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**ANNUAL REPORT
RETENTION LICENCE 8802 BOWRY CREEK
SAVAGE RIVER, TASMANIA**

for the period
24th MAY, 1989 to 31st AUGUST, 1989

**OCHRE DEPOSIT AUGER DRILLING
WINTER PROGRAM**

BY

C.H.C. SHANNON

13-6-1990)

SAVAGE RESOURCES LIMITED

Incorporated in Tasmania

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Geological symbols for plane 1 and 2.

diagonally striped: Magnesite with minor greenschist covered with residual and reworked ochre

plain: Greenschist with minor carbonates

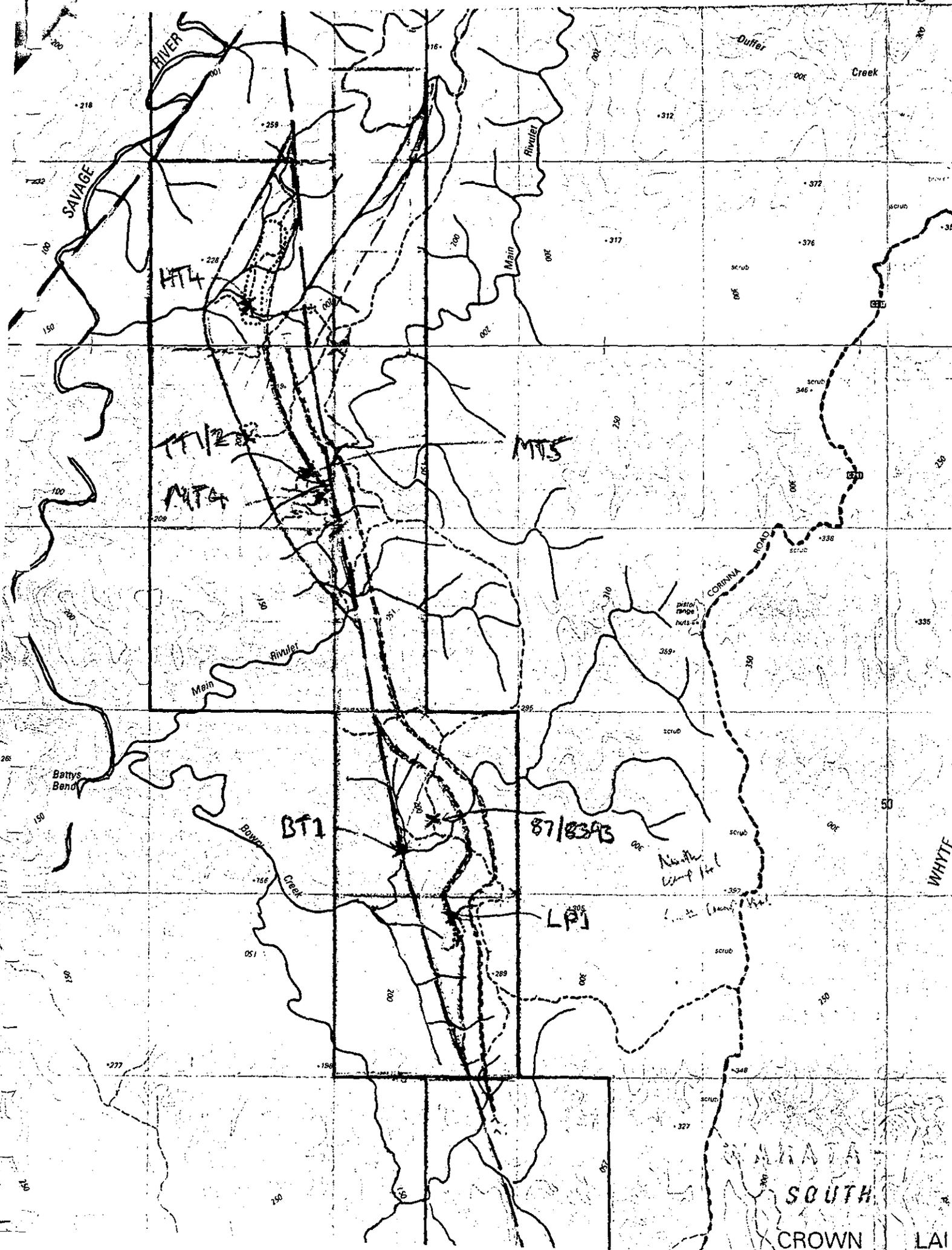
Sample Locations: Assayed samples

HT 4	46540024
TT 1/2	46529950
MT 5	46889930
MT 4	46969918
87/8393	47549742
BT 1	47369726
LP 1 (27)	47649688

Note: all these samples are duplicates of samples with locations described in previous reports. A rough map is included here for convenience.

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Contents

1.0 Introduction	1
2.0 Access and equipment	2
3.0 Sids Creek Grid	3
3.1 Geology	3
4.0 Top Track Grid	6
4.1 Geology	7
5.0 Long Plains Grid	8
5.1 Geology	9
6.0 Chemistry of ochre samples	10
7.0 References	11
Appendix 1: Bore Logs	12
Appendix 2: Assay data	49
Appendix 3: Pfizer pigment data	55
Plan 1: Yellow Paint Drillhole Site; June drilling program 1989	back pocket
Plan 2: Top Track Site; June drilling program 1989	back pocket
Plan 3: Long Plains Ochre Site; June/July drilling program 1989	back pocket
Plan 4: R.L. 8802 Bowry Creek; Ochre resource location plan back pocket	

1.0 Introduction

The winter auger drilling program was an attempt to prove up enough material of a consistent quality to launch the next stage in the project, in which some open pits are planned for pilot scale test runs. It is hoped that this necessary stage for evaluating the deposit for iron oxide pigment use will grade into commercial mining since the end products of the test runs are in theory going to be saleable products. It is now considered necessary to have a proper volume estimate for any site that is to be examined at this pilot scale level, and the volume estimates I have been able to come up with before are reasonable inferences only. The problem is that the depth extent figures are based on the older drilling data collected in what were essentially "overburden assessment" projects done with air blast rigs or the Wacker device which have not normally produced samples of the ochre itself. The magnesite weathering residue could change in character at depth.

Three areas were selected for auger drilling as follows.

a) At Sids Creek where it was hoped that a good source of yellow ochre was to be found. The initial interest in this area came from the Yellow Paint drillhole, MC24 which was abandoned at c.39m in soft ground. The recovery had been poor during the drilling but the thin mud put out by the air blast produced a spectacular bright yellow mudflow. Later "HT" series costeans nearby found good material and then some exposures were found in cuttings further

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2

north. The sample HT5/1 comes from the first of these surface outcrops.

b) On the Top Track, where a previous costean TT1 had exposed ochre of two varieties; an orange to brown somewhat talcose form and a yellow talc rich form which performed well for yellows after wet processing, although with low yield; but not well when dry processed as a whole sample. Both these areas require construction of the proposed truck access road from the Savage River Mine for the pilot scale testing project.

c) At the Long Plains site where two previous costeans had shown that a 3m bed of typical orange brown ochre was locally persistent. Although small this area does not need much work for truck access, and is likely to have other and larger ochre bodies nearby.

2. Access and equipment.

The program was dependent on a skid mounted Gemco auger for the actual drilling with 4 inch rods sufficient for 22.5m (later 21m only). This required preliminary track clearance with bulldozer supported by tracked excavator at an unsuitable time of the year. The machinery was brought in from "B" dump along the old magnetometer survey track which was in the process brought up to dry weather 4WD track standard. This saved the alternative access from having its surface ruined until the end of the program.

It was also necessary to keep the excavator on standby to shift the drilling rig. The rig could only be pulled in to a site so turning space was needed at track ends. Certain planned tracks were abandoned because of boggy ground.

3. Sids Creek grid

This area extended from the vicinity of the HT1-HT4 series costeans and the Yellow Paint drillhole northwards into an area of higher ground where some good yellow ochre had been found in cuttings. Six lines were drilled with from 3 to 5 auger holes over a strike length of 300m. An attempt was made to keep to a precise hole spacing based on 12 or 24 metres but exceptions had to be made which may invalidate their use in CSIRO's new statistical technique. Some pit sampling and cutting outcrops were also used in interpreting the geology. The hole spacing is not close enough for a proper ore deposit estimate and will not be satisfactory until at least crude matching can be found between adjacent holes.

3.1 Geology

There are roughly aligned weathered greenschist occurrences which when compared with the drillhole section for MC 27 DDH can be assigned to (a) complex markers 3 and 4 (see plan 1) or perhaps (b) 3/4 and 6/7. They are wider than would be expected from the

boreholes presumably because of slumping. If (a) is correct the pattern is less like that from the nearby MC 27 than that from the other drillholes in having a wide magnesite (or ochre) interval between 3z and 4. The overall width of the magnesite belt at the surface is greater than that in the borehole indicating that the magnesite body is thinning out at depth in this area. The zone thought to be the most prospective from the borehole section would be 4z to 6 which is mainly west of the grid area.

A surprise was that the good yellows (10YR 6/6 or brighter) seen in previous sampling were restricted to bed margins and near surface situations and are apparently related to good drainage. Browner and redder gritty material took over in the core of ochre bodies. Near-surface subsoil was typically an indeterminate clay/ochre which was found both over ochre and greenschist. Even at depth there is some pug material which appears to be originally ochre but injected with illuvial clay (that is, clay chemically transported within the soil). Distinction was made on the basis of relict schistosity and may be inaccurate. There is some doubt as to the relevance of the colour descriptions taken from the Geol. Soc. Am. Rock colour chart since there is often a substantial difference between the mass colour and the dispersed (wet slurry) colour of the sample, and the difference is not consistent. A more comprehensive colour chart might have helped. But the laboratory descriptions should supercede the field descriptions.

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The deposit was never properly bottomed at any stage although inclined footwall greenschist was encountered often enough. In principle the bottom of an ochre body occurs at the transition to magnesite rock. In the case of hole H24 the base of drilling is below the level of a creekbed exposure of magnesite nearby. A limit of a different type was found in the south west of the grid where deposits of a former sinkhole lake were found in pit samples confirmed with a drillhole to 15m. The ochre may exist at depth in this area, below the sinkhole sediments.

The combination of interpreted geology and drillhole depths gives a basis for tentative tonnage estimates as follows (tonnage assumes density of 0.6).

note: (a) = surface "yellow" ochre

(b) = total indicated resource by the formula: $\text{area} \times \text{average drilled intercept}$, excluding "doubtful ochre" and greenschist

(c) = total inferred resource by the formula: $\text{area} \times \text{notional 20m depth}$

Table 1

band	holes	dimensions	tonnage
4y-5	HZ4	25*50*2.5	1875(a)
		25*50*21.0	15750(b), also(c)
4z-4y	HZ3	10*120*3	2160(a)
	HA1	10*160*12.5	12000(b)
	HB1	10*160*20.0	19200(c)
	HC4 (HD2)		
3z-4	HZ2, HZ1	15*240*4	8640(a)
	HA3, HA4, HA5	30*300*13.3	71820(b)
	HB2, HB3	30*300*20	108000(c)
	HC1, HC2		
	HD1, HD3		
	HE3		
3-3z	HC3	7*200*3.5	2940(b)
	HE2	7*200*20	16800(c)
2-3a	HE1	5*100*4.5	1350(b)
		5*100*20	6000(c)

4.0 Top Track Grid

For the auger program only a short section of new track could be put in but there are cut lines from which coverage can be extended to complete the bulldozed line and another located south of the original track. The seven holes completed do not block in a body of ochre but comprise a long dogleg section for which a good thickness is established with no sign of an ochre/magnesite boundary.

008

7

4.1 Geology

The area of the grid lies wholly to the west of marker 6 so there is no overlap with the beds tested on the Sids Creek grid. The identification of markers is not certain and the borehole MC 28 stopped well short of the beds concerned. The dogleg section covers about 90m of which about 20m is greenschist. Beds classed as talc instead of ochre are about another 20m with the rest ochres contaminated with talc and in near-surface at least, also sand. At least two major pipes with karst breccia fill occur which chop out the most promising orange brown ochre found in the original costean. One pipe which contained minor charcoal cut the ochre only a short distance to the north of the stockpile; the other is apparently a sealed cavity with an intriguing talc sediment. The drilling activity proved up ochre 40m or so further west than the TTI costean, but interbedded with greenschist.

The general depth of ochre is unlikely to be less than 20m, and can be inferred to extend over the 50m or so between the two traverses. The drillhole samples apply to the following rough estimates for tonnage.

Table 2

band	holes	dimensions	tonnage
10-9	TA1, TA2	20*50*5 20*50*20	3000(b) 12000(c); contaminated
9-8	TA3, TA4	15*50*7 15*50*20	3150(b) 9000(c); two thirds talc
7-6	TB2, TB1 (TA5)	30*50*13 30*50*20	11700(b) 18000(c); half talc

5.0 Long Plains Grid

The known band which was to be the target of this grid is rather small and so it was hoped that the tracks put in for the grid would locate the band first and so avoid using the rig to scout the area. In the case of the north end track this was achieved but a boghole problem meant that the rig could not be brought in. A surface sample LP3/1 was collected. Except for the first of them the new tracks put in to cover the likely extensions southward ran into problems with hard quartz gravel cover, which meant that the narrow target bed could not be located at the surface. The drill, and often even the excavator just could not get through. More powerful tools are needed to cope with the problem.

The first track south ended up in a creek bed just as the prospective interval was reached and both drilling and excavator work here were unsuccessful, however during the dozer work some typical ochre was brought up by the dozer treads.

Efforts to expand the target by going off the hard cover did not meet with much success. The brief for the exercise was specifically to prove up a manageable resource out of the known ochre band, although other bands are likely to exist nearby with the same access advantage this area has in requiring only 1.5 km of road upgrading for truck access.

5.1 Geology

The ochre target was known to be in the poorly known interval between the bottom of the section covered by drilling of the Long Plains South iron ore and the Bowry Creek magnesite exposures, that is it lies eastward of what is normally considered the limit of the Main Creek Magnesite. The drillholes bottom in a different magnesite unit again, one that has a high iron content which should in principle decompose to an ochre. It had not been identified at surface since the area is covered with haematite pisolite rubble derived from the iron ore deposit. This ochre band now seems to be exposed in some of the new tracks but only in the form of clay ochre affected by illuvial introduction of clay. Beyond it is another band of iron ore which does not show up consistently in the magnetic survey, more greenschist, and then the ochre band which has been examined in the LP series costeans. The boundary of the Main Creek Magnesite unit can be placed 40m further west.

White and yellow quartz sand was found for up to 6 metres thickness in two sites where the gravel cover could be penetrated. The sand is thought to replace ochre near the surface where weathering is more extreme. A scout hole stepped out SW encountered what appeared to be a karst breccia in which the matrix was an ochre of poor quality.

Table 3

band holes	dimensions	tonnage
"LP" LBI	2*100*11.5	1380(b)
	3*100*20	3600(c)

6.0 Chemistry of ochre samples

Some multiple element analysis results for 7 ochre samples from the Bowry Creek and Main Creek areas, (repeats of sites previously sampled) are reported in appendix 2. These can be compared with standards for Pfizer natural and synthetic pigments in appendix 3. In terms of the standard for pet food lead is just a little high although better than much of the Pfizer range. For most trace elements the Savage River specimens would appear to be mid range or better, but with some isolated high values. In terms of Fe₂O₃ content they are well below that of the synthetics or natural red oxide (80%+, Benbow 1989) but match comparable natural pigments (goethite rather than haematite) in the Pfizer range: 40-62% (Savage) compared with Pfizer's 40-62%. The samples certainly fit the US standard specification for what is termed an ochre pigment of

17. Fe₂O₃ and also the more stringent one for sienna, 38% Fe₂O₃. It should be noted that historically ochres include bright yellows that are mixtures of white clay and yellow pigmenting iron oxide, which simulate a modern mix of titanium white and iron oxide pigment.

7.0 References

1. J. Benbow, Iron oxide pigments. Industrial Minerals No. 58, March (1989).
2. T. Breen, Pfizer iron oxide operations. Status Resources Australia unpub. report, March (1989).
3. J.A. Hosking, Tasmanian ochres, a supplementary report to the annual report; retention licence 8802 Sowry Creek, Savage River, Tasmania, for the period 23rd May 1988 to 23rd May 1989. Marafield Pty. Ltd. unpub. report, (1989)
4. J.A. Hosking and C.H.C. Shannon, Annual report, retention licence 8802 Sowry Creek, Savage River, Tasmania, for the period 23rd May 1988 to 23rd May 1989. Savage Resources Ltd unpub. report, (1989)

APPENDIX 1:

Drilling logs: Winter program

INDEX

HA 1	13
HA 2	14
HA 3	15
HA 4	16
HA 5	17
HZ 1	18
HZ 2	19
HZ 3	20
HZ 4	21
HB 1	22
HB 2	23
HB 3	24
HC 1	25
HC 2	26
HC 3	27
HC 4	28
HD 1	29
HD 2	30
HD 3	31
HE 1	32
HE 2	33
HE 3	34
TA 1	35
TA 2	36
TA 3	37
TA 4	38
TA 5	39
TB 1	40
TB 2	42
LB 1	44
LC 1	45
LD 1	46
LE 1	47
LE 2	48

Auger Hole HA 1

Drilled 15/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by H. Shannon, 0-10.5m; logged by R. Fraser, 10.5-20.0m; log edited by H. Shannon. Location 46560032; RL 175.

Sample	From- to	Description
HA1/1	0.0- 1.5	OCHRE, yellow, clayey? some orange at base.
HA1/2	1.5- 3.0	OCHRE, yellow to yellowish brown; disperses to a bright yellow slip, minor limonite.
HA1/3	3.0- 4.0	OCHRE, yellow.
HA1/4	4.0- 4.5	OCHRE/CLAY?, purplish brown; disperses to a light brown slip.
HA1/5	4.5- 6.0	OCHRE, very light brown; disperses to a light muddy yellow.
HA1/6	6.0- 7.5	OCHRE, light to medium (pinkish) brown.
HA1/7	7.5- 9.0	OCHRE, medium (pinkish) brown.
HA1/8	9.0-10.5	OCHRE, brown with minor quartz.
HA1/9	10.5-11.0	brown OCHRE, minor quartz.
HA1/10	11.0-12.0	pink-brown OCHRE, minor quartz.
HA1/11	12.0-13.5	wet pink-brown OCHRE, minor quartz and grit.
HA1/12	13.5-14.0	pink-brown OCHRE, minor grit fragments.
HA1/13	14.0-15.0	light brown OCHRE, minor grit fragments.
HA1/14	15.0-16.5	light brown OCHRE, gritty sample.
HA1/15	16.5-17.0	light brown OCHRE, gritty sample.
HA1/16	17.0-18.0	pink-brown OCHRE.
HA1/17	18.0-20.0	purple-maroon OCHRE.

Hole terminated in ochre.

Auger Hole HA 2

Drilled 16/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser with editing by H. Shannon; total depth 20.0m. Location 46570032; RL 178.

Sample	From- to	Description
HA2/1	0.0- 1.5	yellow CLAY subsoil; includes ochre or possibly weathered greenschist.
HA2/2	1.5- 3.0	ambiguous brown CLAY or OCHRE, trace of purple and light brown - possible limonite chips.
HA2/3	3.0- 3.5	yellow-brown OCHRE.
HA2/4	3.5- 4.5	purple OCHRE or CLAY, possibly ground up weathered greenschist.
HA2/5	4.5- 5.5	purple CLAY, as above, with greenschist chips.
HA2/6	5.5- 6.0	yellow OCHRE.
HA2/7	6.0- 7.5	ambiguous chocolate brown CLAY or OCHRE with greenschist chips.

Hole terminated because of "poor quality" material; in retrospect the mix of ochre and greenschist may reflect stringers of schist in the original magnesite rock.

Auger Hole HA 3

Drilled 16/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 22.5m. Location 46590032; RL 180m.

Sample	From- to	Description
HA3/1	0.0- 1.5	top 10cm yellow CLAY subsoil, then purple CLAY or OCHRE; possibly weathered greenschist.
HA3/2	1.5- 3.0	pink-brown OCHRE.
HA3/3	3.0- 4.5	pink-brown OCHRE with greenschist chips.
HA3/4	4.5- 6.0	dull yellow OCHRE with limonite chips.
HA3/5	6.0- 7.5	dull yellow OCHRE with limonite chips.
HA3/6	7.5- 8.5	dull yellow OCHRE with some small limonite chips.
HA3/7	8.5-10.5	pink-brown OCHRE.
HA3/8	10.5-12.0	yellow-brown OCHRE.
HA3/9	12.0-12.5	yellow-brown OCHRE.
HA3/10	12.5-13.5	purple OCHRE? (possibly weathered greenschist), with limonite chips up to 3mm.
HA3/11	13.5-14.5	wet yellow-brown OCHRE.
HA3/12	14.5-15.5	yellow-brown OCHRE.
HA3/13	15.5-16.5	off-white PUG (weathered greenschist?).
HA3/14	16.5-19.5	yellow-brown OCHRE, very wet, so the ochre slips off the auger flights; poor sample.
HA3/15	19.5-20.5	yellow-brown OCHRE.
HA3/16	20.5-22.5	GREENSCHIST.

End of hole.

Auger Hole HA 4

Drilled 19/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 21.0m. Location 46600032; RL 182m.

Sample	From- to	Description
HA4/1	0.0- 1.5	muddy yellow OCHRE.
HA4/2	1.5- 3.0	muddy yellow OCHRE.
HA4/3	3.0- 4.5	light brown OCHRE.
HA4/4	4.5- 6.0	muddy yellowish brown OCHRE.
HA4/5	6.0- 8.0	muddy yellowish brown OCHRE.
HA4/6	8.0- 9.5	muddy yellowish brown OCHRE.
HA4/7	9.5-10.5	pinkish brown OCHRE.
HA4/8	10.5-12.5	moderate yellowish brown OCHRE.
HA4/9	12.5-14.0	moderate yellowish brown OCHRE.
HA4/10	14.0-15.0	moderate yellowish brown OCHRE.
HA4/11	15.0-17.0	yellowish brown OCHRE; wet enough to quiver and ooze moisture.
HA4/12	17.0-18.0	yellowish brown OCHRE, as above.
HA4/13	18.0-19.0	moderate yellowish brown OCHRE, wet.
HA4/14	19.0-21.0	brownish yellow OCHRE, wet, and some greenschist.

End of hole.

017

17

Auger Hole HA 5

Drilled 19-20/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 21.0m. Location 46610032; RL 184m.

Sample	From- to	Description
HA5/1	0.0- 1.5	yellow OCHRE.
HA5/2	1.5- 2.0	yellow OCHRE.
HA5/3	2.0- 2.5	light brown OCHRE.
HA5/4	2.5- 3.5	yellow-brown OCHRE and purple OCHRE? (possibly weathered greenschist).
HA5/5	3.5- 4.5	light brown OCHRE.
HA5/6	4.5- 6.0	purple and white friable PUG; possibly weathered greenschist.
HA5/7	6.0- 8.5	pinkish brown OCHRE.
HA5/8	8.5- 9.0	pinkish brown OCHRE.
HA5/9	9.0-10.5	pinkish brown OCHRE.
HA5/10	10.5-12.0	pinkish brown OCHRE.
HA5/11	12.0-13.5	pinkish brown OCHRE.
HA5/12	13.5-15.0	pinkish brown OCHRE.
HA5/13	15.0-16.0	pinkish brown OCHRE.
HA5/14	16.0-17.0	brownish pink OCHRE, (Munsell colour pale red 10R 6/2).
HA5/15	17.0-18.5	yellow OCHRE.
HA5/16	18.5-19.5	light brown OCHRE.
HA5/17	19.5-21.0	light brown OCHRE.

Hole bottomed in ochre.

Auger Hole # HZ 1

Drilled 20/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 20.0m. Location 46650037; RL 178m.

Sample	From- to	Description
HZ1/1	0.0- 1.5	yellowish orange OCHRE, Munsell code 10YR 6/8? to 6/6.
HZ1/2	1.5- 2.0	yellowish orange OCHRE, Munsell code as above.
HZ1/3	2.0- 3.0	light brown OCHRE, Munsell 5YR 5/3 (subjectively, bright yellowish orange).
HZ1/4	3.0- 4.5	dark yellowish orange OCHRE, 10YR 6/8.
HZ1/5	4.5- 6.0	dark yellowish orange OCHRE, as above.
HZ1/6	6.0- 7.5	light brown OCHRE, 5YR 6/6 (wet sample), with quartz pebbles to 2 cm.
HZ1/7	7.5- 8.5	light brown OCHRE, 5YR 6/6 (wet sample).
HZ1/8	8.5- 9.5	dark yellowish orange OCHRE, 10YR 6/8, (wet sample).
HZ1/9	9.5-10.5	light brown OCHRE, 5YR 6/6 (wet sample).
HZ1/10	10.5-12.0	purple and off white gritty PUG, possibly weathered greenschist.
HZ1/11	12.0-14.5	pale reddish brown OCHRE, 10 R 4/4.
HZ1/12	14.5-15.0	white pebbles (PUG?); possibly weathered greenschist.
HZ1/13	15.0-18.0	some GREENSCHIST recovered, poor sample (too wet).
	18.0-20.0	GREENSCHIST, no sample taken.

Hole ended at 20m; too hard, no progress.

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Auger Hole HZ 2

Drilled 20/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 14.5m. Location 46630038; RL 175m.

Sample	From- to	Description
HZ2/1	0.0- 1.5	moderate yellowish brown OCHRE, Munsell code 10 YR 6/4.
HZ2/2	1.5- 3.0	moderate orange brown OCHRE, 10 YR 5/6.
HZ2/3	3.0- 6.0	moderate orange brown OCHRE, 10 YR 4/6.
HZ2/4	6.0- 7.5	moderate orange brown OCHRE, 10 YR 5/6, wet.
HZ2/5	7.5- 8.5	light brown OCHRE, 5 YR 5/4.
HZ2/6	8.5-12.0	brown clay/ochre with green grit, probably greenschist with possibly some genuine ochre.
	12.0-14.5	greenschist, no sample taken.

Hole ended at 14.5m; too hard.

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20

Auger Hole HZ 3

Drilled 21/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 14.5m. Location 46600039; RL 173m.

Sample	From- to	Description
HZ3/1	0.0- 1.5	light green clay with rock chips, probably GREENSCHIST with minor ochre.
HZ3/2	1.5- 2.5	moderate yellowish brown OCHRE, 5YR 6/6.
HZ3/3	2.5- 3.5	GREENSCHIST.
HZ3/4	3.5- 4.5	pinkish orange brown OCHRE, 5YR 6/6.
HZ3/5	4.5- 5.5	pinkish orange brown OCHRE, 5YR 6/6.
HZ3/6	5.5- 6.0	pinkish orange brown OCHRE, 5YR 6/6.
HZ3/7	6.0- 8.0	moderate yellowish brown OCHRE, 10YR 4/6, wet sample.
HZ3/8	8.0- 8.5	moderate yellowish brown OCHRE, 10YR 4/6, wet.
HZ3/9	8.5- 9.0	moderate yellowish brown OCHRE, as above.
HZ3/10	9.0-10.5	brown OCHRE and GREENSCHIST (as clay with greenschist chips).

Hole ended at 10.5m; too hard.

Auger Hole HZ 4

Drilled 21/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 21.0m. Location 46560040; RL 170m.

Sample	From- to	Description
HZ4/1	0.0- 1.0	yellow OCHRE with grit.
HZ4/2	1.0- 1.5	yellowish orange OCHRE with grit.
HZ4/3	1.5- 2.5	yellowish orange OCHRE, Munsell 10YR 6/6.
HZ4/4	2.5- 3.0	reddish orange OCHRE.
HZ4/5	3.0- 4.5	pale reddish brown OCHRE, 10R 5/6.
HZ4/6	4.5- 6.0	pale reddish brown OCHRE, 10R 5/4 (start of wet samples).
HZ4/7	6.0- 7.0	moderate reddish brown OCHRE, 10R 5/5 (wet sample).
HZ4/8	7.0- 7.5	moderate reddish brown OCHRE, 10R 5/5 (wet).
HZ4/9	7.5- 9.0	moderate reddish brown OCHRE, 10R 5/5 (wet).
HZ4/10	9.0-10.5	(darker) moderate reddish brown OCHRE, 10R 4/6.
HZ4/11	10.5-12.0	(darker) moderate reddish brown OCHRE, 10R 4/6.
HZ4/12	12.0-13.5	(darker) moderate reddish brown OCHRE, 10R 4/6.
HZ4/13	13.5-15.0	(darker) moderate reddish brown OCHRE, 10R 4/6.
HZ4/14	15.0-16.0	moderate yellowish brown OCHRE, 10YR 5/6.
HZ4/15	16.0-18.0	moderate yellowish brown OCHRE, 10YR 5/6.
HZ4/16	18.0-19.0	dark yellowish orange OCHRE, 10YR 4/6.
HZ4/17	19.0-19.5	pale reddish brown OCHRE, 10R 5/4.
HZ4/18	19.5-20.5	pale reddish brown OCHRE, 10R 5/4.
HZ4/19	20.5-21.0	(darker) moderate reddish brown OCHRE, 10R 4/6.

Hole terminated in ochre at 21m.

Auger Hole HB 1

Drilled 21-22/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 21.0m. Location 46550029; RL 173m.

Sample	From- to	Description
HB1/1	0.0- 0.7	yellow OCHRE and/or CLAY with pisolites coated with limonite, and organic matter.
HB1/2	0.7- 1.5	purple OCHRE (weathered greenschist?).
HB1/3	1.5- 2.5	yellow and purple OCHRE and/or CLAY, pebbly, (possibly weathered greenschist).
HB1/4	2.5- 4.5	moderate reddish brown OCHRE, 10R 5/5.
HB1/5	4.5- 6.0	moderate reddish brown OCHRE with limonite? chips, 10R 5/5.
HB1/6	6.0- 7.5	moderate reddish brown OCHRE with limonite? chips, 10R 5/5.
HB1/7	7.5- 9.0	(darker) moderate reddish brown OCHRE, with limonite? chips, 10R 4/6.
HB1/8	9.0-10.5	(darker) moderate reddish brown OCHRE as above.
HB1/9	10.5-12.0	dark reddish brown OCHRE, 10R 3/4.
HB1/10	12.0-12.5	dark reddish brown OCHRE, 10R 4/4.
HB1/11	12.5-15.0	dark reddish brown OCHRE, 10R 4/4.
HB1/12	15.0-16.5	dark reddish brown OCHRE, 10R 4/4. Start of wet samples; disperses to a lighter slip (thin mud).
HB1/13	16.5-18.0	dark reddish brown OCHRE, 10R 4/4.
HB1/14	18.0-19.0	moderate brown OCHRE, 5YR 4/6.
HB1/15	19.0-20.0	moderate brown OCHRE, 5YR 4/6.
HB1/16	20.0-20.3	moderate brown OCHRE, 5YR 4/6.
HB1/17	20.3-20.5	moderate yellowish orange OCHRE, 10YR 6/4.
HB1/18	20.5-21.0	moderate reddish brown OCHRE, 10R 5/5.

Hole terminated in ochre at 21m.

Auger Hole HB 2

Drilled 22/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 21.0m. Location 46580029; RL 175m.

Sample	From- to	Description
HB2/1	0.0- 1.5	moderate yellowish brown OCHRE.
HB2/2	1.5- 3.0	yellow OCHRE.
HB2/3	3.0- 4.5	dark yellowish orange OCHRE, 10YR 6/6.
HB2/4	4.5- 5.5	dusky red OCHRE, 5R 4/4.
HB2/5	5.5- 6.0	dusky red OCHRE, 5R 4/4.
HB2/6	6.0- 6.5	moderate reddish brown OCHRE with limonite? chips, 10R 6/5.
HB2/7	6.5- 8.0	dark reddish brown OCHRE, 10R 4/4.
HB2/8	8.0-10.0	off-white and light brown friable PUG; possibly greenschist.
HB2/9	10.0-12.0	dark yellowish brown OCHRE?, 10YR 3/4; (grading to pug?) with limonite chips.
HB2/10	12.0-13.5	dark yellowish brown OCHRE?, 10YR 3/4; (grading to pug?), possibly greenschist.
HB2/11	13.5-15.0	dark yellowish brown OCHRE?, 10YR 3/4; gritty, with greenschist chips; possibly all ground up greenschist.
HB2/12	15.0-18.0	dark yellowish brown OCHRE?, with abundant rock chips including limonite and greenschist; possibly (all?) greenschist.
HB2/13	18.0-19.5	dark yellowish brown OCHRE, 10YR 3/4, (contamination possible but not mentioned).
	19.5-21.0	greenschist.

Hole terminated in greenschist at 21m.

C 024

24

Auger Hole HB 3

Drilled 22/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 21.0m. Location 46600028; RL 177m.

Sample	From- to	Description
HB3/1	0.0- 2.0	yellow CLAY, semi-friable, weathered greenschist.
HB3/2	2.0- 3.0	yellow CLAY, semi-friable, weathered greenschist.
HB3/3	3.0- 5.0	dark yellowish brown OCHRE, with some greenschist.
HB3/4	5.0- 6.0	yellowish orange OCHRE, 10YR 8/6.
HB3/5	6.0- 7.5	moderate yellowish brown OCHRE, 10YR 6/6.
HB3/6	7.5- 9.0	light brown OCHRE 5YR 5/6.
HB3/7	9.0-11.0	dark yellowish brown OCHRE, 10YR 4/4.
HB3/8	11.0-14.0	dark yellowish brown OCHRE, 10YR 4/4.
HB3/9	14.0-15.0	dark yellowish brown OCHRE, 10YR 4/4.
HB3/10	15.0-16.5	dark yellowish brown OCHRE, 10YR 4/4.
HB3/11	16.5-18.0	dark yellowish brown OCHRE, 10YR 4/4, with limonite chips.
HB3/12	18.0-20.5	dark yellowish brown OCHRE, 10YR 3/6.
	20.5-21.0	white talc schist at 20.5.

End hole at 21m.

Auger Hole HC 1

Drilled 22/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 21.0m. Location 46340025; RL 165m.

Sample	From- to	Description
HC1/1	0.0- 1.5	yellow to orange CLAY or OCHRE.
HC1/2	1.5- 2.5	yellow to orange CLAY or OCHRE.
HC1/3	2.5- 3.0	GREENSCHIST.
HC1/4	3.0- 5.0	yellowish orange OCHRE.
HC1/5	5.0- 6.0	brown OCHRE (clay?) and greenschist.
HC1/6	6.0- 9.0	brown OCHRE and some greenschist, start of wet samples.
HC1/7	9.0-10.5	darkish yellow brown OCHRE.
HC1/8	10.5-13.0	light brown OCHRE.
HC1/9	13.0-14.0	off-white talcy greenschist.
HC1/10	14.0-15.0	light brown OCHRE.
HC1/11	15.0-18.0	moderate red OCHRE, 5R 5/4.
HC1/12	18.0-20.0	moderate red OCHRE, 5R 5/4.
HC1/12	20.0-21.0	darkish yellow brown OCHRE.

End hole at 21m.

Auger Hole HC 2

Drilled 26/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 18.0m. Location 46560024; RL 166m.

Sample	From- to	Description
HC2/1	0.0- 1.5	moderate yellowish brown OCHRE? 10YR 5/4.
HC2/2	1.5- 3.0	dark brown OCHRE? with greenschist clasts (possibly clay and greenschist).
HC2/3	3.0- 3.5	dark brown OCHRE? with greenschist clasts as above.
HC2/4	3.5- 5.0	dark yellowish orange OCHRE, 5YR 5/6.
HC2/5	5.0- 6.0	pale reddish brown OCHRE 10R 5/6; start of wet samples.
HC2/6	6.0- 8.0	pale reddish brown OCHRE, wet sample.
HC2/7	8.0-12.0	green CLAY with greenschist chips and minor light brown ochre.
HC2/8	12.0-15.0	brown OCHRE? and green CLAY, gritty; possibly all greenschist.
HC2/9	15.0-17.0	brown OCHRE? and green CLAY as above.
HC2/10	17.0-18.0	GREENSCHIST.

End hole at 18m in greenschist.

027

Auger Hole HC 3

Drilled 26/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 9.0m. Location 46590024; RL 168m.

Sample	From- to	Description
HC3/1	0.0- 1.5	reddish purple, friable weathered GREENSCHIST (basic tuff).
HC3/2	1.5- 2.5	yellowish orange OCHRE?
HC3/3	2.5- 3.0	reddish purple, friable weathered GREENSCHIST (basic tuff).
HC3/4	3.0- 4.0	dark yellowish brown OCHRE, 10YR 4/2.
HC3/5	4.0- 6.0	purple, friable weathered GREENSCHIST with abundant chips (basic tuff).
HC3/6	6.0- 9.0	purplish brown friable weathered GREENSCHIST with abundant chips (basic tuff).

End of hole at 9m in greenschist.

Auger Hole HC 4

Drilled 26/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 9.0m. Location 46520025; RL 163m.

Sample	From- to	Description
	0.0- 1.5	light green friable weathered GREENSCHIST (basic tuff)
HC4/1	1.5- 3.0	moderate reddish brown weathered GREENSCHIST (basic tuff) or OCHRE?
HC4/2	3.0- 5.0	moderate reddish brown weathered GREENSCHIST or OCHRE.
HC4/3	5.0- 5.5	pale reddish brown OCHRE with greenschist chips.
HC4/4	5.5- 9.0	bright yellowish orange OCHRE, wet from 5.5m, virtual loss of all sample from 6m.

Hole abandoned at 9m in excellent ochre because the sample was being washed off the auger flights.

029

29

Auger Hole HD 1

Drilled 27/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 21.0m. Location 46530015; RL 170m.

Sample	From- to	Description
HD1/1	0.0- 1.5	yellowish orange CLAY with greenschist chips; transported cover material.
HD1/2	1.5- 3.0	dark yellowish orange OCHRE, 10YR 5/6.
HD1/3	3.0- 6.0	dark yellowish orange OCHRE 10YR 5/6.
HD1/4	6.0-11.5	yellow OCHRE, very wet, poor sample because most is washed off the auger flights; some greenschist chips (cavings).
HD1/5	11.5-12.0	dark brown OCHRE? with greenschist chips (cavings?) and limonite chips; disperses to a yellowish orange slip 10YR 7/6.
HD1/6	12.0-13.0	yellow OCHRE.
HD1/7	13.0-15.0	(darker) moderate red OCHRE, 5R 4/6; with schist band about 10cm.
HD1/8	15.0-17.0	moderate reddish brown OCHRE, 10R 5/6.
HD1/9	17.0-18.0	reddish purple OCHRE? with schistose greenschist clasts; possibly all ground greenschist.
HD1/10	18.0-20.0	pale red, talcy OCHRE? 10 R 4/2, possibly greenschist.
	20-21	GREENSCHIST.

Hole terminated in greenschist at 21m.

030

30

Auger Hole HD 2

Drilled 27/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 15.0m. Location 46510017; RL 170m.

Sample	From- to	Description
	0.0- 1.5	brown CLAY and yellowish orange CLAY with greenschist chips; (transported cover material) over GRAVEL, with rounded quartz rich clasts in yellowish orange clay matrix.
HD2/1	1.5- 3.0	GRAVEL, as above over dark orange CLAY/OCHRE with charcoal interpreted as a lacustrine deposit following a catastrophic fire, over dark brownish grey organic clay.
HD2/2	3.0- 6.0	brownish grey organic CLAY with some peaty plant remains and dusky green CLAY.
HD2/3	6.0- 9.0	gritty green clay grading to a BRECCIA of greenschist clasts which are softened but not oxidized, with some clay and organic material; interpreted as the fill of a sinkhole lake existing in a very cold climate. Start of wet samples.
HD2/4	9.0-12.0	green BRECCIA as above.
HD2/5	12.0-15.0	green BRECCIA as above.

Hole terminated in greenschist breccia at 15m. No real ochre was found in the hole, and the breccia fill could go a lot deeper.

Auger Hole HD 3

Drilled 27/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 15.0m. Location 46550015; RL 171m.

Sample	From- to	Description
	0.0- 1.5	yellowish orange CLAY?, pale light green clay; transported soil and/or alluvium?
	1.5- 3.0	yellowish orange CLAY? and weathered greenschist chips.
HD3/1	3.0- 6.5	yellowish orange CLAY? with quartz and weathered greenschist fragments.
HD3/2	6.5- 7.5	yellow OCHRE, and greenschist (cavings?) very wet, poor sample because most is washed off the auger flights.
HD3/3	7.5- 9.0	pale red OCHRE? possibly talcy greenschist.
HD3/4	9.0-11.5	yellow OCHRE? but with weathered greenschist fragments.
HD3/5	11.5-14.0	yellowish orange ground GREENSCHIST? gritty, with weathered greenschist fragments.
	14.0-15.0	no recovery: possibly wet yellow ochre c.f. 6.5-7.5.

Hole terminated at 15m owing to non-recovery of sample.

Auger Hole HE 1

Drilled 27/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 9.0m. Location 46600011; RL 170m.

Sample	From- to	Description
	0.0- 1.5	gravelly soil over light greenish grey sandy CLAY; transported soil and/or alluvium?
	1.5- 2.5	pale greenish grey chloritic weathered GREENSCHIST.
HE1/1	2.5- 6.0	reddish orange OCHRE, 10R 5/7 (ed.) gritty, with some limonite and weathered greenschist fragments. (Recorded as dark yellowish brown, but code 5YR 7/6 in the log.)
HE1/2	6.0- 7.0	reddish orange OCHRE, etc. as above.
HE1/3	7.0- 9.0	medium brown and off white gritty PUG? (greenschist).

Hole terminated at 9m in greenschist.

033

Auger Hole HE 2

Drilled 28/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 14.5m. Location 46580011; RL 168m.

Sample	From- to	Description
	0.0- 1.5	weathered GREENSCHIST, no sample taken.
HE2/1	1.5- 3.0	moderate yellowish brown OCHRE, Munsell code 10YR 5/6.
HE2/2	3.0- 4.5	moderate yellowish brown OCHRE, 10YR 5/6.
HE2/3	4.5- 6.0	pale green GREENSCHIST; chips in clay.
HE2/4	6.0- 8.0	dark yellowish brown OCHRE, 10YR 3/6, some greenschist chips, wet sample.
HE2/5	8.0- 9.0	pale red weathered GREENSCHIST (? ed.).
HE2/6	9.0-10.5	pale red OCHRE? disperses well; (possibly weathered greenschist).
HE2/7	10.5-12.0	moderate reddish brown weathered GREENSCHIST.
HE2/8	12.0-14.5	moderate reddish brown weathered GREENSCHIST with abundant chips.

Hole terminated in greenschist at 14.5m.

Auger Hole HE 3

Drilled 28/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 14.5m. Location 46550011; RL 170m.

Sample	From- to	Description
	0.0- 1.5	yellowish orange CLAY (transported soil), no sample taken.
HE3/1	1.5- 3.0	red and white PUG, talcy, smooth texture (weathered greenschist? illuvial clay replacing ochre? ed.).
HE3/2	3.0- 3.5	moderate reddish brown OCHRE, 10YR 4/6.
HE3/3	3.5- 5.0	moderate yellowish orange OCHRE, 10YR 6/6.
HE3/4	5.0- 6.0	pale red and white weathered GREENSCHIST.
HE3/5	6.0- 9.0	dark yellowish orange OCHRE, 10YR 6/6, with limonite chips.
HE3/6	9.0-10.5	dark yellowish orange OCHRE, 10YR 6/6.
HE3/7	10.5-12.0	pale red and white CLAY with greenschist chips.
HE3/8	12.0-15.0	dark yellowish orange OCHRE, 10YR 6/6.
HE3/9	15.0-17.0	moderate yellowish brown OCHRE, 10YR 5/4.
	17.0-18.0	dark green GREENSCHIST.

Hole terminated in greenschist at 18.0m.

Auger Hole IA 1

Drilled 28/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by R. Fraser, edited by H. Shannon. Total depth 9.0m. Location 46509948; RL 195m.

Sample	From- to	Description
TA1/1	0.0- 1.5	talcy pale GREENSCHIST with some quartz chips; minor yellowish orange clay.
TA1/2	1.5- 3.0	orange sandy CLAY (ochre in part, ed.), talcose greenschist chips and quartz fragments.
TA1/3	3.0- 4.5	orange sandy CLAY (ochre in part, ed.), talcose greenschist chips.
TA1/4	4.5- 6.0	dark yellowish brown OCHRE, 10YR 4/6.
TA1/5	6.0- 7.0	dark yellowish brown OCHRE with talc and greenschist chips.
TA1/6	7.0- 9.0	dark yellowish brown OCHRE, with abundant talc.

Hole terminated in talcose ochre at 9.0m.

036

36

Auger Hole IA 2

Drilled 28/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by H. Shannon. Total depth 12.0m. Location 46519949; RL 195m.

Sample	From- to	Description
TA2/1	0.0- 0.7	brown CLAY/OCHRE.
	0.7- 1.5	pale green talcy GREENSCHIST, no sample.
TA2/2	1.5- 2.3	pale olive and dusky yellow CLAY/OCHRE with greenschist fragments; sedimentary breccia?.
TA2/3	2.3- 3.5	light brown weathered GREENSCHIST.
TA2/4	3.5- 6.0	moderate brown OCHRE, 6YR 4/6, minor pyrolusite.
TA2/5	6.0- 7.5	moderate brown OCHRE, 6YR 4/6.
TA2/6	7.5- 8.0	moderate brown OCHRE, with talc/greenschist band at base.
TA2/7	8.0- 9.0	moderate brown and chocolate brown OCHRE, minor schist.
TA2/8	9.0-10.5	GREENSCHIST, TALC and chocolate OCHRE.
TA2/9	10.5-12.0	GREENSCHIST, green (fresh) and purple (weathered)

Hole terminated in greenschist at 12.0m.

Auger Hole IA 3

Drilled 29/6/89; Drillers T. Lodge, J. Walker: Stacpoole's, Launceston. Logged by H. Shannon. Total depth 12.0m. Location 46529949; RL 194m.

Sample	From- to	Description
TA3/1	0.0- 1.5	yellow talcy SAND over red CLAY.
TA3/2	1.5- 3.0	red CLAY/OCHRE and mauve talc BRECCIA with some obvious clasts including green "basic tuff". The red clay/ochre is the matrix, as in the adjacent track exposure.
TA3/3	3.0- 4.5	reddish brown OCHRE, 10R 5/8.
TA3/4	4.5- 6.0	mixed reddish brown OCHRE, 10R 5/8 and moderate red OCHRE, 5YR 4/8, and some greenschist clasts, yellow to green. Breccia?.
TA3/5	6.0- 7.0	reddish brown OCHRE, with minor green "basic tuff". Breccia?
TA3/6	7.0- 8.5	BRECCIA of green "basic tuff" in reddish brown ochre matrix.
TA3/7	8.5- 9.0	reddish brown OCHRE, with minor green "basic tuff"; breccia.

Hole terminated in breccia at 9.0m. The material appears to be a karst cavity fill, the cavity is perhaps an arcuate fissure. the matrix is an ochre of an interesting colour, perhaps naturally calcined, but if it is necessary to separate out the basic tuff clasts to make a proper pigment it would be a difficult thing to do.

0 038

38

Auger Hole IA 4

Drilled 29/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by H. Shannon. Total depth 10.5m. Location 46539949; RL 189m.

Sample	From- to	Description
TA4/1	0.0- 1.5	dark yellowish orange talcose OCHRE, 10YR 5/4 with minor moderate yellowish brown OCHRE, 10YR 5/4.
TA4/2	1.5- 3.0	dark yellowish orange talcose to sandy OCHRE 10YR 6/6.
TA4/3	3.0- 4.5	dark yellowish orange sandy OCHRE, 10YR 6/6 grading to moderate yellowish brown OCHRE, 10YR 5/4 with talc.
TA4/4	4.5- 6.0	pale yellowish orange TALC, 10YR 8/6.
TA4/5	6.0- 7.0	pale yellowish orange TALC, 10YR 8/6 and moderate yellowish brown talcose OCHRE, 10 YR 5/4.
TA4/6	7.0- 8.0	dark yellowish orange TALC and light olive grey TALC SCHIST, 5Y 6/1.
TA4/7	8.0- 9.0	light olive grey CLAY (talc schist?) 5Y 6/1.
TA4/8	9.0-10.5	TALC SCHIST as above, yellowish brown talcose OCHRE, yellow SAND and grey CLAY; hard talc schist at base.

Hole terminated in talc schist at 10.5m.

039

39

Auger Hole IA 5

Drilled 29/6/89; Drillers T. Lodge, J. Walker; Starpoole's, Launceston. Logged by H. Shannon. Total depth 12.0m. Location 46549949; RL 186m.

Sample	From- to	Description
	0.0- 1.0	bluish grey cemented SAND and angular quartz GRAVEL.
TA5/1	1.0 -1.5	yellowish CLAY, grey brown CLAY ex schist.
TA5/2	1.5- 2.5	CLAY and ochre?.
TA5/3	2.5- 3.0	yellowish brown sandy CLAY with grit; alluvial?
TA5/4	3.0- 4.2	yellow to near white TALC.
TA5/5	4.2 -6.0	yellowish brown gritty CLAY/OCHRE, 10YR 5/4 with talc granules. It does not pigment well. The material is perhaps a sinkhole breccia fill in which a mixture of ochre and ordinary clay is the matrix.
TA5/6	6.0- 7.5	yellowish brown gritty talcose CLAY OCHRE, 10YR 5/4 original sediment clasts of white talc, quartz and fresh greenschist; sinkhole breccia fill.
TA5/7	7.5- 8.5	yellowish brown gritty talcose CLAY/OCHRE, as above, but with trace quantities of charcoal.
TA5/8	8.5-10.0	moderate brown gritty talcose CLAY/OCHRE, 5YR 4/4 with charcoal and clasts as above.
TA5/9	10.0-11.0	very gritty greyish red CLAY/OCHRE with abundant clasts of talc, greenschist, etc.
TA5/10	11.0-12.0	very gritty moderate brown CLAY/OCHRE with clasts as above and charcoal; sinkhole breccia fill

Hole terminated at 12.0m in breccia.

Auger Hole IR 1

Drilled 30/6/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by H. Shannon. Total depth 18.0m. Location 46579954; RL 185m.

Sample	From- to	Description
TB1/1	0.0- 1.5	variable; dark yellowish orange to moderate yellowish brown OCHRE and/or CLAY with talc schist; dark flecks. It disperses to an orange slip.
TB1/2	1.5- 3.0	light brown OCHRE, 5YR 5/7 with some orange weathered greenschist chips.
TB1/3	3.0- 4.0	yellowish brown OCHRE, 10YR 5/6.
TB1/4	4.0- 5.0	yellowish brown OCHRE, 10YR 5/6, with some talc.
TB1/5	5.0- 6.0	moderate red to moderate reddish brown OCHRE? 5R 4/6 to 10R 4/6, grading to CLAY with abundant weathered greenschist clasts; i.e. a clay/ochre matrix greenschist breccia. It is not strong in pigmentation power.
TB1/6	6.0- 7.0	reddish brown OCHRE, 10R 4/4.
TB1/7	7.0- 7.5	greyish orange and off white TALC, with yellowish brown OCHRE.
TB1/8	7.5- 9.0	dark yellowish brown OCHRE, with white TALC; some greenschist chips at base.
TB1/9	9.0- 9.5	moderate reddish brown to moderate brown OCHRE.
TB1/10	9.5-10.5	dark yellowish brown and some reddish brown OCHRE, with talc.
TB1/11	10.5-11.5	dark yellowish brown OCHRE.
TB1/12	11.5-12.0	yellowish brown OCHRE.
TB1/13	12.0-13.0	dark yellowish brown OCHRE, minor talc.
TB1/14	13.0-13.5	dark yellowish brown OCHRE, talc rich.
TB1/15	13.5-15.0	dark yellowish brown brown OCHRE.
TB1/16	15.0-15.6	dark yellowish brown OCHRE, with talc.

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TB1/17 15.6-16.2 dark yellowish brown OCHRE, with talc.
TB1/18 16.2-17.0 dark yellowish brown OCHRE, wet sample.
TB1/19 17.0-18.0 dark yellowish brown OCHRE and chocolate brown
OCHRE, wet sample.

Hole terminated in ochre at 18m.

Auger Hole IB 2

Drilled 30/6/89; Drillers T. Lodge, J. Walker: Stacpoole's, Launceston. Logged by H. Shannon. Total depth 21.0m. Location 46539955; RL 182m.

Sample	From- to	Description
TB2/1	0.0- 1.5	dark yellowish orange talcose and sandy OCHRE.
TB2/2	1.5- 2.5	TALC SCHIST.
TB2/3	2.5- 3.5	dark yellowish orange talcose OCHRE, grading to SAND with talc clasts.
TB2/4	3.5- 5.5	dark yellowish orange SAND with clay rather than ochre binder? some talc and some quartz clasts. A cavity fill?
TB2/5	5.5- 7.5	greyish orange TALC, 10YR 7/4 grading to dark yellowish orange TALC 10YR 6/6, and some SAND c.f. 3.5-4.5 at top.
TB2/6	7.5- 8.5	red OCHRE and greenschist clasts.
TB2/7	8.5- 9.0	grey to pale orange talcose SAND.
TB2/8	9.0-11.5	pale orange TALC.
TB2/8*	11.5-12.5	TALC, bluish grey CLAY, brown clayey OCHRE.
TB2/9	12.5-13.0	talcose yellowish orange OCHRE.
TB2/10	13.0-14.0	greyish yellow TALC, 5Y 8/4 and pale bluish grey TALC, 5 B 7/1.
TB2/11	14.0-14.4	(bright) dark yellowish orange TALC, 10YR 6/8.
TB2/12	14.4-14.7	TALC SCHIST and CLAY.
TB2/13	14.7-15.0	dark yellowish orange TALC, 10YR 6/6, and minor red weathering greenschist.
TB2/14	15.0-16.0	light olive grey TALC BRECCIA, 5Y 5/2 comprised of isolated but abundant small white talc clasts up to 10mm but mostly <5mm in light olive grey "dirty" talc sediment matrix. This sediment is interpreted as a cave fill occupying a sealed karst cave.

TB2/15 16.0-16.5 light olive grey TALC BRECCIA, as above.

TB2/16 16.5-17.2 light olive grey TALC BRECCIA, as above.

TB2/17 17.2-18.2 light olive grey TALC BRECCIA, as above.

TB2/18 18.2-19.4 olive grey, yellowish orange and bluish grey TALC BRECCIA, as above; some brown ochre contaminates the sample.

TB2/19 19.4-21.0 yellowish orange, olive grey and bluish grey matrix TALC BRECCIA, with somewhat larger white talc clasts still mostly < 5mm.

Hole terminated in talc breccia at 21m.

Auger Hole LB 1

Drilled 3/7/89; Drillers T. Lodge, J. Walker: Stacpoole's, Launceston. Logged by H. Shannon. Total depth 14.0m. Location 47689691; RL 255m.

Sample	From- to	Description
LB1/1	0.0- 3.0	orange OCHRE, wet, poor recovery.
LB1/2	3.0- 6.0	dark yellowish orange OCHRE.
LB1/3	6.0- 7.5	dark yellowish orange OCHRE.
LB1/4	7.5- 9.0	green PHYLLITE.
LB1/5	9.0-11.0	yellowish orange OCHRE.
LB1/6	11.0-12.0	grey-green PHYLLITE.
LB1/7	12.0-14.0	yellowish orange OCHRE with some greenschist.

The hole was terminated at 14.0m when an impenetrable hard spot was encountered, probably quartz.

note: On a site 3m northwards, an abortive hole **LB Q** was drilled in greenschist to 7.5m in the hope of entering the ochre from the western hanging wall. The hole was abandoned once the expected transition to ochre did not occur by 7.5m.

Auger Hole LC 1

Drilled 3/7/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by H. Shannon. Total depth 6m. Location 47719681; RL 275m.

Sample	From- to	Description
LC1/1	0.0- 3.0	white quartz SAND.
LC1/2	3.0- 5.0	greyish yellow to yellowish orange and white quartz SAND.
LC1/3	5.0- 6.0	silvery dark greenish grey PHYLLITE.

Hole ended at 6.0m in phyllite.

note: An abortive hole **LC Q** was drilled in quartz gravel and sand to 1.4m on a site on the next track northward at 47699687, RL 260m in the hope of encountering the ochre picked up in the dozer treads during construction of the track. The hole was abandoned when it hit hardpan (probably quartz) and since this was the only site on which the rig could be located the line was abandoned. An attempt to sample the ochre show with the excavator bucket also failed because of tough vein quartz.

Auger Hole LD 1

Drilled 3/7/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by H. Shannon. Total depth 12.0m. Location 47659671; RL 255m.

Sample	From- to	Description
LD1/1	0.0- 3.0	SAND and TALC; karst related cavity fill?
LD1/2	3.0- 5.0	talc BRECCIA, as above, start of wet samples.
LD1/3	5.0- 7.0	orange-brown and chocolate brown OCHRE with talc; poor in pigmenting power over light greyish yellow clay/ochre matrix BRECCIA, with clasts to 10mm probably mainly quartz, also not strong on pigmenting power. The breccia is also probably a cave fill.
LD1/4	7.0- 8.5	chocolate brown ochre matrix BRECCIA, as above, over SAND at base only.
LD1/5	8.5-11.5	yellowish orange sand matrix BRECCIA grading to SAND.
	11.0-12.0	grey-green talcose SCHIST.

Hole terminated at 12.0m in talc schist interpreted as a boundary to the original carbonate bed.

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47

Auger Hole LE 1

Drilled 4/7/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by H. Shannon. Total depth 6m. Location 47709675; RL 275m.

Sample	From- to	Description
LE1/1	0.0- 1.5	white quartz GRAVEL including spongy quartz.
LE1/2	1.5- 3.0	dark brown MUD with green phyllite fragments (ground up phyllite? ochre and phyllite?).
LE1/3	3.0- 5.0	dark brown MUD with abundant green phyllite fragments, as above.
	5.0- 6.0	green PHYLLITE as chips in greenish brown ground up matrix.

Hole ended at 6.0m in phyllite.

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Auger Hole LE 2

Drilled 4/7/89; Drillers T. Lodge, J. Walker; Stacpoole's, Launceston. Logged by H. Shannon. Total depth 3m (6m?) Location 47779677; RL 285m.

Sample	From- to	Description
	0.0- 0.4	ironstone pisolites.
LE2/1	0.4- 1.5	yellowish orange CLAY/OCHRE?
LE2/2	1.5- 3.0	pale orange and pale yellowish orange CLAY with soft silvery concretions; specular haematite?.
	3.0- 6.0	orange brown to reddish brown weathered GREENSCHIST.

Hole ended at 6.0m in greenschist.

note: A hole was attempted in the cemented sand outcrop 1.5m westward but the hole could only go to 0.3m. Another start was made 1.5m further west again but in this case the hole reached 1m in ironstone pisolites before stopping abruptly.

note: The program ended with this hole. Some non-ochre samples from the LP area were dumped. Samples TA4/6-7; TA5/1-10 (all samples); TB2/14-19 and HD2 (all samples) have been retained at Savage River.

APPENDIX 2: ASSAY DATA

Savage Resources Reg. No 893235-42

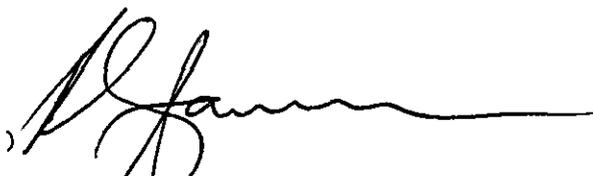
7.11.89

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<u>Reg. No</u>	<u>893236</u>	<u>893237</u>	<u>893238</u>	<u>893239</u>	<u>893240</u>	<u>893241</u>	<u>893242</u>
<u>Description Main Ck</u>	<u>TT 1/2</u>	<u>HT 4</u>	<u>MT 4</u>	<u>MT 5</u>	<u>BT 1</u>	<u>LP 1</u>	<u>87/8393</u>
<u>Items</u>							
Tl g/t	<1	<1	<1	<1	<1	<1	<1
Sol Ba g/t	<1	<1	<1	<1	<1	<1	<1
Hg g/t	<1	<1	<1	<1	<1	<1	<1
Water Sol Salts %	0.43	0.22	0.25	0.37	0.22	0.28	0.14
Sb g/t	<4	7	<4	5	4	<4	<4
Te "	<7	<7	<7	<7	<7	<7	<7
Se "	<7	<7	<7	<7	<7	<7	<7
Cd "	<10	<10	<10	<10	<10	<10	<10
Ag "	<10	<10	<10	<10	<10	<10	<10

Fee 7 X \$26.25 = \$183.75

Analyses by *R.P.S.*

(P.L. James) 
Chief Chemist & Metallurgist

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	SiO2	TiO2	Al2O3	Fe2O3	FeO	MnO	MgO	CaO	Na2O	K2O	P2O5	SO3	CO2	H2O+	LOI
893236															
TT 1/2	19.22	0.05	6.85	46.24	0.65	0.27	9.32	0.09	0.97	0.10	1.00	0.67	2.37	11.61	14.18
893237															
HT 4	24.05	0.05	2.32	58.34	0.30	0.25	1.65	0.09	1.14	0.11	1.17	0.79	0.65	9.14	10.07
893238															
HT 4	23.74	0.33	5.94	51.14	0.65	0.26	2.55	0.21	1.05	0.28	1.06	0.86	2.39	9.41	12.07
893239															
HT 5	31.21	0.19	4.29	43.73	0.30	0.42	5.65	0.11	0.95	0.12	1.06	1.78	2.06	8.99	11.73
893240															
BT 1	23.24	0.28	5.63	44.66	*	7.09	1.78	0.10	1.08	0.21	1.09	3.28	0.72	11.69	13.72
893241															
LP 1	35.27	0.63	6.68	40.12	0.41	0.34	2.82	0.09	0.97	0.96	1.04	1.10	1.61	8.70	10.70
893242															
87/8393	13.09	0.13	5.70	61.72	0.18	2.43	2.27	0.09	1.13	0.16	1.18	2.29	1.29	12.55	14.74

Analyses

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6/10/89
James

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(P.L. James)
Chief Chemist & Metallurgist

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	893236	893237	893238	893239	893240	893241	893242
	TT 1/2	HT 4	HT 4	HT 5	BT 1	LP 1	87/8393
Ag	‡	‡	‡	‡	‡	‡	‡
As	< 20	< 20	20	< 20	< 20	< 20	45
Ba	< 23	< 23	26	< 23	760	84	310
Bi	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Cd	‡	‡	‡	‡	‡	‡	‡
Co	110	21	54	50	82	175	1400
Cr	46	59	135	190	39	180	115
Cu	< 5	< 5	22	< 5	44	110	1250
Hg	‡	‡	‡	‡	‡	‡	‡
Mo	10	7	6	6	6	5	18
Ni	22	63	61	32	20	71	70
Pb	21	49	62	260	28	22	19
Sb	‡	‡	‡	‡	‡	‡	‡
Se	‡	‡	‡	‡	‡	‡	‡
Sn	< 9	< 9	< 9	< 9	< 9	< 9	< 9
Sr	< 5	< 5	10	< 5	27	5	10
Te	‡	‡	‡	‡	‡	‡	‡
Tl	‡	‡	‡	‡	‡	‡	‡
V	80	170	330	180	290	310	220
Zn	450	310	800	480	330	230	290

Analyses by. 

 (P.L. James)
Chief Chemist & Metallurgist

APPENDIX 3: PFIZER PIGMENT DATA

FDA REGULATIONS IRON OXIDES

054

APPLICATION	GUIDE LINES	21 CFR REFERENCE
Paint, Resinous & polymeric coatings used on containers, equipment or utensils coming in contact with food.	Paint or coatings defined as indirect food additives resulting from incidental food contact. Iron oxides included as pigments and colorants GRAS. All components must be of a purity suitable for its intended use.	121.2514 (6), (3) (xxvi)
Food packaging including paper and paperboard in contact with aqueous or fatty foods.	Iron oxides listed as GRAS. Contact with aqueous or fatty foods refers back to 121.2514 (6) (3) (xxvi).	121.101 121.2526
Zinc-Silicon Dioxide matrix food contact coatings.	Iron oxide is permitted as an optional substance.	121.2548
Rubber articles intended for repeated food contact use.	Total color is not to exceed 10% of total weight of rubber product.	121.2562
Pet Foods**	Amounts of oxide up to .25% by weight of finished food. Limits of arsenic 5 ppm, lead 20 ppm, mercury 3 ppm.	8.325
Cosmetics/drugs**	May be ingested or used in topically applied drugs; dosage shall not exceed 5 milligrams per day. Limits of arsenic 3 ppm, lead 10 ppm, mercury 3 ppm.	8.501 (g) 8.6001

* Generally recognized as safe
** Selected lots of iron oxides will meet these criteria.

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PFIZER SYNTHETIC IRON OXIDES

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IRON OXIDE PRODUCTS	GENERAL FORMULA	%Fe ₂ O ₃	PERCENT LOSS ON IGNITION	PERCENT SOLUBLE SALTS	TYPICAL % H ₂ O at 110° C.	TYPICAL SPECIFIC RESISTANCE (OHMS)	PARTICLE SHAPE	AVERAGE PARTICLE SIZE (Microns)	% FINENESS THROUGH 325 MESH	OR ABSORPTION	SPECIFIC GRAVITY	pH	WEIGHTI SOLID GAL.	HIDING POWER SQ. FT./LB.	IRON OXIDE PRODUCTS
R-1299	Fe ₂ O ₃	99+	0.3	0.10	0.25	5500	Spheroidal	0.15	99.9	20	5.15	6-8	42.8	1000	R-1299
R-1599	Fe ₂ O ₃	99+	0.3	0.10	0.25	5300	Spheroidal	0.25	99.9	24	5.15	6-8	42.8	1000	R-1599
R-2199	Fe ₂ O ₃	99+	0.3	0.10	0.25	5500	Spheroidal	0.25	99.9	22	5.15	6-8	42.8	1000	R-2199
R-2200	Fe ₂ O ₃	99+	0.3	0.10	0.25	5200	Spheroidal	0.25	99.9	22	5.15	6-8	42.8	1100	R-2200
R-2899	Fe ₂ O ₃	99+	0.3	0.15	0.25	6500	Spheroidal	0.30	99.9	17	5.15	6-8	42.8	1000	R-2899
R-2900	Fe ₂ O ₃	99+	0.3	0.10	0.25	8000	Spheroidal	0.25	99.9	21	5.15	6-8	42.8	1100	R-2900
R-3098	Fe ₂ O ₃	99+	0.2	0.10	0.25	5800	Spheroidal	0.30	99.9	16	5.15	6-8	42.8	1000	R-3098
R-3200	Fe ₂ O ₃	99+	0.2	0.10	0.25	7000	Spheroidal	0.25	99.9	21	5.15	6-8	42.8	1100	R-3200
R-4098	Fe ₂ O ₃	99+	0.2	0.10	0.25	4000	Spheroidal	0.45	99.9	19	5.15	6-8	42.8	1000	R-4098
R-5098	Fe ₂ O ₃	99+	0.1	0.10	0.25	4000	Spheroidal	0.50	99.9	17	5.15	6-8	42.8	1000	R-5098
R-6098	Fe ₂ O ₃	99+	0.1	0.10	0.25	4000	Spheroidal	0.60	99.9	16	5.15	6-8	42.8	1000	R-6098
R-8098	Fe ₂ O ₃	99+	0.1	0.10	0.25	3000	Spheroidal	0.90	99.9	15	5.15	6-8	42.8	1000	R-8098
R-9998	Fe ₂ O ₃	99+	—	0.10	0.25	1000	Spheroidal	2.50	99.9	15	5.15	6-8	42.8	1000	R-9998
RO-3097	Fe ₂ O ₃	96+	2.0	0.10	0.25	5000	Rhombohedral	0.25	99.9	24	4.90	6-8	40.8	1000	RO-3097
RO-4097	Fe ₂ O ₃	97+	2.0	0.10	0.25	5000	Rhombohedral	0.30	99.9	24	4.90	6-8	40.8	1000	RO-4097
RO-5097	Fe ₂ O ₃	97+	2.0	0.10	0.25	5000	Rhombohedral	0.40	99.9	23	4.90	6-8	40.8	950	RO-5097
RO-6097	Fe ₂ O ₃	97+	2.0	0.10	0.25	5000	Rhombohedral	0.50	99.9	23	4.90	6-8	40.8	950	RO-6097
RO-7097	Fe ₂ O ₃	97+	2.0	0.10	0.25	5000	Rhombohedral	0.65	99.9	23	4.90	6-8	40.8	900	RO-7097
RO-8097	Fe ₂ O ₃	97+	2.0	0.10	0.25	5000	Rhombohedral	0.85	99.9	22	4.90	6-8	40.8	850	RO-8097
YLO-1788	Fe ₂ O ₃ · H ₂ O	86+	13	0.15	0.3	5000	Acicular	0.25	99.9	36	4.03	6-8	33.5	300	YLO-1788
YLO-1888B	Fe ₂ O ₃ · H ₂ O	85+	12	0.10	0.3	6800	Acicular	0.35	99.9	36	4.03	6-8	33.5	300	YLO-1888B
YO-1987B	Fe ₂ O ₃ · H ₂ O	85+	12	0.10	0.3	6200	Acicular	0.45	99.9	40	4.03	6-8	33.5	300	YO-1987B
YO-2087	Fe ₂ O ₃ · H ₂ O	86+	13	0.10	0.3	5200	Acicular	0.50	99.9	50	4.03	6-8	33.5	350	YO-2087
YLO-2288B	Fe ₂ O ₃ · H ₂ O	85+	12	0.10	0.3	8000	Acicular	0.40	99.9	36	4.03	6-8	33.5	375	YLO-2288B
YO-3087	Fe ₂ O ₃ · H ₂ O	86+	13	0.10	0.3	5000	Acicular	0.60	99.9	50	4.03	6-8	33.5	375	YO-3087
YLO-3288B	Fe ₂ O ₃ · H ₂ O	85+	12	0.10	0.3	5500	Acicular	0.50	99.9	33	4.03	6-8	33.5	375	YLO-3288B
YO-3587	Fe ₂ O ₃ · H ₂ O	86+	13	0.10	0.3	5000	Acicular	0.70	99.9	50	4.03	6-8	33.5	375	YO-3587
YLO-4088	Fe ₂ O ₃ · H ₂ O	86+	13	0.10	0.3	5000	Acicular	0.60	99.9	33	4.03	6-8	33.5	375	YLO-4088
YO-5087	Fe ₂ O ₃ · H ₂ O	86+	13	0.10	0.3	5500	Acicular	0.90	99.9	48	4.03	6-8	33.5	375	YO-5087
YO-5287B	Fe ₂ O ₃ · H ₂ O	85+	12	0.10	0.3	5000	Acicular	1.10	99.9	48	4.03	6-8	33.5	375	YO-5287B
YO-6087	Fe ₂ O ₃ · H ₂ O	86+	13	0.10	0.3	5000	Acicular	1.2	99.9	48	4.03	6-8	33.5	375	YO-6087
YO-8087	Fe ₂ O ₃ · H ₂ O	86+	13	0.10	0.3	5000	Acicular	1.5	99.9	45	4.03	6-8	33.5	275	YO-8087
B-1894	Blends	93-98	7.0	0.2	0.2	5000	Acicular & Cubic	0.5-3.0	99.9	26	4.70	6-8	39.1	800	B-1894
B-2091	Blends	90	8.0	0.2	0.2	5000		0.5-3.0	99.9	33	4.34	6-6	36.1	800	B-2091
B-2590	Blends	90	8.0	0.3	0.2	5000		0.5-3.0	99.9	34	4.10	6-8	34.2	800	B-2590
Y-5589	Blends	88	—	0.2	0.2	5000		0.5-3.0	99.9+	37	4.02	6-8	33.5	375	Y-5589
Y-5790	Blends	88	—	0.2	0.2	5000		0.5-3.0	99.9-	37	4.05	6-8	33.5	400	Y-5790
Y-6090	Blends	90	—	0.3	0.2	4500	Mostly Acicular	0.5-3.0	99.9	31	4.30	6-8	35.8	475	Y-6090
Y-6391	Blends	90+	—	0.1	0.2	4500		0.5-3.0	99.9-	41	4.20	6-8	34.9	425	Y-6391
Y-8590	Blends	90	—	0.3	0.2	4500		0.5-3.0	99.5-	30	4.05	6-8	33.5	475	Y-8590
Y-8089	Blends	89	—	0.2	0.2	4500		0.5-3.0	99.9-	32	4.0	6-8	33.3	475	Y-8089
BK-4799	Fe ₂ O ₃	99	—	0.15	0.2	5000	Cubic	—	99.9	27	4.98	8-9	41.5	1300	BK-4799
BK-5000	Fe ₂ O ₃	99	—	0.10	0.2	5000	Cubic	—	99.9	31	5.04	8-9	42.0	1400	BK-5000
BK-5099	Fe ₂ O ₃	98	—	0.10	0.2	5000	Cubic	10.0	99.9	28	4.96	7-8	41.4	1250	BK-5099
BK-5599	Fe ₂ O ₃	98	—	0.20	0.2	5000	Cubic	—	99.9	25	4.90	7-8	40.8	1350	BK-5599
LB-1011	Carbon Black	99% C	—	0.5 Max	—	—	Amorphous	—	99.5	120	1.79	9	14.9	—	LB-1011
G-4099	Cr ₂ O ₃	99	—	0.2	0.1	9000	Spheroidal	0.40	99.9-	23	5.12	5-7	42.6	650	G-4099
G-5099	Cr ₂ O ₃	99	—	0.2	0.1	9000	Spheroidal	0.45	99.9-	19	5.12	5-7	42.6	600	G-5099
G-6099	Cr ₂ O ₃	99	—	0.2	0.1	9000	Spheroidal	0.75	99.9-	22	5.12	5-7	42.6	600	G-6099
G-6199	Cr ₂ O ₃	99	—	0.2	0.1	9000	Spheroidal	0.70	99.9-	15	5.12	5-7	42.6	600	G-6199
G-7099	Cr ₂ O ₃	99	—	0.2	0.1	9000	Spheroidal	1.10	99.9-	19	5.12	5-7	42.6	550	G-7099
GH-9869	Cr ₂ O ₃ · nH ₂ O	80	—	1.3	—	8000	Spheroidal	—	99.9-	57	3.40	6-7	27.5	165	GH-9869

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PFIZER NATURAL

IRON OXIDES

056

IRON OXIDE PRODUCTS	%Fe ₂ O ₃	%MnO ₂	PERCENT SOLUBLE SALTS	TYPICAL %H ₂ O at 110°C	AVERAGE PARTICLE SIZE (Microns)
NR-4284	82-85	—	0.5	0.2	1.0
NR-4686	85-87	—	0.5	0.1	1.7
B-01085	80-85	—	0.3	0.3	9.0
B-1283F	80-85	—	0.3	0.3	3.0
B-2093F	93-97	—	0.2	0.1	3.0
RU-9546	40-45	7		1-4	1.8
BU-1561	58-62	9		1-3	
BU-5250F	52-57	10		1-4	0.7
BU-5452	49-54	10		1-4	2.0
BU-7052	43-48	14		1-4	
BN-4498F	97-98	—	0.10	0.10	—

% FINENESS THROUGH 325 MESH	OIL ABSORPTION	SPECIFIC GRAVITY	pH	WEIGHT/ SOLID GAL.	HIDING POWER SQ. FT./LB.	IRON OXIDE PRODUCTS
99.5	17	4.55	6-7	37.9	650	NR-4284
99.8	17	4.83	6-7	40.2	775	NR-4686
99.0	18	4.50	7-9	37.4	450	B-01085
99.9+	16	4.54	7-9	37.8	625	B-1283F
99.9+	12	4.90	6-7	40.8	750	B-2093F
99.9	47	3.16	6-7	26.3		RU-9546
99.0	44	3.78	7-8	31.5		BU-1561
99.8	54	3.89	7-9	30.7		BU-5250F
99.0	54	3.48	7-9	29.0		BU-5452
99.0	44	3.63	8-9	30.3		BU-7052
99.9	11	5.00	7-8	41.6	200	BN-4498F

Pfizer's natural oxide pigments are produced directly from choice commercial grades of minerals—obtained from all over the world.



Hematite—*anhydrous ferric oxide*. Specimen from Fibbia, Switzerland. Reproduction is in 2.3:1 scale.



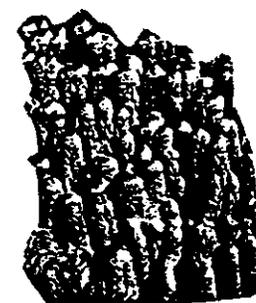
Pyrite—*iron disulfide (fool's gold)*. Specimen from Isle of Elba, Italy. Reproduction is in .06:1 scale.



Limonite—*hydrrous ferric oxide*. Specimen from Keswick, California. Reproduction is in 0.3:1 scale.



Magnetite—*ferroso-ferric oxide*. Specimen from Binnental, Switzerland. Reproduction is in 0.7:1 scale.



Goethite—*hydrated ferric oxide*. Specimen from Gömör, Hungary. Reproduction is in 4.3:1 scale.



Pyrolusite—*manganese dioxide*. Specimen from Ebersbach, Germany. Reproduction is in 2.3:1 scale.

TRACE METALS

	MANGANESE	MAGNESIUM	CHROMIUM	ZINC	COPPER	STRONTIUM
LIGHT COPPERAS REDS R-1599 thru R-4098	500	30-80	20-40	10-100	<10	<10
DARK COPPERAS REDS R-5098 thru R-9998	1700	60	50-150	100-200	100	<10
KROMA REDS RO-3097 thru RO-8097	50-200	50-200	75-175	100-300	100-200	<10
LIGHT YELLOWS YLO-1788 thru YLO-2288	100-150	100-400	100-400	100-400	100-200	<10
MEDIUM YELLOWS YO-3087 thru YO-5287	100-300	100-400	100-400	100-400	100-200	<10
DARK YELLOWS YO-6087 YO-8087	100-300	100-400	100-400	100-400	100-200	<10
TANS & GOLDENRODS	200-9000	300-4000	100-800	50-350	50-300	<10
PURE BLACK BK-5099	2000	300	500-1000	1000	200-500	<10
CHROMIUM OXIDE G-4099 thru G-7099	10-20	100-150	MAJOR	20-80	10-100	<10
CHROMIUM HYDRATE GH-9889	<10	10-30	MAJOR	25-50	<10	<10
RED BLENDS	200-500	100-3000	50-400	50-250	200-1000	50-75
NATURAL BROWNS	200-3000	200-4000	40-150	20-200	20-200	<10
RAW UMBERS	MAJOR	4000-6000	30-150	200-600	500-700	50-200
BURNT UMBERS	MAJOR	5000-10,000	10-30	300-800	500-750	100-1300

ANALYSIS (PARTS PER MILLION)

	ARSENIC	NICKEL	COBALT	SILICON	ALUMINUM	TIN	ANTIMONY
	1-5	50-90	60-120	50-200	50-150	5-20	5-15
	5-15	100-200	75-150	50-700	150-250	10-100	5-15
	30-60	30-100	50-150	100-300	200-300	50-100	5-20
	10-25	20-60	50-150	100-500	100-500	20-100	5-20
	10-40	20-60	50-150	100-500	100-500	20-100	5-20
	10-50	20-60	50-150	100-500	100-500	20-100	5-20
	2-20	80-300	80-160	X	X	<10	<20
	5-15	100-200	100-200	1300	500	50	<10
	2	50-100	20-120	100-200	500	<10	<10
	1-10	<20	20-50	X	X	<10	<20
	10-50	50-400	50-900	X	X	<10	<25
	1-10	30-100	50-250	X	X	<10	<20
	150-300	100-225	100-300	X	X	<10	<25
	100-350	200-250	100-200	X	X	<10	<25

057

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TRACE METALS ANALYSIS (PARTS PER MILLION)

058

	BARIUM (Insoluble)	BARIUM (Soluble)	TELLURIUM	MOLYBDENUM	CADMIUM	VANADIUM		BISMUTH	SELENIUM	LEAD	THALLIUM	MERCURY	SILVER
LIGHT COOPERAS REDS R-1599 thru R-4098	10-100	NOT PRESENT	<10	<15	<20	<20		<50	<20	1-15	<50	<0.1	< 5
DARK COOPERAS REDS R-5098 thru R-9998	10-100	NOT PRESENT	<10	<15	<20	<20		<50	<20	10-40	<50	<0.1	< 5
KROMA REDS RO-3087 thru RO-8097	30-120	NOT PRESENT	<10	10-50	<20	<20		<50	<20	10-40	<50	<0.1	< 5
LIGHT YELLOWS YO-1788 thru YO-2288	100-1000	NOT PRESENT	<10	<10	<20	<20		<50	<20	10-50	<50	<0.1	< 5
MEDIUM YELLOWS YO-3087 thru YO-5287	100-1000	NOT PRESENT	<10	10-50	<20	20-60		<50	<20	10-50	<50	<0.1	< 5
DARK YELLOWS YO-6087 YO-8087	100-1000	NOT PRESENT	<10	20-50	<20	20-60		<50	<20	10-50	<50	<0.1	< 5
TANS & GOLDENRODS	500- 10,000	NOT PRESENT	<10	<20	<10	<50		<50	<15	15-50	<50	<0.05	<10
PURE BLACK BK-5099	100-1000	NOT PRESENT	<10	<10	<20	<50		<50	<20	50-100	<50	<0.1	< 5
CHROMIUM OXIDE G-4099 thru G-7099	10-100	NOT PRESENT	<10	<10	<20	500-1000		<50	<20	20-100	<50	0.05	< 5
CHROMIUM HYDRATE GH-3869	75-150	NOT PRESENT	<10	<20	< 5	50-100		<50	<15	5-10	<50	<0.05	<10
RED BLENDS	600-3000	NOT PRESENT	<10	<25	<10	10-300		<50	<15	50-800	<50	<0.05	<10
NATURAL BROWNS	50-15,000	NOT PRESENT	<10	<20	<10	<100		<50	<15	10-100	<25	<0.05	<10
RAW UMBERS	1000-2000	NOT PRESENT	<10	50-70	10-50	700-1000		<50	<15	100-150	<25	<0.05	<10
BURNT UMBERS	500-2500	NOT PRESENT	<10	<25	<10	1000-1500		<50	<15	100-200	<25	<0.05	<10

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653066

060

99,600mN.

46,500mE.

46,600mE.

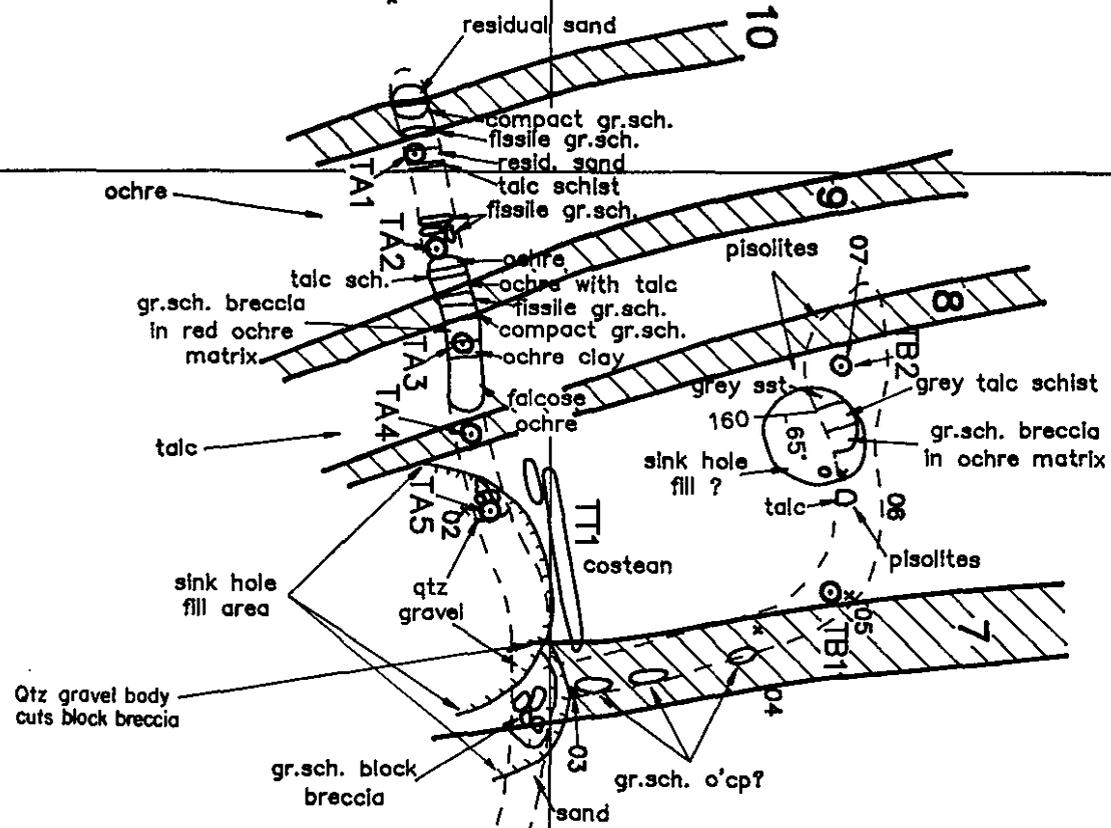
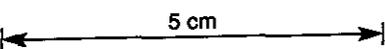
99,500mN.

99,500mN.

99,400mN.

99,400mN.

BA00 = old
08115
*



46,500mE.

SAVAGE RESOURCES LIMITED

SAVAGE RIVER

TOP TRACK

SITE

DRILLING PROGRAM

SCALE 1:1000



PLAN 2

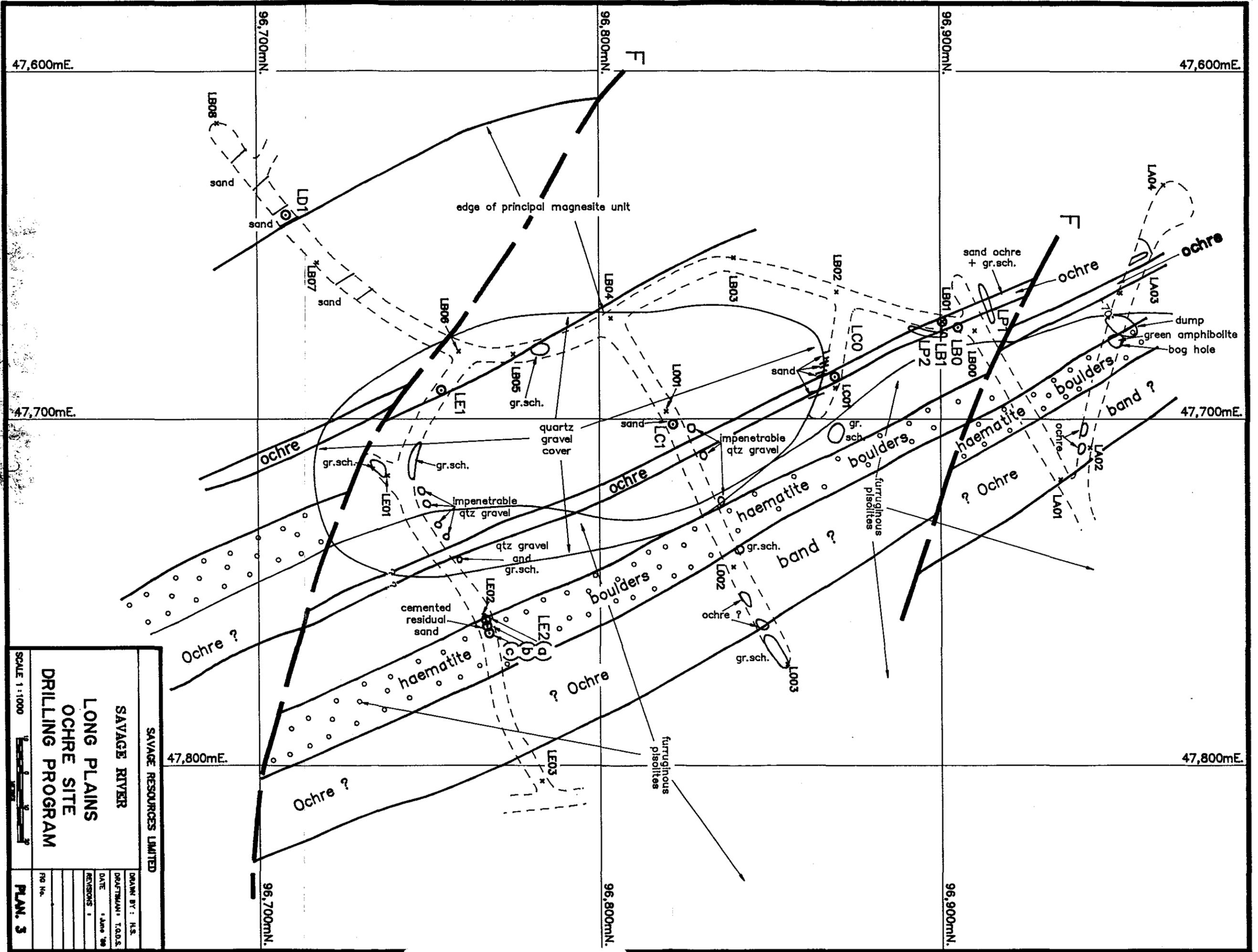
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DRAFTSMAN: T.G.D.S.

DATE: June '86

REVISIONS :

FILE No. SRTDDH2



Savage Resources Limited

Savage River

Long Plains Ochre Site

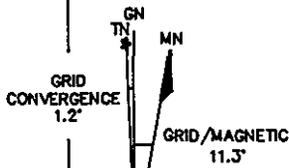
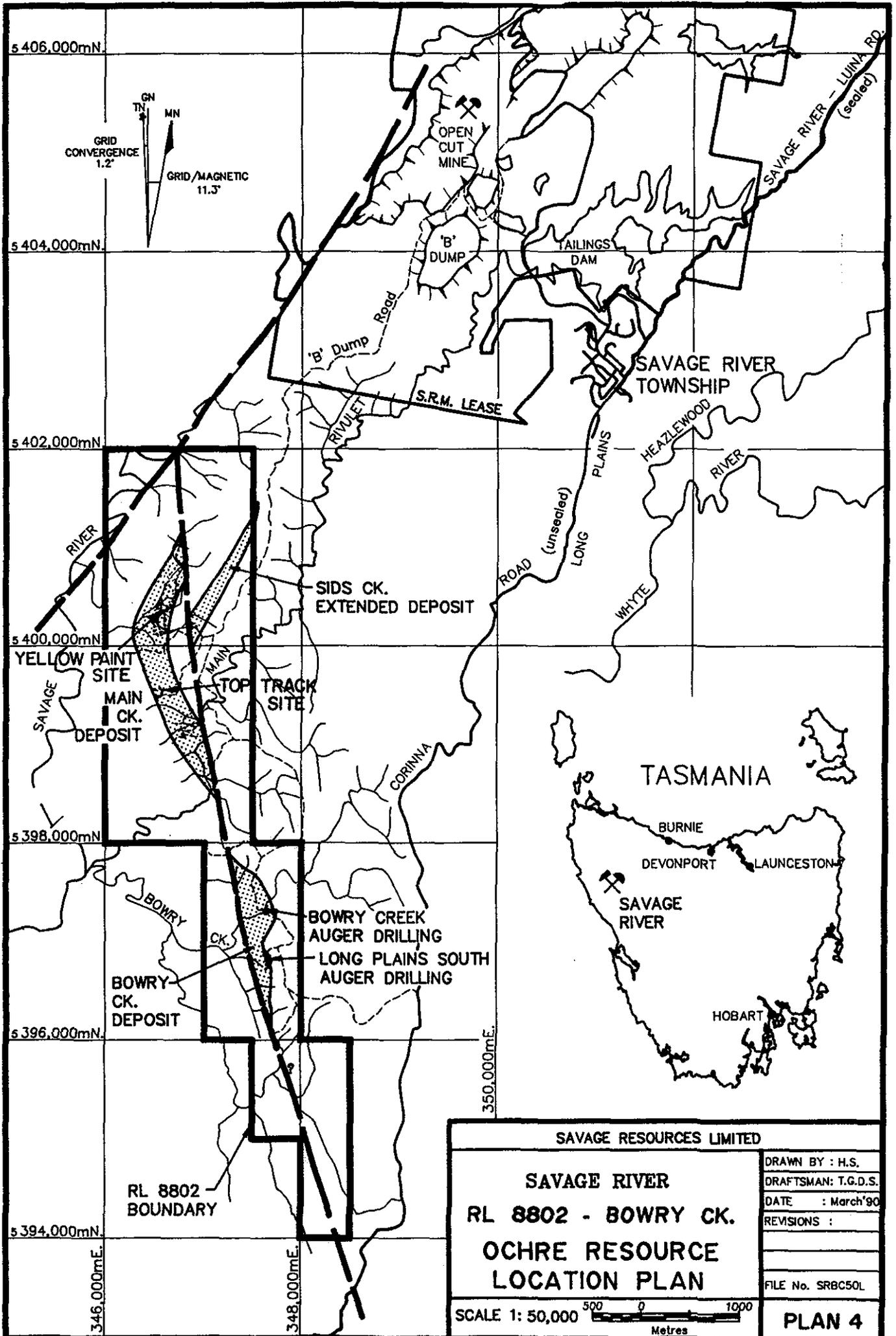
Drilling Program

SCALE 1:1000

PLAN. 3

DRAWN BY:	H.S.
DRAFTSMAN:	T.O.S.
DATE:	June '98
REVISIONS:	
FIG No.	

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SAVAGE RESOURCES LIMITED

SAVAGE RIVER
RL 8802 - BOWRY CK.
OCHRE RESOURCE
LOCATION PLAN

DRAWN BY : H.S.
 DRAFTSMAN: T.G.D.S.
 DATE : March '90
 REVISIONS :
 FILE No. SRBC50L

SCALE 1: 50,000 Metres

PLAN 4