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ADAMSFIELD PROSPECT

SOUTH WEST TASMANIA

E.L. 4/85

ANNUAL REPORT FOR THE PERIOD ENDING 25/7/1986

REPORT NO.941

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SUMMARY

The northern portion of the Adamsfield Ultramafic Complex has been subjected to a detailed program of work designed to assess the hard rock (in situ) resources of PGM, specifically the content of iridosmine, the natural alloy of iridium and osmium.

Old records detail Ir Os grades for the lode in Halls Open Pit as being in the range 12 g/t to 46 g/t over a width of 2 to 3 metres and a strike extent of approx. 600 m. Stream samples with visible Ir Os suggest the most prospective area is between Halls Open Pit and the upper reaches of Hopper Creek to the north, with a lesser area located immediately northwest of Staceys Lookout.

Analytical problems with the determination of Ir have impeded the project since its inception, and considerable effort has been expended in order to obtain reliable and representative assay results.

Weak gold mineralisation has been discovered in the drillholes and which appears to correlate with carbonate veining and to a lesser extent with talc rock and jasperoidal material. Blue coloured staining of the ultramafic lithologies appear to be due to Ni and Co salts, whereas the origin of the "blue rock" is unexplained.

Minor nickel mineralisation is present in both the deformed ultramafics and in the overlying Adamsfield Beds.

Nickel sulphides (both magmatic and metamorphic) occur in the serpentinised dunite in Halls Open Pit.

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1. Introduction.

Exploration Licence 4/85 covers an area of 112 sq.km in south central Tasmania (Figure 1) and includes the Adamsfield Ultramafic Complex, which has been the source (either directly or indirectly) of both alluvial and lode platinum group metals (PGM).

Previous work by Ford (1981) has shown the typical platinoid alloy at Adamsfield to be iridosmine (IrOs) but which is commonly referred to as osmiridium.

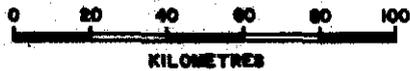
The exploration model adopted to investigate the platinoid potential of the area is one of PGM concentrations in the cumulative layers of a stratiform complex, typified by the Bushveld and Stillwater Complexes.

While this model may be deficient in specific details, the gross features are considered relevant at this stage, although considerable tectonic remobilisation and consequent dismembering of the complex has removed and/or distorted original emplacement relationships between the various rock types.

Work on this project has been handicapped by unforeseen problems with chemical analyses, and which to date have precluded definite conclusions regarding the PGM prospectivity of the area.

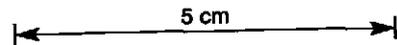
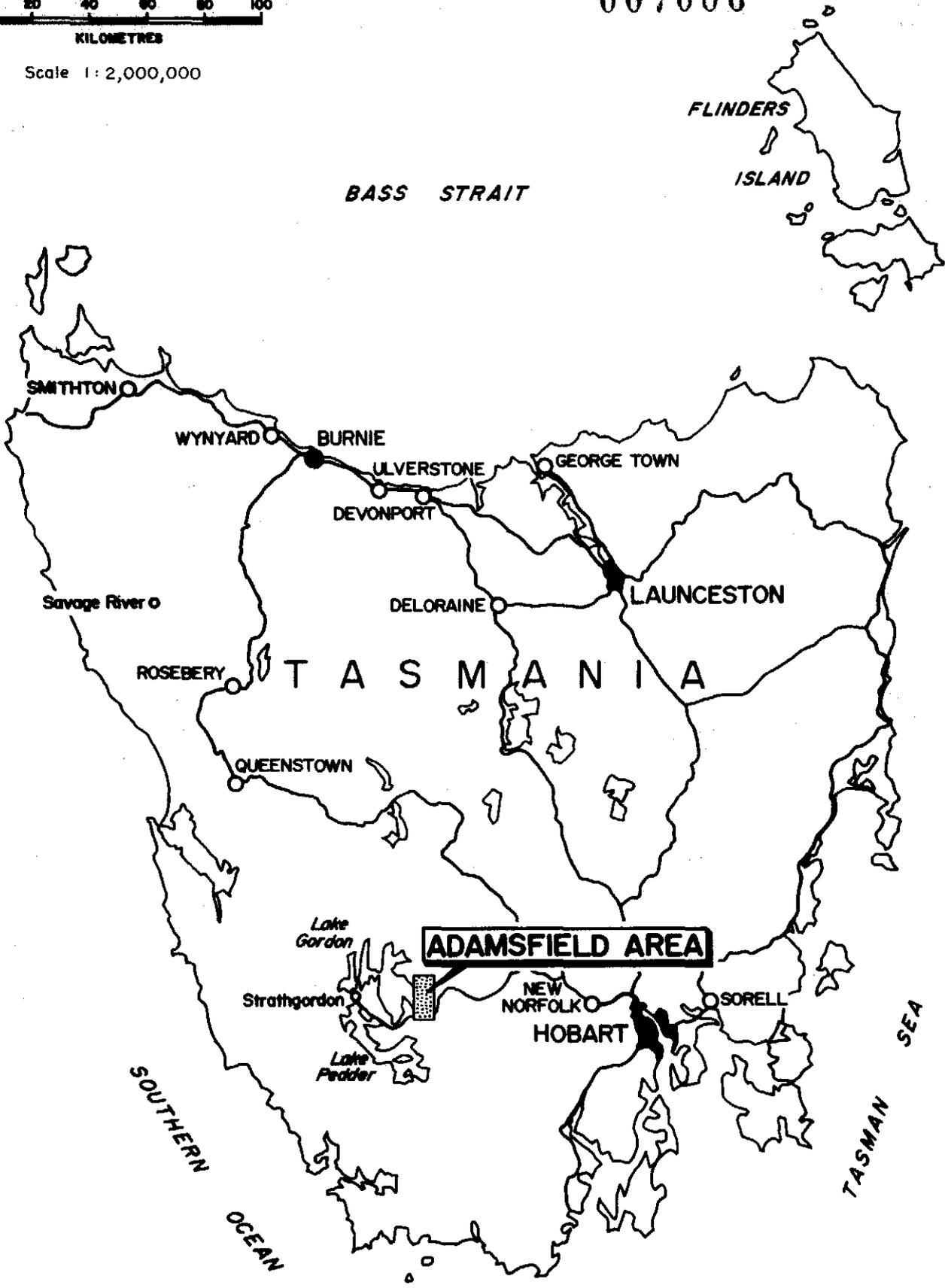
This report details the work done on E.L. 4/85 for the year ended 25.7.1986 and has included mapping, stream sampling, grab/chip sampling, channel sampling and the drilling of cored holes.

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METALS EXPLORATION LIMITED

LOCATION OF EXPLORATION LICENCE 4/85

2. Location, Access and Topography

2.1 Location and Access

The Adamsfield district is situated in the north central part of E.L. 4/85 and is 90 km NNW of Hobart in the South West Conservation Area of south central Tasmania.

Access to the southern part of the licence area is facilitated by the Gordon River Road connecting Maydena and Strathgordon, while the northern part can be accessed by either the Clear Hill Road or the Sawback Range Track, both of which connect with the old Adamsfield Track. The latter track, now inaccessible east of the Sawback Range, provided the original access to Adamsfield and ran west of Tim Shea across the Florentine River.

A section of the Adamsfield Track between the Clear Hill Road and a point 1.3 km east of Adamsfield, was repaired and upgraded by this company as part of the recent program of work to allow the passage of heavy vehicles.

Total track renovation was 5 km, of which approx. 2 km was across a button grass and heath plain, cut by the Adam River and its tributaries.

2.2 Topography

The topography is generally of high relief, the mountains having a general north-south trend, and rising to heights of 1200 ASL. The lower plain country occupies altitudes of 390 - 480 metres ASL, and the eastern margin of Lake Gordon is included in the western part of the Licence area.

The most prominent mountains within the region are The Thumbs (1188 metres), Clear Hill (1198) metres), Sawback Range (700 metres) and Ragged Range (650 metres).

The principal drainage is to the west by means of the Adam and Eve Rivers and the Gordon River.

2.3 Climate and Vegetation

The climate is typical of the West Coast with cold wet winters. Snowfalls are frequent and annual rainfall is 1.90 m.

The vegetation typifies the low altitude - high rainfall character of the region, with the most common type being button grass, interspersed with stringy bark (*E. obliqua*) and wet scrub (*Melaleuca*, *Banksia*, etc).

Minor stands of Smithton peppermint (*E. simmondsii*) and gum topped stringybark (*E. delegatensis*) are also present.

3. Geology

3.1 Regional Geology

The ultramafic complexes of Western Tasmania occur intermittently along a major crustal suture. They lie fault bound within Cambrian sediments or at the boundary between Cambrian and Precambrian rocks (Williams et al; 1975) Numerous cross cutting transcurrent faults have displaced the ultramafic lenses.

The ultramafics throughout the belt display similar characteristics, indicating an origin from a common parent magma.

It is believed that these complexes were emplaced early in the development of the Tasman Geosyncline, into sediment filled troughs formed within and between regions of disrupted Precambrian basement (Williams, 1976).

The layered ultramafic complexes with which platinum group elements (PGE) are associated are mainly emplaced in Cambrian and Precambrian sequences, and are likely to be middle Cambrian age or older. They are considered as attenuated ultramafic sequences derived from magma chambers that have developed in part by fractional crystallisation of an original high Mg, low Ti or andesitic magma.

3.2 Tenement Geology

The Adamsfield Ultramafic Complex is composed mainly of three rock types: serpentinite (and serpentinitised dunite), interlayered serpentinite (and variably serpentinitised dunite) and pyroxenite, and massive pyroxenites; (Corbett (1969) and Brown (1972)).

3.2.1 Serpentinite

The bulk proportion of the northern ultrabasic body consists of serpentinites, both massive and sheared. the latter mainly occurs in the north, while the "tail" along the Sawback Range is mainly massive. Various proportions of relict olivine grains occur in the massive serpentinite. The serpentinites are mainly dark green to matt green, with the sheared zones being more yellowish green.

3.2.2 Layered ultramafics

These rocks from the hills or highest part of the ultrabasics in the north. They consist of alternating orthopyroxene and serpentinite layers. The central cores of the hills often show a more massive coarse grained pyroxenite up to 30 m thick (Brown 1972). The serpentinite layers (after dunite) still contain 20 - 60% olivine and weather greyish green. The pyroxenite layers are generally coarse grained, particularly in the central parts, and weather to a brown colour.

The layers vary in thickness from less than 1 cm to 2 metres, the pyroxenite being the thickest. They appear parallel with a

strike direction of the general N-S trend of the ultramafic complex.

3.2.3 Massive Pyroxenite

This rock type is confined to a distinct body situated in the middle of the ultrabasic "tail" along the west side of the Sawback Range. It consists mainly of orthopyroxene, fine to very coarse grained, weathered dark brown. The boundary between the enclosed pyroxenite and the surrounding serpentinised dunite is mainly irregular, but which is apparently a purely tectonic feature.

3.2.4 Sedimentary Rocks

The Adamsfield Ultramafic Complex is enclosed by sediments of Palaeozoic age forming the Junee Group (and specifically the Denison Sub Group). The more resistant units in this sub group form the locally distinctive Ragged and Sawback Ranges (e.g. siliceous and pebbly sandstone (+/-conglomerates) in the Sawback Ranges) and siliceous cobble conglomerate in the Ragged Range. Less prominent sedimentary rocks occur to the west of the ultramafic complex as quartz sandstone (eg Football Hill), and to the east as the Adamsfield Beds (calcareous mudstone, siltstone, sandstone and ultramafic debris). Ultramafic debris is also present in the Football Hill area, and both this sequence and the Adamsfield Beds appear to have shed chromite and PGM in to the local drainage.

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4. Work Completed

4.1 Literature Review

Numerous authors have recorded parts of the geology and PGM mineralisation of the Adamsfield district, including Nye (1929), Corbett (1969) and Brown (1972) etc.

One of the most detailed sources of information on the hard rock workings, east of Adamsfield is contained in a prospectus report by the company Osmiridium (Tasmania) No Liability.

In 1925 osmiridium was discovered at Adams River. The metal was recovered from the alluvial ground in the district, and large yields were obtained. After some years of recovery of alluvial osmiridium diminished in quantity, but the discovery of a defined serpentinite lode containing osmiridium gave a new impetus to its recovery.

In 1937, the company commissioned a feasibility study on the open cut, shaft and adits, and results reported are as follows:

"In April 1937, the shaft was dewatered and sunk a further seven feet. Every bucket of material extracted obtained payable ore throughout the continuation of the shaft. An estimation of the ore grade from panning was in the order of 15 dwts (23 gms) to 1 oz (31 gms) per tonne.

A five feet by two feet cut was taken from the hanging wall and shipped to Melbourne for bulk testing. The material was passed through a stamp battery (0.108 inch, .27 mm screen) and the total quantity of osmiridium recovered was at the rate of 1.5 oz (46 gms) per ton. A feature of the ore is the absence of finely divided material. Particles of gold were also visible in the concentrate, however not at ore grade"

It was believed at the time that the lode varied in width from 6 feet to 10 feet in the open cut. It had been proved for a length of 1550 feet (472 m) to carry payable ore within an olivine bronzite ultramafic.

Encouraged by the results, the syndicate commissioned a mining engineer to visit Adamsfield for the purpose of making a further inspection of the area. The later work described a north-south trending lode of varying width from 6 - 10 feet and a strike length of 2000 feet, which had been proved up by sluicing and shaft sinking.

The alluvial workings immediately west and downstream from the lode has reported to have yielded osmiridium to the value of Pounds 50,000 (2500 ounces).

Resampling of the shaft area in this latter work yielded osmiridium values averaging 8 dwts (12 gms) per ton.

A shaft sunk on Ivory's claim immediately south of the syndicate area was reported to have good values to a depth of 40 feet (12 m), thus indicating considerable lateral continuity.

Thus, although some of the data in the prospectus may be open to question, it would appear that a significant resource of "osmiridium" was worked during the period 1920 - 1925. — ?

1925-1935

4.2 Regional Mapping

The general area north of Stacey's Lookout in the Sawback Range was traversed on the ground and the result integrated in an aerial photo interpretation; the results are shown in Figures 2 and 3.

Multiple episodes of faulting have fragmented the presently outcropping remnants of the ultramafic complex; by analogy with other ultramafics in the state it would appear that a considerable portion of the Adamsfield body has been dismembered and "lost" during deformation.

This loss of parts of the sequence may also be inferred from the distribution of the Adamsfield beds and by the distances up/down sequence away from possible marker units.

Early faulting appears to have resulted in right lateral offsets along W-E/ENE and NW aligned faults; later faulting (strike slip) was aligned NW - NS.

The possible marker units are the interlayered dunites and pyroxenites (variably serpentinitised) and such units may define a synformal structure between Adamsfield and Halls open pit.

4.3 Stream Sampling

4.3.1 Introduction

A total of 44 stream sediment samples were collected from approx. 5 sq.km of the ultramafic complex north of Staceys Lookout; (Details are provided on Figure 4).

These samples were collected by panning to produce partial heavy mineral concentrates weighing 250 g; further duplicate samples (44 in all) were also taken by panning to produce conventional heavy mineral concentrates.

Approx. one quarter of the latter samples contained visible osmiridium grains, with one (ADSS-19) possibly containing fine gold.

The main areas in which (visible) "osmiridium" has been detected are:

1. North of Halls Open Cut (samples 5, 29 and 19)
2. Main Creek, near its junction with Hopper Creek (samples 9, 14)
3. West of the Hopper - Main Creek confluence (sample 13)
4. West of Staceys Lookout in the Sawback Range (samples 34, 35 and 36).

These samples were analysed for iridium (Ir) and gold (Au) but not osmium (Os), the reasons being that analytical determination of Os is extremely difficult.

Accordingly, the initial phase of work has relied on the work of Ford (1981) who showed the close affinity of Os and Ir in Tasmania and thus that a reasonable approximation of the iridium and osmium content in a sample can be assessed from the iridium concentration.

4.3.2 Results

4.3.2.1 Iridium

Peak values for Ir were 0.04 ppm and 0.06 ppm in samples AD SS-09 and -38 respectively. Sample 09 was taken in Main Creek approx. 1.5 km downstream of the presumed source in Halls Open Cut, while sample 38 was collected in the southern fork of the head of Millen Creek, approx. 1 km north of Staceys Lookout.

All other samples assayed <0.01 ppm Ir.

Reconciliation of "osmiridium" observed in the panned concentrate stream samples with the Ir analyses of the partial panned concentrates (from which the former were derived) is extremely poor.

The 9 samples with visible osmiridium (AD SS - 5, 9, 13, 14, 19, 29, 34, 35 and 36) contained from one to twelve grains/specks of the alloy; sample 9 with one grain of "osmiridium" returned a value of 40 ppb Ir whereas all other samples (including two with twelve grains) assayed <10 ppb Ir.

4.3.2.2 Gold

Gold assays of the stream sediment samples range from <5 ppb to 45 ppb; the 9 samples with gold content above detection are principally located north of the Adamsfield Track, of which 5 occur in either Hopper or Main Creeks.

The samples in Hopper Creek range over 1.2 km and suggest a source shedding gold at >70 ppb.

The sample in Main Creek range over 0.5 km and suggest a source shedding gold at >30 ppb.

The location of both sources may be in the Cambro-Ordovician age siliciclastics of the Sawback Range.

Table 1 Stream Sample Assay Results

Sample No.	Au (g/t)	Ir (g/t)
AdSS 1	0.005	<0.01
2	<0.005	<0.01
3	<0.005	<0.01
4	<0.005	<0.01
5	<0.005	<0.01
6	<0.005	<0.01
7	<0.005	<0.01
8	<0.005	<0.01
9	<0.005	0.04
10	0.010	<0.01
11	0.015	<0.01
12	<0.005	<0.01
13	<0.005	<0.01
14	0.020	<0.01
15	0.010	<0.01
16	<0.005	<0.01
17	<0.005	<0.01
18	<0.005	<0.01
19	<0.005	<0.01
20	<0.005	<0.01
21	0.045	<0.01
22	0.040	<0.01
23	<0.005	<0.01
24	<0.005	<0.01
25	<0.005	<0.01
26	0.010	<0.01
27	<0.005	<0.01
28	<0.005	<0.01
29	<0.005	<0.01
30	<0.005	<0.01
31	<0.005	<0.01
32	<0.005	<0.01
33	<0.005	<0.01
34	<0.005	<0.01
35	<0.005	<0.01
36	<0.005	<0.01
37	<0.005	<0.01
38	<0.005	0.06
39	<0.005	<0.01
40	<0.005	<0.01
41	0.010	<0.01
42	<0.005	<0.01
43	<0.005	<0.01
44	<0.005	<0.01

(NB: All Ir values are suspect, and may not be representative)

Table 2: Grab Sample Assay Results

Analysis	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	Sample
No. Ru	Rh	Pd	Pt	Os	Ir	Au	Re			
210508	BLD	1	BLD	39	BLD	1.3	52	BLD		
509	24	1	16	BLD	7	8.0	4	BLD		
510	BLD	1	BLD	15	BLD	2.0	11	BLD		
514	BLD	1	BLD	BLD	BLD	1.8	5	BLD		
517	BLD	1	BLD	BLD	BLD	0.2	14	BLD		
519	5	1	BLD	BLD	BLD	1.0	3	BLD		
520	BLD	1	BLD	BLD	BLD	2.2	7	BLD		
521	BLD	BLD	BLD	BLD	4	4.8	2	BLD		
525	BLD	1	BLD	BLD	BLD	2.0	2	BLD		
535	BLD	1	18	BLD	40	38	7	BLD		
537	BLD	BLD	18	BLD	BLD	0.9	3	BLD		
542	BLD	BLD	BLD	BLD	BLD	1.1	3	BLD		
543	BLD	BLD	7	13	BLD	1.1	2	BLD		
550	BLD	1	BLD	BLD	BLD	1.5	2	BLD		
552	12	1	10	BLD	4	2.6	5	BLD		
559	BLD	BLD	BLD	BLD	3	2.9	2	BLD		
561	BLD	2	14	BLD	11	11	4	BLD		
565	BLD	BLD	BLD	5	BLD	0.9	2	BLD		
570	5	1	BLD	BLD	3	3.2	3	BLD		
571	11	BLD	BLD	BLD	BLD	1.2	2	BLD		
578	15	1	9	BLD	BLD	1.6	3	BLD		
581	BLD	1	BLD	BLD	BLD	0.7	6	BLD		
583	BLD	BLD	BLD	20	BLD	3.0	3	BLD		
585	20	1	BLD	BLD	BLD	1.0	2	BLD		
589	20	BLD	18	18	BLD	1.6	3	BLD		
595	20	BLD	19	BLD	BLD	0.7	3	BLD		
596	20	1	BLD	BLD	BLD	1.5	2	BLD		
608	10	1	BLD	9	BLD	1.5	2	BLD		
611	10	BLD	BLD	BLD	BLD	1.3	1	BLD		
613	BLD	BLD	BLD	BLD	BLD	1.3	1	BLD		
615	30	1	BLD	20	3	3.1	3	BLD		
618	BLD	1	BLD	BLD	BLD	2.1	1	BLD		
620	BLD	1	BLD	BLD	BLD	0.8	1	BLD		
627	BLD	1	BLD	27	33	42	4	BLD		
628	30	1	BLD	BLD	BLD	1.5	1	BLD		
630	BLD	BLD	6	5	BLD	0.3	1	BLD		
632	BLD	1	BLD	7	BLD	2.6	1	BLD		
635	60	BLD	1		3	2.0	1	BLD		
DETECTION	<5	<1	<5	<5	<3	<0.2	<1	<5		
LIMIT	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb		

Table 3 Grab and Chip Sample Analyses

Sample	Cu	Ni	Co	Cr	Au	Ir
ADTX 4 (1)	2	1740	190	1000	NA	<0.01
ADTX 4 (2)	4	1780	105	580	NA	"
ADTX 4 (3)	5	1020	175	300	NA	"
ADTY 2 (1)	2	2980	120	220	NA	"
ADTY 4 (1)	3	3780	130	85	NA	"
ADTB 15 (1)	10	420	28	2180	NA	"
ADTB 15 (2)	14	410	36	4100	NA	"
ADTB 19 (1)	14	395	24	980	NA	"
ADTB 19 (2)	24	355	24	2100	NA	"
ADTB 19 (3)	24	250	22	2760	NA	"
ADG 1	11	3040	92	1900	0.010	"
ADG 2	7	3240	94	660	<0.005	"
ADG 3	8	2980	94	1300	"	"
ADG 4	7	3000	76	290	"	"
ADG 5	5	1820	80	210	"	"
ADG 6	7	2960	80	210	"	"
ADG 7	6	2380	56	190	"	"
ADG 8	11	1740	56	220	"	"
ADG 9	6	2180	98	340	"	"
ADG 10	7	1920	56	370	"	"
Detn. limit	(2)	(5)	(5)	(10)	(0.005)(0.01)	
	Cu	Pb	Zn	Au		
ADG 11	22	10	6	<0.005		
ADG 12	16	6	5	"		
ADG 13	12	<5	4	"		
Detn. limit	(2)	(5)	(2)	(0.005)		

All values in ppm.

Legend

ADTX 4 (1): light green, highly deformed serpentinite
 ADTX 4 (2): dark green massive serpentinite, 1-2% pyrite
 ADTX 4 (3): pyroxenite boudin - blue green colour.
 ADTY 2 (1): medium green serpentinite, pale blue staining.
 ADTY 4 (1): " " " " " "
 ADTB 15(1): "blue rock" - talcose with vfg chromites
 ADTB 15(2): "blue rock" -
 ADTB 19(1): "blue rock" - siliceous and with minor chromite
 ADTB 19(2): "blue rock" - a/a with distinct pale blue vein-
 lets and particles.

- ADTB 19(3): "blue rock" similar to ADTB 19(2), but with hematitic rims to clear/glassy silica filled voids.
- ADG - 1: Apple green serpentinite, massive, 10% chromite in crude layers/bands 20 - 40 mm wide.
- ADG - 2: a/a but with less chromite.
- ADG - 3: a/a but with 5% chromite.
- ADG - 4: Apple green serpentinite, massive trace chromite and minor carbonate veins.
- ADG - 5: Apple and medium green serpentinite, massive, 3% disseminated chromite, 15 - 20% carbonate veinlets.
- ADG - 6: Apple green serpentinite, massive, 1-2% chromite (diss.) and 10% carbonate veinlets.
- ADG - 7: as for ADG - 6 but with folded 5 mm wide veins of carbonate, total carbonate approx. 15%.
- ADG - 8: dark green massive serpentinite with 30 mm wide veins of carbonate (overall carbonate approx. 40%).
- ADG - 9: as for ADG - 8 but with minor 0.5 - 1 mm veinlets of carbonate (overall 5 - 10%).
- ADG -10: as for ADG - 9 but with a meshwork of abundant 1 mm carbonate veinlets (overall 30 - 40%).
- ADG -11: Pyritic quartzite (Adams Falls)
- ADG -12: " " " "
- ADG -13: " " " "

Full details of the stream sample results are given in Table 1, and a detailed statistical processing of the Au and Ir results was not attempted due to the predominance of values below the detection limits.

4.4 Grab and Chip Sampling

4.4.1 Introduction

Grab and chip sampling of the general area around Halls Open Pit (1.3 km east of Adamsfield) was done in two stages, the initial group of 38 samples being analysed by neutron activation (Neutron Activation Services in Canada, after sample preparation by SGS in Sydney).

These samples were analysed for ruthenium (Ru), rhodium (Rh), osmium (Os), iridium (Ir), rhenium (Re), platinum (Pt), palladium (Pd) and gold (Au), using the neutron activation technique which involved the classical fire assay collection of PGE followed by N.A. analysis of the dore bead, providing a detection limit in the 1 ppb range.

A further phase of sampling from both mullock dumps and from trenches excavated in the general area of Halls Open Pit were submitted for Cu, Ni, Cr, Co, Ir and Au analyses.

4.4.2 Results

The PGE and Au assays are presented in Table 2, while the subsequent sample results are presented in Table 3.

Attempts to expose and sample the strike extensions of the osmiridium lodes worked in Halls Open Cut were only partly successful in December 1985.

However, a vivid blue coloured ultramafic clay and blue coated serpentinite at the southern end of Halls pit was sampled, along with a similar blue coating on a pyroxenite near the collar of hole AD 86-02. The results of most of the grab sampling in the area of Halls pit and the northern adit are tabulated below:

Table 4: Grab/Chip Sample Analyses - Summary

Rock Type	Sample No.	Ni	Cu	Co	Cr	Ir
(1)	ADG-1,2,3,4,6	3044	8	87	872	<0.01
(2)	ADTX-4(1),(2)	1760	3	148	790	<0.01
(3)	ADTY-2(1), 4(1)	3380	3	125	152	<0.01
(4)	ADTB-15(1),(2)					
	-19(1), (2),(3)	366	17	27	2424	<0.01

(values in ppm)

Note Rock Types as follows:

- (1): Apple green massive serpentinite (Halls Open Pit)
- (2): Blue coloured serpentinite (near northern adit)
- (3): Blue coloured serpentinite (Halls Open Pit)
- (4): "Blue rock" - silicified chromite bearing ultramafic material.

4.4.3 Comments

The results of the initial sampling are disappointingly low, with most elements occurring in the low part per billion range. Due to the delicate nature of PGE analysis it was decided to assay splits from six samples analysed via neutron activation.

The samples were analysed by carrying out a "fire assay" of the sample with a mixture of nickel carbonate and sulphur as well as other fluxes. The Platinoids are collected in the nickel sulphide that forms and this compound is poured into moulds in the same way that a lead fire assay is handled. The nickel sulphide button is then crushed and dissolved in reduced hydrochloric acid which is kept in a reduced state by the continuous bubbling of hydrogen sulphide gas. The undissolved Platinoid sulphides are filtered off, digest in Aqua Regia and then diluted to volume for analysis. Final analysis has been made by inductive coupled plasma mass spectrometry by comparison of the samples with standards prepared from the elements or their salts.

The analysis of PGE by ICP and Neutron Activation techniques show good correlation for some elements, however major discrepancies do occur. The results are compared in Table 5.

Even at these low levels of detection a positive correlation between osmium and iridium is evident, indicating that these elements exist as an alloy in the hard rock areas.

Table 5 Comparison of Analyses by Neutron Activation
and I.C.P. Techniques

<u>Sample</u> <u>Number</u>	Ru	Rh	Pd	Ir	Pt
210509N	24	1	16	7	BLD
210509I	5.2	0.47	0.5	5.7	1.6
210535N	BLD	1	18	38	BLD
210535I	13	1.1	1.1	38	6.8
210615N	30	1	BLD	3.1	20
210615I	4.3	0.67	0.4	3.7	1.7
210627N	BLD	1	BLD	42	27
210627I	15	1.3	0.7	17	1.7
210781N	15	BLD	BLD	3.6	44
210781I	17	3.5	0.5	4.0	33
210792N	15	1	23	1.8	7
210792I	4.0	0.57	0.3	2.3	3.3

N- Assayed by Neutron Activation

I- Assayed by I.C.P./Mass Spectrometry

NB: Samples 210781, 210792 are from Heazlewood District

Minor comments relating to the results shown in Table 4 are as follows:

- (a) The blue colouration of the clays etc appears to be due mainly to Co salts and probably in part to Ni salts (?hellyerite).
- (b) The colour of the "blue rock" is less easily explained - but would appear to include some Cr and possibly Cu.
- (c) The inflated Ni values from Halls Open Pit strongly suggest Ni sulphides; background (silicate) Ni values may be as low as 0.18 - 0.20%.

4.5 Road Construction and Trenching

4.5.1 Introduction

Major earthworks were required to repair and upgrade the Adamsfield Track as described in Section 2.1. This work was done by Hazell Bros., using an excavator, a traxcavator and an articulated 6WD truck. The same contractor also installed drill pads and small dams, constructed minor tracks and excavated several pits and trenches in the vicinity of the old hard rock workings, 1.3 km east of Adamsfield.

All trenches were backfilled and appropriate landscaping/rehabilitation done by Xmas 1985.

The Adamsfield Beds overlying the ultramafic mass in the Adamsfield area were exposed in trenches during November/December 1985; the presence of variably oxidised and clay altered ultramafic clasts, in company with locally high concentrations of chromite, prompted the decision to channel sample the sediments to assess their PGM content.

A total of 208 channel samples (mostly 1 m lengths) were collected from 5 trenches excavated near and within Halls Open Cut; most of these samples were collected from the Adamsfield Beds.

4.5.2 Results

Trench locations are shown in Figure 3, and Cross sections of trenches B, C, and D are shown in Figures 5,6, and 7 respectively. The iridium result from the 1 m channel samples were generally disappointing, with peak values as follows:

Trench B	= 0.02 ppm Ir
Trench D	= 0.03, 0.04 ppm Ir
Trench C	= 0.02, 0.03 and 0.08 ppm Ir

Only the Trench C samples were assayed for Au, and all assays were <0.01 g/t.

4.6.3 Metallurgical Test Work

Four composite samples of half core from diamond drill hole AD 85-01 were submitted to the M.E.L. Laboratory in Kalgoorlie in January 1986.

A total of 45 component samples were combined as follows:

3.6 - 12.6 m, 12.6 - 21.5 m, 21.5 - 29.8 m and 29.8 - 35.1 m; each of the composite samples was gravity concentrated using a Wilfley Table.

In addition both the composite components and the Wilfley Table products (concentrates, two middlings and a tailing) were assayed for Ni, Cr, Au and all PGM except Os. No Au or PGM were observed above the detection limit of 50 ppb (Analytical Services, W.A.)

The results of this work are as follows:

- I. The discrepancy between the calculated head values for Cr from the individual component assays and from the Wilfley Table products; the Wilfley Table calculated head for Cr averages 12.7% higher (1.4% - 18.4% range) than the component assays calculated head grade for Cr.
- II. The overall increase in both Cr and Ni calculated head grades from composite 1 to 4 (i.e downhole);
- III. The uniform (approx. 0.11%) Ni values of the table concentrates of composites 1,2 and 3 in contrast to the value of 0.29% Ni for the concentrate of composite 4. This results is interpreted to indicate the presence of nickel sulphides in the basal interval of 29.8 - 35.1 m of AD 86-01.

The assay rejection portions of the 41 samples assayed by Analytical Services were sent to AMDEL for alternative Ni, Au and Ir analyses, the results of which are shown on the drill log for AD 85-01 (Appendix I).

4.6.4 Drill Core Sampling (AD 86-01,02)

A total of 111 samples of half core from drill hole AD 86-01 , representing an interval of 109.3 m (2.7 - 112.0 m) and 25 samples of half core from AD 86-02, representing an interval of 25 m (3-28 m) were dispatched to AMDEL for Ni, Au and Ir analyses.

Sampling was done according to colour, texture, alteration/veining, spinel content and deformational characteristics of the ultramafic core.

In general the maximum sample width was 1 m, with a small number of 2 m samples from AD 86-02.

4.6.5 Platinoid Mineralisation

Hole AD 86-01

This hole tested the easternmost (?basal) 40 m of the ultramafic complex in the vicinity of Halls Open Cut; it tested the downdip position of the "osmiridium" lode 70 m below the old shaft, and 60 m below a suspected lower level of workings originally accessible from the northern adit.

Platinoid-like inclusions in chromite grains, and as minute individual specks were observed over a 4.2 m interval from 103.5 to 107.7 m. However, scanning electron microscopic work did not locate any PGM at a depth of 106.7 m. Pending analytical confirmation of this 4.2 m interval, it would appear that the "osmiridium" lode is approx. 2 m wide and dipping steeply to the east, (Figure 9).

Holes AD 86-02 and AD 85-01

These holes also tested the easternmost (?basal) 40 m of the ultramafic complex approx. 400 m north of AD 86-01. Platinoid-like inclusions in chromite were seen over a 3.7 m interval between 11.3 m and 15 m in AD 86-02.

Analytical confirmation of the apparent mineralised section in AD 86-02 is required and likewise for the interval 25 to 35 m in hole AD 85-01, (Figure 8).

The use of a sluice box blanket around the collar of AD 85-01 revealed several grains of "osmiridium" and one of gold (identified by local prospector S. Morley).

The depth interval applicable to these reported sightings was 25 - 35 m, which the lithological log records as being intensely sheared, thereby suggesting that the PGE may have been cataclastically shed from ?chromite grains.

4.6. Chromite Mineralisation

The spinel (chromite/magnetite) content in AD 86-01 ranges from 3 vol% for most of the hole to <10vol% in the basal section from 102.5 - 107.7 m., Spinel content in AD 86-02 ranges up to 15 vol% over the interval 12.1 - 12.9 m, but elsewhere it is approx. 5 vol%.

4.6.7 Nickel Mineralisation

The inferred presence of nickel sulphide mineralisation has already been alluded to in Section 4.6.3 and the subsequent petrographic work (described in Section 5) confirmed this deduction by locating millerite and heazlewoodite.

In addition moderately elevated nickel values were obtained from the channel samples as described in Section 4.5.2

4.6.8 Gold Mineralisation

Hole AD 85-01

Minor gold mineralisation was intersected in pale (apple) green serpentinites, with peak values of 0.34 g/t (30.8 - 31.5 m) and 0.26 g/t (27.8 - 28.8 m). This type of serpentinite is apparently derived from the dark green serpentinites (ex dunites) by shear deformation, and the gold mineralisation is associated with the development of carbonate and chrysotile veining.

Average Au values for the main rock types in this hole are as follows:

Dark green serpentinite (16 samples)	= 0.09 g/t
Pale green (sheared) " (17 samples)	= 0.14 g/t
Interlayered pyroxenite and dark green serpentinite (3 samples)	= 0.07 g/t
Pyroxenite (5 samples)	= 0.10 g/t

Hole AD 86-01

Similarly styled but lower tenor gold mineralisation occurs over the interval 20.8 - 47.7 m, which consists of serpentinitised dunites, flanking a central zone of talc rock between 31.0 and 39.3 m.

The gross 27 m interval is characterized by locally intensive carbonates (+/- chrysotile) veining, with a variable development of jasperoidal material.

The gold mineralisation is approx. 3 to 4 times the ?background values of approx. 0.02 g/t, seen between the collar and 20.8 m, and again between 47.7 and 67.1 m, (refer Figure 9).

Sawback Range

As indicated in Section 4.3.2.2, weak gold mineralisation may also occur in the Sawback Range to the northeast of Adamsfield.

5. Petrology

Use of the Melbourne University SEM to examine samples from both holes did not detect any platinoid metals; samples were taken as follows:

AD 86-01: 35 m, 58 m, 73.7 m and 106.7 m

AD 86-02: 9.5 m, 10 m

Similarly negative results were attained from two panned concentrates of the drill cuttings from both 1986 drillholes.

The SEM work on the core samples to date has confirmed magnetite rims on chromite subhedra and that the chromites are more likely to be larger than other spinels, and show only minor compositional variations.

In addition, the numerous microscopic blebs in the core from AD 86-01 are nickel sulphide (?millerite, heazlewoodite).

W. Fander of Central Mineralogical Services examined 4 composite samples of half core from AD 85-01 (see section 4.6.3 for composite details) and the superpanned concentrates of original panned concentrates of drill cuttings from both AD 86-01 and -02.

The results showed a wide range of sulphide species to be present, including heazlewoodite, millerite, pyrrhotite, pyrite, chalcopyrite and galena. These sulphides occur both in spinels and as free grains.

Also present were non magnetic, small angular/brittle and larger, platy, striated silvery white particles which from Xray and optical examination appear "quite similar to that of osmiridium".

These non magnetic fragments are in addition to the magnetic small and large ferrous fragments which are almost certainly contamination from drilling equipment.

However, Fander concludes "that all PGE-like grains are in fact contaminants" requiring supplementary identification by use of electron probe analysis.

6. Comment

6.1

Exposure of ultramafic lithologies to the east of the abandoned hard rock workings (Halls Open Cut) allows recognition of sedimentary structures in serpentinous beds and the interbedding of same with grey mudstones and micaceous siltstones. The fine grained clastic sedimentary rocks underlie the ultramafic beds and both dip variably to the east.

The ultramafic beds consist of schistose serpentinites, talc schist, and pyroxenite pebbles/boulders interspersed with red, green, mauve and brown smectitic clays. These beds are considered to be part of the Adamsfield Beds as defined by Corbett (1969).

Chromite is ubiquitous in these serpentinous sediments, ranging from traces to 10 vol% and it is likely that platinoid elements may also be present.

6.2

Field reconnaissance has located some of the unusual "red rock" and "blue rock" described by Brown (1972); the red rock is a jasperoidal replacement of original ultramafic rock, as shown by relict textures and relict chromite aggregates present.

Jasperoidal material is also present in drillhole AD 86-01 where it is associated with carbonate veining, and minor gold mineralisation.

The blue rock has been sampled in trenches and from float material and may be the product of laterite-weathering-induced silicification of ultramafic rock.

However, the original of the blue colour is curious and from chemical analyses may be due to Cr (+?Cu) although confirmation of the riebeckite identified by Brown (1972) is required.

6.3

Evidence provided by grab sampling, gravity concentration of drill core samples and petrographic studies indicates the presence of nickel sulphides in Halls Open Pit. The actual levels of concentration of Ni are not very high, but the work to date confirms the old record of millerite in the area, and provides an interesting link with the ultramafic complex at Heazlewood in the northwest of Tasmania. The presence of heazlewoodite, millerite, pyrrhotite, pyrite, chalcopyrite and galena in the drill core is interesting and suggests a combination of both magmatic (?millerite, pyrrhotite, etc) and metamorphic (heazlewoodite) sulphides.

6.4

Poor reconciliation of stream sample Ir assays with visible osmiridium has been partly resolved and further discussions with alternative commercial laboratories are underway, to enable a comparison of analyses.

This company has been able to establish that the laboratory responsible for the Ir assays has experienced severe problems in its techniques of sample preparation and analysis.

However, a recent change in technique has enabled a much improved reliability of Ir analyses, and work is currently underway to bring the method up to a commercially acceptable standard.

As a consequence, all stream, grab/chip, channel and core samples Ir values obtained to date are still suspect.

I, GARY WILLIAM DREWETT of 3 LUCERNE STREET, VERMONT in the STATE OF VICTORIA, GROUP SENIOR ACCOUNTANT, do solemnly and sincerely declare:-

THAT during the period to 31 March 1986, an amount of \$ 109,443 has been expended on Exploration Licence No. 4/85 Adamsfield and is made up as follows:

Technical Services	\$ 34,590
Consultants	5,219
Contractors General	3,912
Site Preparation	24,718
Drilling - Core	14,208
Vehicle Expenses	1,527
Consumables	1,191
Assaying	16,960
Accommodation	1,607
Travel - Vehicle Hire	1,704
- Air	2,220
- Local	50
Lease Expenses	624
Communications	28
Camp & Messing	639
Survey and Air Photos	243

	\$ 109,443
	=====

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of an Act of Parliament of Victoria rendering persons making false declaration punishable for wilful and corrupt perjury.

Declared before me at Melbourne }
this 9th day of July 1986 } *Spencer.*

T. W. R. Heaselwood.
T. W. R. HESELWOOD
Commissioner for taking Affidavits

References

- Brown, A.V., 1972 Geology of the Adamsfield Ultra-
 mafic mass; unpubl. BSc (Hons)
 Thesis, Univ. Tasmania.
- Corbett, K.D. , 1969 Sedimentation of an upper Cambrian
 Flysh-paralic sequence on the
 Denison Range; unpubl PhD Thesis, .
 Univ. of Tasmania
- Ford, R.J., 1981 Platinum Group Minerals in
 Tasmania, Econ. Geol. V 76,
 pp 498 - 504
- Nye, P.B., 1929: The Osmiridium Deposits of the
 Adamsfield District, Bull. Geol.
 Surv. Tas. 39
- Williams, E., Solomon, M., Green, G.R. 1976 The geological setting
 of metalliferous deposits in
 Tasmania. Monog. Ser.
 Aust.Inst.Min.Metall 5 : 567-581
- Williams, E., 1979 Tasman Fold belt System in
 Tasmania, Explan. Rep. Dep.
 Mines, Tas.

APPENDIX I

DRILL HOLE LOG OF AD 85 - 01

METALS EXPLORATION LIMITED

030

007031

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LAB ENTRY
FIELD ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT			
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	Cr	Au	Zr
1	0	3.6	NA	PHOENIX - (TRICONS ROLLER BIT)						
2	3.6	5.0	36	Serpentine green/brown mud broken with clayey joint filling @ 4m		2	2300	2620	0.13	400
3	5.0	6.0	55	Serpentine yellow/green, SW, broken with trace - 1% spinel		2	1840	3920	0.19	"
4	6.0	7.5	75	Serpentine as for 5.0-6.0m but with minor dark col. serps (5mm wide) bands (---? fresh work)			1140	6540	0.22	"
5	7.5	8.45	85	Serpentine dk. green, magnetite stringers, 1-2% spinel (including chromite).			1000	3080	0.045	"
6	8.45	8.70		Serpentine, dk. green, with irregular pyroxene mosaic diffuse contacts, 1% spinel.			800	4340	0.105	"
7	8.70	9.1	98	Pyroxenite, mosaic texture, white, ave opx size 4-5mm, serpentine matrix, sharp (1240) contact @ 8.7m.		"	830	4780	0.10	"
8	9.1	9.28		Serpentine, dk. green, $\Delta 9.1m = 50^\circ$, $\Delta 9.28 = 75^\circ$.		1	700	3260	0.04	"
9	9.28	10.15		Pyroxenite, opx mosaic, matrix of dk green serps. ave crystal size 2-5mm, crude layering, $\Delta 9.7 = 70^\circ$			820	4440	0.07	"
10	10.15	10.6	10.5	Serpentine, dk. green, trace - 1% spinel.		1	1160	3960	0.06	"
11	10.6	11.2		Showed zone in light green serpentine with grey clayey material, recovery 0.40m; (XRD indicates serpentine, magnetite, hydroxide + talc)			1440	5200	0.06	"
12	11.2	11.3	70	Serpentine, pale/mid. green to translucent (? relic or large porphyroclast in SZ).			1180	4160	0.08	"
13	11.3	11.8		Showed zone in pale green serps, minor grey clayey material, recovery 0.30m. (XRD: serps + Mt)			1160	5200	0.09	"
14	11.8	12.6	86	Serpentine, dk. green, broken, with 2 x 0.05m wide showed zones with grey clayey matrix; abund. magnetite stringers, 1% spinel grains		1	1040	4560	0.06	"
15	12.6	13.4	100	Serpentine, dk. green, abund. magnetite stringers and 15-17% spinel grains (ave size 2mm).		1	1140	5450	0.06	"

MAP, AIR PHOTO OR DRAWING No. _____
 LOGGED BY: T.L. Summers MACHINE: FOX B 80 INCLINATION AT COLLAR: -50°E BEARING AT COLLAR: 075 MAG/GRID: Avel.
 SAMPLE TYPE: HALF CORE FIELD ENTRY BY: DATE 1985

CHECK SAMPLE _____
 LAB. NOTES: _____
 CHEMIST: _____ DATE: / /

PROSPECT OR PROJECT: ADAMS FIELD AREA OR GRID NAME: EL 4/85
 LINE No.: LOCATION ON LINE OR HOLE NUMBER: AD 85-01 LOG PAGE 1 OF 4

METALS EXPLORATION LIMITED

007032

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LAB ENTRY
FIELD ENTRY 03

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT			
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	Cr	Au	Ir
1	13.4	14.55	14.0	Serpentine, dk. green, minor magnetite stringers		1	1120	5050	0.06	<0.01
2				= 3 vol % spinel grains, $\Delta 14.55 = 60^\circ$						
3	14.55	14.85	100	Serpentine, med green / yellow / brownish		2	640	5050	0.05	-
4			pyrite (2 vol %), gradational body at 14.85m.							
5	14.85	15.95	15.7	Interlayered pyroxenite + serpentine, with		3	530	3760	0.05	-
6				irregular (deformed) layering in general.						
7			100	$\Delta 15.7 = 45^\circ$, magnetite absent (? flow banding)		4	720	4320	0.08	-
8	15.95	16.95	Pyroxenite, massive, white grey, opx crystals							
9			17.5	range 10 to 20mm; v. minor (< 3 vol %) serp.		5	650	4500	0.06	-
10				staurolite, $\Delta 15.95 = 40^\circ$, $\Delta 16.95 = 30^\circ$.						
11	16.95	17.90	100	Interlayered pyroxenite and serpentine, dk green		6	1200	2720	0.10	-
12				to black (similar to 14.85-15.95m); in general						
13			100	the layering is poorly defined except 17.5-17.7m		7	1160	4060	0.09	-
14				where Δ opx bands = 90/55. Serpentine						
15			100	increases down hole, with 1% vfg chromite		8	1420	5050	0.12	-
16				(magnetite absent), in the opx layers.						
17	17.90	18.30	100	Serpentine, dk green / black magnetite stringers		9	1600	5250	0.10	-
18				< 2 vol % spinel grains; ? relic magnetite						
19	18.30	18.40	184	As for 17.9-18.3, but broken and sheared.		10	NOT ANALYSED - SEE XRD = serp., magnetite etc.			
20	18.40	18.70	58	"Mud", medium brown / tan; very poor recovery						
21	18.70	19.0	19.0	Serpentine, dk green, with strongly sheared pale		11	1160	4060	0.09	-
22			green zones							
23	19.0	19.3	78	Serpentine, palagreen = 1 vol % spinel, (nil mt).		12	1420	5050	0.12	-
24			Sheared zone, major, porphyroclasts of both							
25	19.3	21.5	19.7	dk green (10 vol %) and palagreen (90 vol %) serp.		13	1600	5250	0.10	-
26				with size range 0.1 - 20mm; where shearing						
27			62	has caused total pulverisation the light green		14	1600	5250	0.10	-
28			colour is dominant, and veined with							
29			20.5	chromite; clayey material as follows:		15	1600	5250	0.10	-
30			100							

MAP, AIR PHOTO OR DRAWING No. _____

LOGGED BY: T.G. Summons MACHINE: FOX 880 INCLINATION AT COLLAR: -50 BEARING AT COLLAR: 075 MAG./GRID: *Amh*

SAMPLE TYPE: HALF CORE FIELD ENTRY BY: *Doc* DATE: 18/8/87

PROSPECT OR PROJECT: *PD Am 57.62* AREA OR GRID NAME: *E2 4/85*

LINE No.: _____ LOCATION ON LINE OR HOLE NUMBER: *PD 85-01* LOG PAGE 2 OF 4

CHECK SAMPLE _____

LAB. NOTES: _____

CHEMIST: _____ DATE: / /

LOG & ANALYTICAL REPORT Sheet No. _____ of A/O _____

METALS EXPLORATION LIMITED

007033

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FIELD ENTRY
LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X= BELOW DETECTION LIMIT				T.C. No.
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	Cr	Au	Zr	
1			67	20.4-20.5 m	no. l. brown (? kaolinitic), (XRD = serp, brucite + mt)						0329
2			21.2	20.5-20.8 m	{ brown to grey (? kaolinitic) XRD = serp, mt + hydroxylated						
3			33	21.4-21.5 m							
4	21.5	22.1	21.5		Serpentine, palagreen, broken (similar 19.0-19.3)						
5			83	1-3 vol % spinel grains, minor mt. stringers		1560	4840	0.16	<0.01		
6	22.1	22.4	22.1		Serpentine, dk. green, broken, minor mt. stringers, and 1/2 vol % spinel grains.		1100	5650	0.18		
7			90	Pyroxene 'layers' (or pyroxene band), approx. 1/2 mm size. > 22.65 = 60°		700	5100	0.12			
8	22.65	23.4	23.1		Serpentine, dk. green, broken, 1/2 vol % spinels		1580	4280	0.10		
9	23.4	25.6	87		Pyroxene 'layers' - irregular contacts		1060	5300	0.13		
10	23.6	23.75	23.7		Serpentine, as for 22.65-23.4 m.		1240	3920	0.11		
11	23.75	24.30			Sheared zone, major, in ? dk. green serpentine porphyroclasts 0.1-1 mm size, recovery of early 0.15um (? pressure fault - strength of zone)		1380	6100	0.17		
12	24.3	24.9	67		Serpentine, dk. green, 1/2 vol % spinel grains		1060	4660	0.14		
13	24.9	25.25	25.2		Serpentine, dk. blue / grey / green, 2-3 vol % vfg spinel grains		1220	3820	0.13		
14	25.25	26.30	89		Sheared zone, in dk. green serpentine, approx 1/3 pale green serp., and 15% grey clayey material seen uphole. (0.70m recovered)		1160	3660	0.11		
15	26.3	26.7	60		Sheared zone, predom. grey/green ? kaolinitic clay, minor dk. green serp. fragments (0.4m recovered).		1400	3680	0.11		XRD = serp + mt.
16	26.7	27.0	77		Serpentine, pale green, skeletal fabric, minor mt. stringers, 5 vol % chlorite + vermiculite.		2000	5050	0.11		
17	27.0	27.8	28.2		Crushed / sheared zone, in dk. green serpentine, minor pale green serp. (similar to 25.25-26.3m)		NOT ANALYSED - SEE XRD				
18			88		2/3 peripheral to major sheared zone 26.3-27.0m. Below						
19	27.8	31.5	29.5		Serpentine, pale green, sheared but intact in box, minor mt. stringers, but skeletal fabric appears to		2040	3980	0.26		

MAP, AIR PHOTO OR DRAWING No. _____

LOGGED BY: TL. SUMMONS MACHINE: FOX B80 INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____

SAMPLE TYPE: HALE CORE FIELD ENTRY BY: Doc DABBY

PROSPECT OR PROJECT: ADAMS FIELD AREA OR GRID NAME: EL4/85

LINE No: _____ LOCATION ON LINE OR HOLE NUMBER: AD 85-01 LOG PAGE 3 OF 4

CHECK SAMPLE _____

LAB NOTES: _____ CHEMIST: _____ DATE: / /

LOG & ANALYTICAL REPORT Sheet No. _____ of A/O _____

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007034

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LAB ENTRY
FIELD ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X= BELOW DETECTION LIMIT				
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	Cr	Au	Ir	
1					have been metamorphosed by chlorite and	(28.8-29.8	2	1960	4820	0.16	<0.01
2					carbonate veins. minor broken zones occur	(29.8-30.8	2	1640	4120	0.13	"
3			87		had no. and major sz; trace - 1 vol% spinels	(30.8-31.5	2	1620	5750	0.34	"
4	31.5	32.3			Shaded zone major, recovery of 0.20 m of			NOT ANALYSED - SEE XAD			
5			32.5		blue grey highly shaded pale green serp.						
6	32.3	33.6			Serpentine, medium to dk green, minor						
7					chlorite + carbonate veins, 1 vol% spinels	1		1740	6600	0.08	"
8			56		and minor Mt. stringers			NOT ANALYSED - SEE XAD (sap + mt.)			
9	33.6	34.6			Shaded zone, major, in dk green serpentine,						
10					minor blue grey clayey material; 0.2% recovery						
11	34.6	35.10	35.1		Serpentine, medium green, chlorite veins,	2		1540	5700	0.16	"
12					very broken, recovery 0.50 m.						
13											
14					Hole abandoned @ 35.1 m.						
15											
16					EDM 35.1 m.						
17											
18											
19											
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27											
28											
29											
30											

MAP AIR PHOTO OR DRAWING No. _____
 LOGGED BY: *Th. Summons* MACHINE: *Fox BSD* INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____

SAMPLE TYPE: *HALF CORE* FIELD ENTRY BY: *Dec 1985* DATE: *1985*

PROSPECT OR PROJECT: *ADAM FIELD* AREA OR GRID NAME: *E24/85*
 LINE No.: _____ LOCATION ON LINE OR HOLE NUMBER: *AD 85-01* LOG PAGE *4* OF *4*

CHECK SAMPLE: _____ LAB. NOTES: _____ CHEMIST: _____ DATE: */ /*

LOG & ANALYTICAL REPORT Sheet No. _____ of A/O _____



034

007035

APPENDIX 2

DRILL HOLE LOG OF AD 86 - 01

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FIELD ENTRY
LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT		
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		INTERVAL	Ni	As
1	0	2.70	2.7m	NON CORE DRILLING, FINE ROLLER BIT CHIP RETURN; DOMINANTLY WEATHERED SERPENTINITE RETURN.					
2	2.70	5.70	3.0m	50% Core Recovery, Highly broken, glassy dark green serpentinite; no relict texture or mineralogy weathered to apple green in places; abundant Chrysotile veinlets along joints and Fractures Dominantly Lizardite Serp. after dunite. Abundant secondary magnetite. minor calcite veinlets; sludge return in places.		2.7 - 3.7	1300	0.02	<0.01
3						3.7 - 4.7	1160	0.03	<0.01
4						4.7 - 5.6	1280	0.04	<0.01
5	5.70	8.33	2.63m	Light apple green serpentinite after dunite; numerous crackle veins of calcite; some up to 1.5cm wide, occurring in Fractures. Chrysotile veinlets throughout, dominantly developed along slickensides; disseminated magnetite (1-2%) throughout - probably coating 1° chromite grains; clay minerals developed in larger joints and Fractures; Highly broken core between 6.2m - 6.53m (7.66m) Fault, infilled by calcite and chrysotile acicular grains (Fault to Core angle 40°). 70% Core Recovery.		5.6 - 6.2	1400	0.02	<0.01
6						6.2 - 7.0	1320	0.02	<0.01
7						7.0 - 8.0	1300	0.03	<0.01
8	8.33			SERPENTINITE (AFTER Dunite) Massive unit, m.g. Apple to Dark green serpentinite; Dominantly Lizardite assemblage, relict granular fabric after m.g. cumulate olivine; minor olivine selvages present, probably up to 10% primary olivine, as fine orbicular patches surrounded by lizardite alt ⁿ		8.0 - 9.1	1300	0.02	<0.01

035

MAP, AIR PHOTO OR DRAWING No.	LOGGED BY: SIMON DODD	MACHINE: MOBILE	INCLINATION AT COLLAR: -60°E	BEARING AT COLLAR: 062°	MAG./GRID	CHECK SAMPLE					
SAMPLE TYPE: DIAMOND DRILL CORE	FIELD ENTRY BY: S. DODD	DATE: 11/2/86	LAB. NOTES:				CHEMIST: / /				
PROSPECT OR PROJECT: ADAMSFIELD	AREA OR GRID NAME: SOUTHERN OPEN PIT AREA	LOCATION ON LINE OR HOLE NUMBER: DDH SA 86-01	LOG PAGE 1 OF 20		LOG & ANALYTICAL REPORT Sheet No. of A/O						

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FIELD ENTRY LAB. ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT			
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		INTERVAL	Ni	As	Zn
1	CONT.									
2	8.33	15.80	7.47m	In excess of 50 crackle veins per metre, mostly showing chrysotile development, minor talc veining; 1-5% disseminated magnetite throughout (9.2-9.5m) Highly broken core, high chrysotile develop (9.60) 1cm wide chrysotile vein (11.7-11.9) Broken core (12.1-12.35) Highly broken core (12.60-12.90) Broken core (Fracture) Fct → C 30° with green blue mineral (2% copper or altered cby) (13.40) Band of Chrysotile in highly fct'd core (13.60) Good orbicular relic(?) cumulate txt. (14.4-14.7) Broken core (14.8) 1cm band of talc-chrysotile infill in large fracture, (Fct → C 15°) (12-12.40) 5% diss magnetite in apple green serp. (14.10) Thin band of v.f.g disseminated native copper(?) or tarnished sulphide over 1cm. (14.7-15m) Numerous 2-3mm chrysotile veins, mostly parallel to core and at 30° to core. (15.5-15.8) Broken Core. 90% CORE RECOVERY						
3						9.1-10.0	890	0.02	20.01	
4						10.0-11.0	1380	0.01	"	
5						11.0-12.0	1340	0.02	"	
6						12.0-13.0	1520	0.05	"	
7						13.0-14.0	1520	0.02	"	
8						14.0-15.0	1400	0.02	"	
9						15.0-15.8	1440	0.02	20.01	
10	15.80	22.36		Hard dark green Serpentinite (after dunite) exhibiting micro block fractures allowing orbicular serpentinite development; original olivine texture was equidimensional. 3% chrysotile veinlets, mostly orientated between 30-40° to core.		15.8-16.8	1100	0.03	"	
11						16.8-17.8	1140	0.02	"	
12						17.8-18.8	1160	0.02	"	

030

MAP, AIR PHOTO OR DRAWING No.	CHECK SAMPLE			
LOGGED BY:	MACHINE:	INCLINATION AT COLLAR:	BEARING AT COLLAR:	MAG/GRID:
SAMPLE TYPE:	FIELD ENTRY BY:	DATE: / /	LAB. NOTES:	
PROSPECT OR PROJECT:	AREA OR GRID NAME:	DATE: / /	CHEMIST:	
LINE No:	LOCATION ON LINE OR HOLE NUMBER:	LOG PAGE 2 OF 20	LOG & ANALYTICAL REPORT Sheet No. of A/O	

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FIELD ENTRY LAB ENTRY

M	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT							
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	As	Zr					
1				(17.60-17.70) Highly broken core.										
2				(20.70-22.36m) Apple green soapy veinlets becoming more prominent.		18-8 - 19-8	1080	0.02	<0.01					
3				(19.1-19.2) 10 cm wide Fct or Fault showing intense chrysotile development.		19-8 - 20-8	1140	0.04	~					
4				Fct to core angle - 20°		20-8 - 21-8	1100	0.09	~					
5				100% Recovery.		21-8 - 22.36	980	0.08	~					
6	22.36	27.0	4-5A	Gradational contact to a more fractured apple green serpentinite, containing numerous veins and veinlets of chrysotile (20%).										
7				(22.36-22.90) 40% Chrysotile		22.36 - 23.0	1280	0.08	~					
8				(23.15) 10cm Fct, infilled by chrysotile & talcose material, angle to core is 20°		23.0 - 24.0	1040	0.09	~					
9				(24.85) Highly broken, Fct id core, Fbt lying Fault F → C & 50°		24.0 - 25.0	1180	0.06	~					
10				Chrysotile veinlets irregular and criss-crossing; intense microfractures, 5-10% disseminated magnetite throughout most of interval, commonly occurring in close association with Chrysotile.										
11				(25.65-25.8) white-pale green Fracture zone consisting of fibrous chrysotile and talc.		25.0 - 26.0	1240	0.09	<0.01					
12				95% CORE RECOVERY		26.0 - 27.0	1480	0.09	~					
13	27.0	31.0	3M	Ex Dunite containing 40% hard white veinlets of talc(?) or tremolite(?), as well as chrysotile; Abundant microfractures and micro block displacement		27.0 - 29.28	1680	0.08	~					
14				60% CORE RECOVERY										

037

MAP, AIR PHOTO OR DRAWING No.

LOGGED BY: MACHINE: INCLINATION AT COLLAR: BEARING AT COLLAR: MAG./GRID

SAMPLE TYPE: FIELD ENTRY BY: DATE: / /

CHECK SAMPLE

LAB. NOTES:

CHEMIST: DATE: / /

PROSPECT OR PROJECT: AREA OR GRID NAME: LOCATION ON LINE OR HOLE NUMBER: LINE No: LOG PAGE 3 OF 20

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FIELD ENTRY
LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT						
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	Au	Zn				
1				(27.3-29.2.8)	Broken and lost core. 28% Recovery								
2					in Chrysotile rich zone, very soapy serp.	29.28-	30-0	1380	0-08	40-01			038
3					Possible relict olivines in host serpentinite; very granular texture, equidimensional medium grained.	30-0-	31-0	1360	0-10	"			
4					(OR DIFFERENT TYPE OF SERP)								
5	31.0	39.30	8.3m	TALCOSE ROCK(?)	Gradational contact to a dark olive to grey talcose rock containing 5% disseminated magnetite, and abundant fine crackle veins showing infill carbonate or Brucite(?). Talc is basically structureless; apart from broad structural lines that are orientated at 20° to core. Talc may reflect lack of Mg to form serpentinite; magnetite occurs along fine stringers.								
6				(31.3)	Hard partly siliceous white vein at 25° to core.								
7				(31.8-31.9)	Selvage of serpentinite	31-0-	32-0	980	0-10	40-01			
8				(33-33.6)	Spheroidal patches of white, talc or carbonate material (40%).	32-0-	33-0	530	0-08	"			
9						33-0-	33-6	810	0-03	"			
10				(34.4-35.1)	Red jasperoidal irregular fill in olive green talc matrix; spotted disseminated mt (5%) throughout.	33-6-	34.4	640	0-07	"			
11						34.4-	35-2	820	0-05	"			
12				(35.3-35.25)	jasperoidal and carbonate fill in large fcl. fill vein. vein → core @ 22°	35-2-	35.7	570	0-08	"			

MAP, AIR PHOTO OR DRAWING No. _____

LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____

SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / / _____

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____

LINE No. _____ LOCATION ON LINE OR HOLE NUMBER: **AD 86-07** LOG PAGE **4** OF **20**

CHECK SAMPLE

LAB. NOTES: _____ CHEMIST: _____ DATE: / / _____

FIELD ENTRY
LAB. ENTRY

METALS EXPLORATION LIMITED

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LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X= BELOW DETECTION LIMIT				PROJECT NO.
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Interval	NI	As	Ir	
1				(35.7-38.7)	20% Recovery. Intense carbonate and lesser (asperoidal) veining in talc host rock. Veining has been X-Fct'd however dominant direction is 25° to core. Venlets are 1-3 mm wide	35.7-	38.7	600	0.09	60.01	038
2				(38.9 Approx)	8mm carb. vein in talc rock. Infill Fracture; Fct → C @ 30°						
3				(39-39.3)	3 sub-parallel carb. Filled Fractures (0.5cm) at C → Fct @ 60-70°	38.7 -	39.3	510	0.06	60.01	
4					Core to schistosity @ 30° ∴ hence schistosity is verticle in talcose unit.						
5											
6	39.30	43.30	4.0m		SERPENTINITE (after Dunite) Broken and Fractured contact with previous unit. Serpentinite is an apple green color, having a granular fabric numerous fine crackle vein carbonate and talcose venlets lesser chrysotile venlets (mainly associated with slickensides). minute rootless folds are seen throughout. Core mostly soft and broken, larger carbonate veins have C → V & @ 20°. Core cleaves in all directions due to fracturing, however dominantly between 20-30° to core. 42% CORE RECOVERY	39.3 -	41.7	2000	0.04	60.01	
7						41.7 -	43.3	1600	0.07	60.01	
8											
9											
10											
11											
12											
13											
14											
15											
16											
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MAP, AIR PHOTO OR DRAWING No. _____
 LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____

SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / / _____

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____
 LINE No. _____ LOCATION ON LINE OR HOLE NUMBER: _____

CHECK SAMPLE: _____
 LAB. NOTES: _____ CHEMIST: _____ DATE: / / _____

FIELD ENTRY
LAB ENTRY

METALS EXPLORATION LIMITED

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LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X= BELOW DETECTION LIMIT		
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	Au	Zr
1	43.30	57.15		Gradational contact to harder dark green serpentinite. Intense and irregular microfracturing, showing minor carb. crackle veins. Abundant lizardite; micro block fracturing; isoclinally folded selvages. Bands of talcose material occur throughout, probably reflecting bulk geochemistry differences (ie availability of Mg). 2-3% Disseminated magnetite throughout.		43.3 - 43.9	1840	0.06	<0.01
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12				(45.75 - 47.60) Intense irregular carbonate veining throughout interval (up to 60% in places). Structureless light green zones may well be skarn textures by complete carbonate alteration of original serpentinite rock (?). Fabric clearly brecciated in places by continual slip along micro block faults. Very minor amounts of patchy brown mineral - possibly cummingtonite.		45.75 - 46.6	1360	0.07	<0.01
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23				(47.70 - 48.60) Dark olive green serpp. in excess of 200 fractures per metre; slightly harder drilling; massive and essentially structureless; main shear direction and presumed schistosity is at 35° to core, suggesting a true dip of 85°W. Granular appearance to fabric, mg and relict olivines present as evidence by f.g.-m.g. glassy		47.7 - 48.6	2480	0.03	<0.01
24									
25									
26									
27									
28									
29									
30									

070

MAP, AIR PHOTO OR DRAWING No. _____

LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG/GRID: _____

CHECK SAMPLE _____

LAB. NOTES: _____ CHEMIST: _____ DATE: / /

SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / /

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____

LINE No.: _____ LOCATION ON LINE OR HOLE NUMBER: 170 86-01 LOG PAGE 6 OF 20

LOG & ANALYTICAL REPORT Sheet No. of A/O

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LAB ENTRY
FIELD ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X= BELOW DETECTION LIMIT			
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		INTERVAL	Ni	As	Zr
1				apple green mineral. Lenses and selvages of light olive green material (talcose?) throughout; minor magnetite seen in interval.						
2				Highly irregular nature of fracturing.						
3				(48.60-49.10) soft whitish-grey section showing intense carbonate alt.; totally destroyed original fabric and mineralogy, rootless crenulations throughout, mostly altered to clayey assemblage; possibly minor particulate relict olivines, minor greenish patches indicate presence of secondary copper minerals.		48.6	49.10	1530	0.005	<0.01
4				- compression zone.						
5				(49.10-57.15) massive serpentinite, 200 Fct's per metre; irregular thin chrysotile & (talco?) venlets. 2% Disseminated magnetite throughout, grains up to 1mm in size.		49.10	50.10	2040	0.035	<0.01
6				Fracturing more intense between 53.40 and 53.80 with prevailing direction of fracturing at 30° to core.		50.1	51.10	2020	0.035	<0.01
7				Dark olive green color throughout interval.		51.1	52.10	2090	0.02	<0.01
8				(56.9-57.15) Broken & altered chrysotile fish core, highly fractured.		52.10	53.4	2120	0.02	"
9				100% CORE RECOVERY.		53.4	53.8	2160	0.025	"
10						53.8	54.8	2000	<0.005 (0.01)	"
11						54.8	55.8	2600	0.03	"
12						55.8	56.8	2680	0.025	"
13						56.8	57.15	2680	0.05	"

041

MAP, AIR PHOTO OR DRAWING No.

LOGGED BY: MACHINE: INCLINATION AT COLLAR: BEARING AT COLLAR: MAG/GRID:

SAMPLE TYPE: FIELD ENTRY BY: DATE: / /

PROSPECT OR PROJECT: AREA OR GRID NAME:

LINE No.: LOCATION ON LINE OR HOLE NUMBER: LOG PAGE 7 OF 20

CHECK SAMPLE

LAB. NOTES: CHEMIST: DATE: / /

METALS EXPLORATION LIMITED

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FIELD ENTRY LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED, X=BELOW DETECTION LIMIT			
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		INTERVAL	Ni	As	Zr
1	57.15	65.70	7.85	SERPENTINIZED DUNITE; gradational contact, differentiated on the basis of degree of serpentinization; The unit is heavier and harder than previous serpentinite, and when broken, shows presence of primary olivine(?), does not appear as magnetic as previous interval, which may reflect the amount of magnetite produced during serpentinization.		57.15 - 58.2	2700	0.055	<0.01	
2						58.2 - 59.2	2140	0.025	"	0.42
3						59.2 - 60.2	2600	0.015	"	
4						60.2 - 61.2	1980	0.03	"	
5				Between 50 and 100 vein filled		61.2 - 62.2	1940	<0.001 (0.01)	"	
6				fract's per metre, mostly showing chrysotile development; fractures are mostly at angles of 70-80° to core, and exhibit micro block fracturing; minute grains of magnetite are associated with the veinlets; Fractures up to 8mm wide.		62.2 - 63.2	2060	0.04	"	
7				Unit is massive, and shows no geochemical variation.		63.2 - 64.2	2080	0.06	"	
8				(59.70 - 62.70) 100% RECOVERY.		64.2 - 65.2	1920	0.04	"	
9				(62.70 - 65.70) 90% RECOVERY						
10				(62.00 - 65.00) Fractures occurring in parallel conjugate sets at angles of 40-50° to core.						
11	65.70	68.40	2.70	Serpentinite + (possible relict dunite)		65.2 - 66.2	2100	0.04	<0.01	
12				Fracturing becoming more intense with up to 200 fractures per metre, and high irregular, minor clots of magnetite up to 3cm long are present. Serpentinite is limey green color (irreg. rootless fobs throughout).		66.2 - 67.1	1720	0.025	"	

MAP, AIR PHOTO OR DRAWING No. _____
 LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____

SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / /

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____
 LINE No. _____ LOCATION ON LINE OR HOLE NUMBER: _____ AD 86-01 LOG PAGE 8 OF 20

CHECK SAMPLE: _____
 LAB. NOTES: _____ CHEMIST: _____ DATE: / /

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FIELD ENTRY
LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT								
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		INTERVAL	Ni	As	Zr					
1				(67.25-67.75)	Core highly broken, dominant direction of shearing is 30-50° to core. All showing mfill										
2					chrysotile and carbonate development.	67.1 -	68.6	2440	<0.01	<0.01					043
3				(67.75)	Core highly altered to soft soapy green clay minerals after serp										
4				(65-70 - 68.70)	80% CORE RECOVERY										
5	68.40	72.10	3.70		Gradational contact to a highly fractured and broken serpentinite similar to previous interval however showing intense carbonate veining (100% in places) and faulting; core is mostly destroyed to soft weathered serpentinite (green) and lesser clay assemblages.	68.6 -	69.4	1480	<0.01	<0.01					
6					Carbonate veining is irregular, however bands of veinlets are 35° to core.										
7				(68.70-69.10)	Parallel set of shears at 15° to core, with large carbonate vein fill over 2cm representing major fault displacing all other veining. Carbonate alteration is however not pervasive around fault.	69.4 -	70.2	1320	<0.01	<0.01					
8				(69.15-72.10)	Intensely broken and weathered core, soft.	70.2 -	71.7	1920	<0.01	<0.01					
9				(68.70-70.20)	= 66% CORE RECOVERY.										
10				(70.20-71.70)	36% CORE RECOVERY.										
11				(71.70-73.70)	75% CORE RECOVERY.										
12				(73.70-75.60)	70% CORE RECOVERY.										

MAP, AIR PHOTO OR DRAWING No:		MACHINE:		INCLINATION AT COLLAR:		BEARING AT COLLAR:		MAG./GRID:		CHECK SAMPLE:					
LOGGED BY:		FIELD ENTRY BY:		DATE: / /		LAB. NOTES:		CHEMIST:		DATE: / /					
SAMPLE TYPE:		AREA OR GRID NAME:		LOCATION ON LINE OR HOLE NUMBER:		LOG PAGE 9 OF 20		PROSPECT OR PROJECT:		LINE No.:		AD 86-01		LOG & ANALYTICAL REPORT Sheet No. of A/O	

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LAB ENTRY
FIELD ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT							
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	As	Zn					
1	72.10	74.05												
2					Moderately hard dark apple green serpentinite, which contains 50-100 Chrysotile filled fractures; possible relict olivine in less altered portions, as evidenced from glassy nature of surfaces.	71.7 -	72.8	1820	<0.01	<0.01				
3														
4														
5														
6														
7														
8														
9					(72.50-72.76) Fracturing becoming intense with bulk of rock being carbonate and chrysotile veins & veinlets. Veining most irregular, however bulk appear to orientated 50° to core.	72.8 -	73.5	1660	<0.01	<0.01				
10														
11														
12														
13					(72.76-72.96) Grey clays: totally destroyed serpentinite, laminated, with contact angles 35° to core. Minor selvages of serp. remain mostly brecciated, 7% fine disseminated magnetite. Bottom contact abuts intensely folded (boxwork & rootless) serpentinite.	73.5 -	74.05	2520	<0.01	<0.01				
14														
15														
16														
17														
18														
19														
20														
21														
22	74.05	76.55	2.50m		Highly Boxwork Folded and Fractured Serpentinite; abundant fine stringers of chrysotile formed along fractures and define folding; micro block faulting throughout; dominant fracturing at 30° to core as conjugate sets (2-3% disseminated mt throughout).	74.05 -	75.0	1860	<0.01	<0.01				
23														
24														
25														
26														
27														
28														
29														
30					(75.60) Core mostly broken to fine granular return.									

QVA

MAP, AIR PHOTO OR DRAWING No.		MACHINE:		INCLINATION AT COLLAR		BEARING AT COLLAR		MAG./GRID		CHECK SAMPLE					
LOGGED BY:		FIELD ENTRY BY:		DATE: / /		LAB. NOTES:		CHEMIST:						DATE: / /	
SAMPLE TYPE:		AREA OR GRID NAME:		LOCATION ON LINE OR HOLE NUMBER:		LOG PAGE 100F 20		LOG & ANALYTICAL REPORT Sheet No. of A/O							



75.86-01

LOG & ANALYTICAL REPORT Sheet No. of A/O

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007046

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FIELD ENTRY
LAB. ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT			LAB. ENTRY NO.
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	As	Ir	
1				(76.1m)	FAULT, INFilled by chrysotile Fibres, with dissiminated magnetite.					
2				(75.6-76.55)	CORE less folded, no boxfolds obvious. 50 Fractures per metre; 90% CORE RECOVERY.	75.0 - 76.55	1540	< 0.01	< 0.01	045
3				(76.40-76.55)	CORE highly broken to Fine granular return					
4	76.55	82.90		Granular Serpentinized Dunite; gradational contact with previous interval and differentiated on basis of fracturing, & degree of serpentinization. Between 50-60 Fractures per metre; often showing mt accumulation; less serpentinization in middle of interval with primary olivine evident between 78-81 metres. ~ Dunite(s.s). Most Fractures are irregular, however larger Fractures are orientated between 50-70° to core.	76.55 - 77.4	1380	< 0.01	< 0.01		
5				(76.66)	Fault, 2cm wide Chrys.-Carb vein. displaced minor veining, mt throughout fault	77.4 - 78.4	1360	< 0.01	< 0.01	
6				(76.55-80.70)	97% CORE RECOVERY.	78.4 - 79.4	1380	< 0.01	< 0.01	
7				(80.30)	Fault: 50° → C, Chrys.-Carb veining	79.4 - 80.2	1260	< 0.01	< 0.01	
8				(80-80.70)	Highly irregular 3-5mm carb. veining; pyramatic or box folded. Less magnetite throughout the dunitic sequence, & less serpentinization.					

MAP, AIR PHOTO OR DRAWING No. _____

LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____

SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / / _____

LAB. NOTES: _____ CHEMIST: _____ DATE: / / _____

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____

LINE No: _____ LOCATION ON LINE OR HOLE NUMBER: _____ AD 86-01 LOG PAGE 11 OF 20

LOG & ANALYTICAL REPORT Sheet No. of A/O



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LAB ENTRY
FIELD ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M UNLESS OTHERWISE STATED; X= BELOW DETECTION LIMIT		
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	Al	Ir
1									
2				(81m) Fault; Pink carbonate + chrysotile over 3cm width 30° → Core.		80.2 - 81.2	1160	<0.01	<0.01
3									
4				(81-82m) Numerous 3-8mm pink carbonate filled Fct's or faults trending 50-70° → Core. Isoclinal folding seen in one of the pink veins.		81.2 - 82.2	1160	<0.01	<0.01
5									
6									
7									
8									
9									
10									
11				(81.8m) Fault; 40° → Core; infilled by pink + white carbonate; + possibly tremolite (?) Irregular fracturing and microfaulting increasing towards end of interval.					
12									
13									
14									
15									
16									
17				(82m) Highly fractured broken apple green serp + chrysotile core					
18									
19									
20									
21									
22				(82-82.90) Hard sheared Serpentinite; dark green; irregular wavy carbonate veining throughout; amygdaloidal in places; microfaulting evident throughout;		82.2 - 82.9	1700	<0.01	<0.01
23				(82.3) 10cm wide patch of light grey - olive green talc - carbonate brecciated, containing remnant clots of chromite (?)					
24				(82.4-82.80) 1cm wide shear infilled by stringer carbonate veins ~ Fault; open cavity containing carbonate (ck) crystals in fault (C → Fault @ 5°)					
25									
26									
27									
28									
29									
30									

0496

MAP, AIR PHOTO OR DRAWING No.		MACHINE		INCLINATION AT COLLAR		BEARING AT COLLAR		MAG./GRID		CHECK SAMPLE	
LOGGED BY:			FIELD ENTRY BY:			DATE: / /			LAB. NOTES:		
SAMPLE TYPE:				PROSPECT OR PROJECT				AREA OR GRID NAME			
LINE No.:				LOCATION ON LINE OR HOLE NUMBER				LOG PAGE 12 OF 20			
CHEMIST: / /						DATE: / /					

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007048

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FIELD ENTRY
LAB. ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT						
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	Pb	Ir				
1				(82.00)	2cm wide carbonate filled fault at 25° to core; containing clots & stringers of chromite; carbonate is brecciated and contains altered selvages of serpentinite with reaction rims.								
2													
3													
4													
5													
6													
7													
8	82.00	84.50	1.6M		Hard Fg. dark green serpentinite with pervasive thin carbonate crackle veining throughout; highly irregular, however dominant direction of veining is 25-30° to core; over 100 fractures per metre.	82.9 - 83.7		950	<0.01	<0.01			
9					(83.55) Fault - carbonate fill @ 45° to C.								
10					(83.33) Minor Fault, carb fill @ 90° to C brecciated.								
11					(83.50) 6mm pink carbonate vein; showing micro brecciation								
12					(84.10) Intensity of thin veinlets increases to a zone 7cm wide consisting of a network of very fine stringer carbonate veins trending 30° to core.	83.7 - 84.5		770	<0.01	<0.01			
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24	84.50	85.45	0.95		Light olive green talcose unit, containing 2-3% fine disseminated magnetite. Fine microfractures (200 per metre) have a general trend of 20° to core; fine chromite stringers evident along some fractures; minor selvages of serp. visible; patchy pink carbonate throughout.	84.5 - 85.45		365	<0.01	<0.01			
25													
26													
27													
28													
29													
30													

047

MAP, AIR PHOTO OR DRAWING No. _____

LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____

SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / /

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____

LINE No: _____ LOCATION ON LINE OR HOLE NUMBER: _____

CHECK SAMPLE: _____

LAB. NOTES: _____ CHEMIST: _____ DATE: / /

LOG & ANALYTICAL REPORT Sheet No. _____ of A/O _____



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FIELD ENTRY
LAB. ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X= BELOW DETECTION LIMIT		
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	Au	Ir
1									
2					Faulted lower contact at 85.45; highly alt'd carb. rich talc. C → F @ 21° brecciated zone of 15cm.				
3									
4									
5	85.45	85.95	0.5		Highly Fract. dark green serpentinite carbonate infill fractures parallel to core; (85.90) Fault; brecciated carb. filled fault over km; F → C @ 70°	85.45 - 85.95	780	0-01	<0-01
6									
7									
8									
9									
10									
11	85.95	92.20	6.25		Fractured controlled contact @ 15° to core to an olive green talcose rock (86.50 - 86.80) Dark green serpentinite selvedge with moderately hard pink carbonate (?) or partly siliceous irregular veining, serpentinite highly fractured. Serp. contains relict chromite clots.	85.95 - 86.8	950	<0-01	<0-01
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
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35									

048

MAP, AIR PHOTO OR DRAWING No. _____

LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____

SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / /

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____ LOCATION ON LINE OR HOLE NUMBER: PT 86-01

CHECK SAMPLE

LAB. NOTES: _____ CHEMIST: _____ DATE: / /



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007050

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LAB. ENTRY
FIELD ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT			TUBE No.
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	As	Zr	
1				(88.50-88.60)	Serpentinite selvedge; fault bound lower contact at 40° to core.					
2				(89m)	Fault; 3cm wide - chl-carb assemblage in Talc rock. (C→F @ 30°).	88-60-89-7	370	<0-01	<0-01	049
3				(89.40-89.70)	A series of parallel faults at 15° to core, displacing the lt olive green talc.					
4				(89.70)	Talc becoming a light bluish-grey color, massive whit; containing irregular calcite veins & veinlets up to 8mm wide; 5% disseminated mt, & tc chromite throughout; fd laminations 30° to core.	89-7-90-9	250	<0-01	<0-01	
5				(90.90-92.20)	Talc is more highly faulted; containing abundant carbonate (c/c) veins orbs, and lenses; Talc is lenticular in appearance. major fracturing orientated at 25° to core, as well as infill c/c veinlets.	90-9-91-9	265	<0-01	<0-01	
6				(91.9-92.20)	Highly broken, with d core, Talc altered to grey clays.					
7	92.20	94.54	2.34		Highly fractured dark green serpentinite fault bound upper contact with talc, at approx 5° to core; Large infill pink jasperoidal & c/c veinlets & veins on contact; Lenticular sleeves of serp & talc intertwined on contact. In places clear metasomatic alteration is evident as calcite has infiltrated serpentinite with the resultant	99-93.0	550	<0-01	<0-01	

MAP, AIR PHOTO OR DRAWING No. _____
 LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____

SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / /

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____
 LINE No: _____ LOCATION ON LINE OR HOLE NUMBER: AD 86-01 LOG PAGE 15 OF 20

CHECK SAMPLE: _____
 LAB. NOTES: _____ CHEMIST: _____ DATE: / /

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FIELD ENTRY
LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT				
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	Pb	Zn		
1				Formation of talcose material.							
2				Serpentine has networking fine							
3				Fracture system throughout; with							
4				preferred orientation of between 25							
5				-30° to core.							
6				(92.95) Calcite vein 15° to core.		91.0 -	94.54	510	<0.01	<0.01	
7				(94.20) Fault fill calcite vein parallel							
8				to core; 8mm wide; and extends							
9				0.6 m. long.							
10				RECOVERIES: 82.0 - 83.70 100%							
11				83.70 - 86.70 100%							
12				86.70 - 89.70 90%							
13				89.70 - 92.70 93%							
14				92.70 - 95.70 98%							
15											
16											
17	94.54	107.70		Gradational contact to a Talc rich							
18				rock containing selvages of serpentine							
19				5% disseminated chromite(?) spinel shows color							
20				variation from light blue (non magnetic) to							
21				olive green; laminations + faults,							
22				fractures + veining show a preferred							
23				orientation of 25-32° from core;							
24				however irregular fol's + veinlets, mostly							
25				infilled by etc. are common.		94.54 -	95.50	340	<0.01	<0.01	
26				Fracturing not as common in the							
27				lt. bluey talc units.							
28				(95.2) sheared serpentine - carbonate							
29				selvedge							
30											

050

MAP, AIR PHOTO OR DRAWING No.		CHECK SAMPLE							
LOGGED BY:	MACHINE:	INCLINATION AT COLLAR:	BEARING AT COLLAR:	MAG./GRID:	LAB. NOTES:		CHEMIST:		
SAMPLE TYPE:	FIELD ENTRY BY:		DATE: //				DATE: / /		
PROSPECT OR PROJECT	AREA OR GRID NAME		LOCATION ON LINE OR HOLE NUMBER		LOG PAGE 16 OF 20		LOG & ANALYTICAL REPORT Sheet No. of A/O		



AD 86-01

FIELD ENTRY
LAB ENTRY

METALS EXPLORATION LIMITED

007052

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DEPTH OR INTERVAL	CO-ORDINATE		GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT		
	FROM	TO	ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	As	Zn
			(95.3) Strong shear direction 18° to core; fine carb. veinlets.					
			(95.5-95.70) Serpentinite selvedge.		95.50-96.10	455	<0.01	<0.01
			Color banding variations throughout talc from very pale blue-green to dark olive green.		96.10-96.9	275	<0.01	<0.01
			Rare patches of red-brown material; possibly jasper/haematite(?)		96.9-98.0	365	<0.01	<0.01
			(98-99m) Highly broken core.		98.0-99.0	670	<0.01	<0.01
			(100.1) Serpentinite selvedge (2cm wide)					
			At least 5-6 main shears or groups of shears per metre.		99.0-100.0	440	<0.01	<0.01
					100.0-101.0	420	<0.01	<0.01
			(101.4-101.65) Dark green serpentinite selvedge; highly foliated with 5% c/c veinlets.		101.0-101.8	810	<0.01	<0.01
			CORE RECOVERIES. 95.70-98.70 26% 98.70-101.70 96%					
			(101.70) Minor band (selvedge) of serpentinite					
			(101.80) Faulted contact with lt. blue talc containing 5% chromite + patchy brown mineral ~ dolomite or haematitic					
			(101.70-102.50) Mixture of talcose + serp. with calcite veins + red asperoidal patches up to 2cm wide; 5-7% chromite; Main banding in talc is sub parallel to core, to 40° to core; globular c/c developed		101.8-102.5	630	0.01	0.03

0.51

MAP, AIR PHOTO OR DRAWING No.	MACHINE:				INCLINATION AT COLLAR	BEARING AT COLLAR	MAG./GRID	CHECK SAMPLE						
LOGGED BY:	FIELD ENTRY BY:				DATE: / /		LAB. NOTES:							
SAMPLE TYPE:	AREA OR GRID NAME				DATE: / /		CHEMIST:							
PROSPECT OR PROJECT	LOCATION ON LINE OR HOLE NUMBER				LOG PAGE / 70F 20		DATE: / /							

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007053

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LAB ENTRY
FIELD ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT				
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		Ni	As	Ir		
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
32											
33											
34											
35											

052

in shear zone (102.45m) as well as irreg. c/c veinlets; + haematitic stringers throughout.

(102.50 - 103.18) Pure bluey talc; 5-8% Chr; minor c/c veinlets up to 3mm wide having orientation of 35° to core;

(103.30) Serp. selvedge; fault band, micro thrust, in light pale green talc;

(103.50 - 105.20) Fractured & annealed Talc, bluey green (A₂₀) consisting of numerous crush zones; globular calcite development 7% Chromite containing silvery inclusions possibly osmiridium; calcite crackle veins throughout; to red brown haematite(?) Highly foliated serp selvedge at 103.90m. Patchy globular texture developed by numerous fracturing events & annealing. Paly pink carbonate developed throughout

(105.20 - 105.95) Annealed fracture consisting of serp & talc lenses in carbonate-haematite(?) matrix; dominant red mineral most likely psiperedal

(105.35 - 106.15) Crush Zone; intensely fractured flaky blue-green talc; 7% Chromite; minor serp selvedges; to osmiridium(?) existing as shiny silvery mineral; conjugate fracturing at approx 20° to core.

RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT	Ni	As	Ir	
102.5 - 103.5	290	<0.01	0.02	
103.5 - 104.7	415	0.01	<0.01	
104.7 - 105.35	690	0.01	0.04	
105.35 - 106.15	1540	<0.01	<0.01	

MAP, AIR PHOTO OR DRAWING No. _____

LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____

SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / /

CHECK SAMPLE _____

LAB. NOTES: _____ CHEMIST: _____ DATE: / /

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____

LINE No. _____ LOCATION ON LINE OR HOLE NUMBER: 9D 86-01 LOG PAGE 18 OF 20

METALS EXPLORATION LIMITED

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FIELD ENTRY
LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT			
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		INTERVAL	Ni	Au	Ir
1				(106.15 - 107.70)	moderately fol'd aqua colored talc, 7-10% chromite - mt, tc silvery mineral throughout (Osminidium?) c/c veinlets developed along fractures, tc pink carbonate; dominant fracture direction is between 20 and 32° to core; conjugate sets; calcite veinlets exhibit micro isoclinal folds;	106.15 - 107.7	700	<0.01	<0.01	
10	107.70	108.6		107.70 - sheared serpentinite; dark green patchy brecciated serp. annealed with calcite and red-brown stringers of paper; minor talc bands and lenses; serp has developed anastomosing texture around brecciated fragments.	107.7 - 108.6	900	0.01	<0.01		
17	108.6	109.7		Gradational into intensely sheared deformed flaky and highly brecciated ex-serpentinite lenses; contains patchy and vein fill calcite; very soft, consisting of granules of serp in a matrix of clays.	108.6 - 109.7	1100	<0.01	<0.01		
23	109.7	112.70		Serpentiniferous mudstone; very soft, fractured flaky intercalated bands of serpentinite and spotted layered mudstones; lenses are fault breccia; dominant fault shearing direction is 25° to core; very hard to differentiate the two rock types; mudstone is assumed to have been in part sourced from the serpentinite	109.7 - 110.7	820	<0.01	<0.01		
					110.7 - 112.0	680	<0.01	<0.01		

0.5%

MAP, AIR PHOTO OR DRAWING No. _____
 LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG./GRID: _____
 SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / /

CHECK SAMPLE _____
 LAB NOTES: _____ CHEMIST: _____
 DATE: / /

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____
 LINE No.: _____ LOCATION ON LINE OR HOLE NUMBER: AD 86-01 LOG PAGE 19 OF 20

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APPENDIX 3

DRILL HOLE LOG OF AD 86 - 02

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FIELD ENTRY LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X* BELOW DETECTION LIMIT			
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		INTERVAL	Ni	As	Zn
1	0	3	3	Phyllosilicate - drilled & friable, rather bit						
2										
3	3	3.3	0.3	Serpentinite, extremely pale green and blue						0.56
4				4-3% chromite, with ? possible trace of other						
5				in spirals						
6	3-3	3-8	0.5	Serpentinite - fresh, spirals of 3-5 mm,		3-3 - 3-8	1300	0.09	Low	
7				blue green, possible minor pyroxene, 2-3%						
8				spirals, very brittle, kelyphite on joints.						
9										
10	3-8	6.0	2.2	Shaded zone - medium gray talcose / serp.		3-8 - 6.0	1260	0.055	Low	
11				massive, soft and brittle, etc.						
12										
13	6.0	6.5	0.5	Serpentinite extremely pale green, talcose powder,		6.0 - 6.6	1080	0.025	Low	
14				brittle, N 45° prob' parallel S, 1-2% spiral						
15										
16	6.5	6.6	0.1	Serpentinite out pyroxene - ? base bergite						
17				serpentine medium to fine green and pyroxene						
18				as layers (10 mm) and rounded - similar						
19				to part of AD 85-01.						
20	6.6	7.2	0.6	Shaded zone - considerable talc inferred,		6.6 - 7.2	1860	0.07	Low	
21				only, talc schist necessary.						
22										
23	7.2	7.7	0.5	Serpentinite, extremely pale green, brittle		7.2 - 7.7	1580	0.03	Low	
24				and similar to 6-6.5m - to 2% chromite						
25				and hornblende ? pyrite or stibicondensed 7.7m.						
26										
27	7.7	9.7	2.0	Shaded zone - major talc also inferred		7.7 - 9.7	1320	0.035	Low	
28				here, medium gray talcose material which						
29				is characteristically juxtaposed with upper						
30				green / serpentine - talc veins in lower part						

MAP, AIR PHOTO OR DRAWING No. _____
 LOGGED BY: T.G. Summers MACHINE: Fox B 50 INCLINATION AT COLLAR: 6.0° BEARING AT COLLAR: 075° MAG/GRID: _____

SAMPLE TYPE: Dip and Drilled Unit FIELD ENTRY BY: T.G. Summers DATE: 8/12/86

PROSPECT OR PROJECT: AD Amfield AREA OR GRID NAME: Northern Adit Area
 LINE No: AD 19-2-86 LOCATION ON LINE OR HOLE NUMBER: DDH AD 86-02 LOG PAGE 1 OF 4

CHECK SAMPLE _____ LAB. NOTES: _____ CHEMIST: _____ DATE: 1/1

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FIELD ENTRY
LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT				T
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		INTERVAL	Ni	As	Zr	
1	9.7	10.1	0-4	Serpentinized (ex. dunite), apple-green layer (2-3 cm) chromite aggregates totalling 5 vol% - broken down with chrysolite plate-joint structure and vermicular.		9.7 - 11.35	1680	0.06	<0.01		057
2	10.1	11.35	1-25	Shaded zone - major Kk, only apple green serpentinized rocks.							
3	11.35	12.1	0-75	Serpentinized (dunite), apple-green, major Kk, chromite ave. 1 mm diam, total 5 vol% possible - over in spots here.		11.35 - 12.1	1940	0.35	<0.01		
4	12.1	12.9	0-8	Serp. in for 11.35-12.1 m, broken down, 3-5 mm diam, totalling 10-15 vol% possible - over in spots here.		12.1 - 13.2	1920	0.03	<0.01		
5	12.9	13.2	0-3	Serpentinized, apple-green, no chrysolite, chromite, 1 mm diam, 3-5 vol% total.							
6	13.2	14.0	0-8	Serp. in for 12.9-13.2 m, chromite & 1 mm diam with 5 vol% ex. d.; trace of Cr 2 in the chromite.		13.2 - 14.0	1980	0.05	<0.01		
7	14.0	14.22	0-22	Serpentinized, ex. dunite, apple-green very fine-grained chromite (2 mm) 2.9 ex. d.		14.0 - 14.95	1940	0.035	<0.01		
8	14.22	14.95	0-73	Serp. in for 14-14.22 m, medium & fine chromite (2.5 vol% ex. d.) except for broken down - trace of very fine chromite in the chromite.							
9	14.95	15.4	0-45	Serpentinized, medium to dark green		14.95 - 15.4	1480	0.03	<0.01		

MAP, AIR PHOTO OR DRAWING No.:				CHECK SAMPLE			
LOGGED BY:	MACHINE:	INCLINATION AT COLLAR:	BEARING AT COLLAR:	MAG./GRID	LAB. NOTES:		
SAMPLE TYPE:	FIELD ENTRY BY:			DATE: / /	CHEMIST: / /		
PROSPECT OR PROJECT	AREA OR GRID NAME	LOCATION ON LINE OR HOLE NUMBER	LOG PAGE 2 OF 4		LOG & ANALYTICAL REPORT Sheet No. of A/O		

METALS EXPLORATION LIMITED

007059

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FIELD ENTRY LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT			T.C. (%)
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY		INTERVAL	Ni	Au	
1										
2	15.4	16.6	1-2	minor (1-2 vol%) chlorite		15.4 - 16.6	1360	0.05	60-01	0.58
3				Sheared zone, major K ₂ O, only flakes of serpentinite observed.						
4										
5	16.6	20.42	3-82	Serpentinites, medium/fin grained, subhedral		16.6 - 17.6	1680	0.04	60-01	
6				modified, coarse grained but broken into 3-5 vol% chlorite, matrix very fine (thin)		17.6 - 18.4	1480	0.05	"	
7						18.4 - 19.4	1580	0.05	"	
8						19.4 - 20.4	1980	0.02	"	
9	20.42	21.70	1-28	Sheared zone, no contacts but apparently developed in the green zone (with 20-19) chlorite		20.4 - 21.7	1880	0.03	"	
10										
11	21.70	22-30	0-60	Pyroxenite - transitional Dunning section		21.7 - 22.3	560	0.02	"	
12				fine grained coarse grained (green) pyroxenite matrix (? chlorite), minor chlorite						
13										
14										
15										
16	22-30	22.60	0-30	Crushed zone - large angular to sub		22.3 - 22.75	650	0.03	60-01	
17				rounded porphyroclasts, white/gray						
18				chromite - ? hydrothermal / metamorphic etc.						
19										
20	22-60	23.75	0-15	Pyroxenite - as for 21.7-22.3		22.75 - 23.75	1020	0.02	60-01	
21				possibly large economic clast.						
22										
23	22-75	26.2	3-45	major crushed/sheared zone, clasts of		23.75 - 24.75	980	0.03	"	
24				serpentinites, very strongly sheared, and		24.75 - 26.2	880	0.03	"	
25				mostly chlorite, minor white/gray talc						
26				and pyroxenite; $\Delta 25 \mu = 45^\circ$						
27										
28	26.2	28-95	2-75	Coarse crushed and sheared zone - medium		26.2 - 27.2	930	0.05	"	
29				chlorite, talc and chlorite serpentinite						
30				various other fragments, minor talc						

MAP, AIR PHOTO OR DRAWING No. _____

LOGGED BY: _____ MACHINE: _____ INCLINATION AT COLLAR: _____ BEARING AT COLLAR: _____ MAG/GRID: _____

SAMPLE TYPE: _____ FIELD ENTRY BY: _____ DATE: / /

CHECK SAMPLE: _____

LAB. NOTES: _____ CHEMIST: _____ DATE: / /

PROSPECT OR PROJECT: _____ AREA OR GRID NAME: _____

LINE No: _____ LOCATION ON LINE OR HOLE NUMBER: Ad 36-02 LOG PAGE 3 OF 4

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007060

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FIELD ENTRY
LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT				TUBE No
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY			Ni	Pb	Zn	
1											
2											
3											
4						27-2-	28-0	1000	0-02	20-01	059
5											
6											
7	28-95	35-4	6-45		Original unbedded medium grained calcareous beds (fossiliferous) with a tectonic fabric of deformed schistosity, with pseudo boundaries of thin calcareous beds. (This is an unbedded parallel shaped calcite veins appear in primary position the shaly. We saw a few broken thin beds. $\Delta 29.2m = 35/40^\circ$						
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20	CORE RECOVERIES										
21	3-5.4m		= 1.15	(48%)	29.4-32.4	= 2.95m	(95-100%)				
22	5.4-8.4m		= 1.45	(49-50%)	32.4-35.4	= 3.00	(100%)				
23	8.4-11.4m		= 0.95	(31-33%)							
24	11.4-14.4m		= 2.95	(95-100%)							
25	14.4-17.4		= 2.0	(67-70%)							
26	17.4-20.4		= 1.5	(50%)							
27	20.4-23.4		= 2.5	(83-87%)							
28	23.4-26.2		= 2.3m	(76-77%)							
29	26.2-27.8		= 1.6	(100%)							
30	27.8-29.4		= 1.6	(100%)							

MAP, AIR PHOTO OR DRAWING No.:	CHECK SAMPLE										
LOGGED BY:	MACHINE:	INCLINATION AT COLLAR:	BEARING AT COLLAR:	MAG./GRID:	LAB. NOTES:						
SAMPLE TYPE:	FIELD ENTRY BY:	DATE: / /	CHEMIST:		DATE: / /						
PROSPECT OR PROJECT	AREA OR GRID NAME	LOCATION ON LINE OR HOLE NUMBER	LOG PAGE 4 OF 4	LOG & ANALYTICAL REPORT Sheet No. of A/O							

FIELD ENTRY

LAB ENTRY

METALS EXPLORATION LIMITED

007061

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LAB. ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT													
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY															
1	0	3	3	Non core drilling; precolor																
2																				
3	3	9.5	6.5m	Dark apple green to dark blue green serpentinite; highly broken, poor recovery, intensely fractured, fragmented and annealed core; major fracture direction is 35-40° to core; conjugate fct. sets are apparent; multiple slickenside surfaces; granulated fabric, destroyed to clays in places (grey colored).																
4				RECOVERIES																
5					3m - 5.4m	40%														
6					5.4 - 8.4m	40%														
7					8.4 - 11.4m	33%														
8					11.4 - 14.4m	86%														
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17	9.5	15	5.5	Apple Green Serpentinite; highly fractured show chrysotile veining; fragmented; (after dunite); contains 3% coarse chromite up to 3mm in size; 7 grains of in situ OSMIRIDIUM visible in core; fracturing showing random orientation, however larger fractures are 20-40° to core; OSMIRIDIUM seen as minute inclusions in the chromite euhedral grains (11.6m) Serp. has inherited the m.g granular fabric from the dunite. over 100 fct's per metre; often developed a web like net fracturing pattern.																
18																				
19																				
20																				
21																				
22																				
23																				
24																				
25																				
26																				
27																				
28																				
29																				
30																				

060

MAP, AIR PHOTO OR DRAWING No. _____

LOGGED BY: **SIMON DODD** MACHINE: **MOBILE** INCLINATION AT COLLAR: **-60°E** BEARING AT COLLAR: _____ MAG./GRIND: _____

SAMPLE TYPE: **DIAMOND DRILL CORE** FIELD ENTRY BY: **S. DODD** DATE: **20/2/86**

PROSPECT OR PROJECT: **ADAMSFIELD** AREA OR GRID NAME: **ADAMSFIELD NORTH**

LINE No.: _____ LOCATION ON LINE OR HOLE NUMBER: **AD 86-02** LOG PAGE _____ OF _____

CHECK SAMPLE _____

LAB. NOTES: _____ CHEMIST: _____ DATE: / /

LOG & ANALYTICAL REPORT Sheet No. of A/O

MEALS EXPLORATION LIMITED

007062

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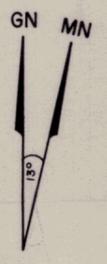
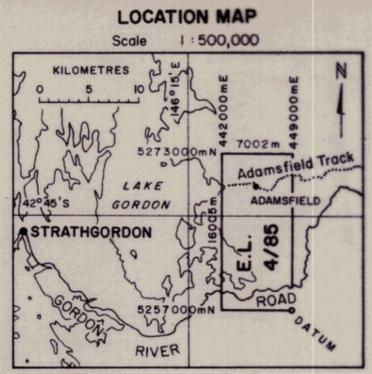
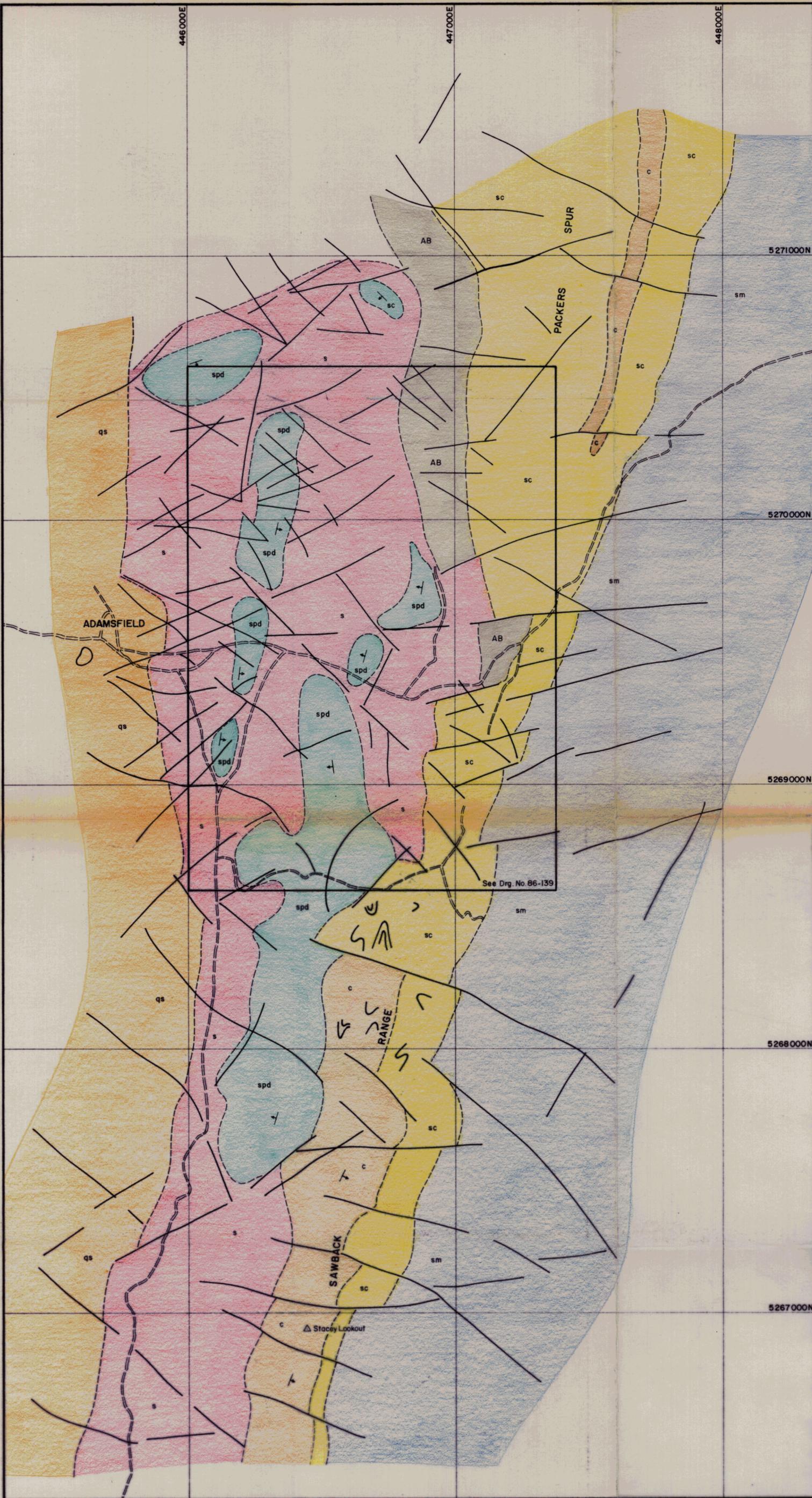
FIELD ENTRY LAB ENTRY

LINE	CO-ORDINATE		DEPTH OR INTERVAL	GEOLOGICAL DESCRIPTION OF SAMPLE		SAMPLE NUMBER	RESULTS IN P.P.M. UNLESS OTHERWISE STATED; X=BELOW DETECTION LIMIT											
	FROM	TO		ABBREV. GEOL. DESCRIPTION	ASSAY SUMMARY													
1				light blue manganese staining along zone														
2				Fractures.														
3				(9.5-12m) Highly broken + fractured core														
4				(12-12.8) Zone of C.G. Chromite (5%)														
5				and chromite clots;														
6				(13.1m) major fracture at 32° to core.														
7																		
8																		
9																		
10	15			CRUSH ZONE: Very highly broken core; dark														
11				green serp; multiple slickensides; with														
12				chrysotile veining, minor talc veining;														
13				Fine granular return in places (approx														
14				15.3 - 15.2(?)														
15																		
16																		
17																		
18																		
19																		
20																		
21																		
22																		
23																		
24																		
25																		
26																		
27																		
28																		
29																		
30																		

061

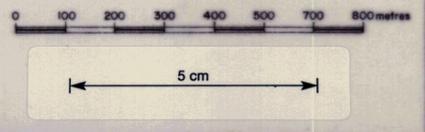
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LOGGED BY:		FIELD ENTRY BY:		DATE: / /		LAB. NOTES:		CHEMIST:											
SAMPLE TYPE:		AREA OR GRID NAME:		LOCATION ON LINE OR HOLE NUMBER:		LOG PAGE OF		DATE: / /											
PROSPECT OR PROJECT		AREA OR GRID NAME		LOCATION ON LINE OR HOLE NUMBER		LOG PAGE OF		CHEMIST											
LINE No:		AREA OR GRID NAME		LOCATION ON LINE OR HOLE NUMBER		LOG PAGE OF		DATE											





Legend

- qs Quartz sandstone
- sm Calcareous sandstone, mudstone; minor chert
- sc Sandstone and pebble conglomerate
- Adamsfield Beds
 - AB Mudstone, siltstone, minor ultramafic clasts unit
 - spd Layered pyroxenite and dunite, variably serpentinized
 - s Serpentinite
 - c Conglomerate
- Photo linear
- - - Geological boundary



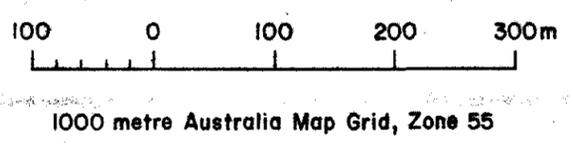
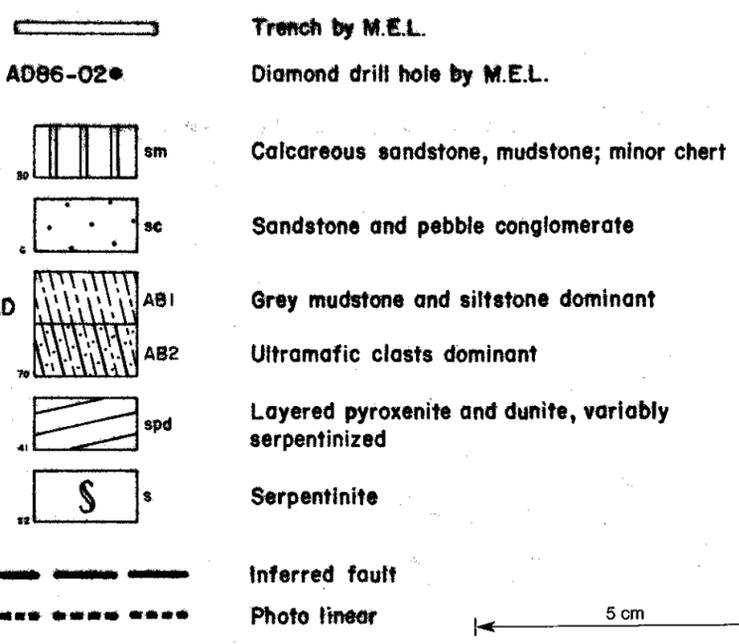
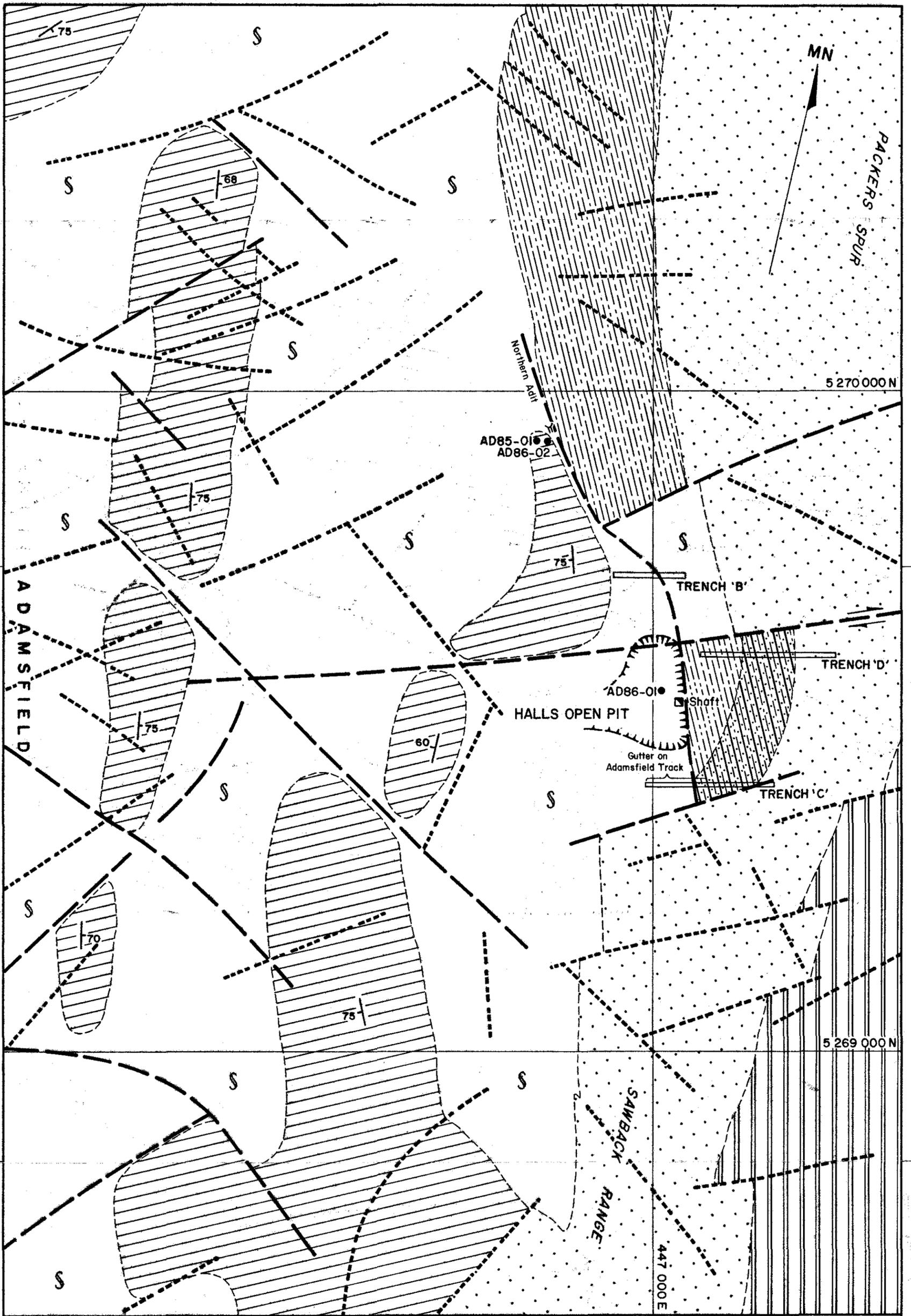
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E.L. 4/85, ADAMSFIELD PROSPECT, TASMANIA.
PACKERS SPUR-ADAMSFIELD-SAWBACK RANGE AREA

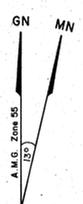
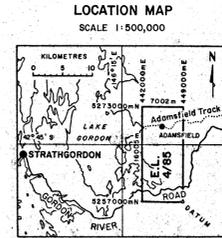
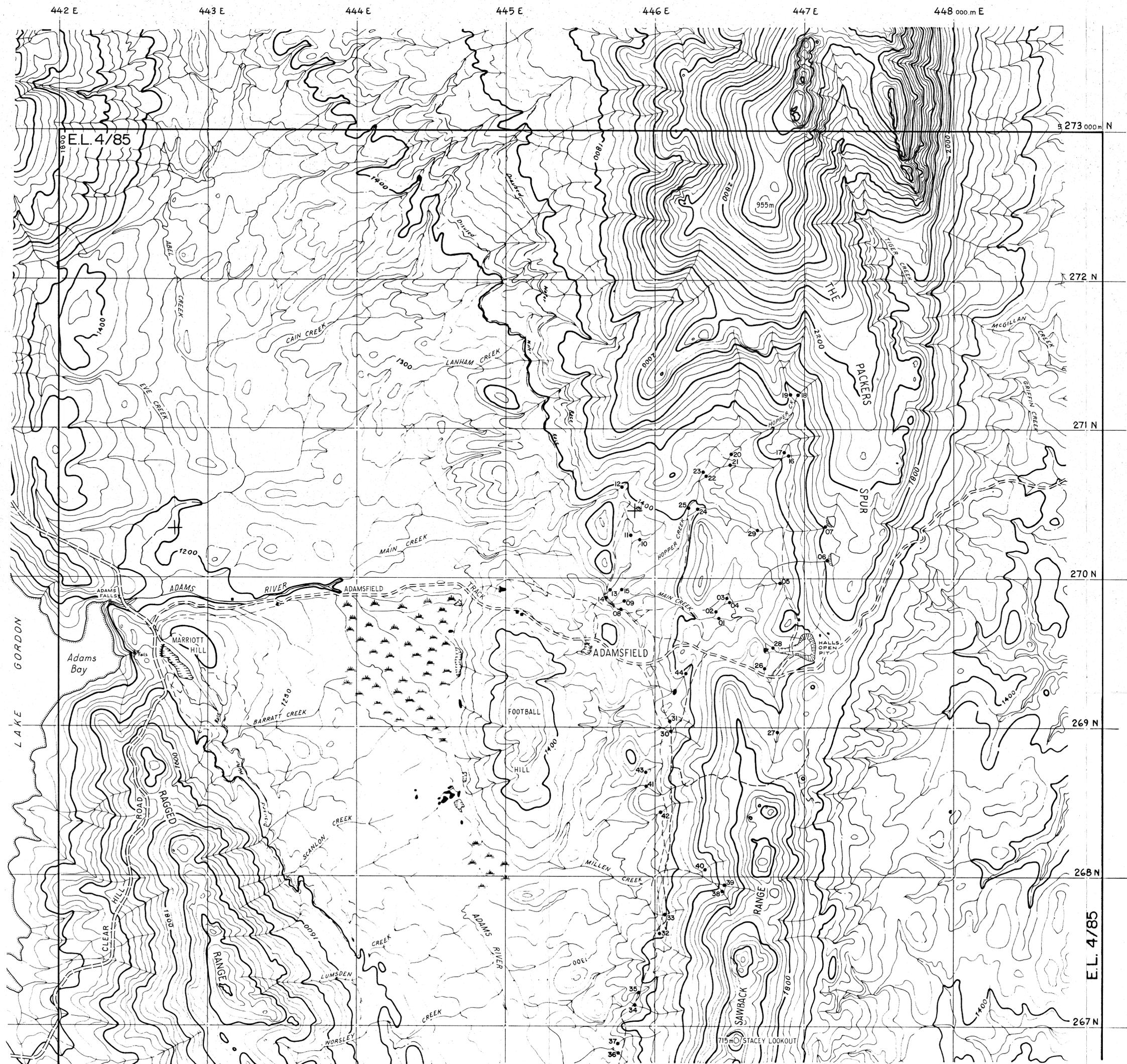
REGIONAL GEOLOGY

FIGURE 2

Scale 1:10,000 Prepared: T.G. Summons
 Drawn: May, 1986 Revised: Drg. No. 86-138



METALS EXPLORATION LIMITED		
E.L. 4/85, ADAMSFIELD PROSPECT		
ADAMSFIELD - HALLS OPEN PIT VICINITY		
GEOLOGICAL PLAN		
FIGURE 3		
SCALE 1:5000	PREPARED T.G. Summons, April '86	068
DRAWN MAY 1986	REV.	
		DRG. NO. 86-139



LEGEND

●26 Location and number of stream sediment sample. All sample numbers are prefixed by "ADSS."

Base map:
Photogrammetric machine plot of HUNTLEY 73-D-3 map sheet by Tasmanian government authorities with additions by M.E.L.

Topographic contours:
Contour interval 30 ft with index contours (bold) every 200 ft.
Intermediate contours (---) at 25 ft interval.

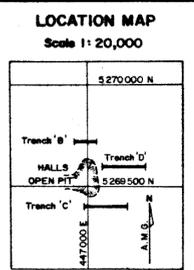
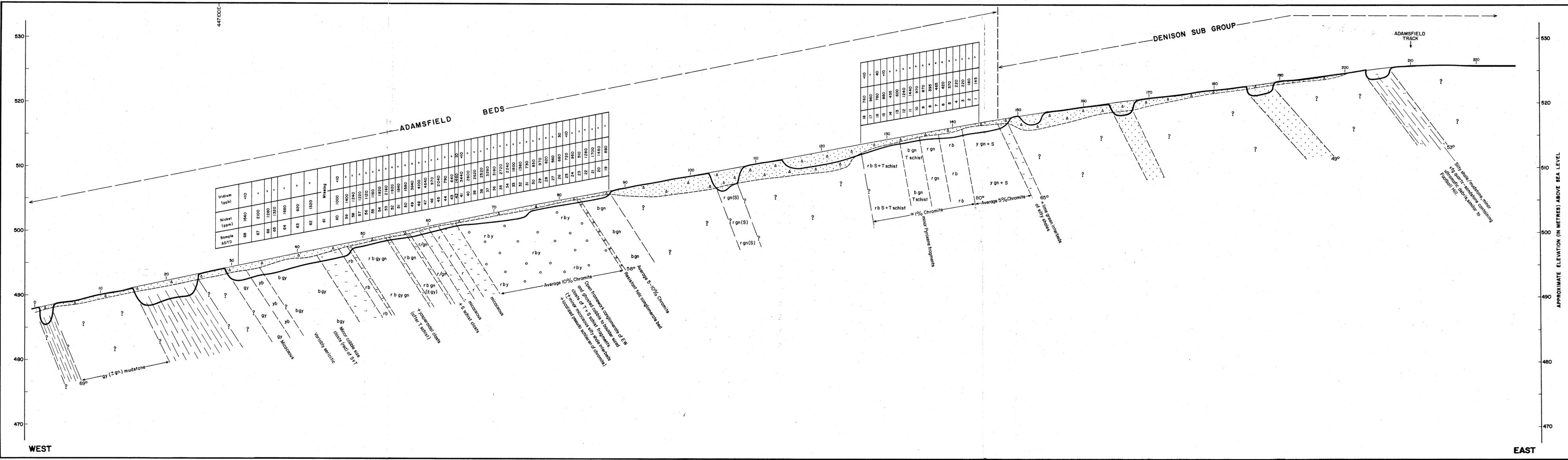


007065 86-2574
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ADAMSFIELD PROSPECT, TASMANIA
NORTHERN PART OF E.L. 4/85

STREAM SAMPLE LOCATION PLAN





METALS EXPLORATION LIMITED

E.L. 4/85, ADAMSFIELD PROSPECT, TASMANIA
HALLS OPEN PIT VICINITY
GEOLOGY AND ASSAY

SECTION ALONG TRENCH 'D'
LOOKING NORTHWARDS

5867

SCALE 1:250 H. & V. Prepared: T.G. Summons, April 1986
Drawn: May, 1986. Revised: Drg. No. 86-143

007068
5 cm

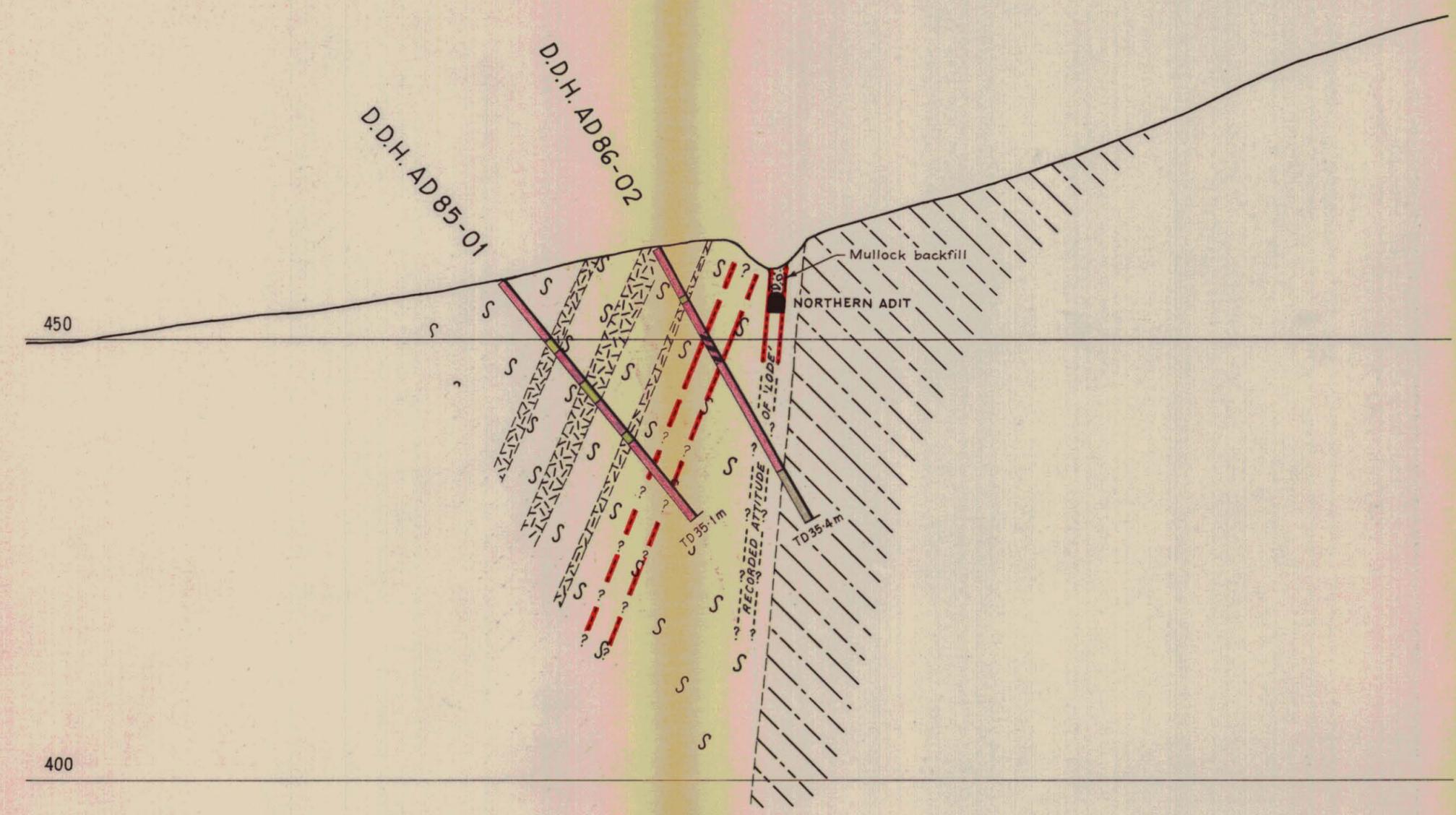
86-2574

ELEVATION (APPROX. A.H.D.)

500

450

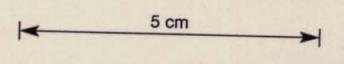
400



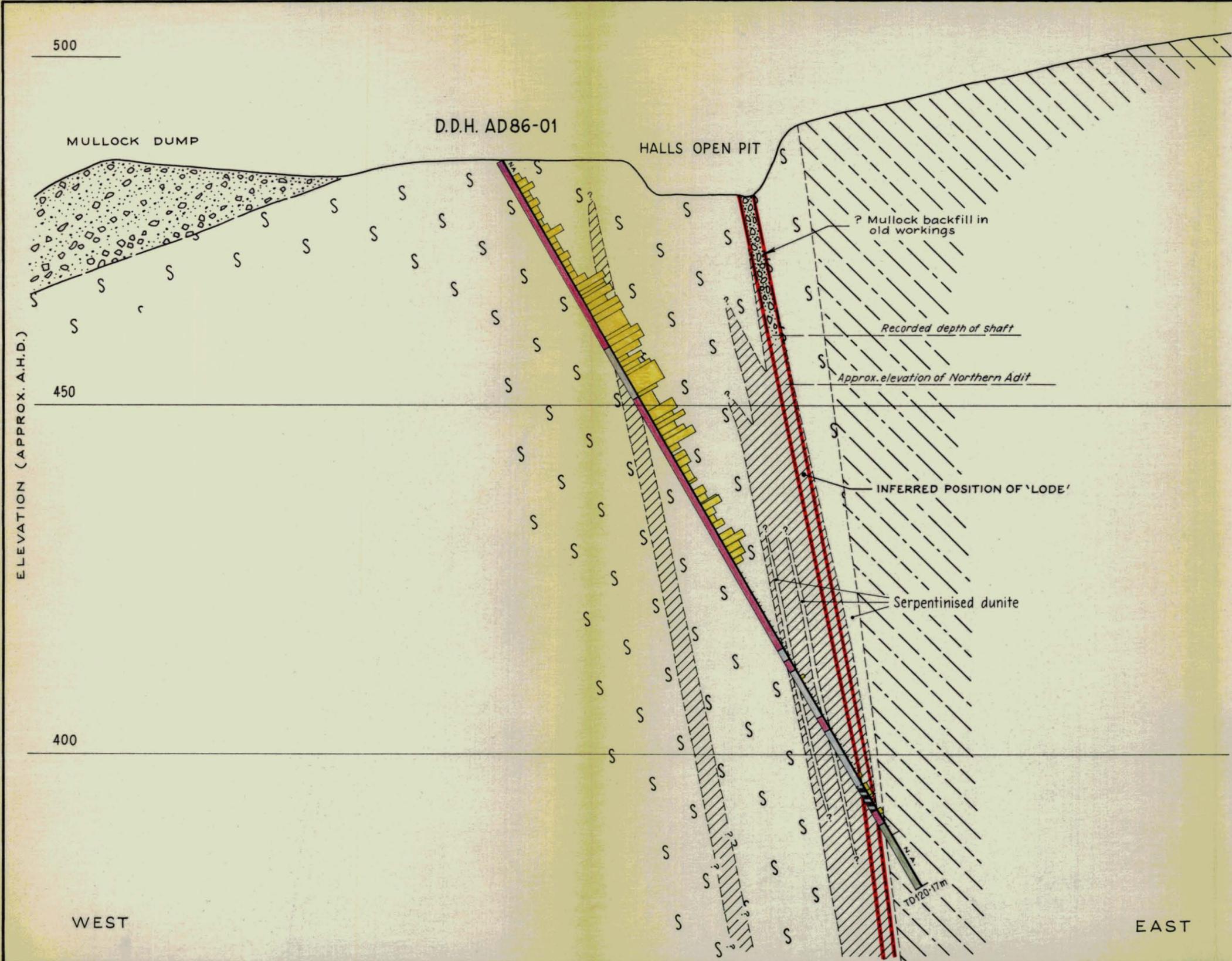
LEGEND

- 70 Mudstone, siltstone - Adamsfield Beds
- 48 Pyroxenite
- 22 Serpentinised dunite
- 14 Zone of platinoids in D.D.H. core

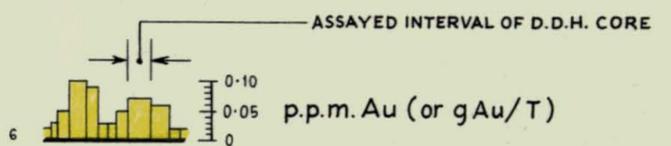
007069



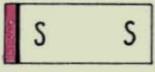
METALS EXPLORATION LTD.	
E.L.4/85, ADAMSFIELD PROSPECT	
SECTION THROUGH DIAMOND DRILL HOLES AD85-01 & AD86-02	Looking towards 345° A.M.G.
PREPARED T. G. SUMMONS	DATE 6/86
DRAWN C. R. MILLER	DATE 6/86
SCALE 1: 500 H. & V.	
DRAWING No. 86-206	REV. 5868



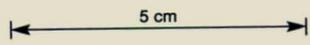
GOLD HISTOGRAM



GEOLOGY

-  Mudstone, siltstone - Adamsfield Beds
-  Talc carbonate
-  Serpentinised dunite
-  Zone of platinoids in D.D.H. core

007070



 METALS EXPLORATION LTD.		PREPARED	DATE
		T.G. SUMMONS	6/86
E.L.4/85, ADAMSFIELD PROSPECT SECTION THROUGH HALLS OPEN PIT & DIAMOND DRILL HOLE AD 86-01		DRAWN	DATE
		C.R. MILLER	6/86
Looking towards 345° A.M.G.		SCALE	
		1: 500 H. & V.	
DRAWING No.		REV.	
86-205		5869	