RELINQUISHMENT REPORT

EXPLORATION LICENCES 7195 & 7297

24th May, 1991
to
23rd May, 1995

Licensee:	Ashton Mining Limited
Operator:	Ashton Mining Limited BHP Minerals Pty Ltd
Sheet Reference:	1:250,000 Bauhinia Downs (SE 53-03) 1:250,000 Robinson River (SE 53-04) 1:250,000 Calvert Hills (SE 53-08)
Submitted to:	Department of Mines and Energy, Darwin
Copies to:	Ashton Mining Limited - Perth Office Ashton Mining Library

Authors:

N. Ong
ASHTON MINING LIMITED
24 Outram Street
WEST PERTH WA 6005

B. Jones
BHP MINERALS PTY LTD
3 Plain Street
EAST PERTH WA 6004

August, 1995
Report Number: 51153

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SUMMARY

During the period 24th May, 1991 to 23rd May, 1995 Ashton Mining Limited, on behalf of the Australian Diamond Exploration Joint Venture (ADE JV), carried out an exploration programme over Exploration Licences 7195 and 7297, which form part of the Boomerang Creek project tenements. On the 23rd May, 1995 these tenements were reduced. This report provides a summary of the exploration activities undertaken within the relinquished portion of these licences.

Diamond exploration work consisted of open file data review and regional stream sampling. A total of thirty-nine samples were collected within the relinquished portion of EL 7195, and three samples within EL 7297. All samples were forwarded to Ashton's Perth laboratory for processing. Sample results were considered poor and no further work was warranted.

Base metal exploration comprised stream sediment sampling within the relinquished portion of EL 7297. This sampling, draining north northwesterly trending structures that cut Cambrian Bukalara Sandstone, returned subdued analytical results. Airborne GEOTEM and follow-up ground PROTEM soundings have found the Bukalara Sandstone in this area to be underlain by a regional conductive unit, interpreted to be Mainoru Formation of the Roper Group.

No work was completed by BHP Minerals, on the relinquished portion of EL 7195.

Exploration expenditure for the relinquished area amounted to $ 60,873

1.0 INTRODUCTION

Exploration Licences 7195 and 7297 were granted to Ashton Mining Limited in 1991 for a period of six years. The licences are situated on the Bauhinia Downs (SE 53-03), Calvert Hills (SE 53-08) and Robinson River (SE 53-04) 1:250,000 map sheets. The target of exploration within the two licences is diamond bearing kimberlitic intrusives and the principal exploration technique employed has been regional stream sampling.

Group reporting of these tenements was requested on the 20th January, 1993 and approved by the Department of Mines and Energy in February, 1993. ELs 7195 and 7297 form part of the Boomerang Creek Project tenements.

In accordance with Section 27 of the Mining Act, statutory relinquishments were made in 1993, 1994 and again in 1995, the details of which are provided in Table 1. Figures 1 and 2 show the retained/relinquished areas.

Tenement	Date Granted	Area (blocks)			
		1992	1993	1994	1995
EL 7195	28/02/91	467	Deferred	234	117
EL 7297	24/05/91	471	236	118	71

These licences also form part of the McArthur River Joint Venture. On the 24th January, 1992, Ashton Mining Limited, on behalf of the Australian Diamond Exploration Joint Venture (ADEJV), entered into a joint venture with BHP Minerals Pty Ltd, which would allow BHP to earn up to 80% of the base metal rights to these tenements.

This report provides a summary of work undertaken by Ashton Mining and BHP Minerals, over the relinquished areas of ELs 7195 and 7297, during the period 24th May, 1991 to 23rd May, 1995. A statement of expenditure is also included in this report.

2.0 EXPLORATION PROGRAMME - DIAMOND

2.1 Data Review

Prior to commencing field work, a comprehensive data review of results and previous exploration in the tenement area was undertaken. In addition, a study of available photography was made to assist in delineating structural and geomorphic features which could represent kimberlitic intrusives. Areas of low relief and poor drainages were also highlighted as these could contain preserved intrusives which had not shed significantly into the present drainages. Areas that had not been adequately explored were targeted for sampling. Proposed gravel sample locations were plotted in the office on 1:100,000 map sheets.

2.2 Stream Sampling

Reconnaissance stream sampling programmes were undertaken during the reporting period, resulting in thirty-nine samples being collected within the relinquished area of EL 7195, and three samples being collected within the relinquished area of EL 7297.

All samples were forwarded to Ashtons Perth laboratory for analysis (*see Section 2.3*). Processing of these sample returned negative results. A complete listing is provided in Appendix 1. Sample locations are shown on Plans 1 and 2.

2.3 Laboratory Procedure

All samples were processed by the Ashton Mining Limited Laboratory in Perth, where they were concentrated by Wilfley Table and heavy liquid separation techniques.

The heavy liquid used was tetrabromethane with a specific gravity of 2.96. The concentrates were then screened into various size fractions, further concentrated by magnetic and electrostatic separation techniques and a comprehensive grain by grain examination carried out on the minus 1.0mm plus 0.425mm fractions.

3.0 BASE METAL EXPLORATION

3.1 Stream Sediment Geochemistry

Thirty-one stream sediment samples were collected from the relinquished portion of the McArthur River (E7297) tenement during the 1992 field season. These drained Proterozoic Roper Group and Cambrian Bukalara sandstone cut by north-northwesterly trending faults. Results were generally low. An unusually high Pb value of 241 ppm was recorded from a tributory of the McArthur River, east of Emu Creek. Zn values peaked at 40 ppm from Corcoran Creek. A further 15 stream sediment samples were collected

during the 1993 field season to follow-up the Pb anomaly. Results were low and it was concluded that the original high result was due to sample contamination.

All samples were collected with a Kawasaki helicopter hired from Helimuster Pty Ltd, Victoria River Downs, Northern Territory and based at Cape Crawford. Samples were sieved in the field to a -2 mm +20 mesh fraction and approximately 150 grams of sediment was collected.

Samples were analysed by Assaycorp Pty Ltd, Pine Creek, Northern Territory for Cu, Pb, Zn, As, Ag, Mn and Fe. Laboratory procedures and analytical results are presented in Appendix 2. Sample sites are plotted on Figure 3.

3.2 Geophysics

3.2.1 GEOTEM Survey

An airborne TEM (Emu GEOTEM) survey was flown by Geoterrex Pty Ltd, Sydney in July 1993 over the northwestern part of the McArthur River (E7297) tenement. Lines were oriented east-west and spaced 1,000 m apart. Survey specifications are listed in Table 2, flight lines are presented in Figure 4, magnetic contours are presented in Plate 1 and profiles are presented in Appendix 3.

The GEOTEM survey delineated a regional conductor beneath the Cambrian Bukalara Sandstone interpreted to be Mainoru Formation of the Roper Group.

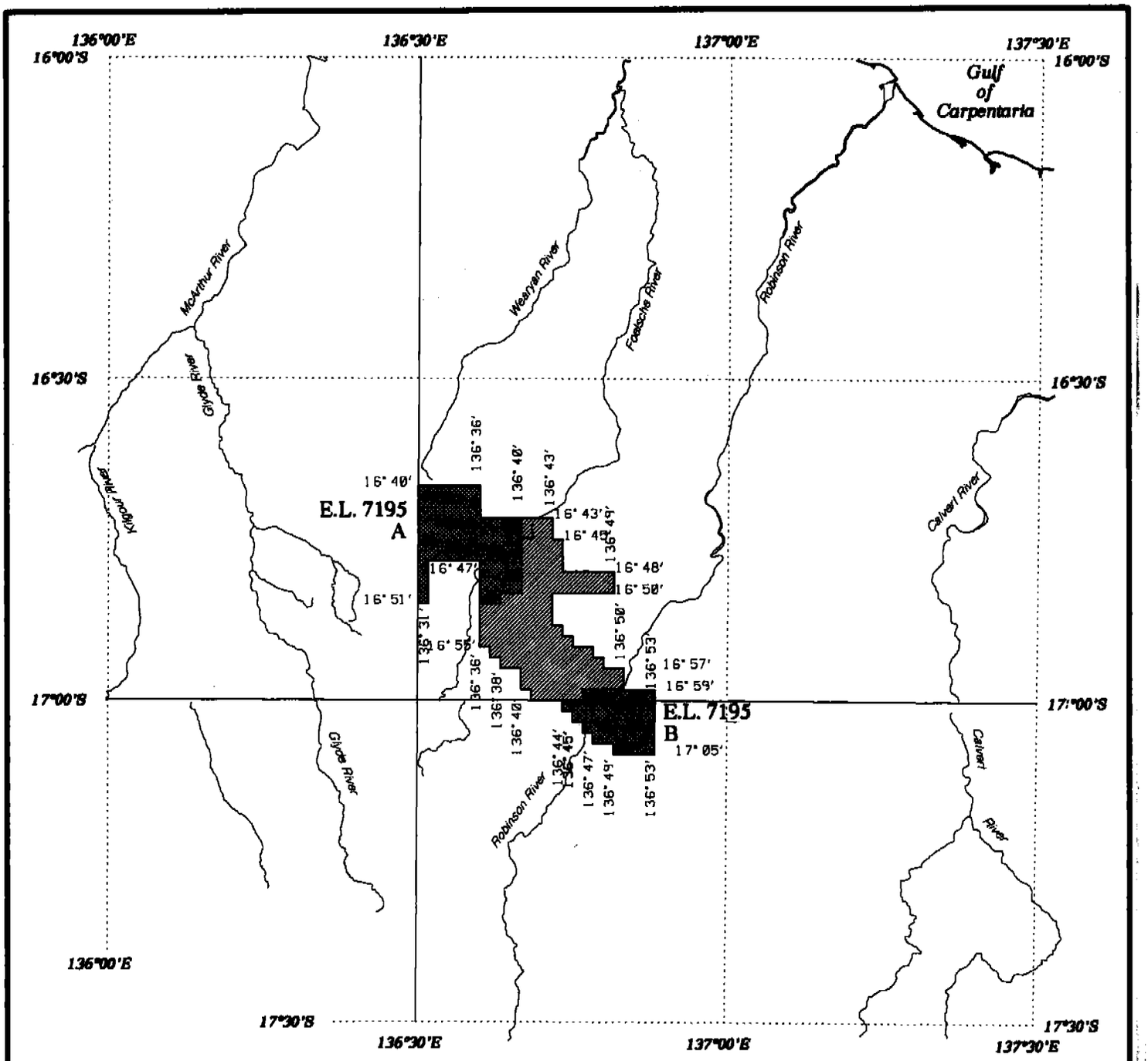
TABLE 2

GEOTEM SPECIFICATIONS

Aircraft	-	CASA C212-200 Turbo Prop
Magnetometer	-	Scintrex Cesium Vapour Optical Absorption
Resolution	-	0.01 nT
Cycle Rate	-	1.0 second
Sample Interval	-	60 metres
Electromagnetic System	-	GEOTEM II Time Domain EM
Transmitter Base Frequency	-	75 Hz
Receiver	-	Horizontal axis coil in towed bird
Cycle Rate	-	0.14 second
Sample Interval	-	9 metres
Window mean delay times (msec)	-	

em1	0.322	em2	0.478	em3	0.634	em4	0.791	em5	0.947
em6	1.129	em7	1.338	em8	1.572	em9	1.832	em10	2.119
em11	2.431	em12	2.770	em13	3.160	em14	3.629	em15	4.228

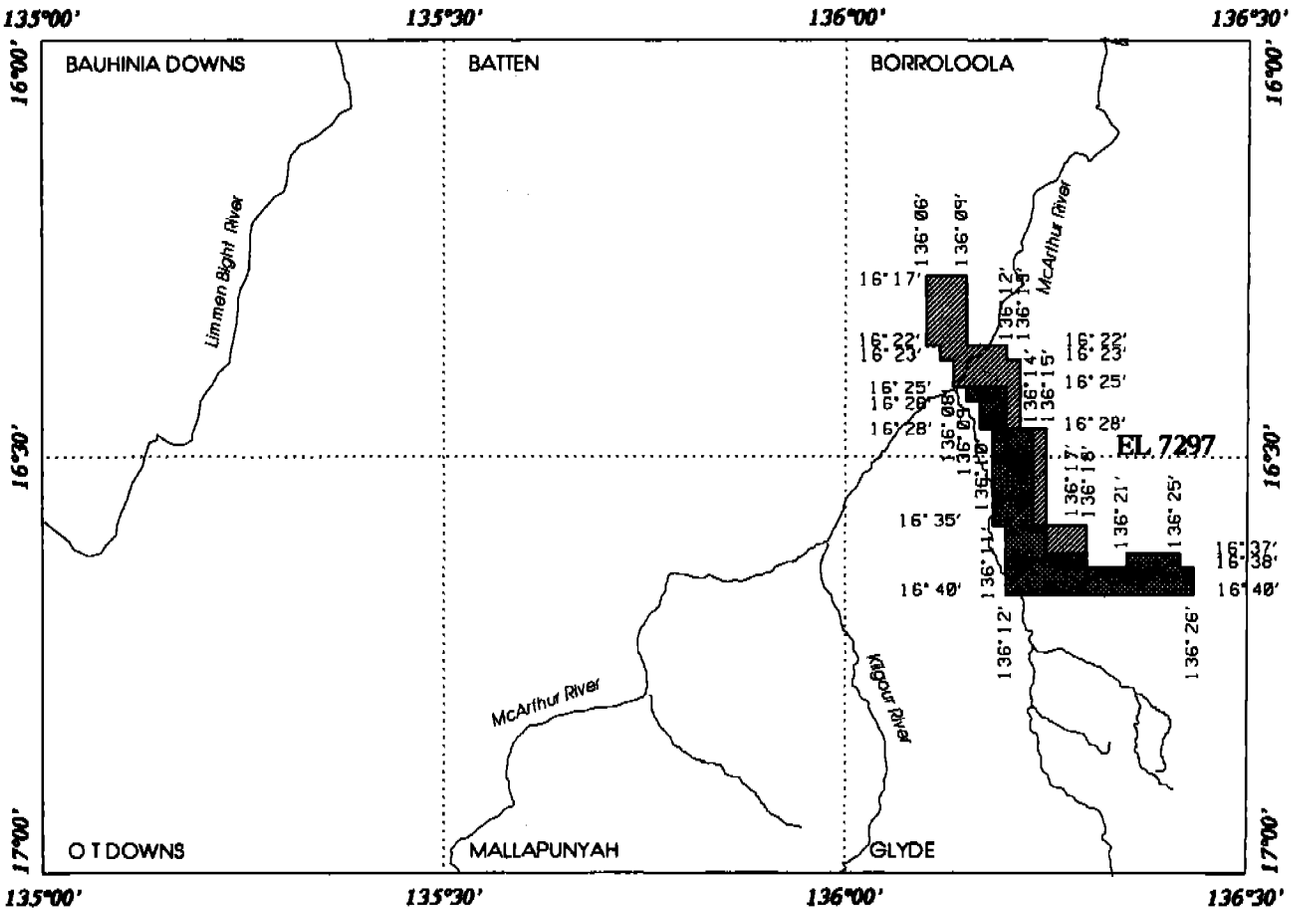
Data Acquisition	-	RMS GR33 Thermal Dot Matrix Recorder
	-	GEODAS Digital Acquisition System
Flight Line Direction	-	090 - 270 degrees
Flight Line Spacing	-	1,000 metres
Mean Terrain Clearance	-	105 metres
Navigation	-	GPS satellite positioning/Doppler



ASHTON MINING LIMITED
A.D.E. JOINT VENTURE

FIGURE 1
EXPLORATION LICENCE 7195
PARTIAL RELINQUISHMENT
LOCATION MAP

AUGUST, 1995



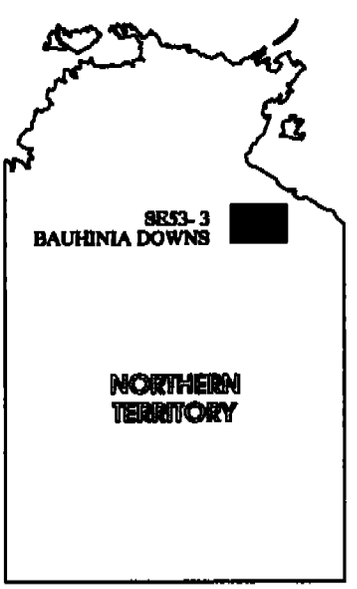
KILOMETRES

0 10 20 30 40 50

1 : 1,000,000

Retained portion

Relinquished portion



ASHTON MINING LIMITED
A.D.E. JOINT VENTURE

FIGURE 1
EXPLORATION LICENCE 7297
LOCATION MAP
PARTIAL RELINQUISHMENT

AUGUST , 1995

610000E 620000E 630000E 640000E 650000E 660000E 670000E

8200000N 8190000N 8180000N 8170000N 8160000N 8150000N

Reduced May 94

DU8351 DU8352 DU8353 DU8354 DU8355 DU8356 DU8357 DU8358 DU8359 DU8360 DU8418

see enlargement for detail

DU8554 DU8555 DU8556 DU8557 DU8558 DU8559 DU8560 DU8561 DU8562 DU8563 DU8564 DU8565 DU8566 DU8419 DU8420

Reduced May 94

ENLARGEMENT

EH0644 EH0645 EH0646 EH0647 EH0648 EH0640 EH0639 EH0641 EH0642 EH0643 EH0638 EH0637 EH0649 EH0650 EH0651 DU8552 DU8553 DU8554

DU8576 DU8580 DU8586

BR1680/320

Reduced May 94

EL7297

NORTHERN TERRITORY

DARWIN Katherine Tennant Creek Alice Springs EL7297

BR1680/320 PROTEM sounding site

DU8580 Stream sediment site

Current tenement

Relinquished tenement

Drainage

Road

Track

Scale 1 : 250,000

0 5 10 15 20 km

AMG Zone 53

BHP

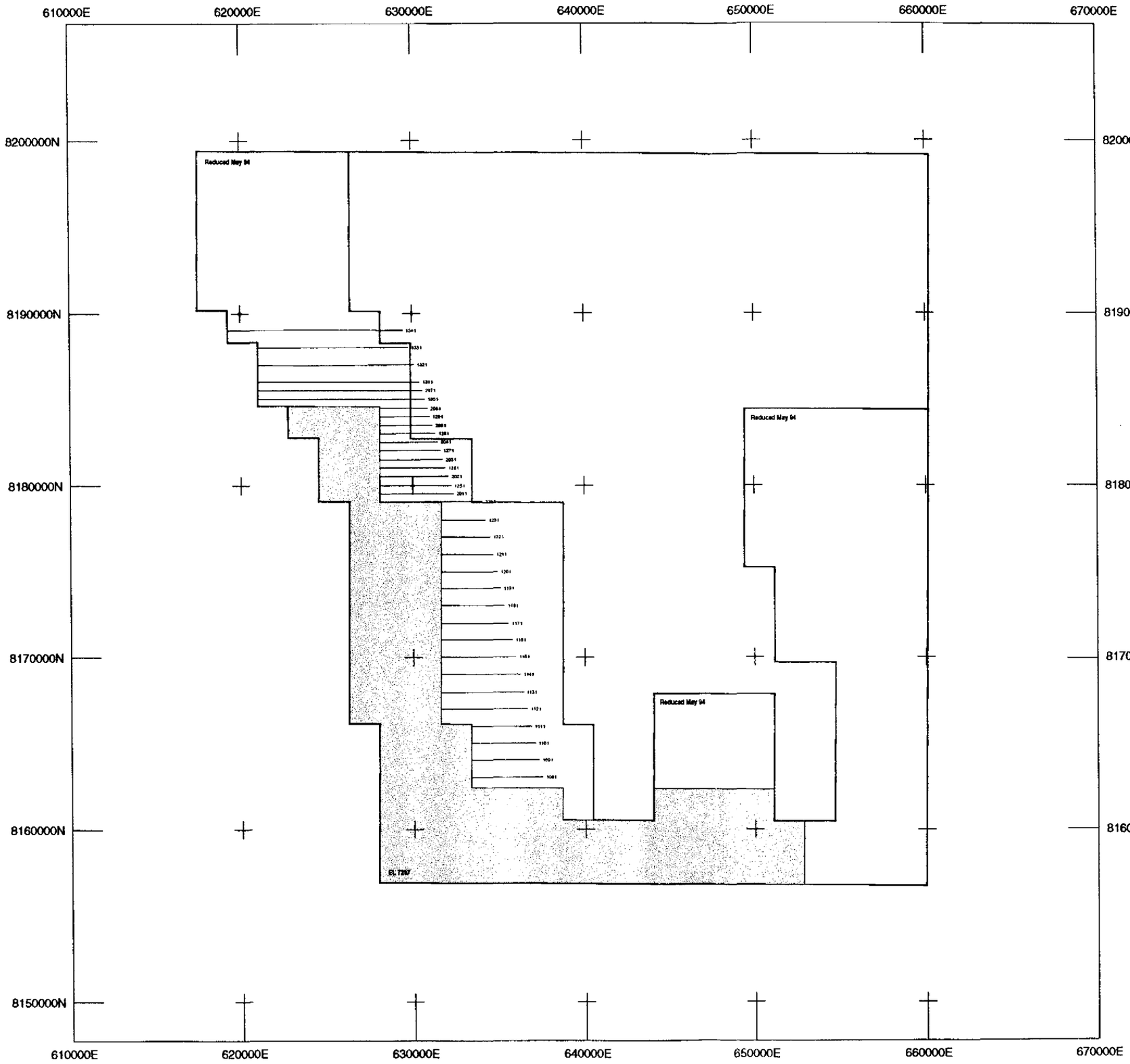
Exploration - BHP Minerals

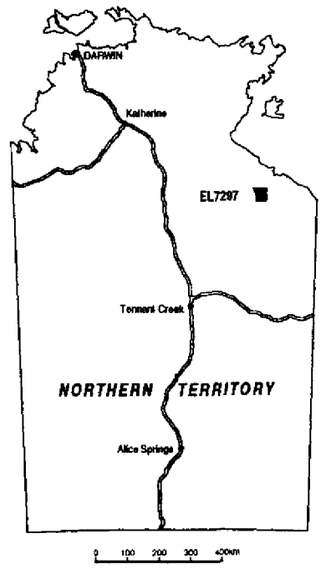
BHP Minerals Pty. Ltd., A.C.N. 006 694 782

McARTHUR RIVER J.V.

EL7297 STREAM SEDIMENT AND PROTEM SOUNDING LOCATIONS

Prepared : B. Jones	Date : 14.8.95	Figure 3.
Drawn : S. Shephard	Revised:	
Centre : Perth	Drg. No.: A3-3973	





Current tenement

Relinquished tenement

Flight line

Scale 1 : 250,000

0 5 10 15 20 km

AMG Zone 53

BHP

Exploration - BHP Minerals

BHP Minerals Pty. Ltd., A.C.N. 008 694 782

McARTHUR RIVER J.V.

EL7297 AIRBORNE GEOTEM SURVEY FLIGHT LINES

Prepared : B. Jones	Date : 14.8.95
Drawn : S. Shephard	Revised:
Centre : Perth	Drg. No.: A3-3974

Figure 4.

3.2.2 PROTEM Soundings

One PROTEM sounding was completed on McArthur River (E7297). The work was completed by Geoterrex Pty Ltd, Sydney. Survey specifications are outlined in Table 3. Apparent resistivity plot and inversion results are presented in Appendix 4. The location of the sounding site is plotted on Figure 3.

The soundings followed-up the regional conductor identified by the Emu GEOTEM survey. This confirmed the interpretation that this conductor was due to the presence of the Mainoru Formation of the Roper Group beneath Cambrian Bukalara Sandstone at a depth of 120m.

4.0 EXPLORATION EXPENDITURE

Exploration expenditure for work undertaken in the relinquished areas of ELs 7195 and 7297 amounted to $ 60,873. A detailed breakdown of expenditure is given in Appendix 5.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Diamond Exploration

Results received from the forty-two samples, taken within the relinquished areas of EL 7195 and EL 7297, were all negative. No further work was warranted in these areas, and relinquishment was recommended.

TABLE 3

TEM SOUNDINGS SURVEY SPECIFICATIONS

Els	-	7201, 7816
Contractor	-	**GEOTERREX PTY LTD**, Sydney
Instrument	-	PROTEM receiver. TEM 37 transmitter
Loop Size/Configuration	-	300 x 300 m/fixed. Diamond Shaped
Base Frequency	-	25, 6.25 Hz. N = 20
Receiver Spacing/Components	-	300 m/Z only
Date	-	July - August 1994
Coverage	-	20 loops
		Both in- and out-of-loop readings
Totals	-	20 soundings

5.2 Base Metal Exploration

The McArthur River (E7297) exploration licence is situated in the mid-Proterozoic McArthur Basin. Exposure in the licence area is dominated by Cambrian Bukalara Sandstone cover. Stream sediment sampling draining north-northwesterly trending structures that cut the Bukalara Sandstone returned subdued analytical results. Airborne GEOTEM and follow-up ground PROTEM soundings have found the Bukalara Sandstone in this area to be underlain by a regional conductive unit interpreted to be Mainoru Formation of the Roper Group. This is not considered to be prospective for sediment hosted Pb-Zn mineralisation and the area has therefore been relinquished.

No work was completed on the relinquished portion of the Calvert Hills (E7195) exploration licence.

APPENDIX 1

Sample Results

EXPLORATION LICENCE 7195

SAMPLING RESULTS IN RELINQUISHED AREA

Sample	Result	Type	Diamond		Chromite	Other
			Micro	Macro		
RBR 0069	Neg	G	-	-	-	-
RBR 0072	Neg	G	-	-	-	-
RBR 0104	Neg	G	-	-	-	-
RBR 0105	Neg	G	-	-	-	-
RBR 0106	Neg	G	-	-	-	-
RBR 0107	Neg	G	-	-	-	-
RBR 0108	Neg	G	-	-	-	-
RBR 0115	Neg	G	-	-	-	-
RBR 0117	Neg	G	-	-	-	-
RBR 0118	Neg	G	-	-	-	-
RBR 0119	Neg	G	-	-	-	-
RBR 0121	Neg	G	-	-	-	-
RBR 0122	Neg	G	-	-	-	-
RBR 0123	Neg	G	-	-	-	-
RBR 0124	Neg	G	-	-	-	-
RBR 0125	Neg	G	-	-	-	-
RBR 0126	Neg	G	-	-	-	-
RBR 0127	Neg	G	-	-	-	-
RBR 0129	Neg	G	-	-	-	-
RBR 0130	Neg	G	-	-	-	-
RBR 0131	Neg	G	-	-	-	-
RBR 0132	Neg	G	-	-	-	-
RBR 0133	Neg	G	-	-	-	-
RBR 0196	Neg	G	-	-	-	-
RBR 0405	Neg	G	-	-	-	-
RBR 0406	Neg	G	-	-	-	-
RBR 0407	Neg	G	-	-	-	-
RBR 0408	Neg	G	-	-	-	-
RBR 0409	Neg	G	-	-	-	-
RBR 0410	Neg	G	-	-	-	-
RBR 0411	Neg	G	-	-	-	-
RBR 0412	Neg	G	-	-	-	-
RBR 0413	Neg	G	-	-	-	-
RBR 0414	Neg	G	-	-	-	-
RBR 0415	Neg	G	-	-	-	-
RBR 0416	Neg	G	-	-	-	-
RBR 0417	Neg	G	-	-	-	-
RBR 0418	Neg	G	-	-	-	-
RBR 0419	Neg	G	-	-	-	-

SAMPLE METHODS/TYPES

G = Gravel	BG = Bulk gravel	LG = Loam on grid
L = Loam	BL = Bulk loam	L PF = Loam on photofeature
R = Rock	BT = Bulk trench	DS = Drill spoil
P = Pit	TR = Trench/costean	

EXPLORATION LICENCE 7297

SAMPLING RESULTS IN RELINQUISHED AREA

Sample	Result	Type	Diamond		Chromite	Other
			Micro	Macro		
BAU 2899	Neg	G	-	-	-	-
BAU 2904	Neg	G	-	-	-	-
BAU 2914	Neg	G	-	-	-	-

SAMPLE METHODS/TYPES

G = Gravel	BG = Bulk gravel	LG = Loam on grid
L = Loam	BL = Bulk loam	L PF = Loam on photofeature
R = Rock	BT = Bulk trench	DS = Drill spoil
P = Pit	TR = Trench/costean	

APPENDIX 2

Stream Sediment Geochemistry
Laboratory Procedures and Analytical Results

ANALYTICAL RESULTS

All geochemical analyses were carried out at Assaycorp Pty Ltd, Pine Creek, Northern Territory. Analytical methods, elements determined and detection limits used at Assaycorp were:

Stream Sediments:

AAS/MA-3	-	Cu	2	ppm
	-	Pb	2	ppm
	-	Zn	1	ppm
	-	Ag	0.5	ppm
	-	Mn	2	ppm
	-	Fe	20	ppm
	-	As	2	ppm
FA50	-	Au	1	ppm

Analytical methods used are as follows:

Base Metal Assays - Cu, Pb, Zn, Ag, Mn, Fe

A 0.3 g sample is digested in a triple mixture of hydrochloric, nitric and perchloric acids at 180°C. The cooled and dried residue is leached with concentrated HC1 acid at 90°C and diluted with distilled water. After cooling, the sample is mixed and left to stand for sediment settling. Elements are read on an atomic absorption spectrophotometer (AAS) against aqueous standards of pure metals for each element. Cu, Pb, Zn, Ag, Co and Ni are read using an air acetylene flame and Fe and Mn using a nitrous oxide - acetylene flame.

Hydride Forming Element Assays - As

A 1:10 dilution is taken from the base metal digestion to give a concentration of 10% HC1 and 0.2% KI solution. The solution is pumped into a GBC model HG 3000 hydride generator and mixed with concentrated HC1 acid and Na BH4. The gas which is given off passes through a gas-liquid separator and the gas passes to a quartz cell on the AAS for reading.

Au Assay

A 50 g sample aliquot is mixed with a fire assay flux and fused in a crucible furnace at 1000°C for 50 minutes. The sample is poured and cooled and the lead button and slag are separated. The button is cupelled in a Mg cupel at 1050°C. The resulting dore prill is treated with nitric acid to dissolve Au. The Au solution is diluted and DIBK with 1% Aliquot 336 is added. Au is extracted into organic phase with mixing and determined using extracted standards with an AAS.

LAB BATCH	LAB NAME	FRACTION	SAMPLE NO.	SAMPLE TYPE	EASTING	NORTHING	ZONE	YEAR	Cu	Zn	Pb	Fe	Mn	Ars	Au	Au_rep	Ag
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8360	SSED	619438	8192110	53	1992	2	5	8	38200	86	6	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8359	SSED	619800	8193831	53	1992	2	4	3	31100	45	7	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8358	SSED	619509	8192364	53	1992	2	5	2	39700	113	8	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8357	SSED	620047	8193596	53	1992	7	6	8	50200	119	8	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8356	SSED	621165	8194005	53	1992	2	6	2	38200	113	6	-1	-1	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8355	SSED	618565	8194142	53	1992	5	8	15	126000	139	26	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8354	SSED	619519	8196002	53	1992	5	6	12	36400	110	6	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8353	SSED	619693	8196195	53	1992	-2	5	10	24300	26	6	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8352	SSED	618729	8196209	53	1992	3	6	10	28900	77	7	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8351	SSED	618854	8196370	53	1992	2	5	7	8699	109	5	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8586	SSED	631931	8166562	53	1992	2	2	2	9008	77	5	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8580	SSED	632039	8169251	53	1992	4	4	9	9368	105	6	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8576	SSED	631981	8172845	53	1992	17	9	5	16600	242	7	0	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8566	SSED	629046	8181579	53	1992	2	6	3	15900	86	3	-1	-1	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8565	SSED	629216	8181702	53	1992	9	8	3	17800	231	3	0	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8564	SSED	628537	8182771	53	1992	3	3	-2	17800	131	3	0	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8563	SSED	628774	8183088	53	1992	3	3	-2	13100	76	3	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8561	SSED	626337	8184959	53	1992	4	4	6	83300	146	13	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8560	SSED	626560	8185006	53	1992	10	5	4	26000	263	5	0	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8559	SSED	629379	8185312	53	1992	6	4	3	26200	132	4	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8558	SSED	629421	8185579	53	1992	2	5	-2	21700	93	4	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8557	SSED	628256	8185489	53	1992	6	12	4	132000	278	20	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8556	SSED	626544	8185786	53	1992	4	7	4	30800	130	6	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8555	SSED	625094	8186064	53	1992	10	8	5	57500	195	12	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8554	SSED	625956	8190293	53	1992	8	27	9	25400	267	4	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8553	SSED	623904	8188853	53	1992	11	40	24	29900	513	6	-1	-1	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8552	SSED	622788	8190028	53	1992	7	10	9	32300	411	4	0	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8551	SSED	621050	8189019	53	1992	16	17	241	18800	288	5	0	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8420	SSED	625763	8186556	53	1992	-2	4	-2	26700	50	6	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8419	SSED	625903	8186859	53	1992	6	4	6	43900	141	9	-1	0	-1
AC 05517	Assaycorp -Pine Crk	+80#-2mm	DU8418	SSED	618741	8191102	53	1992	-2	5	6	16300	63	2	-1	0	-1
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0637	SSED	621130	8189030	53	1993	5	14	-2	36800	46	8	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0640	SSED	620770	8189200	53	1993	3	16	-2	50100	71	4	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0641	SSED	620880	8189310	53	1993	4	10	-2	25900	52	5	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0639	SSED	620920	8189210	53	1993	5	17	-2	26200	55	3	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0638	SSED	621000	8189050	53	1993	3	10	-2	33700	72	3	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0642	SSED	620730	8189370	53	1993	3	9	-2	10700	32	-1	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0644	SSED	620400	8189950	53	1993	1	19	-2	35300	74	5	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0643	SSED	620380	8189590	53	1993	2	8	-2	14700	21	1	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0651	SSED	621220	8187520	53	1993	3	9	-2	19800	32	3	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0650	SSED	621350	8188380	53	1993	3	15	-2	60100	39	13	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0649	SSED	621210	8188480	53	1993	1	12	-2	54900	35	9	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0648	SSED	620090	8189420	53	1993	2	8	-2	17100	41	1	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0647	SSED	620000	8189540	53	1993	2	9	-2	18000	19	1	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0646	SSED	620400	8189700	53	1993	3	14	8	28600	56	7	0	0	0
AC 09899	Assaycorp -Pine Crk	+20#-2mm	EH0645	SSED	620320	8189930	53	1993	2	9	12	19400	35	5	0	0	0

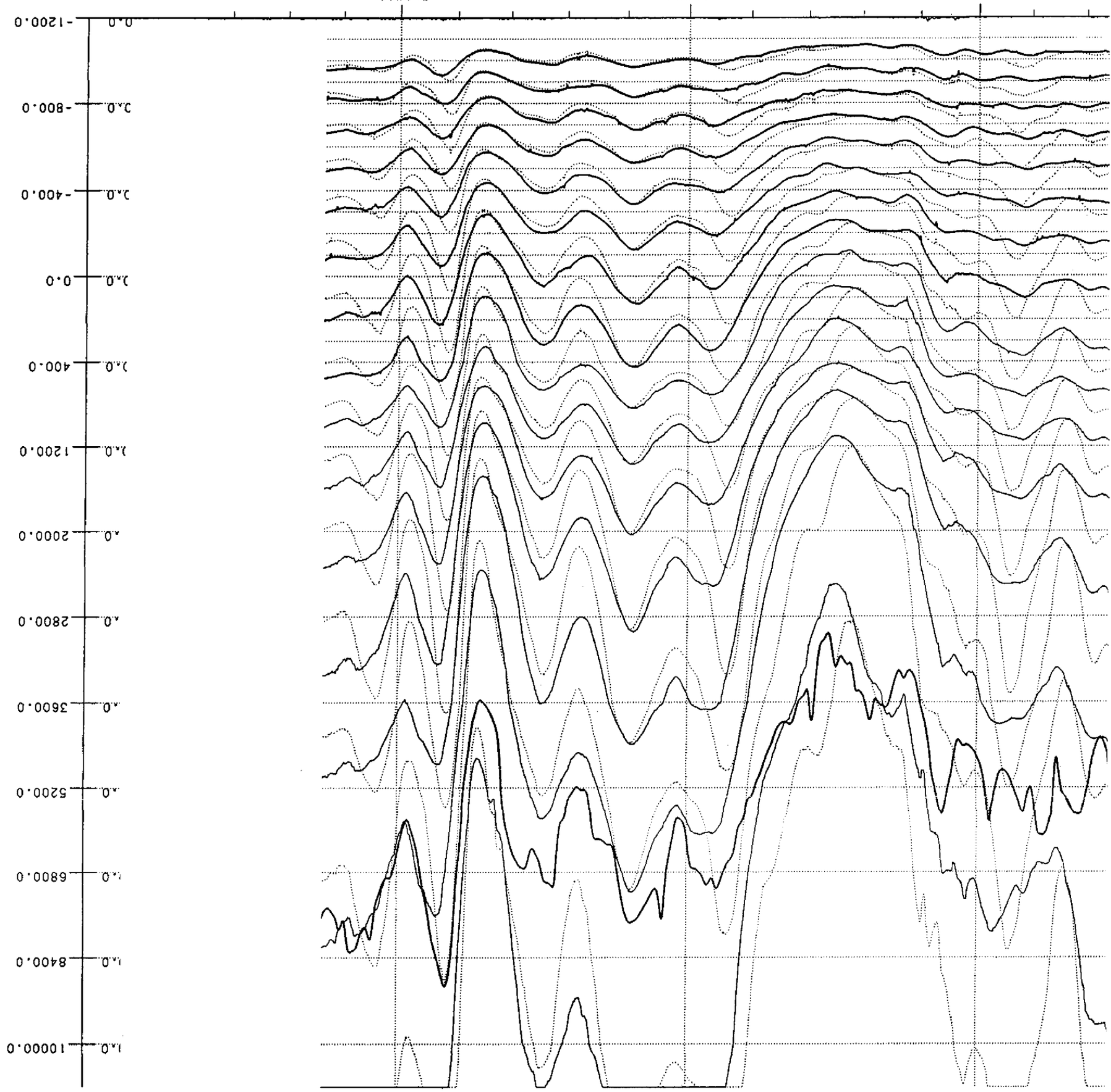
APPENDIX 3

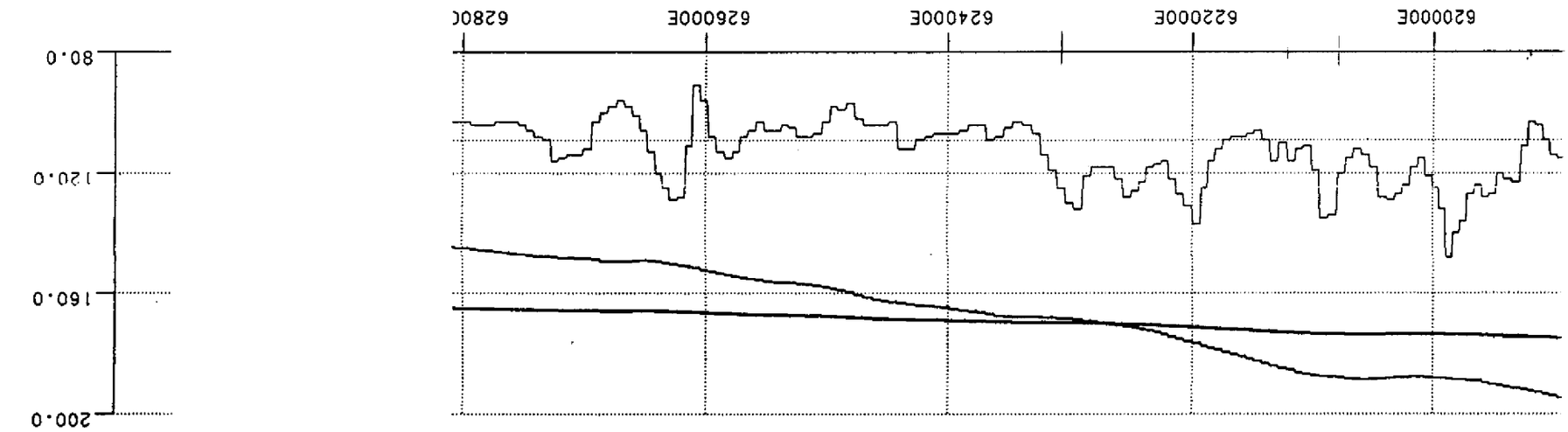
GEOTEM Profiles

LINE 134/1
AVERAGE NORTHING = 8189005N

2-702 EMU 75 Hz (2 msec) GEOTEM

SCALE 1:50,000

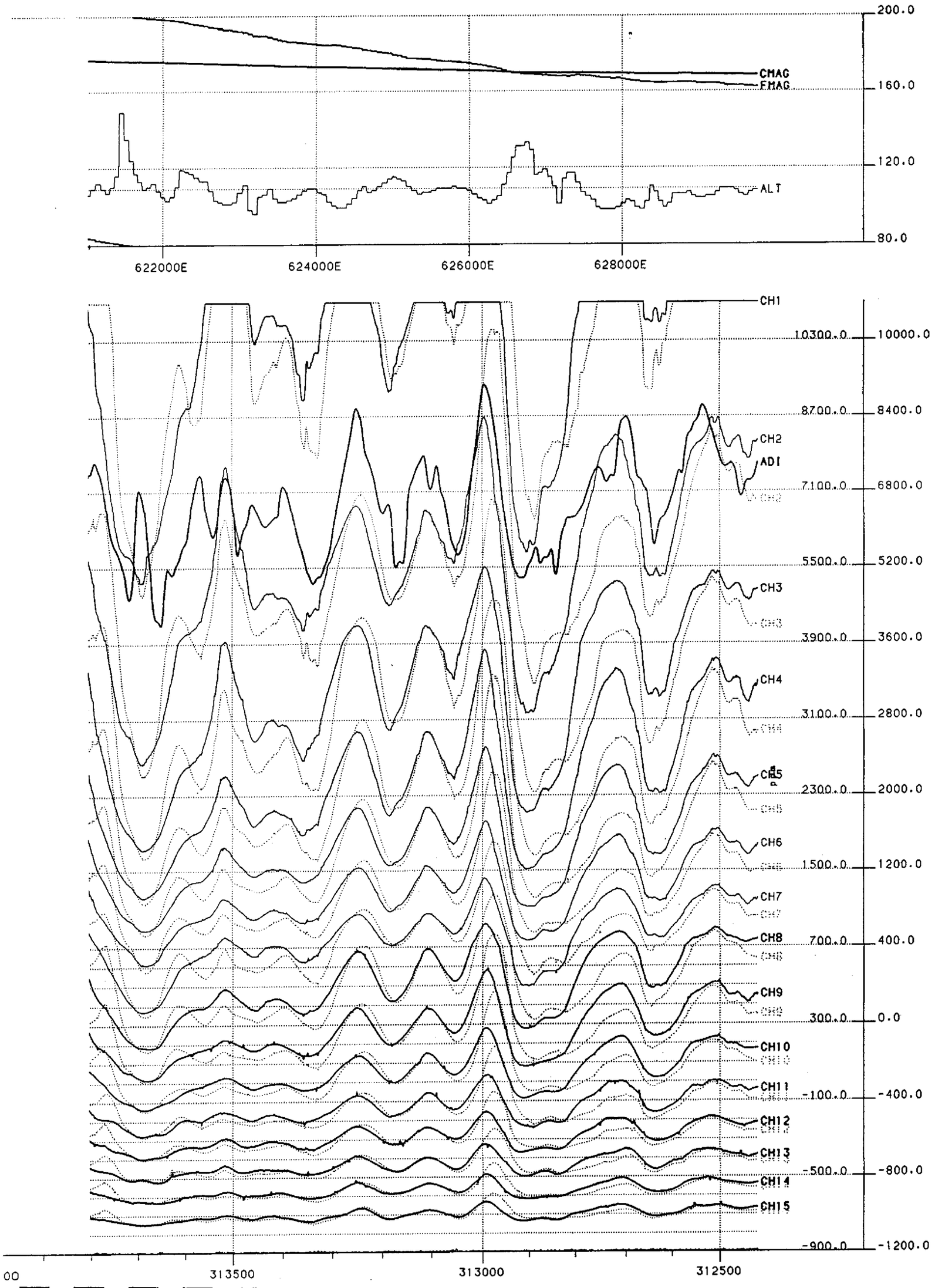




BHP MINERALS LIMITED

2-702 EMU 75 Hz (2 msec) GEOTEM

LINE 133/1
AVERAGE NORTHING = 8187991N

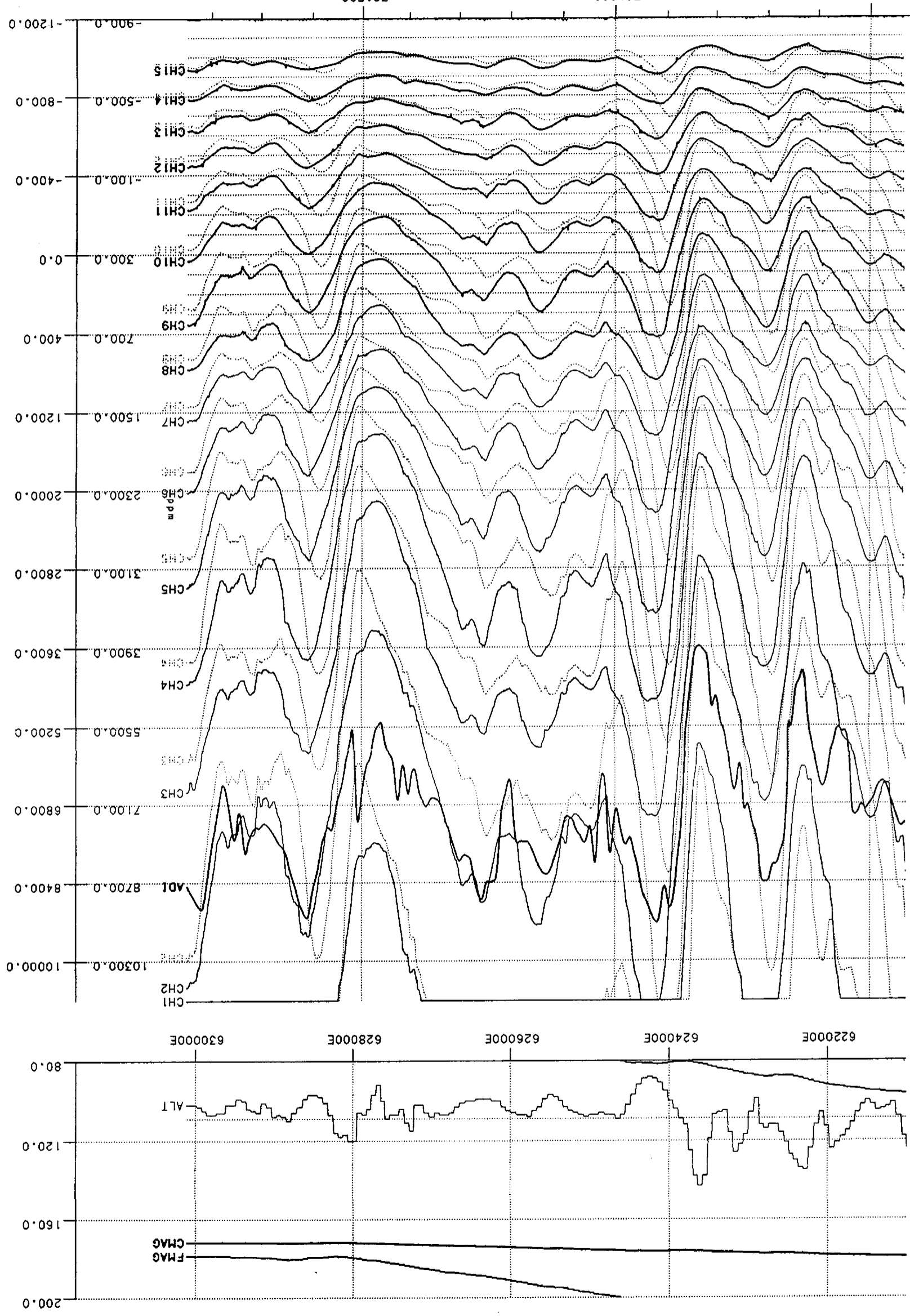


BHP MINERALS LIMITED

2-702 EMU 75 Hz (2 msec) GEOTEM

LINE 132/1
AVERAGE NORTHING = 8187014N

SCALE 1:50,000



BHP MINERALS LIMITED

2-702 EMU 75 Hz (2 msec) GEOTEM

LINE 131/1
AVERAGE NORTHING = 8186012N

FMAG
CMAG
ALT
200.0
160.0
120.0
80.0
metres
622000E
624000E
626000E
628000E
630000E

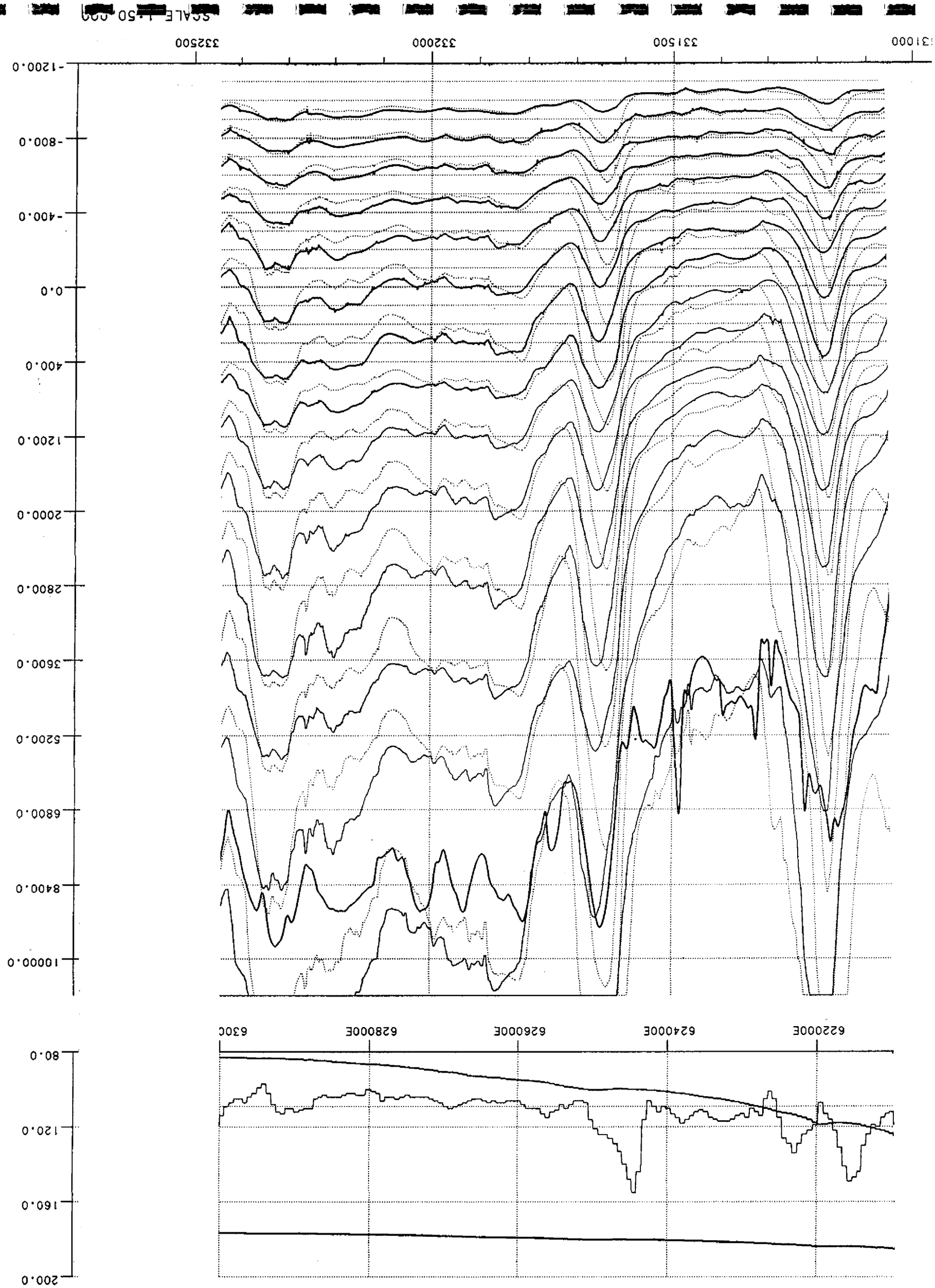
CH1
CH2
CH3
CH4
CH5
CH6
CH7
CH8
CH9
CH10
CH11
CH12
CH13
CH14
CH15
ADI
10300.0
8700.0
7100.0
5500.0
3900.0
3100.0
2300.0
1500.0
700.0
300.0
-100.0
-500.0
-900.0
10000.0
8400.0
6800.0
5200.0
3600.0
2800.0
2000.0
1200.0
400.0
0.0
-400.0
-800.0
-1200.0
ppm
ppm
324500
324000
323500
323000

SCALE 1:50,000

RHP MINERALS LIMITED

2-702 EMU 75 Hz (2 msec) GEOTEM

LINE 207/1
AVERAGE NORTHING = 8185514N



BHP MINERALS LIMITED

2-702 EMU 75 Hz (2 msec) GEOTEM

LINE 130/1
AVERAGE NORTHING = 8185016N

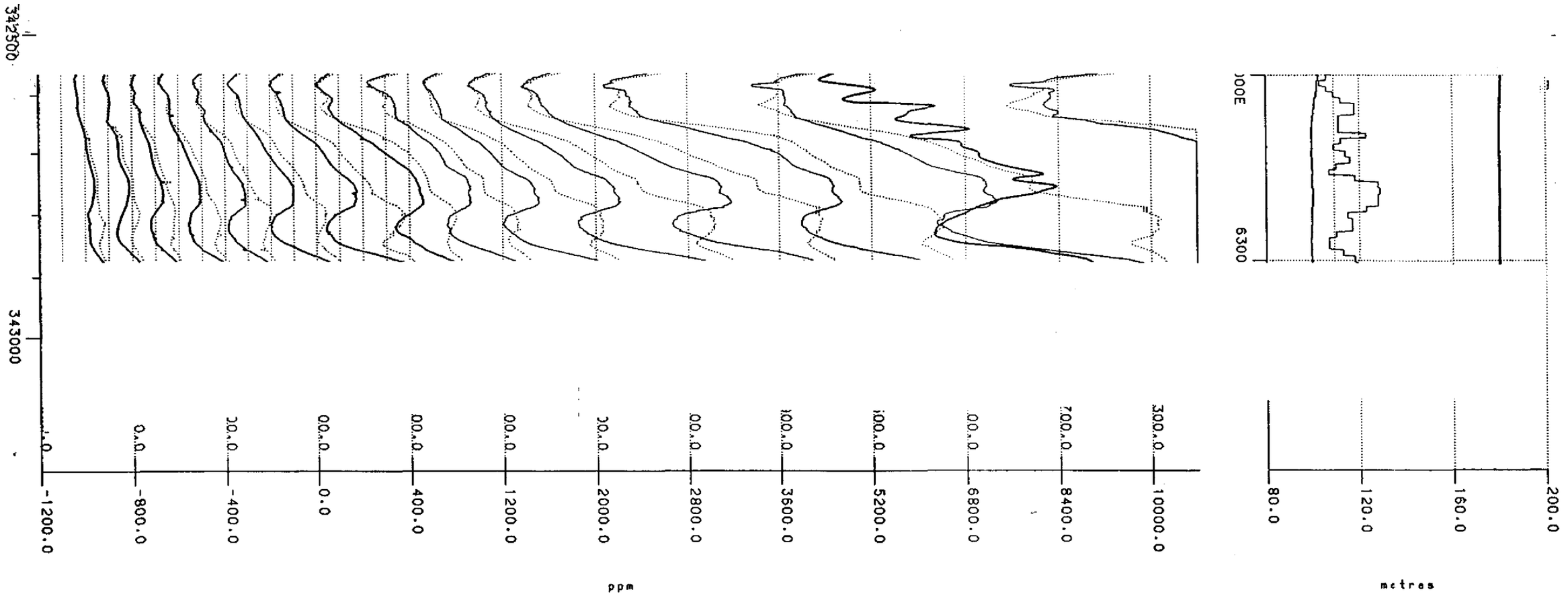
622000E
624000E
626000E
628000E
6300

200.0
160.0
120.0
80.0
metres

335000
334500
334000

10000.0
8400.0
6800.0
5200.0
3600.0
2800.0
2000.0
1200.0
400.0
0.0
-400.0
-800.0
-1200.0
ppm

SCALE 1:50,000



LINE 206/1
AVERAGE NORTHING = 8184522N

2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED

LINE 129/1
AVERAGE NORTHING = 8184000N

2-702 EMU 75 Hz (2 msec) GEOTEM

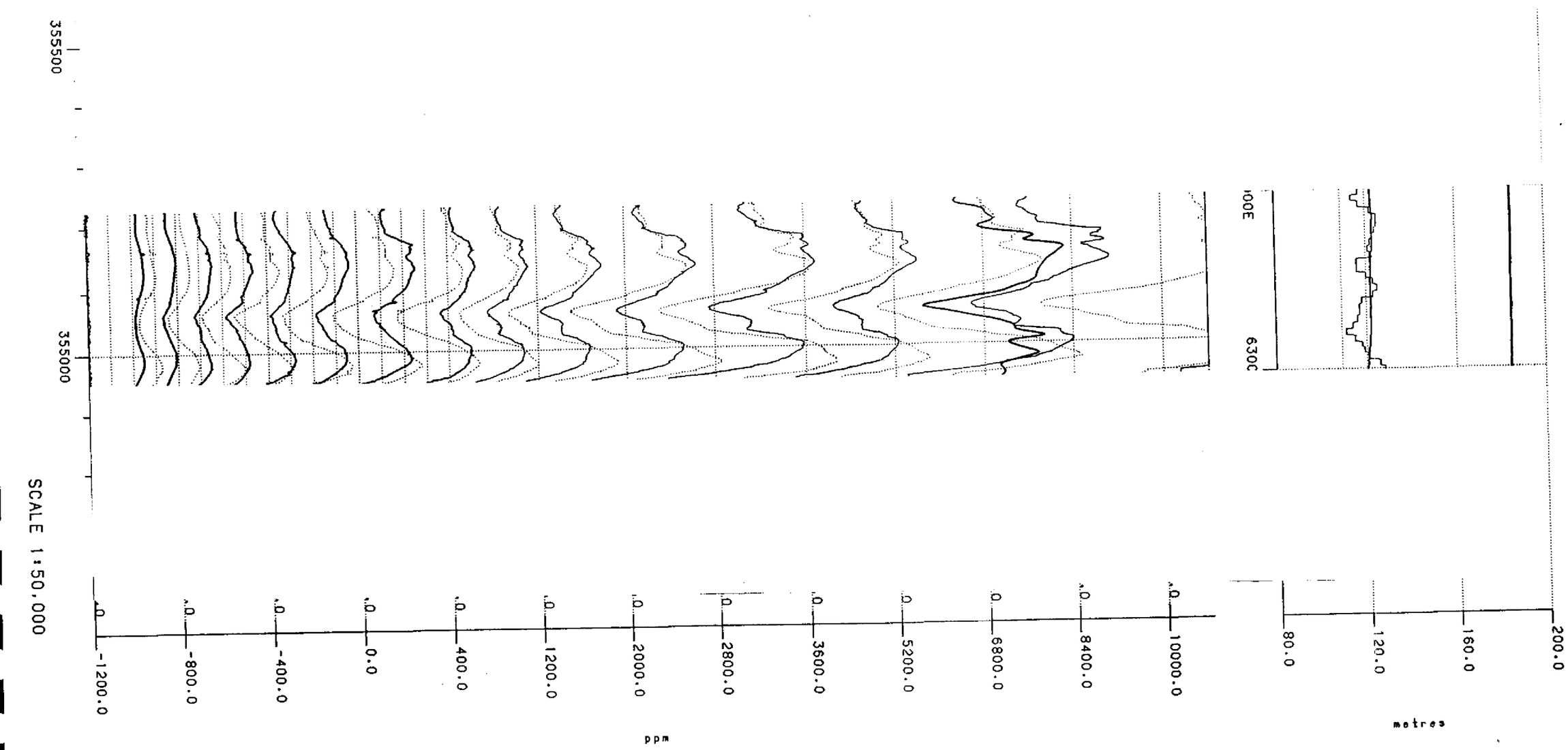
BHP MINERALS LIMITED

SCALE 1:50,000

LINE 205/1
AVERAGE NORTHING = 8183499N

2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED

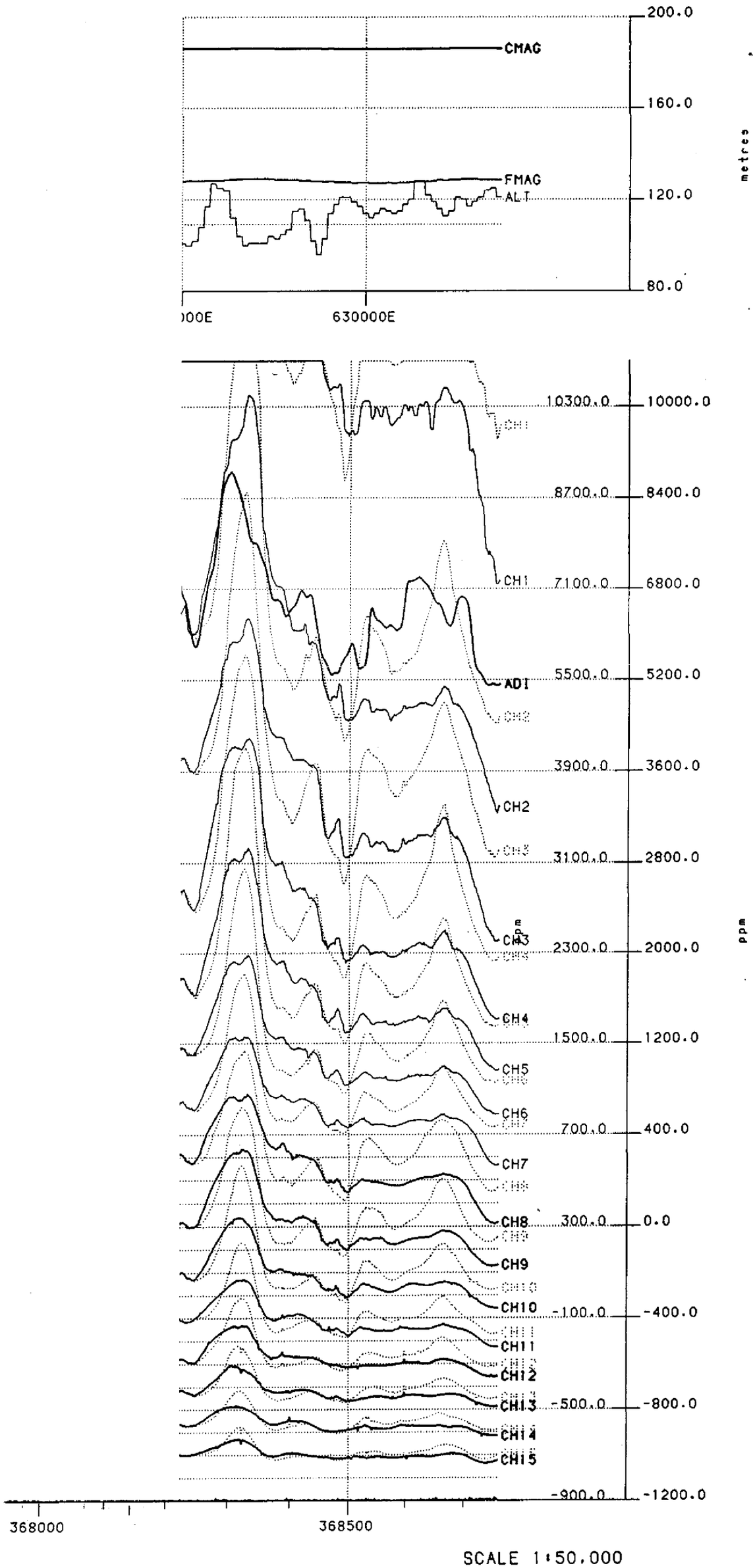


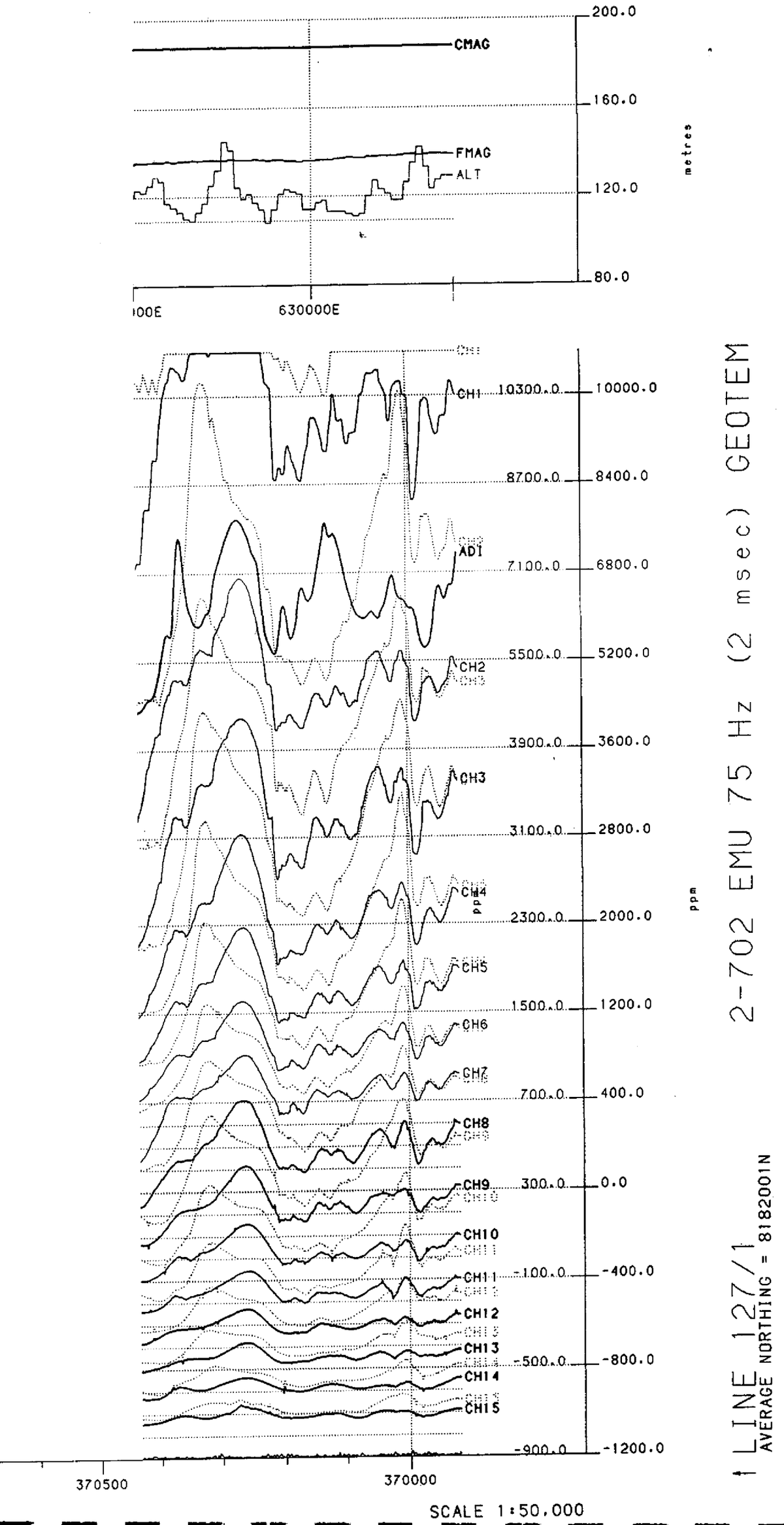
SCALE 1:50,000

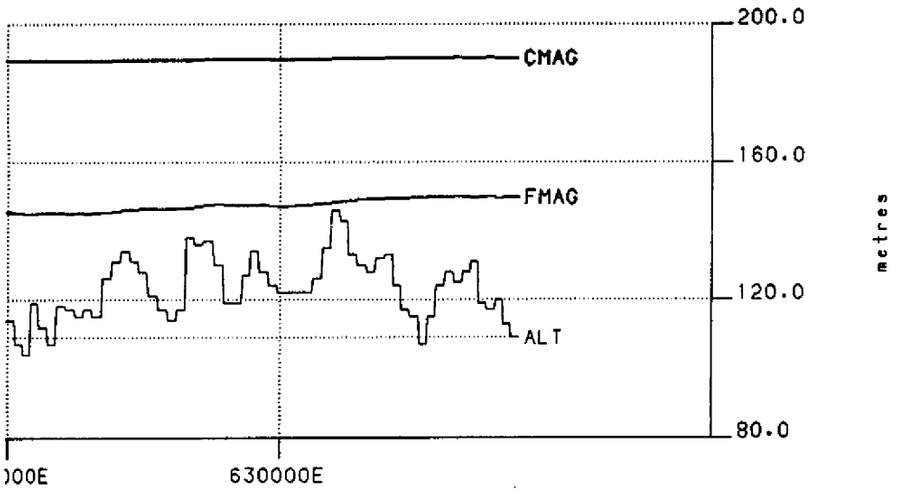
LINE 128/1
AVERAGE NORTHING = 8183007N

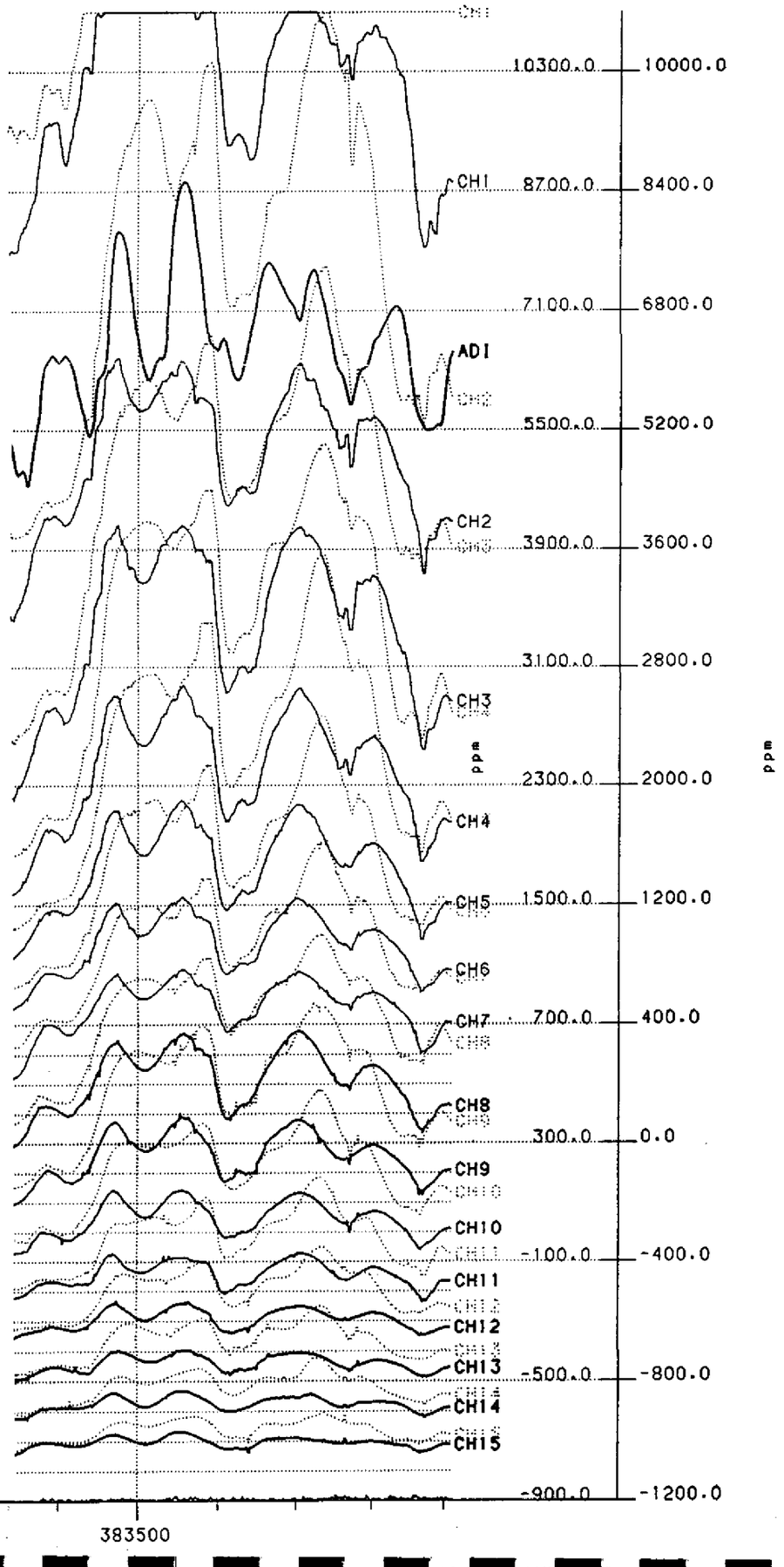
2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED


200.0
160.0
120.0
80.0
CMAG
FMAG
ALT
metres
000E
630000E
10300.0
10000.0
8700.0
8400.0
7100.0
6800.0
5500.0
5200.0
3900.0
3600.0
3100.0
2800.0
2300.0
2000.0
1500.0
1200.0
700.0
400.0
300.0
0.0
-100.0
-400.0
-500.0
-800.0
-900.0
-1200.0
CH1
ADI
CH2
CH3
CH4
CH5
CH6
CH7
CH8
CH9
CH10
CH11
CH12
CH13
CH14
CH15
ppm
368000
368500
SCALE 1:50,000
LINE 204/1
AVERAGE NORTHING = 8182500N
2-702 EMU 75 Hz (2 msec) GEOTEM
BHP MINERALS LIMITED


200.0
CMAG
160.0
FMAG
ALT
120.0
metres
80.0
630000E
CH1
10300.0
10000.0
8700.0
8400.0
ADI
7100.0
6800.0
CH2
5500.0
5200.0
CH3
3900.0
3600.0
CH4
3100.0
2800.0
ppm
CH5
2300.0
2000.0
CH6
1500.0
1200.0
CH7
CH8
700.0
400.0
CH9
300.0
0.0
CH10
CH11
-100.0
-400.0
CH12
CH13
-500.0
-800.0
CH14
CH15
-900.0
-1200.0
370500
370000
SCALE 1:50,000
2-702 EMU 75 Hz (2 msec) GEOTEM
BHP MINERALS LIMITED
LINE 127/1
AVERAGE NORTHING = 8182001N



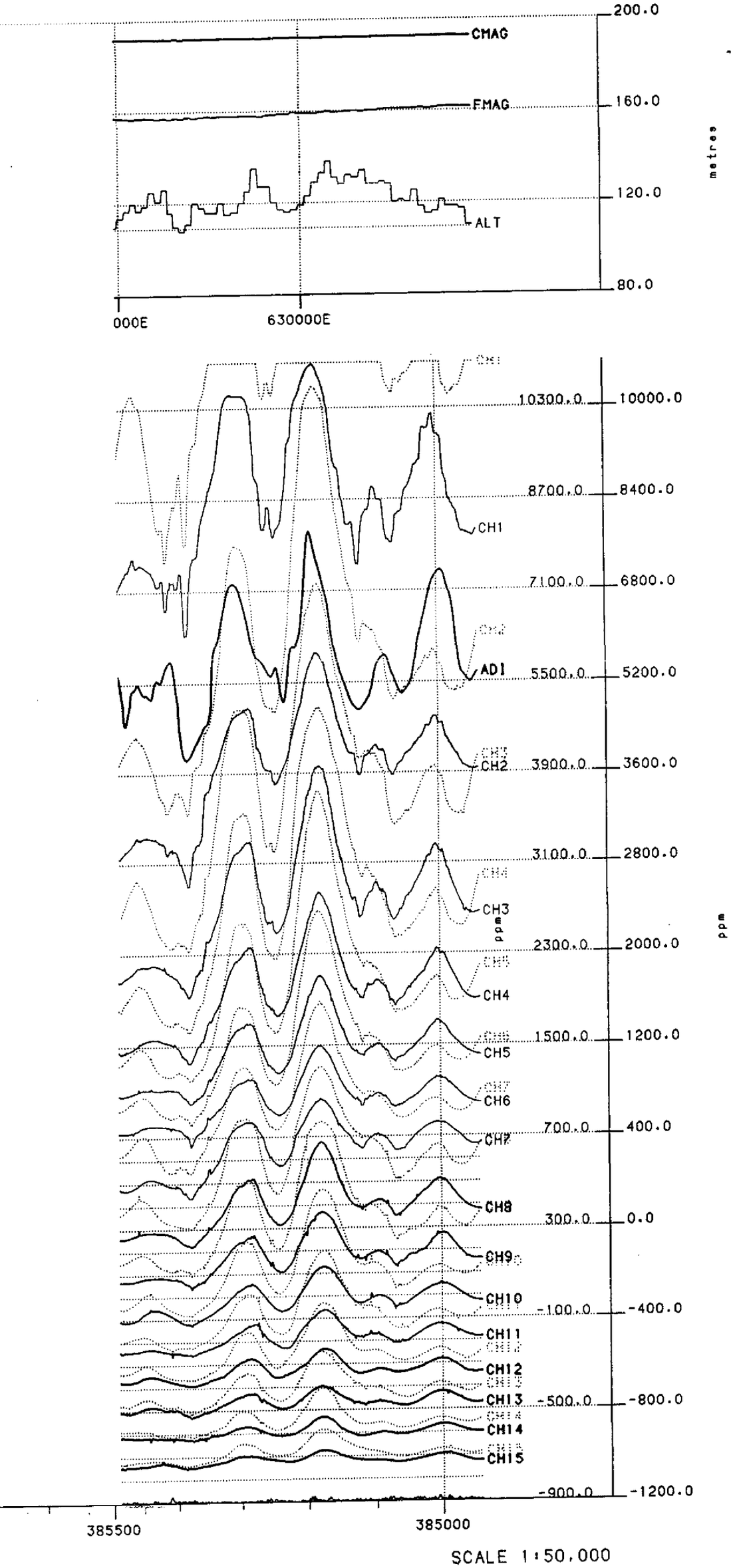


2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED

LINE 203/1
AVERAGE NORTHING = 8181507N

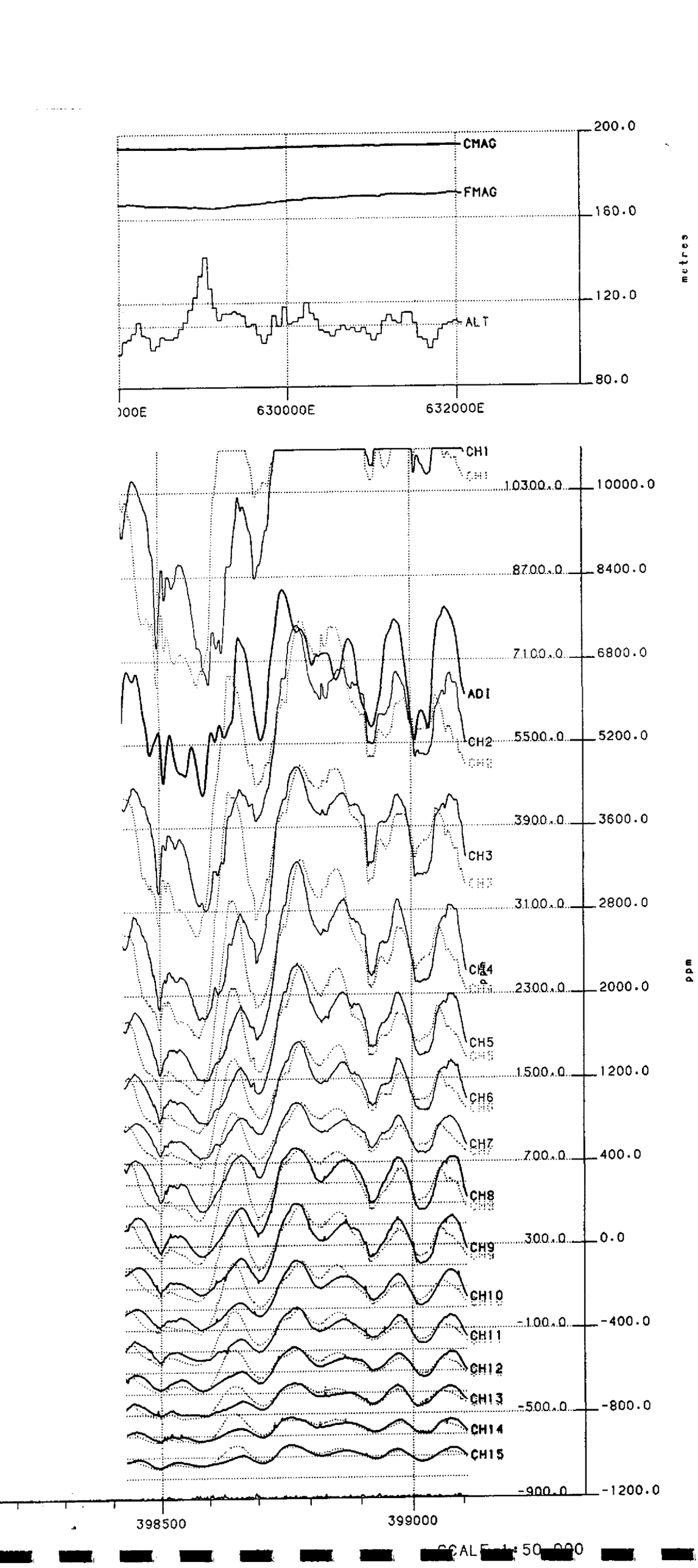
SCALE 1:50,000

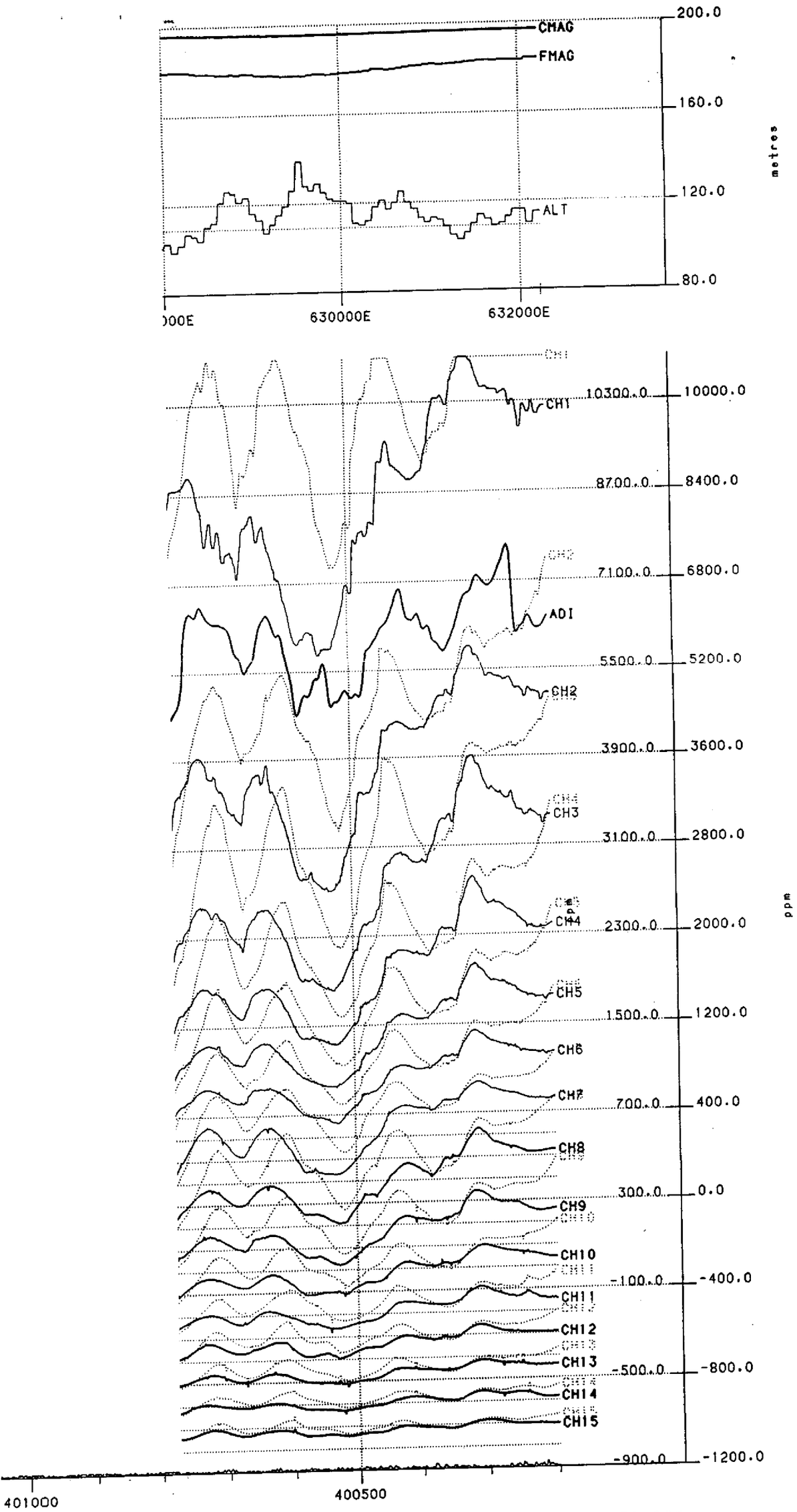


2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED

LINE 126/1
AVERAGE NORTHING = 8181007N

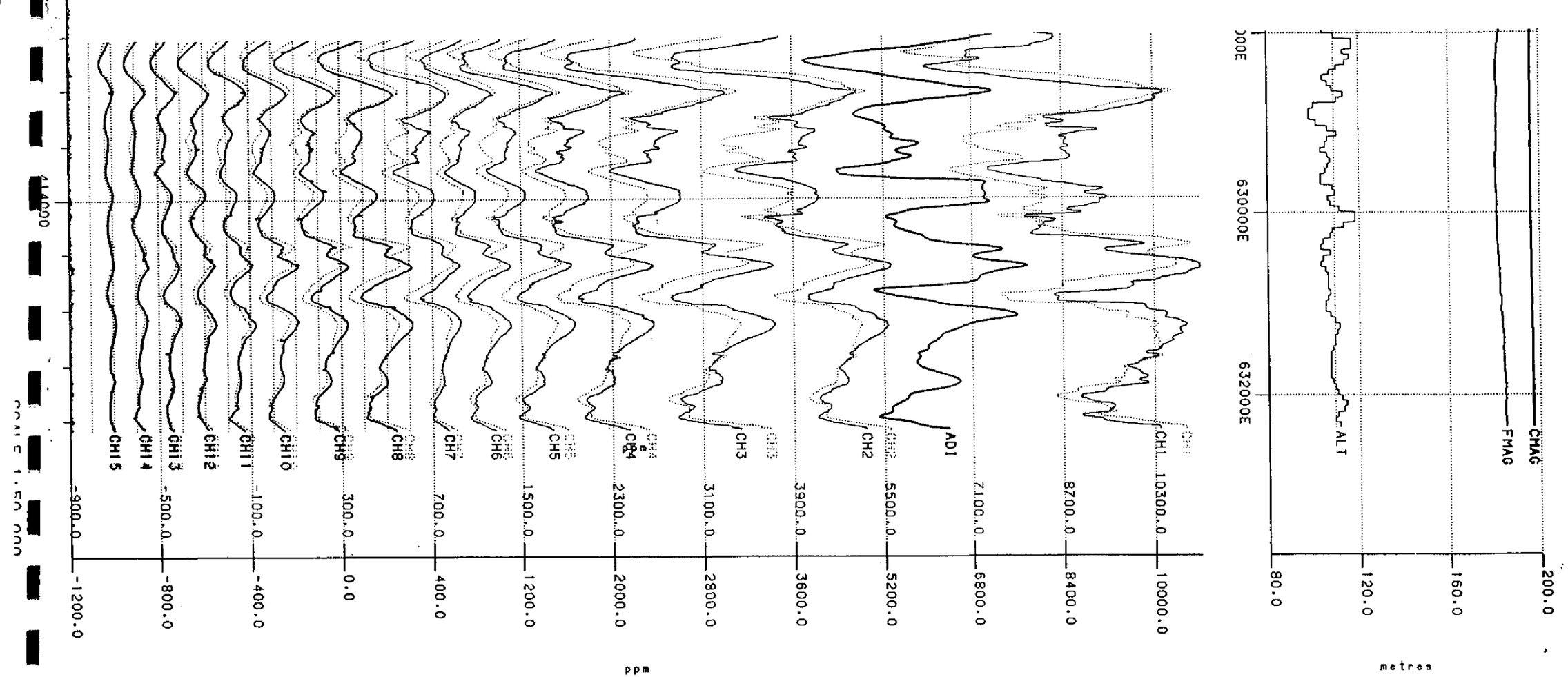

BHP MINERALS LIMITED
2-702 EMU 75 Hz (2 msec) GEOTEM
LINE 202/1
AVERAGE NORTHING = 8180524N
CMAG
FMAG
ALT
200.0
160.0
120.0
80.0
metres
630000E
632000E
CH1
CH2
CH3
CH4
CH5
CH6
CH7
CH8
CH9
CH10
CH11
CH12
CH13
CH14
CH15
ADI
10300.0
10000.0
8700.0
8400.0
7100.0
6800.0
5500.0
5200.0
3900.0
3600.0
3100.0
2800.0
2300.0
2000.0
1500.0
1200.0
700.0
400.0
300.0
0.0
-100.0
-400.0
-500.0
-800.0
-900.0
-1200.0
ppm
398500
399000
SCALE 1:50,000



2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED

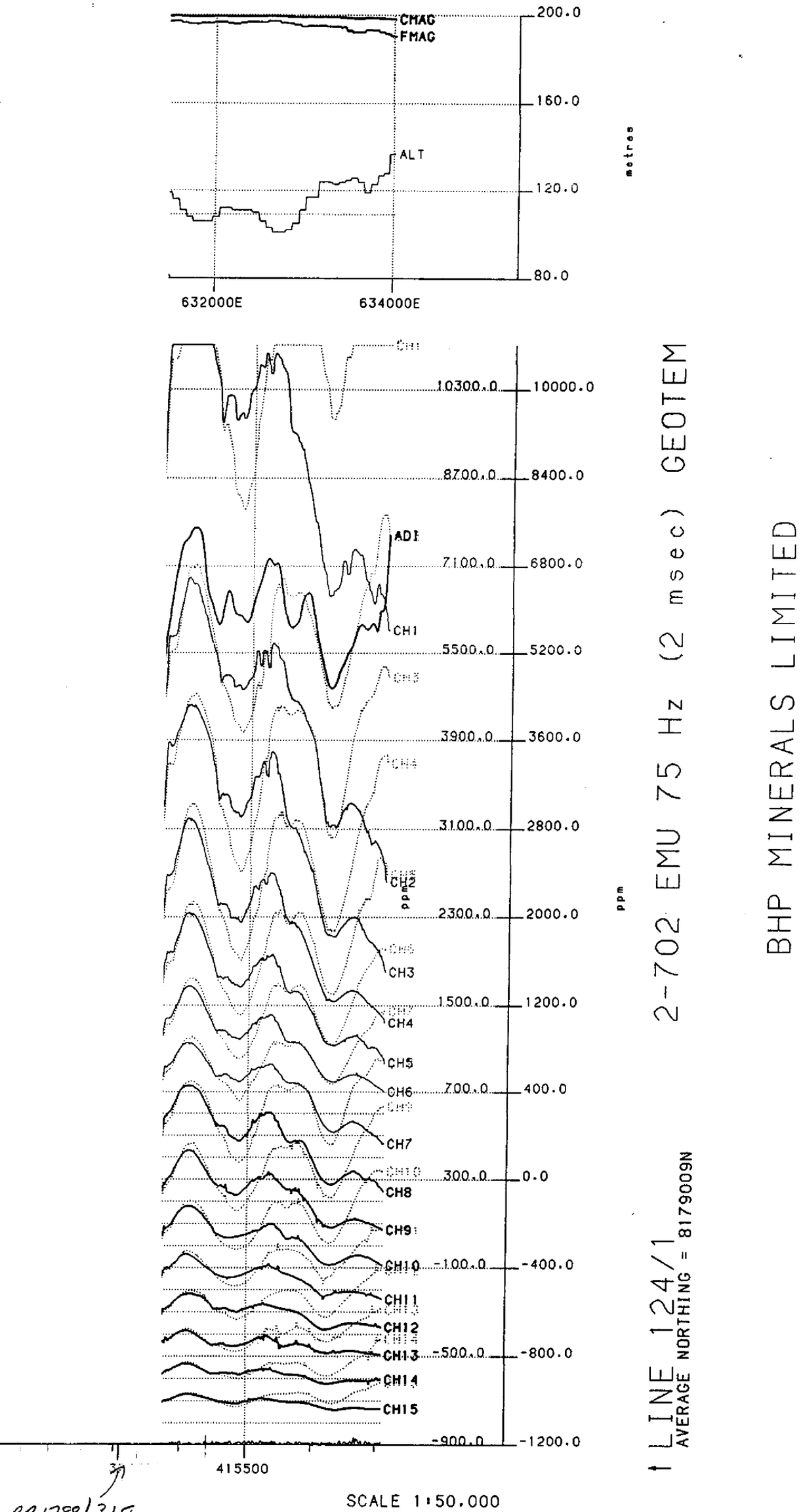
LINE 125/1
AVERAGE NORTHING = 8179986N



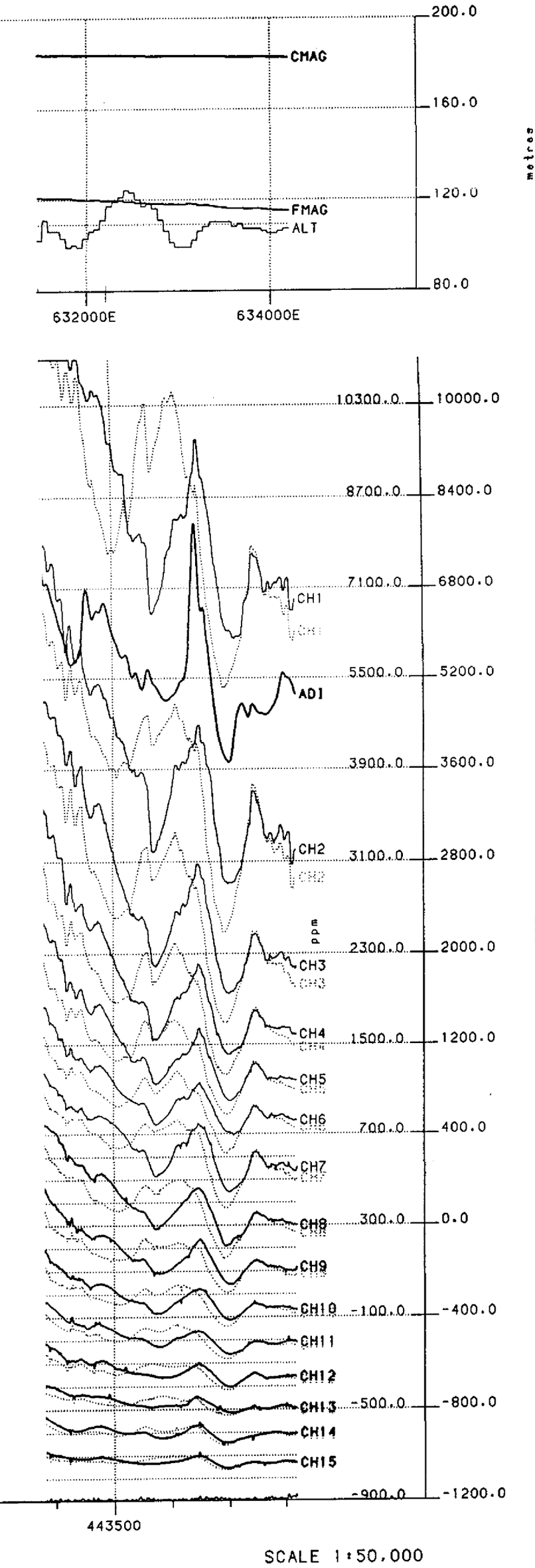
LINE 201/1
AVERAGE NORTHING = 8179524N

2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED


CMAG
FMAG
200.0
160.0
ALT
120.0
80.0
metres
632000E
634000E
CH1
10300.0
10000.0
8700.0
8400.0
ADI
7100.0
6800.0
CH1
5500.0
5200.0
CH3
3900.0
3600.0
CH4
3100.0
2800.0
CH2
ppm
2300.0
2000.0
CH3
1500.0
1200.0
CH4
CH5
CH6
700.0
400.0
CH7
CH8
300.0
0.0
CH9
CH10
-100.0
-400.0
CH11
CH12
CH13
-500.0
-800.0
CH14
CH15
-900.0
-1200.0
ppm
415500
SCALE 1:50.000
2-702 EMU 75 Hz (2 msec) GEOTEM
BHP MINERALS LIMITED
LINE 124/1
AVERAGE NORTHING = 8179009N

AR1788/310

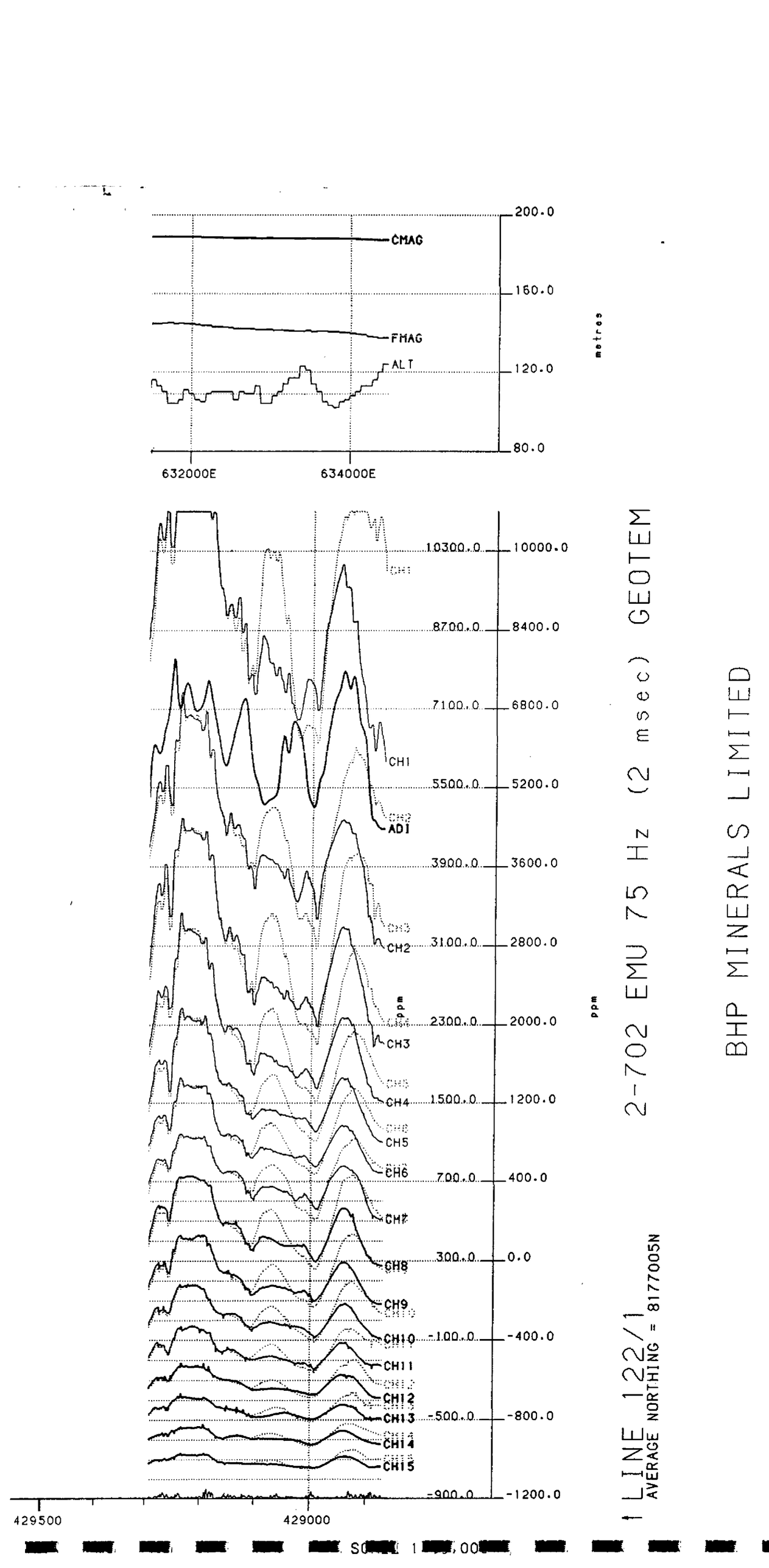


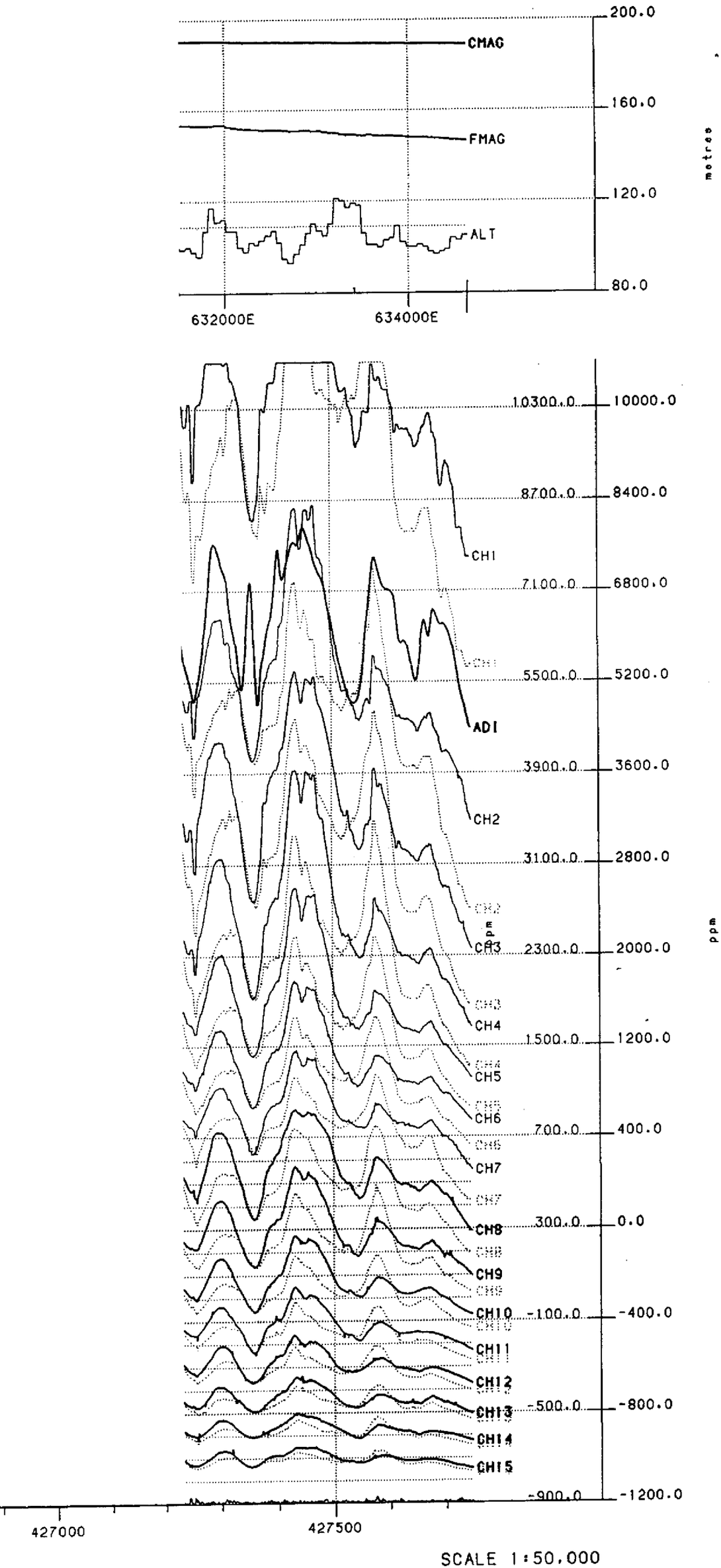
SCALE 1:50,000

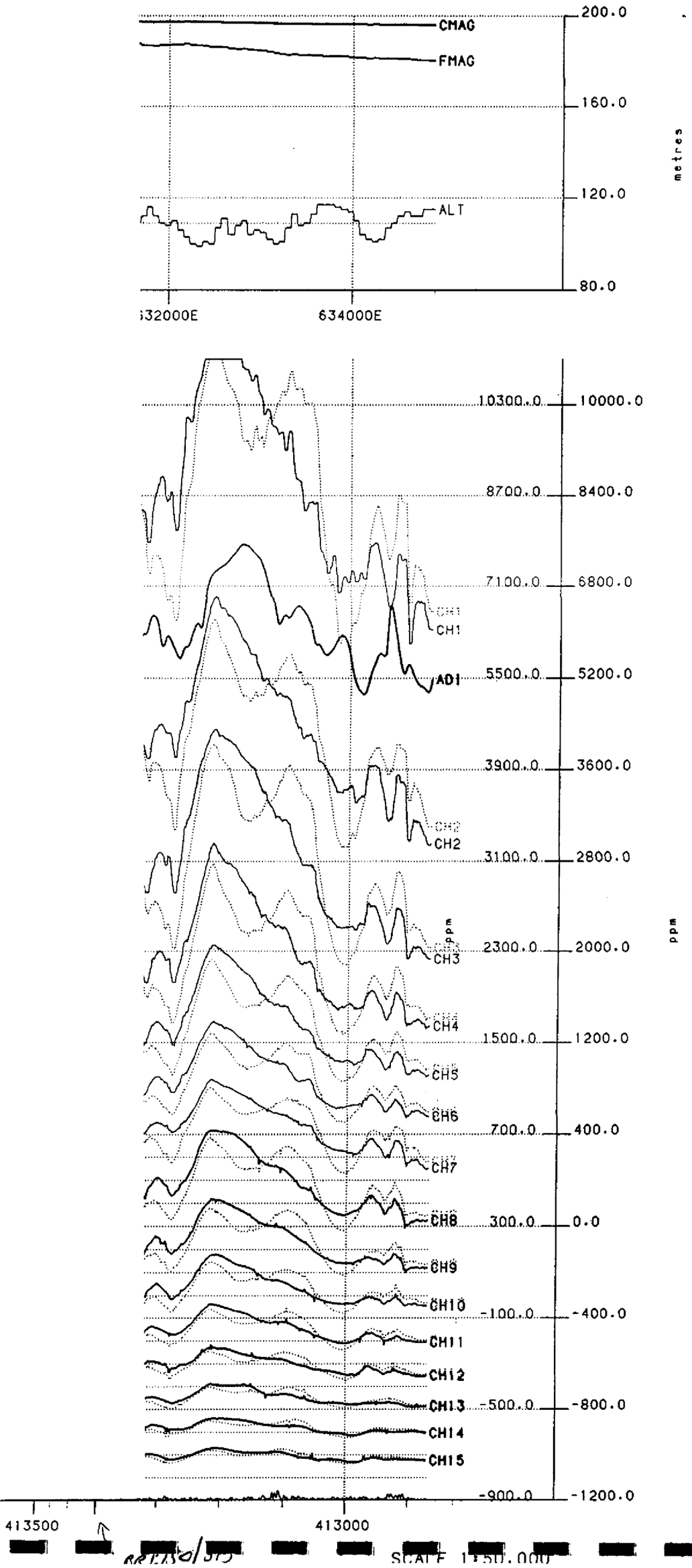
2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED

LINE 123/1
AVERAGE NORTHING = 8178016N


BHP MINERALS LIMITED
2-702 EMU 75 Hz (2 msec) GEOTEM
LINE 122/1
AVERAGE NORTHING = 8177005N
CMAG
FMAG
ALT
200.0
160.0
120.0
80.0
metres
632000E
634000E
CH1
CH2
CH3
CH4
CH5
CH6
CH7
CH8
CH9
CH10
CH11
CH12
CH13
CH14
CH15
ADI
10300.0
8700.0
7100.0
5500.0
3900.0
3100.0
2300.0
1500.0
700.0
300.0
-100.0
-500.0
-900.0
10000.0
8400.0
6800.0
5200.0
3600.0
2800.0
2000.0
1200.0
400.0
0.0
-400.0
-800.0
-1200.0
ppm
ppm
429500
429000

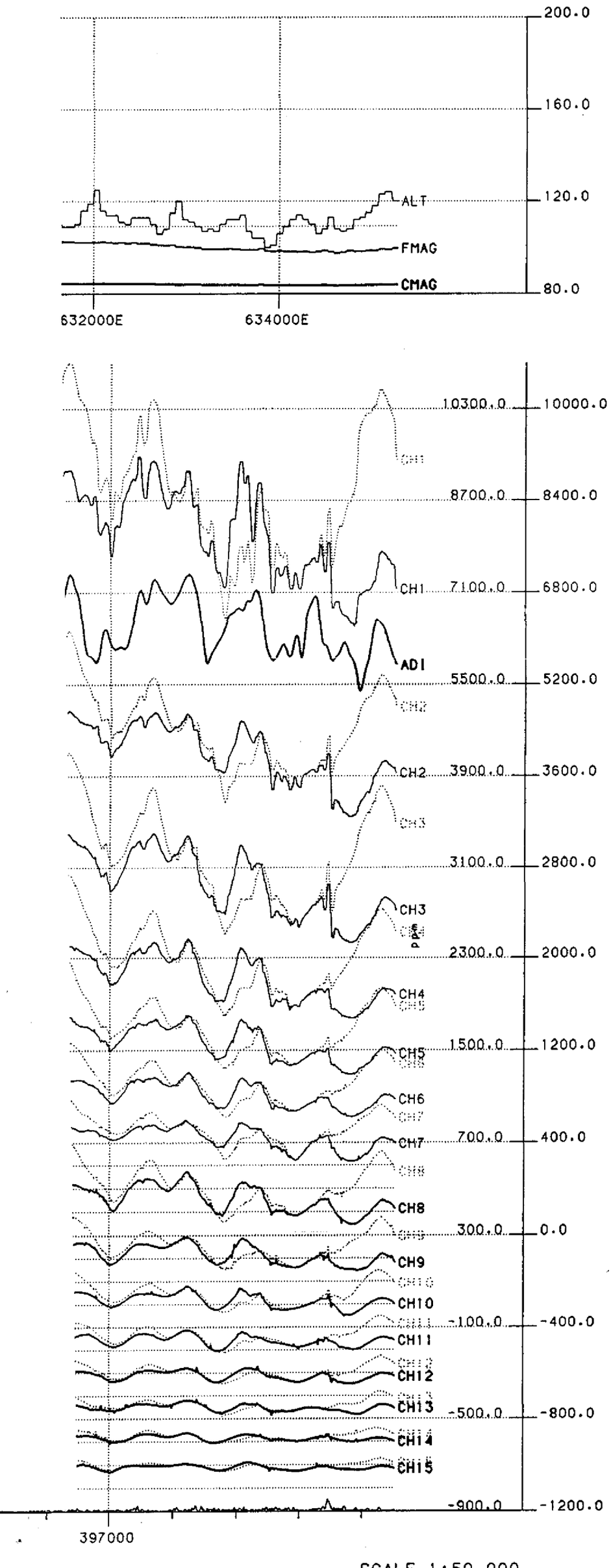

200.0
CMAG
160.0
FMAG
120.0
ALT
80.0
metres
632000E
634000E
10300.0
10000.0
8700.0
8400.0
CH1
7100.0
6800.0
5500.0
5200.0
ADI
3900.0
3600.0
CH2
3100.0
2800.0
CH3
2300.0
2000.0
CH4
1500.0
1200.0
CH5
CH6
700.0
400.0
CH7
CH8
300.0
0.0
CH9
CH10
-100.0
-400.0
CH11
CH12
CH13
-500.0
-800.0
CH14
CH15
-900.0
-1200.0
ppm
427000
427500
SCALE 1:50,000
2-702 EMU 75 Hz (2 msec) GEOTEM
BHP MINERALS LIMITED
LINE 121/1
AVERAGE NORTHING = 8176010N


BHP MINERALS LIMITED
2-702 EMU 75 Hz (2 msec) GEOTEM
LINE 120/1
AVERAGE NORTHING = 8174990N
CMAG
FMAG
ALT
200.0
160.0
120.0
80.0
metres
632000E
634000E
10300.0
8700.0
7100.0
5500.0
3900.0
3100.0
2300.0
1500.0
700.0
300.0
-100.0
-500.0
-900.0
10000.0
8400.0
6800.0
5200.0
3600.0
2800.0
2000.0
1200.0
400.0
0.0
-400.0
-800.0
-1200.0
ppm
CH1
AD1
CH2
CH3
CH4
CH5
CH6
CH7
CH8
CH9
CH10
CH11
CH12
CH13
CH14
CH15
413500
413000
SCALE 1:50,000

LINE 119/1
AVERAGE NORTHING = 8174008N

2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED

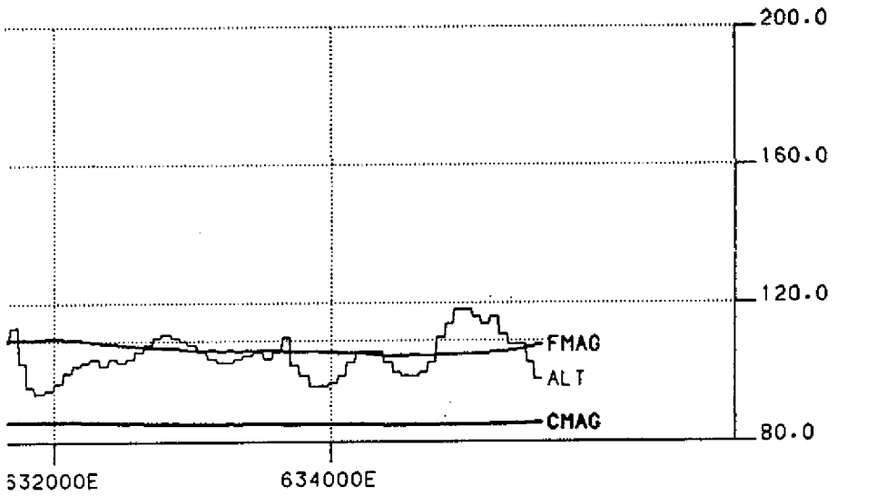


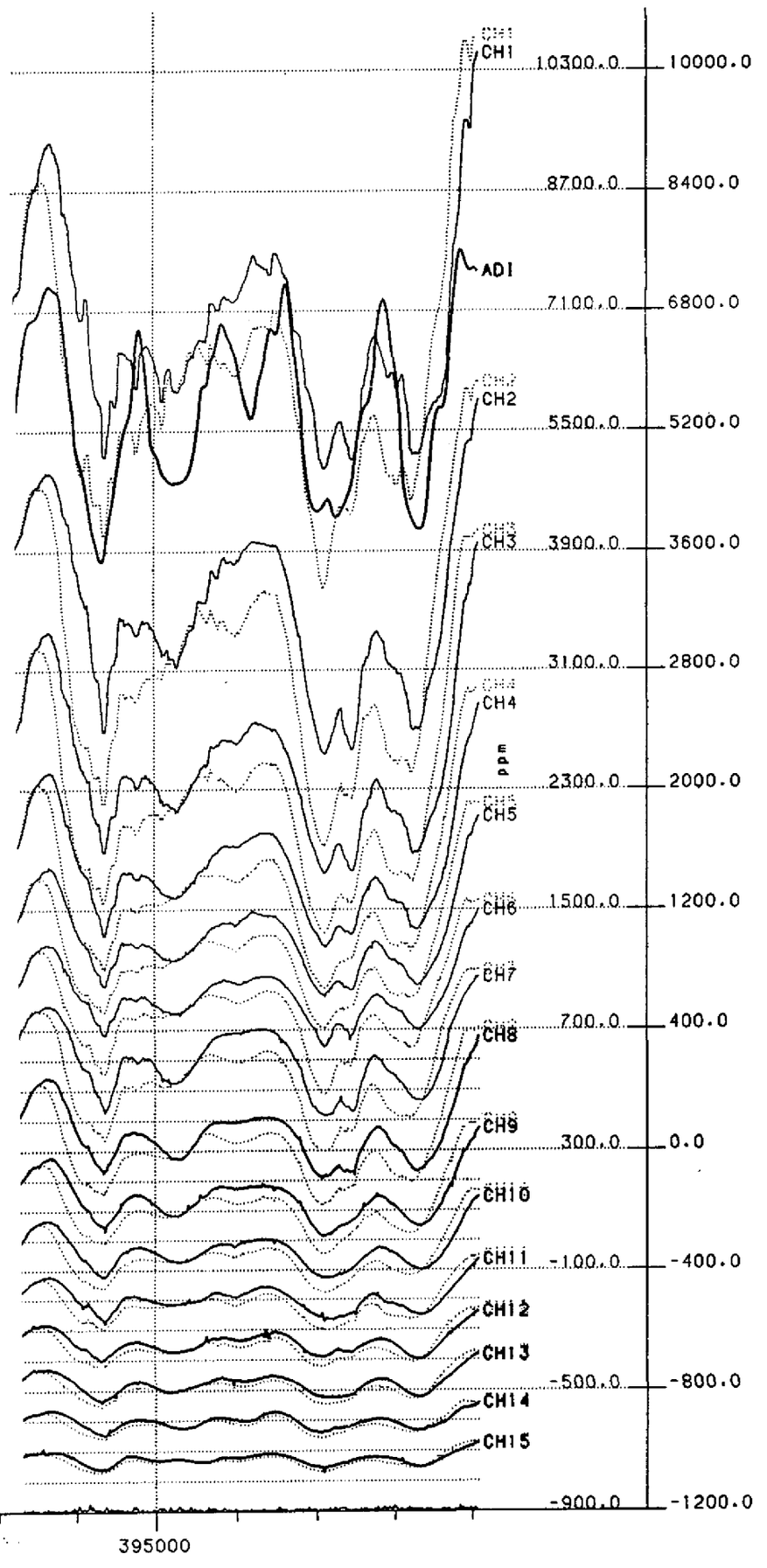
BHP MINERALS LIMITED

2-702 EMU 75 Hz (2 msec) GEOTEM

LINE 1118/1
AVERAGE NORTHING = 8173024N

SCALE 1:50,000



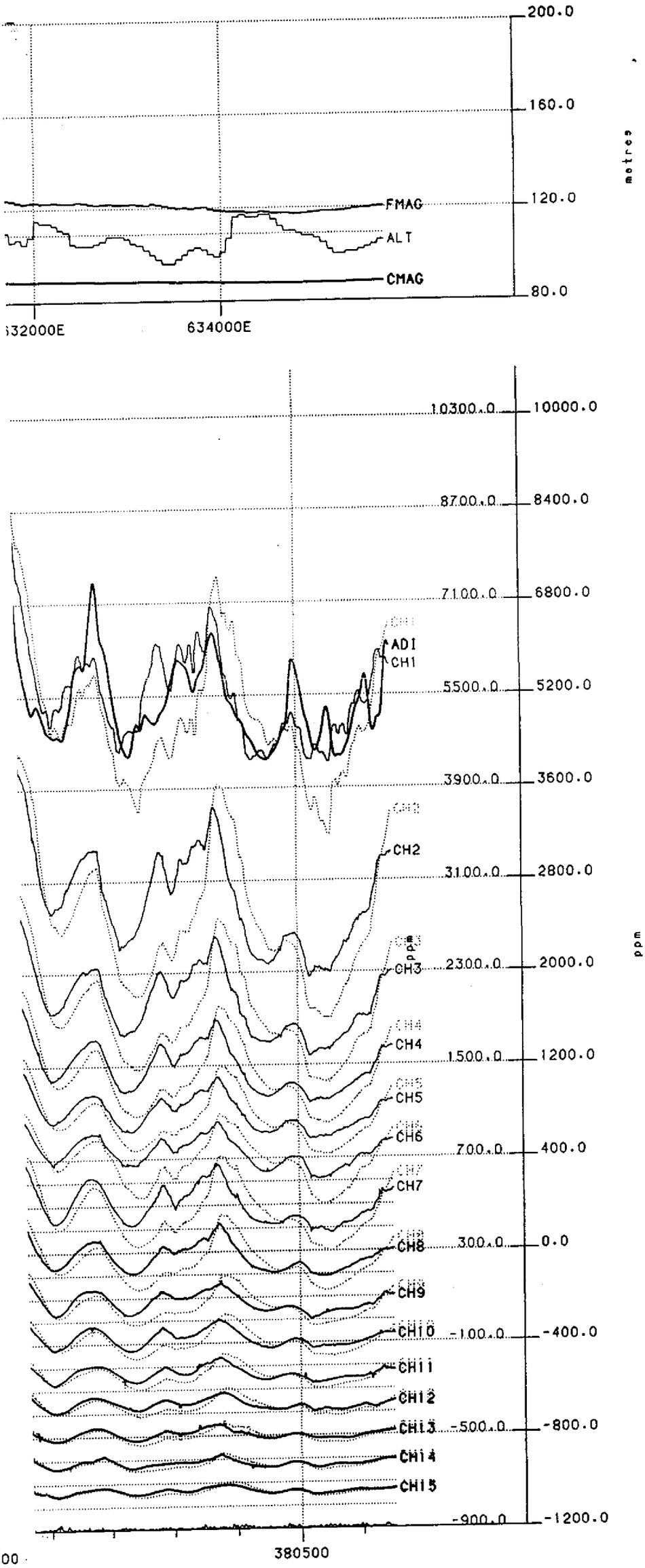


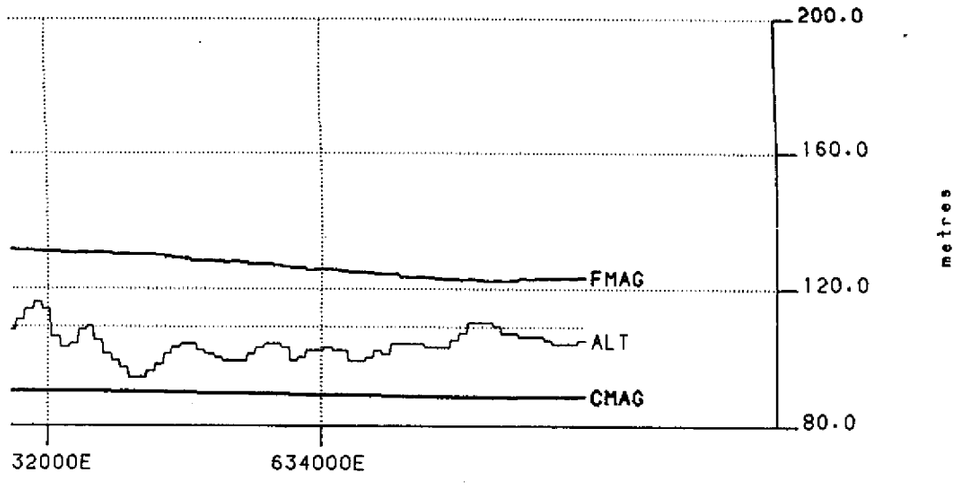
SCALE 1:50,000

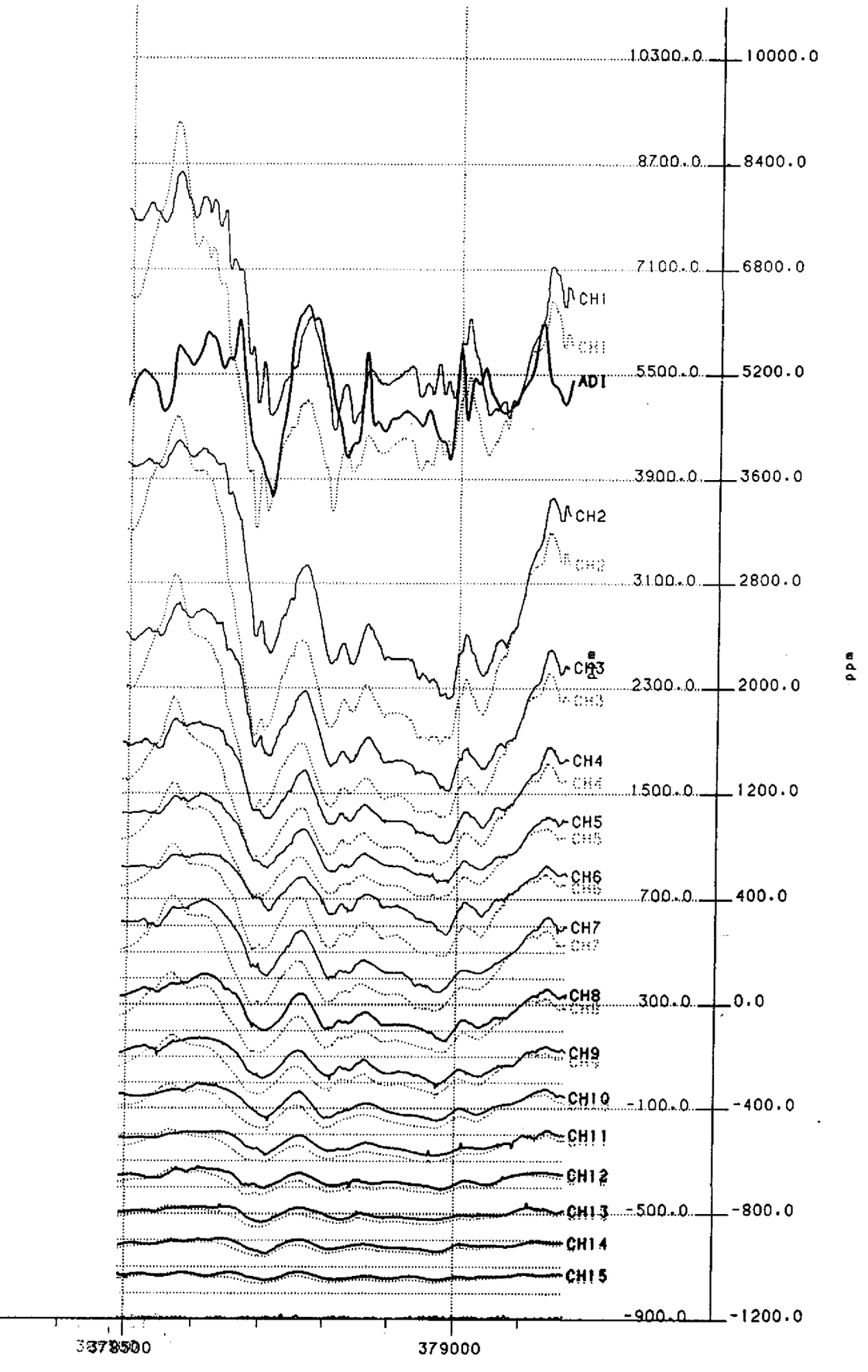
LINE 117/1
AVERAGE NORTHING = 8171999N

2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED


200.0
160.0
120.0
80.0
metres
FMAG
ALT
CMAG
632000E
634000E
10300.0
10000.0
8700.0
8400.0
7100.0
6800.0
5500.0
5200.0
3900.0
3600.0
2300.0
2000.0
1500.0
1200.0
700.0
400.0
300.0
0.0
-100.0
-400.0
-500.0
-800.0
-900.0
-1200.0
ppm
ADI
CH1
CH2
CH3
CH4
CH5
CH6
CH7
CH8
CH9
CH10
CH11
CH12
CH13
CH14
CH15
381000
380500
SCALE 1:50,000
2-702 EMU 75 Hz (2 msec) GEOTEM
BHP MINERALS LIMITED
LINE 116/1
AVERAGE NORTHING = 8171009N



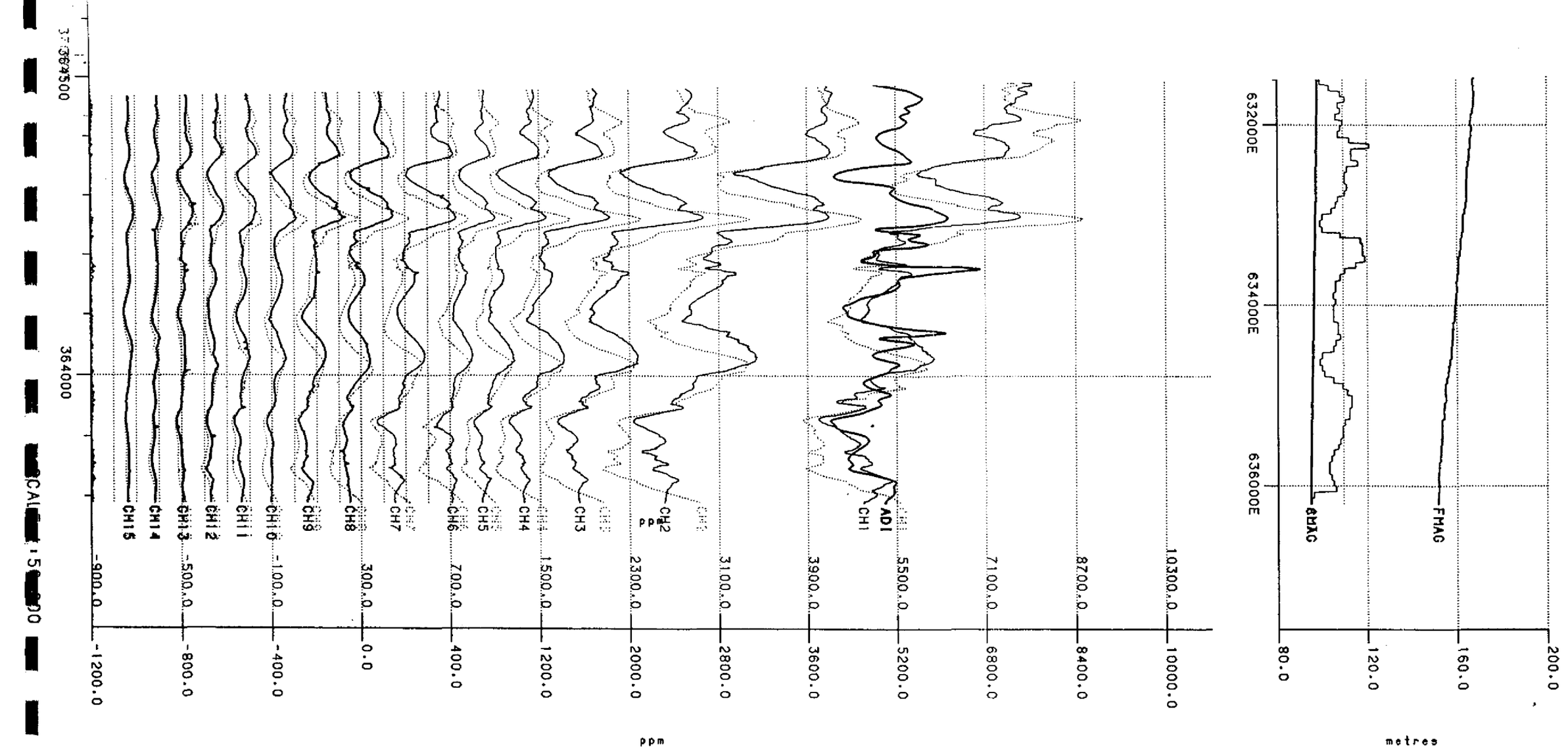


2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED

LINE 115/1
AVERAGE NORTHING = 8170007N

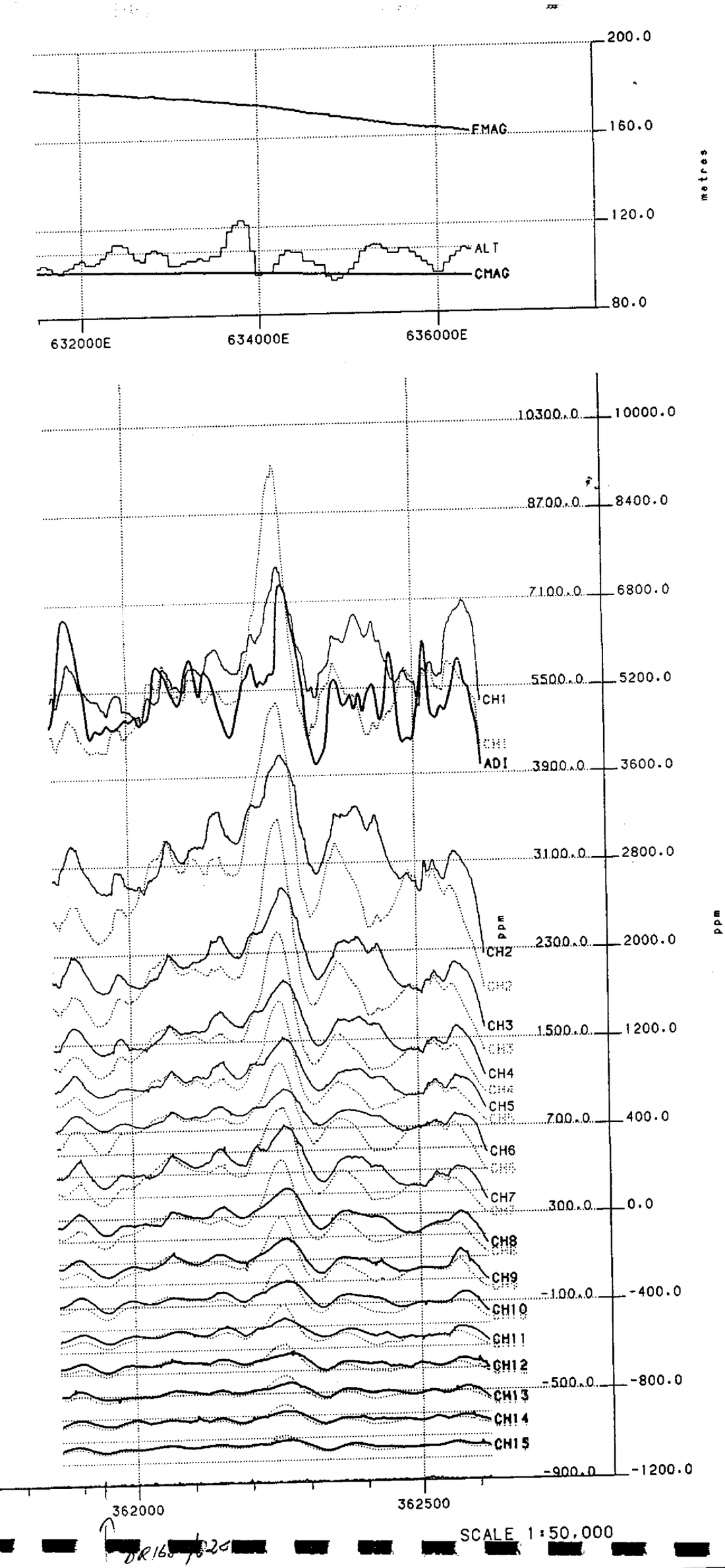
SCALE 1:50,



LINE 114/1
AVERAGE NORTHING = 8169005N

2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED



2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED

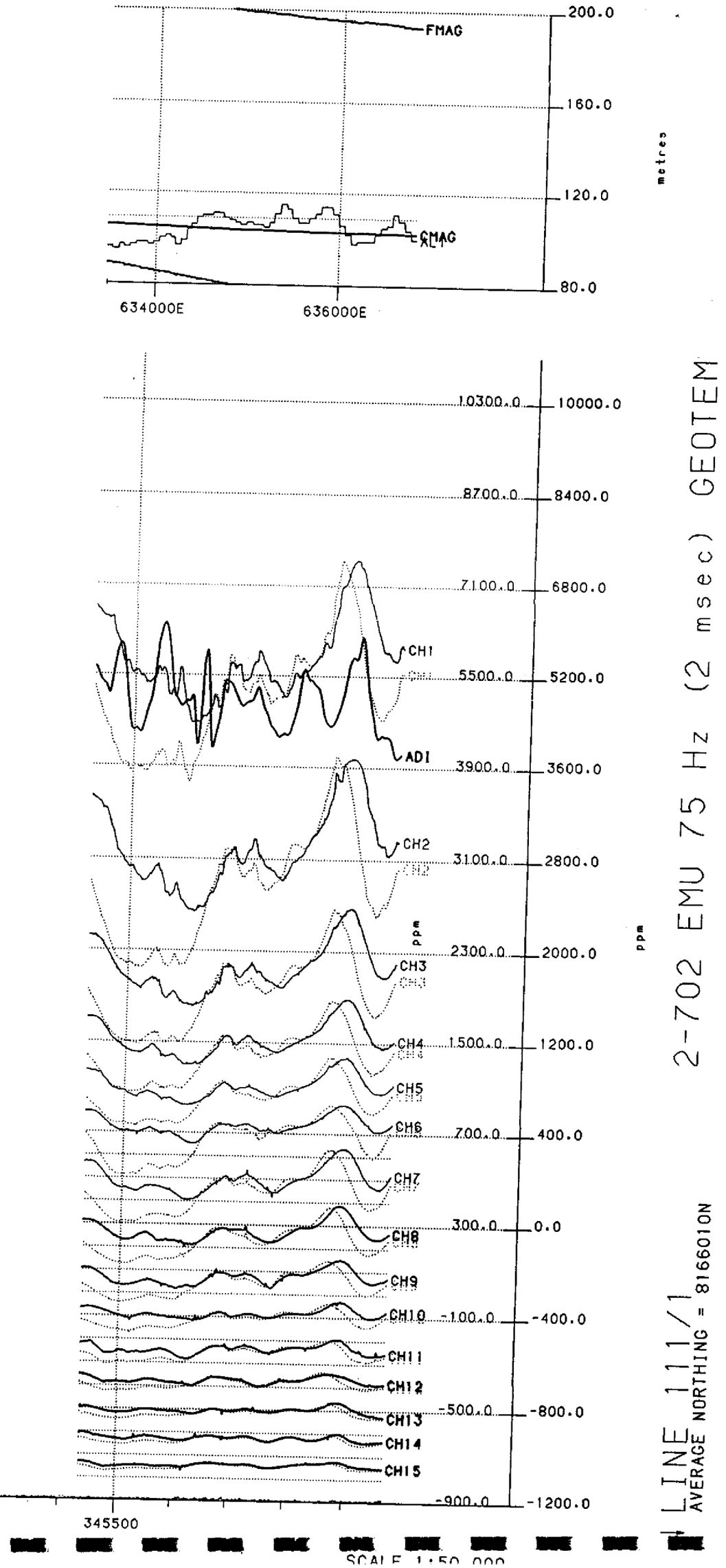
LINE 1113/1
AVERAGE NORTHING = 8167959N

SCALE 1:50,000

LINE 112/1
AVERAGE NORTHING = 8166991N

2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED



2-702 EMU 75 Hz (2 msec) GEOTEM

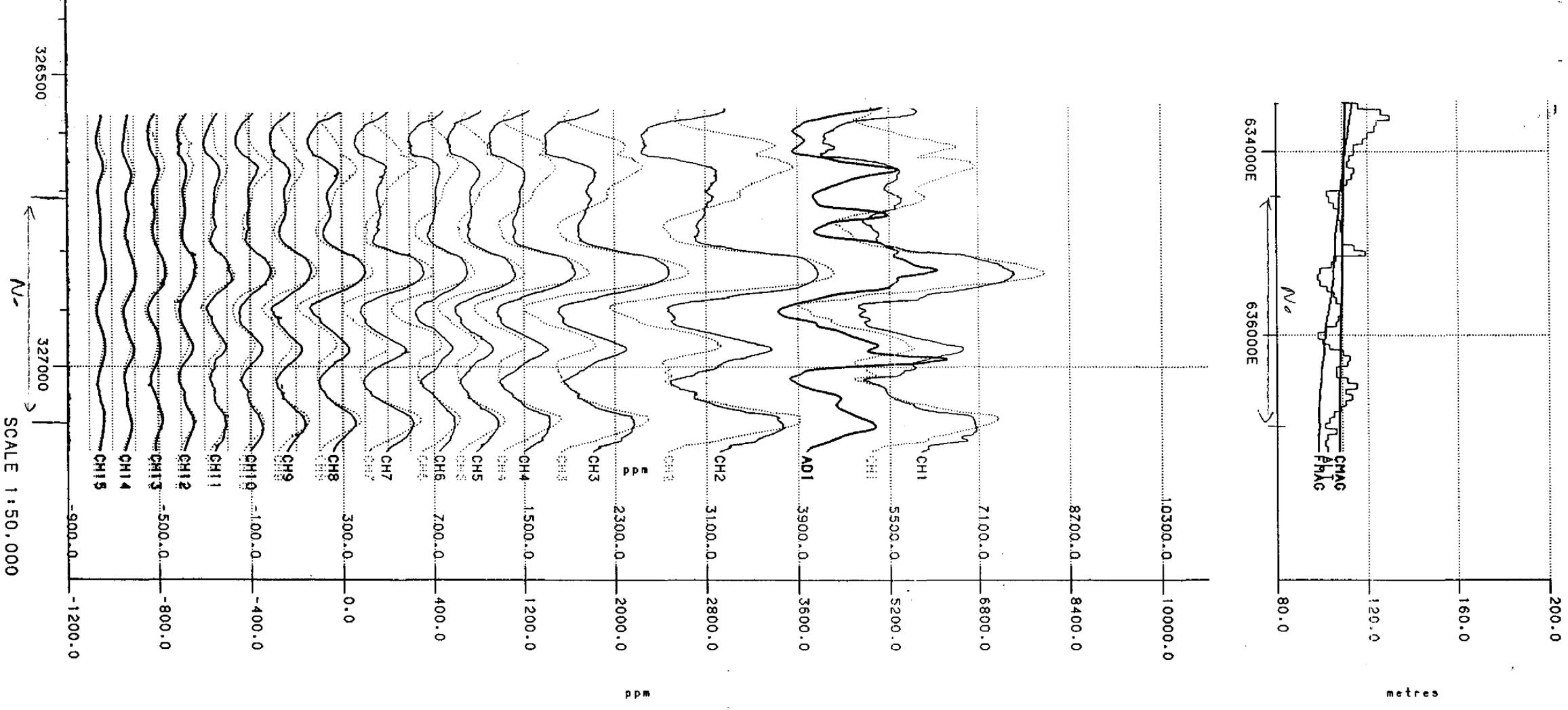
BHP MINERALS LIMITED

LINE 111/1
AVERAGE NORTHING = 8166010N

LINE 110/1
AVERAGE NORTHING = 8165011N

2-702 EMU 75 Hz (2 msec) GEOTEM

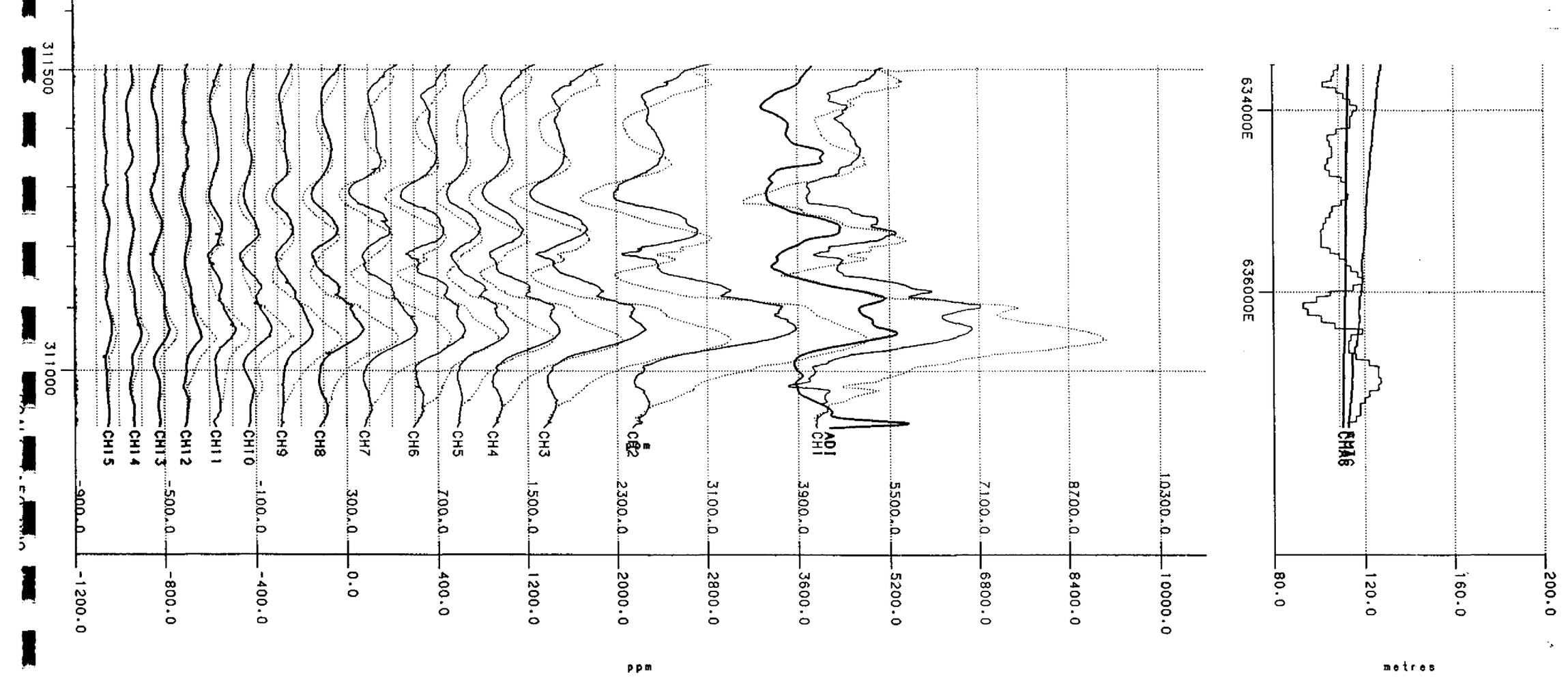
BHP MINERALS LIMITED



LINE 109/1
AVERAGE NORTHING = 8164028N

2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED



LINE 108/1

AVERAGE NORTHING = 8163005N

2-702 EMU 75 Hz (2 msec) GEOTEM

BHP MINERALS LIMITED

APPENDIX 4

PROTEM Apparent Resistivity Plots and Inversions

SOUNDING: 680320 : Vers 1
Bukalara Range 25 Hz BR1680/320

680320A

(934 ohm.m) * 123 m. (934)

* 123 m.

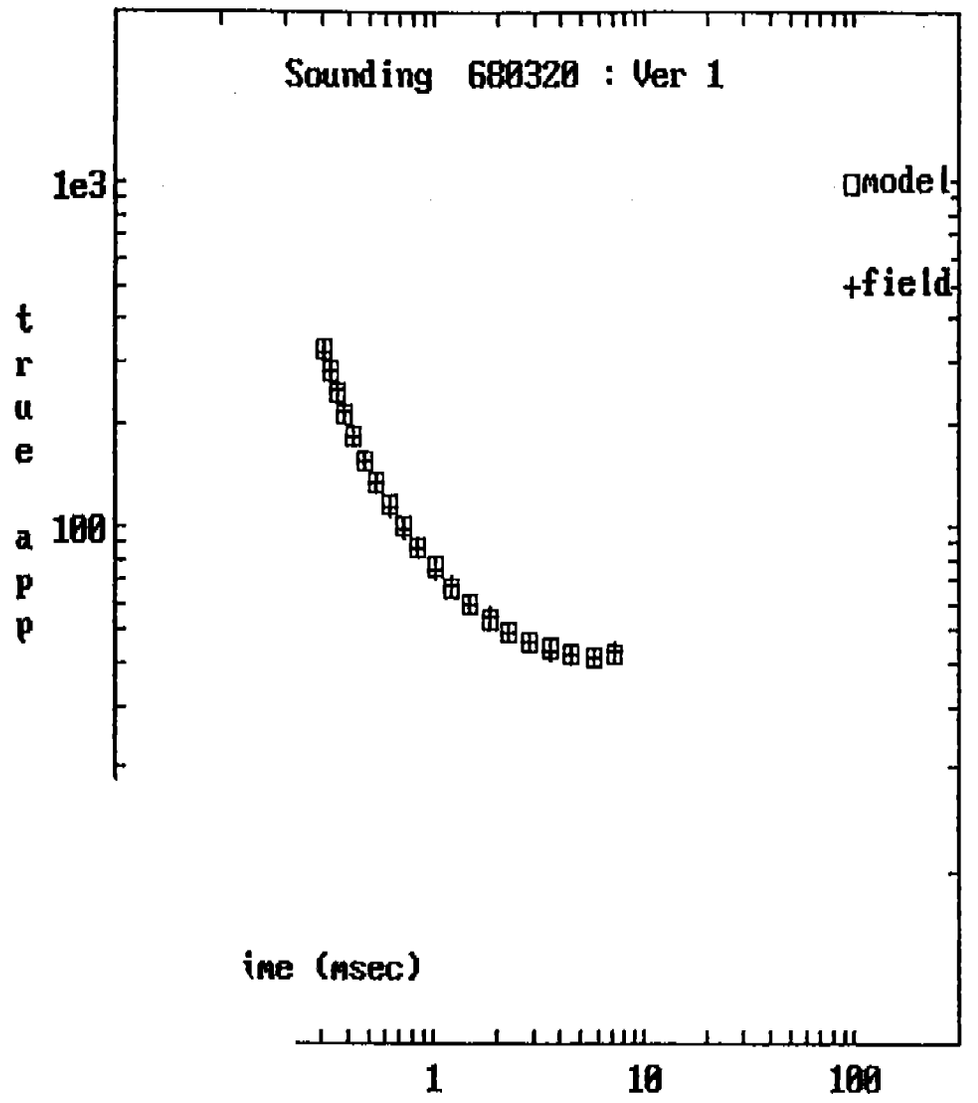
* 21.4 ohm.m * 180 m. * 21.4

* 303 m.

42.8 ohm.m 42.8

= 1.6% : S= 9 S

E= 2%
S= 9S


Sounding 680320 : Ver 1
1e3
100
true app
□model
+field
ime (msec)
1
10
100

SOUNDING: 680320 : Vers 2
Bukalara Range 6.25 Hz BR1680/320

680320A

(909 ohm.m) * 119 m. (909)

* 119 m.

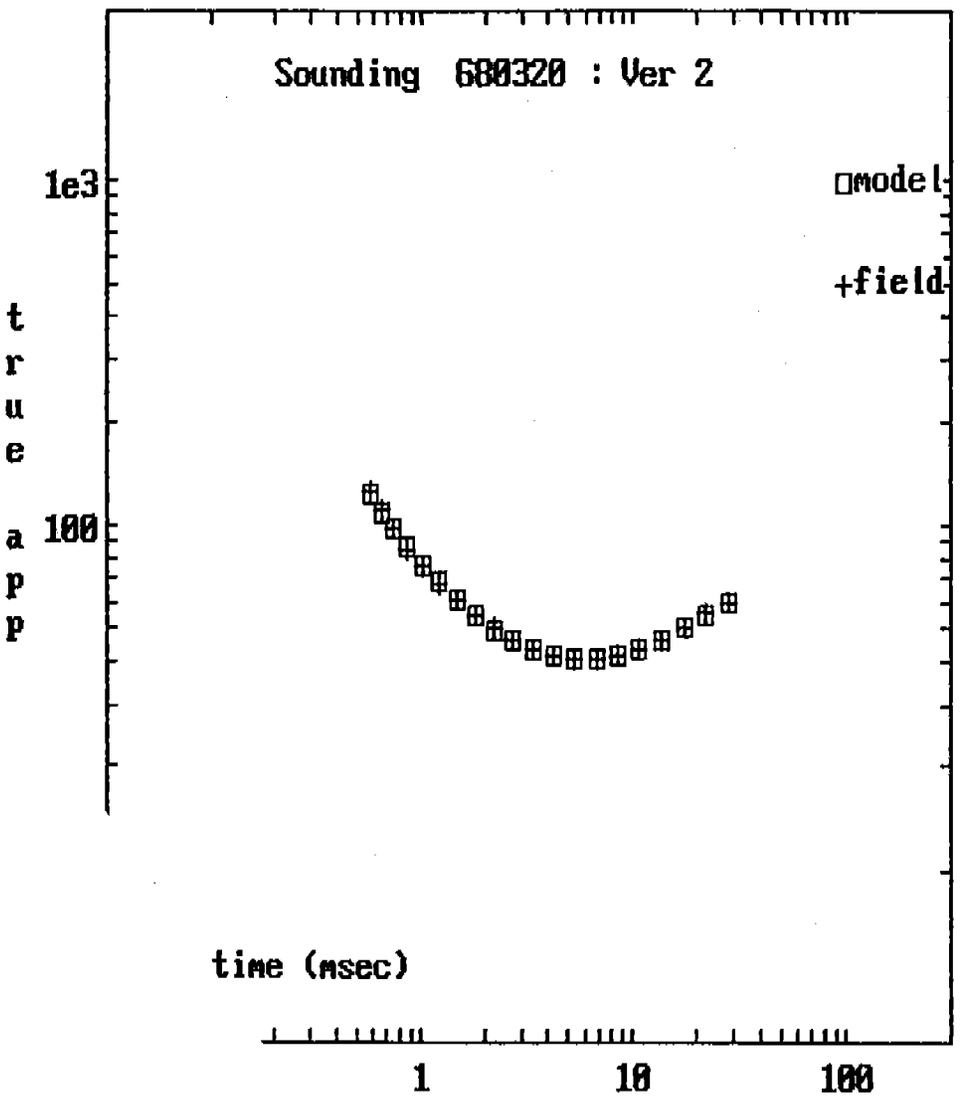
* 24.0 ohm.m * 268 m. * 24.0

* 387 m.

98 ohm.m * 238

0% : S= 11 S

E= 2%
S= 11S


Sounding 680320 : Ver 2
1e3
100
true app
□model
+field
time (msec)
1
10
100

APPENDIX 5

Statements of Expenditure

STATEMENT OF EXPENDITURE

EXPLORATION LICENCE 7195

For the period
24th May, 1991 to 23rd May, 1995

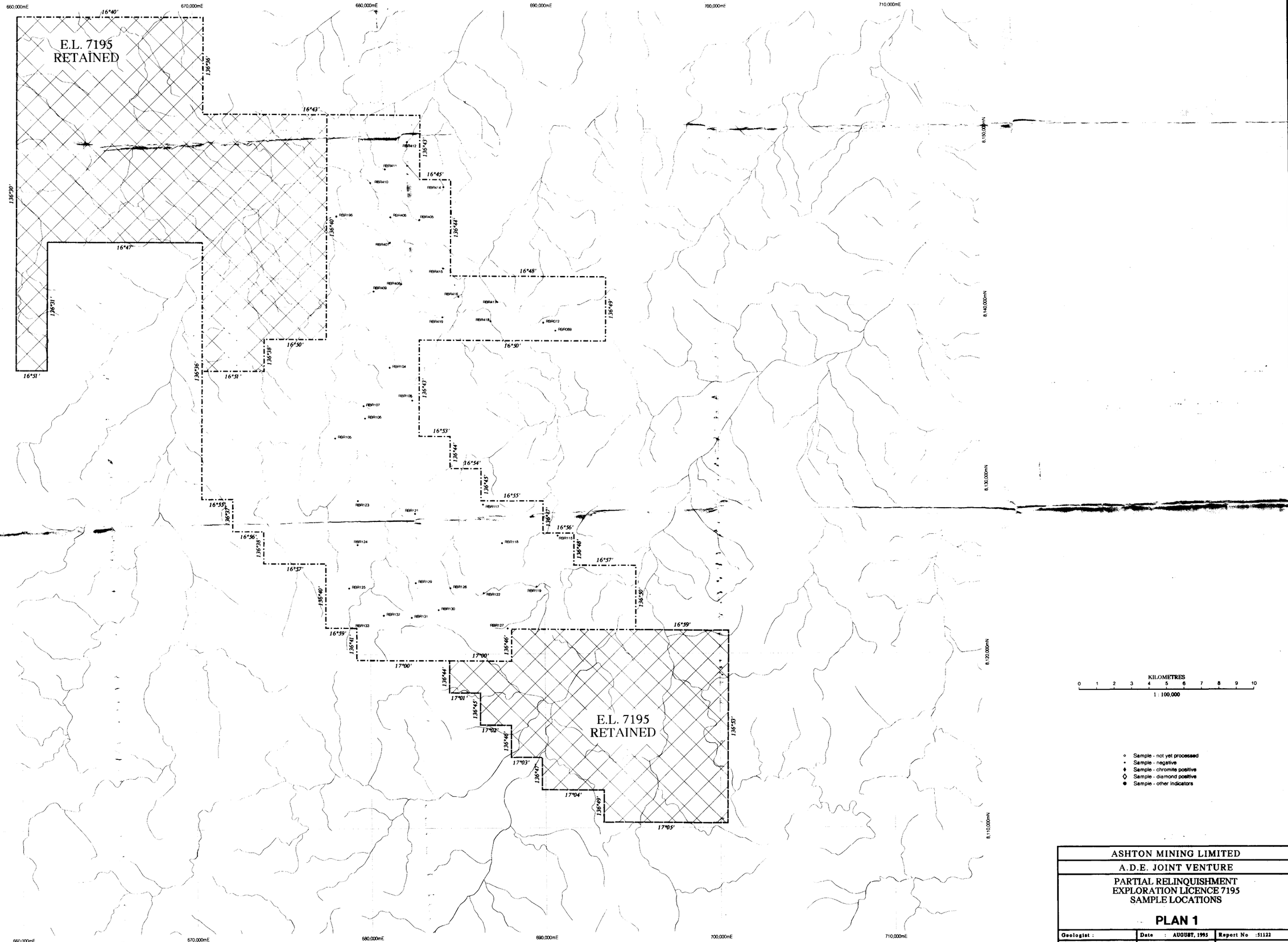
Geoscientist/Professional	8,016
Field Support/Office Staff	5,595
Other Contractors	453
Travel/Accommodation/Meals	1,936
Field Supplies	299
Operating Costs	1,071
Equipment Hire	628
Vehicles	1,423
Freight/Storage	183
Helicopter Charter	3,070
Fixed Wing Charter	2,621
Geophysics	542
TM Imagery	439
Laboratory	6,690
Drafting	362
Sub-Total	33,328
10% Overheads	3,328
Total:	**$ 36,656**

STATEMENT OF EXPENDITURE

EXPLORATION LICENCE 7297

For the period
24th May, 1991 to 23rd May, 1995

Geoscientist/Professional	3,976
Field Support/Office Staff	1,005
Other Contractors	194
Travel/Accommodation/Meals	91
Operating Costs	24
Equipment Hire	82
Vehicles	69
Helicopter Charter	27
Fixed Wing Charter	4,828
Geophysics	9,655
Surveys	834
Geochemistry	452
Laboratory	265
Library	200
Drafting/Office Expenses/Computing	314
Sub-Total	22,016
10% Overheads	2,201
Total:	**$ 24,217**



ASHTON MINING LIMITED

A.D.E. JOINT VENTURE

PARTIAL RELINQUISHMENT
EXPLORATION LICENCE 7195
SAMPLE LOCATIONS

PLAN 1

Geologist :	Date : AUGUST, 1995	Report No :51122
Drafted : M.F.Ariotti	Revised :	Drawing No :

CR95/631

620,000mE
630,000mE
640,000mE
650,000mE
8,200,000mN
8,190,000mN
8,180,000mN
8,170,000mN
8,160,000mN

16°17'
136°06'
136°09'
BAU2914
16°22'
136°07'
16°23'
136°12'
16°23'
136°08'
E.L. 7297
RELINQUISHED
16°25'
16°25'
136°09'
136°11'
136°13'
16°26'
16°26'
136°10'
136°12'
16°28'
16°28'
BAU2904
136°11'
136°14'
136°15'
BAU2899
16°35'
16°35'
136°15'
136°18'
16°37'
136°12'
16°38'
136°21'
136°25'
16°38'
136°26'
16°40'
E.L. 7297
RETAINED

620,000mE
630,000mE
640,000mE
650,000mE

- Sample - not yet processed
- Sample - negative
- Sample - chromite positive
- Sample - diamond positive
- Sample - other indicators

KILOMETRES
0 1 2 3 4 5 6 7 8 9 10
1 : 100,000

ASHTON MINING LIMITED

A.D.E. JOINT VENTURE

PARTIAL RELINQUISHMENT
EXPLORATION LICENCE 7297
SAMPLE LOCATIONS

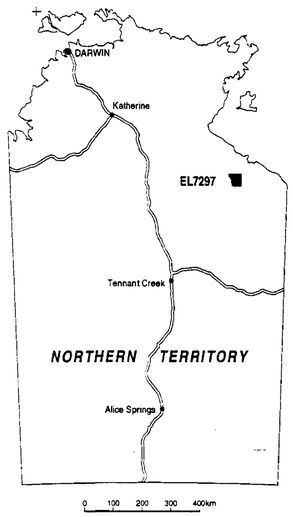
PLAN 2

Geologist :	Date : AUGUST, 1995	Report No :
Drafted : M.F.Ariotti	Revised :	Drawing No :

CR95/631

610000E 620000E 630000E 640000E 650000E 660000E 670000E

8200000N
8190000N
8180000N
8170000N
8160000N
8150000N



Reduced May94

Reduced May94

Reduced May94

EL 7297

Current tenement

Relinquished tenement

AIRBORNE SURVEY SPECIFICATIONS

Contractor	Geoterrex
Magnetometer	Cesium Vapour
Magnetometer Sample interval	1 seconds (approx 65 metres)
Flight Path Recovery	GPS and DOPPLER
Flight Line Direction	90 degrees
Flight Line Spacing	1000 metres
Flying Height	105 metres
Total line kms of survey	1429 km
Survey flown	September 1993
Contour interval	1 nT

Scale 1 : 100,000
0 2 4 6 8 km
AMG Zone 53

BHP Exploration - BHP Minerals
BHP Minerals Pty. Ltd. A.C.N. 008 694 782

McARTHUR RIVER J.V.

EL7297 AIRBORNE GEOTEM SURVEY MAGNETIC CONTOURS

Prepared : B. Jones	Date : 14.8.95	PLATE 1
Drawn : S. Shephard	Revised :	
Traced : Perth	Drawing No : A1-6893	

CR95/631