58.5	60.5	2.0	5	20	80	x	75	x				
					54.1-65.0 Higher percentage of dark green		524	60.5	62.5	2.0	5	15	70	x	70	x	x			
					?hornblende in a pinkish brown (idocrase?)		525	62.5	64.5	2.0	5	20	80	x	40	10				
					matrix, with lesser white tremolite/actinolite		526	64.5	66.4	1.9	15	55	220	x	45	10				
				V	Gradual change		932282	55	THIN SECTION SAMPLE.											
				Cst	65.0-78.1 CALC SILICATE ROCK	65.0-78.1 Brecciated fabric with	527	66.4	68.4	2.0	10	60	150	x	140	x				
					Bone coloured (tremolite/diopside) f.gr.	pervasive alteration, including ?Mn silicates	528	68.4	70.4	2.0	5	125	210	x	130	10	x			
					rock mottled with pink (Mn?) hard	and epidote along fractures. Rare														
					silicate mineral, with veins and patches	patches f.gr. dissem magnetite.														
					of yellow-green epidote.	70.5-71.6 Increase in fabric size - up to	529	70.4	71.6	1.1	20	40	5550	x	60	x				
					71.6-72.4 Magnetite 30%, with calcite, qtz	8cm white clasts of corroded carbonates;	530	71.6	72.4	0.6	5	50	520	x	90	20				8
					and epidote.	some black shale/chert clasts with much	531	72.4	74.1	1.7	5	15	95	x	100	x				8
					74.1-74.9 Black shale/chert breccia - see	remobilised qtz/calcite, some clots of sp	532	74.1	74.9	0.8	40	85	260	x	15	x	x			26667
					38.9-43.6. Minor calc silicate minerals	and patches of finely dissem magnetite.	533	74.9	76.9	2.0	5	15	230	x	30	x				0
				V	Contact 65°															3
					74.9-78.1 As above, minor serpentinite veins		534	76.9	78.1	1.2	5	x	45	x	55	x				4
				sh/Cst	78.1-80.4 BLACK SHALE/CALC SILICATE BRECCIA.	Graphitic partings, trace py in thin veinlets and	535	78.1	80.4	2.3	50	50	105	x	15	x				
					Black, highly deformed rock; lenses to 3mm of black	dissem. Thin veinlets of green serpentinite.														
				V	shale/grey siltstone, with pinkish patches of calc silicate	minerals.														

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 4
TENEMENT NAME TENTH LEGION No. 53M/75
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. TLC2
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s) 26667/26668

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au
					Contact 65°												
82.5	85.3	2.5	NQ	M/S	80.4-81.7 MAGNETITE with SERPENTINITE	Abundant fine calcite veining and	877536	80.4	81.5	1.1	640	4400	1.2%	13.0	70	x	x
85.3	88.5	3.2			Dark green serp. matrix, spotted with greenish	impregnations in mag. Traces py in veins,											
88.5	91.5	3.0			harder minerals.	with minor sp.											
91.5	94.5	3.0			Contact 75°												
94.5	97.5	3.0		cv	81.7-84.1 BRECCIA WITH CALCITE+PYRITE.	81.7-82.4 15% py/marcasite, some euhedral	537	81.5	83.5	2.0	280	3800	1.7%	6.0	20	x	
97.5	100.5	3.0			White calcite vein, with garnets and black	garnets.	538	83.5	84.1	0.6	2000	1.6%	3.3%	20.0	40	x	
100.5	103.5	3.0			serpentinite as a cavity filling. Clasts of a	82.4-83.5 Massive white calcite with serp.											
103.5	106.5	3.0			dark green-grey calc silicate rock	83.5-84.1 Mag 10%, py 15-20%, lesser											
					preserved	calcite in a grey-green calc silicate matrix.											
					Contact 45°	Strong trace sp, some ga?											
				sh/Csd	84.1-95.5 Interbedded BLACK SHALES/	Calcite veining, small patches of	539	84.1	86.9	2.8	15	260	855	0.5	150	x	
					SILTSTONES and CALC SILICATES.	clissem. magnetite.	540	86.9	88.8	1.9	10	30	65	x	25	x	x
					Dark grey → black finely laminated black	89.1-89.4 White vuggy calcite vein.	541	88.8	90.8	2.0	50	40	120	0.5	4	x	
					shale breccia with some crystalline chlorite	92.8-93.4 Vuggy calcite and veining with	542	90.8	92.8	2.0	30	x	30	x	5	x	
					patches and small intervals of drab green	a matrix of dark green-black talcy	543	92.8	93.4	0.6	105	70	390	x	20	x	
					diopside/tremolite rock with minor idocrase(?)	serpentinite with chlorite material.	544	93.4	96.0	2.6	25	40	100	0.5	15	x	x
					?vesuvianite and ?Mn silicates.		932283	94.8m THIN SECTION SAMPLE									
				Cst	95.5-99.9 CALC SILICATE ROCK		545	96.0	97.1	1.1	1000	105	215	0.5	15	10	
					Mottled whites, creams and greens-highly		546	97.1	97.8	0.7	15	180	300	1.5	40	x	
					altered calc silicate rock - dominantly diopside/		547	97.8	99.9	2.1	5	30	75	x	25	x	
					tremolite with epidote, minor idocrase.		932284	96.6m THIN SECTION SAMPLE.									
					Contact 75° 96.0-97.1 Dark green massive serpentinite												
					with py 10-15% replacing magnetite (now 2-3%)												
					Contact 55°												
				S/M	99.9-101.2 SERPENTINITE WITH MAGNETITE.	Mag 40-50%; traces very fine sp.	548	99.9	101.2	1.3	65	25	230	x	45	10	x
					Dark green → black serp. matrix with black		932285	97.2m THIN SECTION SAMPLE.									
					crystalline magnetite 40-50%, minor grey talc												
					and corroded grey clasts of remnant tremolite.												
				Css	101.2-104.7 TREMOLITE ROCK WITH MAGNETITE.	Mag 20-30%, very finely dissem and in small	549	101.2	103.7	2.5	50	20	7650	x	190	x	
					Grey crystalline matrix with small pink clots of	veinlets. Fine calcite-py-sp-po veinlets, 5%	550	103.7	104.7	1.0	25	20	1800	0.5	120	x	
					?idocrase. The grey colour is due to ultrafine magnetite.												

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 5

TENEMENT NAME TENTH LEGION No. 53M/75

PLAN – MAP REFERENCE

CO-ORDINATES ... AZIMUTH ... DRILLERS ... COMMENCED ... DEPTH ... HOLE No. ThC2

RL COLLAR ... INCLINATION ... DRILL TYPE ... COMPLETED ... CASING LEFT ... DPO No(s) 26672 26667/26668

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W
106·5	109·5	3·0	NQ		Contact 70°		877551	104·7	106·8	2·1	15	10	130	0·5	4	x
109·5	112·5	3·0		qs	104·7–117·2 QUARTZ SERICITE ROCK	Patches of chloritic alteration and some										
112·5	115·5	3·0			Intensely altered sedimentary rock	blebs po, py to 3mm scattered through	GRIND	SAMPLES								
115·5	118·5	3·0			- drab olive greys and pinkish brown	the rock. Some fine calcite-pyrite	877569	106·8	111·8	5·0	24	9	75	<1	4	25
118·5	121·5	3·0			alternating layers of silt rich sediment	veining at low angles to core. 3%–5%	570	111·8	117·2	5·4	71	11	112	1	x	60
121·5	124·5	3·0			to 3 cm. thick. Some qtz segregations		571	117·2	122·2	5·0	86	8	134	2	<4	115
124·5	127·5	3·0			and lenses to 3cm thick. The paler		572	122·2	127·2	5·0	45	17	280	1	16	55
127·5	130·5	3·0			coloured layers are probably sericite		573	127·2	133·0	5·8	65	19	183	1	<4	65
130·5	133·5	3·0			rich, with the brown areas being		932286	110m.	} THIN SECTION SAMPLES.							
					hornfelsed siltstones.		287	125m.	}							
					Bedding? preserved; angles 60°–80° to CA.											
					Some intervals pale grey qtz and sericite											
					only – originally sandstones?											
				↓	Contact 60°											
				SS	117·2–133·0 HORNFELSED SILTSTONE.	Some green and white stockworks of										
					Impure tough green-grey rock with	qtz, chlorite and epidote in bleached										
					brown intervals. Finely laminated, minor	pale brown calc silicate rock. Traces py										
					deformation – contact metamorphosed	in veinlets, and as small blebs.										
					impure carbonate? Not a skarn rock.											
					125·3–130·2 Dominantly brownish f.gr.											
					rock (silt-rich argillite?) with green											
					qtz-epidote stockwork.											
					119·8 Bedding 50°											
					122·7 Bedding 50°											
				↓	130·0 Bedding 50°.											
					END OF HOLE 133·0m.											

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 1

TENEMENT NAME TENTH LEGION No. SIM/75

PLAN – MAP REFERENCE TASH 2 TASH 14

CO-ORDINATES 3669.9N 5180.11E AZIMUTH 360° grid DRILLERS S. RIMAK COMMENCED 6.3.81 DEPTH 142.0m HOLE No. TLC3

RL COLLAR 244.5m INCLINATION -50° DRILL TYPE BOYLES 37 COMPLETED 13.3.81 CASING LEFT 9x3m NW casing, 3x3m NQ rods DPO No(s) 26667/26668

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au			
					TRICONED TO 6.0m - NO CORE		SLUDGE SAMPLES													
0	13.5	0.5	NQ	M	6.0 - ?13.5 MAGNETITE	Highly weathered to 16.0m.	877578	0	3.0m		50	15	420	0.5	10	x				
13.5	16.2	1.2	to		Very poor recovery; mostly black granular	6.0-13.5 Soft crumbly puggy clay matrix	877579	3.0	6.0		40	15	335	0.5	15	x				
16.2	19.3	2.5	68m		magnetite 80-90%, with some interstitial clay.	-rock was originally calc silicate material	877580	6.0	9.0		35	15	320	1.0	15	x	x			
19.3	22.5	3.0			13.5 - 16.1 CALC SILICATE ROCK	with much dissem. mag. and discrete lenses	SPLIT	SAMPLES												
22.5	25.5	2.8			Pale green fibrous skarn rock - tremolite	& massive mag.	877582	6.0	13.5	0.5	790	20	3200	2.0	20	x				
25.5	28.5	3.0			/diopside with patches & green chlorite		583	13.5	15.5	0.2	1700	70	1.3%	1.0	30	x				
28.5	31.3	2.8			and epidote with 5-7% mag and trace sp		584	15.5	16.1	0.6	2750	45	6.0%	2.0	35	x	0.017			
31.3	34.3	3.0			veining.															
34.3	37.0	2.1			16.1-19.6 CALC SILICATE ROCK WITH MAGNETITE.	Mag 25-30%, with 2-3% intergrown py	585	16.1	16.35	0.25	1350	90	3.0%	2.0	6	x				
37.0	40.0	2.7			As above, mag dissem and in massive	and 1-2% blebs of sp.	586	16.35	18.1	0.85	920	85	7.4%	3.0	20	x				
40.0	43.5	3.5			bands to 10cm, 2 - 5%.		587	18.1	19.0	0.9	180	15	2.5%	0.5	20	x				
43.5	46.5	3.0			Gradual Change.		588	19.0	19.5	0.5	365	25	2.6%	1.5	15	x	0.017			
46.5	49.5	3.0		Css	19.6-27.1 CALC SILICATE SKARN ROCK.	Mag dissem in narrow alteration zones	589	19.5	21.0	1.5	175	20	3.3%	0.5	20	x				
					As above, but magnetite decreases to 2-3%.	and small veinlets. 3-5%. Strong trace	590	21.0	22.4	1.4	40	15	2.2%	1.0	25	x				
					Some green actinolite? and ? hornblende.	sp.	591	22.4	23.4	1.0	510	15	11.5%	0.5	3	x				
					22.4-23.1 Green epidote rock with mag 3-5% and	sphalerite 10-15%.	592	23.4	24.4	0.7	25	5	1.8%	0.5	10	x	0.008			
					23.1-24.4 Green epidote rock alternating with	23.1-24.4 Sp dissem 1-2% throughout	593	24.4	26.0	1.6	200	15	2.7%	1.0	7	x				
					bands of massive magnetite to 30 cm		594	26.0	27.1	1.1	610	10	1.4%	1.0	10	x				
					24.4-27.1 Massive granular pale green rock	24.4-26.0 2-3% Sp throughout in small veinlets	595	27.1	28.5	1.3	220	10	1.4%	1.0	20	x				
					- diopside/tremolite, with 10-20% crystallic	with mag 1-2%. Trace py.	596	28.5	29.9	1.4	50	15	8000	1.0	20	x	x			
					dark green chlorite and abundant epidote	26.0-27.1 Mag dissem throughout as small	597	29.9	30.9	1.0	155	5	4700	1.0	15	x				
					alteration.	stringers 5-10% with traces sp, py.	598	30.9	32.9	2.0	35	5	3200	0.5	4	x				
					Contact irregular.		599	32.9	34.9	1.8	35	10	3450	0.5	15	x				
				Css	27.1-47.7 CALC SILICATE ROCK	Traces py, po and sp.	600	34.9	36.9	1.4	15	5	1550	0.5	15	x	x			
					Mottled white and green f.gr. matrix -	Thoroughly brecciated fabric which has been	601	36.9	38.9	1.5	30	5	1800	0.5	15	x				
					tremolite/diopside, with major later dark	altered/metasomatised, giving the unusual	602	38.9	40.0	1.1	35	10	2200	0.5	9	x				
					green chloritic alteration, some epidote	spotted texture and crude irregular banding	603	40.0	40.5	0.5	250	35	7250	x	6	x				
					veining and small patches of brown? idocrase.	Extensive fracturing and brown dendritic staining.	604	40.5	42.5	2.0	15	15	1050	x	10	25	x			
						From 44.3 Gradually reverts to a more massive	605	42.5	44.5	2.0	20	15	1850	x	15	x				
						fabric reminiscent of 24.4-27.1 m.	606	44.5	46.0	1.5	25	40	1950	0.5	6	x				

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME TENTH LEGION No. S1M/75

PLAN – MAP REFERENCE

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. THC3

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Cu	Pb	Zn	Ag	Sn	W	Au		
49.5	52.5	3.0			Contact 47°		877607	46.0	47.4	1.4	70	15	2750	x	10	x			
52.5	55.5	3.0			47.7-51.4 MAGNETITE WITH SERPENTINITE.	Mag. 40-60% ; sp dissem throughout 1-2%	552	47.4	49.0	1.6	890	25	2.8%	1.0	6	x	x		
55.5	58.5	3.0			Black crystalline magnetite, crudely banded	; py as blebs to 20mm, 1% ; po as rare	553	49.0	49.8	0.8	270	25	2.55%	0.5	6	x			
58.5	61.5	3.0			÷ 40° LCA. The matrix is dark muddy green	interstitial blebs and in small veinlets with	554	49.8	51.4	1.6	285	30	2.95%	0.5	6	x			
					serpentinite, with some remnants of greyish	py in greyish corestone material, 1-2%.	932288	26.0	}										
					calc silicate rock and small white blebs of		289	28.4	} THIN SECTION SAMPLES.										
					refractory minerals (residuals from serpentinite		290	52.6	}										
					alteration?)														
					Contact 35°														
					51.4-54.0 CALC SILICATE WITH MAGNETITE	Banded 40° in upper 1m.													
					Yellowish grey crystalline tremolite-diopside-	Mag 15-25% dissem throughout with	555	51.4	54.0	2.6	185	30	2.5%	0.5	4	x			
					epidote (?) matrix with heavily dissem. mag 20-25%	serpentinite; sp 1-2% in veinlets and stringers													
					The yellowish colour is due to incipient	; Po 1-2% as interstitial blebs ; trace													
					serpentinisation - small stringers of translucent	py as interstitial blebs.													
					serp. 10-15%.														
				S/M	54.0-56.4 SERPENTINITE WITH MAGNETITE.	54.0-55.2 Mag 40-50% ; sp 5-7% ; py 2-3%														
					Almost black massive serpentinite with bands	55.2-56.4 po 50-60%, virtually massive	556	54.0	55.2	1.2	390	30	1.45%	0.5	x	x	0.017		
					of fine grained magnetite, or heavily dissem	55.5-55.9, with py/marcasite 2-3%, sp	557	55.2	56.4	1.2	2450	25	1.45%	0.5	x	x			
					pyrrhotite.	1-2%, trace cp?													
					Gradual change														
				Css/M	56.4-64.9 ALTERNATING CALC SILICATE														
					SKARN ROCK AND MAGNETITE/SERPENTINITE.														
					56.4-57.2 Massive granular pale green rock	56.4-57.2 po 5-7%, dissem along	558	56.4	57.2	0.8	200	25	4000	0.5	10	x			
					- diopside/tremolite, with dark green chlorite?	weak breccia cracks at approx 50° LCA													
					and abundant epidote alteration	, traces sp, py.													
					Contact 60° 57.2-57.8 CALC SILICATE WITH SERPENTINITE	57.2-57.8 po 10-15%, mag 10%, py, sp	559	57.2	57.8	0.6	640	25	7700	0.5	3	x			
					See above 51.4-54.0.	1-2%. Dissem; some 3-5 cm bands of													
					57.8-59.1 Mottled grey rock - tremolite, with	magnetite. py/marcasite appears to be after po.													
					clots of serpentinite and much po.	57.8-59.1 po 30-35% ; sp 1-2%, traces py.	560	57.8	60.0	2.2	565	20	6150	x	x	x	x		
					Contact 40° 59.1 - 59.5 Magnetite 30-35%, associated	59.1-59.5 po 20-25% ; mag 30-35% ; sp 1-2%													
					with black serpentinite.														

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3
TENEMENT NAME TENTH LEGION No SIM/75
PLAN – MAP REFERENCE
CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. TLC3
RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Cu	Pb	Zn	Ag	Sn	W	Au
61·5	64·5	3·0			Contact 40° 59·5 - 60·0 As above, 57·8 - 59·1												
64·5	67·5	3·0			60·0 - 60·4 Massive magnetite	60·0 - 60·4 Mag 70-80%, po 1-2%, sp 1-2%	877561	60·0	61·3	1·3	1350	20	8500	0·5	4	×	
67·5	70·5	3·0			60·4 - 61·3 Pyrrhotite in black serpentinite.	60·4 - 61·3 po 70-80%; sp 3-5%; py 1-2%.											
70·5	76·5	6·0			Contact 45° 61·3 - 62·6 As above 57·8 - 59·1	61·3 - 62·0 po 10%; sp 1-2%	562	61·3	62·0	0·7	500	20	6200	×	8	×	
						62·0 - 63·6 po 10-15%; sp 1%; py 1%; some bands of black serp to 15 cm, 40° to CA.	563	62·0	63·6	1·6	510	20	2100	×	4	×	
					Contact 70° 63·6 - 64·0 Pyrrhotite in serpentinite	63·6 - 64·0 po 70-80%; py 2-3%.	564	63·6	64·0	0·4	1800	25	1·35%	1·0	3	×	0·008
					Contact 70° 64·0 - 64·9 Transition zone - serpentinite and mag, po gradually decrease - a banded calc silicate rock becomes dominant (see below)	64·9 - 64·9 po 5-7%; patchily distributed and finely banded; strong trace sp. Weak py - serpentinite - calcite veinlets.	565	64·0	64·9	0·9	515	45	5950	×	×	×	
					Contact 65°												
				Cst	64·9 - 67·6 CALC SILICATE ROCK Crudely banded bone coloured mottled ? tremolite - diopside skarn rock.	po 1%, dissem and in small veinlets. Strong trace sp, py.	566	64·9	66·2	1·3	70	30	1800	×	4	×	
							567	66·2	67·6	1·4	185	40	4800	×	4	×	
				Lst	67·6 - 70·8 LIMESTONE Grey crystalline impure limestone with minor serpentinite zones and tremolite/diopside with white calcite segregations.	Banded 30-35° – recrystallisation or ? bedding. Trace py in calcite/serpentinite zones.	568	67·6	69·3	1·7	15	80	250	0·5	9	×	0·008
							877608	69·3	70·8	1·5	170	210	1500	1·0	6	×	×
							932291	69m	THIN	SECTION	SAMPLE.						
					Contact 55°												
				Css	70·8 - 71·5 CALC SILICATE ROCK Green epidote - tremolite - diopside rock with 30% pink crystalline garnets.		877347	70·8	71·5	0·7	25	30	100	1·0	25	20	
				Lst	71·5 - 73·9 LIMESTONE Grey crystalline limestone with serpentinite alteration and some finely dissem. mag. minor crystalline mag intervals with serp. and calcite, minor garnets.	Mag dissem. throughout Lst or in crystalline patches with serp. and calcite 3-5%. Po finely dissem. 1-2%; py in blebs 1%; trace sp.	877609	71·5	73·0	1·5	90	195	1600	1·0	8	×	
							610	73·0	73·9	0·9	510	440	5600	4·5	5	×	
				Cst	73·9 - 75·2 CALC SILICATE ROCK See 64·9 - 67·6 for description.		611	73·9	75·2	1·3	170	80	1200	1·5	×	×	

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 4
TENEMENT NAME TENTH LEGION No. 51M/75
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. T.L. C.3.
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au
					Contact 35°												
76·5	79·5	3·0		Css	75·2 - 75·8 CALC SILICATE SKARN		877612	75·2	75·8	0·6	35	40	120	1·0	20	130	x
79·5	82·5	3·0			See 70·8 - 71·5 for description.												
82·5	85·5	3·0		lst	Contact 55° 75·8 - 76·9 LIMESTONE WITH SERPENTINITE	Mag 2-3% ,weak trace sp,po.	613	75·8	76·9	1·1	20	95	270	1·5	3	x	
85·5	88·5	3·0			Grey lst with olive green drab serpentinite												
88·5	91·8	3·3			30%; banded												
91·8	94·5	2·7			Contact 50°												
94·5	97·5	3·0		Csd.	76·9 - 78·5 CALC SILICATE ROCK	Fine serpentinite veining.	614	76·9	78·5	1·6	15	60	250	0·5	10	20	
97·5	100·4	2·9			Green massive diopsidic rock with qtz												
100·4	103·5	3·1			segregations , minor garnets.												
103·5	106·5	3·0			Contact 40°												
106·5	109·5	3·0		lst	78·5 - 79·4 LIMESTONE WITH SERPENTINITE.	Banded 45° LCA ; 10-12% serpentinite	615	78·5	79·4	0·9	35	80	525	1·0	x	15	
109·5	112·1	2·5			See 75·8 - 76·9 for description	1-2% finely dissem. mag.; trace py ,sp.											
				Cst	79·4 - 80·4 CALC SILICATE ROCK	Traces po near contacts; weak calcite	616	79·4	80·4	1·0	75	40	390	0·5	8	65	x
					See 73·9 - 75·2 for description.	veinlets with rare blebs py.											
					Contact 60°												
				lst	80·4 - 90·1 LIMESTONE , altered.	80·4 - 81·7 Po dissem in lst 3-5% ; sp 1%	617	80·4	81·7	1·3	240	650	6400	8·5	4	x	
					Grey crystalline rock with olive green	Patches dark green sep with calcite and	932292	86·1	THIN SECTION SAMPLE.								
					serpentinite banding 40-60° LCA. Very altered,	garnets. Mag. dissem. up to 2% for the interval											
					with patches of bone white calc silicates, and	81·7 - 85·8 Mag dissem in grey lst 2-3% ,trace	618	81·7	82·2	0·5	10	190	310	0·5	x	x	
					more rarely green diopsidic rocks up to 0·8m	po ,trace py in fine calcite veining.	619	82·2	83·8	1·6	15	65	150	0·5	3	x	
					thick throughout the interval, with irregular	85·8 - 87·4 Mag 2-3%, locally 10% ,dissem with	620	83·8	84·2	0·4	R.O	430	770	2·5	x	x	x
					contacts.	brown sep alteration ; po 1-2% , locally 20%,	621	84·2	85·8	1·6	20	50	70	0·5	x	x	
					Contact 60° 85·8 - 87·4 White calc silicate rock with	py in veinlets with mag 1-2%.	622	85·8	86·5	0·7	90	1200	2150	5·5	x	x	
					brown serpentinite alteration	87·4 - 89·5 po, finely dissem 3-7%	623	86·5	87·4	0·9	70	825	450	4·0	x	30	
					Contact 60°	89·5 - 90·1 po, finely dissem 10%, banded.	624	87·4	89·0	1·6	70	150	810	1·0	9	x	x
				Cst/lst	90·1 - 111·5 CALC SILICATES WITH LIMESTONE.	90·1 - 98·5 Po dissem. in discrete intervals	625	89·0	89·5	0·5	20	125	35	0·5	x	x	
					Banded rock - alternating 10-20 cm intervals of	assoc. with silicified zones. Traces ultramine	626	89·5	91·2	1·7	30	45	235	0·5	x	x	
					yellow (serp alteration) and bone white calc	mag. in black fine bands in carbonate.	627	91·2	92·0	0·8	55	25	50	1·0	9	x	
					silicates, finely banded 35-45°, and grey and	98·5 - 104·2 Traces po with serp. in discrete	628	92·0	92·7	0·7	215	25	50	0·5	x	20	0·008
					white limestone intervals - finely banded 1-5mm	zones.	629	92·7	93·6	0·9	25	65	690	1·0	7	20	
					white and black recrystallised carbonates.		630	93·6	95·1	1·5	20	15	150	x	x	x	

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 5

TENEMENT NAME TENTH LEGION No. 51M/15

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. T.L.C.3

RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization
					Contact 75°	
112·1	115·1	3·0			104·2 – 111·5 Major constituent grey crystalline	104·2 – 111·5 po dissem 3-5% in grey lst
115·1	118·1	3·0			lst with serp and po, with lesser yellowish	, mag finely dissem 1-2% throughout.
118·1	121·3	3·3			calc silicates.	
121·3	124·5	3·0			108·4 – 109·0 Patch of green and pink calc silicate	rock, finely bedded 45°.
124·5	127·5	2·9			110·3 – 110·8 Black chert interval, brecciated	and metasomatised.
127·5	130·5	3·0			Contact 55°	
130·5	133·5	3·0		Css	111·5 – 132·8 CALC SILICATE (SKARN) ROCKS.	111·5 – 112·6 traces po as blebs, stringers (d)
					Alternating intensely altered rocks of any	112·6 – 114·6 Minor calcite – py – mag veining (a)
					of the following 4 types, in intervals	114·6 – 116·5 10% dissem po, mag, traces py (b)
					from 10 cm to 2·5 m; (a) Mottled	116·5 – 117·7 finely dissem mag 1-2%, trace po. (b)
					pink and yellow-brown mtk – idocrase,	117·7 – 119·0 po dissem 5-7%, f.gr. mag 2-3%
					diopside and ? garnet.	Marasite, py after po 1-2%. (a/b)
					(b) Mottled grey	119·0 – 120·4 trace mag, po (a)
					and white rock – tremolite/diopside (Cst)	120·4 – 121·4 po dissem, along stringers 15-20%
					that has been silicified; the grey colour	, degraded to py. Trace mag? (b)
					is due to disseminated po and magnetite.	121·4 – 122·9 Mag dissem throughout 3-5%,
					(c) Mottled greens,	intergrown with 2-3% po (c)
					yellows, pinks and browns – appears to	122·9 – 123·6 po dissem throughout, partially
					be type (a), that has been thoroughly	degraded to py. (d)
					serpentinised.	123·6 – 125·3 Weak calcite veinlets (d)
					(d) grey green rock	125·3 – 125·7 po, py, dissem. 10% (d)
					mottled with pink – diopside-tremolite	125·7 – 127·1 No mineralisation (d)
					rock with minor epidote veining and	127·1 – 128·6 po, py, marasite in veinlets and
					patches of ? Mn silicates, silicified.	disseminated. 10-15% (d)
					Types a, b, c originally Cst?	128·6 – 129·0 1-2% po; mag-serp veinlets (a)
					Type d originally Csd?	129·0 – 129·5 trace po, py in veinlets, blebs (d)
					129·5 – 129·9 Grey hornfelsed cherty sediment	129·5 – 129·9 2-3% py dissem., and as
					less.	bedded laminae.
						129·9 – 132·8 trace fine magnetite (a)

Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au
877631	95·1	95·8	0·7	35	15	340	0·5	×	×	
632	95·8	96·4	0·6	20	40	210	0·5	4	15	0·025
633	96·4	97·3	0·9	10	25	920	0·5	×	15	
634	97·3	98·5	1·2	30	25	440	0·5	5	15	
635	98·5	99·4	0·9	30	5	40	×	3	20	
636	99·4	99·8	0·4	75	×	45	×	7	40	×
637	99·8	100·5	0·7	15	5	20	0·5	×	×	
638	100·5	102·1	1·6	30	15	45	0·5	20	20	
639	102·1	103·0	0·9	5	15	60	×	×	×	
640	103·0	103·8	0·8	20	10	75	0·5	×	×	×
641	103·8	104·2	0·4	20	70	400	1·0	×	×	
642	104·2	106·2	2·0	×	30	60	0·5	×	×	
643	106·2	107·0	0·8	25	90	1500	1·0	6	×	
644	107·0	108·4	1·4	15	55	840	0·5	×	×	×
645	108·4	109·0	0·6	10	75	300	0·5	5	15	
646	109·0	110·3	1·3	10	35	100	0·5	×	×	
647	110·3	110·8	0·5	15	35	75	0·5	5	×	
648	110·8	111·5	0·7	55	130	1100	2·0	×	×	0·033
649	111·5	112·6	1·1	25	35	100	0·5	9	×	
650	112·6	114·0	1·4	35	95	450	1·0	×	×	
651	114·0	115·1	1·1	115	25	130	0·5	4	10	
652	115·1	116·5	1·4	90	95	115	0·5	×	×	0·017
653	116·5	117·7	1·2	30	95	180	1·0	10	35	
654	117·7	119·0	1·3	75	50	140	1·0	×	×	
655	119·0	120·4	1·4	30	100	340	1·0	×	×	
656	120·4	121·4	1·0	110	25	155	1·0	4	×	×
657	121·4	122·9	1·4	20	90	1400	1·5	×	×	
658	122·9	123·6	0·7	55	30	400	1·0	×	×	
659	123·6	125·3	1·7	5	25	60	0·5	5	20	
660	125·3	125·7	0·4	30	25	95	×	5	×	×
661	125·7	127·1	1·4	5	25	45	×	×	×	

041

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 6
TENEMENT NAME TENTH LEGION No. 5.M/75
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. T.L.C.3
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by) Cu	Pb	Zn	Ag	Sn	W	Au
33.5	136.5	2.9		Lst	132.8-139.7 LIMESTONE, altered.	132.8-135.3 Ultrafine magnetite in lst. 5-10%; trace py in veinlets.	87662	127.1	128.6	1.5	45	30	195	0.5	5	x	
136.5	139.5	3.0			See 80.4-90.1 for description. The rock		663	128.6	129.0	0.4	15	100	565	1.0	x	x	
139.5	142.0	2.5			has a banded, 'striped' appearance - bands	135.3-139.7 Ultrafine mag in grey lst, 5%.	664	129.0	129.5	0.5	25	20	85	1.0	7	x	x
					of yellow serpentinite with white calc		665	129.5	129.9	0.4	40	20	60	0.5	x	x	
					silicate or remobilised carbonates, mostly		666	129.9	131.3	1.4	30	95	410	1.0	x	10	
					< 1 cm thick.		667	131.3	132.8	1.5	15	50	185	0.5	x	x	
					136.8 Banding 40°		668	132.8	134.7	1.7	35	65	195	1.0	x	x	0.025
					Contact 40°		669	134.7	135.3	0.6	10	120	700	1.5	x	10	
				Csd	139.7-142.0 CALC SILICATE ROCK.	139.7-142.0 Minor qtz-calcite veining.	670	135.3	136.5	1.2	5	30	250	1.0	x	x	
					Pinkish and greenish grey well banded		671	136.5	138.2	1.7	5	60	290	1.0	x	x	
					silicified ? Diopside-tremolite rock; alternating		672	138.2	139.7	1.5	15	35	155	0.5	x	x	0.017
					colour bands 5-10mm. Some pink? Mn silicates		673	139.7	141.0	1.3	x	20	105	0.5	4	10	
					141 Banding 15°.		674	141.0	142.0	1.0	x	20	110	0.5	x	x	
					END OF HOLE 142.0 m.		932293	113.0	} THIN SECTION SAMPLES								
							294	114.8									
							295	122									

8807 P2

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 1

TENEMENT NAME TENTH LEGION No. 51.M/75

PLAN – MAP REFERENCE TASH 2 TASH 16

CO-ORDINATES 3551·02N 5029·1E AZIMUTH 315° GRID DRILLERS S.RIMAK COMMENCED 14·3·81 DEPTH 134 m HOLE No. ThC4

RL COLLAR 223·6 m INCLINATION -50° DRILL TYPE BOYLES 37 COMPLETED 20·3·81 CASING LEFT 4m NW (collar) DPO No(s) 26669/26672 26671

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au
			NQ	NC	0-4·0m TRICONE DRILLED – NO CORE.				GRIND		SAMPLES						
4·0	7·0	2·6		Cst	4·0 – 24·35 CALC SILICATE ROCK	Minor chlorite-epidote veining	869962	4·0	9·5	5m	27	23	180	<1	8	55	
7·0	8·5	1·5			Bone coloured f.gr tremolite-diopside	7·7m Bedding 40°		9·5	14·5	5m	38	9	100	<1	6	40	
8·5	10·5	1·9			assemblage, with patches of pinkish brown and	Extensively brecciated and disrupted		14·5	19·5	5m	26	10	103	<1	4	50	
10·5	13·5	3·0			green well bedded more diopside	– the white tremolite alteration		19·5	24·4	4·9m	130	14	500	1	<4	140	
13·5	16·0	2·5			rich material 0·3 – 1·0m. Some epidote	appears to post-date the green and brown	932296	10									
16·0	19·5	3·4			veining.	material. Some thin calcite stringers	297	22	THIN		SECTION		SAMPLES.				
19·5	22·5	2·9			Gradually becomes greener and more	and segregations	298	25									
22·5	25·5	2·9			chloritic and altered with depth												
25·5	28·5	3·0			(after about 16 m) – grossly brecciated												
28·5	31·5	3·0			and metasomatised fabric.												
31·5	34·5	2·9			Contact 65°				CUT		SAMPLES.						
34·5	37·5	3·0		Css	24·35 – 31·9 CHLORITE-RICH CALC	Grossly brecciated, metasomatised	877675	24·4	26·0	1·6	5	25	200	×	30	×	
37·5	40·5	2·8			SILICATE ROCK.	fabric – totally recrystallised.	676	26·0	26·6	0·6	5	15	150	×	3	×	×
40·5	43·5	3·0			Dark green coarsely crystalline chlorite	24·35 – 26·0 no obvious mineralisation	677	26·6	26·9	0·3	5	20	275	0·5	25	×	
43·5	46·5	3·0			in interstices of white crystalline	26·0 – 26·5 Granular mag with chlorite	678	26·9	27·2	0·3	5	20	90	×	6	×	
46·5	49·5	2·7			tremolite with recrystallised white	10%	679	27·2	27·8	0·6	5	20	155	×	7	×	
					residual calcite	26·5 – 26·9 Mag 70-80%, green serpentinite	680	27·8	28·4	0·6	×	10	115	×	7	×	0·008
						matrix. Py 1-2%.	681	28·4	29·6	1·2	×	15	185	×	10	×	
						26·9-27·5 Pinkish brown crystalline garnets	682	29·6	31·2	1·6	×	15	215	×	10	×	
						15% 20%	683	31·2	32·6	1·4	25	30	740	×	15	×	
						27·5 – 28·0 Granular mag with chlorite, 10%.											
						28·0 – 31·9 Patches of very crystallic											
					Contact 75°	chlorite, mag rare, trace trace py.											
				Csd	31·9 – 47·90 CALC SILICATE ROCK?	31·9 – 35·1 Minor epidote veining	684	32·6	34·1	1·5	10	20	120	×	10	×	×
					Medium green f.gr diopside rich	and alteration. Sparse thin calcite veins.	685	34·1	35·3	1·2	5	45	115	×	10	×	
					matrix, with paler mottlings (tremolite?)	35·1 – Extensively brecciated, with			GRIND		SAMPLES						
					and brownish portions – possibly	greenish alteration proceeding along	869966	35·1	40·1	5·0	160	9	166	1	4	165	
					idocrase?; or more sediment rich	fractures. Little obvious mineralisation	967	40·1	44·0	3·9	60	5	107	<1	6	80	
					portions – less altered.	, parts of the rock have a 'spotted' fabric	968	44·0	47·9	3·9	63	14	193	1	<4	60	
					35·4 Bedding? 70° TCA	Patches of green crystalline chlorite occur more rarely.	932299	43·2	THIN		SECTION		SAMPLE				

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2
TENEMENT NAME TENTH LEGION No. 51M/75
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. TLC4
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by:) Cu	Pb	Zn	Ag	Sn	W	Au
49·5	52·5	2·5		Cst	47·90–52·9 CALC SILICATE ROCK.	No obvious mineralisation; pervasive calcite stringers.	877686	47·9	50·7	2·8	15	40	150	×	35	10	
52·5	55·5	3·0			Pale green and bone white fgr.	48·0–48·5 Pink cryptallic garnets with	687	50·7	52·9	2·2	5	20	125	×	10	×	
55·5	58·5	2·8			?tremolite-diopside rock, very similar	epidote 20-25%, minor calcite veining.											
58·5	61·5	3·0			to 4·0–24·35m. Excessive yellow-green												
61·5	64·5	2·8			epidote alteration and veining, esp.												
64·5	67·5	3·1			51·3–52·9m.												
67·5	70·5	2·8			Contact 68°												
70·5	73·4	3·1		Css	52·9–57·7 CALC SILICATE SKARN	52·9–53·5 Po diosem as small blebs, 3%	688	52·9	53·5	0·6	160	25	435	×	×	×	×
					Granular grey-green rock - mainly diopside	53·5–54·9 Minor epidot, chlorite	689	53·5	54·9	1·4	50	40	760	0·5	15	×	
					,with extensive chloritic alteration.	54·9–55·4 Mag diosem along fractures, 10%	690	54·9	55·4	0·5	180	90	1·3%	0·5	15	15	
					Mottled appearance, with minor residual	; with sp 3-5%.											
					intervals of 47·9–52·9, above	55·4–56·1 Irregular masses of mag 40%	691	55·4	56·1	0·7	75	90	2·4%	×	15	×	
					Contact 35° 55·4–56·1 Magnetite with serpentinite	, sp 7-10% as interstitial blebs											
					60-80%.	56·1–56·9 Mag, diosem, 5-7%; with po	692	56·1	56·9	0·8	450	40	6900	×	15	×	×
						2-5%; py 1-2% diosem and also in small											
						calcite-sp veins 1-2%.											
					Contact 80°	56·9–57·7 Trace po	693	56·9	57·7	0·8	50	30	1650	×	35	×	
				lst/cst	57·7–73·0 ALTERED LIMESTONE	57·7–59·6 Very finely diosem po 5%	694	57·7	59·1	1·4	65	35	640	×	6	×	
					Grey finely banded impure recrystallised	59·6–65·4 Serpentinite 10-20% of rock	695	59·1	59·6	0·5	35	20	140	×	×	×	
					limestone, serpentinised, with bands of	; rare traces diosem po.	696	59·6	61·0	1·4	5	35	210	×	4	×	×
					yellow and green serpentinite up to	65·4–67·2 Po in small veinlets 2-3%,	697	61·0	61·4	0·4	15	25	105	×	×	×	
					10 cm thick, usually at 70° LCA. In places	locally some mag. veinlets 1-2%	698	61·4	62·3	0·9	5	40	135	×	7	×	
					totally altered to bone white and green	67·2–67·6 Black chert band - rare trace py.	699	62·3	63·2	0·9	×	25	140	×	6	×	
					calc silicate assemblages for up to 1m.	67·6–68·0 Green banded calc silicate, 50°	700	63·2	63·8	0·6	×	20	60	×	4	×	×
					Very distinctive 'stripey' rock.	; trace py, marcasite along banding.	701	63·8	64·5	0·7	×	30	115	×	4	×	
					The grey carbonate intervals usually have	68·0–6 Magnetite/serpentinite banding 50°	702	64·5	65·4	0·9	5	25	385	×	8	×	
					up to 5% very finely diosem po, which	to LCA, 35% of rock. Trace sp?	703	65·4	66·1	0·7	100	30	3500	×	25	×	
					makes the rock magnetic.	69·6–71·7 Very finely diosem mag in	704	66·1	67·2	1·1	60	15	330	×	25	×	×
					Most banding 80–85° LCA	lst 5-7%, locally 10-15%.	705	67·2	67·6	0·4	5	10	60	×	×	×	
					65·4–73·0 Greater percentage of calc silicate	71·7–73·0 Calc silicate rock, minor	706	67·6	68·0	0·4	35	650	600	1·0	25	10	
					rock – 80% overall	mag in grey bands to 5cm.	707	68·0	68·9	0·9	90	225	1800	1·0	50	×	

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3
TENEMENT NAME TENTH LEGION No. 5LM/75
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. THC4
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au
					Contact 72°												
73·4	76·5	3·0		S/M	73·0 – 80·9 SERPENTINITE/MAGNETITE	73·0 – 73·4 Mag 10%	877708	68·9	69·6	0·7	10	85	340	×	25	×	0·008
76·5	79·3	2·8			finely banded green (sap), white (carbonates	73·4 – 75·1 Mag 40%, with green sap and	709	69·6	70·1	0·5	15	115	380	×	7	×	
79·3	82·4	2·8			and residual minerals) and black (mostly mag)	white residual minerals.	710	70·1	71·7	1·6	20	80	590	×	7	×	
82·4	85·3	3·0			rock, rather incompletely altered, with up	75·1 – 77·5 Mag 20-30%, variable 10-50%	711	71·7	73·0	1·3	5	90	600	×	60	×	
85·3	88·3	3·2			to 0·6 m bands of mag/sap alternating	, with bottle green sap or dissem in pale	712	73·0	73·4	0·4	5	45	490	×	40	×	×
88·3	91·5	3·4			with thinner banded mixtures of all three.	green serpentinised carbonates.	713	73·4	75·1	0·7	30	90	560	×	60	×	
91·5	95·5	3·0				77·5 – 78·3 Mag 10% in sap stockwork within	714	75·1	76·2	1·1	60	1000	365	5·0	140	×	
95·5	98·5	3·0				bone white calc-silicates	715	76·2	77·5	1·3	75	700	490	5·0	140	×	
98·5	101·5	3·0				78·3 – 78·9 Mag 40% in green serpentinite	716	77·5	78·3	0·8	25	155	620	×	65	v	×
101·5	104·5	3·0				78·9 – 79·4 Mag 15%, finely dissem in calc silicates	717	78·3	78·9	0·6	35	40	225	×	50	×	
104·5	107·5	3·0				79·4 – 80·9 Mag 25-30% in serpentinite (80 cm	718	78·9	79·4	0·5	×	50	175	×	30	×	
107·5	110·5	3·0			Contact 60°	bands; overall 15-20%.	719	79·4	80·2	0·8	10	95	390	×	55	×	
110·5	113·5	3·0		S/Lst	80·9 – 87·25 SERPENTINISED LIMESTONE	80·9 – 82·6 Mag 1-2% in discrete zones	720	80·2	80·9	0·7	235	620	9500	4·0	120	25	0·025
					White carbonate rich rock, with minor	, some dissem. blebs. Trace py in thin veinlets	721	80·9	82·3	1·4	5	50	220	0·5	60	20	
					intervals of bony white calc-silicate	82·6 – 87·25 Rare blebs magnetite (trace)	722	82·3	83·9	1·6	×	65	500	×	×	×	
					minerals, highly contorted grossly banded	; even more rare thin py veinlets.	723	83·9	85·5	1·6	×	50	240	×	20	×	
					fabric with extensive yellowish greeny brown		724	85·5	87·3	1·8	×	40	470	×	5	×	0·017
					serpentinite in 5mm → 10 cm bands throughout.													
					? Possibly the calcite is an alteration												
					product associated with the serpentinisation												
					of a calc silicate rock?.												
					Contact 65°		725	87·3	88·5	1·2	5	30	80	×	15	×	
				Cst	87·25 – 92·6 CALC SILICATE ROCK.	87·25 – 91·3 Traces of mag, po, sp	726	88·5	89·9	1·4	5	30	180	×	25	×	
					Bone coloured diopside/tremolite rock	associated with sparse serpentinite	727	89·9	91·3	1·4	35	50	2500	×	20	×	
					, banded 40-60°, minor dark (chloritic?)	bands.											
					alteration along small fractures	91·3 – 92·6 Pyrrhotite in bands to 15cm	728	91·3	92·2	0·9	260	40	290	×	15	×	0·008
					Some minor grey banded lst interbeds	with epidote, partially degraded to py	729	92·2	94·1	1·9	35	40	750	×	20	×	
					Contact 70°	10-12%.	730	94·1	95·0	0·9	5	30	85	×	15	30	
				Lst/(S)	92·6 – 113·0 ALTERED LIMESTONE	92·6 – 96·5 1-2% finely dissem po, mag?	731	95·0	95·4	0·4	5	45	65	×	×	×	
					See 57·7 – 73·0 for description.	96·5 – 98·0 5% finely dissem po, py 1%, mag?	732	95·4	96·5	1·1	20	45	70	×	10	20	0·017
						98·0 – 99·5 Mag, dissem, 10%; po 2-3%, py(tr)	733	96·5	98·0	1·5	20	50	155	×	7	×	

045

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 4

TENEMENT NAME TENTH LEGION No 5IM/75

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. TLC4

RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au
113·5	116·5	3·0			99·5 - 101·3 Silicified zone with 15% po,	partially degraded to py.	877734	98·0	99·8	1·8	15	50	320	×	30	×	
116·5	119·5	3·0			101·3 - 106·2 Grey spotted carbonate	101·3 - 106·2 rare po in carbonates, some	735	99·8	101·3	1·5	165	130	4200	0·5	70	30	
119·5	122·4	2·7			, not so well banded, extensively	rare blebs magnetite	736	101·3	102·7	1·4	25	40	350	0·5	40	×	0·050
122·4	125·2	3·0			serpentinised - yellow and brown serp > 50%	106·2 - 113·0 Minor mag veining, some	737	102·7	104·5	1·8	×	35	85	×	15	×	
125·2	128·5	3·5			of rock.	very finely disem mag; trace po.	738	104·5	106·2	1·7	10	40	150	×	15	×	
128·5	131·5	3·2			106·2 - 113·0 Greater percentage of lst, again		739	106·2	107·4	1·2	×	30	75	×	15	×	
131·5	134·0	2·3			moderately well banded at approx 60°.		740	107·4	108·9	1·5	5	40	160	×	15	×	0·017
				↓	Contact		741	108·9	110·3	1·4	20	35	90	×	35	×	
				Css	113·0 - 116·2 CALC SILICATE SKARN ROCK	113·0 - 113·6 Po disem 10-15%, 1-2% sp	742	110·3	110·8	0·5	5	45	75	×	30	×	
					Green, pink and white F.gr. calc silicate	, trace py in veinlets.	743	110·8	112·1	1·3	15	35	90	×	10	×	
					rock, extensively silicified and	113·6 - 114·3 Minor disem mag in more	744	112·1	113·0	0·9	35	30	120	×	55	×	0·025
					converted to a grey massive rock	finely banded portions.	745	113·0	113·6	0·6	215	50	2150	×	45	40	
					with disem po.	114·3 - 116·2 Po disem in 10-30 cm intervals	746	113·6	114·3	0·7	10	55	360	0·5	310	×	
						, 10-15%, elsewhere 1-2%. Patchy disem	747	114·3	115·3	1·0	105	35	830	×	170	×	
						mag. Minor haematite; and traces py in	748	115·3	116·2	0·9	125	190	3500	2·0	230	15	0·008
				↓	Contact 85°	fine calcite veinlets (with mag).	749	116·2	117·0	0·8	15	40	195	×	35	×	
				Csd	116·2 - 134·0 ?CALC SILICATE ROCK.	116·2 - 117·0 Weak trace py; fine calcite veins	750	117·0	117·7	0·7	20	30	160	×	130	×	
				(ss/sh?)	Brown and green thinly bedded	117·0 - 117·7 Green epidote rich rock	751	117·7	119·0	1·3	15	30	60	×	10	×	
					rock, hard tough and very fine grained	117·7 - 119·0 Trace py, weak epidote veining	752	119·0	119·8	0·8	5	20	700	×	130	×	×
					Irregular patches of grey green to	119·0 - 120·3 Green epidote rich rock	753	119·8	120·9	1·1	65	130	670	1·5	290	10	
					white alteration (epidote, chlorite)	120·3 - 120·8 po, py disem 10-15%	754	120·9	121·8	0·9	10	35	170	0·5	25	×	
					associated with fracturing / veining.	120·8 - 121·8 Green epidote veining (weak) tr py.	877755	121·8	123·1	1·3	25	30	990	0·5	120	×	
					Most bedding angles 80-85°	121·8 - 123·1 Epidote rich, 2-5% po (disem)	932114	123·1	125·0	1·9	15	10	170	×	30	×	
					128·7 - 131·1 More greenish diopsidic	minor calcite - py veinlets.	115	125·0	126·8	1·8	30	15	170	×	40	×	
					rock	123·1 - 130·6 Brown rock, extensively	116	126·8	129·0	2·2	60	10	90	×	25	✓	×
					131·1 - 134·0 Very well bedded pale	fractured - weak stockworks of dark	117	129·0	130·3	1·3	25	20	215	×	30	200	
					brown and maroon laminae - sediments?	alteration products, rare epidote, rare	118	130·3	131·0	0·7	65	20	1900	×	95	15	
					133·0 Bedding 80°	blebs py. Some ultrabic disem py.?	119	131·0	132·4	1·4	90	15	60	×	30	×	
						130·6 - 130·9 5-7% disem po with epidote, trace sp.	120	132·4	134·0	1·6	85	10	50	×	25	×	×
						130·9 - 134·0 py, ~~po~~ as bedded	932300	114·8	THIN SECTION SAMPLES.								
				↓	END OF HOLE 134·0 m	laminae and fine stringers; 5-7%.	301	134·0									

8000 8000 8000

046

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME TENTH LEGION No. 5M/75

PLAN – MAP REFERENCE TASH 2 TASH 17

CO-ORDINATES 3439·17N 4852·40E AZIMUTH 315° GRID DRILLERS S RIMAK COMMENCED 20·3·81 DEPTH 119·5 m HOLE No. T.L.C.5

RL COLLAR 235 m INCLINATION −50° DRILL TYPE BOYLES 37 COMPLETED 31·3·81 CASING LEFT 3m NW (collar) DPO No(s) 26672, 26671, 26670

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au	
					TRICONED TO 3·0m – NO CORE													
3·0	4·6	1·4	NQ	Cst	3·0–7·4 CALC SILICATE ROCK	3·0–7·4 Well fractured and broken;	932107	3·0	5·2	2·2	5	45	320	1·0	140	×		
4·6	5·7	1·2	to 30m		Pale grey, pink and green tremolite-	pale green epidote veining.	108	5·2	5·4	0·2	10	745	2850	1·5	140	15	0·025	
5·7	8·0	2·4			diopside rock. Very hard, fine grained	7·4–8·0 Pale green epidote 20–25% of rock	109	5·4	7·4	2·0	15	175	1100	0·5	45	×		
8·0	11·0	3·0			, weakly and randomly banded, and	mottled green and white, metasomatised.	877781	7·4	8·2	0·8	15	80	470	1·0	210	×		
11·0	13·6	2·6			fractured, with a cross cutting	8·0–8·3 Barren pink and green calc silicate	782	8·2	9·6	1·4	10	215	1150	2·0	540	×		
13·6	16·0	2·4			network of epidote veins.	8·3–9·6 40–50% yellow-green epidote.	783	9·6	10·7	1·1	90	35	165	0·5	45	×		
16·0	17·6	2·0			Most veins around 15–20° LCA.	9·6–10·7 Trace py, epidote 2·3%.	784	10·7	11·7	1·0	45	20	105	×	70	×	×	
17·6	21·5	3·9		Css	7·4–23·5 CALC SILICATE SKARN	10·7–11·7 Pink and green calc silicate; minor	785	11·7	13·2	1·5	10	15	120	0·5	150	×		
21·5	23·2	1·8			As above, but grossly altered and	epidote.	786	13·2	14·4	1·2	10	10	580	0·5	60	×		
23·2	24·6	0·9			metasomatised fabric – greens – pinks	11·7–13·2 Epidote veining; some pink ?garnets	787	14·4	15·5	1·1	10	30	450	1·0	65	×		
24·6	25·6	1·0			– greys and yellow-greens (epidote)	or ? idocrase.	788	15·5	17·1	1·6	20	25	590	0·5	40	×	×	
25·6	27·6	2·0			Some intervals rather greyer and less	13·2–14·4 Greyish breccia, barren.	789	17·1	18·2	1·1	40	25	240	×	1700	×		
27·6	30·0	2·4			altered, with a pronounced breccia	14·4–17·1 Mixed breccia (grey) and minor	790	18·2	19·5	1·3	10	30	430	×	170	×		
30·0	31·5	2·0			fabric.	pink and green intervals with epidote.	791	19·5	19·8	0·3	660	240	480	1·5	2300	×		
31·5	34·3	2·9				17·1–17·6 Chloritic alteration – crystalline	792	19·8	20·5	0·7	5	10	55	×	170	×	×	
34·3	37·5	3·2				chlorite/phlogopite 30% of rock	793	20·5	20·8	0·3	5	15	135	0·5	290	×		
37·5	40·3	2·8				17·6–18·2 Massive dark green chloritic	794	20·8	22·3	1·5	120	5	1150	0·5	70	×		
40·3	43·5	2·6			18·2 Contact 45°	rock, minor epidote, trace sp in veinlets.	795	22·3	22·8	0·5	40	5	2650	0·5	35	×		
43·5	46·5	3·0			18·2–19·4 Weakly banded grey calc	18·2–19·4 Green ? chloritic bands.	932110	22·8	25·0	2·2	35	20	340	×	45	×		
46·5	49·5	3·0			-silicate rock. 18·7 banding 55°.	19·4–19·8 Felted mass of ?tremolite in a	111	25·0	25·4	0·4	5	20	465	×	140	×		
49·5	52·4	2·9			19·4–23·5 Grossly brecciated grey rock	dark green-grey matrix (or v.v.)	112	25·4	26·6	1·2	30	10	1000	×	30	×	×	
52·4	55·5	3·1			with dark green-grey interstitial material	19·8–20·2 Green-grey barren calc silicate	113	26·6	27·7	1·1	85	15	1750	×	15	×		
55·5	58·5	2·9			(chloritic) in a felted mass of ?tremolite	20·2–20·8 As for 19·4–19·8	869969	27·7	31·3	3·6	86	13	63	<1	6	40		Grind samples.
58·5	61·5	3·0			19·8 Contact 45°	20·8–23·5 No obvious mineralisation.	970	31·3	35·2	3·9	23	16	66	<1	<4	30		
61·5	64·5	3·0			20·8 " 40°	, trace sp at 22·3 m.	971	35·2	38·5	3·3	5	810	1320	4	175	40		
64·5	67·5	3·0			Contact 45°		877796	38·5	40·2	1·7	5	175	380	1·5	140	15	×	
67·5	70·3	2·8		Cst	23·5–69·9 CALC SILICATE ROCK	23·5–40·7 Coarse gr. chlorite in	797	40·2	40·7	0·5	5	95	160	1·0	170	×		
					Pale greeny-grey diopside-tremolite	irregular patches, usually some	869972	40·7	46·4	5·7	33	36	155	<1	55	30		Grind samples
					rock crystalline; minor irregular patches	intergrown magnetite. Traces po, py	973	46·4	51·5	5·1	83	16	122	<1	8	40		
					of crystalline chlorite. Thin epidote veining	, sp also. Some pink garnet? (idocrase?)	974	51·5	56·3	4·8	28	180	860	<1	36	10		

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2
TENEMENT NAME. TENTH LEGION No. 5IM/75
PLAN – MAP REFERENCE
CO-ORDINATES..... AZIMUTH..... DRILLERS..... COMMENCED..... DEPTH..... HOLE No. TLC5.
RL COLLAR..... INCLINATION..... DRILL TYPE..... COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au		
70·3	74·4	3·1	NQ		23·5–69·9 cont...		869975	56·3	65·0	8·7	13	12	43	<1	6	20		Grind	sample
74·4	77·5	3·1	to 30m		Most alteration contacts approx 45-50°.	40·7–69·9 Sparse epidote veins, rare	877756	58·5	60·0	1·5	95	105	160	0·5	15	×	0·042		
77·5	80·5	3·1	BQ		Gradually becomes harder and whiter	blebs py: Barren.	757	60·0	61·5	1·5	5	40	60	×	9	×			
80·5	83·5	3·0	30m		with depth; alteration diminishes		758	65·0	66·6	1·6	5	30	55	×	9	×			
83·5	86·2	2·8	↓		from small patches every 0·5m to		759	66·6	67·7	1·1	5	25	50	×	70	×			
					thin veinlets and discrete zones every		760	67·7	69·0	1·3	35	35	55	×	40	×	0·050		
					1m, then gradually becomes more		761	69·0	70·3	1·3	175	15	55	×	×	×			
					sporadic. Disruption and brecciation		869976	70·3	76·3	6·0	12	11	48	<1	<4	30		} Grind	samples
					decreases, and bedding becomes		977	76·3	80·2	3·9	19	18	50	<1	<4	25			
					progressively more parallel to LCA viz:		877762	80·2	82·0	1·8	5	15	35	×	5	×			
					37·0 Bedding 20°		763	82·0	82·9	0·9	5	10	30	×	×	×			
					45·2 Bedding 20°		764	82·9	83·7	0·8	×	15	45	×	3	×	0·033		
					49·8 Bedding 13°		765	83·7	84·7	1·0	×	15	35	×	6	×			
					49·6–55·0 Brownish patch of		766	84·7	85·5	0·8	90	15	50	×	10	×			
					siltstone? Bedding at higher angles														
					to core. White alteration is still present		932302	12·3	} THIN SECTION SAMPLES.										
					along fractures and in small bands.		303	60											
					52·5 ? Bedding 45°	58·5–60·4 Zone of green alteration	304	70·5											
					56·2 ? Bedding 55°	– mottled diopside? with traces py, po tremolite	305	88											
					60·4 contact 40°		932316	19·6m	– Mineragraphic Sample.										
					64·4 Bedding 50°	65·0–65·9 Mottled pale green crystalline													
						tremolite/diopside.													
						65·9–69·9 Traces po, py disseminated													
				↓	Contact 30°	blebs along or around small cracks.													
				9/(95)	69·9–85·0 QUARTZITE?	69·9–80·2 Barren – no mineralisation.													8
					White rock with coarse qtz grains	80·2–82·0 Disseminated epidote 10%.													8
					in a white f.gr sericitic? matrix	82·0–82·9 Barren – f.gr. 'calc silicate'													8
					Originally and impure quartzsandstone?	thin epidote stringers.													8
					Massive and featureless, some	82·9–83·7 Disseminated epidote in qtzite, 10%.													8
					qtz segregations and occasional	83·7–85·0 Minor epidote stringers.													8
				↓	thin cherty beds of altered seds.														

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3

TENEMENT NAME TENTH LEGION No 5M/75

PLAN – MAP REFERENCE

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH 119·5 m. HOLE No. TLC5.

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Cu	Pb	Zn	Ag	Sn	W	Au			
36·2	89·5	3·3			83·7 - Alteration at 35° LCA		877767	85·5	86·9	1·4	15	10	20	x	x	x				
89·5	92·5	3·0			Bedding at 25° to LCA		768	86·9	88·3	1·4	10	15	30	x	15	x	0·017			
92·5	95·5	3·0			84·1 - 85·0 Contact b/w qtzite and ? calc		769	88·3	89·6	1·3	x	5	20	x	5	x				
95·5	98·3	2·8			silicate rocks – 2°.		770	89·6	91·2	1·6	x	10	20	x	4	x				
98·3	101·2	2·9		?Cst	85·0 - 89·5 ? Calc Silicate Rock or	85·0 - 85·5 py - po - epidote - chlorite	771	91·2	92·4	1·2	x	10	25	x	10	x				
101·2	104·3	3·0		ss/ch?	Siltstones/cherts.	stringers 10%.	772	92·4	94·0	1·6	85	10	60	x	9	x	0·017			
104·3	107·2	2·9			Pale brown finely bedded rock, as	85·5 - 89·5 traces po, py as blebs	773	94·0	95·4	1·4	240	20	75	0·5	6	x				
107·2	110·5	3·3			above 40·7 - 69·9 m, minor qtzite	assoc with fractures. Thin epidote veinlets.	774	95·4	96·2	0·8	35	10	40	x	5	x				
110·5	113·5	2·8			interbeds.		775	96·2	97·2	1·0	40	15	45	x	10	x				
113·5	116·5	3·0			85·6 Bedding 30°		776	97·2	98·0	0·8	x	25	125	x	80	x	0·142			
116·5	119·5	3·1			Contact 15°		869978	98·0	102·9	4·9	50	9	81	<1	4	60				
				q	89·5 - 91·7 QUARTZITES	89·5 - 91·7 Traces dissem epidote,	979	102·9	109·3	6·4	60	59	24	<1	18	75				
					See above, 69·9 - 85·0 for description.	barren.	980	109·3	119·5	10·2	170	12	122	<1	6	110				
					Contact 80°, faulted.															
				?Cst	91·7 - 112·4 ? CALC SILICATE ROCK	91·7 - 92·4 Barren pink and green														
					Green and pale brown f. gr. rock	calc silicate rock, bedding 2 - 10° LCA														
					as above, 40·7 - 69·9. Some thin	92·4 - 97·6 Deformed and brecciated														
					qtzite interbeds to 5 cm thick	, with alteration along breccia paths														
					92·5 Bedding <5°	and 1-2% py and po as interstitial														
					103·0 Bedding <5°.	blebs, rarely dissem along quartzite														
					Contact 80°, brecciated	interbeds. Qtz - epidote veinlets and														
				q	112·4 - 116·2 QUARTZITE	stringers.														
					As above, but with some pinkish	97·6 - 104·1 Sparse thin qtz - epidote														
					and greenish minerals - originally	stringers with 2-3 m white bleached														
					carbonate rich?	alteration haloes.														
					Contact 4° - - - - - - - -	104·1 - 105·6 Breccia zone - qtz epidote	877777	104·1	105·6	1·5	40	90	195	1·5	100	40				
				?Cst	116·2 - 119·5 ? CALC SILICATE ROCK	stockwork (10%)	778	112·4	113·2	0·8	15	40	105	0·5	15	x				
					See above, 40·7 - 69·9, for description	105·6 - 112·4 See 97·6 - 104·1	779	113·2	114·8	1·6	15	30	60	x	20	x				
					118·0 Bedding 25°	112·4 - 116·2 Sparse dissem. epidote and	780	114·8	116·2	1·4	x	25	55	x	20	x	0·017			
						a pinkish mineral - garnet(?) or ? idocrase.														
					END OF HOLE 119·5 m.	116·2 - 119·5 Minor qtz - epidote stringers.														

Grind Samples

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 1

TENEMENT NAME TENTH LEGION No 54M/15

PLAN – MAP REFERENCE TASM 2 TASM 18

CO-ORDINATES 4273·19N 5630·54E AZIMUTH 210° GRID DRILLERS S RIMAK COMMENCED 31·3·81 DEPTH 208·5 m. HOLE No. TLC6

RL COLLAR 260·15 m INCLINATION -50° DRILL TYPE BOYLES 37 COMPLETED 10·4·81 CASING LEFT NIL DPO No(s) 26672 26670, 26671

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization
0·3	4·4	4·1	NQ	nC	TRICONED TO 0·3 m – NO CORE	
4·4	7·5	3·0	to	S/M	0·3–2·05 SERPENTINITE WITH MAGNETITE.	
7·5	10·5	2·8	77·4m		Yellow and green serpentinite, with grey	
10·5	13·5	3·0			rounded patches of talc throughout 20%	
13·5	16·5	3·0			and 30% magnetite. Mottled random fabric	
16·5	19·5	3·0			– the talc appears to be almost interstitial.	
19·5	22·5	2·8			Gradual Change:	
22·5	25·5	2·9		lst/M	2·05–17·7 LIMESTONE WITH MAGNETITE	2·05–8·35 Mag 10-15% in fine grained
25·5	28·5	3·0			Mottled grey and white rock – white	irregular bands, small patch of haematite
28·5	31·4	2·9			calcite, coarsely crystalline, with bands	at 4·4 m
31·4	34·5	3·1			and swirls of serpentinite alteration	8·35–10·4 Mag largely altered to reddish
					and/or fine grained magnetite rich	haematite – fine and cherry red patches
					bands. Yellowish and partially altered	which are still magnetic 5-7%
					to bernolite/serpentine in places.	10·4–11·0 Reddish maghemite 30%
					8·35–10·4 Pale grey dolomitic lst with	11·0–17·7 Black magnetite, and an
					irregular lenses and patches of bright	unidentified dark green hexagonal mineral
					yellow serpentinite, and distinctive reddish	around later calcite veining – apatite?
					haematitised magnetite.	Mag 20%
					11·0–17·7 Distinctive white and black	17·7–19·5 Mag 10-15%
					calcite and magnetite, crudely banded	19·5–25·4 Mag 10%, abundant serpentine
					35° LCA. Some patches of yellow	veinlets and stringers with white
					serpentinite at top of interval	colloform remobilised calcite.
				S/M	17·7–19·5 Green serpentinised carbonates	
					with 10-15% mag, banded 45°	
				lst/M	19·5–25·4 Serpentinised pale grey	
					dolomitic limestone, as above.	
				M/S	Contact 40° 25·4–32·3 MAGNETITE WITH SERPENTINITE	25·4–27·9 Mag 25%
					Massive black magnetite in a pale	27·9–29·6 Mag 35-40%
					green → dark bottle green serpentine	29·6–32·3 Mag 80%, last 30 cm 20%
					matrix.	

Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) GRINDS: /ZINC CORP/COMLAB Cu	Pb	Zn	Ag	Sn	W	Au
877798	0·3	1·6	1·3	x	10	500	x	25	x	
799	1·6	2·05	0·45	x	10	750	x	30	x	
800	2·05	4·30	2·25	x	5	410	x	15	x	0·017
932001	4·3	5·9	1·6	x	10	190	x	15	15	
002	5·9	7·2	1·3	x	20	280	x	5	x	
003	7·2	8·4	1·2	x	20	225	x	10	20	
004	8·4	9·0	0·6	5	15	205	x	9	15	0·017
005	9·0	10·4	1·4	x	80	270	0·5	60	35	x
932006	10·4	11·0	0·6	x	40	445	x	170	50	x
007	11·0	12·2	1·2	x	20	160	x	15	x	x
008	12·2	13·2	1·0	x	15	170	x	10	x	1·34
009	13·2	14·6	1·4	10	25	185	x	5	10	x
010	14·6	16·2	1·6	40	30	415	0·5	6	x	x
011	16·2	17·7	1·5	5	15	200	x	9	x	x
012	17·7	18·9	1·2	20	75	420	0·5	30	15	0·10
013	18·9	19·5	0·6	10	50	670	x	30	10	
014	19·5	21·0	1·5	x	20	190	x	20	10	
015	21·0	22·5	1·5	x	25	300	x	20	10	
016	22·5	23·9	1·4	5	20	545	x	15	15	x
017	23·9	25·4	1·5	5	25	560	x	15	x	
018	25·4	26·2	0·8	5	10	250	x	40	10	
019	26·2	27·1	0·9	30	100	270	x	30	20	
020	27·1	27·9	0·8	115	335	450	x	35	x	x
021	27·9	29·6	1·7	15	20	370	x	30	x	
022	29·6	30·9	1·3	20	170	515	0·5	30	x	
932033	30·9	32·3	1·4	10	190	655	x	30	x	
034	32·3	33·2	0·9	125	230	1800	x	x	x	
035	33·2	34·3	1·1	60	85	640	x	20	15	
036	34·3	35·8	1·5	25	50	250	x	8	x	x
037	35·8	36·7	0·9	10	30	215	x	8	20	
038	36·7	38·2	1·5	75	40	385	x	15	15	

050

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2
TENEMENT NAME TENTH LEGION No 547/75
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. THC6
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au
					Contact 40°												
34·5	37·0	2·5	NQ	Css/M	32·3-33·2 CALC SILICATE SKARN ROCK	Mag 25-35%	932039	38·2	39·6	1·4	20	20	190	×	15	20	
37·0	40·5	3·5	to 77·4		Grey fibrous tremolite, heavily impregnated		040	39·6	40·6	1·0	10	50	325	×	20	15	×
40·5	43·3	2·8			with magnetite and with blebs translucent		041	40·6	42·0	1·4	55	65	265	×	20	×	
43·3	46·1	2·7			green serpentine.		042	42·0	42·9	0·9	30	45	235	0·5	15	×	
46·1	49·2	3·2			Contact 60°		043	42·9	44·5	1·6	45	45	150	0·5	15	×	
49·2	52·5	3·3		S/M	33·2-40·6 SERPENTINITE WITH MAGNETITE	33·2-34·3 f.gr. mag 30% in a grey	044	44·5	45·2	0·7	85	50	160	×	10	10	×
52·5	55·5	3·0			Dark green serpentinite with approx 50%	partially serpentinised gangue.	045	45·2	46·4	1·2	5	10	100	×	10	×	
55·5	58·5	2·6			mag dissem. throughout, and small white	34·3-35·8 Mag 30%-35%.	046	46·4	48·1	1·7	×	15	110	×	20	×	
58·5	61·5	3·0			2mm clots of refractory minerals from	35·8 – 36·7 Mag 10%	047	48·1	49·1	1·0	20	10	75	×	×	×	
61·5	64·5	2·9			serpentinisation.	36·7 – 40·6 Mag 50-60%, appears to	048	49·1	50·1	1·0	35	20	115	×	15	×	0·008
64·5	67·5	3·0				be brecciated in lower 1·1 m. 1% pyrite	049	50·1	51·1	1·0	×	95	555	×	15	×	
					Contact 35°	in small aggregates to 3×1cm.	050	51·1	52·1	1·0	×	25	140	×	5	×	
				Css/M	40·6-44·2 CALC SILICATE WITH MAGNETITE	40·6-41·1 Mag 10-15%	051	52·1	52·8	0·7	×	20	140	0·5	20	×	
					Hard yellowish grey calc silicate (skarn)	41·4-42·0 Mag 40%	052	52·8	53·5	0·7	×	165	430	0·5	60	×	0·008
					tremolite rock, with serpentinised	42·0-42·9 Mag 30% in olive green	053	53·5	54·8	1·3	×	180	870	0·5	65	20	
					intervals, and pervasive fine veinlets	serpentinite	054	54·8	55·5	0·7	×	130	440	×	30	×	
					and stringers of yellowish green serpentine.	42·9-44·2 Alternating 30-50cm bands of	055	55·5	56·7	1·2	5	610	935	1·0	110	490	
					Magnetite occurs throughout, as bands,	mag 40-50% is either serp or calc silicate	056	56·7	58·0	1·3	×	65	545	0·5	70	×	×
					fine stringers or finely disseminated.	with bands of barren calc silicates, average 20-25%	057	58·0	58·6	0·6	×	110	290	0·5	100	×	
					Contact irregular.		058	58·6	60·2	1·6	10	100	300	0·5	120	×	
				Css	44·2-52·2 CALC SILICATE SKARN	44·2-48·1 Mag 1-2%, locally 5-10%	059	60·2	61·0	0·8	45	1100	6900	2·0	15	200	
					Irregularly banded massive grey	for a few cm.	060	61·0	62·1	1·1	210	1350	2950	2·0	25	30	0·033
					tremolite rock with minor dissem.	48·1-49·1 Mag 10-15%	061	62·1	62·7	0·6	410	40	155	0·5	20	×	
					mag (2-5%) associated with dark	49·1-50·1 Mag 25-35%											
					green-grey alteration.												
						50·1-52·2 Mag 2-3%, finely dissem. in											
					Contact 50°	altered chloritic rock.											
				Cst	52·2-62·7 CALC SILICATE ROCK	52·2-54·8 Epidote-qtz veins 15-20%											
					Green and white highly altered banded	54·8-55·5 Minor epidote-qtz veins.											
					coloured fine grained rock with	55·5-59·3 Epidote up to 40% of rock.											
					pink Mn silicates and abundant epidote.	, with qtz and some black chloritic material.											

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3
TENEMENT NAME TENTH LEGION No 54M/15
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. TLC6.
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au
67.5	70.5	2.8	NQ to		65.3 Banding 65°	59.3–60.2 Barren, minor qtz–calcite stringers	932023	62.7	64.0	1.3	275	15	190	x	10	x	
70.5	73.5	2.8	77.4			60.2–60.4 Mag 40%	024	64.0	65.1	1.1	455	30	135	x	8	x	0.092
73.5	76.5	3.0				60.4–62.7 Mag, dissem 2–3%, assoc. with	025	65.1	65.9	0.8	180	15	120	x	20	x	
76.5	79.5	3.0			Contact irregular.	pale green clots of serpentinous alteration.	026	65.9	66.4	0.5	255	30	165	x	10	x	
79.5	82.5	2.9		S/M	62.7 – 71.2 SERPENTINITE WITH MAGNETITE	62.7–64.0 Mag 15%, finely dissem; py 2-3%	027	66.4	67.9	1.5	65	10	110	x	35	x	
82.5	85.0	2.4			Dark green-grey and bottle green	as large blebs.	028	67.9	69.7	0.8	100	20	220	x	25	x	0.025
85.0	88.5	3.3			serpentinite with dissem mag in bands	64.0–65.1 finely dissem mag 25-30%	029	69.7	71.2	1.5	65	5	140	x	25	x	
88.5	91.5	3.0			and irregular patches. Rare grey	, py 1%.	030	71.2	72.5	1.3	60	25	170	x	20	x	
					patches of incompletely serpentinised calc-	65.1–71.2 mag 40-50%, banded, traces	031	72.5	72.9	0.4	30	5	70	x	20	20	
					silicate rock.	py. 67.9–71.2 mag 60%.	032	72.9	74.0	1.1	155	5	110	x	30	x	x
				M/S	71.2–74.7 MAGNETITE WITH SERPENTINITE	71.2–72.5 mag 70-80%, massive and	932062	74.0	74.7	0.7	1150	20	45	0.5	10	x	
					As above mag > serp.	crystalline, coarse granular texture. py–2%.	063	74.7	75.5	0.8	85	75	70	x	6	x	
						72.5–72.9 White calc-silicate rock, with mag	064	75.5	75.8	0.3	65	20	130	0.5	15	x	0.017
						15–20%	065	75.8	77.5	1.7	15	230	750	0.5	30	x	
						72.9–74.0 Mag 70%, py 2-3%, a little	066	77.5	78.0	0.5	25	35	65	0.5	65	180	
						grey talc.	067	78.0	78.9	0.9	15	15	45	x	20	x	
					74.5 Banding 55°	74.0–74.7 Transition zone – banded mag	068	78.9	79.8	0.9	15	25	75	x	45	20	x
					74.7 Contact 50°	10-15%, py 10%, po 2-3%, sep decreases	069	79.8	81.1	1.3	650	135	365	6.5	45	320	
			BQ	CSS	74.7–83.6 CALC SILICATE SKARN ROCK	74.7–75.5 White barren refractory rock	070	81.1	82.1	1.0	1550	120	330	1.5	20	x	
			77.4		Grey and green crystalline massive rock	(? magnesite)	071	82.1	83.6	1.5	55	35	75	0.5	60	x	
			-209.5		-tremolite-diopside, with green epidote	75.5–75.8 black serpentinite with mag 30%	072	83.6	85.1	1.5	75	15	140	0.5	15	x	0.008
					rich patches with garnets, then virtually		073	85.1	86.9	1.8	35	25	210	0.5	30	25	
					a massive green (diopside+epidote?)	77.5–78.0 Epidote-qtz rock with 20% brown	074	86.9	88.3	1.4	10	10	205	x	20	25	
					rock with white barren qtz	garnets.	075	88.3	89.4	1.1	10	20	345	0.5	20	x	
					segregations from 78.0–79.8	79–81.1 Epidote-qtz rock with 20% garnet.	076	89.4	90.5	1.1	385	15	270	0.5	30	30	x
						81.1–82.1 Magnetite 40%; po 20%, py 1-2%											
						with black sep 20%.											
					Contact irregular	82.1–83.6 Mag in discrete band 10–15%.											
				M/S	83.6–90.5 MAGNETITE with SERPENTINITE	83.6–85.1 Mag 70-80%, trace py.											
					Black crystalline mag 50%, in a matrix	85.1–90.5 Mag 40%, trace py.											
					of almost black sep; minor calcite												

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 4

TENEMENT NAME TENTH LEGION No. 54M/75

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. TLC6

RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au
91·5	94·5	3·0		Lst	90·5 – 143·6 LIMESTONE.	90·5 – 90·9 py, po 60% of rock as	932077	90·5	90·9	0·4	1700	65	95	1·0	×	×	
94·5	97·5	3·0			Grey limestone, recrystallised and	massive aggregates	078	90·9	92·6	1·7	165	25	175	0·5	×	×	
97·5	100·5	3·0			with a brecciated fabric, marked by	92·9 – 92·6 Fine gr mag 5-7%, py, po in	079	92·6	93·2	0·6	950	125	765	0·5	7	×	
100·5	103·5	3·0			fine black bands of recrystallised	veinlets and diosem. 2-3%	080	93·2	94·8	1·6	40	35	135	0·5	6	×	0·008
103·5	106·5	3·0			magnetite. Veins of green and black	92·6 – 93·2 Mag 5-7%, po in 2-3cm bands	GRIND	SAMPLES.									
106·5	109·5	3·0			serpentinite alteration permeate the	10%; py 1-2%	869981	94·8	97·7		10	33	122	1	4	10	
109·5	112·5	3·0			rock, up to 1 cm thick - 5%	93·2 – 97·7 Mag 2-3%, po, py 5-7%, in	982	97·7	100·7		5	36	96	1	<4	10	
112·5	115·5	3·0			, Green serpentinite decreases with depth	thin veinlets and Rndy diosem. Some	983	100·7	106·6		7	32	81	1	<4	<10	
115·5	118·5	3·0			- becomes rare after 96 m approx.	bands to 5 cm thick pyor po.	984	106·6	109·6		5	31	110	1	<4	<10	
118·5	121·5	3·0			109·7 Banding 80°	97·7 – 103·0 Mag 5-7%, py, po 1-2%.	985	109·6	113·4		6	26	57	<1	<4	<10	
121·5	124·5	3·0			124·0 Banding 65°	, locally 3-5% for a few m.	CUT	SAMPLES									
124·5	127·5	3·0			136·6 " 80°	103·0 – 106·0 Py 10%; po 2-3% in	932081	103·0	103·6	0·6	10	30	150	0·5	×	×	
127·5	130·5	3·0				discrete bands to 2 cm thick, trace mag	082	103·6	104·3	0·7	5	15	30	0·5	10	×	
130·5	133·5	3·0			111·1 – 111·7 Calc silicate rock - pale	106·0 – 111·1 Po, Py diosem as discrete	083	104·3	105·0	0·7	15	65	185	1·0	3	×	
133·5	136·5	3·0			brown coloured fgr. tremolite rock (CSt)	blebs along black alteration paths	084	105·0	106·0	1·0	15	110	190	1·5	4	×	×
136·5	139·5	3·0				mag diminishes to 2-3%. Total 5-7%	085	111·1	111·7	0·6	25	15	75	0·5	4	×	
139·5	142·5	3·0			111·7 – 122·2 Spacing and intensity of	111·7 – 122·2 As above 111·1 – 122·2, gradually diminishes.	086	111·7	112·1	0·4	35	20	3650	0·5	×	15	
142·5	145·5	3·0			black alteration/segregation becomes	122·2 – 137·1 Traces po, py as discrete	GRIND	SAMPLES.									
145·5	148·5	2·9			variable - some patches slightly serpentinite	blebs. Mag? possibly 1%, associated	869986	113·4	116·3		6	27	74	1	<4	10	
					rich, others more graphitic. Mag	with pale green serpentinite alteration.	987	116·3	119·0		7	30	50	1	<4	10	
					decreases, slightly more po.	137·1 – mag 2-5%, very finely	988	119·0	122·2		6	39	72	1	<4	<10	
					122·2 – 137·1 More massive, only weakly	diosem, associated with serp, graphitic	989	122·2	125·2		3	28	29	1	<4	<10	
					foliated grey marble, gradually becomes	veins. po, py 1%, thin stringers and blebs.	990	125·2	128·1		2	28	36	1	<4	10	
					more altered, with distinct serpentinite		991	128·1	131·1		2	32	50	1	4	<10	
					zones etc from 132 m approx.		992	131·1	134·1		1	26	44	1	<4	<10	
					137·1 – 143·6 As above 90·5 – 96 m.		993	134·1	137·1		2	28	62	1	<4	<10	
				ss/Do	Contact 70° 143·6 – 145·9 SILTSTONES/DOLOMITES	143·6 – 145·9 – No obvious mineralization	994	137·1	140·1		4	24	81	<1	<4	<10	
					Thinly bedded brown silty rock with		995	140·1	143·1		2	29	158	<1	<4	10	
					sericitic alteration, some qtz segregations		996	143·1	145·9		18	28	137	<1	<4	20	
					and white recrystallised dolomitic		997	145·9	149·1		3	36	50	1	4	<10	
					carbonate Bedding 70-80°.		998	149·1	151·9		2	25	56	1	4	<10	

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 5

TENEMENT NAME TENTH LEGION No. 54M/15

PLAN – MAP REFERENCE

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. T.L.C.6

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Cu	Pb	Zn	Ag	Sn	W	Au		
					Contact 75°														
148·5	151·5	3·0		Lst	145·9 – 147·1 LIMESTONE	145·9–147·1 trace py, po as diosem.	869999	151·9	154·9		1	24	56	<1	<4	<10			
151·5	154·5	3·0			As above 90·5 – 143·6	6/ebs	870000	154·9	156·4		1	24	69	1	4	<10			
154·5	157·5	3·0		Dol/S.	Contact 75° 147·1–149·0 SERPENTINISED DOLOMITE	147·1 – 149·0 No Mineralisation	CUT SAMPLES.												
157·5	160·5	3·0			Brilliant white dolomitic carbonate with		932087	156·4	158·1	1·7	5	10	55	×	×	×			
160·5	163·5	3·0			minor calcite and qtz, strikingly interbanded		088	158·1	160·0	1·9	5	10	50	×	×	×	×		
163·5	166·5	3·0			with yellow and green serpentine (50-60%)		089	160·0	161·4	1·4	10	10	35	0·5	×	×			
166·5	169·3	2·9			Contact 80°		090	161·4	162·5	1·1	10	10	40	×	×	×			
169·3	172·5	3·0		Lst	149·0 – 156·4 LIMESTONE	149·0 – 156·4 Py, Po 5-7%, mag 2-3%	091	162·5	164·4	1·9	5	20	45	0·5	×	×			
172·5	175·5	3·2			As above 90·5 – 143·6 m, partially	along black alteration paths.	092	164·4	166·2	1·8	5	15	55	0·5	×	×	×		
175·5	178·5	3·0			dolomitic – does not react quickly to acid	156·4 – 160·0 – Trace py, po	093	166·2	167·0	0·8	5	15	30	×	×	×			
178·5	181·5	3·0		Dol	156·4 – 178·9 DOLOMITE	160·0 – 162·5 py 2-3%, trace po.	094	167·0	168·2	1·2	5	10	25	×	×	×			
181·5	184·5	3·0			Massive grey dolomitic carbonate	f.gr. mag 1-2%.	095	168·2	169·2	1·0	5	10	25	×	×	×			
184·5	187·5	3·0			with minor calcite – same in hand	162·5 – 164·4 py 1-2%, po 1%, mag 2-3%	096	169·2	170·2	1·0	5	10	25	×	×	×	×		
187·5	190·5	3·0			specimen as the above.	164·4 – 168·2 po 1%, mag 5-7%,	097	170·2	172·1	1·9	5	15	20	×	×	×			
190·5	193·5	3·0			178·9 – gradual change: LIMESTONE	trace py.	098	172·1	173·4	1·3	5	15	40	×	×	×			
193·5	196·5	3·0			See 149·0 – 156·4 for description	168·2 – 173·6 f.gr. mag 1%, trace po, py	099	173·4	174·9	1·5	10	20	150	0·5	5	×			
196·5	199·5	3·0				173·6 – 174·9 po, py 10-15%, trace mag.	100	174·9	176·5	1·6	5	10	50	×	×	×	×		
199·5	202·5	3·0				174·9 – 176·5 1% po, 2-3% f.gr. mag.	101	176·5	177·5	1·0	10	15	105	0·5	×	×			
202·5	205·5	3·0				176·5 – 177·5 po 2-3%; mag 2-3%; py 1%	102	177·5	177·9	0·4 (WI)	10	15	95	0·5	×	×			
205·5	208·5	2·8				177·5 – 177·9 Serpentinised and altered	932701	177·9	182·3		1	7	45	<1	6	<10			
						mag 7%.	702	182·3	185·3		<1	8	41	2	<4	<10			
					182·0 – 189·5 Serpentinised – 30-40%	177·9 – 182·0 mag 3-5%; po 1-2%; trace py	703	185·3	188·3		<1	12	51	2	<4	<10			
					green and yellow brown pervasive	182·0 – 189·5 Mag 1-2%, trace po	704	188·3	191·2		2	5	58	1	<4	10			GRIND SAMPLE
					serpentine alteration.		705	191·2	194·3		2	2	38	1	<4	<10			
					189·5 – 202·6 Grey partially recrystallised	189·5 – 202·6 trace po, 1-2% mag in	706	194·3	197·2		<1	4	58	1	<4	<10			
					and altered lst – black and green	margins of alteration zones around	707	197·2	200·2		<1	1	44	2	<4	<10			
					alteration along 2-3mm breccia fractures	fractures.	708	200·2	202·6		<1	5	49	1	<4	<10			
					(widely spaced cm – cm.)	202·6 – 206·0 traces diosem mag, po.	932103	202·6	203·6	1·0	5	15	65	×	×	×			
					202·6 – 208·5 As for 156·4 – 178·9	206·0 – 208·5 Mag diosem 2-3%, po	104	203·6	205·1	1·5	10	15	35	0·5	×	×	×		
					– partially dolomitic in places.	2-3%.	105	205·1	207·0	1·9	5	10	65	×	×	×			
					END OF HOLE 208·5 m		106	207·0	208·5	1·5	5	15	35	×	5	×			

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME TENTH LEGION No 52 M/75

PLAN – MAP REFERENCE TASH 2 TASH 19

CO-ORDINATES 4080·43N 5478·25E AZIMUTH 220° GRID DRILLERS S. RIMAK COMMENCED 10·4·81 DEPTH 200·10 m HOLE No. TLC7

RL COLLAR 241·62 INCLINATION -50° DRILL TYPE BOYLES 37 COMPLETED 23·4·81 CASING LEFT NIL DPO No(s) 26671, 26672 30101

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) D.P.O. 26672 GRINDS x 2 INCCORP/COMLAB Cu	Pb	Zn	Ag	Sn	W	Au			
					TRICONED TO 6·0m - NO CORE.															
6·0	7·5	0·2	NQ to	?M/Lst	6·0 – ?19·4 ?WEATHERED LIMESTONE WITH MAG	6·0-19·4? 5-10% magnetite dissem. in	932121	6·0	7·5	0·2	355	120	2950	x	10	15				
7·5	10·3	0·3	51·0m		Soft ochreous brown and yellow	yellow clay.	122	7·5	10·3	0·3	360	250	2500	x	8	25				
10·3	13·5	0·2			weathered rock		123	10·3	13·5	0·2	275	120	4100	x	15	50				
13·5	16·5	0·3		Lss?	?19·4 – ?21·3 ?CALC SILICATE SKARN.	?19·4-21·3 Py 20% of recovered core	124	13·5	16·5	0·3	170	85	4300	x	15	50	0·017			
16·5	19·5	0·5			White and yellow altered rock - originally	, mag 3-5%, in irregular bands.	125	16·5	19·4	0·4	195	60	6000	5·5	7	45				
19·5	20·7	0·4			Lst? , with abundant pyrite.		126	19·4	21·3	0·5	70	15	1150	1·5	15	x				
20·7	28·5	7·4		Lst	?21·3 – 127·1 LIMESTONE.	21·3-24·4 Granular texture with blebs	127	21·3	22·7	1·4	50	5	125	1·0	5	x				
28·5	31·5	3·0			Grey limestone, weakly silicified, minor	py in irregular stringers 10-15%, po 3-5%	128	22·7	23·8	1·1	90	10	100	0·5	x	x	x			
31·5	34·5	2·9			black alteration, and heavily impregnated	, finely dissem mag? 10%-15%.	129	23·8	24·4	0·6	150	20	1300	x	x	10				
34·5	37·5	3·1			with pyrrhotite and pyrite to 24·4 m.	24·4-29·4 po 7-10%, finely dissem.	130	24·4	25·9	1·5	25	10	95	x	x	x				
37·5	40·5	3·0			24·4 - 33·2 Grey crystalline limestone	throughout; finely dissem mag 2-3%	131	25·9	27·5	1·6	55	10	70	x	8	x				
40·5	43·5	3·0			with extensive brecciation and black	29·4 – 33·2 po, py 5% in thin irregular	132	27·5	28·8	1·3	50	10	120	0·5	x	x	x			
43·5	46·5	3·0			alteration (ultrabasic mag) along fractures	veinlets and stringers. Ultrabasic mag 1-2%	133	28·8	29·4	0·6	15	15	105	x	x	x				
46·5	49·5	3·0			, some portions almost black.	33·2 – 39·3 po, trace → 1%, weak trace	134	29·4	30·1	0·7	10	15	50	0·5	x	x				
49·5	51·0	1·5			33·2 - 39·3 Pale grey brecciated Lst, less	magnetite, pyrite. Occasional blebs py to	GRIND SAMPLES													
51·0	52·5	1·4			black alteration than the above. Rare	2 x 3 cm.	932709	30·1	33·2		6	1	53	2	<4	<10				
52·5	55·5	3·0			thin fractures filled with grey-green serp.	39·3 – 52·6 po 5-7%, dissem along	710	33·2	36·2		4	5	138	2	<4	<10				
55·5	58·5	3·0			39·3 – 59·6 As for 24·4 - 33·2	black fractures; some ultrabasic mag?	711	36·2	39·0		3	5	193	2	<4	<10				
58·5	61·5	3·0			48·6 - 49·0 Hard white intervals to 5cm	po locally 15%, variable down to 2%	712	39·0	42·0		7	10	92	1	6	15				
61·5	64·5	3·0			, contacts 70-80° LCA. - calc silicate	Mag seems to replace po in the more	713	42·0	44·9		5	4	41	1	<4	<10				
64·5	67·5	3·0			alteration, has some black serpentinite bands	altered dark serpentinous beds. Pyrite is	714	44·9	47·8		2	18	198	1	<4	<10				
67·5	70·5	3·0	51·0		51·0 Banding (bedding?) 50°	variable, usually intergrown with pyrrhotite	715	47·8	50·7		3	12	240	1	<4	15				
			↓ 200·10 BQ CORE		52·2 – 55·8 Patches of hard creamy	52·6 – 59·6 po, py 2-3%, ultrabasic mag	716	50·7	54·5		4	11	640	1	6	15				
					coloured dolomite interbanded with calcite	2%-5%? - rock is heavy and slightly	717	54·5	56·6		9	9	920	1	<4	10				
					59·6 - 68·3 As for 33·2 - 39·3, gradually	magnetic.	718	56·6	59·6		9	5	860	1	6	10				
					becomes harder and more dolomitic	59·6-68·3 po, py 2-3% as irregular	719	59·6	62·6		18	9	153	1	4	25				
					- less reactive to acid. Some white and	veinlets and stringers, trace ultrabasic mag	720	62·6	65·6		5	7	53	1	4	<10				
					62·7 Banding 60° pale green bands of	in darker portions of the rock.	721	65·6	68·6		7	6	143	1	<4	<10				
					? calc silicate rock to 10-15cm															
					appear sporadically.															

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2
TENEMENT NAME TENTH LEGION No. 52 M/75
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. TLC 7
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by) Cu	Pb	Zn	Ag	Sn	W	Au
70·5	73·5	3·0	BQ		68·3–78·2 Gradually becomes darker grey – uniform massive pale grey rock with thin films of black and green(serp) along brecciation paths. 70·4 ? Bedding 57°	68·3–78·2 po 1-2%, py <1% as veinlets and stringers. Traces f.gr. mag.	932722	68·6	71·4		12	6	150	1	<4	10	
73·5	76·5	3·0	↓				723	71·4	74·3		26	7	150	1	<4	15	
76·5	79·5	3·0					724	74·3	77·4		30	333	410	2	<4	25	
79·5	82·5	3·0					725	77·4	80·3		4	5	32	1	4	<10	
82·5	85·5	3·0					726	80·3	83·3		1	5	26	1	<4	<10	
85·5	88·5	3·0			78·2–84·5 Light grey massive type)	78·2–81·1 po, finely disem 1%	727	83·3	86·2		7	2	29	1	<4	15	
88·5	91·5	2·9			as for 33·2–39·3	, weak pyrite veinlets, finely disem	728	86·2	89·3		6	20	56	1	<4	10	
91·5	94·5	3·0			84·5–88·1 See 68·3–78·2 for description	mag 5-7%.	729	89·3	92·3		33	3	75	2	<4	10	
94·5	100·0	0·3			88·1–94·7 See 78·2–84·5; 33·2–39·3	81·1–84·5 po in veinlets and stringers	730	92·3	100·5		2	6	107	2	4	<10	
100·0	100·5	40				2% blebs along brecciation paths. Trace	731	100·5	103·6		2	3	39	2	<4	10	
100·5	103·5	2·8				py, fine gr mag in black haloes	732	103·6	106·6		4	9	47	1	<4	<10	
103·5	106·5	3·0				84·5–88·1 po 3-5%, mag 2-3%	733	106·6	109·6		3	1	42	1	<4	<10	
106·5	109·5	3·0				88·1–94·7 As for 68·3–78·2	734	109·6	112·6		2	1	18	1	<4	<10	
109·5	112·5	3·0		nc	CAVITY 94·7m – 100·1m.		735	112·6	117·0		2	5	24	1	<4	<10	
112·5	115·5	3·0		Lst	100·1–112·1 Pale grey fine grained	100·1–106·8 Very finely disem po	736	117·0	121·5		3	4	40	1	6	<10	
115·5	118·5	3·0			limestone, with lighter coloured	in matrix 1-2%, occasional blebs.	737	121·5	124·6		9	4	58	1	6	20	
118·5	121·5	3·0			recrystallised patches. Finely bedded;	106·8–112·1 Trace f.gr. po.	738	124·6	127·5		27	4	43	1	<4	10	
121·5	124·5	3·0			minor green and black serpentinite												
124·5	127·5	3·0			alteration in fractures to 5mm, widely												
					spaced. Becomes lighter coloured after 106·8m												
					106·8 Bedding 35°.												
					111·9 Bedding 80°.												
					112·1–119·0 Pale grey massive crystalline	112·1–119·0 po, 1% as veinlets and											
					lst, as above 33·2–39·3, minor	blebs; trace magnetite.											
					10cm – 0·4m of pale grey limestone												
					(unaltered), as for 100·1–112·1.												
					119·0 – 127·1 pale grey massive l'st with	119·0 – po 2-3%, some blebs to											
					more abundant black alteration, more	2cm, f.gr. disem mag 5-7%.											
					distinct alteration zones. Some minor												
					intervals of white and pink/green calc												
					silicates.												

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3
TENEMENT NAME TENTH LEGION No 52M/15
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. TLC7
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au
127.5	130.5	3.0			122.0 Bedding 65°			GRIND	SAMPLES								
130.5	133.5	3.0		Cst/lst	Contact 55° 127.1 – 132.6 ALTERNATING CALC	127.1 – Pink garnets and traces	932739	127.5	130.5		19	7	69	1	10	10	
133.5	136.5	3.0			SILICATES AND LIMESTONE.	of epidote in calc silicate bands	740	130.5	133.5		27	5	53	1	8	15	
136.5	139.5	3.0			Tough white and bone coloured	, trace po, f.gr. mag. in lst.	741	133.5	136.5		10	10	35	0.5	×	×	
139.5	142.5	3.0			calc silicate intervals 10cm – 1.0m		742	136.5	139.5		5	10	65	×	×	×	
142.5	145.5	3.0			with thin interbeds of grey crystalline		743	139.5	142.5		5	10	40	×	×	×	
145.5	148.5	3.0			limestone		744	142.5	145.5		×	15	50	×	6	10	
148.5	151.0	2.5			Contact 70°		745	145.5	148.5		×	10	50	×	×	×	
151.0	154.1	3.1		Lst	132.6 – 142.6 LIMESTONE	132.6 – 142.6 po 3%, f.gr. mag 2%	746	148.5	151.5		×	10	30	×	×	×	
154.1	156.9	2.8			As above 119.0 – 127.1	, rare trace py.	747	151.5	154.5		×	15	20	0.5	×	×	
156.9	157.7	0.8			135.0 Bedding 40°		748	154.5	157.5		×	10	20	×	×	×	
157.7	160.5	2.8			Contact 55°		749	157.5	160.5		×	5	15	×	5	×	
160.5	163.5	3.0		S	142.6 – 145.1 SERPENTINITE.	142.6 – 145.1 No mineralisation	750	160.5	163.5		×	5	25	0.5	×	×	
163.5	166.5	3.0			Pale yellow and green massive	except for 143.7 – 144.3 po 2%, f.gr.	751	163.5	166.5		5	5	50	0.5	×	10	
166.5	169.5	2.8			serpentinite, with bands of remnant	mag 2%.	752	166.5	169.5		×	10	40	×	×	×	
					carbonate												
					143.7 – 144.3 limestone as above												
					132.6 – 142.6.												
					Contact 50°												
				Dol	145.1 – 161.0 DOLOMITE	145.1 – 161.0 1-2% pyrite dissem.											
					Massive coarsely crystalline pale	with black margins around grains.											
					grey dolomite, with minor thin												
					serpentinite stringers.												
					Contact 60°	161.0 – 165.1 po 1-2%, fine grained											
				Lst	161.0 – 168.8 LIMESTONE.	mag 1%.											
					161.0 – 165.1 Grey crystalline lst, with	165.1 – 167.1 po 1-2%, very fine											
					abundant black alteration and minor	grained dissem mag 5-7%.											
					serpentinite along fractures												
				Lst/S	165.1 – 167.1 Black and green altered												
					limestone – mostly serpentinous material												
					with f.gr. dissem. mag throughout, and grey calcite remnants.												

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 4

TENEMENT NAME TENTH LEGION No. 52M/75

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. T.L.C.7

RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by) Cu	Pb	Zn	Ag	Sn	W
169·5	172·5	3·0			167·1-168·8 transition zone – segregated white	167·1 – 168·8 trace po, mag 5%		GRIND SAMPLES								
172·5	175·5	3·0			dolomitic carbonates and black material		932753	169·5	172·5		×	10	10	1·0	×	×
175·5	178·5	3·0			as above.		754	172·5	175·5		×	5	15	1·0	×	×
178·5	181·2	2·6			Contact 50°		755	175·5	178·5		5	10	55	0·5	4	×
181·2	184·3	3·1		Dol	168·8 – 185·2 DOLOMITE 40°	168·8 – 177·1 po, py finely dissem 1-2%	756	178·5	181·2		×	5	20	1·0	×	×
184·3	187·4	3·1			Pale grey crystalline massive	177·1 – 177·4 zone with magnetite 30-40%	757	181·2	184·3		×	10	10	1·0	4	×
187·4	190·5	3·1			dolomite, as for 145·1 – 161·0	177·4 – 185·2 po, py finely dissem 1-2%	758	184·3	187·4		5	10	25	1·0	×	×
190·5	193·5	3·0		?sd/st	185·2 – 188·8 Breccia zone. clasts	185·2 – 188·8 Breccia zone – grey	759	187·4	190·5		×	15	25	1·0	×	×
193·5	196·5	3·0			of grey fine grained soft grey	and black breccia clasts with 10%	760	190·5	193·5		×	15	35	1·0	×	×
196·5	199·5	3·0			siltstone in a calcite rich matrix	combined po and magnetite.	761	193·5	196·5		×	10	30	0·5	×	×
199·5	200·1	0·8		Lst	188·8 – 196·3 LIMESTONE	188·8 – 192·1 traces po, py – 1%	762	196·5	200·1		×	15	30	0·5	×	20
					Grey massive limestone – variable	192·1 – 196·3 dk grey rock with traces										
					bands of black serpentinite/mag	dissem mag – prob 1-2%, traces po, py										
					alteration. 194·9 banding 65°.											
					Contact 45°											
				Lst/S	196·3 – 200·1 SERPENTISED LIMESTONE	196·3 – 200·1 No mineralisation.										
					Yellow and white rock, banded 2mm-1cm											
					scale – the yellow is serpentinite?											
					, with the white patches being almost											
					pure calcite. Medium hard, tough											
					crystalline rock – calc-silicate affinities?											
					199·8 Banding 65°.											
					END OF HOLE 200·1 m.											

8/8/1985

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 1

TENEMENT NAME TENTH LEGION No 5IM/15

3688·7N

PLAN – MAP REFERENCE TASH 2 TASH 15

CO-ORDINATES 5268·20E AZIMUTH 330° GRID DRILLERS S. RIMAK COMMENCED 23·4·81 DEPTH 150·9m. HOLE No. TLC8

RL COLLAR 229·34m INCLINATION -50° DRILL TYPE BOYLES 37 COMPLETED 6·5·81 CASING LEFT NIL DPO No(s) 30102, 30104, 30103

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au
				nc	TRICONED TO 6.0m - NO CORE												
6·0	7·0	0·1	NQto	?M	6·0 – 15·0 MAGNETITE	6·0-15·0 Extremely weathered -	932178	8·1	10·5	0·7	200	25	800	2·5	10	×	
7·0	8·0	0·1	47·0m		Only core recovered fragments of	residual magnetite, porous with											
8·0	10·5	0·7			washed magnetite - probably subcrop	red and brown interstitial clay.											
10·5	13·0	—			rubble for the major part, but some												
13·0	15·0	0·2			in situ material that has been	Weathered and broken with high											
15·0	16·5	0·9			cored and the clay matrix washed	core losses to ≑38·6m.											
16·5	18·0	0·4			away.												
18·0	19·5	0·5		?Css	15·0 – 16·5 CLAY WITH MAGNETITE		179	15·0	16·5	0·9	525	25	1575	2·5	20	140	
19·5	21·0	0·6			Brown banded extremely weathered												
21·0	22·5	0·3			rock - some Mn and ~2% very												
22·5	24·0	0·3			fine grained magnetite Banding 60° LCA												
24·0	25·5	0·4			16·5 – 18·0 CLAY		180	16·5	18·0	0·4	425	25	675	×	60	100	0·125
25·5	27·0	0·9		?Css	Yellow soft, crumbly, silty clay.												
27·0	28·5	1·5		M	18·0 – 22·5 MAGNETITE		181	18·0	19·5	0·5	475	125	500	×	10	×	
28·5	30·0	1·4			Black massive soft crumbly		182	19·5	21·0	0·6	425	25	450	×	10	×	
30·0	31·5	1·5			weathered magnetite, some hard		183	21·0	22·5	0·3	75	25	600	2·5	25	×	
31·5	33·0	1·5			crystalline intervals.												
33·0	34·5	1·5			21·0 – 22·5 Black soft friable												
					magnetite with ? Mn oxides 5·5%.												
				Css	22·5 – 53·6 WEATHERED CALC		184	22·5	24·0	0·3	550	100	1450	×	35	×	0·025
					SILICATE		185	24·0	25·5	0·4	450	25	1725	2·5	30	×	
					22·5 – 28·2 Dark brown ochreous	22·5 – 28·2 Dark brown colour due	186	25·5	27·0	0·9	825	25	7950	2·5	20	×	
					weathered rock, some ?Mn oxides	to Mn oxides? Has 2-3% finely	187	27·0	28·5	1·5	250	×	1·47%	2·5	4	×	
					, weakly banded - poorly defined	dissem mag.	188	28·5	30·0	1·4	50	×	9400	2·5	×	×	0·008
					parting at 70° LCA.												
					28·2 – 33·4 Pale brown/cream friable	28·2-33·4 traces magnetite, some	189	30·0	31·5	1·5	75	25	1·26%	×	×	×	
					sandy textured weathered rock	extremely weathered ? serpentinite	190	31·5	32·9	1·4	200	×	9550	2·5	7	×	
					- granular calc-silicate skarn analogous	stringers and traces weathered ?epidote.	191	32·9	33·6	0·7	750	×	9650	×	30	20	
					to that beneath the upper magnetite												
					lens in TLC 3?												

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 2

TENEMENT NAME TENTH LEGION No. 6IM/75

PLAN – MAP REFERENCE

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. TLC 8

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Cu	Pb	Zn	Ag	Sn	W	Au		
34·5	35·8	0·4			31·4 – 33·4 Inter-bedded brown/cream		932192	33·6	34·5	0·9	625	×	6750	2·5	5	×	0·008		
35·8	37·3	0·3			sandy textured material and thinly		193	34·5	35·8	0·4	300	×	5950	2·5	×	×			
37·3	38·6	0·8			laminated dark chocolate brown		194	35·8	36·1	0·3	150	25	1725	2·5	×	×			
38·6	39·8	0·6			manganiferous clay as for 22·5-28·2		195	36·1	38·6	0·8	100	×	2100	2·5	3	×			
39·8	41·0	1·2			- originally Css/Cst, inter-bedded?		196	38·6	40·4	1·2	25	300	650	2·5	20	×	0·017		
41·0	44·0	2·8			33·4-45·2 White calc silicate rock	33·4-45·2 patches & coarsely	197	40·4	41·9	1·5	25	25	525	2·5	8	×			
44·0	47·0	3·0			extensively altered, with irregular patches	crystalline chlorite, and epidote	198	41·9	43·8	1·9	25	×	425	×	15	×			
47·0	48·5	1·4			& chloritic alteration and epidote	veinlets. Traces mag, sp?	199	43·8	45·2	1·4	25	×	275	×	10	×			
48·5	51·5	3·0			- similar rocks occur in TLE 3 28-45m		200	45·2	47·0	1·8	50	×	375	2·5	9	×	×		
51·5	54·5	3·0			and the upper part of TLC 4.														
54·5	57·5	3·0			45·2 – 47·0 Distinct breccia fabric	45·2 – 47·0 – No obvious mineralisation													
57·5	60·5	3·0			- rounded clasts of calc silicate in a	47·0 – 51·4 – Minor chlorite-epidote													
60·5	63·5	3·0			grey chloritic matrix with a hard	veining													
					black mineral in interstices. 5-7%.	50·9-51·2 Zone of po, py, marcasite	GRIND SAMPLES.												
					47·0 – 51·4 As above 33·4-45·2, but	with mag and chlorite : trace sp, 70° LCA.	932763	47·0	50·6		400	65	570	0·8	×	×			
					the alteration acquires a distinctly		764	50·6	53·6		790	21	6400	0·5	×	55			
					banded character – 5mm – 25cm														
					bands @ 70° LCA.														
					51·4 – 53·6 Massive crystalline mottled	51·4-53·6 traces py, chlorite, one													
					green and white calc silicate skarn	magnetite zone – 3cm at 51·7m.													
					rock – dense and heavy.														
					Contact 80°		CUT SAMPLES												
				S/M	53·6 – 63·2 ? SERPENTINITE WITH MAGNETITE		932135	53·6	54·9	1·5	600	200	3·0%	×	10	×			
					Pale yellow-green(?) serpentinised bgr	53·6 – 58·0 Mag disseminated 30-40%;	136	54·9	55·6	0·7	175	150	9600	×	15	×	×		
					calc silicate matrix with bands of	variable 10-15% to 80-90% for a few	137	55·6	56·5	0·9	825	75	2·2%	×	8	×			
					crystalline black magnetite distributed	cm. Sp variable throughout trace – 10%,	138	56·5	58·0	1·5	750	100	2·71%	×	10	×			∞
					throughout 30-40%.	2-3% overall.	139	58·0	58·9	0·9	700	125	4·26%	2·5	10	×			∞
						58·0-58·9 Dark green serpentinite	140	58·9	60·1	1·2	625	125	2·38%	×	15	×	×		∞
						matrix, mag and sp as above.	141	60·1	61·5	1·4	350	100	1·35%	×	15	×			0·0
						58·9 – 63·2 As above, sparse calcite	142	61·5	62·4	0·9	575	250	1·68%	2·5	20	×			0·0
						stringers	143	62·4	63·1	0·7	200	175	8300	2·5	15	×			

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3

TENEMENT NAME TENTH LEGION No. 5IM/75

PLAN – MAP REFERENCE

CO-ORDINATES ... AZIMUTH ... DRILLERS ... COMMENCED ... DEPTH ... HOLE No. T.L.C.8.

RL COLLAR ... INCLINATION ... DRILL TYPE ... COMPLETED ... CASING LEFT ... DPO No(s) ...

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ...) Cu	Pb	Zn	Ag	Sn	W	Au
63·5	66·3	2·8		Csd	63·2-65·3 CALC SILICATE ROCK	63.2-64.6 mag 2-3%, trace sp, in blebs	932144	63·1	64·6	1·5	25	50	1375	×	×	×	×
66·3	69·0	2·6			Green, brown and white banded calc	and stringers.	145	64·6	65·0	0·4	175	125	3.81%	×	6	×	
69·0	72·5	3·4			silicate rock, which has been subjected	64.6-65.0 Serpentinite band with	146	65·0	65·3	0·3	575	100	4300	×	×	×	
72·5	75·5	3·5			to minor alteration/metasomatism - some	40% mag, sp 2-3% in central											
75·5	78·5	3·0			serpentinite bands and stringers	65.0-65.3 trace mag, garnets.											
78·5	81·0	2·7			Contact 65°												
					65·3-68·2 SERPENTINISED CALC SILICATES												
					WITH MAGNETITE.												
				S/M	65·3-66·1 Dark green serpentine with	65.3-66.1 py 1%; trace sp.	147	65·3	66·0	0·7	250	75	8200	×	8	×	
					black magnetite 30%. Banded 65°		148	66·0	66·9	0·9	150	100	1400	×	9	×	×
				Cst/S	66·1-68·2 Bone white calc silicate	66.1-68.2 – py 3-5%, in irregular bands	149	66·9	68·2	1·3	575	75	6150	×	9	×	
					with green/grey serpentinised intervals: mag.	to 2cm thick.											
					10%: Banded 60°												
					Contact 70°												
				Css	68·2-72·7 CALC SILICATE SKARN	68.2-70.6 mag 1%, py 1-2%, strong	150	68·2	69·0	0·8	250	150	5750	2·5	×	×	
					White fine grained rock with irregular	trace sp → 1%	151	69·0	70·6	1·6	75	175	5900	×	×	×	
					bands and patches to 2cm of dark	70.6-72.7 Sp locally in 10 cm intervals											
					green serpentinite or white calcite.	to 15%, overall 1-2%, mag 2-3% assoc.	152	70·6	71·6	1·0	75	100	1.41%	×	3	×	×
					"Altered 'Cst' type of calc-silicate.	with serpentine, blebs disseminated py. to 1%.	153	71·6	72·1	0·5	×	75	1600	×	7	×	
					72·7-85·7 CALC SILICATE ROCK	72.7-73.9 magnetite 1-2% in fine stringers	154	72·1	72·7	0·6	50	325	5400	×	×	×	
					Bone white f.gr. rock with weak	, sp 1-2%											
					sporadic serpentinite alteration.	73.9-75.0 Finely disseminated mag 5-7%	155	72·7	73·9	1·2	25	50	1975	×	5	×	
				Cst/Lst	73·9-75·0 Altered limestone – remnant 2×1cm	in limestone; trace sp.	156	73·9	75·0	1·1	25	50	2500	×	4	×	0·008
					lenses of grey limestone surrounded by												
					bands of green serpentinite and white calc-silicates.												
				Cst	75·0-75·8 Bone and cream calc silicate	75.8-75.8 trace magnetite, garnet.	157	75·0	75·8	0·8	25	50	225	×	6	×	
					as above.		158	75·8	77·4	1·6	50	450	725	5·0	4	×	
				Css	75·8-77·6 Qtz-epidote-garnet rock	75.8-77.6 Epidote 30% along fractures	159	77·4	78·8	1·4	25	1175	375	5·0	10	×	
					-alteration stockwork.	, with garnet 10% and residual white and	160	78·8	79·1	0·3	100	275	1·36%	2·5	7	×	0·008
				Cst	77·6-81·3 Bone and greenish white calc	greyish pink qtz. Traces disseminated mag.	161	79·1	80·2	1·1	75	×	425	×	10	20	
					silicate rock with minor serp/mag banding to 30°	77.6-81.3 mag 1-2% with black serp, trace sp	162	80·2	81·3	1·1	25	300	3600	×	5	×	

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 4
TENEMENT NAME TENTH LEGION No. 5LM175
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. T.L.C.8
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by) Cu	Pb	Zn	Ag	Sn	W	Au
81·0	84·0	3·0		M/s.	81·3 – 82·0 Magnetite 40% associated with	81·3-82·0 Sp 1%, associated with mag.	932163	81·3	82·0	0·7	50	×	1·1%	×	9	×	
84·0	87·1	3·1			dark green, almost black serpentinite, some		164	82·0	82·6	0·6	25	×	1·03%	×	10	×	0·017
87·1	89·9	2·7			remnant patches white calc silicates		165	82·6	83·3	0·7	25	175	6300	2·5	25	×	
89·9	92·9	3·0			82·0 – 85·7 White calc silicate rock with	82·0-85·7 Mag 15-20% in bands with	166	83·3	83·9	0·6	50	50	4250	2·5	4	×	
92·9	95·9	3·0			0·5cm → 10 cm bands of mag/serpentinite	serpentinite; trace sp.	167	83·9	84·2	0·3	150	×	1·31%	2·5	55	×	
95·9	99·0	3·1			as above 81·3-82·0, 30%. Some sparse		168	84·2	85·7	1·5	75	100	4975	×	6	×	0·017
99·0	102·4	3·4			bands grey lst near base of interval.												
102·4	105·4				Contact 60°		GRIND SAMPLES.										
105·4	108·4	3·0		lst/Cst	85·7 – 97·9 ALTERED LIMESTONE	85·7-95·7 Mag diosem 2-3% throughout	932765	85·7	88·8		26	30	470	0·3	×	20	
					Banded grey and white rock – the	lst, overall 1-2%, traces po, py and rare	766	88·8	91·6		47	22	710	0·3	4	15	
					grey is a crystallic impure limestone	sp in small zones to 3 cm.	767	91·6	95·7		18	18	90	0·2	×	×	
					with finely diosem mag, frequently	95·7 – 97·5 po, py diosem in bands	CUT SAMPLES										
					with green 2-8 mm serpentinite rims	to 30 cm thick, 10-20%; overall 3-5%	932169	95·7	97·0	1·3	175	×	1925	2·5	7	×	
					surrounding irregular bands and intervals	97·5 – 97·9 10% Mag in serpentinised limestone	170	97·0	97·5	0·5	×	50	425	×	7	×	
					of bone white calc silicate rock, which	, trace py	171	97·5	97·9	0·4	150	×	4475	2·5	7	50	
					may be up to 1·2 m thick.												
					Contact 55°		GRIND SAMPLES										
				Ss/Cst	97·9 – 101·4 BLACK SILTSTONES/CALC SILICATES.	97·9 – 101·4 No obvious mineralisation	932768	97·9	101·2		64	18	148	1·0	×	110	
					Thinly bedded black siltstones which	, traces py in some calc-silicate intervals.											
					alternate with, and have been invaded												
					by, white and pink calc-silicates.												
					Hard, hornfelsed; bedded 50-60°												
					Contact 70°												
				Cst	101·4 – 104·6 Calc Silicate Rock.	101·4 – 104·6 minor epidote and pale	769	101·2	104·6		38	27	640	1·0	25	75	
					Bone white calc silicate, with greenish	brown garnets, mostly in the greenish	932308	104·8	THIN SECTION SAMPLE								
					coarser grained intervals	crystalline intervals.											
					Contact 50°		CUT SAMPLES										
				lst/Cst	104·6 – 106·7 ALTERED LIMESTONE	104·6-106·7 f.gr. mag 2-3%, traces	932172	104·6	105·4	0·8	25	100	725	2·5	6	×	0·042
					As above 85·7 – 97·0, but lesser	po, py. Some mag has been	173	105·4	106·7	1·3	75	25	175	5·0	×	×	
					intervals of calc-silicates	partially converted to reddish											
						haematite											

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 5

TENEMENT NAME TENTH LEGION No 5M/75

PLAN – MAP REFERENCE

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. T.L.C.8

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Cu	Pb	Zn	Ag	Sn	W	Au			
					Contact 30°															
108·4	111·4	3·0		Cst	106·7 – 114·9 CALC SILICATE ROCK	106·7 – 109·3 Black magnetite and sp	GRIND	SAMPLES												
111·4	113·9	2·5			As for 101·4 – 104·6, some epidote	disseminations throughout, some	932770	106·7	109·7		47	94	1220	1·4	×	45				
113·9	117·4	3·7			-garnet rich intervals, and bands	bands f.gr. mag – segregation due to	771	109·7	112·6		51	19	135	0·9	7	75				
117·4	120·4	3·0			and patches of remnant limestone and	recrystallisation. 10-15%.	772	112·6	115·5		19	22	440	0·5	3	20				
120·4	123·4	2·9			carbonates.	109·3 – 112·2 Green epidote stockworks and	773	115·5	117·4		47	25	250	0·5	×	20				
123·4	126·4	3·0			109·4 Bedding 35°	pinkish brown? garnets, 20-30%.	774	117·4	120·4		15	11	120	0·2	×	20				
126·4	129·4	3·0			Contact irregular	(idocrase?) Traces banded and disseminated mag.	* 775	120·4	123·5		7	15	90	0·1	×	×				
129·4	132·4	3·0		Lst/Cst	114·9 – 150·9 Altered LIMESTONE.	112·2 – 114·9 Trace disseminated mag.	776	124·6	127·6		7	23	73	0·2	×	×				
132·4	135·4	3·0			As above 85·7 – 97·9, but darker	114·9 – 117·4 Traces disseminated mag. – almost	777	127·6	130·6		10	21	75	0·1	×	×				
135·4	138·4	3·0			grey and finely banded – greater	1-2% in places.	778	130·6	133·6		12	48	138	0·3	×	10				
138·4	141·2	2·8			serpentinisation and lesser calc-silicate	117·4 – 123·5 po disseminations 1-2% as	779	133·6	136·6		11	33	390	0·2	3	15				
141·2	144·3	3·1			alteration. Little calc silicate alteration	blebs and very fine grains, trace	780	136·6	138·9		17	18	230	0·1	5	×				
144·3	147·4	3·1			after 118·3 m, to 124·6	fine py, disseminated magnetite.	* CUT	SAMPLE												
147·4	150·4	3·0			124·7 Banding 55°	123·5 – 124·6 very black – f.gr mag 2-3%	932174	123·5	124·6	1·1	25	25	100	2·5	×	×				
150·4	150·9	0·6			Gradually becomes lighter in colour	, trace po.														
					, with stronger calc-silicate alteration	124·6 – 142·1 traces f.gr. mag, po, py.														
					124·6 m → 142·1	142·1 – 145·9 f.gr mag 1-2%, very fine														
					138·2 Banding 35°	pyrite 1-2%	CUT	SAMPLES												
					142·1 – 145·9 Darker in colour – more	145·9 – 150·9 1-2% f.gr. mag, concentrated	932175	142·1	142·7	0·6	50	25	100	×	×	×				
					magnetite	in limestone intervals; trace very fine	176	142·7	144·3	1·6	25	25	225	×	10	×	0·008			
					145·9 – 150·9 As above, 124·6 – 142·1	pyrite.	177	144·3	145·9	1·6	25	25	275	×	×	×				
					150·8 Banding 52°.		GRIND	SAMPLES												
							932781	138·9	142·1		34	11	150	0·2	6	15				
					END OF HOLE 150·9m!		782	145·9	148·5		58	53	620	1·1	20	55				
							783	148·5	150·9		109	13	140	0·4	×	20				8880603

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1

TENEMENT NAME TENTH LEGION No 53M/75

PLAN – MAP REFERENCE TASH 2 TASH 13

CO-ORDINATES 4982.3 N 5261. E AZIMUTH 180° GRID DRILLERS S. RIMAK COMMENCED 7.5.81 DEPTH 163.0m. HOLE No. TLC9

RL COLLAR 249.3m INCLINATION -48.5° DRILL TYPE BOYLES 37 COMPLETED 19.5.81 CASING LEFT NIL DPO No(s) 30105 30106

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ANALABS) Cu	Pb	Zn	Ag	Sn	W	Au
0.0	1.5	1.4	HQ		0-1.8 Surface rubble – magnetite and												
1.5	2.0	0.3	to 24m		limonite scree.												
2.0	5.0	3.0			1.8 - QUARTZITES AND SILTSTONES	1.8-2.5 Yellow soft puggy clay with siltstone											
5.0	8.5	3.5			Yellow - brown weathered impure	frags - highly weathered. No mineralisation.											
8.5	12.0	3.5			quartzite, fine bedding laminations	2.5-7.5 Quartzite beds, weak qtz veinlets											
12.0	15.0	3.0			with thin siltstone interbeds.	may have been some py, but now											
15.0	18.0	3.0			3.5 ? Bedding 60°.	leached, bleached, fractured and weathered.											
18.0	21.0	3.0			4.3 Bedding 75°	7.5 - 21.0 Minor qtz veins, pitted, Leached											
21.0	23.5	2.5			7.7 Bedding 50°	and weathered.											
23.5	25.5	2.0			9.1 Bedding 45° ; 13.0 Bedding 60°												
25.5	28.5	3.0			Mostly quartzite to 7.5m												
28.5	31.5	2.9			Then mostly siltstones with some thin												
31.5	34.5	3.0			shale laminae and thin qtzite interbeds												
34.5	37.5	2.9			to 14.2												
					14.2 – 16.7 Massive pinkish brown qtzites												
					16.7 – 18.5 Siltstones etc as for 7.5-14.2												
					18.5 - Thinly bedded f.gr. quartzites	21.0 – 21.6 Epidote - qtz veining at											
					, pale grey in places, minor siltstones.	low angles to core, pronounced											
					18.4 Bedding 45°	bleached/brown alteration haloes around											
					24.6 Bedding 70°	veinlets 2-3 mm.											
						21.6 – 30.4 Qtz veins and segregations											
			Change to NQ core 24m ↓		30.9-35.6 Breccia zone – qtz-calcite	to 6 mm thick, traces py.											
					-rhodochrosite - py veining to 32.1 m.	30.4 – 30.9 Qtz stockwork in breccia	932201	30.4	30.9	0.6	50	25	75	7.5	65	20	
					32.1 - 35.6 highly altered, minor veining	zone - 27 1-2%, some chlorite	202	30.9	32.1	1.2	25	25	75	2.5	80	×	
					of the above with magnetite rich	Contact 15° 30.9 – 31.35 Vein – qtz, with pink											
					intervals that have been partially	rhodochrosite, greenish chloritic material											
					altered to haematite.	and 10% crystalline py to 5x5 mm.											
						Contact 70° 31.6 – 32.1 Vein – calcite-qtz- pink											
						rhodochrosite, and green chloritic											
						material with py in course crystals 10%.											

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2
TENEMENT NAME TENTH LEGION No 53M/75
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. TKC9
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au
37·5	40·5	2·9				Contact 65°	932203	32·1	34·5	2·4	200	25	175	5·0	130	30	
40·5	43·5	3·0				32·1 – 34·5 Highly altered and metasomatised rock ? – Chloritic matrix, coarse grained with qtz – rhodochrosite – calcite – py veining as above. Up to 10·5% dissem. f.gr. mag. that has been converted to haematite. Pyrite dissem throughout 5–7%.											
43·5	46·5	3·0															
46·5	49·0	2·5															
49·0	52·5	3·5															
52·5	58·5	6·0															
						Contact 20° → 34·5 – 34·7 Massive chlorite with 30% mag haematite.	204	34·5	35·6	1·1	175	50	800	5·0	95	30	0·025
						Contact 70° → 34·7 – 35·6 Massive chloritic rock with spots of white minerals and 10% mag-haematite.											
					Contact 45°?												
				qs	35·6 – 54·8 ALTERED SILTSTONES? Dark muddy maroon - browns and greeny grey rock, extensively deformed, silicified and altered. Up to 60 cm. patches of remobilised qtz with greyish-white fine grained ?sericite, s histrose fabric, which decrease in size and abundance with depth. 7 cm qtz-carbonate vein on contact	35·6 – 38·3 Py 1-2% as disseminated blebs and in veinlets with qtz.	205	35·6	38·3	2·7	75	×	50	2·5	×	×	
						38·3 – 38·5 White bleached zone with 10% py	206	38·3	38·5	0·2	525	×	50	2·5	×	×	
						38·5 – 39·8 Trace py as interstitial blebs	207	38·5	39·8	1·3	25	×	25	5·0	×	×	
						– no qtz – sericite alteration. 2-3% as thin veinlets.	932306	36·0	THIN SECTION SAMPLE.								
							GRIND SAMPLE										
					39·8 – 44·3 Gradually becomes lighter in colour – pale brown ? sericitic rock, quite well bedded with minor disruption and contortion of beds – originally a clay rich siltstone? 42·4 Bedding 65° 44·3 – 44·7 Mag-chlorite assemblage, massive 44·7 Contact 45°	39·8 – 43·9 Py, po 10% combined as veinlets and dissem in some thin beds < 5 mm.	932784	39·8	43·9		113	24	87	1·1	10	95	
							CUT SAMPLES										
						43·9 – 44·3 Spots of green chlorite and black (?) actinolite in a bleached matrix Py 1-2%	932208	43·9	44·3	0·4	×	×	150	2·5	80	×	×
							932307	43·2	THIN SECTION SAMPLE.								
						44·3 – 44·7 Dissem mag 50%, with chlorite and ? tremolite.	209	44·3	44·7	0·4	×	50	725	2·5	140	×	×

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3
TENEMENT NAME TENTH LEGION No 53M/15
PLAN – MAP REFERENCE
CO-ORDINATES ... AZIMUTH ... DRILLERS ... COMMENCED ... DEPTH ... HOLE No. T4C9
RL COLLAR ... INCLINATION ... DRILL TYPE ... COMPLETED ... CASING LEFT ... DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ...) Cu	Pb	Zn	Ag	Sn	W	Au
58·5	64·5	6·0			44·7–45·9 Green (chlorite) hornblende, actinolite? alteration; matrix	44·7–45·9 Qtz-epidote veining, trace py	932210	44·7	45·9	1·2	×	25	175	2·5	140	×	0·025
64·5	67·5	3·0			is pink and white, hard and silicified.	45·9–46·6 Mag. dissem. and in veinlets	211	45·9	46·6	0·7	25	×	850	2·5	160	×	×
					45·9–46·6 Black serpentinite with dissem	with dark green serpentinite, 10%–15%											
					mag and sediment inclusions – originally												
					an impure carbonate rich shale?												
					Contact 75° 46·6–47·5 See 44·7–45·9, above	46·6–47·5 Dark green crystalline? hornblende	212	46·6	47·5	0·9	×	×	125	5·0	200	×	0·585
					Contact 55°?, irregular. 47·5–52·9 Pinkish brown and pale	-chlorite – ? actinolite alteration and veining	GRIND	SAMPLES									
					brown qtz-sericite rock. Totally	47·5–52·9 Traces very fine dissem. py.	932785	47·5	50·0		98	13	103	1·3	5	170	
					altered, schistose fabric, disrupted	talcy material on sheared partings.	786	50·0	52·9		49	12	73	0·9	10	110	
					48·8 Bedding 62° and brecciated; some	52·9–54·8 As above 46·6–47·5, less or	CUT	SAMPLES									
					weak bedding visible.	dark green minerals, 1% py in veinlets.	932213	52·9	54·2	1·3	×	50	100	2·5	60	×	× 0·032
					Contact 75°		214	54·2	55·1	0·9	×	50	150	5·0	230	×	0·042 0·008
				M	54·8–85·2 MAGNETITE												
					54·8–55·1 Pale green serpentinised												
					carbonates with 10–15% mag.		932310	56·2m	Mineragraphic	Sample.							
					Contact 70° 55·1–59·1 Massive magnetite with		215	55·1	56·6	1·5	25	75	350	5·0	5350	×	× 0·008
					2–5% interstitial dark green serpentinite		216	56·6	58·1	1·5	×	100	450	5·0	310	×	0·017 0·008
					and traces of white refractory		217	58·1	59·1	1·0	×	50	450	7·5	240	×	0·008
					minerals as small remnant clots.												
					59·1–60·5 Yellow-green serpentinite	59·1–60·5 Trace interstitial pyrite.	218	59·1	60·5	1·4	50	50	525	5·0	700	×	0·008
					with white refractory minerals and												
					magnetite dissem throughout 40%												
					60·5–62·8 Massive mag. with grey and	60·5–62·8 Py dissem throughout, 3%	219	60·5	61·9	1·4	100	50	3250	5·0	1550	×	0·008
					green serpentinite 3·5%.	some Rea interstitial pyrrhotite?	220	61·9	62·8	0·9	250	50	800	5·0	1750	×	0·025 0·008
					62·8–64·1 Black shaly-looking		221	62·8	64·1	1·3	75	25	375	2·5	2600	×	×
					serpentinite with 10–70% dissem mag		932311	63·4m	Mineragraphic	Sample							
					and white speckles and bands												
					of calcite												
					64·1–64·9 Yellow-green serpentinised		222	64·1	64·9	0·8	25	300	625	2·5	210	×	0·008
					refractory residual minerals, with 30%												
					mag dissem in bands and as clasts												

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 4

TENEMENT NAME TENTH LEGION No. 58M/15

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. T.L.C.9.

RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....) Cu	Pb	Zn	Ag	Sn	W	Au
67·5	70·5	3·0			64·9–65·9 Mag 70%, in dark green serpentinite; trace white calcite.		223	64·9	65·9	1·0	50	100	500	2·5	480	×	0·008
70·5	73·5	3·0															
73·5	76·5	3·0			65·9–67·2 Massive mag 95%; small veinlets grey sep(?), py, mcasite as veinlets in last 30 cm, 20%.	– hard veinlets bluish grey f.gr. material – associated with Sn mineralisation? Present through most of the interval to 72·6 m.	224	65·9	67·2	1·3	150	75	500	2·5	9100	×	0·017 ×
76·5	79·5	3·0					932312	66·1m			Mineragraphic Sample.						
					67·2–67·7 Mag 35% in crystalline white calcite		225	67·2	67·7	0·5	100	75	800	2·5	2250	×	×
					67·7–68·1 Yellow green serpentinised calc silicate minerals, white residual minerals, and py, dissem 5–7%.		226	67·7	68·1	0·4	250	150	3500	2·5	320	×	×
					68·1–70·6 Mag 40–50%, in crystalline white calcite mottled in places with minor green serpentinite. Py 1–2%, patchy.		227	68·1	69·6	1·5	150	25	1450	2·5	2700	×	0·008
							228	69·6	70·6	1·0	175	75	5500	2·5	1400	×	0·008 ×
							932313	70·0			Mineragraphic Sample.						
					70·6–71·65 Mag 60–65% in calcitic gangue which has been partially serpentinised; 1% py; 3–5% sp throughout	Some unusual fine bluish-grey material along fractures – f.gr. mag? with calcite.	229	70·6	71·65	1·05	100	150	1·5%	2·5	2600	×	×
					71·65–72·0 Yellow-green serpentinised carbonates + residual minerals; mag 40%		230	71·65	72·0	0·35	25	200	1925	2·5	310	×	×
					72·0–72·6 Mag 50–60% dissem in grey qtz–carbonate matrix.	trace sp, py.	231	72·0	72·6	0·6	25	175	3025	5·0	2750	×	×
					72·6–73·9 Residual calc silicate minerals and yellowish-green serpentinite alteration; mag dissem 30–40% in places; overall 10–20%, po with grey calc silicates 2–3%, traces py, sp.		232	72·6	73·9	1·3	225	150	5050	2·5	490	×	0·033 ×
					73·9–77·0 Mag 30–40% in a grey and green serpentinite matrix, with white clots of residual carbonates and qtz. Irregularly banded fabric, greyish colour due to incomplete serpentinisation.	py 5–7% as irregular veinlets and stringers	233	73·9	75·5	1·6	475	75	2150	2·5	350	×	×
							234	75·5	77·0	1·5	175	50	2175	2·5	540	×	×

067

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 5
TENEMENT NAME TENTH LEGION No 63M/75
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No TLC9
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s)

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Cu	Pb	Zn	Ag	Sn	W	Au
79·5	82·1	2.6			77·0 – 78·2 Crystalline mag with dark and	mag 60%, py 1-2%.	932235	77·0	78·2	1·2	175	50	2025	2·5	1600	×	×
82·1	85·0	2·9			pale green seperitite;		932314	78·5 m	Mineragraphic	Sample.							
85·0	88·5	3·0			78·2 – 79·5 Fine grained bluish green mag	py/marcasite 1-2%	236	78·2	79·5	1·3	25	75	1925	×	3750	×	0·050 ×
88·5	91·5	3·0			in a bottle green seperitite matrix some		237	79·5	80·6	1·1	125	25	2600	2·5	1000	×	×
91·5	94·5	3·4			white and brown residual minerals.		238	80·6	82·1	1·5	25	50	2025	2·5	2350	×	×
94·5	97·5	3·0			79·5 – 85·2 Massive crystalline mag.	Weak calcite veins; minor bluish grey	239	82·1	83·4	1·3	150	100	1450	2·5	4100	×	×
97·5	100·5	2·9			90% interstitial green translucent serp.	magnetite/carbonate veining; trace py.	240	83·4	84·4	1·0	50	75	1075	2·5	2400	×	0·017 ×
				ss/sh	Contact 70° 85·2 – 91·2 GREY SILTSTONES/SHALES.	85·2 – 88·1 Carbonate – qtz stockwork	241	84·4	85·2	0·8	50	50	700	2·5	6000	×	×
					Dark grey f.gr. silt rich rock, deformed	, traces py.	242	85·2	86·3	1·1	50	25	9400	2·5	150	×	×
					and brecciated with carbonate veining	88·4 – 91·2	243	86·3	88·1	1·8	25	25	125	×	120	×	×
					and minor pale coloured calc silicate		244	88·1	89·5	1·4	75	325	75	×	×	×	0·017 ×
					intervals		245	89·5	91·2	1·7	75	200	125	2·5	×	×	×
					Contact 40°		GRIND	SAMPLE									
				Cst	91·2 – 95·2 CALC SILICATE ROCK.	91·2-94·4 Broken, slightly weathered	932787	91·2	94·4		81	22	113	1·1	30	100	
					Pale pink and white crystalline	, trace py in stringers with calcite.	CUT	SAMPLES									
					?tremolite rock with patches of	94·4 – 95·2 Epidote 50-60%, vein	932246	94·4	95·2	0·8	25	50	150	5·0	220	×	
					calcite and minor interbeds 0.5m	swarm and dissem. throughout.	932315	84·0 m	Mineragraphic	Sample.							
					of grey siltstone as above.												
					Contact 55°?												
				Css	95·2 – 96·3 CALC SILICATE SKARN	95·2-96·3 f.gr. dissem. mag.	247	95·2	95·5	0·3	175	250	1200	5·0	190	×	
					Grey granular rock with abundant	10-15%, also in crystalline patches	248	95·5	96·3	0·8	200	500	5600	5·0	330	×	0·042
					epidote, some pink Mn silicates	with seperitite; py, po 2-3%.											
					partially seperitised.												
					Contact irregular.												
				M/S	96·3 – 98·0 MAGNETITE/SERPENTINITE.	Mag 50%, traces py as blebs to	249	96·3	98·0	1·7	125	125	400	2·5	80	×	
					Crystalline magnetite with bottle green	6 mm.											
					seperitite and yellowish partially												
					seperitised material.												
					Contact 50°												
				Cst	98·0 – 99·9 CALC SILICATE ROCK	traces pinkish ? garnets, minor	250	98·0	99·9	1·9	25	75	2025	5·0	120	×	
					As above 91·2-95·2 some greenish	patches epidote – chlorite veining.											

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C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 6
TENEMENT NAME TENTH LEGION No. 53 M/75
PLAN – MAP REFERENCE
CO-ORDINATES ... AZIMUTH ... DRILLERS ... COMMENCED ... DEPTH ... HOLE No. TL C9
RL COLLAR ... INCLINATION ... DRILL TYPE ... COMPLETED ... CASING LEFT ... DPO No(s) ...

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ...) Cu	Pb	Zn	Ag	Sn	W	Au
100·5	103·5	3·0		Css	99.9–101.2 CALC SILICATE SKARN		932251	99.9	101·2	1·3	25	25	225	2·5	250	×	
03·5	106·5	3·0			Grey crystalline rock, greasy feeling												
06·5	109·5	3·4			soft, talcy and chloritic, minor												
09·5	112·5	3·0			calcite stringers.												
12·5	115·5	3·0			Contact 70°												
				M/S	101.2 – 105.7 MAGNETITE/SERPENTINITE	Patches of brownish interstitial	252	101·2	101·9	0·7	25	50	150	2·5	100	×	0·017
					Crystalline mag 60% in a matrix of	? idocrase, fine calcite veins	253	101·9	102·6	0·7	25	75	250	2·5	50	×	
					bottle green serpentinite, with some	1-2% py in lower 1·5m.	254	102·6	104·2	1·6	25	50	225	5·0	120	×	
					paler grey-green incompletely serpentinised		255	104·2	104·8	0·6	125	×	6800	2·5	270	×	
					patches. 104.6 – 104.8 grey-green Css		256	104·8	105·7	0·9	225	50	4800	2·5	80	×	0·100
					Contact ? 70°		GRIND SAMPLES										
				Cst	105.7 – 106.6 CALC SILICATE ROCK	patches green epidote and dark	932788	105·7	110·2		31	30	118	0·7	35	35	
					Bone coloured f.gr rock with greenish	green ? hornblende											
					epidote veins, and pinkish patches of												
					? idocrase – vesuvianite.												
				qS	106.6 – 110.1 QUARTZ-SERICITE ROCK	Weak trace pyrite, in small											
					Pinkish brown, grey and cream highly	stringers.											
					altered? sedimentary rock. Finely												
					banded (? bedding), disrupted and												
					contorted with qtz segregations and												
					pale buff coloured ? sericite rich												
					patches to 10 cm.												
					Contact ? 60°		CUT SAMPLES										
				M	110.1 – 112.0 MAGNETITE	110.1 – 111.2 Mag 30-40%, Sp 1-2%; py	932257	110·2	112·0	1·8	275	500	1·58%	2·5	220	×	
					Black crystalline mag., in a yellowish	1-2% in yellowish green matrix.											
					green partially serpentinised matrix of	111.2 – 111.5 f.gr mag 10%, Sp 2%, py <1% in hard											
					hard grey calc-silicate material.	grey matrix											
					Contact 70°	111.5 – 112.0 As above 110.1 – 111.2.											
				Css	112.0 – 113.8 CALC SILICATE SKARN	112.0 – 113.8 Mottled grey due to finely	258	112·0	112·7	0·7	25	50	1750	×	100	×	
					Hard grey massive fibrous tremolite	disseminated chloritic and serpentinite alteration	259	112·7	113·8	1·1	50	25	2825	×	170	×	
					-actinolite, weak black serpentinite veining	1-2% disseminated py, weak trace Sp.											

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 7

TENEMENT NAME TENTH LEGION No 53M/75

PLAN – MAP REFERENCE

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. TLC9.

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Cu	Pb	Zn	Ag	Sn	W	Au
15·5	118·5	3·0		S/M	113·8 – 115·4 SERPENTINITE WITH MAGNETITE.	113·8 – 114·8 Sphalerite 20%, coarsely	932260	113·8	114·8	1·0	550	25	14·1%	×	180	×	0·017
118·5	121·2	2·7			Dark green serpentinite, with dissem mag	crystalline and intergrown with magnetite											
121·2	124·0	2·7			15–20% and abundant sphalerite.	, py 1–2% dissem throughout.											
24·0	127·0	3·0			Some minor grey calc-silicate interbeds at	114·8 – 115·4 Mag 10–15%, sp 1–2%, in dark	261	114·8	115·4	0·6	75	75	2525	×	130	×	
127·0	129·9	2·9			base of interval.	green serpentinite. Transition zone to next rock type.											
129·9	133·0	3·1			Contact ? 65°	– overall only 50% mag-sulp in interval.	GRIND SAMPLES										
133·0	136·0	3·0		ss	115·4 – 116·2 SILTSTONES		932789	115·4	118·1		15	21	89	0·4	35	15	
					Brown hard hornfelsed sediment, disrupted	Weak trace pyrite as thin stringers											
					and contorted with some greenish calc-silicate												
					patches to 2×1 cm.												
				Cst/Css	116·2 – 135·6 CALC SILICATE ROCK	116·2 – 118·1 Weak epidote-qtz veining.	CUT	SAMPLES									
					White and pink rock, exceedingly	118·1 – 119·4 Stockwork of dark greeny grey	932262	118·1	119·4	1·3	25	250	1000	×	30	×	
					altered, with minor greenish (diopside?)	chloritic alteration – no obvious min.											
					patches. The pink mineral is ? Mn	119·4 – 121·2 As above 116·2 – 118·1	263	119·4	121·2	1·8	25	125	600	×	15	×	
					silicate (rhodonite?). Crudely banded												
					structure – alteration has proceeded along												
					brecciation fractures. Bedding is recognisable												
					but not measurable – too brecciated.												
					Contact ?60° 121·2 – 122·2 Dark green chlorite-serpentinite	121·2 – 122·2 Mag 1–2%, py-marcasite 2–3%	264	121·2	122·2	1·0	200	75	625	×	25	×	0·017
					zone.	, trace sp.											
					122·2 – 135·6 Rock becomes more greyish	122·2 – 124·7 Po 2–3%, mag 1%, py 1%	265	122·2	123·1	0·9	175	×	575	×	45	×	
					green and massive – pink Mn minerals	associated with green sep. alteration in	266	123·1	124·7	1·6	25	25	300	2·5	45	×	
					disappear. – tremolite-diopside assemblage?	small clots to 2×1 cm throughout the											
						rock.											
						124·7 – 126·5 Epidote stockwork 10%, minor	267	124·7	126·5	1·8	25	25	150	×	80	×	
						garnets.											
						126·5 – 135·6 Weak veinlets epidote and	268	126·5	127·7	1·2	25	50	150	×	50	×	×
					Contact ÷60°	rare pinkish garnets.	269	127·7	128·5	0·8	25	25	75	×	15	×	
				qs	135·6 – 136·5 ALTERED SILTSTONE/CHERT	135·6 – 136·5	932790	128·5	131·4		11	65	139	0·3	50	×	GRIND SAMPLES
					Brown and white finely bedded altered		791	131·4	134·4		6	43	75	0·4	65	×	
					sediment – segregations of qtz, sericite in discrete bands to 5mm		792	134·4	137·4		31	21	90	0·4	9	15	

DPO 1570

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C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 8

TENEMENT NAME TENTH LEGION No 53M/75

PLAN – MAP REFERENCE

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. TLC9

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) .....

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Cu	Pb	Zn	Ag	Sn	W	Au			
36·0	137·7	1·7		Cst	136·5–137·4 CALC SILICATE ROCK															
37·7	139·5	1·8			As above 116·2–135·6		CUT	SAMPLES												
39·5	142·5	3·0		Css	137·4–139·8 CALC SILICATE SKARN	137·4–139·8 Mag 15–20%, po 1–2%	932270	137·4	138·7	1·3	25	×	850	×	70	×				
42·5	145·5	2·9			Grey mottled siliceous tremolite rock, with	, trace py; in veinlets with blackserp.	271	138·7	139·8	1·1	50	50	2625	×	120	×				
145·5	148·5	2·9			mag–serpentinite banding and a stockwork															
48·5	151·3	2·8			of mag–po veinlets.															
151·3	154·5	3·2			Contact 75°															
154·5	157·4	2·9		M/S	139·8–141·3 MAGNETITE	139·8–141·3 Mag 30–40%,	272	139·8	141·3	1·5	75	50	475	×	25	×	0·008			
57·4	160·5	3·1			Black crystalline mag, finely banded and															
60·5	163·0	2·5			in blebs to 5×3 cm, in a matrix of yellow															
					-green serpentinised calc silicate rock.															
					Contact 70°															
				Css	141·3–145·0 CALC SILICATE SKARN	141·3–141·8 Py 1–2%, mag 1–2%, very	273	141·3	141·8	0·8	125	×	4600	×	360	×				
					As above 137·4–139·8.	finely dissem.														
						141·8–142·1 Mag 50%, py 1–2%, in sap.	274	141·8	142·1	0·3	400	25	350	×	×	×				
						142·1–142·7 Mag 2–3% in veinlets.	275	142·1	142·7	0·6	25	25	100	×	20	×				
						142·7–143·1 Mag 10–15%, py veinlets 1–2%	276	142·7	143·1	0·4	25	25	850	×	40	×	0·017			
						143·1–143·9 Py 1%, mag 1–2%, dissem.	277	143·1	143·9	0·8	25	×	2150	×	130	×				
					Contact Gradual and Transitional	143·9–145·0 Mag dissem in 2mm irregular	278	143·9	145·0	1·1	25	25	1775	2·5	130	×				
				qs	145·0–168·0 QUARTZ SERICITE ROCK	bands, 15%–20%, trace py, po, sp.	GRIND	SAMPLES												
					Gradual change from grey-green	145·0–161·7 Weak epidote-qtz veining	932793	145·0	148·2		50	19	103	0·6	×	25				
					massive calc silicate rock to a pinkish	, minor dark green-grey ? chloritic	794	148·2	151·0		53	20	108	0·9	6	65				
					brown siltstone interbedded with a	alteration. Traces py, marcasite, rare po	795	151·0	154·0		72	85	160	1·3	10	75				80
					white and grey recrystallised weakly	as irregular blebs to 3×7 mm.	796	154·0	157·0		69	15	101	1·0	6	110				80
					schistose quartz-sericite rock (originally	Weak calcite-serpentinite veinlets.	797	157·0	159·9		65	15	82	0·9	3	65				40 ppb
					an impure grwke?). Crudely foliated	161·7–162·4 Greenish bleached zone	798	159·9	163·0		141	19	63	0·6	60	620				
					60–70° LCA, sericitic matrix with grey	with py/marcasite 10–15%, and one														
					and white qtz segregations to 2cm×1cm.	large ? wolframite crystal at 161·8m.														
						162·4–163·0 As above, 145·0–161·7.														
					END OF HOLE 163·0m.															

APPENDIX 11

PETROLOGICAL DESCRIPTIONS OF DRILL CORE SAMPLES

LIST OF SAMPLES SUBMITTED

SAMPLE NO.	HOLE NO.	DEPTH, METRES	CORE LOG DESCRIPTION
932279	TLC 1	44	'ss/sh'
280	"	75	'Css'
281	TLC 2	45	'Css'
282	"	55	'Csd'
283	"	94.9	'sh/Csd'
284	"	96.6	'S'
285	"	97.2	'Cst'
286	"	110	'qs'
287	"	125	'ss'
288	TLC 3	26.0	'Css'
289	"	28.4	'Css'
290	"	52.6	'Css/M'
291	"	69	'Lst'
292	"	86.1	'Lst'
293	"	113.0	'Css'
294	"	114.8	'Css'
295	"	122	'Css'
296	TLC 4	10	'Cst'
297	"	22	'Cst'
298	"	25	'Css'
299	"	43.2	'Csd'
300	"	114.8	'Css'
301	"	134.0	'ss/sh'
302	TLC 5	12.3	'Css'
303	"	60	'Cst'
304	"	70.5	'q/qs?
305	"	88	'ss/ch?
306	TLC 9	36.0	'qs'
307	"	43.2	'qs'
308	TLC 8	104.8	'Lst/Cst'

LEGEND

MAGNETITE

M — Magnetite - black granular crystalline magnetite, frequently massive, disseminated in a dark green serpentinite matrix (M/S), or disseminated within calc silicate rocks (M/Cs..).

CALC SILICATE ROCKS

Cst — F. gr. bone coloured rock with pale greenish-grey colour mottling - dominantly tremolite/diopside/±epidote.

Csd — F. gr. mottled green-pale grey, pinkish brown rock, dominantly diopside/tremolite/epidote/idocrase with patchy hornblende and vesuvianite.

Css — Hybrid (skarn) rock. May be either of the above, with a greasy brecciated fabric and metasomatic alteration products (serpentine, talc, chlorite, qtz., calcite, magnetite, epidote, Mn. silicates, grossularite, etc.) along irregular fracture paths. May have substantial remnant partially altered dolomitic carbonates.

S — Serpentinite - various shades of green, may have minor talc, chlorite, or intergrowths of tremolite/diopside, but is most commonly intimately associated with magnetite.

SEDIMENTS

Lst/dol — Massive recrystallised greyish impure carbonates, frequently with thin serpentinite films and incipient alteration along fine fracturing.

(b.)sh — Shales, thinly bedded, folded and contorted. Have been hornfelsed to epidote-amphibolite facies. (b.) - black, carbonaceous beds, often with a cherty component and py.

qs — Qtz. - sericite schistose altered sediments.

ss — Siltstones, grey and brown in colour, with minor bedded py. and po. Hornfelsed.

q — Quartzites - pale browns - pinkish greys, very hard, with some qtz. segregations.

ch — 'Chert' - very hard fine grained highly siliceous flinty rocks. Usually well bedded, some folding, varies in colour from pale greys to pinks to almost black.

cv — Calcite veining.

074

887075

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7th August, 1981

REPORT CMS 81/7/14

YOUR REFERENCE:	D.P.O. No. 30107
DATE RECEIVED:	7th July, 1981
SAMPLE NOS.:	932279 - 932308
SUBMITTED BY:	G. Broadbent
WORK REQUESTED:	Petrology

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H.W. Fander, M. Sc.

REPORT CMS 81/7/14

Thrity specimens of drill core were received for petrological examination and results are summarised in the attached tables. Descriptions incorporate data from K-feldspar staining tests and microscopic (stereobinocular, petrolgical) examination of representative thin-sections and offcuts. Occasional carbonate stainings were performed to confirm carbonate mineralogy. Offcuts were examined under a UV-lamp, with negative results.

Summary

All thirty specimens reflect contact-metamorphic/metasomatic alteration effects. Mineralogical assemblages are indicative of the hornblende-hornfels facies or, less commonly, albite-epidote hornfels facies. Metasomatic assemblages are poorly resolved against mineralogically similar, strictly metamorphic assemblages, and the distinction is tenuous in some specimens.

Host rocks range from labile pelites to carbonate facies and serpentinites, with minor basics (microgabbro, or dolerite). Several specimens are poorly diagnostic in terms of the primary lithology, but usually some relict textural and/or mineralogical featurespersist. The term serpentinite is used in a loose sense as the bulk of these rocks lack positive evidence of a primary igneous (i.e. ultramafic) origin.

This situation is complicated by the presence of widespread multiple alteration phenomena, with the bulk of the suite reflecting overprinting of two and sometimes three assemblages. Typically, this is reflected in veins and random aggregates of, for example, epidote and carbonate in more or less massive diopside or diopside-tremolite rocks. Late veinlets of prehnite are semi-ubiquitous. There are several modes of vein feldspar (associated with, and elsewhere postdating, the initial contact-metamorphic/metasomatic assemblages), and minor development of zeolitic veins.

Further, there is localised evidence of two generations of diopside (possibly similarly olivine). In common with some other known N.W. Tasmanian contact situations, it appears likely that "serpentinites" are at least partly derived from contact- rather than igneous diopside-olivine assemblages, and this is entirely consistent with the multiphase alteration assemblages. Cr and Ni assays and field data should elucidate the petrology of these rocks.

D. Cowan, B. Sc.

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Sample No.	Classification - Composition	Fabric	Accessories	Comments
932-279 (T.S. 37764) TLC 1. 44.0m	Altered Ash. Crypto- to microcrystalline quartz alkali feldspar with minor carbonaceous matter, sericite. Sporadic veinlets, aggregates metasomatic quartz, tremolite. Minor late quartz-prehnite veinlets.	Relict slumped, microlaminated fine silty clastic. Locally fine sandy, vaguely vitroclastic.	Clastic leucoxenic semi-opaques, traces "syngenetic" pyrite, metasomatic schorl.	Mildly metasomatised (tremolitised, tourmalinised), weakly carbonaceous, pyritic labile pelite with relict ?reworked tuffaceous characteristics.
932-280 TLC1 75.0m	Calc-Silicate Rock or Skarn. Tremolite and closely intergrown diopside in varying proportions, with irregular aggregates, crude veins of epidote. Disseminated cloudy sphene.	Variable, but generally fine-grained. Vague relict slumped, psammitic to pelitic.	Traces quartz, apatite. Minor traces pyrite.	Hornblende-hornfels facies contact-metamorphosed, ?metasomatised labile psammopelite. Epidote postdates main contact phase.
932-281 TLC2 45.0m	Calc-Silicate Rock or Skarn. Variably dolomitised tremolite with subordinate, closely intergrown diopside. Frequent veins, aggregates hastingsite, late epidote-dolomite veins, impregnations.	Similar to 280, but coarser-grained, complex vein relationships.	Traces sphene, minor traces pyrite, talc (after tremolite).	Essential alteration trend is hornfelsing (tremolite/diopside), hastingsite veining, late epidotisation /carbonation. Analogies with 280.
932-282 TLC 2. 55.0m.	Altered Microgabbro. Saussuritised/albitised plagioclase, uralitised pyroxene, disseminated leucoxenised opaques. Sporadic partly chloritised tremolite veins, epidote veinlets, late prehnite veins, aggregates.	Relict, medium-grained, "doleritic" (subophitic).	Traces diopside (in tremolite veins), apatite (in epidote veinlets).	Intersecting veins confirm saussurite-uralite/tremolite-diopside/epidote/prehnite-chlorite alteration trend. Primarily a minor intrusive or core of flow.
932-283 TLC 2 94.9m	Carbonaceous Pelite. Quartz and semi- to sericitic muscovite in varying proportions with semi-pervasive carbonaceous matter. Sparse clots, impregnations tremolite, schorl. Sparse late veinlets adularia.	Contorted to microfractured, crenulated, slaty, with relict pelitic bedding laminations.	Minor recrystallized clastic alkali feldspar clastic leucoxenic semi-opaques. Traces late sericite, quartz effects.	Affinities with 279, but lacks positive reworked tuffaceous features. Low-greenschist regional metamorphism appears to postdate mild contact
932-284 TLC2 96.6m.	Metasomatised Serpentinite. Pale yellow, fine-grained to serpophitic serpentine with subordinate, closely intergrown talc. Disseminated magnetite, magnesite clots, films, brown andradite garnet.	Semi-mesh-textured with olivine, pyroxene-derived structures.	Minor traces opaline silica.	Apparently an orthodox (igneous) serpentinised peridotite with metasomatic andradite. Conceivably, but doubtfully, a serpentinised humite skarn.
932-285 TLC 2 97.2m	Diopside Skarn. Near-massive diopside with minor epidote aggregates, veinlets. Minor ultrafine tremolite.	Fine- to medium-grained, genrally featureless. Patchy relict psammitic, breccia textures.	Minor traces ultrafine cloudy sphene. Rare adularia (inepidote veinlets).	Sporadic diopside veins consistent with metasomatic ratherthan strictly contact-metamorphic alteration.
932-286 TLC 2. 110.0m	Spotted Hornfels. Quartz and semi-sericitic muscovite in varying proportions, subordinate to minor, extensively chloritised pale phlogopite, disseminated microscopic sericitised cordierite blasts.	closely fractured to brecciated, fine-grained spotted hornfels.	Traces carbonaceous matter. Minor traces extremely fine metasomatic schorl.	Marginally hornfelsed/weakly metasomatised pelite. Affinities with 283. Retrogressive chlorite, sericite, associated with semi-brittle deformation.
932-287 TLC 2 125.0m. (T.S. 37772)	Spotted Hornfels. Quartz and extensively chloritised pale phlogopite with subordinate to minor sericite, sporadic sericitised/tremolitised cordierite blasts. Sporadic partly chloritised tremolite veins.	Brecciated, tremolite-healed pelitic bedding. Spotted, with micro- to mesoscopic ovoid blasts.	Traces cloudy sphene, zoisite, late quartz veinlets. Rare pyrite.	Close affinities with 286. Cordierite selectively tremolitised marginal to tremolite veins, elsewhere sericitised/chloritised.

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Sample No.	Classification - Composition	Fabric	Accessories	Comments
932-288 TLC3 26.0m. (T.S. 37773)	Diopside Skarn. Diopside with subordinate to minor closely intergrown chloritised ?tremolite, patchy schorl. Sporadic veins of epidote, diopside, grossular. Disseminated magnetite, sphalerite.	Fine- to medium-grained with spongy intergranular magnetite. Sphalerite concentrated in epidote veins.	Traces phlogopite, cloudy sphene.	Similarities with 285. Devoid of relict textural features, thus original lithology obscure.
932-289 TLC3 28.4m	Diopside-Garnet Skarn. Diopside with sporadic zones of near-massive grossular-andradite, sparse veins of garnet, epidote with disseminations of sphalerite.	Fine- to medium-grained Epidote veins transect vague diopside veins.	Patchy chloritic phlogopite-tremolite clots. Minor traces sphene, magnetite, green schorl.	Affinities with 285, 288. Garnet concentrated into irregular selvedges on garnetiferous veins. Devoid of relict textural features; metasomatised dolomite.
932-290 TLC3 52.6m	Diopside Skarn. Diopside with sporadic clots, films of Mg-chlorite, disseminated magnetite, sphalerite, pyrrhotite.	Fine- to medium-grained diopside tends to form sub- to millimetric clots with interstitial chlorite.	Traces antigorite, chloritised tremolite.	Vague relict fabric consistent with a skarnised (diopsidised) serpentinite, but no positive evidence. Cr. Ni assays may be diagnostic.
932-291 TLC3 69m	Skarnised Serpentinite. Diopside and Mg-chlorite in varying proportions with disseminated andradite. Patchy relics of carbonated (dolomitic) antigorite serpentinite.	Variably metasomatised, mesh-textured serpentinite with olivine-derived structures.	Sparse olivine, magnetite (?chromiferous). Trace ?ilvaite, rare sphalerite, pyrrhotite.	Apparently a skarnised, orthodox (igneous) serpentinite, but confirmatory Cr, Ni assays recommended.
932-292 TLC3 86.1m	Skarnised Serpentinite. Semi-massive diopside with intergranular carbonate, subordinate to minor Mg-chlorite, antigorite, patchy late talc. Disseminated magnetite.	Weak relict banding, mesh textures.	Traces dark sphalerite, minor traces pyrrhotite. Sparse clots microcrystalline garnet.	Close affinities with 291, but relatively diopsidised. Relict structures poorly diagnostic, but consistent with a mildly sheared serpentinite.
932-293 TLC3 113.0m	Garnetised Serpentinite. Near-isotropic, semi-serpophitic serpentine with semi-pervasive carbonate (calcite-dolomite), ultrafine metasomatic grossular-andradite.	Semi-banded, weakly schistose. Patchy vague relict mesh structures.	Traces talc, tremolite, partly oxidised ultrafine sulphide.	Partly carbonated serpentinite with metasomatic garnet developing as preferential replacement of carbonate.
932-294 TLC3 114.8m	Diopside Skarn. Diopside with patchy, extensively chloritised tremolite, minor calcite, quartz, thinly disseminated pyrrhotite. Minor late chlorite veinlets.	Fine- to medium-grained with faint relict banding, silty clastic fabric.	Traces cloudy sphene, chloritised phlogopite.	Affinities with 285. Vague relict features consistent with a skarnised labile clastic psammopelite.
932-295 TLC3 122m	Steatitised Serpentinite. Cloudy talc-carbonate aggregates with patchy relics diopside; semi-pervasive, extremely fine-grained garnet. Minor late calcite-scapolite veinlets.	Relict, weakly sheared, serpentinitic, granular diopside.	Traces olivine, partly chloritised phlogopite. Disseminated magnetite.	Partly serpentinised, subsequently steatitised-carbonated diopside rock, with intermediate phase of garnet metasomatism.
932-296 TLC4 10m. (T.S. 37781)	Metasomatised Pelite. Ultrafine diopside and closely intergrown tremolite, conspicuous fine cloudy sphene, minor relict clastic quartz, feldspar. Frequent tremolite-adularia, late prehnite veinlets.	Brecciated/tremolite-healed with relict pelitic bedding laminations.	Minor traces pyrite, pyrrhotite.	Affinities with 280. Primarily a labile silty pelite ("tuffaceous greywacke").

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Sample No.	Classification - Composition	Fabric	Accessories	Comments
932-297 TLC4 22m (T.S. 37782)	Metasomatised Pelite. Extremely fine tremolite, subordinate closely intergrown diopside, minor relict detrital, silt-sized quartz. Sparse quartz-albite-diopside veins.	Variably fractured, tremolite-healed, weakly bedded, relict silty fabric. Stressed veins.	Sparse leucoxenic semi-opaques. Traces late prehnite (veinlets), adularia.	Affinities with 280, 296, and similarly altered. Primarily a relatively massive labile silty pelite.
932-298 TLC4 25m	Calc-Silicate Hornfels. Diopside and closely intergrown tremolite, patchy late replacive talc. Sporadic veins of pale, partly chloritised phlogopite with disseminated epidote, ~~axinite~~.	Relict deformed, locally brecciated banding. Crosscutting veins.	Rare oxidised ?pyrrhotite.	Probable hornblende-hornfels facies contact-metamorphosed impure carbonate facies, but relict fabric is poorly diagnostic.
932-299 TLC4 43.2m	Quartz-Mica Hornfels. Microcrystalline quartz, *semi-sericitic muscovite, pale phlogopite in* varying proportions; subordinate, partly argillised feldspar.	Hornfelsic, with relict *fine* silty clastic fabric. Frequent sericitic albite-quartz veinlets.	Minor metasomatic pale schorl, dravite.	Marginally hornfelsed, argillaceous arkosic siltstone. Weakly tourmalinised, pervasively fractured, quartz-albite-healed.
932-300 TLC4 114.8m	Diopside Skarn. Extremely fine-grained diopside with disseminated clots, films of Mg-chlorite and pyritised pyrrhotite.	Homogeneous, featureless apart from sparse diopsidic and later chlorite veinlets.	Traces antigorite.	Near-monomineralic diopside rock, essentially devoid of relict features. Probably altered carbonate facies, but conceivably skarnised serpentinite.
932-301 TLC4 134 m	Spotted Hornfels. Microcrystalline quartzofeldspathic material, semi-sericitic muscovite, pale phlogopite in varying proportions. Sporadic degraded ?cordierite, rare, partly sericitised ~~andalusite~~.	Relict fine-scale pelitic laminations. Minor crosscutting adularia-quartz veinlets.	Patchy metasomatic dravite, pale schorl. Disseminated pyrrhotite. Traces actinolite, ~~calcite~~.	Weak hornfelsic spotting poorly resolved in thin-section. Albite-epidote hornfels facies contact-metamorphosed, mildly tourmalinised arkosic pelite. * sim. 286, 287.
932-302 TLC5 12.3m	Skarn. Diopside, grossular-andradite, vesuvianite in varying proportions with minor epidote, rare clots axinite.	Fine- to medium-grained with vaguemetasomatised breccia textures, sparse epidote veinlets.	Rare pyrrhotite, ultrafine ?magnetite, traces tremolite.	Skarnised ?limestone breccia. Epidote(-axinite) postdates main skarn (diopside-garnet-vesuvianite) assemblage.
932-303 TLC5 60m.	Metasomatised Pelite. Relict microcrystalline quartzofeldspathic material, fine to ultrafine metasomatic tremolite with subordinate schorl; dravite, patchy diopside. Sporadic feldspathic ~~veinlets~~.	Fractured to brecciated, albite-tremolite-diopside-healed relict pelitic bedding.	Sparse pyritised pyrrhotite, occasional clots of manganepidote (veins).	Labile (arkosic, ?tuffaceous) pelite with moderately marked Ca-Mg silicate, subordinate tourmaline metasomatism.
932-304 TLC5 10.5m.	Diopsidised Arkose. Corroded relict detrital quartz, recrystallized orthoclase, with intergranular fine-grained diopside cement. Sporadic diopside veins, late prehnite veinlets.	Relict, fine- to medium-grained, psammitic.	Traces sphene (after silt-sized clastic opaques), rare zircon, pyritised pyrrhotite.	Primarily a carbonate-cemented (dolomitic) arkose, psammitic variant of the feldspathic pelites.
932-305 TLC5 88m (T.S. 37790)	Diopsidic Hornfels. Microcrystalline K-feldspar and diopside in varying proportions, minor quartz, albite. Sporadic diopside, adularia and late zeolite (chabazite) veins.	Closely fractured, vague relict silty pelitic.	Minor traces pyrite, epidote, cloudy sphene, fluorite.	Similar paragenesis to 304, 280, 296, 297; hornfelsed, metasomatised feldspathic pelite. Complex vein relationships.

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Sample No.	Classification - Composition	Fabric	Accessories	Comments
932-306 TLC9 36.0m. (T.S. 37791)	Pelitic Hornfels. *Microcrystalline quartzo-feldspathic material with more or less pervasive sericite, pale phlogopite, patchy ultrafine tremolite.*	Contorted to crenulated, fractured, weakly boudinaged relict pelitic banding.	Sparse carbonaceous matter, cloudy sphene, rare pyrite (?after pyrrhotite).	Marginally hornfelsed/mildly metasomatised arkosic pelite with affinities to 286, 287, etc.
932-307 TLC9 43.2m	Spotted Hornfels. *Ultrafine quartzofeldspathic material, sericite, pale phlogopite in varying proportions, with semi-pervasive sericitised/ phlogopitised microscopic cordierite blasts.*	Finely spotted hornfelsic with relict pelitic bedding, incipient slaty cleavage.	Disseminated pyrite (?recrystallized syngenetic).	Marginally hornfelsed feldspathic pelite. Retrogression of *cordierite* apparently related to weak tectonic *overprint.*
932-308 TLC8 104.8m. (T.S. 37793)	Carbonated Serpentinite. *Impure calcite with patchy antigorite, talc, tremolite, diopside, corroded olivine.* Sparsely disseminated ultrafine magnetite.	Relict granular with weakly sheared serpentinitic overprint, irregular alteration ~~zones.~~	Minor traces acicular ?ilvaite.	Olivine rock, partly serpentinised, calcitised, with patchy steatitisation, skarnisation. Lacks diagnostic features as to whether ultramafic or ~~olivine marble primarily.~~

APPENDIX 111

PETROGRAPHY/MINERAGRAPHY OF TIN BEARING DRILL CORE SAMPLES

LIST OF SAMPLES SUBMITTED

A list of seven magnetite-bearing specimens were taken from holes TLC 1 and TLC 9 for mineragraphy to determine the identity and distribution of Tin bearing mineral species. One sample was taken from hole TLC 5. Sample numbers, location and assay results for the respective intervals are summarised below:

SAMPLE NO	HOLE NO.	DISTANCE	ASSAY INTERVAL	ASSAY RESULTS (TIN)
932309	TLC 1	28.6 metres	28.5 - 31.1	3.3%
932310	TLC 9	56.2	55.1 - 56.6	0.54
311	"	63.4	62.8 - 64.1	0.26
312	"	66.1	65.9 - 67.2	0.91
313	"	70.0	69.6 - 70.6	0.14
314	"	78.5	78.2 - 79.5	0.38
315	"	84.0	83.4 - 84.4	0.24
932316	TLC 5	19.6	19.5 - 19.8	2350 ppm

Appendix three

887083

082

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11th August, 1981

REPORT CMS 81/7/15

YOUR REFERENCE:	D.P.O. NO. 30108
DATE RECEIVED:	7th July, 1981
SAMPLE NOS.:	932309 - 932316
SUBMITTED BY:	G. Broadbent
WORK REQUESTED:	Petrology

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for H.W. Fender, M. Sc.

REPORT CMS 81/7/15

Eight specimens were received for petrological/mineragraphic examination, particularly with respect to the nature of tin mineralisation. Brief petrological descriptions, in tabulated form, are attached and mineragraphic notes are appended.

Summary

Specimen 932316 is representative of a diopsidic metasomatic zone and apparently represents an altered carbonate facies, although the evidence is largely negative (specifically an absence of relict clastic features).

Specimens 932309 to 932315 inclusive are representative of a magnetite-rich skarn sequence. These rocks are extensively serpentinised, with locally marked development of late talc ("steatite")-carbonate-chlorite assemblage partly controlled by shear zones.

Serpentine structures, where evident, are typically "olivine"-derived and, on the basis of minor corroded relics (particularly 932312), the former Mg-silicate can be identified as members of the humite group, which are compositionally and atructurally closely related to forsterite and are similarly prone to serpentinisation.

Humite skarns have a restricted paragenesis, with rare exceptions limited to contact-metamorphosed and -metasomatised "limestones", particularly magnesian facies (dolomite, magnesite). Problematically, the exceptions include carbonated and contact-altered serpentinites. There is no real evidence to support thelatter in this particular suite, but the only diagnostic petrological feature relates to relict chromite (or chrome spinel in general), and its absence in the limited number of specimens examinated is both negative evidence and inconclusive. Cr and Ni assays may be warranted.

Humite skarns are rather notorious ashost rocks to non-cassiterite tin mineralisation. Significantly, the seven specimens examined are devoid of optically detectable cassiterite. Since the tin mineralisation in skarns typically exhibits a spotty distribution, this may, in part, reflect sampling. However, some specimens in-clude variously altered disseminations of an ilvaite-like phase, possibly pageite, a poorly described Fe-Mg borate known to be stanniferous in part. The Sn distribution will be examined further by a limited programme of electron-probe micro-analyses, and results will be forwarded when available.

D. Cowan, B. Sc.

REPORT CMS 81/7/15

Mineragraphic Notes

932-309 Disseminated magnetite (to 1 mm), extensively replaced by martitic hematite, maghemite, frequent partly oxidised films of secondary hematite along crude cleavage. Magnetite includes sparse indeterminate (< 5 μ) sulphide micro-inclusions and is a brownish titaniferous variety. Hematite films appear, in part at least, to represent a degraded, subacicular phase, conceivably ilvaite or pageite.

932-310 Near-massive, granular magnetite (mean 300 μ), weakly anisotropic and generally weakly poikilitic in marginal zones with included "mica" flakes. Magnetite includes rare microscopic particles of pyrite, pyrrhotite and other indeterminate (due < 5 μ sizing) phases (?chalcopyrite, pentlandite). There is no detectable cassiterite.

932-311 Sparsely disseminated, isolated to clustered, an- to euhedral, variably poikilitic magnetite with rare ultrafine sulphide inclusions (sim. 309, 310); conspicuous ultrafine secondary magnetite exsolved from pre-existing silicates. No detectable cassiterite.

932-312 Near-massive, weakly anisotropic magnetite, poikilitic with silicate, extremely rare ultrafine indeterminate sulphide inclusions; locally granulated into microscopic particles along sheared zones. No detectable cassiterite.

932-313 Disseminated to semi-massive magnetite, typically with massive cores of strongly octahedrally-parted/mildly martitised, spongy overgrowths; extremely rare sulphide inclusions. Fine semi- to fibrous secondary magnetite occurs sporadically associated with altered acicular "silicate" (?ilvaite). Rare clots of colourless sphalerite are present and may include traces of exsolved chalcopyrite. There is no detectable cassiterite.

932-314 Disseminated to spongy, semi-massive, fine-grained magnetite of secondary character, developing in part by semi-pseudomorphous replacement of a fine- to medium-grained, sub- to acicular, optically ilvaite-like phase, possibly pageite (this optical distinction is tenuous at best). Sparse to locally conspicuous clots of pale sphalerite include ultrafine chalcopyrite exsolution blebs. Sparse, coarse grains of "primary" magnetite are present. There is no detectable cassiterite.

932-315 Semi- to near-massive, granular to euhedral magnetite, weakly anisotropic and with relatively abundant, octahedrally arranged ultrafine silicate inclusions. Magnetite exhibits a weak dimensional preferred orientation and is locally incipiently martitised. Extremely rare microscopic, poorly determinable sulphide inclusions are present. There is no detectable cassiterite.

932-316 Includes thinly disseminated pyrite crystals and sporadic small patches of pyritised pyrrhotite. Devoid of magnetite and detectable cassiterite.

D. Cowan, B. Sc.

Sample No.	Classification - Composition	Fabric	Accessories	Comments - Interpretation
932-309 (T.S. 37794)	Weathered "Talc-Magnetite" Phyllite. Degraded/Fe-stained ?talc, phlogopite with conspicuous extensively martitised magnetite, semi-pervasive secondary hematite.	Microcrenulated, phyllitic, with "metablastic" magnetite.	Semi-pervasive isotropic, pale brown stainings, limonite. Minor Mg-chlorite.	Hematite in part vaguely pseudomorphous after flaky, subacicular phase. No detectable cassiterite. Indeterminate isotropic stainings, conceivably schoenfliesite.
932-310	Magnetite-Antigorite Rock. Magnetite with subordinate to minor, fine to ultrafine antigorite, Mg-chlorite. Patchy late talc impregnations, veinlets.	Vaguely mesh-textured with olivine, pyroxene-derived structures. Weak phyllitic overprint.	Minor traces cloudy carbonate, rare apatite.	Serpentinised magnetite-olivine-pyroxene rock. No relict igneous features. No detectable cassiterite.
32-311	"Serpentinite". Colourless Mg-chlorite with sporadic aggregates of weakly Fe-stained calcite. Conspicuous, extremely fine secondary and sparse "primary" magnetite.	Essentially phyllitic with deformed olivine, minor pyroxene-derived mesh-textures.	Rare pyrite.	Pervasively chloritised-calcitised olivine-pyroxene rock, medium-grained, granular. No relict igneous features. No detectable cassiterite.
932-312	Serpentinised Skarn. Zones of near-massive magnetite, interspersed with variably carbonated antigorite aggregates. Sparse corroded relics of clinohumite.	Crude banding enhanced by sporadic shear-zones, "olivine-derived" mesh-textures.	Sporadic talc foliae. Rare ?wollastonite.	Affinities with 310, 311. Relatively sheared, with late calcitisation, steatitisation. Relics of clinohumite tend to confirm these rocks as serpentinised skarns.
932-313	Carbonated "Serpentinite". Dolomitic carbonate with irregular corroded patches antigorite, disseminated to semi-massive magnetite, patchy brucite, talc, Mg-chlorite.	Crudely banded, mildly sheared. Vague relict "olivine-derived" structures.	Occasional clots of altered acicular ?ilvaite. Traces pale sphalerite.	Affinities with 310, 311, 312. Serpentinised/carbonated ?humite-magnetite rock. ?Ilvaite extensively replaced by secondary magnetite. Unusually pale sphalerite.
932-314	Steatitised Serpentinite. Talc with patchy relics antigorite. Abundant fine magnetite semi-pseudomorphous after ?ilvaite. Disseminated clots sphalerite.	Crenulated, phyllitic overprint on "olivine" mesh-textures.	Minor traces extremely fine corroded relict ?humite.	Affinities with 310, 311, 312, 313. Primarily a ?humite-ilvaite rock. Serpentinised, subsequently extensively steatitised with development of secondary magnetite.
932-315	Magnetite-Antigorite Rock. Disseminated to semi-massive magnetite, with fine to ultrafine antigorite; minor talc films, clots of talc, brucite.	Incipiently sheared with semi-pervasive relict "olivine" mesh-textures.	Traces pale sphalerite. Rare corroded relics ?humite. Trace cloudy carbonate.	Affinities with 310, 311, 312, 313, 314; evidently a serpentinised/mildly steatitised humite-magnetite skarn.
932-316 (T.S. 37801)	Diopside-Phlogopite Rock. Diopside with subordinate to minor intergranular phlogopite (partly chloritised).	Microgranular to medium-grained, granular to subprismatic diopside. Weakly banded.	Minor traces sphene, pyritised pyrrhotite.	Metasomatic rock with vague relict fabric suggestive of a skarnised carbonate facies. No detectable cassiterite (?stanniferous sphene).

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Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. G. Broadbent
Geologist
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
BURNIE / TAS. 7320

31st August, 1981

REPORT CMS 81/7/15
Supplement

YOUR REFERENCE:	D.P.O. No. 30108
DATE RECEIVED:	7th July, 1981
SAMPLE NOS.:	932 - 309, 310, 314
SUBMITTED BY:	G. Broadbent
WORK REQUESTED:	Electron-probe Microanalysis

Copy to:
The Chief Geologist
C.R.A. Exploration Pty. Ltd.
G.P.O. Box 384D
MELBOURNE / VIC. 3000

Copy & Invoice to:
Administration Officer
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
BELLERIVE / TAS. 7018

for

H.W. Fander, M. Sc.

REPORT CMS 81/7/15
Supplement

At the request of G. Broadbent, a limited programme of electron-probe microanalysis was instituted to further examine the tin mineralisation in the 932-prefixed samples described in CMS 81/7/15.

AMDEL report 803/82 is attached and is largely self-explanatory. In general, probe data supports the petrological observations and confirms that the tin assays reflect non-cassiterite tin mineralisation.

Specimens 932-309, 932-310, and 932-314 were selected to represent the higher grade (-309, 310) and possible pageite-bearing zones (-314). Problematically, 932-310 is devoid of detectable tin at a minimum detection limit of approximately 0.1 %.

The extremely fine-grained secondary isotropic phase in 932-309 is confirmed as schoenfliesite within the limits of matrix effects reflecting the sizing. Conceivably, ultrafine cassiterite,or hydrocassiterite, is also present as would be suggested by localised concentrations of up to about 60 % Sn. However, it should be pointed out that schoenfliesite is poorly.described in the literature, to the extent that its commonly quoted formula ($(Mg,Sn(OH)_6$ - calc. approx. 48 % Sn) is by no means certain.

The optically ilvaite-like phase in 932-314 is confirmed as a member of the pageite-hulsite-ludwigite group of Fe-Mg borates of a com-bination of electron-probe (specifically absence of Si) and optical data. Re-examination of this specimen in transmitted light confirms the presence of rare microscopic spongy patches of whitish-pigmented isotropic material with refractive index and pale brownish colouration in thinsection consistent with schoenfliesite. These aggregates are closely spatially related with partly chloritised/magnetite semi-pseudomorphed relics of "pageite" and can be distinguished from similarly "exsolved" secondary ultrafine cassiterite known to occur in related N.W. Tasmanian pageite-bearing skarns.

Presence of non-stanniferous corroded relics of "pageite" suggests that this phase may have been zoned with respect to tin content or, alternately, the tin-bearing phase was closely intergrown and has been preferentially altered.

It should be noted that literature on the pageite group is both sparse and confusing as to which member of the group is potentially stanniferous. Hence the term pageite is used in a general sense to denote a potentially stanniferous Fe-Mg borate. Mesoscopically, presence of fibrous acicular or plagy opaques or magnetite pseudomorphs of platy habit may be significant.

D. Cowan, B. Sc.

083

The Australian
ineral Development
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O. Box 114 Eastwood
SA 5063
In reply quote:

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amdel

25 August 1981

GS 3/501/0

Central Mineralogical Services,
39 Beulah Road,
NORWOOD, SA 5067.

Attention: Mr D. Cowan

REPORT GS 803/82

YOUR REFERENCE:	Order No. 80, dated 10 August 1981
MATERIAL:	Three polished sections
IDENTIFICATION:	37794, 37795 and 37799
DATE RECEIVED:	11 August 1981
WORK REQUIRED:	Locate and identify tin phases

Investigation and Report by: Peter Schultz

Manager, Geological Services Division: Dr Keith J. Henley

Keith Henley

for Norton Jackson
Managing Director

jd/1

ot Plant: Osman Place
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ELECTRON MICROPROBE ANALYSIS OF TIN PHASES

1. INTRODUCTION

Three polished sections, numbers 37794, 37795 and 37799, were received for electron microprobe analysis of the tin-bearing phases.

Sample 37794 was a partly weathered talc-magnetite rock assaying 3.4% Sn.

Sample 37795 was a magnetite-rich antigorite "serpentine" rock assaying 0.54% Sn.

Sample 37799 was similar to 37795 - conspicuous fresh to altered (magnetite-pseudomorphed) "ilvaite" (?paigeite) - a representative aggregate was circled. This sample assayed 3750 ppm.

The work required was to detect cassiterite, if present (none was detectable optically) and to detect non-cassiterite tin minerals, with determination of their approximate compositions and association.

2. EXPERIMENTAL PROCEDURE

The three polished sections received were carbon coated and analysed by scanning large areas of the samples for the presence of tin. When detected the mineral was identified and its size and association noted.

3. RESULTS

3.1 PS37794

Tiny (1-5 μm in size) inclusions of a high-tin phase were detected in talc (Mg+Si present). Two larger ones (∿ 10 μm) gave about 60% Sn, about 10% Mg and some Fe. This phase is possibly schoenfliesite ($MgSn(OH)_6$) or in the case of the smaller inclusions also possibly cassiterite. No tin-bearing phases were detected in the magnetite.

3.2 PS37795

No tin-bearing phases were detected in this sample.

3.3 PS37799

The circled grains were found to contain only Fe and Mg and they could be hulsite as suggested but no tin was detected in them. Tiny grains (1-5 μm) were, however, detected in ?talc (Mg+Si present) containing high tin and possibly magnesium and these are therefore cassiterite or schoenfliesite, the small size preventing positive identification.

APPENDIX 1V

ROCK AND SOIL SAMPLING LEDGER

092

C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOG SHEET

Tenement name ML's 5044/75 → 5444/75 No. ..... Sample numbers 869469 → 869479 Collected by G.B. / J.C.P. Sheet no. 1

Area / Prospect TENTH LEGION Date 11:6:81

Map / Photo reference TASH 3 - TASH 10 ; TASH 20 Analysed by COMLABS DPO no 26657 / 26658

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type ****	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Grid ref	Geological Observations
869469	oc	R.C. at o/c in creek									24	8	14	<1				6	20	5030E 4865N	Calc silicate rock with dissem mag. and some ? brown tourmaline.
869470	oc	Random chips off o/c									36	8	12	<1				6	10	5000E 4735N	Contorted pale green calc silicate rock traces mag, py in one piece.
869471	oc	chips off float boulders.									190	36	750	<1				<4	30	5000E 4320N	Lateritic iron oxide capping - limonite, haematite with qtz grains
869472	oc	chips off float boulders 4327N → 4343N									330	70	830	<1				<4	15	5000E 4335N	Lateritic capping with magnetite cobbles and cemented qtz, gtzite frags.
869473	oc	chips from small o/c in creek bed.									85	10	26	<1				10	20	5090E 4990N	Grey, siliceous calc silicate? rock with pyrite 2-3% Sandy Texture.
869474	oc	chips from same o/c as 869473									65	8	120	<1				<4	<10	5090E 4990N	Black siliceous brittle shale-like rock with several % bedded + dissem py.
869475	oc	random chips from o/c									10	4	12	<1				<4	20	5095E 4830N	Finely bedded grey spotted calc-silicate hornfels.
869476	oc	Sample of same for T.S.									—									5095E 4830N	SEE T.S. REPORT D.P.O. 26658
869477	oc	Thin section sample									—									5100E 4620N	Pale green finely bedded tough calc silicate, Fine grained, some epidote, chlorite?
869478	oc	Chips from 4580N → 4590N @ 1m intervals.									34	8	80	<1				42	<10	5100E 4585N	Sub o/c - boulders of massive mag and cemented lateritic Fe oxides.
869479	oc	Chips from 4550N → 4565N									140	12	175	<1				26	40	5100E 4565N	Lateritic capping with mag rubble.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75 → 54M/75 No. ..... Sample numbers 869480 → 869490 Collected by GB / JG ..... Sheet no. 2

Area / Prospect TENTH LEGION Date 11.6.81

Map / Photo reference TASW 3 - TAS N 10 ; TAS N 20 Analysed by COMLABS / W FANOCE. DPO no 26657/26658

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Grid ref	Geological Observations
		o/c sample type ***																	
		s sample type ****																	
869480	o/c	chips from wall of adit, 7 m from mouth.							320	420	150	<1				28	80	5125 E 4460 N	Weathered yellow greasy carbonate rock with black specks of ? magnetite.
869481	oc	chips 4275N → 4283N							20	14	370	<1				<4	<10	5200E 4280N	Lateritic capping with mag. rubble and cemented qtz, qtzite grains.
869482	oc	chips 4365N → 4375 N							6	12	780	<1				16	<10	5200E 4370N	Magnetite rubble and cemented limonitic capping.
869483	oc	chips from boulders 4380 N → 4390 N							30	14	850	<1				44	10	5200E 4385N	Boulders of massive crystallie magnetite.
869484	f	random chips from float.							34	24	12	<1				<4	20	5200E 4940N	Grey finely laminated shale, greasy feel on fracture surfaces.
869485	f	"	"	"	"	"			100	24	18	<1				20	<10	5200E 4945N	White greasy feeling fine grained rock ? weathered calc silicate?
869486	o/c	Sample for thin section							—	—	—	—	—	—	—	—	—	5190E 4975N	Very hard, hornfelsed grey siliceous sandy sediment (? calc silicate affinities)
869487	oc	2m chip sample from o/c							4	14	55	<1				1600	150	5260E 4895N	Massive black magnetite o/c
869488	Sub oc	sample for thin section							—	—	—	—	—	—	—	—	—	5300E 4805N	Hornfelsed siliceous green + grey finely bedded rock with qtz, carbonate veining some epidote + chlorite.
869489	f	sample for thin section							—	—	—	—	—	—	—	—	—	5300E 4772N	Grey greasy feeling (talcose?) slightly hornfelsed sh/siltst.
869490	f	"		"	"	"			—	—	—	—	—	—	—	—	—	5300E 4755N	f. gr green rock with white shin minor chlorite, actinolite - calc silicate?

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. Sample numbers 869491 → 869500 Collected by JGP / GB Sheet no. 3

Area / Prospect TENTH LEGION Date 11.6.81

Map / Photo reference TASK 3 - TASK 10 ; TASK 20 Analysed by COMLABS / FANDER DPO no 26657/26658

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type ****	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Grid ref	Geological Observations
869491	oc	Sample for thin section									—									5300E 4615N	Grey phyllitic shale/siltstone: some limonite staining along fractures.
869492	oc	sample for	"		"						—									5300E 4555N	f. gr pale creamy green well bedded ? calc silicate rock.
869493	oc	"		"	"		"				—									5320E 4342N	Massive finely bedded pale green calc silicate rock
869494	oc										28	16	185	<1				12	<10	5340E 4255N	Massive magnetite o/c + sub o/c.
869495	Sub oc	Chips 5370E - 5395E along 4250 N									10	14	145	<1				<4	45	5380E 4250N	Mag talus - massive black mag cemented with lateritic Fe oxides
869496	oc	chips from small o/c massive magnetite.									125	18	165	<1				18	20	5370E 4310N	o/c massive magnetite, with abundant laterite frags and mag talus.
869497	oc	chips from small 2m² o/c									50	65	26	<1				12	10	5700E 4740N	Soft weathered phyllitic rock - pink and grey shales.
869498	oc	Sample for thin section									—									5700E 4615N	Hard dense f. gr. carbonate rock? originally dolomitic? Dark greeny black.
869499	oc										630	6	3·10%	<1				18	10	5700E 4583N	f.gr green and brown (? garnets) calc-silicate rock with several % py + magnetite
869500	oc	sample of 499 for thin section									—									5700E 4583N	

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887095

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75-54M/75 No. Sample numbers 869501-869509 Collected by G.B Sheet no. 4

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASK 3 - TASK 10 ; TASK 20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type *** Hand Auger	Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO	Grid ref Line	Geological Observations
																						5000E	
869501	S									0.3		24	25	18	<1	2	30		8	10	<5	4990N	Grey shale and slate in a whitish clay matrix - Bedrock 'C'.
869502	S									0.75		8	10	22	<1	2	20		34	<10	<5	4965N	Grey siltstones + shales in a dark grey clay.
869503	S									1.3		10	25	840	<1	2	810		450	<10	15	4940N	Grey-green silty clay - possibly calc-silicates
869504	S									1.1		8	60	65	<1	2	210		40	<10	5	4915N	- Siltstone and quartz in a light fawn silty loam
869505	S									0.6		4	15	18	<1	1	40		18	10	~~50~~ 5	4890N	Light and dark grey spotted calc-silicates in a light brown sandy loam
869506	OC	R.C. sample at 5m intervals 4990-5000E										14	5	20	<1				12	10		4865N	Thinly bedded siltstones? and carbonates
869507	OC	R.C. sample taken at random within 3-5 m of peg										12	5	14	<1				14	<10		4840N	Chip sample of sub-outcrop of calc-silicates
869508	S									1.2		440	40	90	<1	2	85		210	75	100	4815N	Dark green black silty clay with pyrite - weathered calc-silicates

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LODGER

Tenement name ML's 50M/75-54M/75 No. ..... Sample numbers 869509-869516 Collected by G.B Sheet no. 5

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASK 3 - TASK 10 ; TASK 20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %										Grid ref	Geological Observations
	ss * oc f s	fl	wi	al	co	ca	pH		Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Line 5000E	
		o/c sample type ***																		
		Auger (****) s sample type *** Depth (m)																		
869509	S						-		130	10	180	<1	5	100		8	<10	110	4790N	Weathered calc-silicates pale brown with pyritic fragments and minor greenish patches.
869510	S						1.1		60	<5	55	<1	2	120		16	<10	20	4765N	Pale brown weathered siltstones and shales in a silty loam base.
869511	S						0.4		6	<5	26	<1	1	130		6	<10	5	4740N	Brown silty loam, possibly B-C horizon - boulders of greenish calc-silicate with thin brownish chert lenses.
869512	S						0.7		8	5	32	<1	1	130		8	<10	15	4715N	Pale fawn-brown mottled grey sandy clay
869513	S						1.2		4	25	120	<1	85	160		85	<10	70	4690N	Mottled greenish and pink silty clay with trace pyrite - 'C' horizon
869514	S						0.5		2	10	12	<1	5	40		6	<10	5	4665N	chocolate brown soil - probably magnetite. - 'C' horizon
869515	S						0.9		10	15	38	<1	2	70		42	<10	<5	4640N	Brown clay loam with greenish limestone or calc-silicate fragments.
869516	S						0.6		24	5	20	<1	2	40		<4	10	5	4615N	Bright orange clay

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name MLs 50M/75 - 54M/75 No. [redacted] Sample numbers 869517 - 869518, 869534 - 869537 Collected by G.B. Sheet no. 6

Area / Prospect TENTH LEGION Date 7-1-91

Map / Photo reference TASK 3 - TASK 10 & TASK 20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type **** Auger (Hand)	Depth (m)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
												Metal content ppm or %										Line 5000E	
869517	S									0.7		16	15	30	<1	3	55		12	<10	5	4590N	Weathered yellowish and white siltstones and mudstones
869518	S									0.8		18	10	14	<1	2	45		12	<10	5	4565N	Yellow and white sandy clay - weathered siltstones & mudstones.
																						Line 5100E	
869534	S									0.9		60	10	50	<1	5	40		70	10	<5	4950N	Orange and yellow clay beneath magnetite scree - possibly weathered calc-silicates.
869535	oc	R.C. Sample width of outcrop 4910 - 4925N, chips every 30-40 cm					across					140	10	250	<1				1300	<10	~~55~~	4925N	Chip sample of outcrop of magnetite and green diopside - tremolite - magnetite rock.
869536	S									0.8		120	30	95	<1	2	140		200	<10	<5	4900N	Yellow sticky clay beneath 0.5 m of magnetite scree - probably not bottomed
869537	S											4	5	70	<1	<	25		20	10	<5	4875N	Pale grey loam with thinly bedded siltstones - minor quartz

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name NLs 50M/75 - 54 M/75 No. Sample numbers 869519 - 869529 Collected by G.B/J.G.P. Sheet no. 7

Area / Prospect TENTH LEGION Date 11.6.81

Map / Photo reference TASK 3 - TASK 10 ; TASK 20 Analysed by COMLABS / FANDER DPO no 26651/26658/26661

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
		o/c sample type ***																		
		s sample type ****																		
869519	oc	chips from selected outcrops							20	20	300	<1				6	25		5690E 4250N	Dark green opale silicate rock - some serpentinite, heavily impregnated with mag.
869520	oc								10	24	48	<1				<4	15		5690E 4250N	? dolomite - aphanitic rock with limonite
869521	oc	Sample for thin section							—										5180E 4990N	Brown and green impure ghaita
869522	oc	chip sample N° 3 adit 0-3m							18	10	28	<1				<4	20		5150E 4970N	Black shale rock - highly fractured and cleaved.
869523	f	gs from dump N°3 adit.							22	14	175	<1				1300	70		5150E 4990N	Crumbly massive f.gr mag. with 10-20% py.
869524	f	gs " " " " "							46	4	125	<1				780	20		5150E 4990N	Hard f.gr massive mag with 5% py.
869525	f	gs from dump N° 2 Adit							24	12	530	<1				410	10		5240E 4965N	Massive hard f.gr. black mag. with minor serpentinite gangue.
869526	f	gs from dump N° 1 Adit							2	20	115	<1				<4	20		5330E 5000N	Massive grey coarsely xtline dolomite with <5% finely disem mag.
869527	f	" " " " " "							4	6	55	<1	Ni	Cr		450	60		5330E 5000N	60% f.gr mag disem in serpentine
869528	f	gs from dump Adit N° 4							30	110	440	<1	48	28		540	30	48	5530E 4910 N	Dark grey-green hornfelsed sed (siltstone?) with minor py.
869529	oc	chip sample 5520E → 5535E 4860N → 4850N							32	60	80	1	<4	10		14	20	<4	5528E 4855N	Interbedded grey gtzose siltstone /greasy talc - carbonate rock.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

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*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887099

093

C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75-54M/75 No. ..... Sample numbers 869538-869545 Collected by G.B Sheet no. 8

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TASK 3 - TASK 10 - TASK 20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %										Grid ref	Geological Observations
	ss * oc f s	fl	wi	al	co	ca	pH		Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Line 5100E	
		o/c sample type ***																		
		Hand Auger s sample type ****					Depth (m)													
869538	S						0.8		180	15	330	<1	1	360		14	15	35	4850N	Greenish grey pyritic micaceous calc-silicates and pale buff coloured siltstone
869539	S						0.5		10	5	60	<1	<1	140		40	<10	5	4825N	Pale grey gritty siltstone, calc-silicates (greenish) and rare chert.
869540	S						0.85		4	45	300	<1	<1	520		6	<10	5	4800N	Greenish grey silty loam with thinly bedded greenish brown siltstone fragments.
869541	S						1.1		70	30	120	<1	<1	300		4	<10	20	4775N	Fawny grey silty loam, not fully bottomed, minor organic matter.
869542	S						1.0		120	5	80	<1	5	290		14	<10	20	4750N	Pale brown silty clay loam with minor greenish patches
869543	S						0.9		95	10	60	<1	2	280		12	10	5	4725N	Brown and greenish brown sandy clay - originally calc-silicates.
869544	S						1.1		75	5	48	<1	1	45		8	<10	5	4700	Yellow clay - weathered calc-silicates, soft, bedrock not reached.
869545	S						1.2		60	<5	50	<1	1	90		6	<10	5	4675N	Grey and faintly greenish grey clay with shale, quartz, trace pyrite, and white mica

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887100

100

C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75-54M/75 No. ..... Sample numbers 869546-869563 Collected by G.B. Sheet no. 9

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TASH 3 - TASH 10 ; TASH 20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	Hand Auger s sample type ****	Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO	Grid ref Line 5100E	Geological Observations
869546	S									1.1		10	15	46	<1	3	25		22	<10	<5	4650N	Loose textured grey-brown sandy loam beneath fawn coloured clay, with chert and weathered calc-silicates
869547	OC							R.C. sample from outcrop - 4612N - 4625N every 5m				12	30	32	<1				120	<10		4625N	Highly siliceous carbonate and other material with an almost hornfelsic texture. - Chip sample.
869548	S									1.25		150	180	220	1	2	190		80	25	15	4600N	Streaky grey-white weathered calc-silicates beneath a yellow clay matrix.
869549	S									0.8		65	25	70	<1	4	300		26	10	20	4575N	Yellow siltstones and clay beneath a rubbly iron capping.
869550	S									0.9		200	140	140	<1	5	490		34	25	15	4550N	Stiff yellow clay with white calc-silicate fragments
869551	f							R.C sample of caprock				120	10	600	<1				22	<10		4525N	Chip sample of ironstone cap-rock.
869552	S									0.85		60	25	180	<1	2	180		18	10	5	4500N	Yellow clay bottomed on shales and siltstones. Surface covered with magnetite.
869553	S									1.2		130	160	330	<1	5	2200		14	210	10	4475N	'C'-horizon - pale grey siltstone and shale beneath yellow clay 'B'-horizon

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A B or C horizon

887101

101

C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75-54M/75 No. Sample numbers 869554-869564 Collected by G.B Sheet no. 10

Area / Prospect TENTH LEGION Date 6-1-81

Map / Photo reference TASK 3- TASK 10; TASK 20 Analysed by AMDEL DPO no 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Hand Auger s sample type **** Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line	Geological Observations
869554	f							R.C. Sample		430	20	830	<1	2	45		42	<10	5	4470N 5100E	Sample no. used for grab
								4470N - 5110E, 50												-5110E	sample of mullock heap at
								random chips													adit. (massive magnetite).
869555	S						1.1			48	45	80	<1	2	45		12	<10	5	4425N	Sticky white and yellow
																					clay with minor quartz and
																					calc-silicate? fragments.
869556	S						0.6			30	<5	4700	<1	1	1.20%		<4	<10	70	4400W	Grey siltstone + shale in a
																					sticky Pale grey clay matrix
869557	f							R.C. Sample within		50	10	350	<1				6	15		4375N	Chip sample of float + sub-
								5 m radius of peg													outcrop of porous, weathered magnetite
869558	S						0.3			6	10	150	<1	14	1300		<4	35	10	4350N	Chocolate brown clay loam
																					derived from magnetite
869559	S						0.1			20	30	540	<1	7	860		10	15	170	4325N	Magnetite sub-outcrop with
																					chocolate brown loam grit.
																				Line 5200E	
869563	OC							R.C. Sample at		46	35	300	<1				1100	<10		4900N	Chip sample along strike
								4900N, 5195-5205E													of calc-silicate with magnetite
869564	OC							R.C. Sample from		22	10	150	<1				18	10		5195	Thinly bedded siltstones
								creek 10 m astride												-5205E	and micaceous sandstones
								line (.5m interval)												4975N	with orange-brown speckled
																					calc-silicates

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

88/102

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. Sample numbers 869565 - 869573 Collected by C.B Sheet no. 11

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TASH 3 - TASH 10 ; TASH 20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 8200E	Geological Observations
		o/c sample type *** Hand Auger s sample type ***					Depth(m)													
869565	S						1.0		90	55	140	<1	6	600		300	25	5	4950N	Yellow sticky stiff clay - possibly weathered calc-silicates or magnetite.
869566	S						0.8		30	55	310	<1	2	3400		1300	40	15	4925N	Orange brown stiff clay with small white crumbly fragments minor magnetite - possibly contaminated B+C horizon rather than 'C'-horizon
869567	S						1.0		46	270	75	<1	1	120		110	<10	5	4900N	Speckled grey white and orange weathered calc-silicates adjacent to magnetite outcrop.
869568	S						0.5		22	40	70	<1	3	340		540	<10	5	4875N	Yellow-orange clay with magnetite fragments.
869569	S						0.8		70	40	70	<1	<1	130		65	<10	<5	4850N	Orange clay with white and red spotted calc-silicates.
869570	f	R.C. sample of scree from 5 m depth.					scree		30	25	85	<1	4	620		780	30	5	4825N	Magnetite scree.
869571	S						1.2		65	45	95	<1	1	85		46	10	5	4800N	Pale grey weathered calc-silicates
869572	S						0.9		55	10	48	<1	<1	210		12	<10	5	4775N	Greenish silty weathered calc-silicates white soft siltstones
869573	S						1.0		300	15	75	<1	<1	430		4	15	10	4750N	Loose flaky greenish and yellowish weathered siltstones and calc-silicates.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A B or C horizon

887103

~~103~~

C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75-54M/75 No. ..... Sample numbers 869574-869584 Collected by G.B. Sheet no. 12

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TASK 3-TASK 10; TASK 20 Analysed by AMDEL DPO no 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Hand Auger	s sample type ****	Depth (m)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 5200E	Geological Observations
869574	S									0·9		110	10	32	<1	<1	130		6	<10	5	4725N	Yellowish siltstones + shales
869575	S									0·7		22	10	18	<1	1	55		14	10	<5	4700N	Ochreous brown siltstone with minor quartz fragments.
869576	S									0·6		8	5	34	<1	<1	120		8	10	5	4675N	Grey shales + siltstones.
869577	S									0·9		50	5	65	<1	11	160		10	<10	30	4650N	Greyish-white calc-silicates? with faint greenish streaks and occasional micaceous patches.
869578	S									0·85		6	10	36	<1	1	95		8	15	5	4625N	Yellowish siltstone with minor fe-staining - originally pyritic
869579	S									0·6		42	10	24	<1	2	90		30	10	5	4600N	Yellowish siltstones minor shales with orange patches.
869580	S									0·7		40	15	32	<1	3	50		12	<10	<5	4575N	Orange clay, minor shale fragments
869581	S									1·0		38	25	70	<1	1	35		16	10	5	4550N	Orange brown ferruginous siltstones + shales
869582	S									0·7		140	10	100	<1	<1	45		12	<10	<5	4525N	Orange-yellow clay with shale fragments weakly micaceous
869583	S									0·9		200	35	85	<1	<1	50		10	<10	<5	4500N	Orange clay with quartz, shale fragments
869584	S									1·05		26	10	24	<1	1	20		12	<10	<5	4475N	Grey sandy clay with micaceous green shale + minor quartz
	s	s sample type ****														Ni	Cr		Sn	W	Co	5400E	
869590	f	chips from mag. boulders.										44	8	105	<1	12	10		8	<10	36	3855N	Chips of black massive magnetite.
869591	oc	1m chips over o/c										30	8	150	<1	8	4		8	10	50	5396E 3833N	Massive black foliated mag o/c.
869592	f	gs										48	200	490	<1	28	18		50	<10	24	5400E 3925N	Weathered yellow/pale green gtzose rock, with Hem. Mn
869593	f	gs.										55	20	2700	1	100	8		16	<10	48	5400E 3967N	Lateritic float, with mag fragments.

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75 - 54M/75 No. ..... Sample numbers 869594 - 869602 Collected by G.B Sheet no. 13

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TASH 3 - TASH 10 ; TASH 20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Hand Auger s sample type **** Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO	Grid ref Line 5300E	Geological Observations
869594	S							1.0		6	5	30	<1	1	25		28	10	<5	4975N	Yellow and red sandy clays
869595	S							0.65		26	55	190	<1	3	290		280	50	5	4950N	Orange-yellow faintly spotted clay with some magnetite.
869596	S							0.9		8	20	85	<1	3	530		580	50	5	4925N	Orange clay with white speckles and small magnetite granules, possibly contaminated by scree.
869597	OC	R.C. sample of outcrop in track, 4895N -10 m either side								12	15	200	<1				980	50		4900N	Chip sample of magnetite outcrop.
869598	f	R.C. sample of float within 5 m of OC								14	60	350	<1				490	50		4875N	Chip sample of float magnetite in oxidised condition.
869599	S							0.95		36	55	70	<1	5	270		260	15	<5	4850N	Weathered orange to greenish grey spotted calc-silicates in an orange clay matrix.
869600	S							0.6		18	20	65	<1	11	330		440	15	5	4825N	Bottomed in magnetite rubble - possibly cemented capping or outcrop.
869601	S							0.3		20	15	30	<1	2	130		22	10	5	4800N	Yellow clay with thinly bedded siltstones and shales, rare calc-silicates in sub-outcrop
869602	S							0.3		8	35	36	<1	<1	55		10	10	<5	4775N	Yellow thinly bedded siltstones and shales, minor quartz.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75-54M/75 No. ..... Sample numbers 869603-869613 Collected by G.B. Sheet no. 14

Area / Prospect TENTH LEGION Date 6-1-81

Map / Photo reference TASH 3-TASH 10; TASH 20 Analysed by AMDEL DPO no 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
		o/c sample type ***																		
		Hand Auger s sample type ****					Depth(m)												Line 5300E	
869603	S						0.5		8	15	75	<1	<1	210		10	<10	10	4750N	Yellow thinly bedded siltstones + shales with minor quartz.
869604	S						0.55		6	15	36	<1	1	95		8	<10	5	4725N	Greenish + Yellowish grey clay + siltstones and shales.
869605	S						0.3		4	15	34	<1	<1	180		14	<10	5	4700N	Yellowish and greenish grey siltstone fragments in a grey clay matrix.
869606	S						0.4		12	10	24	<1	<1	60		12	<10	<5	4675N	Grey siltstones + shales, thinly bedded.
869607	S						0.4		4	<5	20	<1	<1	70		8	<10	<5	4650N	Silty + sandy rubble, grey shale, siltstone and quartz.
869608	S						0.45		4	5	20	<1	<1	70		10	<10	<5	4625N	Grey siltstone and quartzite in a silty grey clay matrix.
869609	S						0.45		4	5	12	<1	1	40		12	<10	<5	4600N	White silty clay with quartz and quartzite fragments.
869610	S						0.4		4	<5	18	<1	1	25		6	<10	<5	4575N	White quartz gravel, silty clay, minor quartzite
869611	S						0.6		2	15	30	<1	<1	160		10	<10	<5	4550N	Yellow and grey siltstones and shales, minor quartz.
869612	S						0.6		65	20	26	<1	1	25		6	<10	<5	4525N	Yellow clay with minor siltstone and shale.
869613	S						0.7		160	5	24	<1	<1	35		14	<10	5	4500N	Yellow clay with shiney cleaved shales, minor siltstone + quartz.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. Sample numbers 869614, 869619-869623, 869625-869626 Collected by G.B Sheet no. 15

Area / Prospect TENTH LEGION Date 9-1-81

Map / Photo reference TASH 3 - TASH 10 ; TASH 20 Analysed by AMDEL DPO no 26654/26655/26681

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Hand Auger	s sample type ****	Depth (m)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
869614	S									0.9		46	15	14	<1	<1	25		6	<10	5	Line 5300E 4475N	Yellow and green shales, minor siltstones + sparce white mica
869619	S									1.0		12	45	85	<1	<1	86		70	50	<5	4375N	Dark brown peaty loam
869620	S									1.1		4	45	26	<1	<1	40		18	<10	<5	4350N	Dark brown peaty loam not 'C', possibly 'B' horizon
869621	S									0.9		2	15	12	<1	<1	35		4	<10	<5	4325N	Pale ochreous brown silty loam with minor quartz and quartzite fragments - possibly bedrock 'C'-horizon.
869622	S									1.0		4	45	22	<1	<1	40		16	<10	<5	4300N	Pale brownish cream loam with minor siltstone and qtz pebbles - Possibly B-C horizon.
869623	S									1.0		60	150	160	<1	<1	330		10	40	5	4275N	Greenish organic rich mud beneath 30 cm peat +30cm gravel
																						Line 5400E	
869625	S									0.4		12	20	18	<1	<1	80		8	10	<5	4990N	Thinly bedded siltstones + shales
869626	S									0.6		4	5	28	<1	<1	70		10	15	<5	4975N	Steel grey and brown sandy loam bottoming on yellow siltstone.
																Ni		Cr					
869615	OC	gs	- random chips over 1m²									100	20	800	1	44		12	14	<10	44	5400E 3996N	gossanous, green, sandy leached rock with 30% py.
616	OC	gs	.									820	24	1100	1	48		<4	6	<10	28	5401E 3994N	gossanous rock with dissem. mag + limonite
617	f	g.s. - r.c.										80	60	740	<1	8		<4	12	10	<4	5405E 4003N	hard creamy rock with black spots, py + mag
618	f	g.s. - r.c.										36	44	960	1	50		10	12	25	65	5400E 4006N	? Sulphide gossan - limonite, Mn with 30% py.

C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name: ML's 50M/75 - 54M/75 No. Sample numbers: 869627-869629, 869631-869634 Collected by: C.R.A. & J.W(I.M.I.) Sheet no.

Area / Prospect: TENTH LEGION Date: 8-1-81

Map / Photo reference: TASK3 - TASK10 ; TASK20 Analysed by: AMDEL DPO no. 26654 / 26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** hand auger	s sample type **	Depth (m)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO	Grid ref Line 5400E	Geological Observations
869627	S						1.0					4	10	60	<1	<1	80		22	30	<5	4850N	Greenish yellow sandy clay with siltstone and minor sandstone
869628	S											30	25	110	<1	<1	160		170	20	<5	4925N	Yellow clay beneath magnetite rubble, in some places cemented, possibly calc-silicates, taken from bulldozed area, possibly not representative.
869629	f	R.C. sample at 4695N										42	120	450	<1				280	25		4900N	Chio sample from magnetite boulders.
869631	OC	R.C. Sample in a 5 m radius from peg.										14	60	320	<1				580	75		4850N	Outcrop sample (magnetite) approximately 1 chip per m²
869632	OC	R.C. sample every 0.5 m from outcrop on track at 4830N 5410-5395E										24	85	440	<1				660	<10		4825N	Magnetite?
																							Sampler J.W (I.M.I.) 869633-869655
869633	f	R.C. sample at					0.15					12	45	100	<1	2	800		260	15	10	4800N	Fe-pebbles - Hard rock.
869634	S						0.75					12	40	250	<1	2	860		130	15	15	4775N	Brown clay, some gravel.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75-54M/75 No. ... Sample numbers 869635 - 869646 ... Collected by J.W. (I.M.I.) ... Sheet no. 16

Area / Prospect TENTH LEGION ... Date 7-1-81

Map / Photo reference TASH 3 - TASH 10; TASH 20 ... Analysed by AMDEL ... DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type ****	Depth	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
									Auger			Metal content ppm or %										1mE 5400E	
869635	S									0.75		16	10	75	<1	2	180		85	30	5	4750N	Orange Clay, some gravel 'C' horizon material
869636	S									0.3		4	5	14	<1	<1	35		10	<10	<5	4725N	Clean white fine silt. 'B'-horizon
869637	S									0.9		2	<5	16	<1	<1	60		16	<10	<5	4700N	Light gravel 'B' horizon
869638	S									0.9		4	<5	8	<1	<1	30		8	<10	<5	4675N	Loose - grey quartz gravel 'B'-horizon.
869639	S									0.9		4	10	12	<1	<1	20		14	10	<5	4650N	Clean loose grey quartz gravel 'B'-horizon
869640	S									0.9		4	5	6	<1	<1	25		8	<10	<5	4625N	Loose - grey quartz gravel 'B'-horizon.
869641	S									0.75		28	15	18	<1	<1	190		8	<10	5	4600N	Fawn-grey clay 'C'-horizon
869642	S									0.75		36	15	24	<1	<1	110		12	<10	5	4575N	Grey-green clay with red spots - iron oxide staining 'C'-horizon
869643	S									0.6		28	20	32	<1	<1	360		6	<10	10	4550N	Loose fawn coloured silt. 'B'-horizon.
869644	S									0.45		130	20	12	1	<1	60		4	<10	<5	4525N	Loose fawn coloured silt. 'B'-horizon.
869645	S									0.9		40	20	10	<1	1	15		12	<10	<5	4500N	Clean orange clay 'C'-horizon.
869646	S									0.6		36	20	28	<1	<1	65		8	<10	<5	4475N	Clean orange-fawn clay with some white mica. 'C'-horizon

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

GOLDFIELDS

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C.R.A. [redacted]PLORATION . GEOCHEMICAL SAMPLE [redacted]GER

Tenement name ML's 50M/75-54M/75 No. [redacted] Sample numbers 869647-869655 Collected by J.W (I.M.I.) Sheet no. 17

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASH 3 - TASH 10 ; TASH 20 Analysed by AMDEL DPO no 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	Anger s sample type **** Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 5400E	Geological Observations
869647	S								0.6		18	10	12	<1	<1	15		14	<10	<5	4450N	Yellow orange clay 'C' - horizon
869648	S								0.9		10	140	30	<1	1	90		18	10	<5	4425N	Fine grey silt 'B' - horizon
869649	S								0.75		6	5	10	<1	1	35		10	<10	<5	4400N	Grey gravel with quartz pebbles A+B - horizon
869650	S								0.6		4	5	14	<1	1	15		12	<10	<5	4375N	White - grey gravel 'B' - horizon
869651	S								0.9		4	60	22	<1	<1	45		12	<10	5	4350N	Light cream clay B+C - horizon.
869652	S								0.9		4	35	70	<1	<1	15		16	<10	<5	4325N	Fawn clay with green parent rock chips 'B' - horizon material
869653	S								0.75		2	25	22	<1	<1	15		10	10	<5	4300N	Fawn coloured clay B or C - horizon
869654	S								0.9		2	15	80	<1	<1	65		9	<10	5	4275N	Swamp alluvium, grey - brown 'B' - horizon.
869655	S								0.9		16	25	200	<1	<1	1400		18	60	65	4250N	Broken parent rock - grey - green 'C' - horizon.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LODGER

Tenement name M.L.s 50M/75 - 54M/75 No. Sample numbers 869656-869664 Collected by G.B Sheet no. 18

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASH 3 - TASH 10; TASH 20 Analysed by AMDEL DPO no 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 5500E	Geological Observations
								Auger **** sample type Depth		Metal content ppm or %											
869656	S									4	30	22	<1	<1	25		4	<10	<5	4990N	Pale bluish grey shales
869658	S						0.7			4	15	22	<1	<1	100		38	10	<5	4950N	Light fawn-grey sandy clay
869659	S						0.5			12	75	130	<1	8	320		70	<10	10	4925N	Possibly siltstone but heavily contaminated with magnetite rubble - cemented capping boulders littering the ground.
869660	oc	R.C. sample of 10 m either side of peg								46	170	600	3				150	<10		4900N	Magnetite chip sample.
869661	S	Sample taken into bank cut by bulldozer at 4867N 5495E					0.9			65	520	950	<1	4	290		70	220	15	4867N 5495E	
869663		R.C sample along road .3m W 15m E 2m N of peg.								32	190	250	1				85	20			
869664	S						0.6			44	120	120	<1	3	350		560	50	10.	4800N	Orange brown clay - probably ~~down~~ magnetite

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75-54M/75 No. ..... Sample numbers 869665-869672 Collected by C.B Sheet no. 19

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASH3- TASH10 ; TASH20 Analysed by AMDEL DPO no 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO	Grid ref Line 6500E	Geological Observations
		o/c sample type ***																		
		Auger s sample type ****					Depth													
869665	S						0·5		16	65	120	<1	9	230		160	20	10	4775N	Light brown silty clay with magnetite pebbles - possibly bottomed on cemented capping - sample suspect.
869666	oc	R.C. sample taken 6-10m E of line 4737 - 4748N							12	35	85	<1				50	<10		4737 - 4748	Magnetite chip sample.
869667	S						0·4		8	20	46	<1	2	65		26	<10	5	4725N	Brown silty clay bottoming on magnetite
869668	S						0·65		8	15	24	<1	<1	50		4	15	<5	4700N	Brownish siltstones + quartz pebbles.
869669	S						0·4		8	10	24	<1	<1	130		10	<10	5	4675N	grey shales in a grey clay matrix.
[illegible]																				
869670	S						0·7		320	20	16	<1	<1	90		12	10	5	4650N	Greenish + yellowish speckled grey clay - possibly calc-silicates
869671	S						0·5		20	10	12	<1	<1	15		10	<10	5	4625N	Light brown-grey sandy clay with qtz + quartzite rubble
869672	S						0·6		16	40	740	<1	<1	2000		50	25	55	4600N	Faintly blnish light grey micaceous siltstone + shale.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. [redacted]PLORATION . GEOCHEMICAL SAMPLE [redacted]GER

Tenement name ML's 50m/75 -54M/75 No. ..... Sample numbers 869673 - 869685 Collected by G.B Sheet no. 20

Area / Prospect TENTH LEGION Date 7-1-91

Map / Photo reference TASH3-TASH10; TASH20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %										Grid ref	Geological Observations
	ss * oc f s	fl	wi	al	co	ca	pH		Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO.		
		o/c sample type ***																		
		Auger s sample type ****					Depth(m)													
869673	S						0.4		4	35	44	<1	<1	85		60	10	5	4575N	Fawn and faintly blwish - grey siltstones + shales
869674	S						0.5		14	110	200	<1	<1	1500		65	10	15	4550N	Grey siltstone, minor shale.
869675	S						1.1		8	30	100	<1	<1	85		36	<10	5	4525N	Pale blwish grey clay with shales, not fully bottomed
869676	S						0.4		190	15	40	<1	<1	120		4	<10	20	4500N	Yellowish siltstone and greasy shale rubble
869677	S						0.5		26	30	80	<1	<1	680		10	10	10	4475N	faintly mottled brownish and yellowish clay with shale fragments.
869680	S						0.7		8	130	50	<1	<1	400		50	10	5	4400N	White clay with shale and siltstone.
869681	S						0.4		30	85	34	<1	1	45		14	<10	5	4375N	Brownish cream siltstones and shales.
869682	S						1.0		4	25	140	<1	<1	45		10	10	10	4350N	Pale blwish grey shales with minor limonitic patches
869683	S						0.7		8	45	42	<1	<1	45		34	<10	5	4325N	Stiff yellow clay with ferruginous patches, shale
869684	S						0.7		8	65	130	<1	<1	90		110	20	5	4300N	Speckled orange-yellow clay.
869685	S						0.7		16	85	60	<1	<1	95		36	15	5	4275N	Stiff speckled orange-yellow clay - possibly calc-silicates?

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75-54M/75 No. Sample numbers 869684-869687, 869689, 869691-869694 Collected by G.B Sheet no. 21

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASK 3 - TASK 10; TASK 20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type **** Depth (cm)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
869686	S						0.5m	Auger		14	60	55	<1	<1	280		22	10	10	4750N Line 5500E	Stiff pale yellow clay - siltstone and shale
869687	S						0.45	Auger		8	10	14	<1	1	30		14	<10	<5	4990N Line 3600E	Quartzites and siltstones - silty clay with quartz gravel and quartzite rubble.
869689	S						0.4	Auger		4	40	10	<1	<1	20		10	<10	<5	4940N	Quartzite - pale grey-fawn sandy clay
869691	S						0.7	Auger		4	15	16	<1	<1	140		12	<10	<5	4890N	Pale fawn-grey sandy clay - siltstones + quartzites
869693	S						0.5	Auger		40	45	10	<1	<1	35		8	<10	5	4840N	2 m south of peg (4848) grey weathered ?calc-silicates or ?quartzites
869694	OC	R.C. sample 10 m half circle around W side of peg									80	110	140	<1				120	20		4825N	Chip sample of magnetite outcrop exposed by bulldozer

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A B or C horizon

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. ..... Sample numbers 869695 - 869702 Collected by G.B Sheet no. 22

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASH3 - TASH10 ; TASH20 Analysed by AMDEL DPO no 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Auger s sample type **** Depth	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO	Grid ref Line 5600E	Geological Observations
869695	f							R.C. sample of rubble at .4 m		50	140	290	<1	21	600		200	<10	5	4800N	Bottomed on solid magnetite - grab sample of magnetite Scree.
869696	S						0.8			32	280	95	<1	8	470		16	10	5	4775N	Yellow-orange speckled clay - calc-silicates.
869697	S						0.6			360	40	640	<1	2	65		14	<10	25	4750N	Black shale.
869698	S						0.5			26	5	34	<1	<1	70		16	<10	5	4725N	White quartz gravel and light brown sandy clay.
869699	oc	R.C. sample exposed by bulldozing 4 m W of peg.								4	<5	22	<1	1	10		24	<10	5	4700N	White hard weathered calc-silicate 'C' horizon.
869700	f	R.C. sample of magnetite boulders dislodged by bulldozing.								16	25	400	<1				65	<10		4675N	Magnetite chip sample
869701	S						1.5			55	75	24	<1	1	10		14	15	<5	4650N	Yellow and white faintly mottled clay - calc-silicates?
869702	S						0.5			8	30	16	<1	1	45		16	<10	<5	4625N	White clay with shale fragments

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

115

C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50W/75-54W/75 No. ... Sample numbers 869703 ... Collected by G.B ... Sheet no. 23

Area / Prospect TENTH LEGION 869705 ... Date 7-1-81

Map / Photo reference TASK 3 - TASK 10; TASK 20 869707 - 869709 ... Analysed by ANDEL ... DPO no. 26654/26655

869711 - 869714

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type ****	Depth(cm)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 5600E	Geological Observations
869703	S								Hand Auger	0.6		8	20	36	<1	1	140		34	<10	<5	4600N	White clay with siltstone fragments.
869705	S									0.7		6	15	16	<1	<1	35		14	<10	5	4550N	Yellow and grey sandy clay with quartz and quartzite fragments. Possibly not fully bottomed.
869707	S									1.1		80	15	120	<1	1	290		16	<10	5	4500N	Pale yellowish grey clay with shale fragments.
869708	S									0.75		75	15	38	<1	1	30		10	<10	5	4475N	Yellow clay with siltstone fragments.
869709	S									0.75		26	40	65	<1	1	140		38	20	10	4450N	Yellow clay with greenish decomposed rock fragments - serpentine? or calc-silicates? or gabbro?
869711	S									0.5		6	15	28	<1	<1	15		8	<10	5	4400N	White clay and shale, siltstone fragments.
869712	S									0.7		85	40	55	<1	<1	110		8	<10	5	4375N	Yellow clay with shales + minor siltstone fragments
869713	S									0.4		4	5	22	<1	1	15		8	<10	<5	4350N	Soft white shale beneath quartz rubble.
869714	S									0.6		6	<5	20	<1	<1	20		10	<10	5	4325N	Grey + yellow shales and siltstones

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887116

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. ..... Sample numbers 869715 - 869718, 869720, 869722 Collected by G.B. Sheet no. 1 24

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASK 3 - TASK 10 ; TASK 20 Analysed by ANDEL DPO no. 26654 / 26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
		o/c sample type ***																		
		s sample type ****																		
869715	S						0.3		20	30	100	<1	1	250		12	30	5	Line 5600: 4300N	Bottomed on magnetite scree capping or outcrop? Brown silty loam with magnetite pebbles.
869716	oc	R.C. sample of magnetite outcrop @ 4279N							16	30	360	<1				50	<10		4279N	Magnetite chip sample.
869717	oc	10 m chip sample of outcrop in bulldozed area 4250 - 4260N							30	40	320	<1				12	35		4250N - 4260N	Magnetite and calc - silicate chip sample from outcrop.
																			Line 5700E	
869718	S						0.5		2	25	8	<1	<1	30		8	<10	<5	4990N	Grey sandy clay with siltstones and shales with abundant quartz, quartzite float.
869720	S						0.6		8	20	34	<1	<1	75		8	<10	<5	4940N	Grey sandy clay - weathered quartzites and siltstones
869722	S						0.6		4	5	10	<1	<1	40		8	<10	5	4890N	quartz gravel in a light brown grey sandy clay matrix.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887117

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. ..... Sample numbers 869724, 869726, 869728, 869730 - 869733 Collected by G.B Sheet no. 25

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASK 3 - TASK 10 ; TASK 20 Analysed by ANDEL DPO no 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Hand Auger s sample type **** Depth(m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 5700 E	Geological Observations
869724	OC							R.C. sample from		6	25	22	<1	.			16	<10		4840 N	Chip sample of siltstones
								from outcrop in													and black shales
								gutter in road at													
								4852 N													
869726	S						0.65			4	<5	34	<1	<1	25		10	<10	5	4790 N	Grey soft shales, thinly
																					bedded in a grey clay
																					matrix.
869728	OC							R.C. sample from		55	60	20	<1				12	<10		4740 N	Chip sample of yellow and
								outcrop 5m W													grey shale outcrop.
								of line: exposed													
								by bulldozed track.													
869730	S						0.7			24	160	38	<1	<1	50		<4	<10	10	4690 N	Yellow clay with
																					siltstone and shale fragments
869731	S						0.9			16	230	90	<1	<1	2000		38	<10	40	4665 N	Greenish brown sandy clay
																					- possibly weathered calc-
																					silicates, minor magnetite
																					fragments
869732	f							R.C. sample of		85	200	240	<1				190	<10		4640 N	Chip sample of magnetite
								float, sub-outcrop													- porons and cellular with
																					some massive material
869733	OC							R.C. sample of		28	30	34	<1				14	<10		4615 N	Chip sample of small cherty
								outcrop													silicate outcrop.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887118

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75-54M/75 No. ..... Sample numbers 869734 - 869742 Collected by G.B. Sheet no. 26

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASK3-TASK10 ; TASK20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Hand Auger s sample type **** Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 5700E	Geological Observations
869734	S							0.9		22	75	3000	<1	2	510		85	15	200	4590N	Pale bluish grey clay - weathered calc-silicates? minor quartz, shale?
869735	S							0.9		75	270	120	<1	2	930		36	15	25	4565N	Yellow clay - ? weathered calc-silicate? white soft weathered material.
869736	S							1.0		330	150	70	<1	1	50		16	10	5	4540N	Stiff yellow clay beneath green ferruginous clay Possibly weathered calc-silicate
869737	S							1.01		150	5	90	<1	<1	80		<4	<10	5	4515N	Orange clay with siltstone fragments.
869738	S							1.0		90	25	65	<1	1	480		130	<10	20	4490N	Yellow siltstone - shale.
869739	S							0.9		26	90	65	<1	1	120		60	<10	5	4465N	Yellow siltstone - shale
869740	oc	R.C. sample from exposure in creek at 4455N and along line to 4460N								16	75	60	<1				55	<10		4440N	Chip sample of thinly bedded siltstone, shale with minor cherty calc-silicates and serpentinite?
869741	S							0.7		14	20	24	<1	<1	40		20	10	<5	4415N	Grey and yellow shales with thinly interbedded carbonates (?)
869742	S							0.65		12	40	75	<1	<1	440		34	10	5	4390N	Orange clay with calc-silicate and siltstone fragments.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887119

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name MLs 50M/75-54M/75 No. [redacted] Sample numbers 869743 Collected by G.B Sheet no. 27

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASH3-TASH10; TASH20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Hand Auger s sample type **** Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO	Grid ref	Geological Observations
																				Line 5700E	
869743	S							0.6		8	20	16	<1	<1	100		16	<10	<5	4365N	Light fawn grey silty clay with quartz fragments - quartzite?
869744	S							0.65		24	130	34	<1	<1	320		32	<10	5	4340N	Light fawn siltstones and shales beneath yellow and grey clay.
869745	S							0.7		28	55	24	<1	1	45		14	<10	<5	4315N	Yellow clay with siltstone fragments
869746	S							1.1		250	220	44	<1	<1	120		22	20	<5	4290N	Yellow speckled with white clay - weathered calc-silicates
869747	S							0.9		90	75	44	<1	<1	280		16	<10	5	4265N	Yellow speckled clay - calc-silicates
869748	S							0.5		14	20	22	<1	<1	120		8	10	5	4250N	Grey and white siltstones, minor quartz
																				Line 5000E	
869749	S							0.9		20	20	50	<1	<1	70		50	<10	5	5015N	White weathered siltstones + calc-silicates; faintly streaked with grey beneath magnetite.
869750	OC	RC sample of outcrop from 5051-5063N								26	110	560	<1				1900	45		5040N	Magnetite chip sample.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887120

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C.R.A. [redacted]PLORATION . GEOCHEMICAL SAMPLE [redacted]GER

Tenement name ML's 50M/75-54M/75 No. ..... Sample numbers 869751-869758 Collected by G.B Sheet no. 28

Area / Prospect TENTH LEGION Date 9-1-81

Map / Photo reference TAS 3-TAS 10; TAS 20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** ft	wi	al	co	ca	pH	o/c sample type *** Hand Auger s sample type **** Depth(m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 5000E	Geological Observations
869751	f	R.C. sample of								46	40	260	<1				720	10		5065N	Magnetite chip sample.
		scree + cemented																			
		boulders. Sample taken																			
		3m W of line.																			
869752	S						0.9			6	30	70	<1	1	360		840	<10	5	5090N	Pale grey mottled silty clay - calc-silicates?
869753	S						1.0			8	10	12	<1	<1	40		12	10	5	5115N	White decomposed siltstones and minor shales, possibly contaminated by stream sediment.
869754	S						0.9			4	5	20	<1	<1	45		10	<10	5	5140N	Pale grey quartzites and silty grey clay with quartz fragments.
																				Line 4940E	
869756	S						0.35			2	5	10	<1	<1	40		14	10	5	5015N	White siltstones and shales
869757	S						0.5			36	5	30	<1	1	20		10	<10	<5	5040N	White and yellow clay beneath magnetite - possibly weathered shales and siltstones, minor calc-silicates.
869758	OC	R.C. sample. ct								75	100	190	2				540	20		5065N	Chip sample along edge of outcrop at 0.5 m intervals.
		4950E, 5072N →																			
		4940E, 5079N																			

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description ft = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887121

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. Sample numbers 869759 - 869768 Collected by G.B. Sheet no. 29

Area / Prospect TENTH LEGION Date 9-1-81

Map / Photo reference TASH 3 - TASH 10 ; TASH 20 Analysed by AMDEL DPO no. 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Hand Auger s sample type *** Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO	Grid ref Line 4940E	Geological Observations
869759	OC	R.C. Sample from 5115N - 5090N, 4945E								170	80	270	<1				520	25		5090N	Magnetite outcrop chip sample.
869760	S						0.9			60	150	46	<1	1	75		920	25	5	5115N	Yellow speckled white clay - calc-silicates
869761							0.7			4	15	8	<1	<1	40		12	15	<5	5140N	Light fawny-grey silty clay - weathered quartzite.
																				Line 4900E	
869762	OC	R.C Sample								20	5	18	<1				14	10		4990N	Chip sample of siltstone and quartz accumulations
869763	S						0.7			20	50	14	<5	<1	70		9	<10	<5	5015N	White soft clay - siltstones + shales.
869764	S						0.45			8	10	65	<1	<1	190		180	<10	<5	5040N	White quartzite and quartz rubble in a light grey silty clay matrix.
869765	S						0.4			46	30	210	<1	1	740		380	15	5	5065N	Probably bottomed on cemented cap-rock. Sample of light brown silty clay with magnetite pebbles.
869766	S						0.6			6	10	22	<1	<1	60		26	<10	<5	5090N	Faintly speckled white silty clay - possibly weathered calc-silicates.
869767	S						0.7			4	<5	6	<1	<1	25		18	<10	<5	5115N	Light brown sandy loam with quartz.
869768	S						0.6			4	10	12	<1	<1	20		8	<10	5	5140N	Fawn-grey sandy clay - weathered quartzite

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

88/122

122

C.R.A. [redacted]PLORATION . GEOCHEMICAL SAMPLE [redacted]GER

Tenement name ML's 50M/75 - 54M/75 No. Sample numbers 869769- Collected by G.B Sheet no. 30

Area / Prospect TENTH LEGION Date 9-1-81

Map / Photo reference TASH 3 - TASH 10 ; TASH 20 Analysed by AMDEL DPO no 26654/26655

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl / wi / al / co / ca / pH; o/c sample type ***; s sample type ****	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Grid ref Miscellaneous	Geological Observations
869769	OC	R.C. Sample at 4875N, between 5100E + 5200E 18 m chip sample across outcrop in a N-S direction		130	10	650	<1				860	20	4875N 5100E - 5200E	Chip sample of main magnetite body.
869770	OC	R.C. Sample at 4890 - 4910 N between lines 5200E + 5300E - broken across car-park at end of track		14	20	220	<1				1100	15	5200E - 5300E 4890N - 4910N	Chip sample of magnetite outcrop.
869771	OC	R.C. Sample - at 50m W of 5400E, 4870N - 4910N in track.		30	45	510	<1				480	50	5350E 4870 - 4910N	Chip sample of magnetite. outcrop or float?
869772	OC	R.C. Sample of magnetite between 5400E + 5500E along track, mainly sub-outcrop - 20 m lenghth		34	200	630	<1				960	40		Magnetite chip sample
869773	OC	R.C. Sample of outcrop between 5500 - 5600E along track - 5545 - 5555 E, approx 4922N		40	120	190	<1				190	10		Magnetite chip sample.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887123

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name: 50M/75 - 54M/75 No. Sample numbers: 869774 - 869785 Collected by: GB/JGP. Sheet no: 31

Area / Prospect: TENTH LEGION Date: 11-6-81

Map / Photo reference: TASH3 - TASH10 ; TASH20 Analysed by: CAMLABS/FANDER DPO no: 26657/26658 26661

A 02143

Sample No.	Type (ss * / oc / f / s)	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type ****	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W		Grid ref	Geological Observations
869774	f										10	55	120	<1				60	10		5600E	White bleached greasy feeling structureless
																					4735N	rock with fibrous minerals - tremolite rock?
869775	f										14	50	65	<1				32	30		5596E	Hard tough greeny grey rock
																					4304N	- tremolite/actinolite?
869776	f										14	44	30	<1				22	15		5503E	White soft granular weathered
																					4247N	? talc carbonate rock
869777	oc	Chips 4575-4577N									4	20	38	<1				55	10		5500E	Finely laminated greeny-grey
																					4576N	calc silicate rock.
869778	oc	chips 5540E - 5560E 4870N - 4867N									12	16	26	<1				8	10		5550E	Very soft grey weathered? calc
																					4868N	silicate rock with interbedded sediments
869779	f	See 869775, above - Thin Section									Sample				Ni	Cr				Co		See above.
869780	f										36	44	960	<1	70	8		18	<10	42	5400E	Gossanous leached pale green calc
																					4005N	silicate with traces pyrite
869781	f										115	50	210	1	<4	55		20	<10	4	5400E	Magnetite float with lateritic iron
																					4043N	oxides.
869782	f										155	60	130	<1	12	26		4	100	16	5404E	Massive magnetite float with
																					4120N	lateritic matrix.
869783	f										125	28	195	<1	<4	26		<4	<10	12	5400E	Limonitic, slightly gossanous leached
																					4190N	sediment
869784	Sub oc	chips over 8m capping									1350	65	570	18	24	18		14	<10	28	5390E	Limonitic gossanous material with
		in road																			3975N	Mn, magnetite. - capping over sulphides?
869785	f	grab sample from dump									125	100	200	1	8	10		14	40	40	5500E	Qtz epidote rock + epidote rock
																					4190N	with some massive magnetite.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887124

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 → 54M/75 No. Sample numbers 869786 → 869796 Collected by G.S./J.C.P. Sheet no. 32

Area / Prospect TENTH LEGION Date 22.6.81

Map / Photo reference TASH3-TASH10; TASH20 Analysed by COMLABS DPO no 26661/26664

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type ****	Carbon	Cu	Pb	Zn	Ag	Ni	Cr	Au	Sn	W	Co	Grid ref	Geological Observations
											Metal content ppm or %											
869786	Sub o/c	Chips from boulders									60	32	38	<1	24	32		55	10	8	5500E 4180N	Creamy coloured leached weathered sed. Silty texture, greasy feel; minor qtz veins.
869787	f	gs									70	90	160	<1	28	20		40	20	125	5500E 4060N	Very Mn rich black weathered rock
869788	f	gs									430	140	960	<1	12	165		12	30	28	5500E 4050N	Clayey limonitic? gossan - red yellow and brown, with Mn oxides.
869789	f	gs									270	90	430	1	4	18		<4	20	28	5500E 4045N	Limonitic, Mn rich rock - red, yellow, brown
869790	f	Chips from boulders 3970N → 3965N, line 5500E									230	20	155	1	<4	6		28	35	70	5500E 3972N	Massive magnetite as chips from massive float boulders.
869791	o/c	gs									60	12	175	<1	16	6		36	35	60	5500E 3880N	Interbanded black and yellow weathered rock with muscovite + black massive mag.
869792	f	g.s									50	40	135	<1	95	28		26	15	270	5500E 3858N	Yellow weathered banded silty rock with bands of black Mn oxides.
869793	f	g.s.									44	12	2100	<1				8	15	20	4980E 3625N	Light weight porous limonite with small rounded qtz grains - a capping of mesa sed.
869794	f	g.s.									60	10	2000	<1				85	<10	50	4960E 3625N	Bright yellow and red, lightweight gossanous limonite, minor mag.
869795	o/c	g.s.									300	20	4200	1				<4	70	55	4930E 3650N	Mn rich capping over pale cream (w) seds with some Mn veining.
869796	o/c	r.c. 15m x 05m.									360	330	750	<1				100	45	250	4895E 3730N	Highly Mn rich gossanous rock - some pan or skin development on pink w. seds

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887125

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 – 54M/75 No. Sample numbers 869797 → 869800, 869871 → 869876, 869878 → 869879. Collected by J.G.P. / G.B. Sheet no. 33

Area / Prospect TENTH LEGION Date 22-6-81

Map / Photo reference TASH 3 – TASH 10; TASH 20 Analysed by COMLABS DPO no 26664

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
		o/c sample type ***																		
		s sample type ****																		
869797	OC	2·5	m x 1·5 m		random	chips			510	220	430	<1				80	110	55	4885E	Highly gossanous Mn rich capping with 'eyes'
																			3765 N	of white silky leached grease rock
869798	OC	2x	2m	area	– r.c.				630	250	1800	2				16	35	95	4880E	White soft silky leached rock with Mn
																			3800N	and limonite rich capping.
869799	f	g.s							890	65	2·2%	15				110	40	70	4860E	Massive Mn caprock, partly cellular.
																			3820N	
869800	OC	r.c.	– random	chips	from o/c				590	1900	1050	1				350	35	95	4850E	Soft dark brown Mniferous rock
																			3835 N	– capping over white soft leached seds etc.
869871	f	g.s.							110	24	110	<1				26	<10	4	4845E	Highly leached white silky grease sediment
																			3845 N	laced with limonitic veinlets.
869872	OC	random	chips	of	o/c's				65	8	1800	<1				140	40	16	4840E	Chips from massive magnetite o/c's
																			3880 N	
869873	f	g.s.							70	4	390	<1				24	<10	16	4900E	Chips of lateritic mag float
																			3560N	
869874	OC	g.s							55	4	55	<1				<4	<10	28	4993E	Hard grey silicified calc silicate
																			3525N	rock with some actinolite and dissem. py.
869875	OC	g.s							50	14	850	<1				60	<10	24	4990E	Hard pale green calc-silicate rock
																			3520 N	with ? tourmaline, chlorite actinolite, 1-2% py.
869876	OC	g.s.							150	<4	55	<1				4	<10	40	4976E	Grey f.gr very hard silicified hornfelsed chert/
869877 –	taken for T.S.																		3500N	calc silicate rock with 10% pyritic veinlets.
869878	Sub o/c	g.s.							12	4	135	<1				10	10	4	3850E	Hard cherty grey f.gr. calc silicate
																			3430N	with minor py and some black tourmaline.
869879	o/c	r.c. 4 x 0·3m.							14	4	420	<1				<4	<10	28	5010E 3585N	Black, massive, magnetite outcrop.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A B or C horizon

887126

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C.R.A. [redacted]LORATION . GEOCHEMICAL SAMPLE [redacted]GER

Tenement name ML's 50 M/75 → 54 M/75 No. Sample numbers 869880 → Collected by C.B. / J.C.P Sheet no. 34

Area / Prospect TENTH LEGION Date 22.6.81

Map / Photo reference TASK 3 – TASK 10 ; TASK 20 Analysed by COMLABS DPO no 26664 / 26661

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type ****	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
869880	Sub o/c.	g.s.									350	40	300	<1				<4	30	24	5230E 3720N	Lateritic magnetite – possibly over o/c.
869881	f	g.s.									12	8	120	<1				26	40	12	4960E 3575N	Greasy grey calc silicate rock with epidote.
869882	Sub o/c ?	g.s.									14	<4	18	<1				10	20	<4	4985E 3430N	?Granitic dyke – biotite, felspar, crystalline.
869883	Sub o/c	g.s.									18	<4	34	<1				44	<10	<4	4930E 3450N	Crumbly porous whitish calc-silicate rock.
869884	f	g.s.									14	<4	48	<1				20	<10	10	4820E 3445N	Greasy-grey calc silicate with epidote, dissem py.
869885	Sub o/c	g.s over 6 m along track.									60	28	175	<1				36	<10	28	4810E 3440N	Calc silicates with 1-2% py, magnetite + ? chlorite
869886	f	g.s.									50	24	520	<1				42	25	50	4900E 3440N	Yellow weath calc-silicate with Mn, limonite.
869887	o/c	g.s.									105	4	5.85%	<1				50	50	130	4828E 3470N	30% sp, py, mag. with crystalline chlorite/muscovite
869888	o/c	g.s.									50	<4	2.90%	<1				14	25	40	4828E 3470N	mag + chlorite, mica with sp, py 2-3%.
869889	f	g.s. from mullock heap.									40	<4	1.50%	<1				16	25	50	4822E 3472N	mag + chlorite, micas, traces sp, py.
869890	Sub o/c	g.s.									430	70	910	1				48	110	28	4790E 3480N	Black hard magnetic Mn rich caprock.
869891	o/c	random chips over 1 × 1.5 m.									115	<4	1050	<1				20	15	8	4780E 3485N	Green rock with magnetite and green ? chlorite.
869892	o/c	g.s.									75	<4	3700	<1				340	30	28	4765E 3490N	Banded magnetite (fibrous) / green crystalline chlorite
869893	o/c	g.s.									115	<4	4200	<1				200	50	32	4757E 3495N	Hard greenish sulphide-rich calc silicate rock-py.
869894	o/c	r.c. 15 × 0.5 m.									145	<4	125	<1				150	<10	16	4740E 3500N	Green epidote / sulphide rich porous w. calc silicate
869895	o/c	g.s.									770	<4	55	<1				18	15	18	4690E 3505N	Bedded calc silicate with cherty beds, traces py.
869896	o/c	r.c. 15 × 0.5 m									16	16	300	<1				10	15	34	5070E 3600N	Rock chip sample along magnetite o/c in track
869897	o/c	r.c. 15 × 0.5 m.									20	16	260	<1				6	<10	28	5100E 3620N	Massive magnetite o/c.
869898	o/c	r.c. 20 × 1.0 m.									40	10	210	<1				24	<10	40	5145E 3640N	Massive magnetite o/c.
869899	o/c	r.c. 18 × 1.0 m.									60	14	430	<1				24	<10	50	5160E 3665N	Massive " "
869900	o/c	r.c. 8 × 0.5 m.									65	34	590	<1	Ni	Cr		32	15	65	5170E 3608N	" " "
869901	f	g.s.									4	32	10	1	<4	24		24	20	<4	5790E 4250N	Qtz-epidote rich greenish calc silicate rock.
869902	f	g.s.									12	36	24	<1	12	12		20	<10	<4	5835E 4250N	Greenish grey spotted calc silicate hornfels.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

88 71 27

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75 → 54M/75 No. Sample numbers 869902 - 869906, 869908 - 869925 Collected by G.B. / J.G.P. Sheet no. 35

Area / Prospect TENTH LEGION Date 22.6.81

Map / Photo reference TAS13 - TAS10; TAS12C Analysed by COMLABS. DPO no. 26664/26661

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** / s sample type ****	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Ni	Cr	Au	Sn	W	Co	Grid ref	Geological Observations
869902	oc	g.s.								4	44	170	<1	50	8		18	15	40	5868E 4250N	Greenish grey f.gr. calc silicates
869904	f	g.s.								10	16	16	<1	40	8		6	<10	4	5878E 4250N	Fibrous greenish-grey tremolite/actinolite + epidote
869905	f	g.s.								8	12	100	<1	180	1000		16	<10	4	5880E 4250N	Banded green and grey calc silicate rock with mag.
869906	f	g.s.								18	28	40	<1	48	34		4	<10	12	5900E 4250N	Hard green and white granular rock - gabbro?
869907	→ Sample taken for thin section																			"	
869908	oc	g.s.								30	12	48	<1	60	28		32	<10	28	5970E 3850N	Chip sample of ? actinolite (tourmaline?) veins with gabbro.
869909	oc	g.s.								34	20	14	<1	40	14		10	15	12	5770E 4250N	Hard grey hornfelsed chert.
869910	f									145	120	310	<1	300	5000		<4	110	20	5780E 4140N	Magnetite, dissem. in grey calc silicates.
869911	Sub o.c.	r.c. 10 m × 1 m.								12	28	44	<1	65	50		12	<10	16	5780E 4115N	Speckled green massive gabbro.
869912	f	g.s.								32	8	150	<1	240	1750		16	<10	8	5880E 4250N	Hard magnetite with interstitial green serpentinite
869913	oc	g.s								90	55	130	<1	16	8		6	<10	44	5580E 4232N	Soft friable Mn rich magnetite beneath laterite
869914	oc	g.s								850	960	280	1	28	14		16	80	1850	5581E 4232N	Black f.gr. Mn rich clay, minor magnetite
915	f	gs from float boulders.								175	150	290	<1	8	22		36	25	60	5680E 4185N	Limonite float - porous + cellular, some mag.
916	oc	r.c. from 4167N → 4173N (0.5)								165	440	1400	1	16	6		<4	45	115	5680E 4170N	Magnetite with tough green calc-silicates.
917	f	g.s.								200	135	930	<1	8	32		12	<10	55	5680E 4094N	Limonitic capping on swamp margin.
918	f	g.s.								26	12	44	<1	24	4		8	<10	12	5680E 4067N	'Basaltic-looking' tough green calc-silicate.
919	o/c	r.c over 2 × 1 m outcrop								16	50	510	<1	80	8		22	<10	44	5680E 4040N	Hard dense f.gr. greenish calc-silicate rock.
920	- Thin section of 919.																			"	
921	f	g.s.								55	12	135	<1	175	2900		6	<10	12	5680E 4020N	Tough pink calc silicate with dissem mag.
922	f	g.s.								185	20	140	<1	<4	26		12	<10	28	5600E 3905N	Porous ochreous yellow silty w. rock.
923	f	g.s.								150	40	290	<1	<4	46		12	30	24	5600E 3915N	Magnetite rubble from small shaft dump.
924	f	gs - float from bulldozing.								150	48	250	<1	<4	50		8	15	24	5600E 3940N	Porous limonite capping (over serpentinite!)
925	Sub o/c	g.s. - from wall of small shaft.								390	120	290	<1	20	20		12	10	32	5593E 3960N	Magnetite and porous clayey limonite.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887128

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75 → 54M/75 No. ..... Sample numbers 869932 → 869954 Collected by G.B. / J.G.P. Sheet no. 36

Area / Prospect TENTH LEGION Date 22.6.81

Map / Photo reference TASK 3 – TASK 10 ; TASK 20 Analysed by COMLABS. DPO no 26664 / 26666

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** / s sample type ****	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
869932	o/c	random chips.								12	26	165	<1				8	<10	8	5707E 4272N	Hard dark green massive calc silicates with py 1-2%
869933	oc	g.s.								12	310	930	1				16	25	50	5707E 4284N	Dark green serpentinite with 30% dissem. mag.
869934	oc	g.s.								32	95	350	<1				6	45	48	5687E 4269N	Green serpentinite with 15-50% dissem. mag.
869935	f	g.s.								34	50	510	<1				20	50	65	5634E 4257N	Near massive lateritic limonite with mag.
869936	f	g.s.								10	20	410	<1				180	<10	70	5611E 4264N	Black massive magnetite debris with sap.
869937	Sub oc.	random chips.								105	220	390	<1				14	<10	40	5608E 4228N	Massive black mag in laterite capping.
869938	f	g.s.								270	620	460	<1				<4	20	20	5626E 4200N	Yellow-brown gossanous limonite – capping.
869939	Sub o/c	random chips								230	155	390	<1				<4	25	75	5461E 4054N	Lateritic capping with mag.
869940	Sub oc	random chips from trench.								140	150	280	<1				<4	20	220	5453E 4088N	Mn rich gossanous magnetite
869941	oc	random chips 2m × 2m.								22	28	170	<1				16	10	36	5432E 4150N	Black magnetite – massive and heavy.
869942	f	g.s.								42	<4	105	<1				60	<10		4880E 3675N	Magnetite rubble from auger hole.
869943	f	g.s 3625N – 3630N, Lie 4880E								330	8	2200	<1				32	<10		4880E 3628N	Magnetite float and boulders.
869944	f	g.s.								70	8	440	<1				48	<10		4880E 3575N	Magnetite and limonite boulders.
869945	o/c	g.s.								12	16	1550	<1				22	<10		4875E 3505N	Grey and white calc silicate rock, trace py, magnetite
869946	oc	g.s.								155	28	210	<1				<4	15		4880E 3375N	Calc silicate rock with 10% py, po.
869947	oc	g.s.								14	24	590	<1				20	<10		4880E 3345N	Tough green crystalline calc silicate with qtz, epidote.
869948	f	g.s.								30	12	480	<1				26	15		4880E 3275N	Magnetite pebbles and scree.
869949	oc	g.s.								8	38	300	<1				30	20		4830E 3405N	Micaceous calc silicate with dissem. mag.
869950	oc	3 × 0.5 m chip sample								20	8	1.2%	<1				26	30		4854E 3475N	Calc silicate rock with sp. magnetite, chlorite.
869951	oc	7 × 0.5 m " "								8	8	270	<1				40	<10		4848E 3510N	Banded magnetite / chlorite ; trace sp.
869952	f	g.s.								18	8	38	<1				65	30		4730E 3708N	Tough grey calc silicate float.
869953	f	g.s								4	4	12	<1				<4	<10		4736E 3708N	Granite – f.gr aplitic biotite rich float
869954	Sub oc	g.s.								16	12	105	<1				80	100		4884E 3715N	Highly weathered rock-spotted yellow clay? aplite.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887129

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LODGER

Tenement name ML's 50M/75-54M/75 No. ..... Sample numbers 877001-877011, 869955-869961 Collected by A.C. Sheet no. 37

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASH3-TASH10; TASH20 Analysed by AMDEL DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 5500E	Geological Observations
		o/c sample type ***																		
		Auger s sample type ****					Depth(cm)													
877001	S						1.4		33	30	55	<1	<1	180		14	15	5	4225N	Buff clays with fragments
877002	S						1.4		40	35	42	<1	<1	320		14	10	5	4200N	Buff clays with fragments
877003	S						1.3		30	55	70	<1	<1	660		24	<10	20	4175N	Buff clays with fragments
877004	S						1.2		38	50	38	<1	<1	350		8	10	10	4150N	
877005	S								34	45	85	<1	<1	120		10	<10	5	4125N	
877006	S						1.4		26	35	150	2	<1	6200		10	<10	70	4100N	Muscovite dust, dark brown
877007	S						1.3		30	70	85	<1	<1	4400		18	<10	40	4075N	Light brown
877008	S						0.5		450	160	310	1	<1	1.6%		8	<10	35	4050N	Red clay soil with fragments
877009	S						1.3		420	5000	70	8	2	2.0%		4	35	65	4025N	Red clay soil
877010	S						0.75		210	2400	220	2	1	2.0%		26	25	150	4000N	Dark brown clay with fragments.
877011	S						1.2		390	460	290	<1	<1	6400		32	<10	290	3975N	
869955	f	gs.							70	24	50	<1				24	40		5208E 3765N	Soft white porous weathered lst.
956	sub oc	chip sample from boulders.							120	16	420	<1				<4	30		5300E 3686N	Massive magnetite boulders.
957	f	gs from mullock dump of small shaft							100	32	1350	<1				<4	25		5350E 3755N	Black massive crystalline magnetite.
958	oc	15 x 0.5 m chip sample.							10	14	340	<1				180	10		4830E 3525N	Micaceous and chloritic calc silicate with dissem. mag
959	oc	gs.							10	12	5300	<1				18	40		4843E 3540N	Magnetite outcrop with chlorite, sp.
960	oc	5 x 0.5 m r.c.							480	6	3.3%	<1				14	30		4852E 5555N	Micaceous calc silicate with dissem. mag 5-10%
961	oc	10 x 0.5 m rock chip							32	8	1.6%	<1				12	<10		4805E 3562N	Chloritic calc silicates with sp. mag, 10-20%

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887130

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LODGER

Tenement name MLs 50M/75 - 54M/75 No. ..... Sample numbers 877012 - 877020 Collected by M.W Sheet no. 38

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASK3 - TASK10 ; TASK20 Analysed by AMDEL DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Dewey angle	s sample type **** Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 5500E	Geological Observations
877012	S						0.5				140	75	180	2	3	4000		6	15	35	3950N	Brown clay with Magnetite fragments.
877013	S						1.5				250	130	400	<1	2	2.3%		18	20	290	3925N	Dark brown clay with magnetite rock fragments.
877014	S						1.5				160	65	190	<1.	2	1.6%		14	25	160	3900N	Brown clay with magnetite fragments and white weathered fragments.
877015	S						1.5				100	35	150	<1	2	990		14	25	20	3875N	Orange + yellow clays - very fine white weathered fragments.
877016	S						1.25				44	40	200	1	1	470		20	45	15	3850N	Light brown clay with no fragments.
																					Line 5400E	
877017	S						1.6				16	20	270	<1	1	5000		12	95	50	4250N	Green gritty clay - all fragments much weathered.
877018	S						1.5				36	75	75	<1	1	65		34	15	10	4225N	Yellow clay with weathered feldspar? fragments.
877019	S						1.4				150	130	260	<1	1	640		16	60	10	4200N	Red - brown gritty clay.
877020	S						1.3				65	55	130	1	1	410		36	30	10	4175N	Orange clay

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887131

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE REGISTER

Tenement name MLs 50M/75 - 54M/75 No. ..... Sample numbers 877021 - 877029 Collected by M.W. Sheet no. 39

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASh3 - TASh10; TASh20 Analysed by AMDEL DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type **** Power Auger	Depth (M)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line	Sample	Geological Observations
877021	S									1.3		200	170	190	<1	2	450		22	<10	10	4150N		Reddish colour clay.
877022	S									1.5		40	90	160	<1	1	340		42	10	15	4125N		Yellow clay.
877023	S									1.5		70	95	250	<1	1	340		36	15	20	4100N		Yellow gritty clay
877024	S									1.5		140	210	1200	<1	5	7600		<4	50	25	4075N		Gritty clay, much magnetite near top of hole.
877025	S									1.2		100	85	620	<1.	7	920		6	50	10	4050N		Gritty red clay.
877026	S									1.5		710	120	430	2.	14	6900		6	30	25	3975N		Orange-red clay with rock fragments.
877027	S									1.5		470	530	250	1	110	6.00%		22	45	85	3950N		Black soily clay
877028	S									1.5		270	150	190	1	17	1.80%		22	25	90	3925N		Black soils
877029	S									1.5		180	45	370	2.	14	380		16	95	15	3900N		Reddish clays with rock fragments.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887132

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50 MTS - SUM 175 No. ..... Sample numbers 877032 - 877051 ..... Collected by M.W ..... Sheet no. 40

Area / Prospect TENTH LEGION ..... Date 7-1-81

Map / Photo reference TASK3 - TASK10 ; TASK20 ..... Analysed by AMDEL ..... DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	a/c sample type ***	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO	Grid ref	Geological Observations
								Powered Auger **** Depth(m)		Metal content ppm or %										LINE 5280E	
877032	S						.85			32	10	55	1	1	60		4	<10	5	4225	ROUNDED RIVER GRAVEL
877033	S						1			10	35	10	3	1	60		12	<10	5	4200	GRANITIC SAND
877034	S						1.5			28	210	110	<1	1	120		10	10	5	4175	GREY & GREEN SILTS & CLAY
877035	S						1.5			8	5	20	<1	1	40		<4	<10	<5	4150	GREY SILTS
877036	S						1.5			8	20	6	4	<1	40		12	10	<5	4125	BROWN SAND
877037	S						1.5			20	70	20	1	<1	50		4	<10	5	4100	REDDISH, GRITTY CLAY
877038	S						1.5			50	250	1500	1	2	80		12	<10	15	4075	BROWN SAND WITH ROCK FRAGMENTS.
877039	S						1.5			110	490	150	<1	9	140		6	<10	5	4050	BROWN SAND WITH ROCK FRAGMENTS.
877040	S						1.6			85	210	250	1	1	120		12	50	10	4025	GREY, GRITTY CLAY
877041	S						1.6			42	140	1800	<1	1	680		14	20	90	4000	GREY SILT
877042	S						1.6			50	90	1200	<1	2	5600		12	30	45	3975	WEATHERED, GREEN, CLAYEY SILTS
877043	S						1.5			16	30	1100	<1	10	2.40%		<4	85	110	3950	BLACK SILT WITH ROCK FRAGMENTS
877044	S						1.5			120	95	170	<1	<1	210		18	75	15	3925	GREEN GRITTY CLAY WITH ROCK FRAGMENTS
877045	S						1.5			140	40	200	<1	9	300		22	110	10	3900	ORANGE CLAY, SOME ROCK FRAGMENTS
877046	S						1			110	25	170	1	9	350		6	90	10	3875	ORANGE CLAY, MANY ROCK FRAGMENTS
877047	S						1.1			200	520	110	<1	5	1.40%		20	120	95	3850	REDDISH CLAY
877048	S						1			20	70	22	<1	1	110		10	10	10	4250	GREY, GRITTY CLAY, IRREGULAR FRAGMENTS.
																				LINE 5600E	
877049	S						.45			120	95	140	<1	1	3000		22	<10	25	4225	RED MATERIAL, MUCH MAGNETITE
877051	S						.4			95	75	130	<1	3	4600		12	<10	25	4175	A+B HORIZON. BROWN MATERIAL WITH MAGNETITE.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887133

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name NL'S 50M/75 - 54M/75 No. Sample numbers 877052 – 877072 Collected by M.W Sheet no. 41

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASh3 - TASh10 ; TASh20 Analysed by AMDEL DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	Soil sample type **** Power Auger Depth(m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref LINE 5600E	Geological Observations
877052	S						.4				110	110	310	<1	2	900		8	<10	20	4150	LIGHT BROWN CLAY WITH MAGNETITE
877053	S						.4				100	80	350	3	2	1490		14	15	20	4125	LIGHT BROWN 'A&B' HORIZON & MAGNETITE
877054	S						.4				270	65	250	<1	2	260		12	<10	15	4100	GREY BROWN SILT. MAGNETITE PRESENT
877055	S										65	30	110	<1	<1	340		10	15	10	4075	GREY 'A' HORIZON, MUCH MAGNETITE
877056	S										44	210	480	1	2	980		8	<10	20	4050	MUCH MAGNETITE, DARK BROWN 'A' HORIZON
877057	S										38	85	290	3	4	950		<4	30	25	4025	'B' HORIZON, CAN'T PENETRATE MAGNETITE
877058	S						1.5				700	350	1000	<1	1	600		26	25	60	4000	ORANGE CLAY
877059	S										330	45	200	<1	3	1800		28	40	40	3975	'B' HORIZON, STILL ON MAGNETITE
877060	f										130	40	130	<1	2	3100		<4	20	70	3950	'B' HORIZON SAMPLE (CHIP)
877062	S						1.2				95	30	190	1	<1	160		36	20	30	3900	ORANGE-YELLOW CLAY BENEATH MAGNET
877063	S						1.5				32	40	1400	<1	2	130		<4	15	290	3875	LIGHT GREY & GREEN GRITTY CLAY
877064	S						1.5				75	35	210	<1	<1	80		<4	10	45	3850	GREEN CLAY
																					LINE 5680E	
877065	S						1.2				42	210	270	<1	<1	6700		24	20	55	4250	BROWN CLAY WITH LIGHT BROWN FRAGMENT
877066	S						1.2				240	540	1100	<1	2	7140		28	45	35	4225	ORANGE-BROWN CLAY
877067	S						1.2				48	100	240	<1	3	2700		4	45	30	4200	RED CLAY, MUCH MAGNETITE
877068	S						.5				190	45	280	<1	<1	8200		8	30	140	4175	RED CLAY & MAGNETITE FRAGMENTS A+B HORIZON
877069	S						1.1				350	330	1500	<1	2	6000		16	20	190	4150	BROWN CLAY WITH MAGNETITE.
877070	S						1.2				80	130	320	<1	<1	260		26	20	15	4125	GREY CLAY
877071	S						1.2				80	65	670	<1	<1	340		<4	15	40	4100	GREY CLAY BENEATH MAGNETITE
877072	S						1.2				16	45	3100	2	<1	530		6	15	280	4075	GREEN CLAY

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887134

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50N/7S - 54N/7S No. ..... Sample numbers 877073 - 877091 Collected by M.W Sheet no. 42

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TA5h3 - TA5h10; TA5h20 Analysed by AMDEL DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	Power Auger sample type ****	DEPTH	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
												Metal content ppm or %										LINE 5680E	
877073	S									.4		20	75	330	1	<1	4580		8	20	55	4050	B HORIZON, MUCH GREEN ROCK
877074	S									.6		36	45	220	1	2	2600		8	15	40	4025	BROWN, GRITTY CLAY
877075	S									1.2		26	45	85	4	<1	530		<4	10	20	4000	ORANGE, GRITTY CLAY
877076	S									1.2		12	30	75	2	<1	260		<4	<10	90	3975	ORANGE, GRITTY CLAY
877077	S									1.2		16	25	120	2	<1	160		<4	10	70	3950	ORANGE, GRITTY CLAY
877078	S									1.2		10	30	260	1	<1	240		6	<10	35	3925	BROWN, GRITTY CLAY
877079	S									1.2		16	30	1420	<1	<1	200		<4	<10	40	3900	LIGHT GREEN CLAY
877080	S									1.2		20	20	240	2	<1	310		<4	<10	80	3875	DARK GREEN GRITTY CLAY
877081	S									1.2		30	25	170	<1	1	260		4	<10	40	3850	WHITE GRIT IN GREEN CLAY
~~877082~~																						LINE 5780E	
877082	S									.7		18	20	85	<1	1	350		8	<10	20	4250	GREY-WHITE CLAY
877083	S									.85		12	20	30	3	2	240		<4	<10	10	4225	BROWN CLAY WITH POSSIBLE CALC SILICATE AND MAGNETITE
877084	S									1.1		8	85	80	3	1	570		32	<10	15	4200	WEATHERED GREEN, GRITTY CLAY POSSIBLE CALC SILICATE
877085	S									1.1		24	25	48	<1	1	580		10	<10	10	4175	GREENISH CLAY WITH SLATE LIKE FRAGMENTS
877086	S									1.2		50	35	130	1	3	260		16	220	10	4150	ORANGE CLAY WITH MAGNETITE
877087	S									1.2		16	40	160	4	1	330		<4	40	35	4125	GRITTY GREEN CLAY
877088	S									1.2		42	30	150	2	1	160		<4	25	10	4100	GREEN CLAY
877089	S									1.2		8	25	110	2	<1	280		10	95	15	4075	GREEN CLAY
877090	S									1.2		55	30	95	<1	<1	260		<4	<10	40	4050	ORANGE CLAY
877091										.5		12	25	65	<1	1	200		8	<10	15	4025	GREY CLAY, A+B HORIZON

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887135

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML'S SOM175-64M175 No. Sample numbers 877092 — 877108 Collected by M.W Sheet no. 43

Area / Prospect TENTH LEGION Date 7-1-21

Map / Photo reference TASK3 - TASK10 ; TASK20 Analysed by AMDEL DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	sample type ****	DEPTH(M)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
									POWER AUGER			Metal content ppm or %										LINE 5780E	
877092	S									1.2		24	35	95	<1	1	310		<4	<10	30	4000	YELLOW GRITTY CLAY + GREEN ROCK
877093	S									1.2		12	30	70	1	1	170		<4	15	15	3975	GREEN + ORANGE CLAY.
877094	S									1.2		14	30	50	1.	<1	110		3	<10	10	3950	YELLOW GREEN CLAY
877095	S									1.2		10	35	90	<1	<1	140		<4	<10	45	3925	GRITTY, GREEN, SILTY CLAY.
877096	S									1.2		24	20	95	<1.	<1	130		18	<10	30	3900	GRITTY ORANGE - YELLOW CLAY.
877097	S									1.2		12	25	90	<1	<1	400		6	<10	50	3875	GRITTY GREEN CLAY
877098	S									1.2		40	25	380	1	<1	640		12	15	95	3850	DARK GREEN CLAY
																			1			LINE 5880E	
877099	S									.65		14	40	480	1	<1	700		4	<10	20	4250	GRAY GRITTY SOIL WITH BROWN
																							WEATHERED FRAGMENTS.
877100	S									1.2		6	25	250	3.	<1	290		6	10	65	4225	GREENISH GRITTY CLAY
877101	S									1		30	45	120	1	<1	260		<4	<10	35	4200	ORANGE CLAY WITH COLOURED FRAGM
877102										1.2		60	140	95	2.	1	3600		4	15	160	4175	ORANGE BROWN CLAY, SMALL
																							FRAGMENTS POSSIBLE CALC SILICATES
877103	S									1.1		90	55	90	<1	1	210		<4	<10	30	4150	ORANGE BROWN CLAY WITH SMALL
																							FRAGMENTS, GRITTY.
877104	S									1		40	45	160	2.	1	4300		<4	10	85	4125	BROWN CLAY WITH MANY
																							FRAGMENTS. CALC SILICATES
877105	S									1.2		25	45	110	4	<1	180		<4	<10	40	4100	ORANGE, YELLOW CLAY WITH
																							CALC SILICATE FRAGMENTS
877106	S									1.2		12	40	200	3.	<1	5100		<4	<10	140	4075	LIGHT BROWN GRITTY CLAY
877107	S									1.2		20	140	240	2.	<1	350		4	<10	45	4050	LIGHT BROWN GRITTY CLAY
877108	S									1.2		18	35	160	3.	<1	670		8	<10	40	4025	BROWN SANDY CLAY

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

88/136

136

C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/7S - 54M/7S No. ..... Sample numbers 877109 - 877126 Collected by M.W Sheet no. 44

Area / Prospect TENTH LEGION Date 7-1-87

Map / Photo reference TASh3 - TASh10; TASh20 Analysed by AMDEL DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	Power Auger sample type ****	Depth(m)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
												Metal content ppm or %										LINE 5980E	
877109	S									1·2		20	50	260	1	1	290		8	<10	55	4000	SANDY, GRAY CLAY
877110	S									1·2		18	55	260	3.	<1	250		22	15	30	3975	LIGHT GREEN SANDY CLAY
877111	S									1·2		22	45	210	3.	<1	900		55	1050	25	3950	ORANGE CLAY WITH WHITE CLAY CLASTS, CALC SILICATE.
877112	S									1·2		140	350	730	<1.	3	2500		95	150	70	3925	REDDISH BROWN CLAY WITH GREEN CALC SILICATES.
877113	S									1·2		170	50	200	<1.	1	560		12	10	25	3900	ORANGE CLAY WITH CALC SILICATES
877114	S									1·2		30	50	170	<1.	<1	560		20	<10	35	3875	LIGHT ORANGE CLAY WITH BROWN WEATHERED FRAGMENTS
877115	S									1·2		32	110	46	1.	1	380		14	15	25	3850	BROWN & GRAY CLAYS, GRITTY
																						LINE 5980E	
877116	S									1·2		8	85	110	<1.	<1	210		<4	<10	25	4250	ORANGE CLAY
877117	S									1·2		20	45	120	2.	1	510		<4	15	40	4225	ORANGE CLAY
877118	S									1·2		12	50	95	1	1	250		6	<10	25	4200	ORANGE CLAY
877119	S									1·2		22	40	100	3	1	2700		4	<10	55	4175	REDDISH BROWN CLAY
877120	S									1·2		18	35	90	1	2	550		6	<10	20	4150	ORANGE & GREEN CLAY
877121	S									1·2		26	35	130	3.	1	350		8	<10	20	4125	ORANGE CLAY WITH ROCK FRAGMENTS
877122	O.C																					4100	OUTCROP SAMPLE TAKEN
877123	S									1·2		30	25	100	2.	1	190		4	<10	20	9075	ORANGE YELLOW CLAY
877124	S									1·2		18	25	250	<1.	1	320		<4	<10	30	34050	ORANGE GRITTY CLAY
877125	S									1·2		14	30	410	1.	<1	340		<4	<10	75	34025	ORANGE GRITTY CLAY
877126	O.C																					34000	OUTCROP SAMPLE - GREEN ROCK WITH WHITE XENOLITH

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887137

C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. Sample numbers 877127 - 877140 Collected by M.V Sheet no. 45

Area / Prospect TENTH LEGION Date 7-1-81

Map / Photo reference TASH3 - TASH10 ; TASH20 Analysed by AMDEL DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Rowler s Auger e **** DEPTH(M)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
																				LINE 5980E	
877127	S							1·2		16	10	170	1	<1	330		4	<10	35	3975	ORANGE & GREEN CLAY
877128	S							1·2		16	35	420	<1	<1	280		<4	<10	45	3950	GREY-GREEN CLAY
877129	S							1·2		30	30	310	<1	1	270		10	<10	25	3925	ORANGE-GREEN CLAY WITH CLASTS OF WHITE CLAY
877130	S							1·2		314	25	400	2.	<1	7.20%		4	<10	470	3900	DARK BROWN SILTY MATERIAL
877131	S							1·2		30	20	190	1.	1	150		28	20	55	3875	GREENISH CLAY; OUTCROP SAMPLE TAKEN
877132	S							1·2		36	20	90	1.	14	110		36	45	55	3850	GREENISH GREY CLAY
																				LINE 6080E	
877133	S							·7		34	35	150	<1	2	420		<4	<10	20	4250	LIGHT BROWN MATERIAL WITH GREEN ROCK FRAGMENTS
877134	S							·45		16	30	90	2.	2	350		6	<10	15	4225	GREY BROWN CLAY
877135	S							·8		18	35	140	1	2	380		<4	<10	25	4300	GRITTY MATERIAL WITH GREEN ROCK FRAGMENTS
877136	S							1·2		22	35	110	<1	1	4300		<4	<10	70	4175	BROWN CLAY WITH GREEN ROCK FRAGMENTS
877137	S							1·2		214	25	80	1.	1	330		<4	15	40	4150	TAN CLAY WITH SMALL GREEN ROCK FRAGMENTS
877138	S							1		28	30	130	<1	<1	380		4	<10	20	4125	DARK BROWN MATERIAL WITH GRAVEL
877139	S							1		38	25	110	<1	<1	890		<4	<10	50	4100	ORANGE BROWN CLAY WITH GREEN ROCK FRAGMENTS
877140	S							1		80	25	110	<1.	1	5700		4	<10	140	4075	LIGHT BROWN CLAY WITH WEATHERED BROWN FRAGMENTS

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

877138

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C.R.A. [redacted] PLORATION . GEOCHEMICAL SAMPLE [redacted] DGER

Tenement name ML's 50M/75 - 54M/75 No. ..... Sample numbers 877141 - 877161 Collected by M.W Sheet no. 46

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TASK 3 - TASK 10 ; TASK 20 Analysed by AMDEL DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	**** sample type	DEPTH (M)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
												Metal content ppm or %										LINE 6080E	
877141	S						1·2		POWER AUGER			12	60	110	<1	<1	360		6	10	30	4050	LIGHT GREEN SANDY MATERIAL
877142	S						1					10	65	90	<1	1	410		6	<10	10	4025	CREEK SAND
877143	S						1·2					32	25	100	1	4	300		<4	<10	20	4000	LIGHT ORANGE CLAY
877144	S						1·2					60	20	55	<1	1	95		4	<10	15	3975	LIGHT BROWN CLAY
877145	S						1·2					60	25	130	<1	<1	770		4	10	100	3950	LIGHT BROWN CLAY
877146	S						1·2					46	35	180	5	<1	3400		<4	<10	80	3925	GRITTY ORANGE CLAY
877147	S						1·2					100	35	55	<1	1	140		18	10	20	3900	ORANGE CLAY
877148	S						·8					110	145	200	<1	1	7600		22	<10	100	3875	GRITTY, DARK BROWN CLAY
877149	S						1·2					100	30	130	1	<1	560		8	<10	95	3850	ORANGE CLAY
																						LINE 5000E	
877150	S						1·4					18	10	1300	1	1	540		12	10	25	3575	GREY SAND
877151	S						1·5					50	130	8300	<1	1	5100		55	50	35	3600	GREEN SANDY CLAY
877152	S						1·6					130	90	1·2%	<1	4	1100		32	35	15	3625	GREEN & ORANGE SANDY CLAY
877153	S						1·6					85	60	1·0%	2	2	1100		130	100	5	3650	GREEN AND WHITE SANDS
877154	S						1·6					55	30	390	1	4	340		80	20	5	3675	BROWN MUD WITH QUARTZ SAND
877155	S						1·6					200	200	410	4	5	430		660	70	10	3700	BROWN MUD WITH MAGNETITE
877156	S						1·6					300	80	640	<1	11	1800		90	190	10	3725	BROWN CLAY
877157	S						1·6					120	75	600	<1	12	1000		38	85	10	3750	YELLOW AND RED CLAY WITH MAGNETITE
877158	S						1·6					90	30	260	1	5	420		42	30	10	3775	DARK BROWN SANDY CLAY
877159	S						1·6					420	210	4100	<1	1	9900		10	20	100	3800	GREEN SANDY CLAY
877160	S						1·6					160	25	520	<1	3	3800		16	40	20	3825	LIGHT BROWN SANDY CLAY
877161	S						1·6					590	110	970	2	4	3400		10	45	70	3850	

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887139

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LODGER

Tenement name ML's SOMITS - SUNITS No. [redacted] Sample numbers 877162 - 877181 Collected by MW Sheet no. 47

Area / Prospect TENTH LEGION Date 8-1-87

Map / Photo reference TASK3 - TASK10 & TASK20 Analysed by AMDEL DPO no. 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Power Auger sample type **** DEPTH(M)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref LINE 5200E=	Geological Observations
877162	S						1·6			140	20	190	3	1	260		8	15	5	3850	GREY CLAY WITH WHITE ROCK FRAGMENTS
																					POSSIBLE CALC SILICATES
877163	S						1·6			150	60	240	2	8	310		30	60	15	3825	RED SANDY CLAY
877164	S						1·2			260	45	510	2	3	1,150		22	80	35	3800	ORANGE CLAY
877165	S						1·2			85	30	110	2	2	900		22	170	20	3775	ORANGE AND RED CLAY
877166	S						1·1			1800	270	430	4	16	3000		14	1950	150	3750	ORANGE CLAY
877167	S						1·2			650	100	920	1	1	8600		48	75	170	3725	CHOCOLATE CLAY WITH MAGNETITE
877168	S						·75			230	110	290	2	7	1·4%		44	90	160	3700	CHOCOLATE CLAY WITH MAGNETITE
877169	S						·75			95	45	200	<1	5	4900		28	50	90	3675	LIGHT BROWN CLAY WITH MAGNETITE
877170	S						—			60	20	210	2	1	1·6%		14	<10	100	3650	B HORIZON SAMPLE
877171	S						1·2			75	15	160	3	1	4500		26	35	35	3625	YELLOW CLAY WITH WHITE SILTY
																					FRAGMENTS
877172	S						1·2			100	35	210	2	1	830		40	<10	65	3600	REDDISH CLAY WITH MAGNETITE
877173	S						1·2			90	30	200	2	2	2300		30	15	60	3575	RED CLAY WITH MAGNETITE
877174	S						·8			50	10	160	2	3	550		18	<10	15	3550	RED CLAY WITH MAGNETITE
877175	S						1·2			14	15	490	<1	2	5700		<4	10	100	3525	YELLOW CLAY
877176	—						—													3500	NO SAMPLE
877177	S						1·2			14	30	170	<1	<1	130		14	<10	5	3475	YELLOW ORANGE CLAY
877178	S						1·2			18	15	55	2	1	75		<4	10	<5	3450	YELLOW CLAY WITH GREEN ROCK
																					FRAGMENTS
877179	S						1·2			8	20	60	<1	<1	65		6	10	<5	3425	ORANGE CLAY WITH ROCK FRAGMENTS
877180	OC						—													3400	
877181	S						·5			6	15	55	1	1	180		8	<10	5	3375	LIGHT BROWN CLAY

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887140

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C.R.A. [redacted] PLORATION . GEOCHEMICAL SAMPLE [redacted] GER

Tenement name ML'S 50M/75 - 54M/75 No. Sample numbers 877182 — 877198 Collected by M.W Sheet no. 48

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TA5K3 - TA5K10 ; TA5K20 Analysed by AMDEL DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	**** sample type DEPTH (M)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref LINE 5200 E	Geological Observations
877182	S								POWER AUGER ·45		8	25	95	1	1	220		14	<10	5	3350	YELLOW CLAY WITH GREEN ROCK FRAGMENTS
877183	S								·7		26	85	80	<1	1	140		60	60	5	3325	ORANGE CLAY WITH GREEN ROCK FRAGMENTS
877184	S								—		8	40	130	1	2	260		16	10	10	3300	B-HORIZON SAMPLE
877185	S								·3		6	15	40	1	1	150		65	<10	5	3275	B-HORIZON SAMPLE, GREEN ROCK WITH TOURMALINE
877186	OC								—		40	16	30	<1	Ni 95	Cr 90		10	<10	16	3250	ROCK CHIP
877187	S								·4		12	10	28	<1	2	90		<4	<10	5	3225	B-HORIZON SAMPLE
877188	S								1		12	10	75	<1	2	230		8	10	20	3200	GREEN CLAY
877189	S								1·2		26	25	55	<1	2	40		10	30	5	3175	ORANGE CLAY
877190	S								—		14	25	30	<1	1	100		18	<10	5	3150	B-HORIZON SAMPLE
877191	S								·4		12	20	34	2	3	110		26	<10	5	3125	BROWN CLAY
877192	S								—		12	15	32	<1	2	120		26	10	5	3105	B-HORIZON SAMPLE
877193	S								·7		18	15	180	<1	2	1800		30	25	10	5000 E 3550	BROWN SAND TAKEN AT CREEK
877194	OC								—		30	8	22	<1	Ni 55	Cr 38	8	<10		12	3525	OUTCROP: METASEDIMENTS WITH EPIDOTE AND MINERALISATION
877195	O.C								—		30	12	40	<1	Ni 20	Cr 20	36	15		12	3500	OUTCROP: METASEDIMENTS WITH EPIDOTE AND MINERALISATION
877196	S								·6		8	15	34	<1	1	640		18	10	5	3475	LIGHT BROWN CLAY WITH BROWN SILTS
877197	S								—		12	20	14	2	2	230		8	<10	<5	3450	B-HORIZON SAMPLE
877198	S								—		38	5	44	<1	1	360		16	<10	<5	3425	CREEK SAND & OUTCROP SAMPLE TAKEN

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

877141

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 504/75 - 544/75 No. Sample numbers 877199 - 877214 Collected by M.W Sheet no. 49

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TASL3 - TASH10 ; TASH20 Analysed by AMDEL DPO no. 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	**** sample type DEPTH(M)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
									Metal content ppm or %												LINE 5000E	
877199	S						.6	POWER AUGER			6	15	120	<1	3	4700		18	25	10	3400	BROWN SANDY CLAY WITH MANY MAGNETITE ROCK FRAGMENTS POSSIBLY CONTAINED
877200	S						1.2				12	5	22	<1	2	180		42	<10	<5	3375	GRANATIC, COARSE CREEK SAND
877201	S						1.2				8	10	16	1	2	160		34	<10	<5	3350	BROWN, SANDY SOIL WITH ROCK FRAGMENTS
877202	S						.9				10	10	18	3	2	120		18	15	<5	3325	BROWN SANDY SOIL
877203	S						1.2				10	5	60	1	<1	110		20	10	5	3300	BROWN SANDY SOIL
877204	S						1.2				16	65	120	2.	2	120		32	25	<5	3275	BROWN SANDY SOIL
877205	S						1.2				12	20	65	2.	1	130		22	15	<5	3250	BROWN SANDY SOIL
877206	S						1.2				48	30	170	<1	<1	1000		100	20	75	3225	GREEN SILTY CLAY
877207	S						1.2				14	10	36	<1	1	130		18	20	<5	3200	BROWN SANDY SOIL
877208	S						1				10	10	65	1	1	330		8	90	30	3175	GREEN CLAY - OUTCROP
877209	S						1.2				12	20	65	<1	<1	170		14	10	25	3150	GREEN CLAY - OUTCROP
877210	S						1.2				4	30	90	<1	<1	130		4	10	20	3100	GREEN CLAY - OUTCROP
877211	S						.4				2	5	214	<1.	<1	140		42	10	10	3105	B-HORIZON, ALSO OUTCROP SAMPLE TAKEN
																					5100E	
877212	S						1				95	50	70	1	<1	1.70%		34	25	220	3050	CLAY - DARK BROWN WITH MAGNETITE
877213	S						1.2				150	95	75	<1	1	3400		24	170	70	3025	ORANGE RED CLAY WITH MAGNETITE
877214	S						1.2				95	25	90	<1	<1	2800		16	20	30	3000	DARK BROWN CLAY WITH MAGNETITE

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

88142

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. Sample numbers 877215 - 877229 Collected by M.W Sheet no. 50

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TASK 3 - TASK 10 ; TASK 20 Analysed by AMDEL DPO no. 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref LINE 5400E	Geological Observations
		o/c sample type ***																		
		POWER AUGER sample type ****					DEPTH (M)													
877215	S						1·3		44	25	60	<1	3	780		20	45	10	3775N	RED CLAY WITH MAGNETITE
877216	S						1·5		38	30	130	<1	3	2900		42	200	15	3750N	ORANGE CLAY
877217	S						1·5		36	90	150	<1	1	1.0%		44	65	90	3725N	Dark brown soil
877218	S						1·5		14	25	95	<1	1	90		12	20	15	3700N	Orange clay
877219	S						1·4		6	25	75	<1	1 Ni	470 Cr		6	<10	20	3675N	Light green clay
877220	OC								10	16	50	<1	85	65		14	10	16	3650N	Outcrop of gabbro (green rock) with tourmaline - chip taken
877221	S						1·4		10	25	75	<1	2	270		<4	<10	15	3625N	B-horizon sample. - outcrop of gabbro (green).
877222	S						1·4		12	25	80	1	<1	130		6	<10	10	3600N	Orange clay - also outcrop of gabbro
877223	S						1·5		26	30	75	<1	1	60		30	10	5	3575N	Orange clay with coarse sand.
877224	S						1·5		14	20	75	1	1	50		18	<10	5	3550N	Orange clay
877225	S						1·2		95	30	220	4	1	500		14	15	35	3525N	Orange clay
877226	S						1·5		14	20	310	1	1	90		<4	<10	20	3500N	Light green clay
877227	S						1·5		20	20	170	1	2	70		<4	<10	15	3475N	Orange clay with green rock fragments (gabbro).
877228	S								8	15	55	3	1	140		<4	10	15	3450N	B-horizon sample, also outcrop of gabbro.
877229	S						1·6		28	45	250	<1	1	300		6	10	35	3425N	Light green + yellow clay.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887143

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75-54M/75 No. ..... Sample numbers 877230 - 877244 Collected by M.W. Sheet no. 51

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TASK3 - TASK10 ; TASK20 Analysed by ..... DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Power Auger s sample type **** Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 5440E	Geological Observations
877230	S						1·6			36	90	430	<1	<1	1000		10	10	40	3400N	Light Yellow clay
877231	S						1·6			65	45	250	<1	1	330		34	15	25	3375N	Blue-green clay beneath brown mud with rock fragments at surface
877232	S						1·6			140	150	170	1	1	110		50	10	30	3350N	Green clay with gabbro fragments
877233	S						1·6			36	30	100	2.	<1	60		20	10	100	3325N	Yellow clay
877234	S						1·6			22	20	140	<1	1	200		14	10	15	3300N	Yellow + green clay
877235	S						1·6			20	30	130	<1	1	160		14	<10	25	3275N	Orange clay
877236	S						1·6			18	25	140	1.	1	120		4	10	20	3250N	Light yellow clay
877237	S						1·6			34	30	170	2.	<1	190		6	<10	50	3225N	Green clay
877238	S						1·6			22	15	340	1.	1	220		<4	<10	120	3200N	Dark green clay with quartz
877239	S						1·6			32	70	120	3.	1	260		55	<10	25	3175N	Light green clay with green weathered fragments (gabbro?)
877240	S						1·6			30	160	370	3.	2	290		12	<10	25	3150N	Dark mud.
877241	S						1·6			90	120	230	2.	1	290		10	20	70	3125N	Light greenish clay with sand
877242	S						1·6			65	160	260	3.	2	5300		16	<10	170	3105N	Dark greenish mud.
																				Line 4800E	
877243	S						1·0			38	25	90	2.	2	260		80	40	25	3850N	Yellow clay.
877244	S						1·4			30	15	414	1.	2	95		50	15	10	3825N	Light brown clay with white weathered fragments.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887144

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. Sample numbers 877245-877256 Collected by M.W. Sheet no. 52

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TAS13-TAS10; TAS20 Analysed by DPO no 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type **** (Power Auger)	Depth (m)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 4900E	Geological Observations
877245	S						0.8					10	10	6	2.	2	260		65	40	5	3800N	Brown clay with white silty fragments.
877246	S						1.5					114	10	46	2.	4	390		90	35	5	3775N	Orange + brown gritty clays.
877247	S						1.1					110	25	80	2.	2	100		110	25	5	3750N	Orange clays with white fragments
877248	S						1.1					26	30	142	<1	8	60		55	25	10	3725N	Orange silty clay with white fragments.
877249	S						1.5					24	10	22	1	7	200		380	30	10	3700N	Light yellow clay with white fragments
877250	S						1.0					314	5	8	<1	13	490		60	20	5	3675N	Light brown clay with white fragments.
877251	S						1.4					80	10	18	<1	8	180		38	15	5	3650N	Light yellow clay.
877252	S						1.5					120	20	140	<1	8	160		80	35	15	3625N	Light brown clay with fragments
877253	S						1.1					90	15	50	2.	8	240		38	10	10	3600N	Light brown clay with white fragments
877254	S						—					16	10	14	<1	2	110		12	<10	5	3575N	Creek sands - A-horizon sample.
877255	S						—					280	30	450	1	4	3500		120	30	25	3550N	A horizon material - magnetite
877256	S						1.1					230	15	570	<1	3	3600		150	45	40	3525N	Dark brown clays with magnetite + white rock with much white mica - Sample

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

877145

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name ML's 50M/75 - 54M/75 No. Sample numbers 877257-877268 Collected by M.W. Sheet no. 4 53

Area / Prospect TENTH LEGION Date 8-1-91

Map / Photo reference TA5L3 - TA5L10 ; TA5L20 Analysed by DPO no. 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	CO	Grid ref	Geological Observations
		o/c sample type ***																		
		Dower Auger s sample type ****					Depth(m)												Line 4500E	
877257	S						-		80	10	540	<1	4	4500		230	15	30	3500N	'B'-horizon? sample with large plates of a greenish mica - lepidolite?
877258	S						-		90	35	590	<1	2	8100		240	25	65	3475N	'B'-horizon? sample with plates of greenish mica
877259	S						1.1		80	15	590	<1	3	1100		300	15	25	3450N	A+B-horizon - brown clay with magnetite.
877260	S						0.75		148	30	670	1	2	2500		95	10	20	3425N	Brown + black clays with much muscovite.
877261	S						0.65		18	35	240	<1	2	1700		75	15	15	3400N	White silts + sands with white
877262	S						-		14	20	90	1	3	1400		44	<10	10	3375N	'B'-horizon material?
877263	S						-		14	20	110	2.	4	680		40	<10	10	3350N	'B'-horizon material? fine grey fragments.
877264	S						-		90	35	230	1	3	1460		580	55	10	3325N	'B' horizon material?
877265	S						-		38	20	260	<1	6	910		280	30	10	3300N	'B' horizon material? with metamorphosed silty sediment fragments
877266	S						0.7		130	15	290	<1	10	1800		460	45	25	3275N	Dark brown creek sands and gravels
877267	S						1.5		55	15	390	<1	3	680		110	10	30	3250N	Grey clays with fragments
877268	S						-		22	10	370	1	3	420		70	20	20	3225N	'B'-horizon material? with white mica

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887146

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50M/75 - 54M/75 No. ..... Sample numbers 877269-877284 Collected by M.W. Sheet no. 54

Area / Prospect TENTH LEGION Date 9-1-81

Map / Photo reference TASK3 - TASK10 ; TASK20 Analysed by ..... DPO no. 26656/

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Power Auger s sample type **** Depth (cm)	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
877269	S						0.4			42	20	290	<1	3	910		95	35	40	3200N	'B' - horizon ? - yellow + brown clays.
877270	S						1.5			100	20	210	1	<1	750		160	80	90	3175N	Green sandy clays
877271	S						1.3			100	25	350	<1	<1	490		90	20	45	3150N	Bright red and orange sandy clays.
877272	S						1.3			100	30	210	1	1	330		140	20	30	3125N	Orange clays with yellow weathered fragments.
877273	S						1.3			75	15	55	<1	<1	55		24	10	10	3105N	Brown clays with white fragments.
																				Line 4720E	
877274	S						0.6			18	15	20	1	<1	80		10	<10	10	3105N	Red clay
877275	S						1.5			190	10	32	<1	<1	210		10	10	20	3125N	Orange clay
877276	S						1.4			100	10	20	<1	2	60		4	<10	15	3150N	Green-brown clay
877277	S						1.5			55	15	250	3.	3	990		36	30	30	3175N	Brown-green clay
877278	S						-			50	25	100	6.	1	2300		65	<10	20	3200N	'B' - horizon sample (separate) - outcrop - sample taken.
877279	S						0.75			8	5	16	1	3	95		18	<10	10	3225N	'B' - material - red soil with fragments.
877280	S						0.75			8	5	24	1	3	150		40	<10	10	3250N	Light brown clay
877281	S						1.6			38	15	70	2	6	370		75	15	45	3275N	Grey gritty clay
877282	S						1.6			730	20	1300	2.	2	2300		210	25	65	3300N	Green micaceous silty clay
877283	S						1.1			120	25	150	<1	6	2200		110	20	30	3325N	Orange clay
877284	S						1.2			180	55	990	<1	25	600		160	30	70	3350N	Grey + Brown clays.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887147

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name MLs 50M/75 - 54M/75 No. Sample numbers 877285 - 877299 Collected by M.W. Sheet no. 55
Area / Prospect TENTH LEGION Date 8-1-81
Map / Photo reference TASh 3 - TASh 10; TASh 20 Analysed by DPO no 26656/
A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm or % Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 47206	Geological Observations
		o/c sample type ***																		
		Power Auger s sample type ****					Depth (cm)													
877286	S						-		24	10	150	1	5	530		55	<10	20	3400N	B-horizon material? - grey clays with fragments.
877287	S						1.5		22	65	380	<1	2	4200		210	15	15	3425N	Greenish clays with fragment
877288	S						1.0		16	25	240	<1	2	2000		80	10	10	3450N	Grey clays with white R.f's
877289	S						-		8	10	30	<1	1	190		55	20	5	3475N	'B'-horizon material? - grey clay.
877290	S						1.4		24	10	55	1	4	210		55	10	15	3500N	Brown gritty clays.
877291	S						1.0		10	15	16	<1	3	170		95	10	5	3525N	Grey clay with fragments.
877292	S						0.8		55	20	100	1	2	1.40%		240	<10	150	3550N	Grey + brown gritty clays.
877293	S						0.75		26	20	110	3	.5	3300		75	20	50	3575N	light brown gritty clays.
877294	oc						-		18	4	8	<1	Ni 12	Cr 24		30	20	4	3600N	Rock outcrop - meta-sediments - chip sample at random.
877295	S						-		12	10	32	<1	6	380		85	15	15	3625N	'B'-horizon sample?
877296	S						-		14	10	75	1	10	690		210	30	10	3650N	'B'-horizon sample?
877297	S						-		10	10	28	<1	4	990		310	85	5	3675N	'B'-horizon sample?
877298	S						0.8		4	5	16	<1	6	150		720	25	5	3700N	Grey clays with quartz fragments
877299	S						-		26	10	26	1	7	640		1200	20	7	3725	B-horizon sample? with quartz + tourmaline?

* Sample type ss = stream sediment oc = outcrop f = float s = soil
** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2
*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)
**** Soil sample type auger hole or pit depth m A, B or C horizon

887118

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name MLs 50M/75-54M/75 No. [redacted] Sample numbers 877300 - 319 Collected by M.W Sheet no. 56

Area / Prospect TENTH LEGION Date 8-1-81

Map / Photo reference TASH3 - TASH10 ; TASH20 Analysed by AMDEL / COMLABS DPO no. 26656 / 26665 / 26666

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type *** Power Auger s sample type **** Depth (m)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref Line 4720E	Geological Observations
877300	S						-			190	20	210	<1	7	7900		1050	20	35	3750N	'B'-horizon material?
																					-brown soil.
877301	S						-			80	25	310	2	4	2900		260	15	30	3775N	'B'-horizon sample?
																					-brown clay
877302	S						-			26	25	190	<1	3	5500		150	25	30	3800N	'B'-horizon material
																					-brown clay
877303	S						1.0			12	10	130	<1	1	820		40	8	20	3825N	Brown clay
877304	S									14	10	110	<1	1	3300		35	6	15	3850N	
877305	S	Auger	B-C				0.3m			44	28	500	<1				32	30		4890E 3850N	Pale brown silty loam with qtz.
306	f	g.s.								60	48	410	<1				190	40		4880E 3850N	Pebbles & magnetite and limonite from auger hole.
307	S	Auger	B-C.				0.5m			195	42	230	<1				44	20		4880E 3775N	Yellow sandy clay.
308	S	"	B-C				1.2m			250	55	690	<1				600	30		4880E 3750N	Black manganiferous capping over yellow clay.
309	S	"	B-C				0.7m			70	30	330	<1				170	55		4880E 3725N	Orange brown clay rich sandy alluvial soil.
310	S	"	B-C				1.0m			10	10	200	<1				65	60		4880E 3700N	Pale grey and white sticky clay with qtz.
311	S	"	B-C				0.8m			230	14	1150	<1				65	10		4880E 3650N	Dark reddy-brown loam with mag. rubbles.
312	S	"	C				1.0m			14	65	940	<1				140	20		4880E 3525N	Soft orange-yellow clay beneath mag rubble.
313	S	"	B-C				0.3m			14	40	320	<1				46	20		4880E 3400N	Powdery yellow loam - qtzite?
314	S	"	B-C				0.2m			4	46	280	<1				140	30		4880E 3325N	Brown sandy loam - qtzites?
315	S	"	B-C				0.3			10	60	440	<1				32	15		4880E 3300N	Pale brown sandy loam.
316	S	"	"				0.6m			18	12	220	<1				32	<10		4880E 3250N	Brown sandy loam with mag. scree.
317	S	"	"				1.0m			75	55	310	<1				100	30		4880E 3225N	Yellow gravelly clay - alluvium?
318	S	"	"				0.7			260	140	1150	<1				100	35		4880E 3200N	Yellow sticky clay.
319	S	"	"				1.0m			70	50	240	<1				180	70		4880E 3150N	Speckled yellow and white clay-gabbro?

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887149

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LOGGER

Tenement name ML's 50 M/75 – 54 M/75 No. Sample numbers 877320 – 342 Collected by G.B. Sheet no. 57

Area / Prospect TENTH LEGION Date 23.7.81

Map / Photo reference TASH 3 – TASH 10 ; TASH 20 Analysed by COMLABS. DPO no 26665 / 26666

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type **** Depth(m)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Grid ref	Geological Observations
											Metal content ppm or %										
877320	S	Auger		'C'			1·1 m				14	24	440	<1				16	<10	4880E 3125N	Green speckled clay - gabbro.
321	S	"		'C'			0·5m				6	8	50	<1				36	10	4726E 3405N	Brownish sandy loam. - quartzite?
322	S	"		'C'			0·5m				8	20	175	<1				65	35	4752E 3403N	Sandy loam with qtz frags, minor mica.
323	S	"		C			0·7m				16	32	650	<1				170	15	4802E 3405N	Pale brown silty micaceous loam.
324	S	"		"			0·8m				10	28	680	<1				28	<10	4827E 3405N	Sticky micaceous white clay, sandy.
325	S	"		"			1·1m				320	95	940	<1				46	100	4852E 3405N	Yellow sticky clay, weakly micaceous
326	S	"		"			0·4m				18	42	500	<1				44	<10	4918E 3406N	Yellow sandy loam.
327	S	"		"			0·5				14	8	12	<1				30	25	4861E 3710N	Pale brown sandy loam with qtz frags.
328	S	"		"			0·6				240	16	140	<1				<4	15	4938E 3715N	Bright orange sandy loam with mag frags.
329	S	"		"			0·5				135	22	210	<1				42	20	4958E 3718N	Sandy loam with mag pebbles.
330	S	"		"			05				95	38	230	<1				34	50	4982E 3723N	Magnetite rubble and laterite capping
331	S	"		"			1·7				32	50	280	<1				28	25	5005E 3726N	Grey swamp soil with sand and some white mica
332	S	"		"			1·7				16	32	85	<1				30	10	5023E 3730N	Grey sticky clay - swamp soil.
333	S	"		"			1·3				10	48	185	<1				14	10	5049E 3732N	White and grey shale and qtz rubble.
334	S	"		"			1·2				24	42	670	<1				18	10	5067E 3735N	White qtz rich clay and mag. rubble.
335	S	"		"			1·1				260	14	420	<1				36	65	5100E 3738N	Orange and yellow slightly sandy clay.
336	S	"		B-C			1·0				210	130	185	<1				65	100	5122E 3745N	Dark brown powdery Mn rich loam beneath gravel
337	S	"		C			1·3				430	270	240	<1				60	85	5150E 3750N	" " " " " " with yellow rock chips
338	S	"		"			1·2				130	135	44	<1				38	55	5196E 3760N	Dark reddy-brown loam with small white rock frags.
339	S	"		"			1·0				250	110	210	<1				34	140	5249E 3772N	Yellow weathered rock frags with black Mn oxides.
340	S	"		B-C			0·8				155	165	175	<1				10	120	5269E 3780N	Dark brown sandy loam - capping.
341	S	"		C			1·0				185	250	85	<1				24	130	5294E 3785N	Yellow weathered rock frags with Mn oxides.
342	S	"		B-C			0·8				470	195	3000	<1				<4	130	5318E 3788N	Brown sandy loam with magnetite frags - poss o/c?

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887150

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name TENTH LEGION No. Sample numbers 877343-355; 877581, 932333-340 Collected by C.B Sheet no. 58

Area / Prospect MLs 50 m/75 - 54 m/75 Date 23.7.81

Map / Photo reference TASK3-TASK10; TASK20 Analysed by ANALABS / COMLABS DPO no 26665, 26666, 26668, 30110

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	o/c sample type ***	s sample type ***	Depth (m)	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
877343	S	Hand Auger			'B'					0.7		450	100	1050	<1				<4	90		5342E 3794N	Magnetite rubble - impenetrable scree.
344	S	"			B-C					0.8		195	115	125	<1				12	40		5390E 3805N	Brown and Dark brown → black Mn rich material
345	S	"			B-C					0.6		140	46	220	<1				10	<10		5418E 3812N	Brown and reddish-black magnetite rubble.
346	S	"			B-C					0.8		95	60	80	<1				22	20		5441E 3815N	Brown clay and brown → black Mn oxides.
348	S	"			"					0.6		210	50	250	<1				30	120		5380E 3850N	Reddish brown speckled stiff clay.
349	S	"			B					0.5		120	50	220	<1				8	55		5335E 3825N	Pebbles of magnetite
350	S	"			A					0.3		360	60	510	<1				<4	75		5346E 3775N	Grab sample of magnetite scree.
351	S	"			A-B					0.4		125	30	250	<1				10	95		5351E 3752N	" " " " "
352	S	"			B					0.7		48	12	175	<1				<4	20		5357E 3728N	Magnetite and laterite rubble.
353	S	"			B-C					0.7		30	30	1150	<1				<4	15		5363E 3704N	Yellow and orange speckled clay - gabbro?
354	S	"			C					0.8		12	44	700	<1				<4	<10		5368E 3679N	Green, yellow and white speckled clay - gabbro
877355	S				C					1.5m		20	32	390	<1				20	<10		5374E 3655N	Speckled white and orange clay - gabbro.
877581	f	g.s.										450	25	295	0.5				15	<10		5180E 3712N	Black f.gr rock with bands of ?tourmaline (actinolite?)
										Distance from mouth													
932333	oc	Chip samples from								30m		1000	1750	1450	x	2.0	2.4%				95		Yellow and red sticky clay - calc silicate?
334	"	adit at 5120E 4462N								30m		500	130	695	0.1	0.5	6150				145		Black clay rich friable magnetite
335	"	heading to 2°								30		890	30	550	0.2	0.5	3150				45		Massive crystalline magnetite boulder.
336	"									25		270	65	195	0.1	0.5	4600				70		Black friable magnetite
337	"									24m		920	155	650	x	1.0	4.3%				415		Black Mn rich clay with magnetite
338	"									18m		405	15	160	0.1	0.5	4750				60		Black friable loose textured magnetite
339	"									10m		180	25	1150	0.2	x	1.2%				230		Massive black crystalline magnetite
340	"									8m		120	70	250	x	x	7400				50		Pink and yellow clay with Mn oxides

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

88/151

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C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LEDGER

Tenement name MLS 50 M/75 - 54 M/75 No. [redacted] mple numbers 932341 - 362 Collecte[redacted]y G.B. Sheet no. 59

Area / Prospect TENTH LEGION Date 23.7.81

Map / Photo reference TAS13 - TAS110 ; TAS120 Analysed by ANALABS DPO no. 30110

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH; o/c sample type ***; s sample type ****	Carbon	Cu	Pb	Zn	Ag	Mo	Mn	Au	Sn	W	Co	Grid ref	Geological Observations
341	Sub oc	g.s.							25	55	70	0·2	x	535				10	4861E 3800N	Sticky grey and yellow clay with Mn oxides
342	"	g.s.							25	35	50	0·1	x	700				25	4865E 3798N	f.gr. biotite rich aplite dyke.
343	"	g.s.							385	1150	905	0·8	10·0	3·0%				65	4858E 3802N	Greasy pink and yellow clay with Mn oxides.
344	"	g.s.							145	140	1150	x	1·5	8·2%				310	4865E 3787N	Black Mn rich caprock and sticky clay.
345	oc	3 x 0·5 m r.c.							105	30	645	0·1	x	3·55%				140	4884E 3635N	Massive black magnetite oc.
346	Sub oc	14 x 0·5 m r.c.							270	30	1500	x	0·5	1·9%				110	4890E 3630N	Red and brown clay with magnetite boulders.
347	oc	2 x 0·3 m r.c.							1350	50	5100	x	2·0	8·75%				900	4896E 3624N	Massive black crystalline magnetite.
348	Sub oc	3·5 x 0·5 m r.c.							320	45	1950	0·3	1·0	1·4%				155	4900E 3620N	Red and brown clay with magnetite.
349	oc	1·5 x 0·3 m r.c.							825	30	7250	x	1·0	14·0%				310	4902E 3618N	Massive black magnetite.
350	Sub oc	4 x 0·5 m. r.c.							305	50	1300	0·2	0·5	6350				60	4904E 3616 N	Red and brown clay with magnetite.
351	oc	Adit near TH C3							180	105	3900	0·6	1·0	1·9%				125		
352	"	- trends 190°, mouth							445	50	1750	0·2	0·5	1·2%				90		
353	"	at approx 5120E							255	30	2250	0·7	1·0	1·45%				145		
354	"	3650N							235	30	2150	0·8	1·5	1·55%				140		friable weathered magnetite rich rock in
355	"	Samples 3 x 0·5 m chip							260	45	2050	0·5	1·0	1·45%				170		a matrix of green and grey clay.
356	"	samples of weathered mag body in last 24m							1900	110	2900	0·6	12·5	2·1%				335		
357	"	of drive. (50m long)							230	35	690	0·2	0·5	5000				160		
358	"								920	35	1·15%	0·2	1·0	1·8%				170		
359	Sub o/c	gossanous float from limonite							465	1400	1650	0·3	1·0	900				50		
360	Sub o/c	capping in access track near Silver Stream mine.							845	1950	930	0·1	1·0	800				45		
361	Sub oc	g.s.							560	40	5350	2·8	2·0	1·4%				50	5060E 4900N	Magnetite outcrop - sample taken from dump of trench
362	oc	g.s.							180	2650	900	1·9	1·5	4850				30	4920E 4950N	Pyritic calc silicate rock with trace galena.

* Sample type ss = stream sediment oc = outcrop f = float s = soil

** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2

*** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)

**** Soil sample type auger hole or pit depth m A, B or C horizon

887152

APPENDIX V

TENTH LEGION COMPOSITE SAMPLES FOR 70 ELEMENT EMISSION SPECTROSCOPY SCANS

LIST OF SAMPLES SUBMITTED

ROCK TYPE	HOLES	SAMPLE NO.
Magnetite Tin Bearing	1 & 9	932317
Magnetite Tin Barren Zinc Rich	2 & 9	318
Css	1 & 9	319
Cst	2 & 9	320
Csd	2	321
qs	2 & 9	322
Vein	9 & 2	323
Pyrrhotite-Zinc rich Css	3	324
Magnetite Zinc rich Css	3 & 8	325
Chloritic rocks rich Css	3,4, & 8	326
Limestone	3, 8	327
Sediments	3, 4	328
Css Tin Bearing	5	329
Css with Chlorite epidote veining	5	330
Magnetite/Serpentinite	6	331
Lst	6 & 7	332

887155

LEGEND

MAGNETITE

M — Magnetite - black granular crystalline magnetite, frequently massive, disseminated in a dark green serpentinite matrix (M/S), or disseminated within calc silicate rocks (M/Cs..).

CALC SILICATE ROCKS

Cst — F. gr. bone coloured rock with pale greenish-grey colour mottling - dominantly tremolite/diopside/± epidote.

Csd — F. gr. mottled green - pale grey, pinkish brown rock, dominantly diopside/tremolite/epidote/idocrase with patchy hornblende and vesuvianite.

Css — Hybrid (skarn) rock. May be either of the above, with a greatly brecciated fabric and metasomatic alteration products (serpentine, talc, chlorite, qtz., calcite, magnetite, epidote, Mn. silicates, grossularite, etc.) along irregular fracture paths. May have substantial remnant partially altered dolomitic carbonates.

S — Serpentinite - various shades of green, may have minor talc, chlorite, or intergrowths of tremolite/diopside, but is most commonly intimately associated with magnetite.

SEDIMENTS

Lst/dol — Massive recrystallised greyish impure carbonates, frequently with thin serpentinite films and incipient alteration along fine fracturing.

(b.)sh — Shales, thinly bedded, folded and contorted. Have been hornfelsed to epidote-amphibolite facies. (b.) - black, carboneceous beds, often with a cherty component and py.

qs — Qtz. - sericite schistose altered sediments.

ss — Siltstones, grey and brown in colour, with minor bedded py. and po. Hornfelsed.

q — Quartzites - pale browns - pinkish greys, very hard, with some qtz. segregations.

ch — 'Chert' - very hard fine grained highly siliceous flinty rocks. Usually well bedded, some folding, varies in colour from pale greys to pinks to almost black.

cv — Calcite veining.

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The Australian
ineral Development
Laboratories

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South Australia 5063
hone Adelaide 79 1662
Telex AA 82520

Please address all
correspondence to
P O. Box 114 Eastwood
SA 5063
In reply quote:

3/1/6/0 - AC 539/82 887156

31 August 1981

amdel

NATA CERTIFICATE

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C.R.A. Exploration Pty.Ltd.,
P.O. Box 138,
BURNIE TASMANIA 7320

REPORT AC 539/82

YOUR REFERENCE:	D.P.O. No. 30109
IDENTIFICATION:	As listed
DATE RECEIVED:	30 July 1981

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Manager
Analytical Chemistry Division

D.K. Rowley

for Norton Jackson
Managing Director

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THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

REPORT AC 539/82

QUALITATIVE SPECTROGRAPHIC ANALYSIS

Sample No.	Major	Minor	Heavy Trace	Trace	Faint Trace	Very Faint Trace
	100% 10%	1%	5000ppm 1000	500ppm 100	50ppm 10	5ppm 1
			K	Ca As	Sb	Li Ga
932317	Zn	Fe	Sn Mg Si Na	Al Mn Cd	Cu In V	Co
				Rb	Pb Zr	Ni
		Si			Ni In Ge	
18	Fe	Zn	Mn	K Sn Cu	Cd Co V	Li Ga
		Mg	Ca	Al	Pb Zr	
	Si	Fe Mg	Na	Sn Sr	Pb Ga Cu	Ge
19	Ca	Al Ti	K Zn	Ba V Cr Rb	La Co Sc	Bi Mo Be
		Mn		Zr As Ni Li Y Nb		Yb Ag
		Fe		P	Li Y Sc	
20	Si	Al K	Mn Na	Ba Rb Sr V Cr	Pb Co	Mo Be
		Ca Mg	Ti	Zr Cs Ni	Sn Nb Ga	Yb
		Ca	Na	Sr Ni	Sc Ga	
932321		Al Mg Ti	K Mn Ba	Cr Rb Zr Li	Co Nb	Pb Yb
	Si	Fe		V P	Cs Sn Y	

Elements not sought: U Re Hf Hg Platinoids B

Other elements not detected at limits quoted in attached sheet:

887157

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THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

REPORT AC 539/87

QUALITATIVE SPECTROGRAPHIC ANALYSIS

Sample No.	Major	Minor	Heavy Trace	Trace	Faint Trace	Very Faint Trace
	100%	10%	1% 5000ppm	1000 500ppm	100 50ppm	10 5ppm 1
		Ca		P	Li Y	Cu Sn
732322	Si	Al Mg	K Ti Na	Ba Mn	Rb Sr Cr Ni Cs Pb Co	Sc Be
		Fe		Zr	V Ga	Yb
		Ca Al		Rb Na Ni Cd	Cs Ga Bi	Yb
23	Fe	Mn Mg	K Ti Pb	Cu Zr Co	V Sb Cr	Ag Mo Be
	Si	Zn		W As	Sn Li Y In	Sc Ge
			K		Zr Sn	
24	Zn	Mg Mn	Al Cu	Ti	Co V Bi	Ga Ag
	Fe	Si Ca		Cd	Ni Pb	Li
		Si		K Zr Ni		
25	Fe	Zn Mn	Al Ca	Ti V	Co W Bi	Li Ga Be
		Mg		Cu Cd	Pb Sn	
		Mg	Ti	Na	Ni Li Pb Y	Yb
732326	Si	Ca Al	Mn Zn Ba	Zr	Cr Co Sc Ga	Be
		Fe	K	Rb	V Cs Cu Sn	

Elements not sought: U Re Hf Hg Platinoids B

Other elements not detected at limits quoted in attached sheet:

887158

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THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

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QUALITATIVE SPECTROGRAPHIC ANALYSIS

Sample No.	Major	Minor	Heavy Trace	Trace	Faint Trace	Very Faint Trace
	100%	10% 1%	5000ppm 1000	500ppm 100	50ppm 10	5ppm 1
32327	Ca	Si Mg Fe	Mn Al	K Zn Sr Pb Ti	Ni V Cu	Bi Li
28	Si Al	Ca Fe Ti Mg K	Na Ba	Zr Ni Rb Mn Cr Sr V P	Y Cu Li Ga Co Pb Cs Sc Sn	Yb Mo Be Ge
29	Si Fe	Ca Mg Mn Al	Ti K	Sn Zn Ba Na V P Zr Cs Rb	Pb Cu Ni Cr Li Co Ga Y In	Sc Ge Be Yb Bi
30	Si	Fe Mg Al Ca	Zn K Mn Na Ti	Zr Ba Rb P V Pb	Li Sn Ga Cr Cu Cs Co Y Ni Sr	Bi Ag Sc Be Yb
32331	Fe	Si Mg	Mn	Zn K Cu As Ca	Ni Sb Co Pb Zr Sn Bi	Li Ga Ge

Elements not sought: U Re Hf Hg Platinoids B

Other elements not detected at limits quoted in attached sheet:

887159

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THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

REPORT AC 539/82

QUALITATIVE SPECTROGRAPHIC ANALYSIS

Sample No.	Major	Minor	Heavy Trace	Trace	Faint Trace	Very Faint Trace
	100% 10%	1% 5000ppm	1000 500ppm	100 50ppm	10 5ppm	1
		Mg		Zn	V	Pb Sn
932332	Si	Ca Fe Mn Al	K	Ti Sr	Ni	Cu Co
					Na Zr	Li

Elements not sought: U Re Hf Hg Platinoids B

Other elements not detected at limits quoted in attached sheet:

887160

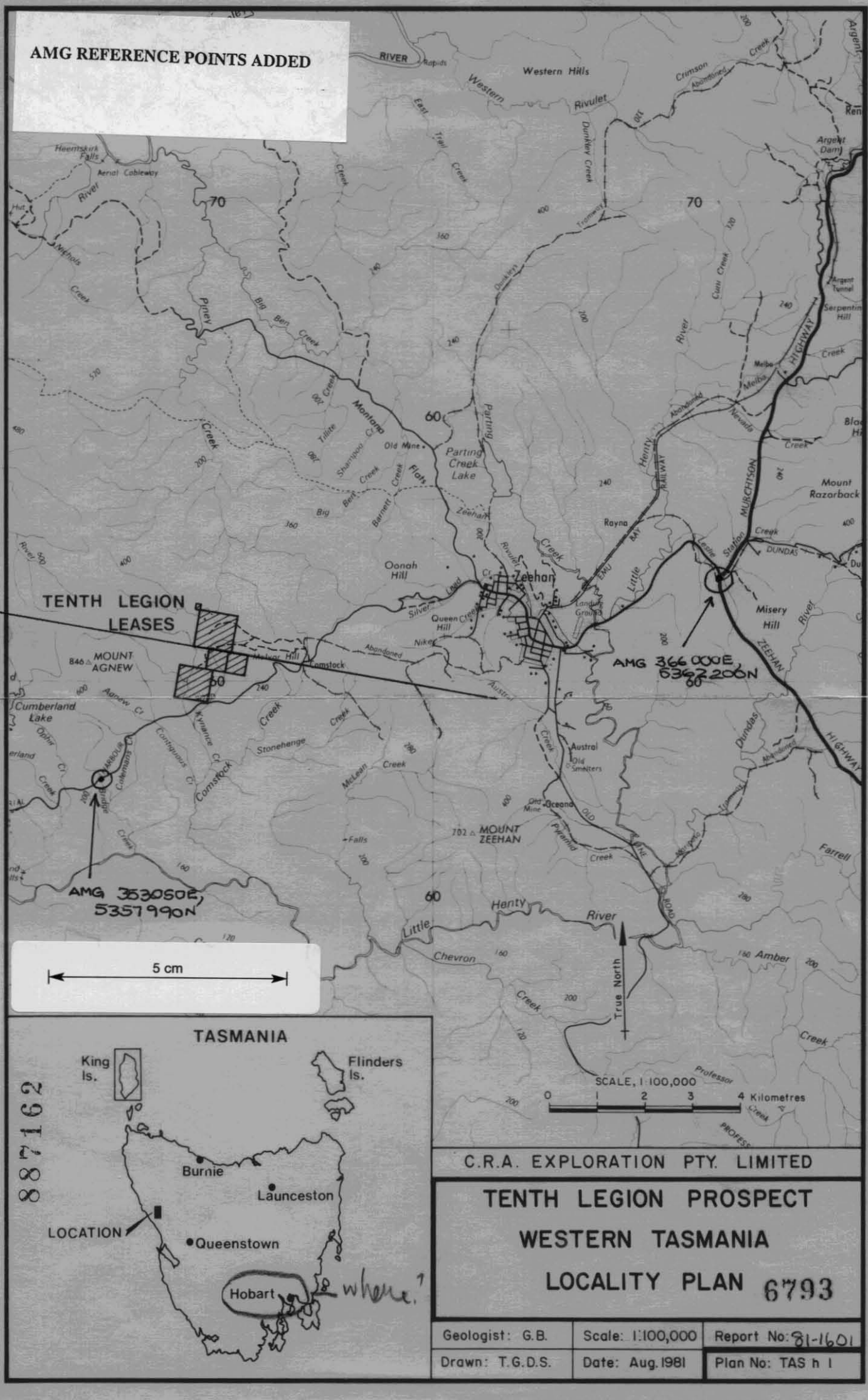
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A10

SPECTROGRAPHIC ANALYSIS

Detection-Limit Concentrations of Elements
DC Arc Excitation

ELEMENT	ppm	ELEMENT	ppm
Ag	0.1	Mo	3
Al	100	Na	50
As	50	Nb	20
Au	3	Ni	5
B	3	P	100
Ba	200	Pb	1
Be	1	Rb	10
Bi	1	Sb	30
Ca	100	Sc	3
Cd	3	Si	100
Ce	300	Sn	1
Co	5	Sr	10
Cr	20	Ta	100
Cs	30	Te	20
Cu	1	Th	100
Fe	100	Ti	100
Ga	1	Tl	1
Ge	1	V	10
In	10	W	50
K	5	Y	10
La	50	Yb	1
Li	1	Zn	20
Mg	100	Zr	100
Mn	10		


AMG REFERENCE POINTS ADDED
TENTH LEGION LEASES
AMG 366 000E 6397 200N
AMG 353 050E 5357 990N
Zeehan
Oonah Hill
Parting Creek Lake
Old Mine
Rayna
Queen Hill
Misery Hill
Mount Razorback
Austral Old Smelters
Oceana Old Mine
MOUNT AGNEW
846
MOUNT ZEEHAN
702
Cumberland Lake
Stonehenge
Comstock
Chevron
Henty River
Little Henty River
Western Rivulet
Dunkeys Creek
Parting Creek
Big Ben Creek
Montana Creek
Piney Creek
Trilite Creek
Shamrock Creek
Barnett Creek
Flats
Zeehan Creek
Silver Lead Creek
Abandoned Nike
Lyvanice Cr
Contiguous Cr
McLean Creek
Pyramid Creek
Agnew Cr
Opfir Cr
Crimson Creek
Argent Dam
Argent Tunnel
Serpentine Hill
Melba Creek
Nevada Creek
Leslie Station
Dundas
Farrell
Amber
Professor Creek
Heemskirk Falls
Aerial Cableway
Hut
Nephols Creek
Rapids
Trail Creek
Tramway
Old Mine
Falls
Abandoned
Loading Ground
Henty Railway
Murchison Highway
Zeehan Highway
Dundas Highway
Old Pyramid Road
Zeehan Emu Bay Railway
Rivulet Creek
Little Emu Bay
Cuni Creek
Black Hill
Mount Razorback
Misery Hill
Serpentine Hill
Argent Tunnel
Argent Dam
Crimson Creek

50M/75

DATUM POINT 4990N. 5000E. GRID

53M/75

52M/75

54M/75

51M/75

4700E.

4800E. (60m S.E. ON BASELINE)

5000E. (60m S.E. ON BASELINE)

5200E. (60m S.E. ON BASELINE)

5445E.

5100E. 5200E. 5300E. 5400E. 5500E. 5600E. 5700E. 5750E.

4990 N.

4250 N.

3105 N.

D.D.81 T.L.C1

D.D.81 T.L.C2

D.D.81 T.L.C3

D.D.81 T.L.C4

D.D.81 T.L.C5

D.D.81 T.L.C6

D.D.81 T.L.C7

D.D.81 T.L.C8

D.D.81 T.L.C9

TENTH LEGION FAULT

DIME REEF

Old Adit

Adit No 1

Adit No 2

Adit No 3

Adit No 4

Creek

Dump

Old Track

Trench

Shaft

Adit

Massive magnetite and silt red sediments on dump.

Note: Creek drains Silver Stream – Kynance workings

Rounded lag? ?ls. qtzite

qtzite float (lag?)

qtzite float (lag)

Old Track qtzite float

Adit dump magnetite + qtz-epidote rock on dump.

Magnetite capping

Mn rich laterite capping on green calc-silicate with dissem. mag.

?collapsed costean

Mn rich capping and float

Shaft in magnetite ± brown clay

Gabbro a/c in track

Small prospecting pit green-grey calc-silicates with finely diss. py.

Mn rich capping with limonite minor mag.

Adits and trenches

a/c with 5-15% py, po

Calc-silicate with minor mag, py

Tr. Py in soil

Manganiferous gossan float

Gossanous and manganiferous zone

Sulphidic gossanous zone in calc-silicates (py, sp, sp, cp)

Gossanous float with much manganese

Kynance Creek

2m Shaft

6m Shaft

8m Shaft

B.S.M. in Track

Creek py mag.

LEGEND

QUATERNARY

a — Recent alluvium (mainly sub-angular gravels)

m — Magnetite bearing lateritic soil and gravel capping and scree

CAMBRIAN – LOWER PROTEROZOIC

Ls — Limestone
Impure banded grey-green microcrystalline limestone variously altered to calc-silicate sequence below.

Cs — Calc-Silicate Sequence
Predominantly banded green-grey fine grained hornfelsed carbonate sediments also containing thin beds of quartz-carbonate hornfelsed rock and minor dolerite

M — Magnetite
Massive to semi-massive magnetite rock

Ss — Siltstone and Sandstone
Grey to buff-pink and red siltstone and sandstone beds with minor interbedded quartzite and conglomerate

Qq — Quartz Dolerite
Light grey to dark grey fine grained dolerite sills and dykes with chilled margins. Some contain xenoliths of country rock

IGNEOUS ROCKS

G — Gabbro

5 cm

SCALE 1:250

0 5 10 15 20 Metres

887163

CRA EXPLORATION PTY LTD

TENTH LEGION PROSPECT

WESTERN TASMANIA

INTERPRETIVE GEOLOGY AND DIAMOND DRILL PLAN

Scale	1:250	Date	81-1601R
Drawn	T.B.P.	Date	July 1980
Plan No	TAS h2		

6794

SOUTH

NORTH

4700 N

4800 N

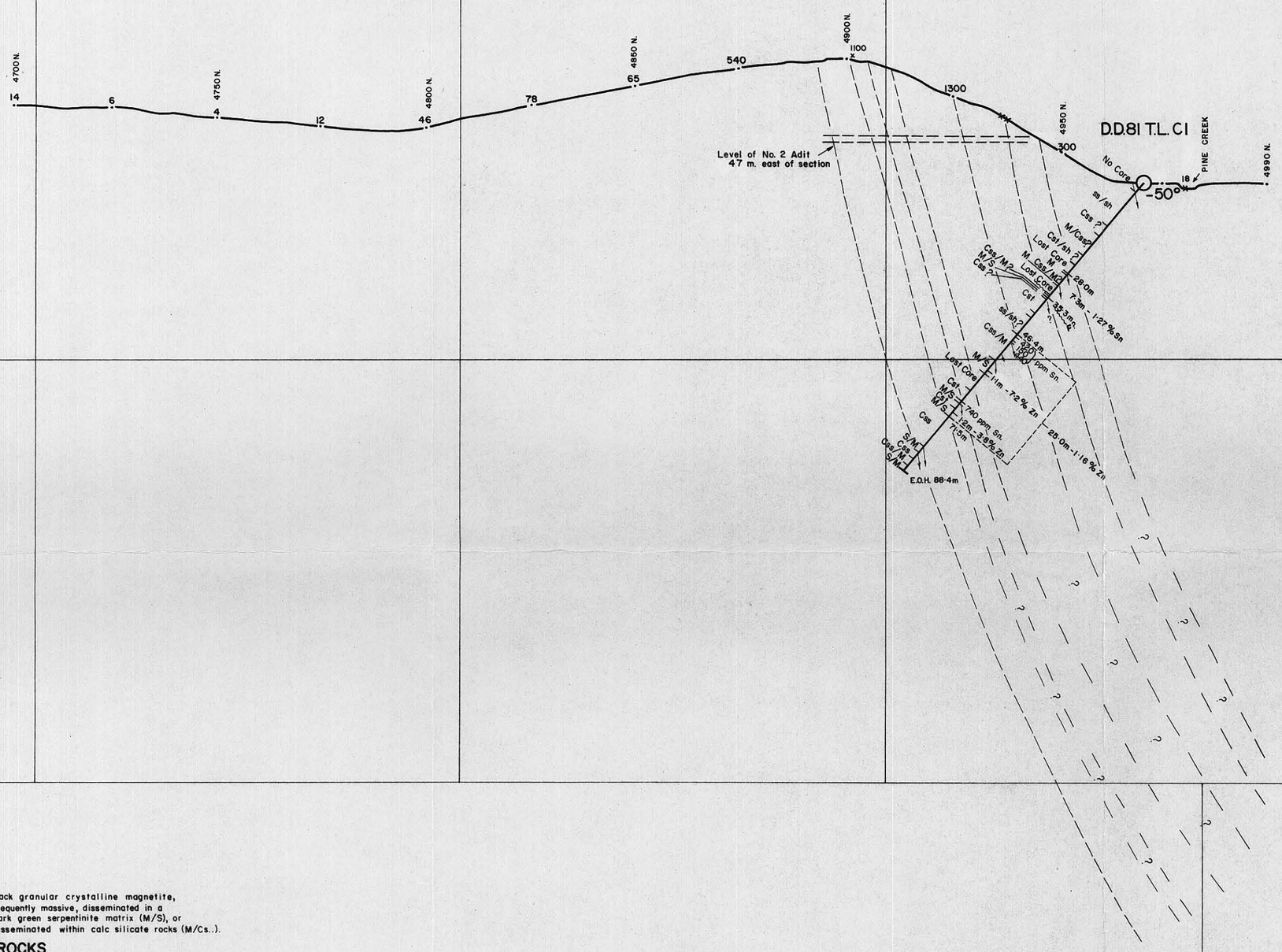
4900 N

5000 N

300m R.L.

200m R.L.

100m R.L.



LEGEND

MAGNETITE

M — Magnetite - black granular crystalline magnetite, frequently massive, disseminated in a dark green serpentinite matrix (M/S), or disseminated within calc silicate rocks (M/Cs..).

CALC SILICATE ROCKS

Cst — F. gr. bone coloured rock with pale greenish-grey colour mottling - dominantly tremolite/diopside/± epidote.

Csd — F. gr. mottled green - pale grey, pinkish brown rock, dominantly diopside/tremolite/epidote/idocrase with patchy hornblende and vesuvianite.

Css — Hybrid (skarn) rock. May be either of the above, with a grossly brecciated fabric and metasomatic alteration products (serpentine, talc, chlorite, qtz., calcite, magnetite, epidote, Mn. silicates, grossularite, etc.) along irregular fracture paths. May have substantial remnant partially altered dolomitic carbonates.

S — Serpentinite - various shades of green, may have minor talc, chlorite, or intergrowths of tremolite/diopside, but is most commonly intimately associated with magnetite.

SEDIMENTS

Lst/dol — Massive recrystallised greyish impure carbonates, frequently with thin serpentinite films and incipient alteration along fine fracturing.

(b.)sh — Shales, thinly bedded, folded and contorted. Have been hornfelsed to epidote-amphibolite facies. (b.) - black, carbonaceous beds, often with a cherty component and py.

qs — Qtz. - sericite schistose altered sediments.

ss — Siltstones, grey and brown in colour, with minor bedded py. and po. Hornfelsed.

q — Quartzites - pale browns - pinkish greys, very hard, with some qtz. segregations.

ch — 'Chert' - very hard fine grained highly siliceous flinty rocks. Usually well bedded, some folding, varies in colour from pale greys to pinks to almost black.

cv — Calcite veining.

KEY

20 • Soil sample with Sn result p.p.m.

20 × Rock sample with Sn result p.p.m.

5 cm

Scale 1:1000

0 10 20 30 40 50 Metres

887164

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

SECTION 5200 E.

D.D.81 T.L. C1 6803

LOOKING WEST

geologist: G.B.	scale: 1:1000	report no: 81-1601 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 11

SOUTH

NORTH

4700 N

4800 N

4900 N

5000 N

300m R.L.

200m R.L.

100m R.L.

16 10 85 130 260 660 Road 580 280 170 No Core D.D.81 T.L.C2 -50° q/ss 22 10 Creek 8

laterite and mag scree covering up to 1m thick

Level of No 1 Adit 66m west of section

Cst Csd Css S/M Cst/Dol M3 Dol sh/ss Cas Csd/M Csd? 240 ppm Sn.

? Altered dolerite

450 ppm Sn.

sh/Csd M/S Cst 60.9m 13.7m 1·7% Zn; 10·7g/t Ag; 0·6% Pb; 2% Cu. 24.1m

sh Csd Cst S/M C qs ss

E.O.H. 133m

LEGEND

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cv — Calcite veining.

00

KEY

20 + Soil sample with Sn result p.p.m.

20 × Rock sample with Sn result p.p.m.

5 cm

Scale 1:1000

0 10 20 30 40 50 Metres

887165

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

SECTION 5400 E.

D.D.81 T.L. C2

LOOKING WEST

6804

geologist:	G.B.	scale:	1:1000	report no:	81-1601 R
drawn:	T.G.D.S.	date:	July 1981	plan no:	TAS h 12

SOUTH-N

NORTH

4700 N | 4800 N | 4900 N | 5000 N

300m R.L.

200m R.L.

100m R.L.

Swamp

Track

Track

D.D.81 T.L. C9

Creek

No. 2 Adit
46m W. of section

12m W. of section

LEASE BOUNDARY 4990 N.

E.O.H. 163·0m

LEGEND

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cv — Calcite veining.

5 cm

Scale 1:1000

0 10 20 30 40 50 Metres

887166

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

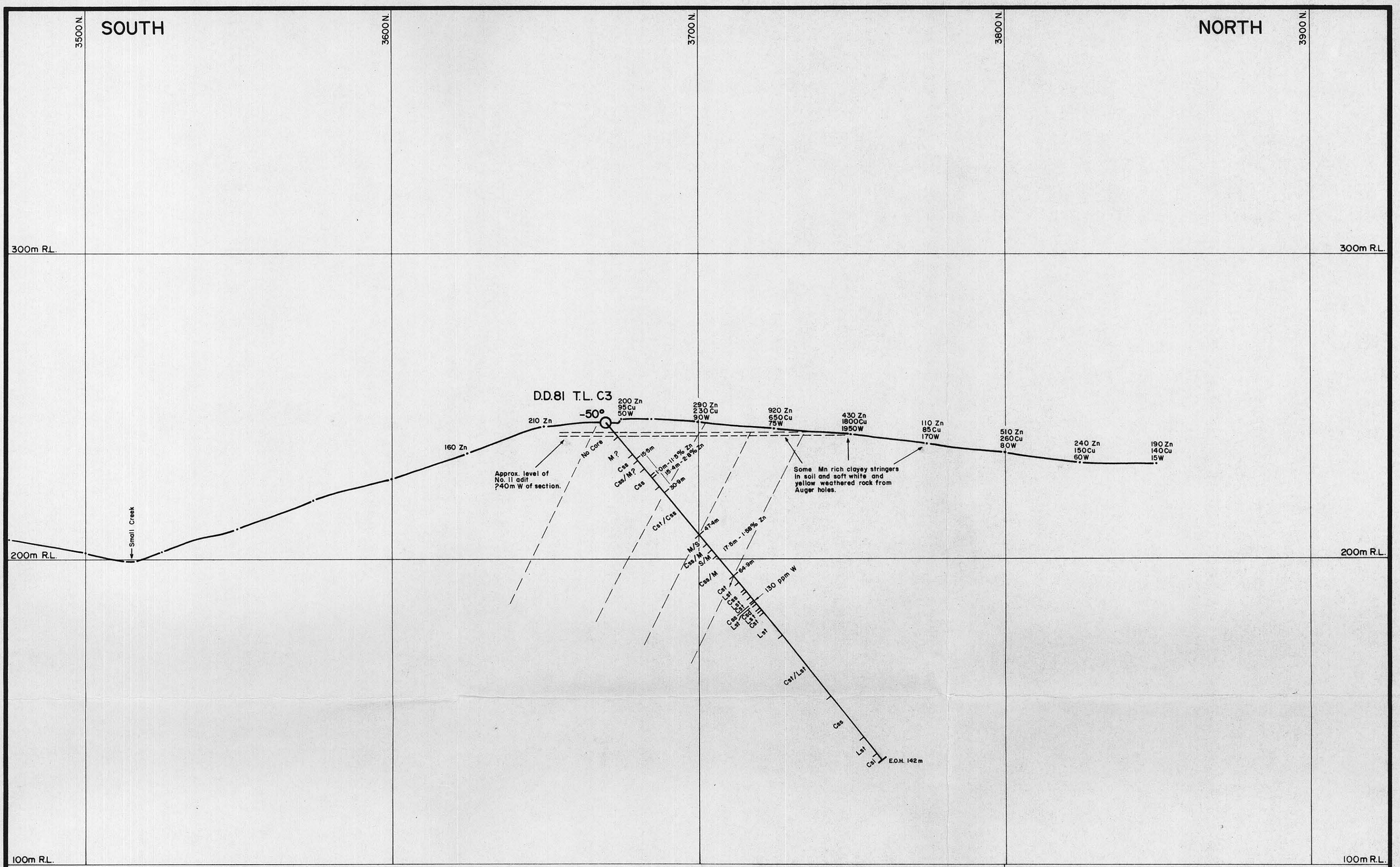
WESTERN TASMANIA

SECTION 5260 E.
D.D.81 T.L. C9

LOOKING WEST

6805

geologist: G.B.	scale: 1:1000	report no: 81-1601 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 13



LEGEND

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cv — Calcite veining.

00

KEY

110 Zn
650 Cu
170 W
•
Soil sample with Cu, W and Zn results in ppm.

5 cm

Scale 1:1000

0 10 20 30 40 50 Metres

887167

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

SECTION 5180 E.

D.D.81 T.L. C3

LOOKING WEST

6806

geologist: G.B.	scale: 1:1000	report no: 81-1601 R	
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 14	

SOUTH-EAST

NORTH-WEST

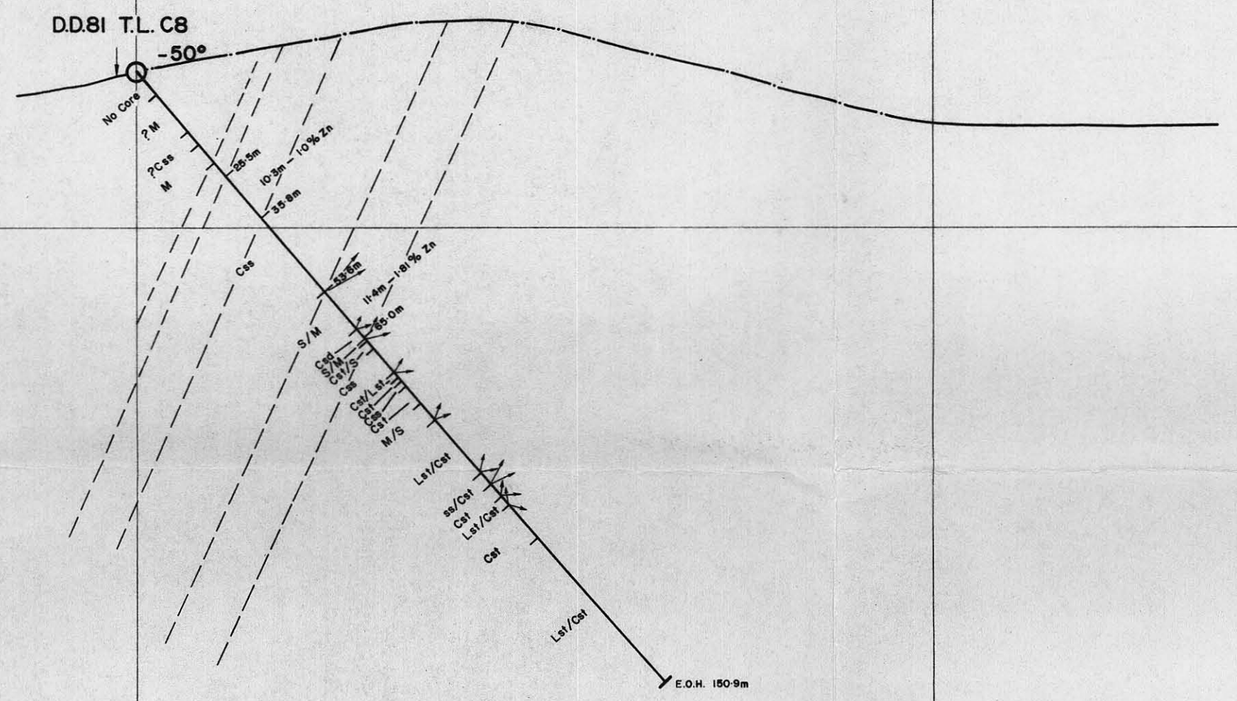
3688·7N, 5268·2 E.

5200 E.

300m R.L.

200m R.L.

100m R.L.



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cv — Calcite veining.

5 cm

Scale 1:1000

0 10 20 30 40 50 Metres

887168

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

DRILL SECTION

D.D.81 T.L. C8

6807

LOOKING SOUTH-WEST

geologist: G.B.	scale: 1:1000	report no: 81-1601 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 15

SOUTH-EAST

NORTH-WEST

3551 N; 5029 E

5000 E

300m R.L.

200m R.L.

100m R.L.

D.D.81 T.L. C4
-50°

No Core

Creek

8300 p.p.m. Zn

1·2% Zn
14m N.E. of section

1·0 % Zn, 130 p.p.m. Sn, 100 W.
30m N.E. of section.

660 p.p.m. Sn

Cst

Csa

Csd

Cst

Csa

54·9m 2·0m-1·44 % Zn
56·9m

Lst/Csd

S/M

9500 ppm Zn.

S/Lst

Cst

Lst/S

310 ppm Sn.
170 ppm Sn.
3500 ppm Zn, 230 ppm Sn

290 ppm Sn

Csa

ss/sh

E.O.H. 134m

LEGEND

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cv — Calcite veining.

00

5 cm

Scale 1:1000

0 10 20 30 40 50 Metres

887169

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

DRILL SECTION

D.D.81 T.L. C4 6808

LOOKING SOUTH - WEST

geologist: G.B.	scale: 1:1000	report no: 81-1601 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 16

SOUTH-EAST

NORTH-WEST

3439.17N; 48524 E

4800 E.

300m R.L.

200m R.L.

100m R.L.

D.D.81 T.L. C5
-50°

Mag - chlorite - sp
O/C in old prospecting pit 5m S.W. of section
Dip 40° to 120° Samples 1·6% Zn to 5·85% Zn.

Surface O/C -
fibrous mag, phlogopite, epidote, weathered sulphides ?
assays up to 600 ppm Tin.

Creek

No Core

Csd

Css

17·1m VHF 0·17% Sn
20·5m - 0·25·28·8m
28·8m

Cst

q(qs)

Trace of tightly folded sediments + calc. silicates striking at shallow angle to hole.
Strike 100° to 120°, variable steep dips and facing directions.

E.O.H. 119·5m

Mag. etc. mineralisation transgressive to bedding, trending NE, dip unknown, but probably >80°.

LEGEND

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cv — Calcite veining.

5 cm

Scale 1:1000

0 10 20 30 40 50 Metres

887170

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

DRILL SECTION

D.D.81 T.L. C5

LOOKING SOUTH-WEST

6809

geologist: G.B.	scale: 1:1000	report no: 81-1601 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 17

SOUTH-WEST

NORTH-EAST

5600 E.

4273·19N; 5630·54 E.

300m R.L.

200m R.L.

100m R.L.

D.D.81 T.L. C6

-50°

Track

Track

No Core S/M

Level of No. 3 Adit.

7m pyritic zone from old adit data.

1m 1·99 gr/t Au.

Lst/M

S/M

M/S

Cas/M

Cas

Cst

Lst

ss/Dol

Dol/S

Dol.

E.O.H. 208·5m

LEGEND

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cv — Calcite veining.

00

5 cm

Scale 1:1000

0 10 20 30 40 50 Metres

887171

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

DRILL SECTION

D.D.81 T.L. C6

LOOKING NORTH-WEST

6810

geologist: G.B.	scale: 1:1000	report no: 81-1601 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 18

SOUTH-WEST

NORTH-EAST

5400 E.

4080·43N;5478·25E

300m R.L.

200m R.L.

100m R.L.

Gossanous outcrop with dissem. py, po, black Mn wad.

Creek

D.D.81 T.L. C7
-50°

No Core

?M/Lst

Css ?

Lst

nc

Lst

Cst/Lst

Lst

S

Dol.

Lst

Lst/S

Dol.

?ss/Lst

Lst

Lst/S

LEGEND

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cv	Calcite veining

5 cm

Scale 1:1000

0 10 20 30 40 50 Metres

887172

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

DRILL SECTION

D.D.81 T.L. C7 6811

LOOKING NORTH-WEST

geologist: G.B.	scale: 1:1000	report no: 81-1601.R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 19

DATUM POINT 4990N. 5000E. GRID

50M/75

53M/75

52M/75

54M/75

51M/75

4700E. 4800E. 4900E. 5000E. 5100E. 5200E. 5300E. 5400E. 5500E. 5600E. 5700E. 5750E. 5780E. 5880E. 5980E. 6080E. 5445E.

4990 N. 4250 N. 3850 N. 3105 N.

4800E' (GRID E. ON BASELINE) 5000E' (GRID N. ON BASELINE) 5200E' (GRID E. ON BASELINE)

LINE 36N. (RENISON)

RENISON BASELINE

Old Adit

Adit No.1 Adit No.2 Adit No.3 Adit No.4

Dump

Adit dump

Trench

Shaft

Shaft collapsed

KEY

SOIL SAMPLE

ROCK CHIP SAMPLE

ROCK CHIP SAMPLE

Results in p.p.m.

CONTOUR VALUES

200 - 500 p.p.m.

≥ 500 p.p.m.

5 cm

SCALE 1:2500

0 25 50 75 100 Metres

887173

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

TIN GEOCHEMISTRY

geologist: G.B.	scale: 1:2500	report no: 81-160 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 3

6795

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

ZINC GEOCHEMISTRY

geologist: G.B.	scale: 1:2500	report no: 81-1601R	
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 4	

887174

SCALE 1:2500

0 25 50 75 100 Metres

5 cm

CONTOUR VALUES
- 300 – 600 p.p.m.
- 600 – 1500 p.p.m.
- 1500 p.p.m.

KEY

Results in p.p.m.
- soil SAMPLE
- ROCK CHIP SAMPLE
- ROCK CHIP SAMPLE

3105 N.

3850N.

4250 N.

4990 N.

5445 E.

5200 E. (GRID E. ON BASELINE)

5000 E. (GRID E. ON BASELINE)

4800 E. (GRID E. ON BASELINE)

4700 E.

3600E.

3650E.

3700E.

3750E.

3800E.

3850E.

3900E.

3950E.

4000E.

4050E.

4100E.

4150E.

4200E.

4250E.

4300E.

4350E.

4400E.

4450E.

4500E.

4550E.

4600E.

4650E.

4700E.

4750E.

4800E.

4850E.

4900E.

51M/75

52M/75

53M/75

54M/75

50M/75

DATUM POINT 4990N. 5000E. GRID

LINE 36N. (RENISON)

RENISON BASELINE

Shaft @ 150

Shaft @ 290

Adit dump

Portal

Dump

Adit No 1

Adit No 2

Adit No 3

Adit No 4

6796

50M/75

DATUM POINT 4990N. 5000E. GRID

4900E. 4940E. 5000E. 5100E. 5200E. 5300E. 5400E. 5500E. 5600E. 5700E. 5750E.

4990 N.

53M/75

52M/75

54M/75

51M/75

4250 N.

3850 N.

3105 N.

4700E. 4800E. (4775E. ON BASELINE) 5000E. (4988E. ON BASELINE) 5200E. (5017E. ON BASELINE) 5445E.

5280E. 5680E. 5780E. 5880E. 5980E. 6080E.

LINE 36N. (RENISON)

RENISON BASELINE

Old Adit

Adit No.1

Adit No.2

Adit No.3

Adit No.4

Dump

Adit dump

Trench

Shaft

recollapsed costean

KEY

┼	SOIL SAMPLE
×	ROCK CHIP SAMPLE
I	ROCK CHIP SAMPLE

Results in p.p.m.

CONTOUR VALUES

200 - 450 p.p.m

> 450 p.p.m.

5 cm

SCALE 1:2500

0 25 50 75 100 Metres

887175

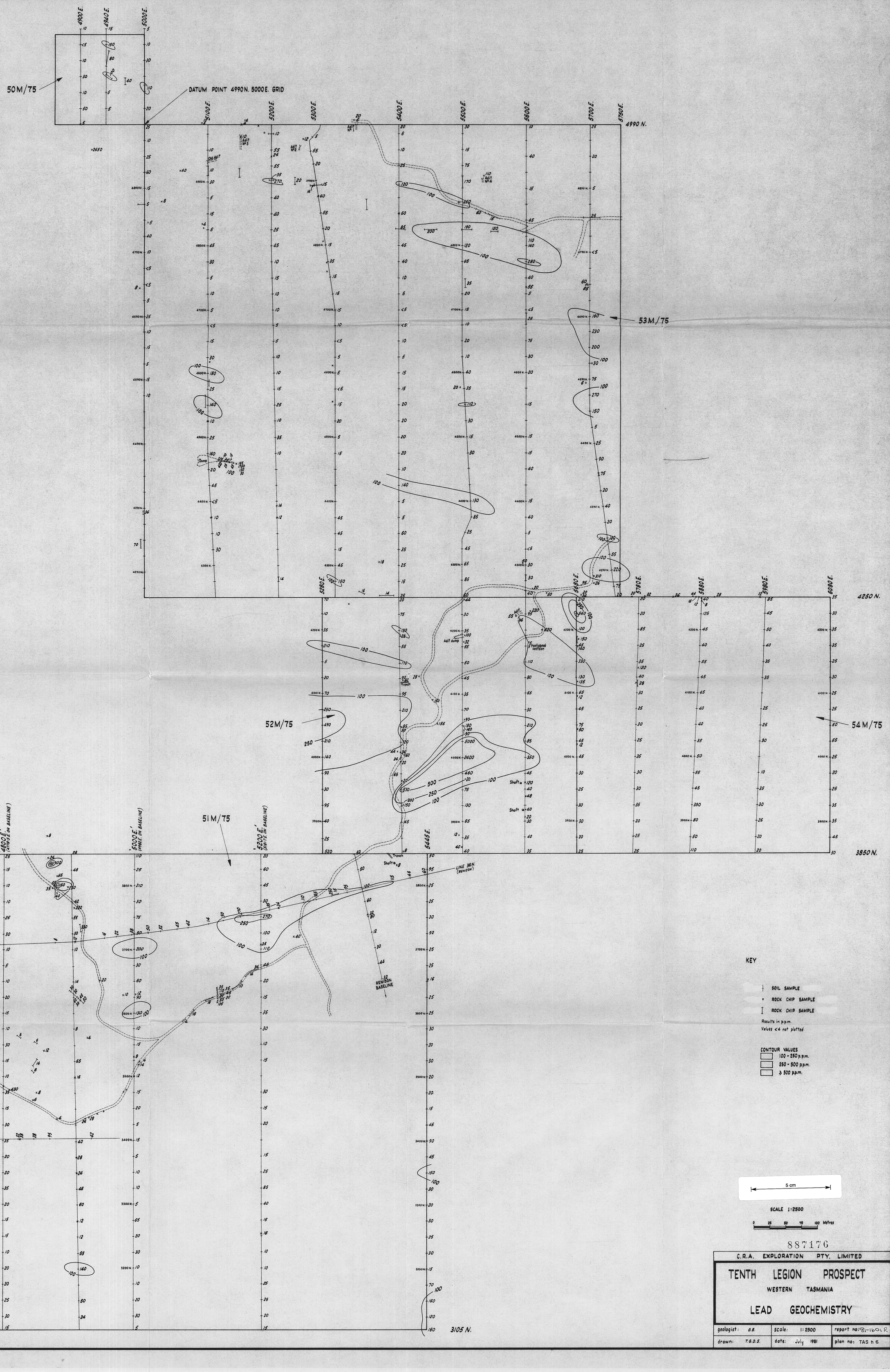
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TENTH LEGION PROSPECT

WESTERN TASMANIA

COPPER GEOCHEMISTRY

geologist: G.B.	scale: 1:2500	report no: 81-1601R
drawn: T.G.D.S.	date: July 1981	plan no: TASh 5



KEY

┼	SOIL SAMPLE
×	ROCK CHIP SAMPLE
I	ROCK CHIP SAMPLE

Results in p.p.m.
Values <4 not plotted

CONTOUR VALUES
- 100 - 250 p.p.m.
- 250 - 500 p.p.m.
- > 500 p.p.m.

5 cm

SCALE 1:2500

0 25 50 75 100 Metres

887176

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TENTH LEGION PROSPECT

WESTERN TASMANIA

LEAD GEOCHEMISTRY

geologist: G.B.	scale: 1:2500	report no: 81-1601R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 6

8679

DATUM POINT 4990N. 5000E. GRID

50M/75

53M/75

52M/75

54M/75

51M/75

Adit No 1

Adit No 2

Adit No 3

Adit No 4

Old Adit

Dump

Adit dump

Shaft

Trench

RENISON BASELINE

LINE 36N. (RENISON)

4700E. '4800E' (47½S.E. ON BASELINE) '5000E' (ARE. ON BASELINE) 5100E. '5200E' (5845E. ON BASELINE) 5300E. 5445E.

4900E. 4940E. 5000E. 5100E. 5200E. 5300E. 5400E. 5500E. 5600E. 5700E. 5750E. 4990 N.

5280E. 5680E. 5780E. 5880E. 5980E. 6080E. 4250 N.

4990N. 4890N. 4790N. 4690N. 4590N. 4490N. 4390N. 4290N. 4200N. 4100N. 4000N. 3900N. 3800N. 3700N. 3600N. 3500N. 3400N. 3300N. 3200N. 3105 N. 3578N. 3450N. 3850N.

KEY

- SOIL SAMPLE
- x ROCK CHIP SAMPLE
- I ROCK CHIP SAMPLE

Results in p.p.m.

CONTOUR VALUES
- 45 - 150 p.p.m.
- ≥150 p.p.m.

5 cm

SCALE 1:2500

0 25 50 75 100 Metres

88/137

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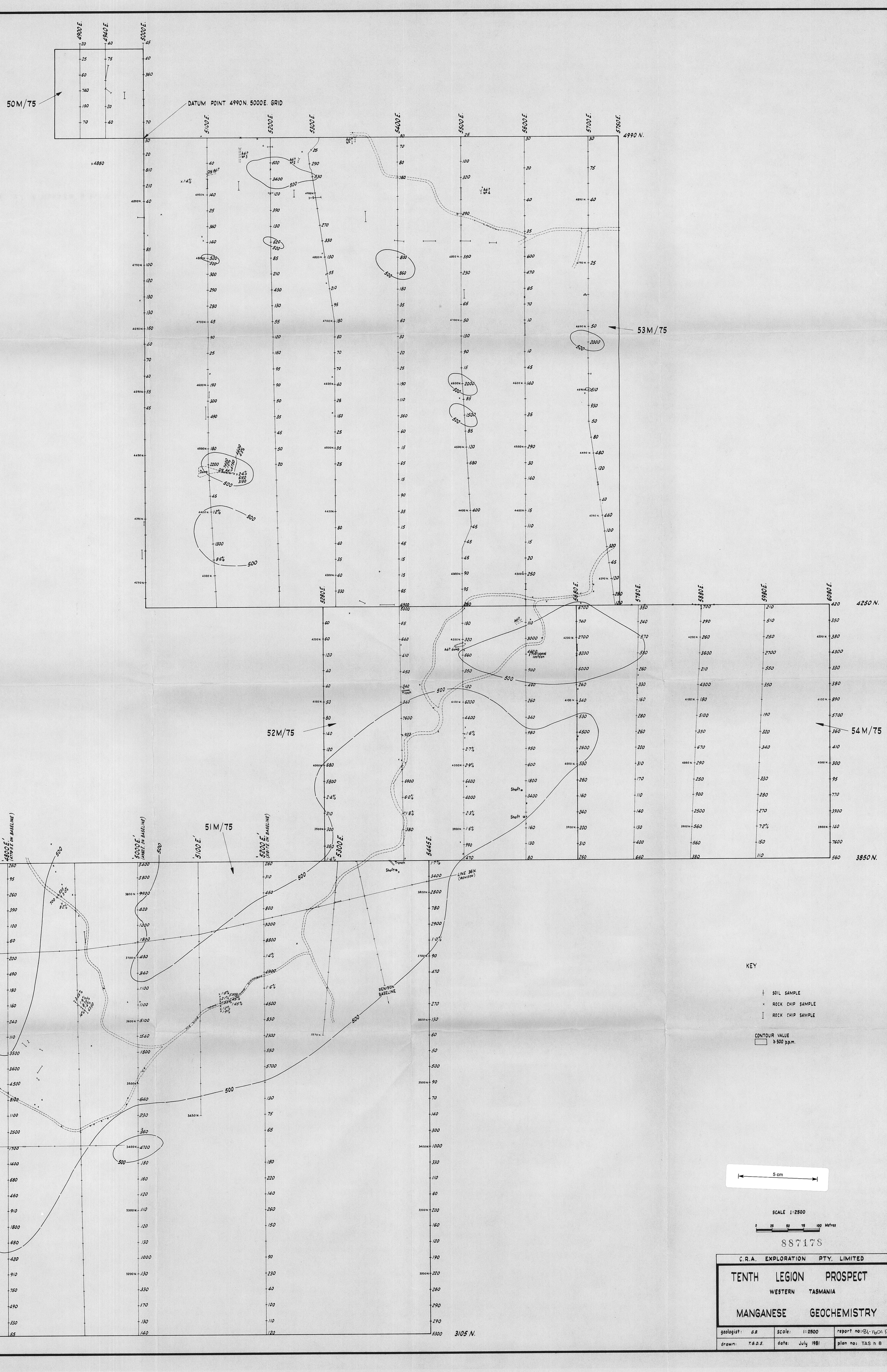
TENTH LEGION PROSPECT

WESTERN TASMANIA

COBALT GEOCHEMISTRY

geologist: G.B.	scale: 1:2500	report no: 81-160 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 7

6649



KEY

- SOIL SAMPLE
- ROCK CHIP SAMPLE
- ROCK CHIP SAMPLE

CONTOUR VALUE
▭ ⩾ 500 p.p.m.

5 cm

SCALE 1:2500

0 25 50 75 100 Metres

887178

C.R.A. EXPLORATION PTY. LIMITED

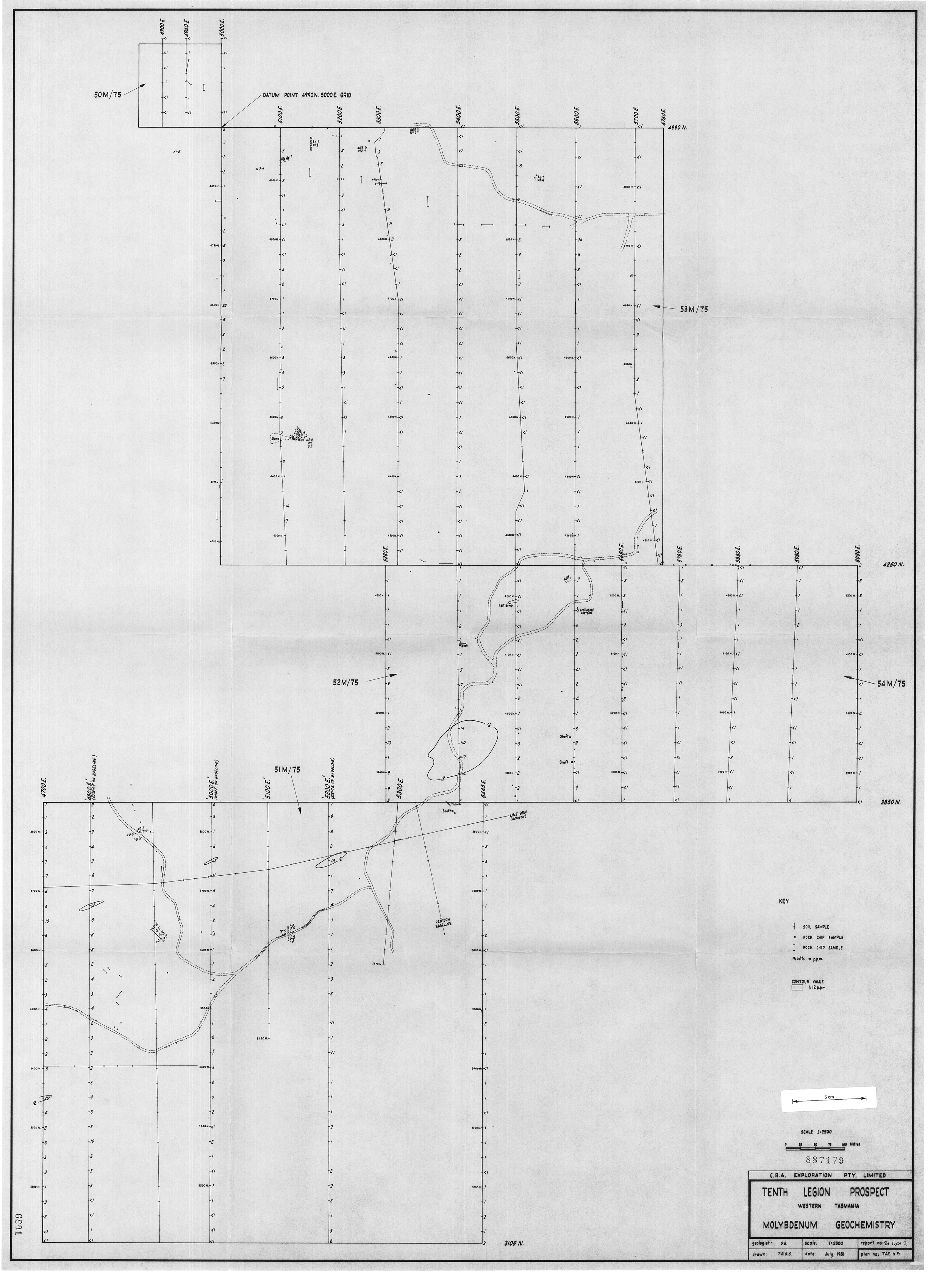
TENTH LEGION PROSPECT

WESTERN TASMANIA

MANGANESE GEOCHEMISTRY

geologist: G.B.	scale: 1:2500	report no: 81-1601 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 8

0089



KEY

┼	SOIL SAMPLE
x	ROCK CHIP SAMPLE
I	ROCK CHIP SAMPLE

Results in p.p.m.

CONTOUR VALUE
▭ ≥ 12 p.p.m.

5 cm

SCALE 1:2500

0 25 50 75 100 Metres

88179

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

MOLYBDENUM GEOCHEMISTRY

geologist: G.B.	scale: 1:2500	report no: BH1601R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 9

1639

50M/75

DATUM POINT 4990N. 5000E. GRID

4900E. 4940E. 5000E. 5100E. 5200E. 5300E. 5400E. 5500E. 5600E. 5700E. 5750E.

4990 N.

Old Adit

Adit No 1

Adit No 2

Adit No 3

Adit No 4

N.S.

53M/75

4250 N.

Dump

Adit dump

Recollapsed section

Trench

5280E. 5380E. 5480E. 5580E. 5680E. 5780E. 5880E. 5980E. 6080E.

52M/75

54M/75

3850 N.

4700E. 4800E. (GRID E. ON BASELINE) 5000E. (GRID E. ON BASELINE) 5200E. (GRID E. ON BASELINE) 5445E.

51M/75

LINE 36N. (RENISON)

RENISON BASELINE

3105 N.

KEY

⊥	SOIL SAMPLE
×	ROCK CHIP SAMPLE
I	ROCK CHIP SAMPLE

Results in p.p.m.
NOTE: Results <10 not plotted.

CONTOUR VALUE
70 p.p.m.

5 cm

SCALE 1:2500

0 25 50 75 100 Metres

887180

6883

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

TUNGSTEN GEOCHEMISTRY

geologist: G.B.	scale: 1:2500	report no: 81-1601 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 10

50M/75

DATUM POINT 4990N. 5000E. GRID

53M/75

52M/75

54M/75

51M/75

LINE 36N. (RENISON)

RENISON BASELINE

4700E.

4800E. (6175E. ON BASELINE)

5000E. (4982. ON BASELINE)

5200E. (6017E. ON BASELINE)

5445E.

4990 N.

4250 N.

3850N.

3105 N.

KEY

877100 SOIL SAMPLE NUMBER

869600 × ROCK CHIP SAMPLE NUMBER

869700 I ROCK CHIP SAMPLE NUMBER

5 cm

SCALE 1:2500

0 25 50 75 100 Metres

887181

C.R.A. EXPLORATION PTY. LIMITED

TENTH LEGION PROSPECT

WESTERN TASMANIA

SAMPLE LOCATIONS

geologist: G.B.	scale: 1:2500	report no: 81-160 R
drawn: T.G.D.S.	date: July 1981	plan no: TAS h 20

6812