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CONTINUING TENURE APPLICATION AREA EXPLORATION LICENCE 4/61 SAVAGE RIVER, TASMANIA

2. REPORT ON THE OCHRE/TALC/SILICA SAND PROJECT THE LONG PLAINS MAGNETITE THE BROWN PLAINS CLAY THE WHITE ROCKS PROJECT AND SPECIMEN REEF

BY

C.H.C.SHANNON

8-2-1988

SAVAGE RESOURCES LIMITED

Incorporated in Tasmania

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1.0 Ochre project

1.1 Introduction

The ochre and its associated residual talc and silica sand have been mentioned in previous reporting but there have been recent developments

The initial work yielded samples of sufficient promise to warrent a follow up with a range of samples large enough for demonstration level industrial processing. The samples were provided from a series of traxcavator costeans which were located to cover the range of colours known from limited outcrop on the access track system already in the area. The samples could not be processed immediately but are being processed at the time of writing. The proceedure adopted is a wet separation process which offers prospects of gaining a talc concentrate and a (low grade, iron rich) silica sand concentrate from the residue.

The important thing is that useful pigments seem attainable from virtually all the samples and some are showing colour strength and pigmenting power normally expected only in expensive, imported synthetic oxide pigments. The colour range issaid to be remarkable and it is hoped to provide some demonstration material shortly.

1.2 Exploration program

It has been shown that the proceedure of examining dozer tracks that are cut deeply enough to reveal some outcrop of leach residue will give a guide to some ochre deposits, and that if these are followed up with traxcavator costeans the cutsurface is very informative so that complications such as soil breccia fills of fossil sinkholes can be identified. Without such extensive exposures it would be very easy to mistake transported soil breccia with greenschist clasts for greenschist bedrock. The plan for track construction previously submitted is considered a basic minimum needed to develop the new discoveries to a size great enough to support exploitation. Some experimentation is planned in the use of power auger or Wacker device in the hope that later on basic exploration can be done with less disturbance. But there is a real problem in chasing a weak, erosionally recessive substance in country which is prone to thick transported soil mantles.

The track system proposed is to be fitted into the 200m module adopted for the magnesite drilling.

The ochres are expected to develop best on high iron/low quartz magnesites or on talcose magnesites. So the higher iron content magnesites in the west of the Main Creek and Bowry Creek deposits have an advantage in principle over the low iron magnesites. The LT series samples which are an attractive orange were found using this

model but interesting ochres are also found over low iron magnesites.
The magnesite horizon below the Long Plains South iron ore is exceptionally high in iron and is a prime target on this concept. The southward extension of this unit is proven by the iron ore drilling but subcrop is obscured by oxidized ironstone rubble.

1.3 Work program

The outline of the next phase of the project has been notified previously (letter to the department 9/10/87). There is a basic framework of dozer/traxcavator accesswork needed for the follow up of present discoveries, and test quarries are likekly to be needed also. Infill work with hand held power auger or Wacker device may or may not prove practicable while traxcavators have no chance of bottoming the deposits. airblast rigs have been beaten by the material and the Jacro style or posthole rigs would appear adequate.

1.4 Budget for 1988-89

90*10hr dozer days at $70-00/hr	$63000-00
20*10hr tx days at $50-00/hr	$10000-00
Laboratory work	$30000-00
Total	$103000-00

1.5 Annotated feild notes on ochre costeans

Trench 1 Long Plains (See Fig 1)

LP 1/1 Brown ochre with minor quartz, (selective sample) 1.5m width, 1m blow original surface.

LP 1/2 Brown ochre with vein quartz(representative sample) 3m strike width from 1.5-2.5m down, excludes boudinaged lenses expressing 2 greenschist beds.

Trench 2 Long Plains, 15m S of No. 1

LP 2/1 Brown ochre with black stain on joints, 1.5m + 0.3m boundary phase talcose greenschist, (within 1m of original surface). Note: The black stain proved to be confined to the upper 1m from surface.

LP 2/2 Brown ochre and minor reddish calcined ochre, with minor greenschist and spongy quartz (only western 1m of section) c.3m strike width at 1m from surface.

LP 2/3 c.f. 2/2, bucket sample from 1.5-2.0m down.

LP 2/4 Channel sample c.f. 2/2 from 2-3m down 0.3m greenschist excluded.

LP 2/5 Bucket sample from eastern 2m portion of ochre bed from 4m down.

Bowry Track (see Fig 1)

BT 1/1 Chocolate ochre, approx 2m strat. sec. at 1.2m down. (1m green pyrophyllite? schist not sampled).

BT 1/2 Chocolate ochre approx 2m strat. sect. at 1m down.

BT 1/3 Chocolate ochre approx 2m strat. sect. at 0.8m down.

BT 1/4 6m strat. sect. 2m down.

BT 1/5 Next 6m strat. sect. 2m down.

BT 1/6 2m strat. sect. 4m down, below 1/5.

BT 1/7? Bucket sample at 5m.

Sid bogged the dozer (see Fig. 2)

MT 1/2 dark purple ochre, 2m section, 0.5m talc excluded, 1.5m down, w. end of trench.

MT 1/1 Purple ochre next 2m section.

MT 1/3 Yellow ochre, 4m section after 10m gap of sandy ochre not sampled

MT 2/1 Dull brown, variable ochre with talc, 2.5m down.

MT 2/2 3-4m section variable purple to very dark purple ochre at 3m down, selected for dark material.

MT 2/3 2m section uniform dark purple ochre at -2.5m down.

MT 2/4 purple ochre selected from uniform patches ove 3m.

Zig Zag Track (see Fig. 3)

MT 3/1 Mottled ochre, 4m sect. at 1m down (orange clay ochre matrix plus blobs of iridescent very dark purple ochre.

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MT 3/2 4m sect. orange transported cly ochre at 1m down.

MT 3/3 3m mottled pink/brown ochre with talc at 1.5m down.

MT 3/4 7m orange to yellow brown transported ochre plus some in situ at 2m down.

MT 3/5 4m purple and some mottled ochre at 2m down.

MT 3/6 2m purple ochre at 4m down.

MT 3/8? Reddish purple ochre.

Floating ochre locality (see Fig. 3)

MT 4/1 Yellow clay ochre.

MT 4/2 Tough purple ochre from 1m block in yellow matrix.

MT 4/3 yellow clay ochre at 3m down.

MT 4/4 Bucket sample (sloppy yellow? ochre) from 4.5m down.

MT 4/5 Brown "floating" ochre selected from excavator dump.

Little Creeks site (see Fig. 2)

MT 5/1 Brown/orange mottled ochre

MT 5/2 Brown clay ochre.

MT 5/3 Yellow clay ochre at 3m down, bucket sample.

MT 5/4 Bright yellowish orange ochre at 2.5m down.

MT 5/5 Bright brownish orange ochre.

Top Track area

TT 1/1 1.5m sect. orange brown talcose ochre from 1.2m down.

TT 1/2 3m section orange brown and khaki mixed ochre with minor talc (some black) from 1.2m down.

TT 1/3 Yellow talc 3m section at 1.2m down.

TT 1/4 Yellow talc as above, next 3m.

TT 1/5 Yellow talc as above, next 4m section.

TT 1/6 Cream talc, 1.2m section, after 4m greenschist bed.

TT 1/7 Brown ochre with white clay patches, possibly greenschist breccia.

TT 2/1 Sand and ochre 7m section, 2m down.

TT 2/2 Ochre with talc 1.5m section, 1.5m down

Gravelly track area (see Fig. 5)

GT 1/1 Dark greyish yellow ochre, about 1.5m strat. sect. in an area of anomalous low dips interpreted as a large tilted block in a breccia pipe. Alluvial fill with organics occurs in the core of the pipe structure. Cystalline talc 1.5 m occurs adjacent to the ochre as part of the same block.

Yellow Paint Drillhole area (see Fig. 6)

HT 1/1 Yellowish orange ochre, bucket sample from 3m down.

HT 1/2 Yellowish orange ochre from 4.5m down.

HT 2/1 Yellow ochre, bucket sample from 4.5m down.

HT 2/2 Yellow and some yellowish orange ochre. The yellow material is soft and also crumbles easily and becomes orange on exposure.

2.0 Talc

Talc/pyrophyllite occurs in the margins of the greenschists but also contains much iron which detracts from the resource. With the wet processing adopted for treating the ochres it is possible a talc by product will be extractable. The talc search will be included in the ochre project.

One of the costeans on the Top Track encountered soft and friable pale yellow crystalline talc over outcrop widths of 10m and 1.6m. This zone is provisionally equated with the white crystalline talc in the 7/8 stratigraphic interval in MC 27 DDH. Most of the talcs are predominantly iron stained so would not command high prices

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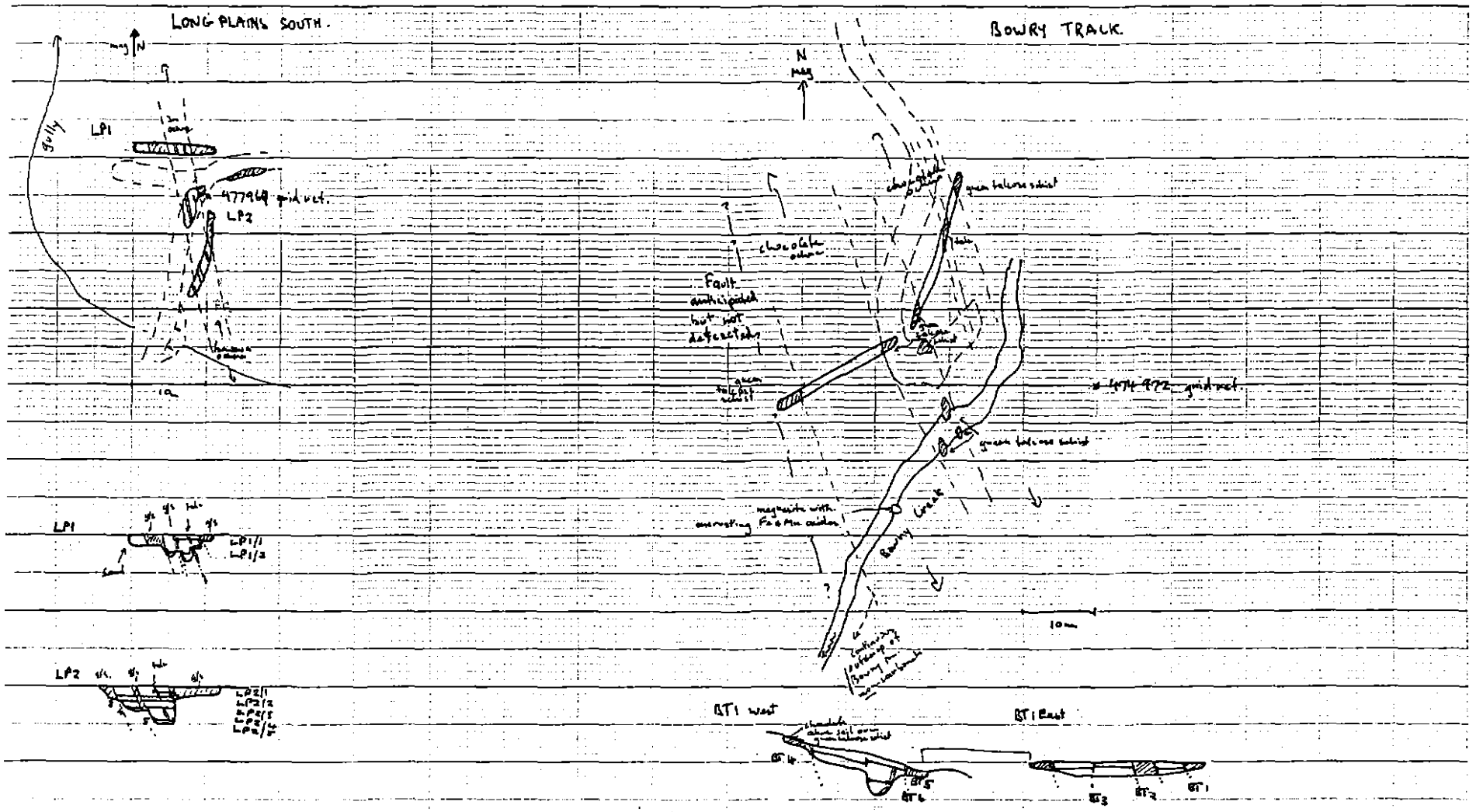
Fig 1

Bowry Track + Long Pln



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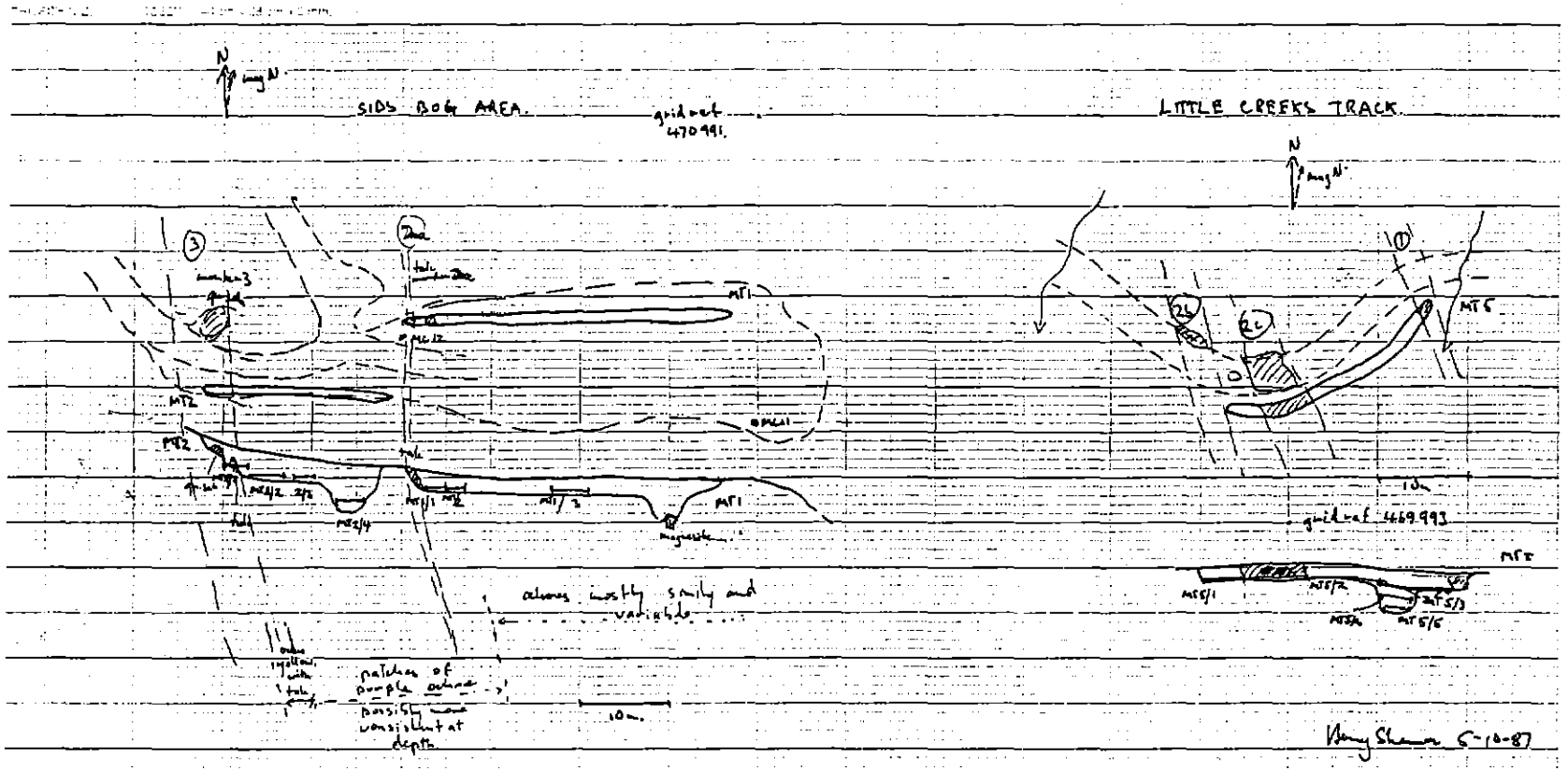

Fig 2 Sids Bog
Little Creek.

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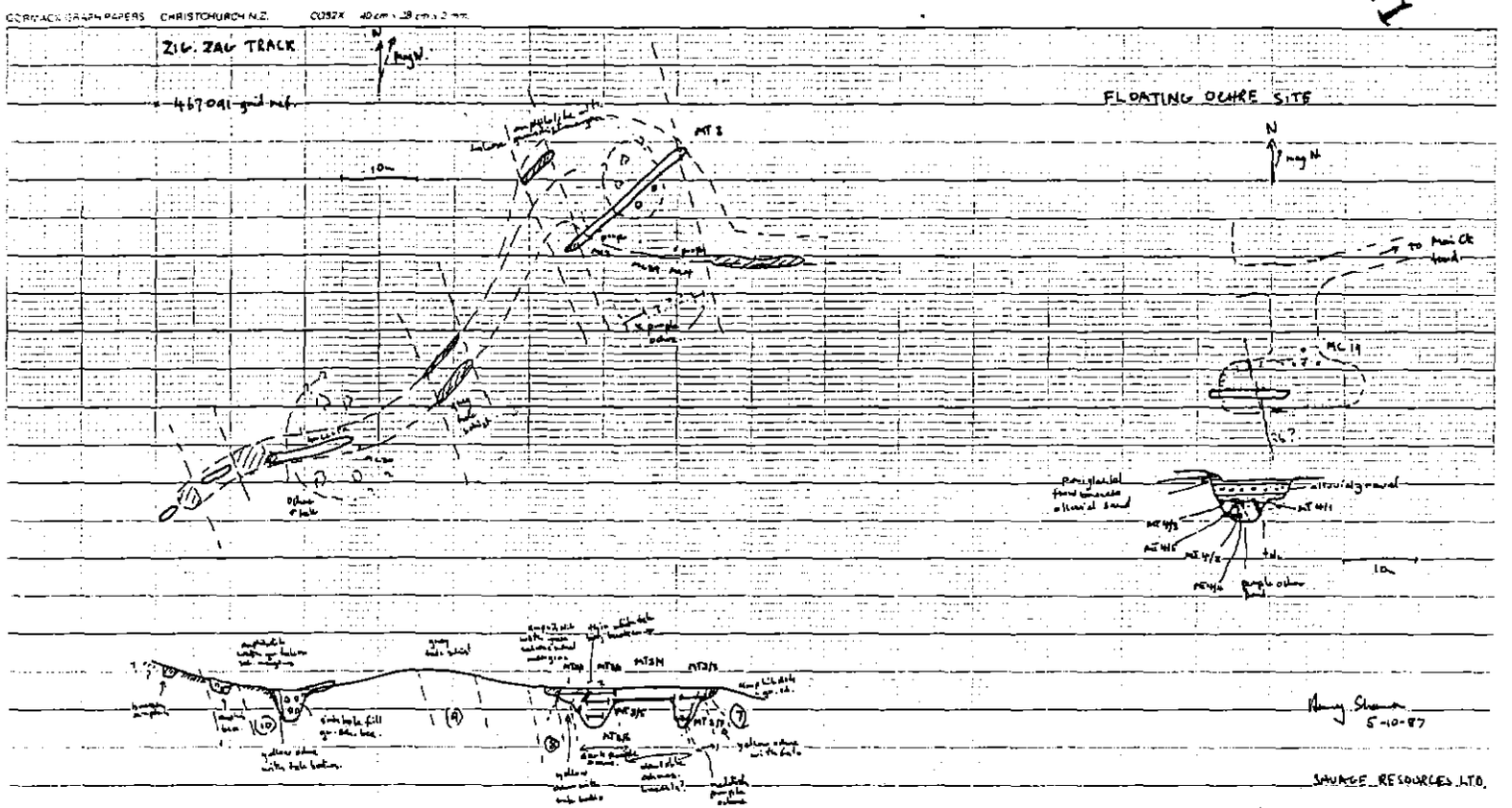
Fig 3

Zig Zag Trail.
Floating Ochre



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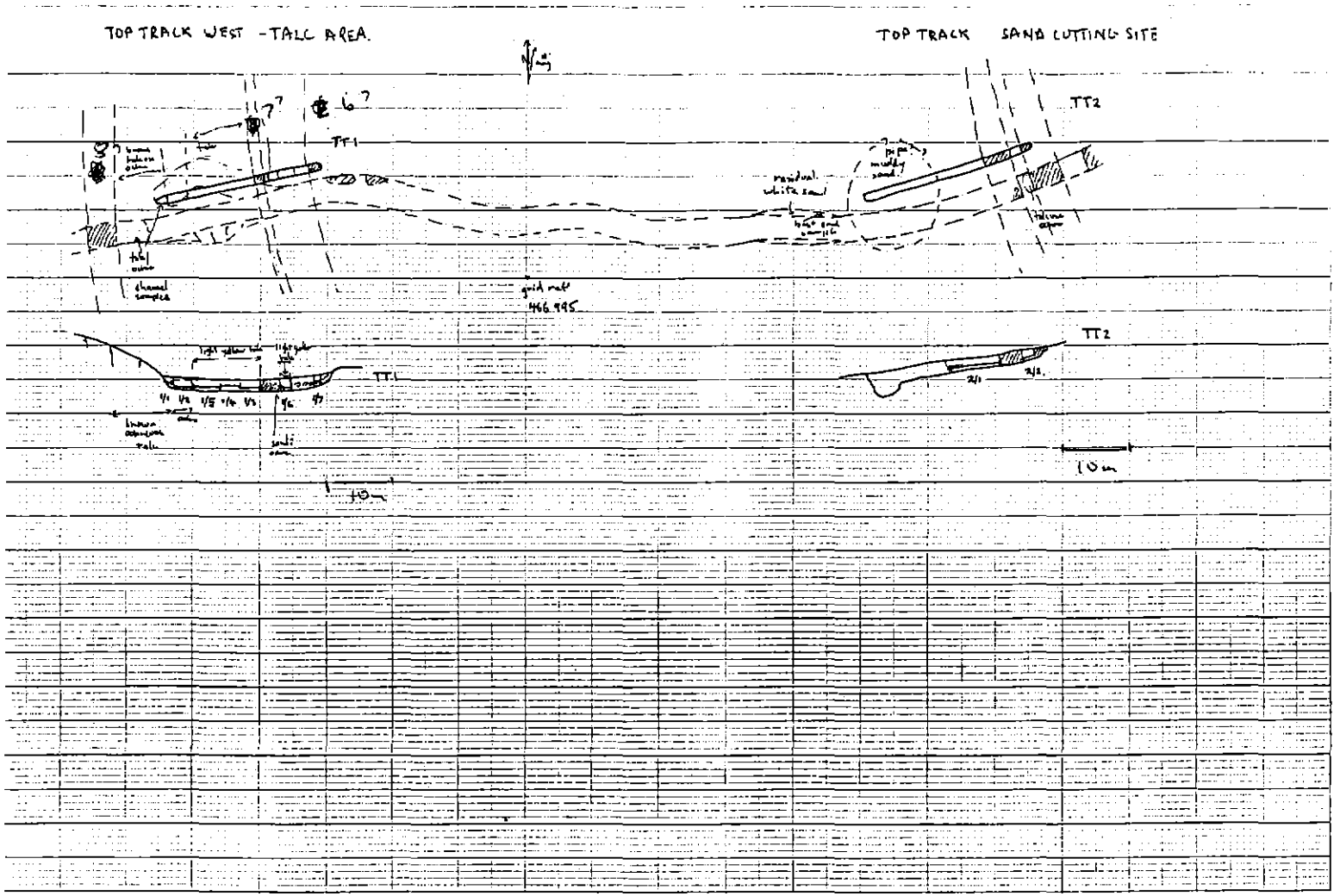

Fig 4

~~Top Track~~

Top Trust - Talc

Top Trust - Sand cutting

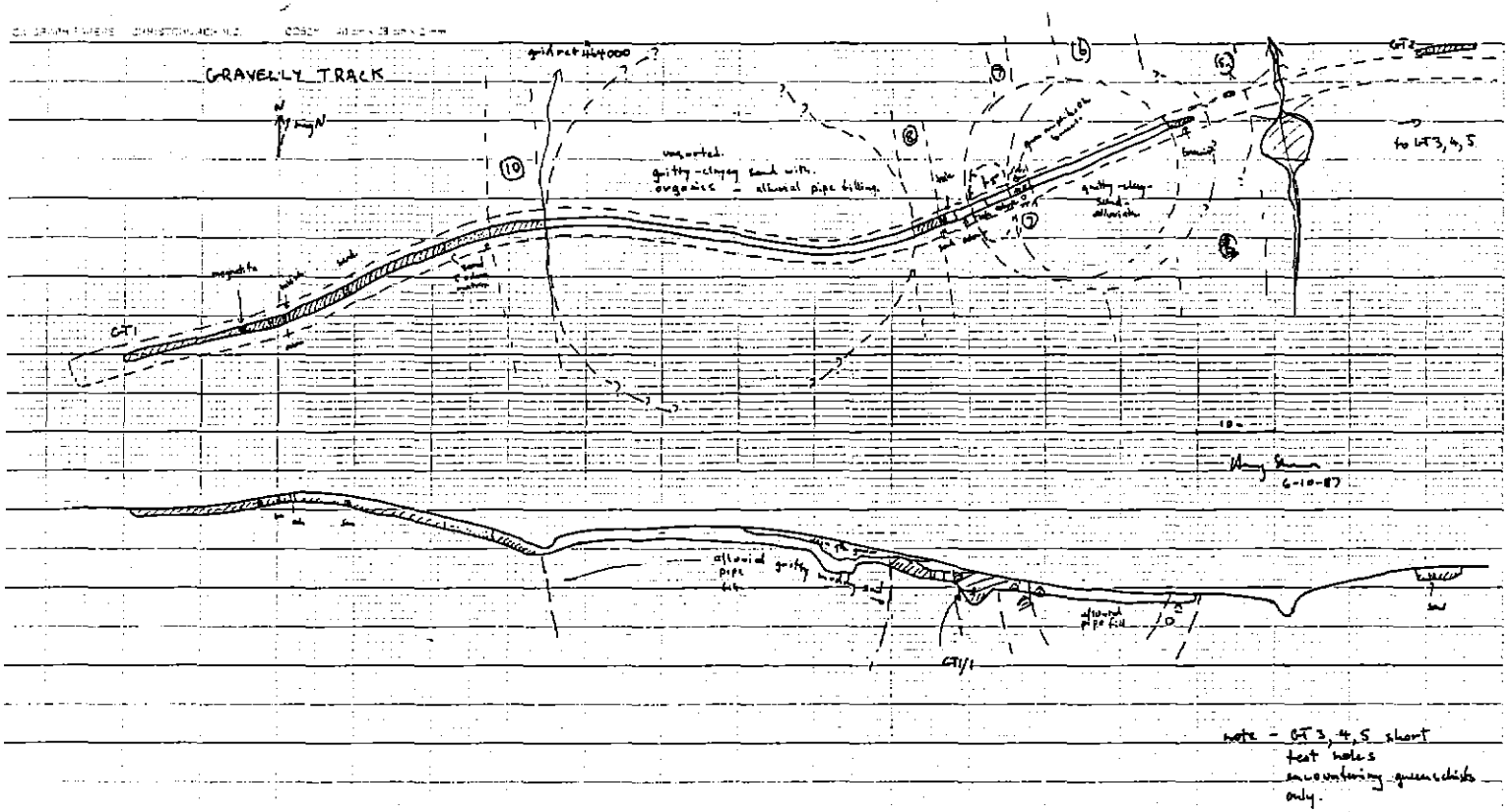

Fig 5

Gravelly Trench

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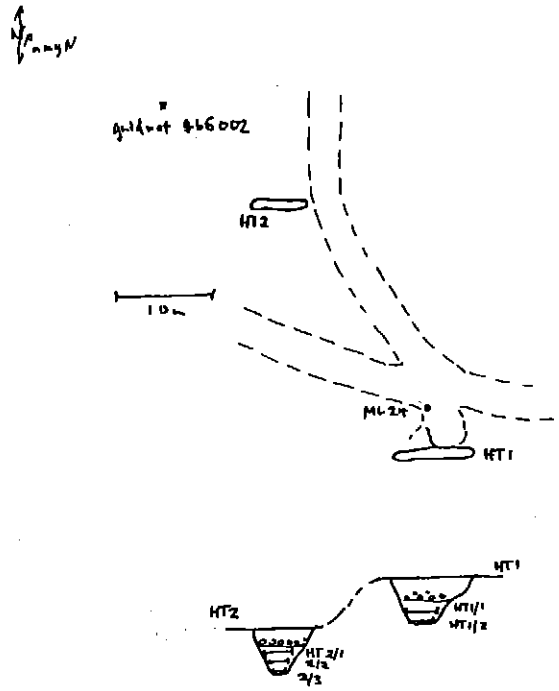
Fig 6.
Yellow Paint
Drillhole

YELLOW PAINT DRILLHOLE



unless that problem can be treated.

3.0 Silica sand (and possibly gold)

The resource would seem to be inferior to the Corinna deposits and more variable than desirable, and it is no longer looked on as a potential standard bearer project. It will be examined as it turns up in the ochre investigation.

3.1 Carlin style gold?

As dicussed in the magnesite report the quartz/dolomite rich portions of the deposit include bodies which appear to be alterations of the magnesite. With the discovery of fine grained gold in a small outcrop of leached silicified dolomite? at the Brookside prospect, There is some hope of a Carlin style gold province in the area. It may be neccessary to collect samples at depth since the fully leached surface sands could have lost its original gold. A single speck of gold was spotted just once in the C.S.I.R.O. petrological work (M. Frost pers comm).

4.0 Long Plains South magnetite deposit

4.1 Introduction

The Long Plains South iron ore deposit comes a distant third after the Savage River Central Pit and Northern Deposits.

The deposit has been covered by a comprehensive magnetic survey (Eadie, 1962) and by seven drillholes providing a basis for controlling the inference from magnetic anomaly strength to recoverable iron content. A working estimate of the resource was prepared by Ridgeway (1969) at the end of the period of active exploration. (see appendix 2) There was thought of further drilling at the time and the bore I.M.I 46 postdates Ridgeway's report but since then the deposit became less economic with time and the expense would have been sterile.

The concept of using the deposit for coal washing magnetite was examined and pit profiles drawn up (Edyvean, 1980) but Davis tube tests to follow up the initially promising concept indicated that quality was marginal, and the potential market was occupied by Savage River Mines. It has always been considered by I.M.I./Savage Resources as a potential producer should conditions change, as the retention area preamble goes.

There is a situation developing at the savage River Mine which might make this "sub-marginal" deposit usable: There must come a time when the waste:ore ratio grows too large for the mine to operate

profitably, and the proposed shut down proceedure contemplated involves suspending the waste removal side of the operation, at which point most of the trucks become redundant. It has been suggested to the S.R.M. management that in these circumstances the Long Plains deposit would become minable with the paid off and redundant equipment.

Only the major body at the north end of the deposit is being considered at this stage and initial response from the S.R.M. management has been that the ore appears too lean and too far away for the project to work given the present very low price for iron. As yet there is no suggestion of any need for further drilling beyond a suspicion that the drillholes are overselective for the highest grades present.

Metricated sections of the drillholes at Long Plains and at Rocky River have been prepared and are included here as is Ridgeway's report (Appendix 2). Should tenure continue for the prospect, further work on deciphering the assay tables, etc. will be continued. A metricated version of the plan projection of the drillholes for the major prospect is included in the Main Creek magnesite map series, sheet 7. The appropriate scale change for the old B.M.R. magnetics grid has been made and the outline of the magnetic anomaly (after Eadie, 1962) superimposed.

The definitions of ore zones are taken from Edyvean (1979). In some cases in alternating richer/poorer ore the figures given for the bulked interval appear to exclude the HCl soluble iron content of the lower grade zones. Much of the mineralization is at least above the mine's cutoff grade of 15% recoverable magnetite (15% magnetite equals 11% HCl soluble Fe) so long as recovery is good, but longer transport most mean a higher cutoff grade.

4.2 Adequacy of drillhole coverage

S.R.M consider the present level of information is adequate to establish the nature of the deposit and its prospects of minability. The latest feedback has been that they would like to go over the data again in more detail. Should they suggest need for a drillhole in a non-anomaly peak site it would be appropriate to drill one but only in the context of an "it looks like x but y seems possible and if so we'd be interested" enquiry from S.R.M. who remain the only presently conceivable large scale user.

4.3 An alternative use for the deposit

Magnetite is used as a pigment darkener and with Savage Resources developing a number of pigment oriented prospects an in house supply of magnetite would be convenient.

4.4 Work Program

In anticipation of further enquiry from S.R.M. metricated versions of the assay tables will be prepared. Further ground exploration would require a definate expression of interest.

5.0 The white rock of Rocky River and Davis Creek

5.1 Introduction

The white rocks have been subject to work already reported on recently, Annett and Shannon (1987).

There is something of a problem with the rocks of the Bowry Formation in that although much of the rock is chemically basic there are no unequivocal flows (although dykes are locally commen) and the excuse of drastic metamorphic reconstitution of the non-dyke rocks is not compatable with the igneous textures. Albite as a metamorphic feldspar is unexceptional but should be more or less universal. Matzat (1984) considers that the peculiar mineralogy of Bowry Formation rocks reflects original compositions, and explains the generally tuffaceous aspect as a consequence of extreme volatile content. He noted in passing that there was rare earths enrichment at Savage River.

The white rock is an albite felsite (crystal tuff?) as indicated by chemistry of the leached samples. The leached rock has puzzled other workers, Urquhart (1966) called it a cataclasite and it was thought to be a carbonate by the writer at one stage. Albite feldspar occurs with a magnesium rich, calcium poor non albite phase (as expressed at least in the leached rocks). The associated rocks look like basic tuffs and the absence of definite flows in the Bowry Formation has always hinted at an unusual volcanism high in volatiles. But whether all or any of the suggested ophiolite affinity (serpentinite with the magnetite ore), Spiller, (1974), parodoxical alkaline affinity (from the feldspar and amphiboles), Matzat, (1984) or the hint of even a carbonatite affinity (leached character of the outcrop), are valid it remains a candidate for an odd rocks have odd elements approach.

A set of samples has been sent for analysis for rare earths and strategic minerals., and three heavy mineral concentrates for optical examination.

The original concept of extracting an albite concentrate may have insurmountable problems with limonite and amphibole like minerals in the disintegrating rock preventing a pure concentrate but the opaques have been found (in an office microscope study) to be magnetic including magnetite, probable maghemite and a magnetic form of specular haematite, so the idea of magnetic separation of the iron bearing phases was valid in part. Pyrite is present in trace amounts.

The concept that the rutile component is rcoverable still appears valid. The specular haematite may also be relatively easy to recover. A red translucent mineral is abundant, more so than the darker, more lustrous mineral interpreted as rutile.

The old report in Twelvetrees of a "white limestone" in the Rocky River Associated Mine is, on the balence of probabilities, a reference to a fresh rock of the white rock suite and if correct certainly helps the carbonatite/alkaline tuff hypothesis. It is a pity this adit cannot be visited.

Despite the lack of success in the gold search in the area The white rock does have an association with gold at Rocky River (coarse grained alluvial gold) and at Davis Creek on what is very likely the same horizon. It is interpreted as the wall rock control on a vein set such that a vein is gold bearing when enclosed in the white rocks but not elsewhere. The veins seem also to be "flat lying", and sparse.

5.2 Work program

The rock is virtually an unconsolidated material in the Rocky River road although fresh rock(interpreted as quartzite originally) occurs at river level and at Davis Creek. On the Main Creek track a fine grained kaolin variant occurs. The proceedure contemplated is to get the samples down to sand size to examine what fractions can be extracted and their value.
The sampling approach contemplated is to use the mechanical auger to extract a 2m column of sample to then be pulverized and panned down with the goldwheel for examining the heavies in the field camp situation with supplementary airblast samples from the access track to be examined on a "use every part of the pig but the squeal" approach in a suitable laboratory. Gramet is suitable for the micaceous haematite aspect in particular.

6.0 Specimen Reef

6.1 Introduction

Work on Specimen Reef to date is summarized in Fig 7.2 in the December 1987 volume of the annual report (Annett and Shannon, (1987). The point it shows is that the ore shoot of interest to the old timers, if it persisted in the direction on record and maintained the width on record, would pass between SPC 6 and SPC 12. Barren intersections found in the drilling are often close to ground known to have been barren in the adits.

The one hole which does go through the inferred prospective zone, does have gold in it: The spectacular 900g/t intersection. It is interpreted to be in a minor vein off the Specimen Reef itself. It is thin (1.5 cm), but a calculation based on the hypothesis that a cubic metre of the main vein at its reputed thickness of 0.8m would contain no more gold in a shoot situation, than a cubic metre containing the little vein. This came out as a potential target of $12m over a 30m*200m plane. It would seem worth 2 holes to c.180m with 100m precollar.

It would be gratifying to encounter the Specimen Reef in the form that is supposed to be typical in the literature.

6.2 Work program

It is proposed therefore to put 2 bores down in the indicated area situated between the two holes. SPC 6 and SPC 12.

SPC 13,	Rig location	$1500-00
	Precollar	$3500-00
	NQ, 70m	$4000-00
SPC 14,	Rig location	$300-00
	Precollar	$3500-00
	NQ, 70m	$4000-00
	TOTAL	$16800-00

7.0 Brown Plain Clay Project

7.1 Introduction

The special interest in the clay took over when it proved capable of treatment to produce a white pigment comparable with the Georgia Clays of the US. This is despite iron and titanium content on the high side. The question was then raised as to whether there was enough of it to support industrial development with the figure of 500,000 tonnes given as the basic minimum. This figure was arrived at because the air classifier size cut that qualifies as pigment precursor is some 30% of the dry weight of the clay. The density of the clay has not been measured but does not appear abnormal so can be taken as 1.5.

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A drilling program was implemented using a carefully surveyed and levelled grid for control and dozer cuts for access.

Nine tonnes of sample were collected. They have yet to be examined owing to pressure of work on the process laboratory.

During drilling some ominous indications of excessive iron content turned up , with extensive iron stain in dehumified material basal to the deposit and clots of marcasite in the fresh peat stained clay. These hints are confined to the basal portions.

At first it was thought that the clay would take the form of a persistant flat layer some 2-3m in thickness. The drilling reveald that it was a thicker layer on a more irregular surface, with bedrock highs occupying ground where good thicknesses of clay were expected while the present land surface puts modern valleys in some parts where the clay had once existed. But it is reasonably certain that the target quantity is there so long as the inferred zone of iron contamination is not larger than it looks.

Maps and sections provide the basis for a reserve estimate. Using an arbitrary density estimate of 1.5 there is 700,000 tonnes in the drilled area with perhaps another 100,000-200,000 in the adjacent undrilled area with other evidence for the presence of the clay. The groundwork is now dependent on chemical/processing results and is largely completed.

26 holes in clay

References:

1. R.W. Annett, C.H.C. Shannon and L. Vanzino, Report on Field Investigations within EL 4/61, West Coast, Tasmania, August 1986, Savage Resources Ltd. unpub. report. (1986).

2. R.W. Annett and C.H.C. Shannon, Annual Report on Field Investigations within EL 4/61, West Coast, Tasmania, Vols 1 and 2, September 1986 to June 1987, Savage Resources Ltd. unpub. report. (1987).

3. R.W. Annett and C.H.C. Shannon, Annual Report on Field Investigations within EL 4/61, West Coast, Tasmania, Vol 3, June to December 1987, Savage Resources Ltd. unpub. report. (1987).

4. W.J. Atkinson, Report on the Rocky River Area Iron Deposits, N.W. Tasmania. Rio Tinto Australian Exploration Pty. Limited unpublished report, (1960).

5. E.N. Eadie, Long Plains Magnetic Survey, Tasmania 1961-62, Bureau of Mineral Resources, Geology and Geophysics Record 1963/52, (1963)

6. M.D. Edyvean, Report on Field Investigations, Hall Creek - Specimen Creek area EL 4/61 Tasmania, June 1980. Industrial and Mining Investigations Pty.Ltd. unpub. rep. (1980).

7. M.D. Edyvean, Supplementary Report on the Field Investigation of the Hall Creek - Specimen Creek area EL 4/61 Tasmania, Gold analyses. Industrial and Mining Investigations Pty.Ltd. unpub. rep. (1980).

8. M.D. Edyvean, Six-Monthly Progress Report on field investigations within E.L. 4/61 for the period ended 24th February 1981. Industrial and Mining Investigations Pty.Ltd. unpub. rep. (1981).

9. M.D. Edyvean, Quarterly Report for the period ended 24th November 1981. E.L. 4/61, West Coast, Tasmania. Industrial and Mining Investigations Pty.Ltd. unpub. rep. (1981).

10. M.D. Edyvean, Report on Field Investigations within EL 4/61, West Coast, Tasmania: Summer field season, 1981-82. Part II: Davis Creek - Specimen Creek geochemical surveys, Industrial and Mining Investigations Pty. Ltd. unpub. rep. (1982).

11. A.W. Howland-Rose, Comments on gradient reconnaissance and dipole-dipole electrical induced polarization surveys, Specimen Reef area, EL 4/61 near Savage River, Tasmania, on behalf of Industrial and Mining Investigations Pty. Ltd. February, 1981. Scintrex Pty. Ltd. unpublished report. (1981).

12. T.D.Hughes, Logs of Rocky River 1 and Rocky River 2 diamond drillholes. Tasmania Department of Mines diamond drill core records? (1966).

13. H-W.F. Matzat, Mineralogical,Petrological and Geochemical Features of the Ore Formation of Savage River, Tasmania (Australia) (including a comparison with the Kiruna - Iron Mtn. Type of Iron Ore Deposits. Inaugural dissertation etc (Ph.D. thesis) Ruprecht - Karls - Universitat, Heidelberg, (1984).

14. C.H.C. Shannon, Logs and new assay data R.R.1 and R.R.2. I.M.I. internal memo, (1984).

15. C.H.C. Shannon, R.W. Annett, F. Enzmann and L. Vanzino, Report on Field Investigations within EL 4/61, West Coast, Tasmania: 23 Feb 1985 - 22 May 1985, Industrial and Mining Investigations Pty. Ltd. unpub. rep. (1985).

16. C.H.C. Shannon, Continuing tenure application area, exploration licence 4/61, 1. Status of the magnesite project, Main Creek and Bowry Creek deposits. Savage Resources Ltd. unpub. report. (1988).

17. J. Harcourt Smith, Report on the mineral district between Corinna and Waratah, Ann. Rep. Sec. Mines. Tas. for 1896-97 (1897).

18. G. Thureau, Report on Specimen Reef near Mt. Cleveland, Tas. Parliamentary papers 104, (1884)

19. W.H. Twelvetrees, Report on the mineral fields between Waratah and Corinna, Ann. Rep. Sec. Mines. Tas. for 1899-1900 (1900).

20. W.H. Twelvetrees, Report on the mineral fields between Waratah and Long Plains, Publ. Dept. Mines Tas. (1903)

21. G. Urquhart, Magnetite deposits of the Savage River - Rocky River region, Tasmania Department of Mines, Geological Survey Bulletin No. 48, (1966).

22. J.Woodman, H. Shannon and M. Edyvean, Report on Field Investigations within EL 4/61, West Coast, Tasmania - Summer field season, 1981-82; Part III, Specimen Reef and Main Creek drilling programmes, Industrial and Mining Investigations Pty. Ltd. unpub. rep. (1982).

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APPENDIX 1

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THE ACCESSORY INDUSTRIAL MINERALS OF THE SAVAGE RIVER MAGNESITE AREA

(by John A. Hocking)

1987

Marafield Pty. Ltd.
301 Lydiard St. North, Ballarat 3350 Telephone: (053) 32 7158

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INTRODUCTION

The magnesite area at Savage River is surrounded and overlain by a variety of, potentially interesting, industrial minerals. The range covers, ochres, talcs, silicas, dolomite and magnesite itself. At the current state of our knowledge, the most interesting are the ochres and the silicas. This document puts our current knowledge into perspective in relation to these two minerals and briefly discusses the others.

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OCHRES

The magnesite deposit appears to be overlain by residual hydrated iron oxides. These are visible in exposures in a large number of places and have been sampled. Further sampling is currently in progress. We have examined four samples with respect to response to calcination, colour and pigmenting power in paints and concretes. The results are commented on later.

USES AND MARKETS

Natural ochres were at one time the major source of red, brown, and yellow pigments for the manufacture of paint and the staining of concrete and ceramics. The use of natural ochres declined dramatically with the introduction of synthetic iron oxides. These were brighter in colour, had greater pigmenting power, and were controlled to a precise specification. Natural ochres lost ground steadily all over the world until the mid 1960's when natural oxides began to grow strongly.

The existing market for natural oxides in Australia is small, but we believe that there are compelling reasons why a new natural oxide industry would be successful.

1) The price of synthetic oxides (all imported) is inordinately high. We believe that the price to end users range from $2000 to $5000 per tonne.

2) Modern instrumented colour matching techniques can rsult in a colour control as good as the synthetics.

3) Pigmenting power is closely related to surface area and particle size. Modern jet milling techniques can generate ultrafine products.

4) The above milling technique will also improve colour purity (See later data).

5) Natural pigments of about 60% of the pigmenting powe can be put on the market at 20% of the price.

6) The public revolt against all things grey and monolithic make the climate right for the production of naturally coloured mass concrete. Feasible only with cheap natural oxides.

One of the specific advantages of the Savage River ochres is the extreme range of colours from yellows through browns and reds to purples. Such a range will enable precise colour matching by blending.

TEST RESULTS TO DATE

Four ochre samples have been examined. They have been dried, and milled in both their natural and calcined state (100 C).

026

The pigmenting characteristics of the disc milled samples have been examined in paint, powder, and mortar.

The effect of finer grinding on one sample was also measured in powder.

To date the paint and mortar applications have been subjective examinations only, instrument measurements will be made on receipt of the new Chroma meter.

The powder colours and depths were measured and the ful results are appended. Probably the most interesting result was that relating to grinding the calcined version of 870393 as shown here:

	Brightness		Redness
Yellowness			
Disc milled	72.18	3.92	5.61
Ground in mortar	69.91	5.12	8.04

These results interpret as:

A 30.8% increase in pigmenting power
A 64% increase in redness
A 43% increase in yellowness

A jet mill will achieve much finer levels than those yet examined and will further improve both colour purity and pigmentation.

Tests in mortar mixes indicate an excellent range of colours from the disc milled material, further test will be run using finer material.

Tests in pigmenting white acrylic paint indicate that a very significant percentage of paint colours can be matched with the limited range of ochres tested.

In both paints and mortars, natural pigments have a major advantage that they are more weathering and ultraviolet resistant than synthetics.

SUMMARY

The work to date shows that the Savage River ochres have a wide colour range, respond well to low temperature calcination, and at moderate particle size, have good pigmentation characteristics. Further work needs to be done on grinding and on using fine ground magnetite both as a black pigment and to darken the coloured pigments. The latter devise is used in synthetic pigments as we have extracted magnetic black oxides from the darker pigments.

If the final phases of the current research confirm the present indications, there is every reason to believe that highly profitable markets can be developed both domesticly and overseas.

814028

027

SAMPLE	DILUTION	COMMENT	L value	a value	b value
GS 32/33	nil		90.58	0.66	5.60
GS 34	nil		93.21	0.52	5.21
GS 35	nil		93.21	0.47	5.28
Cresta U/f	nil	diluent	92.38	-0.05	5.77
870393.00	nil	raw	42.50	10.23	30.02
870394.00	nil	raw	43.49	5.33	20.74
870395.00	nil	raw	44.44	12.37	23.94
870396.00	nil	raw	40.23	5.25	19.61
870393.00	nil	calcined	27.41	9.95	10.50
870394.00	nil	calcined	31.97	8.76	12.82
870395.00	nil	calcined	33.33	15.53	19.00
870396.00	nil	calcined	30.05	8.50	10.60
870393.00	4%	calcined	72.13	3.92	5.61
870394.00	4%	calcined	77.14	3.66	7.62
870395.00	4%	calcined	75.65	6.56	12.90
870396.00	4%	calcined	73.48	3.33	5.87
870395.00	16%	calcined	62.19	10.62	17.87
870393.00	4%	milled	69.91	5.12	8.04
870393.00	8%	calcined	64.82	5.11	5.98
mon brown	2%		66.73	4.18	4.25
mon brown	4%		59.29	4.90	5.03
mon black	4%		57.17	0.73	0.07
haymes blk	4%		59.07	0.09	-1.30
mon yellow	4%		80.64	2.09	33.43
haymes yel	4%		82.58	1.96	34.38
haymes red	4%		64.11	20.84	20.80

028

SILICAS

Pure silica residual deposits have been identified at Savage River, and some preliminary analyses carried out. The deposit is of unknown extent, but its appearance in road cuttings suggests more than an isolated occurance. The deposit consists of what appears to be low temperature silica ranging in size from friable walnut size lumps to a sub 2 micron fraction.

USES AND MARKETS

The uses for silicas of this type vary from a basic ceramic raw material to the manufacture of optical glass, depending on the purity.

The Savage River silicas are extremely pure, being ell excess of 99.5% silica, very much better than that required for ceramics, but not at the level required for optical glass. It may well be possible, however, to cheaply upgrade this material to match the stringent Japanese specifications.

The Japanese market is for about 80,000 tonnes per annum at a landed price of $200 per tonne. Most of this is being sourced from India, although the Japanese are actively seeking a separate source for about half of this.

We think that it is unlikely to be economic to consider this material as an ordinary ceramic grade, however some work should be done on ultrafine grinding to produce specialised fillers for rubber and paint.

TEST RESULTS

The initial chemistry is appended, indicating the failure of the unprocessed material to meet the Japanese specifications, albeit by a narrow margin in some cases.

We have visually examined some of this material, carrying out some sizing and isolating a tan coloured clay fraction. It may well be that the bulk of the contaminant elements are contained in this fraction. No chemistry has been carried out as the samples were taken using a metal impliment and metal screens were used in the sizing. Further work is due to be carried out on further samples using all non metalic equipment.

SUMMARY

The Savage River silicas are of high quality and appear to be capable of further upgrading. Future work will determine its suitability for optical glass manufacture or high grade fillers.

OTHER MINERALS

There are a number of other industrial mineral occurances which have yet to be subjected to any meaningful examination.

TALC About a dozen talc samples have been analysed and one of those gave better results than those commercially available, however, much of the talc occurs in association with ochres and clays and would not be viable unless mined with them and wet processed. This last could only be considered if a wet milling process were used for the ochres.

MAGNESITE & DOLOMITE These minerals have not been examined by us to date, however, potential may exist to use these for the production of some specialised fillers for paper, paint, and rubber. Dolomite and magnesite both have applications in refractories. The potential here would be to find a market for lower grade material which is unsuitable for other purposes. Prices are likely to be low.

APPENDIX 2

030

814031

LONG PLAINS

IRON ORE DEPOSIT

TASMANIA

A limited amount of drilling has been carried out on the discontinuous outcrops of iron ore that make up this deposit.

The first diamond drillhole (RTAE 1) was put down by Rio Tinto Australia Exploration following a magnetometer survey carried out by the Geophysical Branch of the Bureau of Mineral Resources under the supervision of Mr. E. Eadie. Later Industrial & Mining Investigations Pty. Ltd. drilled six holes Nos. 28, 29, 30, 33, 34 and 35.

The drillholes were widely spaced but were sited to intersect the more important anomalies revealed in the magnetometer survey.

More drilling would be necessary to obtain the complete picture.

DRILLING RESULTS

		Width Intersection	True Width
RTAE No. 1			
79' - 116'	56.6% Fe	37'	35'
315' - 498'	49.1% Fe	183'	150'
IMI No. 28			
58' - 105' (17.7 - 32.0)	15.4% Fe	47')) 111.5	90'
156' - 169'6 (47.5 - 51.6)	49.4% Fe	13.5')	
270' - 349' (82.3 - 106.4)	20% Fe	79'	60'
483' - 489' (147.2 - 149)	54.9% Fe	6'	
IMI No. 29			
(16.5 - 36.4)			
54' - 126'	30% Fe	72'	60'
(78.3 - 115.2)			
257' - 378'	11% Fe	121'	100'
IMI No. 30			
194' - 256'	27% Fe	62'	50'
480'6 - 521'	38% Fe	40.5'	35'
553'6 - 558'	33.9% Fe	4.5'	
IMI No. 33			
140' - 296'	22% Fe	156'	100'

L 07880N - L 08080N

Magnetic Anomaly 40,000 gammas 220' long x 34' wide

Quantity:

220' x 34' = 7,500 square feet

= 750 tons per vertical foot

L 06350N - · L 06750N

Magnetic Anomaly 40,000 gammas 450' long x 25' wide

Quantity:

450' x 25' = 11,000 square feet

= 1,000 tons per vertical foot

L 05650N - L 05900N

Magnetic Anomaly 40,000 gammas 250' long x 30' wide

Quantity:

250' x 30' = 7,500 square feet

= 750 tons per vertical foot

L 04880 - L 05070

Lode Intersection	True Width	Values
IMI No. 30	50'	27% Fe

True Width 50 ft.

True Length 200 ft.

Quantity:

200' x 50' = 10,000 square feet

= 1,000 tons per vertical foot

Tonnage to V. depth 80 ft. = 80,000 tons

L 0900N - L 05320

Lode Intersection	True Width	Values
IMI 30	35'	38% Fe

Width 35'
Length 430'

Quantity:

430' x 35' = 15,000 square feet

= 1,500 tons per vertical ft.

Tonnage to 300 feet = 450,000 tons

L 03360 - L 03960

Magnetic Anomaly 40,000 gammas length 600' width 40'.

Quantity:

600' x 40' = 24,000 square feet

= 2,400 tons per vertical foot.

L 10000N - L 02125N

Lode Intersection	True Width	Values
IMI 33	100'	25% Fe
IMI 34	100'	25% Fe

Length 1,000 feet

Average Width 100'; Average Value 23%.

Quantity:

1000'x 100' = 100,000 square feet

= 10,000 tons per vertical foot

Tonnage to 200' = 2,000,000 tons

SUMMARY:

The total outlined and partly outlined tonnage to depth of drillholes amounts to approximately 11,000,000 tons. Average value based on drillhole intersections = 28% Fe. Additional tonnage based on 40,000 gammas magnetic anomaly amounts to some 5,000 tons per vertical foot.

Tons per vertical foot of all the major anomalies including those drilled amounts to 62,400 tons per vertical foot.

In view of deep drilling on the Savage River end of this deposit it seems safe to assume that this ore will extend to a depth of at least 500 feet. To that depth the deposit could be expected to yield some 30,000,000 tons of ore of an average value of approximately 28% Fe.

On our present knowledge it appears that the major portion would have to be recovered by underground mining operations owing to the narrow widths of the individual lenses.

More detailed drilling of the deposit is warranted.

J.E. Ridgway

(J.E. Ridgway)
CONSULTING GEOLOGIST.

13.5.69

034

814034

Department of Mines, Tasmania

Hobart, 7th September, 1965.

TELEPHONES:

Director of Mines
Mines Inspection
Explosives and Inflammable Liquids
Geological Survey
General Office
} Hobart 2 4041 - 2 2 lines.

Assaying and Metallurgical Research ... Launceston 4 2431

Mr. E.R. Hudson,
Industrial and Mining Investigations Pty. Ltd.,
P. & O. Building,
2 Castlereagh Street,
SYDNEY, New South Wales.

Dear Sir,

Bulk assays of the lower part of R.T.A.E. Hole No. 1 have been carried out. The results are given below.

	MgO	CaO	SiO_2	Al_2O_3	Fe_2O_3	Ign. Loss	MnO	TiO
606' - 620'	32.16	9.79	7.45	0.2	4.86	45.26	0.10	Nil
624' - 639'	27.79	14.35	7.26	0.04	4.00	46.37	0.12	Nil

This seems to indicate thatthis portion of the core is a quartz, dolomite, magnesite intergrowth.

Yours faithfully,

(J.G. Symons)
DIRECTOR OF MINES.

035

814035

TELEPHONES:

Metallurgical Research ... ... } 42431-2
Laboratory ... ... } 2 Lines
Mines Inspection ... ... }
Explosives and Inflammable Liquids

Registrar of Mines 2 2467

Department of Mines,
Launceston Offices,
287 Wellington Street,
South Launceston 19th February, 65.

c.c. to-
Mr. J. E. Ridgway,
43 Paramount Terrace,
Morningside,
Brisbane, Qld.

No 48

Industrial & Mining Investigations Pty. Ltd.,
2 Castlereagh Street,
Sydney, N.S.W.

Dear Sirs,

Long Plains Area, Savage River Iron Ore Deposit. D.D.H. No.28.

Herewith results of analyses of samples received from you on the 26th January, 1965.

Reg. No.	Footages.	Per Cent Total Iron	Nickel	Titanium
82.	58'- 61'	23.2	0.01	0.83
83.	61'- 71'	11.1	Under 0.01	0.85
84.	71'- 83'	20.5	0.02	0.63
85.	83'- 93'	9.10	0.01	0.77
86.	93'-105'	17.20	0.01	0.77
87.	131'-137'3	38.1	0.01	0.01
88.	142'-146'	48.7	0.01	1.09
89.	151'6-153'6	39.6	0.01	0.79
90.	156'-169'6	49.4	0.03	0.79
91.	184'6-186'	44.6	0.06	0.68
92.	211'-214'	15.3	0.03	0.71
93.	224'6-226'6	41.9	0.03	0.67
94.	246'-250'	37.7	0.03	0.58
95.	270'-282'6	20.6	0.04	0.64
96.	287'9-289'3	27.6	0.03	0.70
97.	292'-302'	23.2	0.02	0.77
98.	302'-313'	13.9	0.04	0.58
99.	329'-339'	48.8	0.08	0.68
100.	339'-349'	39.9	0.05	0.63
101.	483'-489'	54.9	0.09	0.28

Chief Chemist & Metallurgist.

ges: £30:-:-

81460.

036

Tasmania

814036

TELEPHONES:

Metallurgical Research 4 2431-2
Laboratory ..... 2 Lines
Mines Inspection .....
Explosives and Inflammable Liquids

Registrar of Mines 2 2457

Department of Mines,
Launceston Offices,
287 Wellington Street,
South Launceston 6th July, 1965.

Industrial & Mining Investigations Pty. Ltd.,
2 Castlereagh Street,
Sydney, N.S.W.

10250

Dear Sirs,

Dial Ranges, Long Plains, Tas. N°29

Herewith results of analysis of samples received from you on the 24th June, 1965.

Reg. No.	Footage Etc.		Per Cent HCl.Sol Fe.	
2427.	54' - 68'	14	33.9	30% - 72 ft
2428.	68' - 79'	11	42.9	
2429.	79' - 86'	7	21.1	
2430.	86' - 98'	12	13.5	
2431.	98' -109'	11	53.2	
2432.	109' -126'	17	19.8	
2433.	257' -268'	11	20.4	10% - 12 ft.
2434.	283' -299'	16	35.4	
2435.	313' -320'	7	12.6	
2436.	350' -356'	6	44.0	
2437.	367' -378'	11	17.8	
2438.	550' -566'		2.7	
2439.	566' -583'		2.7	
2440.	583' -600'		2.5	

Yours faithfully,

Chief Chemist & Metallurgist.

Fees: £7:-:-

037

814037

TELEPHONES:

Metallurgical Research, Laboratory, Mines Inspection, Explosives and Inflammable Liquids ... 42431-2 2 Lines.

Registrar of Mines ... 22457

PHOTO COPY FOR

FILE

Department of Mines,
Launceston Offices,
287 Wellington Street,
South Launceston 1st February, 1966.

c.c.-
Mr. T.D. Hughes,
5 Lambert Avenue,
Sandy Bay,
Hobart, Tas.

Mr. E.R. Hudson,
2 Castlereagh Street,
Sydney, N.S.W.

Dear Sir,

Bore No. 30-Savage River-Long Plains.

Herewith results of analyses of samples received from you on the 20th January, 1966.

Reg. No.	Sample No.	Footage		Per Cent HCl. Sol. Fe
227.	LP. 1	194-207		16.9
228.	2	207-219		43.2
229.	3	219-231'6		7.1
230.	4	231'6-237		25.9
231.	5	237-250	13'	44.6
232.	6	250-256	6'	33.4
233.	7	256-264	8'	4.1
234.	8	264-275	11'	15.5
235.	9	275-284	9'	7.6
236.	10	324-336	12'	17.3
237.	11	354-367	13'	21.2
238.	12	422-432		17.9
239.*	13	432-479		7.8
240.	14	480'6-499		47.0
241.	15	503-521		37.9
242.	16	553'6-558		33.9

	Per Cent MgO	CaO	CO_2
239.*	36.1	5.8	44.0

Analyses by J.S. Coulston A.R.A.C.I.
J. Fine[illegible] A.R.A.C.I.

Yours faithfully,

H. Wed[illegible]

Senior Metallurgical Engineer.

Fees: £9:10/-

1306

814038

Tasmania

TELEPHONES:

Metallurgical Research ..... } 44 2431 - 2
Laboratory ..... } 2 Lines.
Mines Inspection ..... }
Explosives and Inflammable Liquids }

Registrar of Mines 2 2457

Department of Mines,
Launceston Offices,
287 Wellington Street,
South Launceston 21st October, 1966.

c.c. to-
Mr. Hughes,
Hobart.

Industrial & Mining Investigations Pty. Ltd.,
2 Castlereagh Street,
Sydney, N.S.W.

Long Plains, Savage River Area.

Herewith results of analyses of samples received from you on 3rd October, 1966.

Reg. No.	Sample No. etc.		Per Cent HCl. Sol. Fe
663519.	Bore No. 33.	1. 91'-104'	11.1
3520.		2. 112'-140'	8.3
3521.		3. 140'-163'	28.3
3522.		4. 163'-182'	2.7
3523.		5. 182'-198'	6.0
3524.		6. 198'-205'	39.7
3525.		7. 205'-225'	38.8
3526.		8. 225'-245'	18.6
3527.		9. 245'-265'	32.6
3528.		10. 265'-296'	21.2
3529.	Bore No. 34.	1. 94'-98'	34.8
3531.		3. 161'-191'	33.3
3532.		4. 191'-221'	25.1
3533.		5. 221'-251'	22.1
3534.		6. 251'-271'	14.6
3535.		7. 271'-291'	23.4
3536.		8. 291'-306'	13.5

039

814039

TELEPHONES:
Metallurgical Research Laboratory, Mines Inspection, Explosives and Inflammable Liquids ... 42431-2 (2 Lines)
Registrar of Mines ... 22467

Tasmania

Department of Mines,
Launceston Offices,
287 Wellington Street,
South Launceston

18th October, 1966.

c.c. to-
Mr. T.D. Hughes,
Hobart.

Industrial & Mining Investigations Pty. Ltd.,
2 Castlereagh Street,
Sydney, N.S.W.

Dear Sirs,

Savage River, Tas.

Herewith results of analyses of composite samples from Bore No. 33 and 34.

Reg. No.	Sample No. etc.			Per Cent Ni	Ti	S	P
663537.	Bore No. 33.	1-4.	91'-182'	0.20	0.54	1.27	0.06
3538.		5-10.	182'-296'	0.23	0.73	1.04	0.04
3539.	Bore No. 34.	3-8.	16'-306'	Nil	0.77	0.77	0.04

Abalyses by..[signature]

Yours faithfully,

[signature]
Chief Chemist & Metallurgist.

Fees: $12.00

PHOTO COPY FOR

70992 040

Sheet No. 2.

814040

FROM Department of Mines Laboratory, Launceston, Tasmania. TO Industrial & Mining Investigations, Sydney.

Reg. No.	Sample No. etc.	Per Cent Ca	Mg	CO_2
663522.	Bore No. 33. 4. 163'-182'	6.90	22.4	43.4
3530.	Bore No. 34. 2. 124'-150'	5.44	23.7	42.5

Analyses by..... J. Fawcett Launceston

Yours faithfully,

A K Wells

Chief Chemist & Metallurgist.

Fees: $23.00

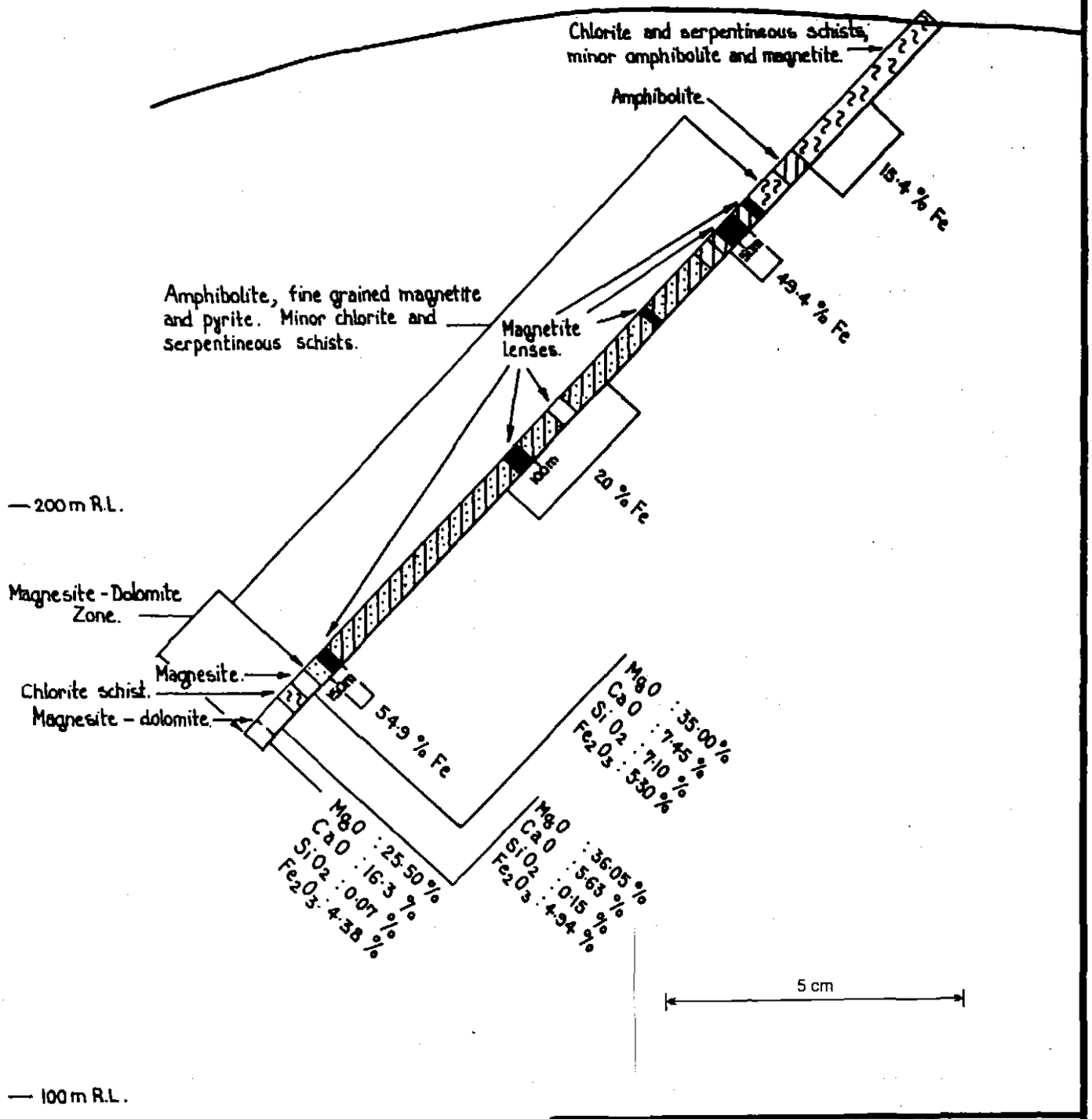
041

347 800 m E

347 900 m E

814041

IMI 28
347925 m E
5396400 m N
R.L. 280m A.S.L.
Azimuth 259° A.M.G.



INDUSTRIAL AND MINING INVESTIGATIONS PTY. LIMITED

LONG PLAINS SOUTH PROSPECT

PROFILE IMI 28

(LOOKING NORTH)

SCALE 1:1000 — 10 0 10 20 Metres

DRAWN BY : R.A.
DRAFTSMAN : T.D.G.S.
DATE : 20-II-'85
REVISIONS :
FILE NO.
FIG.

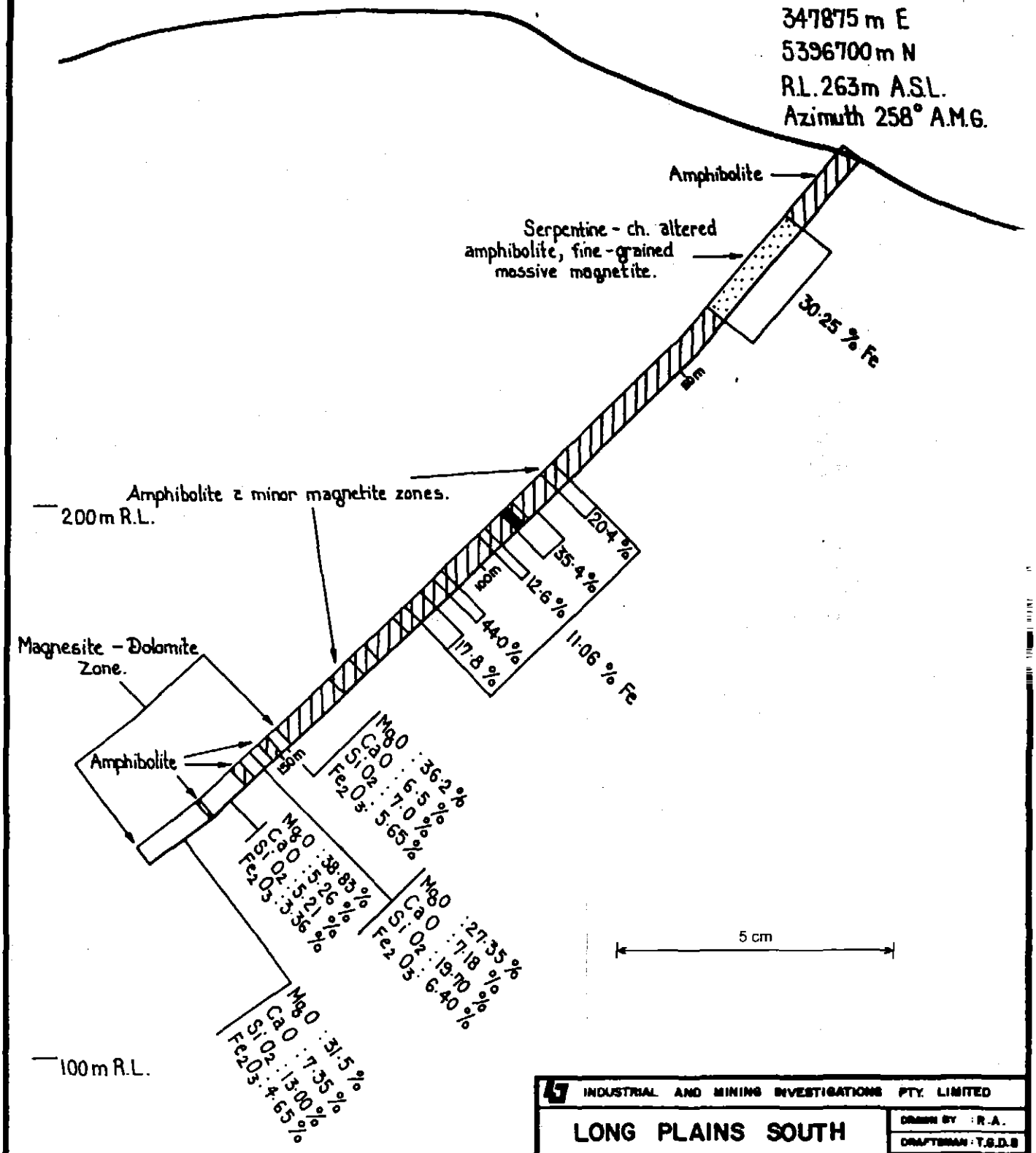
042

814042

347 800 m E

347 900 m E

IMI 29
347875 m E
5396700 m N
R.L. 263m A.S.L.
Azimuth 258° A.M.G.



INDUSTRIAL AND MINING INVESTIGATIONS PTY. LIMITED

LONG PLAINS SOUTH PROSPECT

PROFILE IMI 29

(LOOKING NORTH)

SCALE 1:1000 — 10 0 10 20 Metres

DRAWN BY : R.A.
DRAFTSMAN : T.S.D.S
DATE : 20-11-'86
REVISIONS :
FILE NO.
FIG.

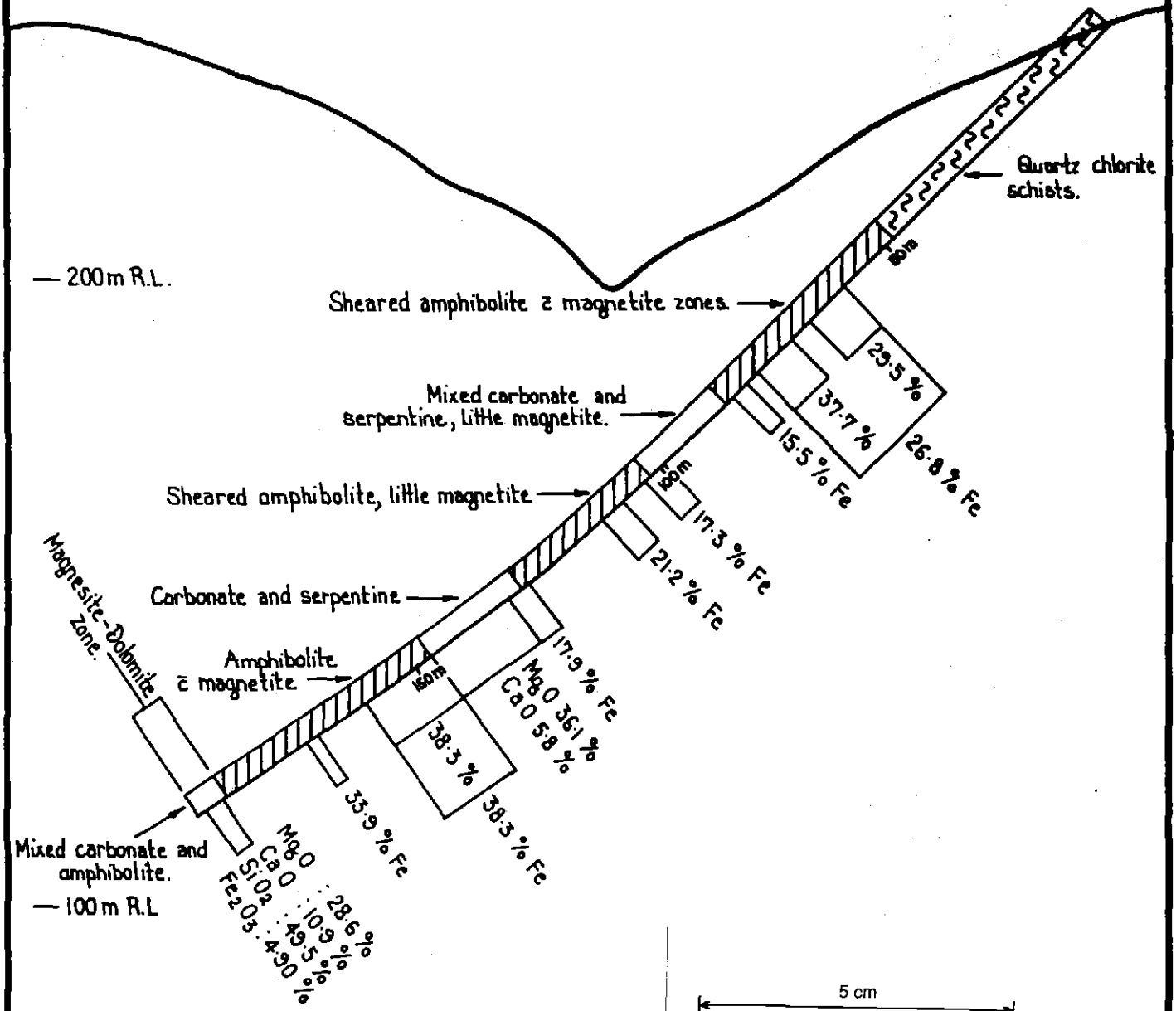
043

814043

348 100m E

348 200m E

IMI 30
348200 m E
5396400m N
R.L. 240m A.S.L.
Azimuth 255° A.M.G.



5 cm

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LIMITED

LONG PLAINS SOUTH PROSPECT

PROFILE IMI 30

(LOOKING NORTH)

SCALE 1:1000 — 10 0 10 20 Metres

DRAWN BY : R.A.
DRAFTSMAN : T.G.D.S.
DATE : 20-11-85
REVISIONS :
FILE NO.
FIG.

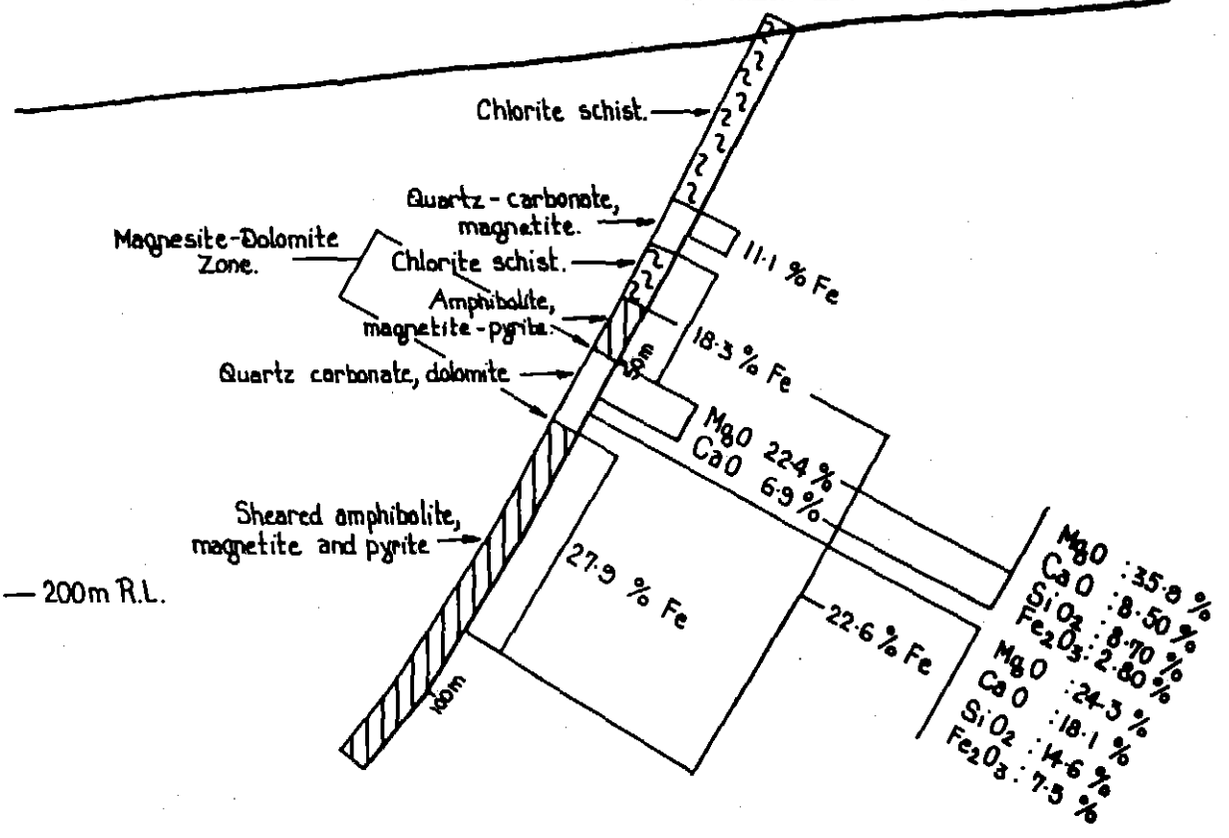
044

814044

348 400m E

348 500m E

IMI 33
348450 m E
5394175 m N
R.L. 275m A.S.L.
Azimuth 255° A.M.G.



— 200m R.L.

— 100m R.L.

5 cm

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LIMITED

LONG PLAINS SOUTH PROSPECT

PROFILE IMI 33

(LOOKING NORTH)

DRAWN BY : R.A

DRAFTSMAN : T.S.D.

DATE : 19·

REVISIONS :

FILE NO.

SCALE 1:1000 — 10 0 10 20 Metres

FIG.

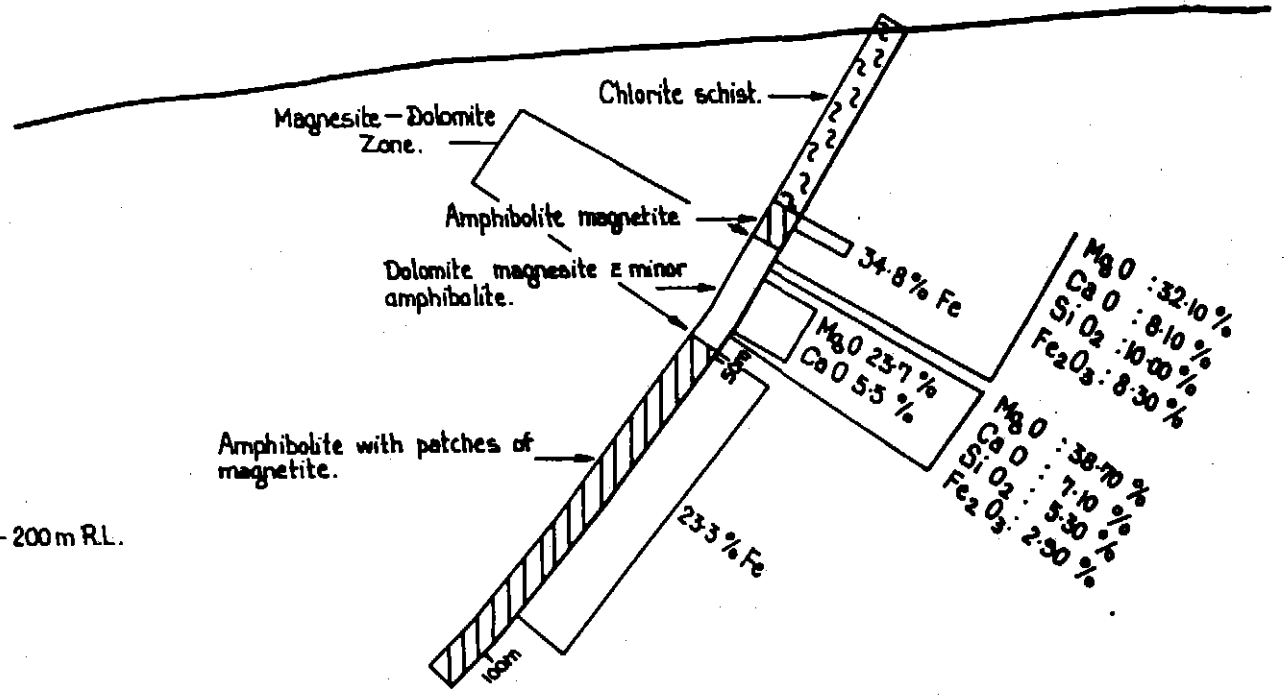
045

348 400 m E

814045

346 500m E

IMI 34
348475 m E
5394025 m N
R.L. 267m A.S.L.
Azimuth 256° A.M.G.



— 200 m R.L.

5 cm

— 100 m R.L.

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LIMITED

LONG PLAINS SOUTH PROSPECT

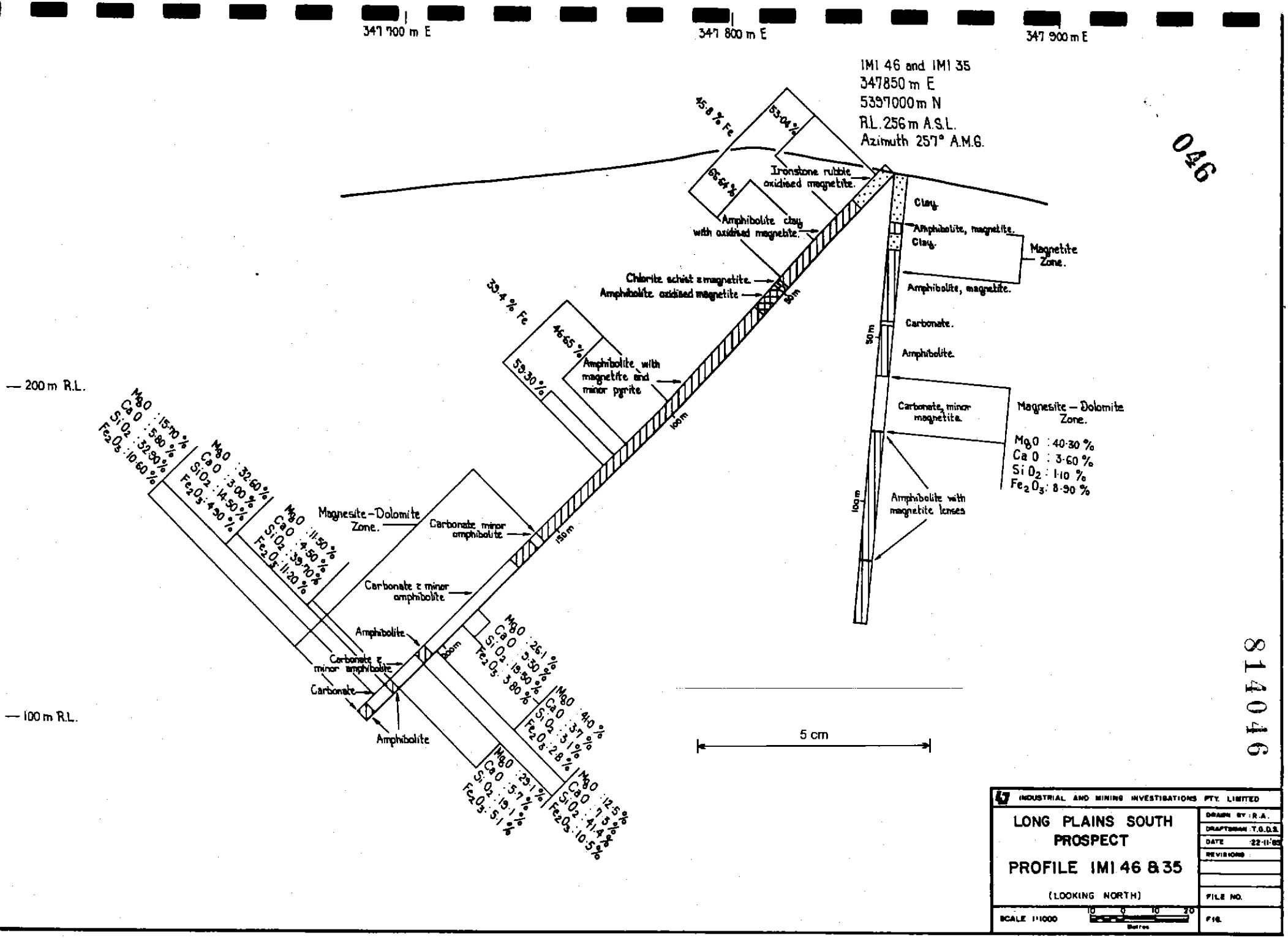
PROFILE IMI 34

(LOOKING NORTH)

DRAWN BY : R.A.
DRAFTSMAN : T.G.D.S
DATE : 19-11-80
REVISIONS :
FILE NO.

SCALE 1:1000

10 0 10 20
Metres



8140416

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LIMITED

LONG PLAINS SOUTH PROSPECT

PROFILE IMI 46 & 35

(LOOKING NORTH)

SCALE 1:1000

DRAWN BY : R.A.
DRAFTSMAN : T.G.D.S.
DATE : 22-11-82
REVISIONS :
FILE NO.
FIG.

APPENDIX 3

ROCKY RIVER IRON DEPOSIT

Introduction

The large magnetic anomaly was investigated with two drillholes. The iron is mostly disseminated with few stringers of massive magnetite. Ridgeway calculated a reserve of 4mt of very low grade mieralization.

Location of drillholes, Rocky River Drilling Program.

There is a problem with the location of these drillholes largely because of the confused terms in which the location of Rocky River 1 is given in the log

An important source for location data is an annotated early draft of the magnetometer survey map,- a large scale version of what became Fig 15 in Urquhart (1964) which appears to be the field copy used by a geologist involved in the drilling program. Geological data has been added, plus some annotations including the following remarks -

No 1 80 (degrees)

No 2 dir 265 dip 55
225'Bg 150 from corner Base line and traverse C.L.
then 30' in dir 265.

In the same biro hand dots numbered 1400 on line 4S and 1350 on line 8S are marked and the contours are heavied in.
These figures make sense as peg positions in feet, taken from zero marks on the old water race, not the original baseline.

Shown in pencil are two circled dots with (multiple) lines drawn from them. In the case of the more northerly site the heaviest line is marked: 265 (degrees) it is at 740' by the map's contours. The other point is at 700' by the map's contours and the heaviest line is not marked in degrees but is oriented 115 degrees magnetic.

On the ground, the northern site contains a drillhole interpreted as RR 2; the southern site is contained on an artificial platform and this is now considered to be the site of RR 1.

Logs were prepared by T.D. Hughes. The log for R.R.2 is reasonably straightforward in terms of location data, so long as the "centre line" is line zero of the original baseline grid. The hole is stated as commenced on 4-4-66; completed 2-5-66.
For R.R.1 no dates are given, but it seems probable that most of the drilling was done in March 1966. The big problem is with the location data. It is possible to locate the site on the 700' map

contour if the annotations mentioned above are correct so long as "south" is taken to be defined in terms of the magnetometer grid which is oriented 40 degrees west of magnetic north. If this assumption is made the azimuth of the R.R.1 drillhole given in the log as 120 degrees (Magnetometer survey grid) coincides with the (magnetic) azimuth of 80 degrees in the annotatations. This is the preferred interpretation. It places the borehole perpendicular to the axis of the anomaly.
But the most confidently drawn line on the annotated map is at 115 degrees magnetic, and it is also possible that the true orientation is 120 degrees magnetic.

Core logs

Rocky River No.1 D.D.H. log by CHC Shannon, October 1984. Depths in feet.

0 -62	pink weathered granular greenschist,rare non-fissile chlorite bands.
62 -120	green chlorite schist and green and white metamorphic banded feldspar chlorite schist. Bands 1-5 mm.
120-146	granular greenschist,with rare globular quartz/carbonate segregations to 3 cm.
146-172	granular greenschist with carbonate. Granular character due to albite? porphyroblasts.
172-300	mostly fissile chlorite schist with intervals of green and white banded schist.
300-324	as above, less fissile.
324-376	grey magnetite rich greenschist with carbonate. Intervals of coarsely crystalline pyrite and of green/white banded greenschist.
376-432	mostly fissile chlorite schist; pyrite, magnetite bearing.
432-442	non-fissile greenschist with carbonate-quartz segregations; minor magnetite rock.
442-443	coarsely crystallinecarbonate rock with segregations of non-fissile chlorite and of pyrite.
443-465	fissile chlorite schist; magnetite, pyrite bearing.
465-475	feldspar-quartz-carbonate-chlorite schist with pyrite and

magnetite.

475-491 fissile chlorite schist.

491-518 feldspar-chlorite schist; feldspar as coarse porphyroblasts and as metamorphic segregation bands 2-5mm.; also pyrite and magnetite porphyroblasts; rare magnetite rock bands.

518-521 carbonate rock with segregations of pyrite 5cm. and magnetite 3cm.

521-532 feldspar-chlorite schist; feldspar as porphyroblasts and as metamorphic segregation bands.

532-553.5 spindle banded chlorite schist, chlorite-feldspar schist and carbonate schist grading to carbonate rock. generally pyritic and with some magnetite; clots of massive pyrite to 3cm.

553.5-565.5carbonate rock (probably magnesite) with pyrite clots.

565.5-599 pyritic laminated feldspar-chlorite schist with feldspar and magnetite porphyroblasts; minor carbonate.

end of hole.

(core split in the original sampling, i.e. from 153 to 489 feet, is shattered and was not logged in the detail possible for the remainder.)

Rocky River No 2 D.D.H. log by CHC Shannon, October 1984.

0- 31 poor recovery; laminated greenschist with limonite stain, some gossan.

31- 62 non-fissile laminated greenschist with quartz segregations.

62- 83 non fissile, banded feldspar-chlorite schist.

83- 89 non-fissile, laminated feldspar-chlorite schist; some gossan.

89-342 mostly fissile chlorite schist.

342-364 leached, dark brown weathering talc/haematite earth and schist; probably after interbanded carbonate

050

(magnesite)-talc-chlorite schist.

364-380 feldspar-chlorite schist with some talc-haematite earth after magnesite.

380-400 leached, dark brown weathering talc/haematite earth and schist; probably after interbanded magnesite-talc chlorite schist.

end of hole

(core split in the original sampling, i.e. from 90 to 340 feet, is shattered and could not be logged in the detail possible for the remainder.)

Rocky River drill core analysis.

Rocky River No.1.

Depth in ft. Sample number. Element

		Cu	Pb	Zn	Mn	Ag	As	Se	Sn	W	Sb	Te	Au	Hg	S	Fe	Ca	Mg	LoI
8- 21	RR1010	100	45	160	1750	0.2	1		x	x		x	2050						
21- 41	RR1011	135	25	330	2100	x	x		x	x		x	2030						
41-52.5	RR1012	205	15	445	1750	0.1	x		x	x		x	1675						
52.5-62	RR1013	225	x	365	2550	x	x		x	x		x	2530						
62- 71	RR1014	180	10	490	2050	x	x		x	x		x	1460						
71-78.5	RR1015	115	x	550	3550	0.1	x		x	x		x	730						
78.5-88.5	RR1016	105	5	575	6000	0.5	x		x	x		x	980						
88.5-99	RR1017	115	5	515	6250	0.9	x		x	x		x	910						
99-110	RR1018	85	x	490	2850	0.7	x		x	x		x	390						

110-119 490	RR1019	130	x	475	2750	0.4	x		x	x			x
119-138 1530	RR1020	105	10	1500	2600	0.5	x		x	x			x
138-153 2530	RR1021	60	x	860	1.4%	0.1	x		x	x			x
153-169 0.008	661519	150	10	850	2.5%	0.4	24	x		x		x	x
169-189 0.040	661520	495	x	200	1.7%	0.1	8	x	x		6	x	x
189-209 017	661521	345	x	135	1550	x		x	x	7		7	x	0
209-229 008	661522	445	5	160	2550	x		x	x	6		x	x	0
229-249 0.015	661523	190	x	150	3850	x		x	x	x		x	x	x
249-269 0.005	661524	455	x	135	2750	x		x	x	4		x	x	x
269-289 0.030	661525	170	x	135	2500	x		x	x	3		4	x	x
289-309 0.180	661526	35	x	135	2400	x		x	x	3		x	x	x
309-365	no samples													
365-377	*selective sample pyrite rich.*												
	RR1001	120	5	105	1300	0.5	6			x				x
16.5%														
377-395	no samples													
395-405	*selective sample pyrite rich.*												
	RR1002	25	5	95	1550	0.4	3			x				x
13.3%														
405-442	no samples													
442-443 9.9%	RR1003	20	x	65	2200	0.3	12			x				x
443-518	no samples													

518-519 carbonate/pyrite/magnetite

	RR1004	975	25	35	6850	0.4	39		x				x
11.1%													

519-520 carbonate, minor pyrite and magnetite

	RR1005	910	25	25	8700	0.4	19		x				x
5.3%													

520-540 no samples

540-543 greenschist with carbonate schist

	RR1006	30	20	85	2.45%	0.3	17		x				x
2.2%													

543-553 no samples

553-553.5 carbonate,non-fissile chlorite and pyrite

	RR1007	1100	25	100	1.25%	0.3	37		x				x
10.3%													

553.5-562.5 carbonate rock, some pyrite

	RR1008	185	20	65	1.85%	0.3	5		x				
5.00	1.33%	6.25%	12.1%	5.15%	30.35%								

562.5-586 no samples

586-601 representative greenschist

	RR1009	90	5	370	3800	0.4	2		x				
0.03	0.65%												

end of hole.

Rocky River No 2

Depth in feet	Sample number	Element											
xxx-yyy	nnnnnn	Cu	Pb	Zn	Mn	Ag	As	Se	Sn	W	Sb	Te	
Au	Hg	S											
0-18	no samples												
18-30	20 cm. selective for gossan in greenschist												
	RR2001	70	10	95	255	0.3	13		x				
1.24	0.05%												
30-64	no samples												
64-65	20 cm. control greenschist												

RR2002 20 5 110 940 0.3 3 x
0.08 4.1%

65-85 no samples

85-89 20 cm. gossan and wallrock

RR2003 135 15 105 530 0.3 13 x
0.18 2.0%

89-104 no samples

104-113 662467 20 x 125 1700 x x x 4 3 x x
0.510

113-130 no samples

130-150 662469 20 5 130 895 x x x 8 4 x x
0.210

150-170 662470 150 5 145 1100 x 2 x 4 x x x
0.140

170-190 662471 100 5 175 2500 x x x x 6 x x
0.090

190-210 662472 110 5 155 2200 x x x 3 x x
0.008 0.260

210-230 no samples

230-250 662474 170 5 140 2600 x x x 4 x x x
0.150

250-270 no samples

270-290 662476 230 10 275 4450 x x x 3 x x x
0.100

290-310 662477 540 x 125 1400 x x x x x x x
0 075

310-330 662478 325 x 145 1500 x x x 3 6 x
0.008 0.100

330-340 662479 610 10 150 1700 x 2 x 4 x x x
0.170

340-362 no samples

362-366 leached carbonate/greenschist

	RR2004	60	x	505	1.5%	0.3	x		x	
0.82		0.01%								

366-374 no samples

374-377 feldspathic greenschist

	RR2005	35	10	940	3450	0.6	x		x	
0.29		0.01%								

377-400 no samples

end of hole

References:

Atkinson, W.J.; 1960: Report on the Rocky River Area Iron Deposits, N.W. Tasmania. Rio Tinto Australian Exploration Pty. Limited unpublished report.

Hughes, T.D.; 1966: Logs of Rocky River 1 and Rocky River 2 diamond drillholes. Tasmania Department of Mines diamond drill core records?

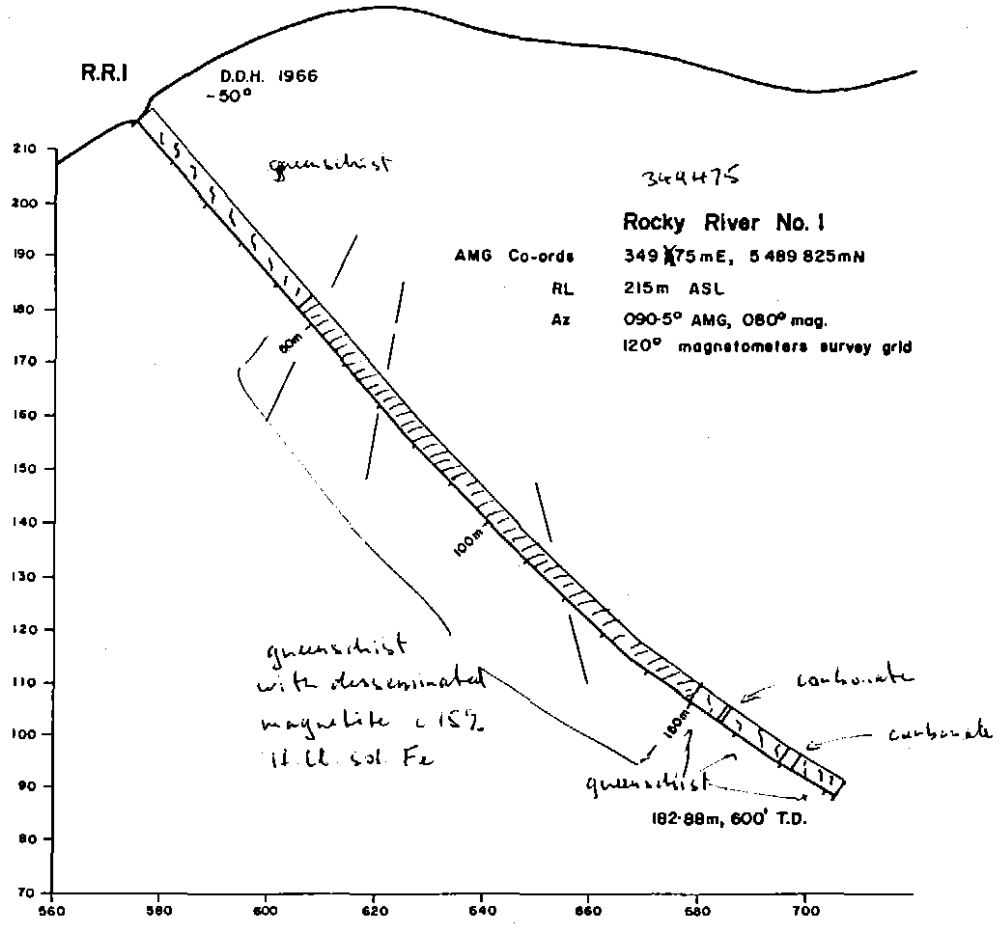
Shannon, C.H.C.; 1984: Logs and new assay data R.R.1 and R.R.2. I.M.I. internal memo.

Ridgeway, J.E.; 1969: Rocky River iron ore deposit, Tasmania. I.M.I. consultant's report.

Urquhart,G.; 1966: Magnetite Deposits of the Savage River - Rocky River Region. Tasmania Department of Mines, Geological Survey Bulletin No 48.

055

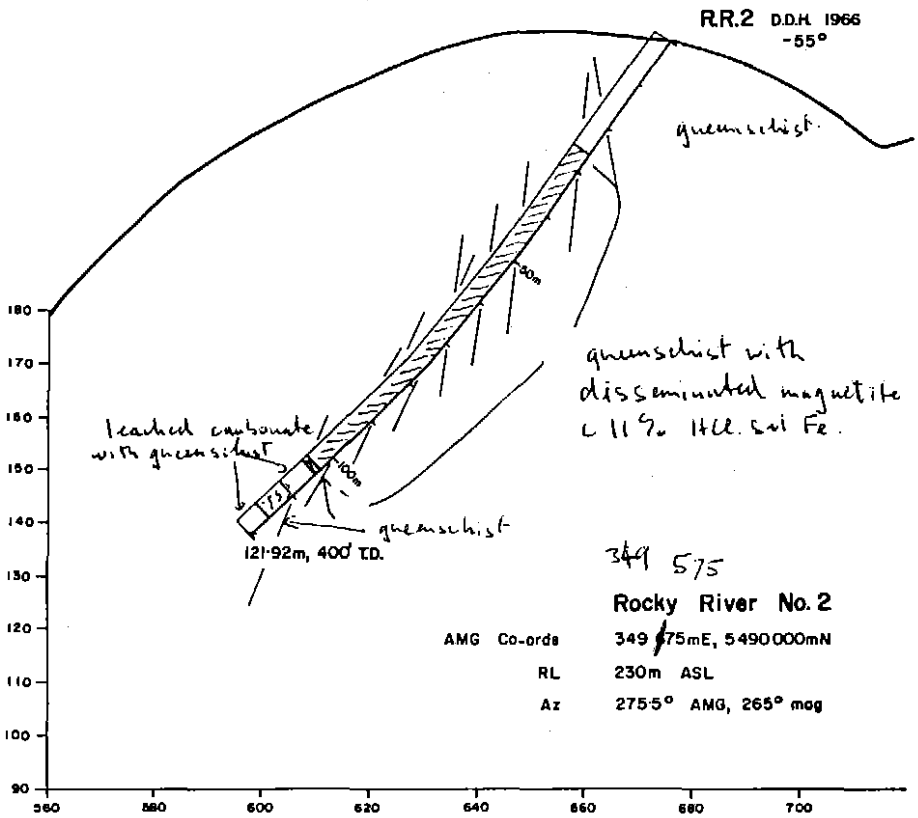
814055



349475

Rocky River No. 1

AMG Co-ords	349475mE, 5489825mN
RL	215m ASL
Az	090·5° AMG, 080° mag.
	120° magnetometers survey grid



349575

Rocky River No. 2

AMG Co-ords	349575mE, 5490000mN
RL	230m ASL
Az	275·5° AMG, 265° mag

5 cm

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LIMITED

E.L. 4/61 - SAVAGE RIVER
ROCKY RIVER
IRON DEPOSIT AREA
DRILLHOLE PROFILES
R.R.1 & R.R.2

DRAWN BY : H.S.
DRAFTSMAN : T.B.D.
DATE : Aug.
REVISIONS :

FILE NO.

SCALE 1:2500

FIG.

IMI No. 34		Width Intersection	True Width
94' - 98'	34.8% Fe	4'	
161' - 306'	25% Fe	145'	100'

TONNAGE ESTIMATE

The following tentative figures of outlined and possible tonnage are based on magnetic anomalies and widely spaced skeleton drilling

L 08950N to L 11330N

Lode Intersections	True Width	Values
RTAE No. 1	35'	56.6% Fe
IMI No. 29	60'	30% Fe
IMI No. 28	90'	17% Fe

Average Width 60 ft. Average Value 29%

Length 2300 ft.

Quantity:

2400 x 60 = 144,000 square feet

= 14,000 tons per vertical foot

To depth outlined 100' = 1,400,000 tons

L 10850N - L 11250N

Lode Intersection	True Width	Values
RTAE No. 1	150'	49% Fe
IMI No. 29	100'	11% Fe
IMI No. 28	60'	20% Fe

Average Width 100 ft. Average Value 28%

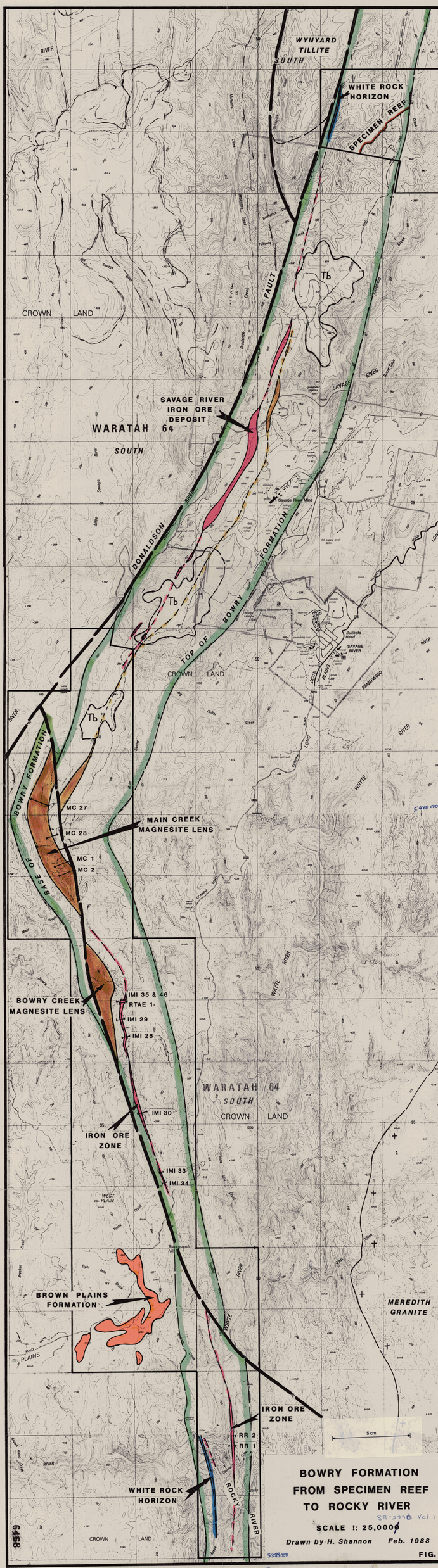
Length 2800 ft.

Quantity:

2800 x 100 = 280,000 square feet

= 28,000 tons per vertical foot

Partly outlined to 250 ft. = 7,000,000 tons.



BOWRY FORMATION FROM SPECIMEN REEF TO ROCKY RIVER

SCALE 1: 25,000

Drawn by H. Shannon Feb. 1988

FIG. 1

814057

6469

346 350mE | 346 400mE | 346 450mE | 346 500mE | 346 550mE | 346 600mE | 346 650mE | 346 700mE | 346 750mE | 346 800mE | 346 850mE | 346 900mE | 346 950mE | 347 000mE | 347 050mE | 347 100mE | 347 150mE | 347 200mE

401 500mN

401 400mN

401 300mN

401 200mN

401 100mN

401 000mN

400900mN

400800mN

MARKER 6

150 200 250 240 220 220 250 250 230 250 240 250 280

LEGEND

- CARBONATES
- SILICA ROCK
- TALC
- POROUS OCHRE, AFTER CARBONATE
- RESIDUAL SAND, AFTER CARBONATE
- SAND OR POROUS OCHRE / LIMONITE PISOLITES
- GREENSCHIST BRECCIA USUALLY OVER CARBONATE
- GREENSCHIST UNDIFFERENTIATED
- GREENSCHIST WITH DISSEMINATED MAGNETITE
- MAGNETITE ROCK
- GREY SANDSTONE

SHEET LOCATION

- SHEET 1
- SHEET 2
- SHEET 3
- SHEET 4
- SHEET 5
- SHEET 6
- SHEET 7

GM
TN
MN
GRID CONVERGENCE 1.2°
GRID/MAGNETIC ANGLE 12.5°

6469

5 cm

S14058

SAVAGE RESOURCES LIMITED

SAVAGE RIVER E.L. 4 / 61
MAIN CREEK MAGNESITE
SHEET I 88-2776 Vol 1

DRILLING, GEOLOGY
OUTCROP & INTERPRETATION

SCALE 1:1000 — 20 0 0 10 20 30 40 METRES

DRAWN BY : H.S.
DRAFTSMAN: T.G.D.S.
DATE : Feb. '88
REVISIONS :
FILE No.

FIG. 2-1

N.W. Coast Computer Aided Drafting Centre. Phone (004 354315) Fax. (004 354490)

6470

MAIN CREEK MAGNESITE LENS

MARKER 6

MARKER 3

MC 27 D.D.H.

HT 2

HT 1

MC 21

MC 23A

MC 23B

MC 25

MC 22

MC 26

MC 24

346 300mE. 346 400mE. 346 500mE. 346 600mE. 346 700mE. 346 800mE. 346 900mE. 347 000mE. 347 100mE. 347 200mE.

400700mN.

400600mN.

400500mN.

400400mN.

400300mN.

400200mN.

400100mN.

400000mN.

LEGEND

- CARBONATES
- SILICA ROCK
- TALC
- POROUS OCHRE, AFTER CARBONATE
- RESIDUAL SAND, AFTER CARBONATE
- SAND OR POROUS OCHRE / LIMONITE PISOLITES
- GREENSCHIST BRECCIA USUALLY OVER CARBONATE
- GREENSCHIST UNDIFFERENTIATED
- GREENSCHIST WITH DISSEMINATED MAGNETITE
- MAGNETITE ROCK
- GREY SANDSTONE

2-2

814059

SHEET LOCATION

SHEET 1
SHEET 2
SHEET 3
SHEET 4
SHEET 5
SHEET 6
SHEET 7

5 cm

GRID CONVERGENCE 1.2°

GRID/MAGNETIC ANGLE 12.8°

6470

SAVAGE RESOURCES LIMITED

SAVAGE RIVER E.L. 4 / 61
MAIN CREEK MAGNESITE
SHEET 2 - 86-2776 Vol 1
DRILLING, GEOLOGY
OUTCROP & INTERPRETATION

DRAWN BY : H.S.
DRAFTSMAN: T.S.D.S.
DATE : Sept. '87
REVISIONS :
FILE No.

SCALE 1 : 1000 — METRES

FIG. 2-2

N.W. Coast Computer Aided Drafting Centre, Phone (004) 354303
Fax. (004) 354490

6471

SITE D

Proposed D.D.H.

MAIN CREEK MAGNESITE LENS

M MARKER 6

MARKER 3

MC 28 D.D.H.

SITE A

Proposed D.D.H.

Proposed Roads

SITE C

Proposed D.D.H.

MTS

KARST BRECCIA PIPE

MC 1 D.D.H.

MC 31 MC 20B MC 20A MC 20G MC 16 MC 15 MC 31 MC 13 MC 17 MC 18

346 300mE 346 400mE 346 500mE 346 600mE 346 700mE 346 800mE 346 900mE 347 000mE 347 100mE 347 200mE

399 900mN 399 800mN 399 700mN 399 600mN 399 500mN 399 400mN 399 300mN 399 200mN

LEGEND

- CARBONATES
- SILICA ROCK
- TALC
- POROUS OCHRE, AFTER CARBONATE
- RESIDUAL SAND, AFTER CARBONATE
- SAND OR POROUS OCHRE / LIMONITE PISOLITES
- GREENSCHIST BRECCIA USUALLY OVER CARBONATE
- GREENSCHIST UNDIFFERENTIATED
- GREENSCHIST WITH DISSEMINATED MAGNETITE
- MAGNETITE ROCK
- GREY SANDSTONE

SHEET LOCATION

- SHEET 1
- SHEET 2
- SHEET 3
- SHEET 4
- SHEET 5
- SHEET 6
- SHEET 7

GRID CONVERGENCE 1.2°

GN MN

GRID/MAGNETIC ANGLE 12.5°

5 cm

6471

E11060

SAVAGE RESOURCES LIMITED

SAVAGE RIVER E.L 4 / 61
MAIN CREEK MAGNESITE
SHEET 3 85 2776 Vol 1
DRILLING, GEOLOGY
OUTCROP & INTERPRETATION

DRAWN BY : H.S.
DRAFTSMAN: T.O.D.S.
DATE Feb. '88
REVISIONS :
FILE No.

SCALE 1:1000 METRES

FIG. 2-3

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6472

Proposed D.D.H.

MC 1 D.D.H.

SITE E

Proposed Road

TEST QUARRY SITE

MT3

MT4

MT1

MT2

MC 2 D.D.H.

SITE B

Proposed D.D.H.

MARKER 3

MARKER 6

MAGNESITE "A" EAST

MAIN CREEK MAGNESITE LENS

346 600mE 346 700mE 346 800mE 346 900mE 347 000mE 347 100mE 347 200mE 347 300mE 347 400mE 347 500mE

399 100mN 399 000mN 398 900mN 398 800mN 398 700mN 398 600mN 398 500mN 398 400mN

LEGEND

- CARBONATES
- SILICA ROCK
- TALC
- POROUS OCHRE, AFTER CARBONATE
- RESIDUAL SAND, AFTER CARBONATE
- SAND OR POROUS OCHRE / LIMONITE PISOLITES
- GREENSCHIST BRECCIA USUALLY OVER CARBONATE
- GREENSCHIST UNDIFFERENTIATED
- GREENSCHIST WITH DISSEMINATED MAGNETITE
- MAGNETITE ROCK
- GREY SANDSTONE

SHEET LOCATION

SHEET 1
SHEET 2
SHEET 3
SHEET 4
SHEET 5
SHEET 6
SHEET 7

5 cm

TN MN

GRID CONVERGENCE 1.2°

GRID/MAGNETIC ANGLE 12.5°

6472

S14061

SAVAGE RESOURCES LIMITED

SAVAGE RIVER E.L. 4 / 81
MAIN CREEK MAGNESITE
SHEET 4 (85-2776 Vol 1)
DRILLING, GEOLOGY
OUTCROP & INTERPRETATION

DRAWN BY : H.S.
DRAFTSMAN: T.G.D.S.
DATE : Feb. 88
REVISIONS
FILE No.

SCALE 1:1000 METRES 20 10 0 20 30 40

FIG. 2-4

N.W. Coast Computer Aided Drafting Centre Phone (004 354351 Fax. (004 354495)

6473

IRON ORE

IRON ORE

IRON ORE

Proposed Road

BOWRY CREEK MAGNESITE LENS

347 500mE 347 600mE 347 700mE 347 800mE 347 900mE

398 300mN.
398 200mN.
398 100mN.
398 000mN.
397 900mN.
397 800mN.
397 700mN.
397 600mN.

LEGEND

- CARBONATES
- SILICA ROCK
- TALC
- POROUS OCHRE, AFTER CARBONATE
- RESIDUAL SAND, AFTER CARBONATE
- SAND OR POROUS OCHRE / LIMONITE PISOLITES
- GREENSCHIST BRECCIA USUALLY OVER CARBONATE
- GREENSCHIST UNDIFFERENTIATED
- GREENSCHIST WITH DISSEMINATED MAGNETITE
- MAGNETITE ROCK
- GREY SANDSTONE

SHEET LOCATION

- SHEET 1
- SHEET 2
- SHEET 3
- SHEET 4
- SHEET 5
- SHEET 6
- SHEET 7

GN TN MN

GRID CONVERGENCE 1.2°

GRID/MAGNETIC ANGLE 12.5°

5 cm

6473

S14062

SAVAGE RESOURCES LIMITED

SAVAGE RIVER E.L. 4 / 61
MAIN CREEK MAGNESITE
SHEET 5 (85 2776 Vol 2)
DRILLING, GEOLOGY
OUTCROP & INTERPRETATION

DRAWN BY : H.S.
DRAFTSMAN: T.G.D.S.
DATE : Feb. '88
REVISIONS :
FILE No.

SCALE 1:1000 METRES 20 0 10 20 30 40

FIG. 2-5

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6474

BOWRY CREEK MAGNESITE LENS

BOWRY CREEK MAGNESITE LENS

AXIS OF MAGNETIC ANOMALY AFTER EADIE (1982)

BT 1

Proposed Road

LP1

LP2

IMI 46 & 35

RTAE No.1

DYKE

IRON ORE

SITE F

Proposed D.D.H.

347 300mE 347 400mE 347 500mE 347 600mE 347 700mE 347 800mE 347 900mE 348 000mE 348 100mE 348 200mE

397 500mN 397 400mN 397 300mN 397 200mN 397 100mN 397 000mN 396 900mN 396 800mN

LEGEND

- CARBONATES
- SILICA ROCK
- TALC
- POROUS OCHRE, AFTER CARBONATE
- RESIDUAL SAND, AFTER CARBONATE
- SAND OR POROUS OCHRE / LIMONITE PISOLITES
- GREENSCHIST BRECCIA USUALLY OVER CARBONATE
- GREENSCHIST UNDIFFERENTIATED
- GREENSCHIST WITH DISSEMINATED MAGNETITE
- MAGNETITE ROCK
- GREY SANDSTONE
- 20 — 20,000 nT CONTOUR

SHEET LOCATION

SHEET 1
SHEET 2
SHEET 3
SHEET 4
SHEET 5
SHEET 6
SHEET 7

GRID CONVERGENCE 1.2°
GRID/MAGNETIC ANGLE 12.5°

S14063

6474

5 cm

SAVAGE RESOURCES LIMITED

SAVAGE RIVER E.L. 4 / 61
MAIN CREEK MAGNESITE
SHEET 6 GS 2776 Vol 2
DRILLING, GEOLOGY
OUTCROP & INTERPRETATION

DRAWN BY : H.S.
DRAFTSMAN : T.G.D.S.
DATE : Feb. '88
REVISIONS :
FILE No. :

SCALE 1:1000 0 10 20 30 40 METRES

FIG. 2-6

N.W. Coast Computer Aided Drafting Centre. Phone (004 354351) Fax. (004 354495)

6475

Proposed D.D.H.

Prop. Road

IMI 29

IRON ORE

Proposed Road

BOWRY CREEK MAGNESITE LENS

IMI 28

Permanent peg on baseline of BMR grid

IRON ORE

FAULT PUD

347 300mE | 347 400mE | 347 500mE | 347 600mE | 347 700mE | 347 800mE | 347 900mE | 348 000mE | 348 100mE | 348 200mE | 348 300mE

396 700mN | 396 600mN | 396 500mN | 396 400mN | 396 300mN | 396 200mN | 396 100mN | 396 000mN

LEGEND

- CARBONATES
- SILICA ROCK
- TALC
- POROUS OCHRE AFTER CARBONATE
- RESIDUAL SAND, AFTER CARBONATE
- SAND OR POROUS OCHRE / LIMONITE PISOLITES
- GREENSCHIST BRECCIA USUALLY OVER CARBONATE
- GREENSCHIST UNDIFFERENTIATED
- GREENSCHIST WITH DISSEMINATED MAGNETITE
- MAGNETITE ROCK
- GREY SANDSTONE
- 20 — 20,000 nT CONTOUR

SHEET LOCATION

- SHEET 1
- SHEET 2
- SHEET 3
- SHEET 4
- SHEET 5
- SHEET 6
- SHEET 7

GRID CONVERGENCE 1.2° | GRID/MAGNETIC ANGLE 12.5° | MN

814064

6475

5 cm

SAVAGE RESOURCES LIMITED

SAVAGE RIVER E.L 4 / 61
MAIN CREEK MAGNESITE
SHEET 7
DRILLING, GEOLOGY
OUTCROP & INTERPRETATION

DRAWN BY : H.S.
DRAFTSMAN : T.G.D.S.
DATE : Feb '68
REVISIONS :
FILE No.

SCALE 1 : 1000 — METRES

FIG. 2-7

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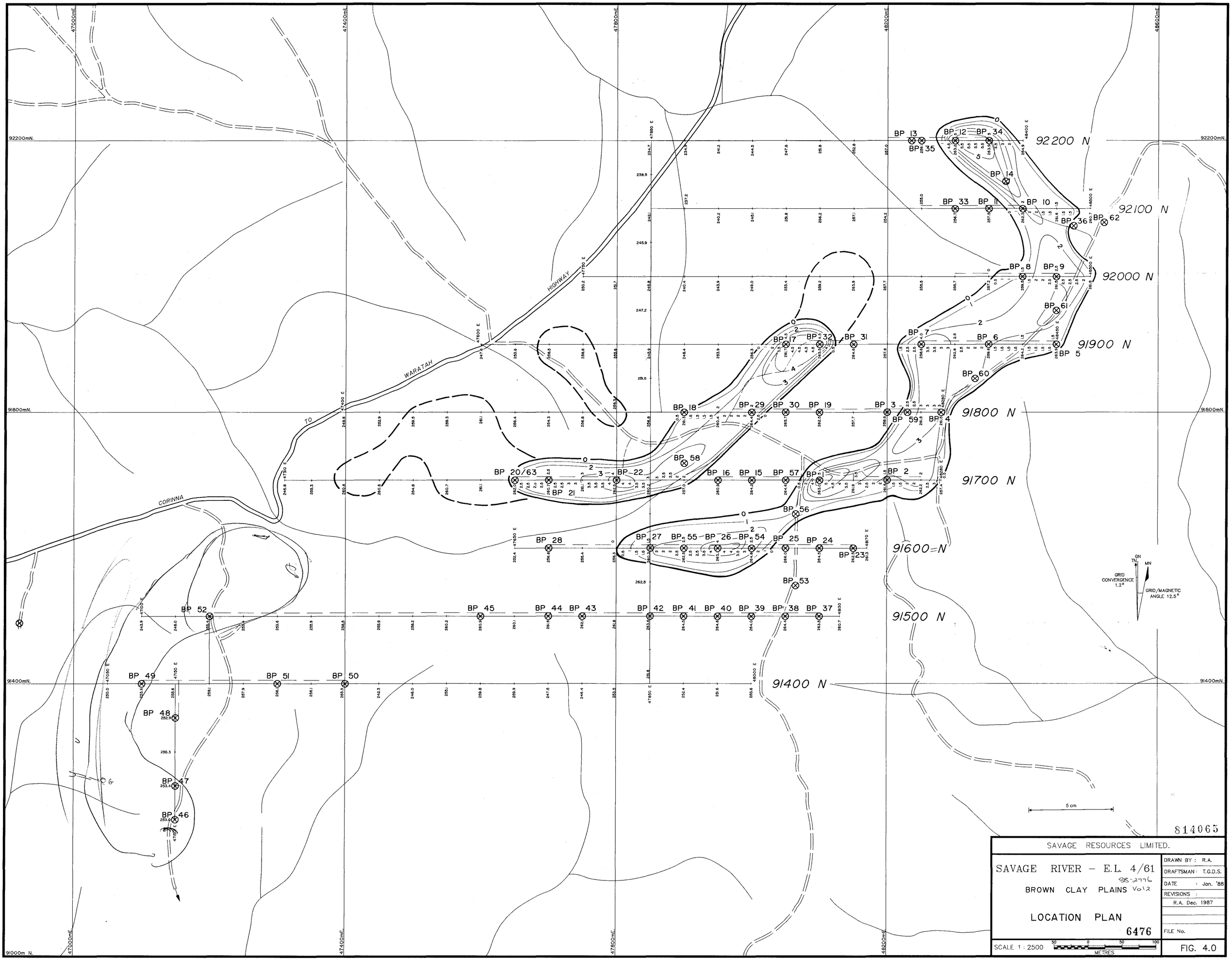


814065

SAVAGE RESOURCES LIMITED.

SAVAGE RIVER – E.L. 4/61

85-2776

BROWN CLAY PLAINS Vol 2

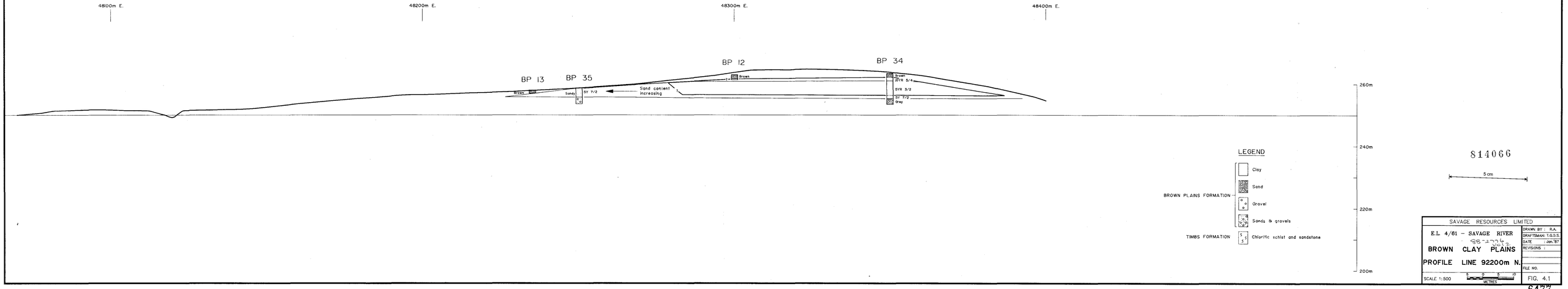
LOCATION PLAN

6476

DRAWN BY :	R.A.
DRAFTSMAN :	T.G.D.S.
DATE :	Jan. '88
REVISIONS :	R.A. Dec. 1987
FILE No.	

SCALE 1 : 2500 — 50 0 50 100 METRES

FIG. 4.0



S14066

5 cm

SAVAGE RESOURCES LIMITED

E.L. 4/81 – SAVAGE RIVER

88-2776

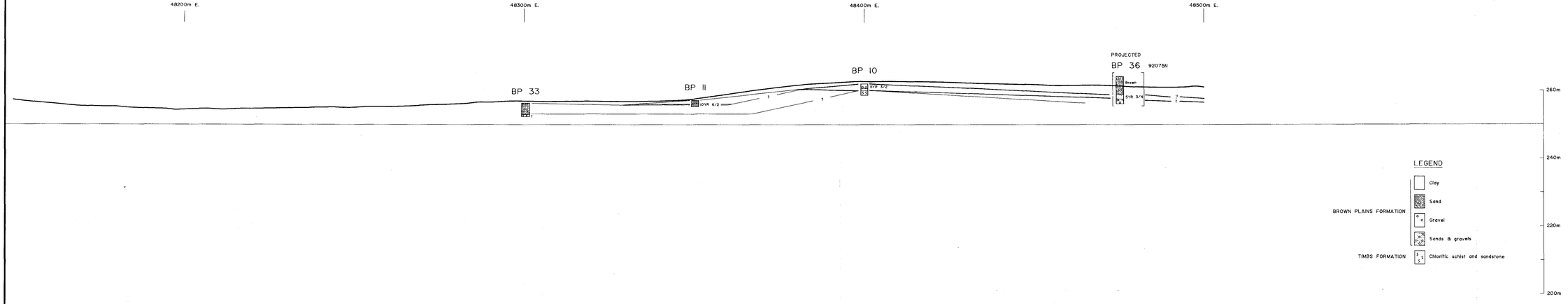
BROWN CLAY PLAINS

PROFILE LINE 92200m N.

SCALE 1:500 METRES 5 0 5 10 15 20

DRAWN BY : R.A.
DRAFTSMAN: T.G.D.S.
DATE : Jan.'87
REVISIONS :
FILE NO.
FIG. 4.1

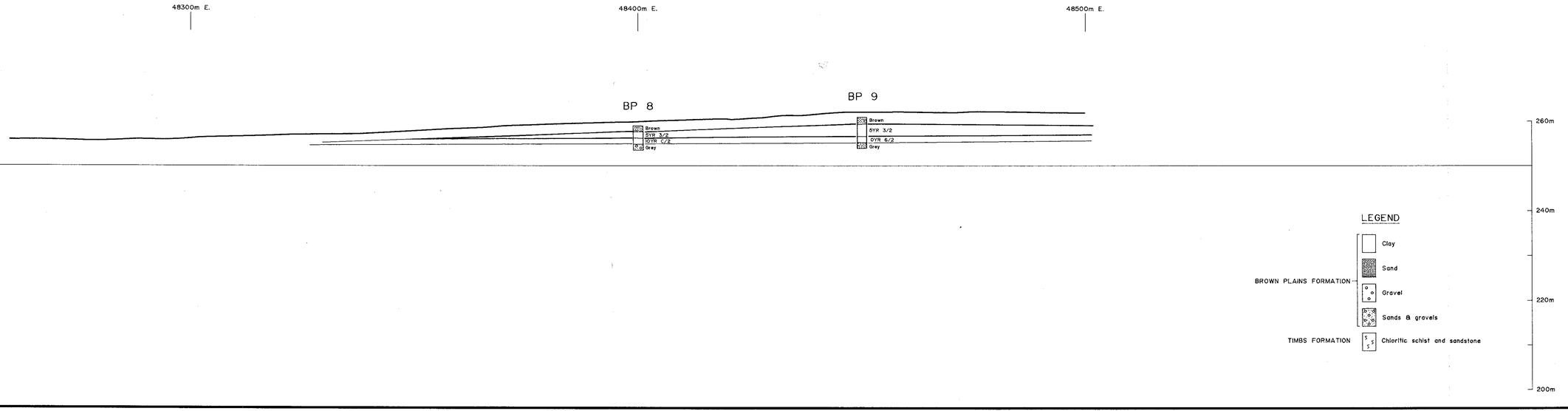
6477



S14067

SAVAGE RESOURCES LIMITED	
E.L. 4/81 - SAVAGE RIVER	DRAWN BY : R.A.
85-2776 Vol 2.	DRAFTSMAN: T.G.D.S.
BROWN CLAY PLAINS	DATE : Jan. 87
PROFILE LINE 9210Om N.	REVISIONS :
SCALE 1:500 METRES 5 0 5 10	FILE NO.
	FIG. 4.2

6478



814068

SAVAGE RESOURCES LIMITED

E.L. 4/81 – SAVAGE RIVER

83-2776 Vol 2

BROWN CLAY PLAINS

PROFILE LINE 92000m N.

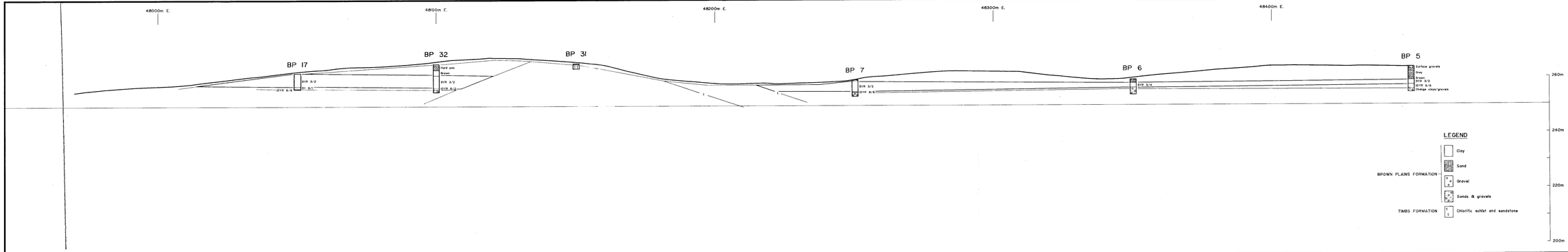
SCALE 1:500 — METRES 5 0 5 10

DRAWN BY : R.A.
DRAFTSMAN: T.G.D.S.
DATE : Jan.'87
REVISIONS :

FILE NO.

FIG. 4.3

6479



6460

S14069

SAVAGE RESOURCES LIMITED

E.L. 4/81 – SAVAGE RIVER

BROWN CLAY PLAINS

PROFILE LINE 9100m N.

SCALE 1:500

METRES

DRAWN BY: R.A.

DRAFTSMAN: T.G.D.S.

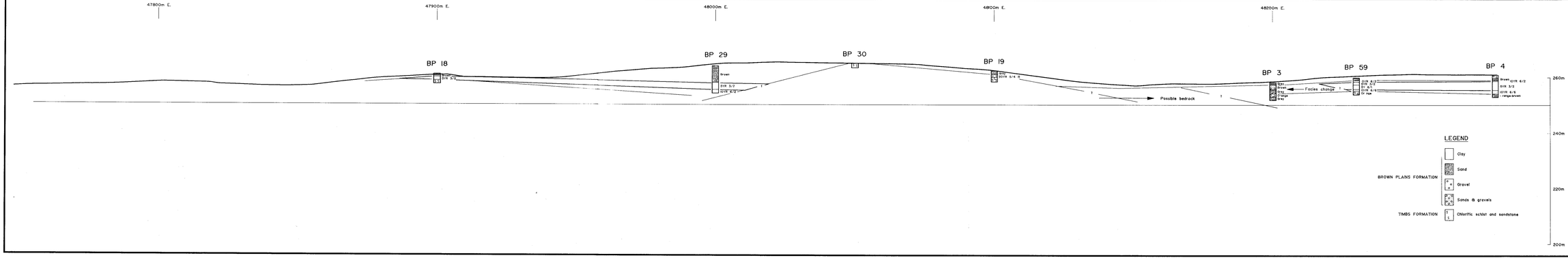
DATE: Jan. 82

REVISIONS:

FILE NO.

FIG. 4.4

6481



S11070

5 cm

SAVAGE RESOURCES LIMITED

E.L 4/81 – SAVAGE RIVER
(85-2776 Vol 2)

BROWN CLAY PLAINS

PROFILE LINE 91800m N.

DRAWN BY : R.A.
DRAFTSMAN: T.G.D.S.
DATE : Jan 87
REVISIONS :

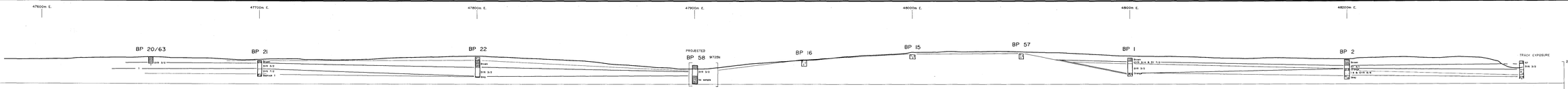
FILE NO.

SCALE: 1:500 — 0 5 10 15 METRES

FIG. 4.5

6481

6482



LEGEND

- Clay
- BROWN PLAINS FORMATION — Sand
- Gravel
- Sands & gravels
- TIMBS FORMATION — Chloritic schist and sandstone

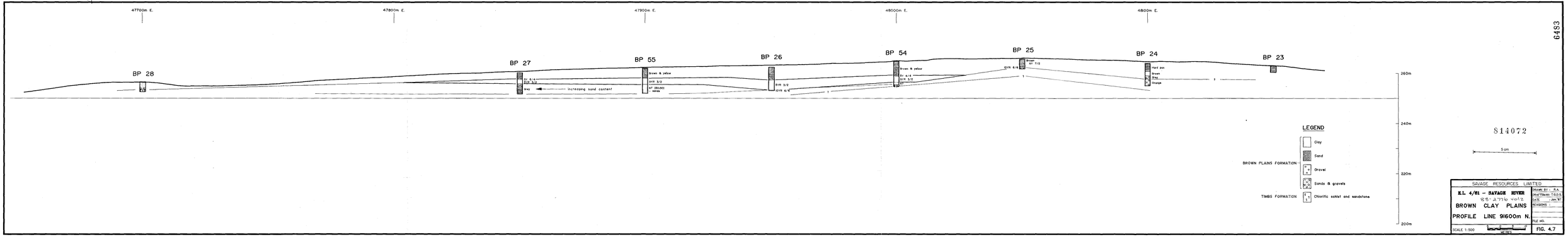
S14071

5 cm

6482

SAVAGE RESOURCES LIMITED	
E.L. 4/91 — SAVAGE RIVER	DRAWN BY: R.A.
	CHECKED: T.E.S.
BROWN CLAY PLAINS	DATE: JAN '97
	ACCORDS
PROFILE LINE 91700m N.	
	PLOT NO.
SCALE 1:500	FIG. 4.6

6483



6453

S14072

5cm

SAVAGE RESOURCES LIMITED

K.I. 4/61 – SAVAGE RIVER

BROWN CLAY PLAINS

PROFILE LINE 9160Om N.

SCALE 1:500

DRAWN BY : R.A.

DRAFTSMAN: T.B.D.S.

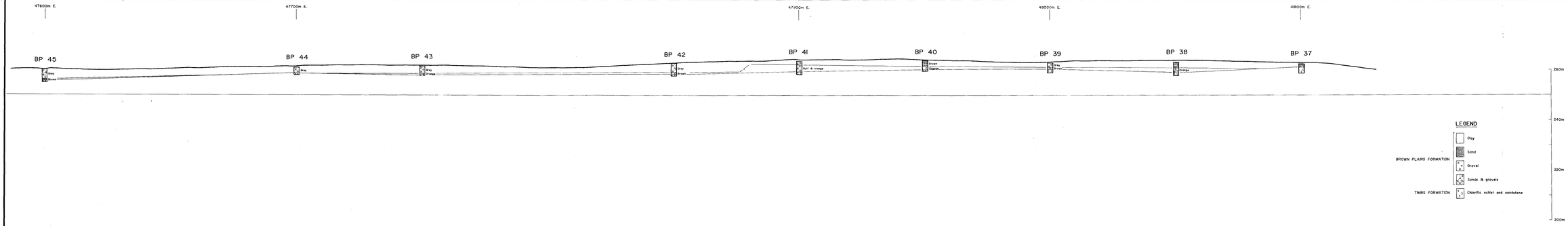
DATE : Jan.'87

REVISIONS :

FILE NO.

FIG. 4.7

6484



6484

814073

5 cm

SAVAGE RESOURCES LIMITED

K.L. 4/81 – SAVAGE RIVER

BROWN CLAY PLAINS

PROFILE LINE 91500m N.

SCALE 1:500

DRAWN BY: R.A.

DRAFTSMAN: T.G.S.

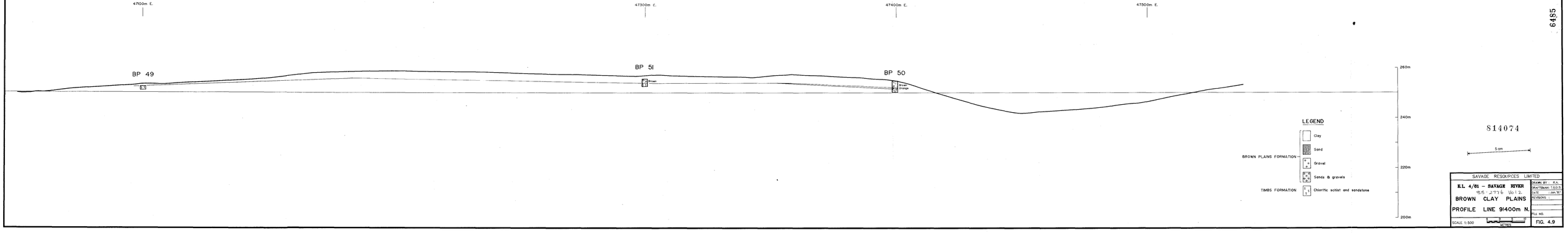
DATE: Jan.'82

REVISIONS:

FILE NO.

FIG. 4.8

6485



6485

S14074

5 cm

SAVAGE RESOURCES LIMITED

K.L 4/81 – SAVAGE RIVER

(E5-2716 Vol 2.

BROWN CLAY PLAINS

PROFILE LINE 91400m N.

DRAWN BY : K.A.

DRAFTSMAN: T.G.O.S.

DATE : JAN.'87

REVISIONS :

FILE NO.

SCALE 1:500

METRES

FIG. 4.9