

CRA EXPLORATION PTY. LTD.

D of M	A.O.	G.G.	E.O.	D.S.M.E.
				Registrar
Received - 9 MAY 1983				E & IL
DEPT. OF MINES				
REF. NO. 3814/83				

LEFROY EL 35/81EXPLORATION AT THE LEFROY DEEP LEADTASMANIA**OPEN FILE**

Author : G. Broadbent

Date : 2nd May, 1983.

Submitted To : T. W. Dickson

Accepted By :



Copies : CRAE Melbourne
 CRAE Hobart
 CRAE Burnie
 Mines Department, Tasmania.
 Valken Mining

The contents of this report remain the property of CRA Exploration Pty. Limited and may not be published in whole or in part nor used in a company prospectus without the written consent of the Company.

CONTENTS

	<u>Page</u>
1. SUMMARY	1
2. CONCLUSIONS	1
3. RECOMMENDATIONS	1
4. INTRODUCTION	2
5. GEOLOGIC SETTING	2
6. GEOPHYSICS	3
6.1 Ground Magnetic Traverses	3
6.2 Gravity Traverses	3
7. REFERENCES	4
8. KEYWORDS	4
9. LOCATION	4
10. LIST OF PLANS	4
11. LIST OF APPENDICES	4

1. SUMMARY

Ground magnetometer traversing and field mapping were used to define the margins of the Tertiary basalt which overlies the Lefroy deep lead. Two trial gravity lines indicate that combined gravity and ground magnetics will be a useful means of predicting sub surface basalt geometry.

The lead extends north from the town of Lefroy to the coast at Beechford - an indicated length of eight or nine kilometres. Cable tool drilling offers the best means of evaluating whether the sub-basaltic gravels are auriferous. An east west trending 'fence' of churn drill holes is recommended to test the character of the wash, and to refine the preliminary geophysical interpretation. This drilling would be best located approximately eight kilometres north of the township of Lefroy.

2. CONCLUSIONS

1. The Lefroy deep lead has the potential to hold economically interesting quantities of gold bearing gravels.
2. Sampling and evaluation of these gravels will necessitate close spaced, relatively deep (greater than 100 metres), cable tool drilling. Further exploration will thus be of high cost.
3. Combined gravity and ground magnetics have the best potential for defining subsurface basalt geometry and predicting optimum locations for drill holes.

3. RECOMMENDATIONS

1. Scout drilling by cable tool rig, with large diameter percussion pre-collar through the basalt. Holes to be positioned as close as practicable to the line of gravity traverse number 2. Three or four initial holes at 200 - 300 metre intervals, with subsequent infill holes at progressively closer spacing until the deepest portion of the lead is located.

4. INTRODUCTION

EL 35/81 was granted on the 9th of June, 1982. It was primarily intended to cover the sub-basaltic Lefroy deep lead, the headwaters of which were worked for gold at Lefroy.

Mapping of the basalt caprock over the lead was accomplished by widely spaced ground magnetometer traverses to locate basalt-induced magnetic "edge" effects. The contact between these points on the various traverses was interpolated by correlating known basalt outcrop and topography. In all, some 60,950 metres of ground magnetic traversing was completed.

Two trial gravity profiles were established over the lead to see whether this method could be used to predict sub-surface basalt geometry. The initial results are encouraging.

A line of scout cable tool drill holes (percussion pre-collared) in the northern portion of the lead is proposed as the next stage of exploration.

5. GEOLOGIC SETTING

The basement rocks consist of Ordovician - Devonian age turbidite-like sediments, termed the Mathinna Beds. These have been extensively folded and strike north-east to south-west.

Primary gold mineralisation occurs in the Mathinna Beds as quartz-pyrite-arsenopyrite lodes emplaced along east west trending steeply dipping fractures. At Lefroy there was a concentration of these lodes in an echelon zone which was aligned roughly along the strike of the Mathinna Beds. Total production from Lefroy was of the order of 179,000 ounces. Approximately 5,000 ounces of this came from the alluvial working at the head of the deep lead.

The deep leads are of Tertiary age. The pre-basalt drainage was from south to north, with accumulation of gold, derived from the Mathinna Beds, in the stream gravels. Basalt extrusion commenced in the Tertiary. A succession of flows, separated by minor periods of erosion and deposition of interbasaltic sediments, covered the Tertiary valley.

Erosion continued until the Cainozoic, with intervals of marine incursion and regression which deposited an extensive veneer of Quaternary age gravels and sands over the basalt.

Likely deep lead geometry, gold values, and distribution in the sub-basaltic wash, are contained in the CRAE internal memorandum from G. Broadbent to T. W. Dickson of 12th July, 1982.

6. GEOPHYSICS

6.1 Ground Magnetic Traverses

Preliminary ground magnetic traverses over the relatively well known portion of the lead near Lefroy indicated that the method could locate the edges of the basalt fairly accurately. Some computer modelling of the data was tried, and is reproduced in Appendix One. This early modelling indicated that qualitative data on the thickness of the basalt could be obtained.

The coverage of the magnetic traverses was gradually extended northwards into the lesser known portions of the lead. Traverse lines made the maximum possible use of pre-existing tracks and the more open paddocks for speed of coverage. Placement of lines was aimed at defining the basalt contact where it was totally concealed or not able to be fixed by topographic slope changes.

The location of the traverses and the interpreted margin of the deep lead basalt is given on plan number TASH 105. Profiles for the various traverses are given in Appendix Three.

6.2 Gravity Traverses

As the magnetic survey progressed, it became apparent that the high noise levels and variations in magnetic intensity rendered most of the traverses unfit for computer modelling. Accordingly, two trial gravity lines were surveyed over the lead, one over pre-existing Mines Department drilling near Lefroy, and the other some seven kilometres to the north. (Plan TASH 105). Results and interpretation of the survey are reproduced in Appendix Two.

Scout drilling by cable tool rig offers the only means of checking this interpretation, and of sampling the deep lead gravels. It is therefore recommended that a line of cable tool holes be established as close as practicable to the line of gravity traverse 2; over the deepest portions of the lead as indicated by the gravity interpretation.

7. REFERENCES

- Broadhurst, e. "Lefroy and Back Creek Goldfields"
Tas. Dept. Mines Geological Surv.
Bulletin No.42, 1935.
- Gee, R.D. and Legge, P.J. Beaconsfield 1:63 360 Geological
Map Sheet and Explanatory Report,
Tas. Dept. of Mines, 1971.

8. KEYWORDS

Geophysics - mag; Geophysics - gravity; deep leads; gold.

9. LOCATION

Launceston SK55-4

10. LIST OF PLANS

TASh 105	Lefroy 35/81 Deep Lead Basalts and Ground Magnetic Traverses	1:25 000
TASh 953	Lefroy EL 35/81 Geophysical Traverse No.1 Ground Magnetics & Gravity Survey	1:10 000
TASh 1370	Lefroy EL 35/81 Geophysical Traverse No.2 Ground Magnetics & Gravity Survey	1:10 000

11. LIST OF APPENDICES

1. Lefroy Deep Lead - Ground Magnetic Traverse No.3 Model.
2. Results and Interpretation of Two Gravity and Magnetic profiles over the Lefroy Deep Lead.
3. Lefroy Deep Lead - Ground Magnetic Profiles 1-17; 19-27; 29-34.

APPENDIX ONE

Lefroy Deep Lead - Ground Magnetometer Traverse No. 3 Model



CRA EXPLORATION PTY. LIMITED

(INC. IN N.S.W.)

LEVEL 4, BELLERIVE QUAY,
CAMBRIDGE ROAD, BELLERIVE, 7018, TASMANIA, AUSTRALIAP.O. BOX 138
BELLERIVE 7018
TELEGRAMS: CRAEX
TELEX: AA57144
TELEPHONE: 44 3533
AREA CODE: (002)

IN REPLY PLEASE QUOTE

28th July, 1982.

Memorandum To: G.BROADBENT

Copy: T.W.DICKSON

From: M.FLIS

LEFROY DEEP LEAD - GROUND MAGNETIC TRAVERSE #3 MODELINTRODUCTION

A profile of ground magnetic data collected over a sub-basaltic deep lead in the Lefroy area was modelled using a Talwani - type model. Control for the modelling was provided by drill hole information to the north and south of the traverse. A location map is attached.

DISCUSSION

The magnetic data was upward continued to various levels in an endeavour to smooth the profile in a non-arbitrary fashion. A level of one-and-a-half times the station spacing (i.e. 37.5m) was chosen to model.

It became evident early in the modelling procedure that the anomaly pattern was reversed to that expected for a flat lying body such as the basalt being imitated here. It was thus concluded that, like the basalts around Mt.Bischoff, these basalts had a major remanent magnetization component whose direction is opposite to the earths' present field direction.

This observation is compensated for in the forward model by setting the magnetic susceptibility to a negative value.

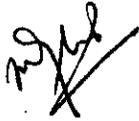
The final model arrived at is attached. Whilst no real effort was made to fit the upward continued observed data exactly, it can be seen that the form of the two curves (observed and calculated) is identical.

The model has three important features -

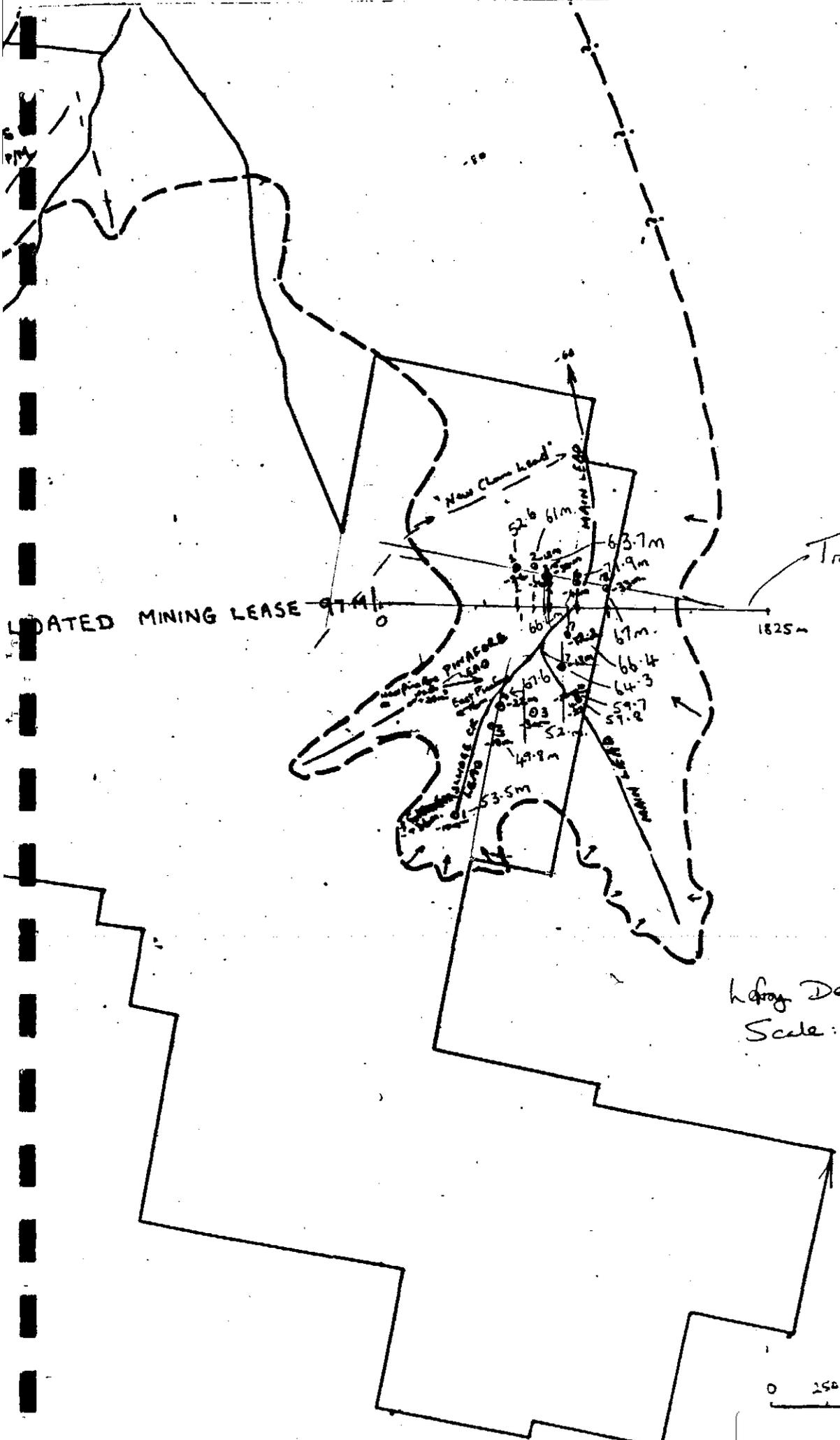
1. the edges of the basalt are very well defined by magnetics,
2. basalt thickness is, in general much less than that indicated by the surrounding drill holes. A change in the magnetude of the susceptibility used may rectify this but there is little point until more mag data is collected to expand the model,
3. a definite mid-lead basement ridge is reflected in the data. Drilling data reflects a lead bifurcation to the south. This may in fact start closer to the mag traverse than is shown on the diagram.

CONCLUSION AND RECOMMENDATIONS

Ground magnetic surveying over sub-basaltic leads can provide valuable information on the configuration of the basalt, and thus the configuration of the basement ('bedrock'). Any meaningful interpretation will have to be based on an extensive magnetic coverage - i.e. relatively close spaced lines with 10m station spacing. Information on the magnetic properties of the basalt is also required. Magnetic susceptibility and remanent susceptibility measurements should be carried out on oriented samples to obtain this information.

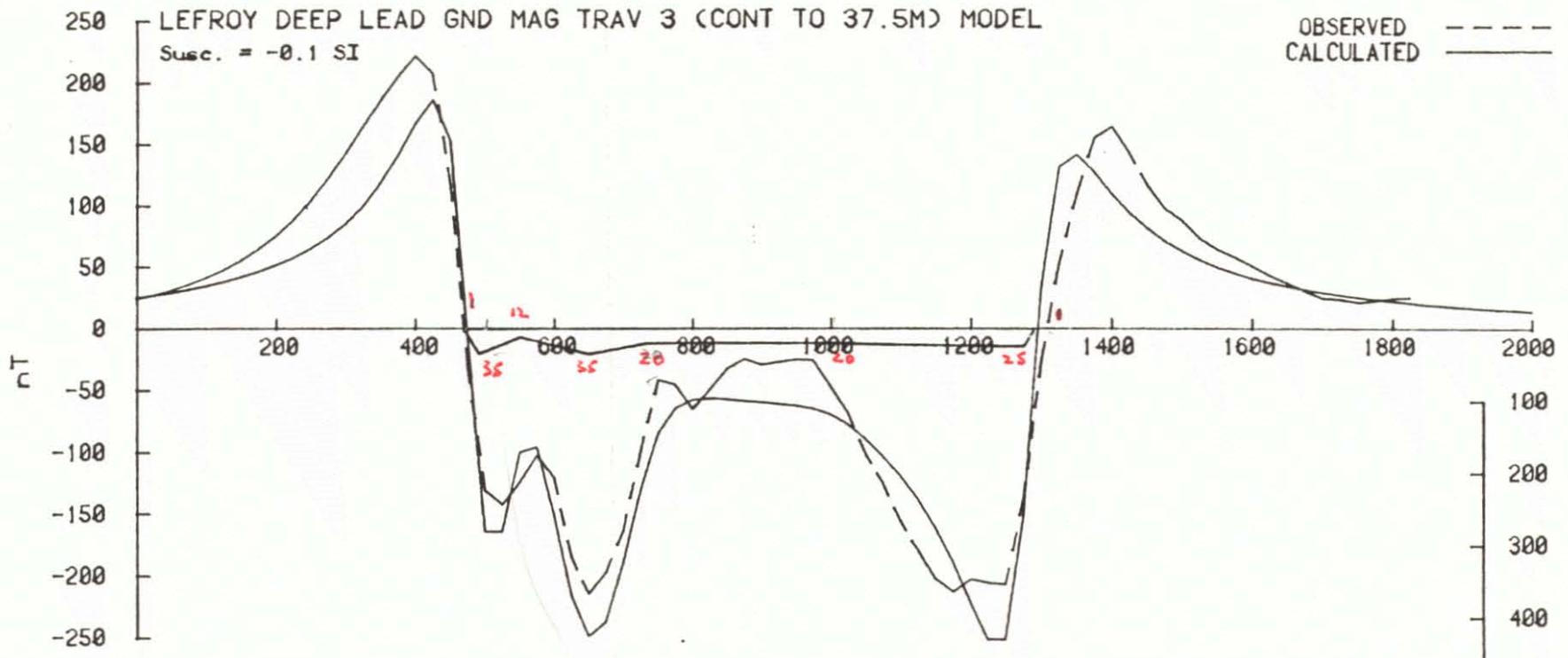


MARCUS FLIS



Grey Deep lead Area,
Scale: 1:25,000.

577011



MODEL CO-ORDS: 470, 1; 1290, 1; 1275, 25; 1000, 20; 735, 20; 650, 35; 550, 12; 490, 35

APPENDIX TWO

RESULTS AND INTERPRETATION OF TWO GRAVITY AND
MAGNETIC PROFILES OVER THE LEFROY DEEP LEAD.



CRA EXPLORATION PTY. LIMITED

(INC. IN N.S.W.)

LEVEL 4, BELLERIVE QUAY,
CAMBRIDGE ROAD, BELLERIVE, 7018, TASMANIA, AUSTRALIAP.O. BOX 138
BELLERIVE 7018
TELEGRAMS: CRAEX
TELEX: AA57144
TELEPHONE: 44 3533
AREA CODE: (002)

IN REPLY PLEASE QUOTE

4th May, 1983.

Memorandum To: G.BROADBENT
T.W.DICKSON

From: M.F.FLIS

Subject: RESULTS AND INTERPRETATION OF TWO GRAVITY AND
MAGNETIC PROFILES OVER THE LEFROY DEEP LEAD.INTRODUCTION

Two orientation lines were set up over the Lefroy Deep Lead north of Lefroy, (see locality Plan TASH 105). These lines were surveyed with the ground magnetic and gravity methods.

Line one is located along a fence of Department of Mines drill holes which provide sub-surface information. The second line is some 5,800 metres to the north where a fence of drill holes is desirable to evaluate the lead. The survey was carried out to optimize the placing of these holes.

DISCUSSION

Gravity data was collected by the author using CRAE's LaCoste and Romberg gravimeter (#G649). The gravimeter was calibrated on the Hobart calibration range before the survey. A lack of a National Gravity Network gravity station in the area meant the data had to be reduced to an arbitrary datum. A similar lack of a survey bench mark necessitated the elevation data (lines were optically levelled) to be tied in to the A.H.D. by estimation from 1:25 000 topography maps. Elevation is deemed to be accurate to within 10cm overall and to within 5 metres with respect to the A.H.D. This is within acceptable specifications for this survey.

Resultant gravity data was modelled by inversion techniques using the depth control of line one to provide the best fit density contrast. This value was used in the inversion of the line two data. The models thus derived were then compared with the ground magnetic data.

All gravity, magnetic and model data are shown in Plans TASH 953 and TASH 1370 and as attachments I and II.

Line One

Gravity and magnetic data exhibit coincident and relatively well shaped anomalies directly attributable to the basalt's presence. Although the regional gravity field is not well enough mapped out by this profile to be adequately defined, the state gravity map indicates a near flat field. The data was inverted and, using the nearby holes as a depth control, a density contrast of 0.45 g/cc was obtained.

The model obtained is in good agreement with the drill holes, and indicates that a two channel lead exists. Comparison with the magnetic data shows that discrepancies do exist, however this is typical of basalts. The gross form of the observed data is sufficiently comparable and may be accepted as being in agreement. These discrepancies may be due to either local changes in bulk density of the basalt or the basement rocks, local changes in bulk susceptibility of the basalt or both. It is also of interest to note that the basalt's magnetic susceptibility reflects the reversed remanent magnetization imprinted in these basalts.

Line Two

Data on this line is more confused, and noisy. The basalt is extensive; approaching a plain situation rather than a well defined river valley. Adding to the confusion is the complex regional gravity field. A fourth-order line of best fit was applied to the profile to obtain residuals for inversion modelling.

The model indicates that a two channel lead still persists, although it is not possible to tell whether these are the same two or tributaries of the ones identified on line one. A third smaller lead is also indicated, however, it's authenticity is in question due to it's improbable shape.

SUMMARY

Both gravity and magnetic methods appear to have detected the sub-basaltic Lefroy Deep Lead adequately for the purpose of drilling. Whilst it would be irresponsible to assert that the derived models reflect the true situation, they do increase the chances of finding the leads by drilling on their indications. That is, the surveys are best viewed as being a qualitative rather than quantitative guide.

RECOMMENDATIONS

It is recommended that:

1. The lead will be best tested on line 2 by locating drill holes at the following positions (with inferred order of priority):
 - a. 3100mE
 - b. 2900mE
 - c. 750 mE
 - d. 1150mE
 - e. 1875mE

These localities do not include step-out holes should they be required.

2. Further gravimetry and magnetometry to be carried out if further holes are contemplated.

M.F.FLIS

ATTACHMENT I

LEFROY DEEP LEAD ORIENTATION

GRAVITY SURVEY

TABLE OF PRINCIPLE FACTS

GRAVITY SURVEY SHEET

Area	LEFROY DEEP LEAD	Prospect	LINE 1 (S/L)	Survey No
Title	ORIENTATION SURVEY	Sheet	1 of 2	Date 18/10/82 Oper. M. FLIS

Motor	LACOSTE + Lomazee #G 649	Scale factor	1.01212	Trav. STN. LINE (#27)
-------	--------------------------	--------------	---------	-----------------------

LT ϕ 146° 58' 57", 41° 5' 21"
1000 lat

Station	Time	Dial Units	Height (AHD)	mN	Bouguer Anom	Comments	
LT9	350.3	12.48	3745.58	88.657	451.2	0	BASE STATION 1
LT ϕ	0.0	13.14	49.395	74.514	549.5	1.15	
LT1	50	13.20	48.0	80.399	535.7	0.88	
LT3	110.9	13.26	47.695	81.521	518.4	0.77	
LT4	161.4	13.30	47.013	84.061	504.3	0.57	
LT5	212.4	13.36	45.13	91.776	489.4	0.17	
LT7	262.9	13.41	45.29	92.041	475.0	0.37	
LT8	289.5	13.46	45.305	91.862	468.2	0.34	
LT9	350.3	13.51	45.605	88.657	451.2	0.0	BASE STATION 1
LT10	400.8	13.56	45.225	89.136	437.1	-0.27	
LT11	452.3	14.01	45.36	88.093	423.3	-0.32	
LT12	501.0	14.07	45.665	86.198	410.2	-0.35	
LT13	552.4	14.11	46.62	83.165	396.6	0.03	
LT14	601.0	14.15	47.51	79.205	381.1	0.17	
LT15	650.5	14.19	49.15	74.615	367.6	0.94	
LT16	701.0	14.23	50.05	70.551	353.4	1.06	
LT17	751.0	14.31	50.025	70.253	339.7	1.02	
LT18	767.2	14.35	49.483	71.65	335.1		
800	797.5	14.35	49.483	72.618	327.1	0.95	
850	849.5	14.40	49.365	72.835	312.2	0.9	
900	891.2	14.44	49.15	73.321	301.1	0.79	
950	938.4	14.48	49.04	73.293	290.4	0.69	
1000	989.16	14.55	49.04	73.057	279.4	0.68	BASE STATION 2
LT9	350.3	15.10	45.0975	88.657	451.2	0	BASE STATION 1
1000	989.16	15.25	48.995	73.057	279.4	0.68	BASE STATION 2
1050	1043.8	15.30	48.805	73.922	269.1	0.64	
1100	1090.4	15.36	49.185	71.979	246.1	0.62	
1150	1141.1	15.48	49.26	71.671	232.9	0.72	
1200	1194.8	15.59	49.6	71.282	217.9	0.86	
1250	1244.5	16.03	49.48	72.216	205.0	0.91	
1300	1294.3	16.08	48.945	75.456	189.6	0.99	
LT33	1336.7	16.11	48.61	77.481	176.5	1.04	
LT34	1386.3	16.15	48.045	80.115	163.9	0.97	
LT35	1436.1	16.20	47.285	83.78	150.7	0.91	
LT36	1489.6	16.25	46.428	87.907	136.4	0.84	BASE STATION 3
1000	989.16	16.41	49.0625	73.057	279.4	0.68	BASE STATION 2
LT36	1489.6	16.55	46.325	87.907	136.4	0.84	BASE STATION 3
LT37	1540.1	17.00	46.13	88.848	121.6	0.8	
LT38	1590.1	17.04	45.528	89.773	108.3	0.35	
LT39	1640.0	17.08	44.78	92.059	94.9	0.02	
LT40	1690.1	17.12	44.125	94.515	83.7	-0.19	
LT41	1740.3	17.16	43.66	96.937	68.0	-0.21	
LT42	1790.2	17.19	43.278	99.159	54.1	-0.18	
LT43	1840.3	17.25	42.81	102.596	40.8	-0.01	
LT44	1890.0	17.29	42.043	106.34	27.1	-0.07	

GRAVITY SURVEY SHEET

Area LEFROY DEEP LEAD	Prospect LINE 2 (NTH)	Survey No
Title ORIENTATION SURVEY	Sheet 1 of 2	Date 20/10/82 Oper. M. FLIS

Meter LACOSTE & ROMBERG #G649	Scale factor 1.01212	Trav. NTH LINE
-------------------------------	----------------------	----------------

1450: 497190mE, 5456980mN
146° 57' 59.6", 41° 2' 18"

Station	Time	Dial Units	Height (AHD)	mN	Bouguer Anom	Comments
1450 *	8:57	3756.674	21.245	437.8	3.0	BASE STATION #1
1400	1100 9:02	56.205	22.136	418.2	2.68	
1350	1050 9:07	55.385	24.494	398.7	2.30	
1300	1000 9:17	55.230	26.102	379.1	2.44	
1250	950 9:23	55.233	27.436	359.6	2.69	
1200	900 9:32	55.090	28.785	340.2	2.80	
1150	850 9:39	55.12	29.702	320.9	2.99	
1100	800 9:45	55.05	30.113	301.9	2.98	
1050	749 9:52	54.865	30.829	282.5	2.92	
1000	700 9:57	54.708	32.102	263.4	2.99	
1450 *	10:06	56.6875			3.0	BASE STATION #1
950	630 10:26	54.290	34.522	244.2	3.05	
900	600 10:32	53.903	36.434	225.0	3.03	
850	550 10:40	53.591	38.566	205.9	3.13	
800	500 10:48	53.291	40.560	186.0	3.21	
750	10:54	53.176	42.242	166.2	3.41	
700	10:59	52.840	44.306	147.6	3.47	
650	11:07	52.356	46.524	129.9	3.41	
600	11:16	52.140	47.456	111.8	3.37	
550	11:22	52.036	47.590	92.9	3.28	
500	11:28	51.433	50.098	74.1	3.16	
450	11:36	50.959	52.621	55.8	3.17	
400	11:42	50.858	53.154	36.5	3.16	
350	11:50	50.591	54.612	18.3	3.17	
300	11:57	50.878	53.805	0	3.30	
1450 *	12:19	56.543			3.0	BASE STATION #1
1450 *	13:39	56.523			3.0	BASE STATION #1
1500	13:47	56.698	20.491	457.6	3.04	ROAD
1550	13:58	56.862	19.946	476.1	3.11	
1600	14:04	56.904	18.822	494.0	2.83	
1650	14:10	57.351	17.201	514.0	3.10	
1700	14:15	58.008	15.262	533.8	3.4	NOISY
1750	14:26	58.138	13.967	553.8	3.29	NOISY
1800	14:35	58.635	12.173	573.2	3.45	CREEK
1850	14:43	59.375	12.138	592.8	4.15	
1900	14:52	58.724	15.619	609.7	4.24	
1950	15:00	57.671	20.000	631.0	4.06	
2000	15:06	57.021	22.181	651.3	3.841	
2050	15:12	56.755	22.926	669.8	3.73	
1450 *	15:29	56.544			3.0	BASE STATION #1
2050 *	15:42	56.760			3.73	BASE STATION #2
2100	15:51	56.976	21.980	689.1	3.78	
2150	16:01	57.225	21.061	709.5	3.86	NOISY
2200	16:16	57.713	19.744	728.1	4.11	
2250	16:22	57.519	21.640	748.1	4.30	

577021

GRAVITY SURVEY SHEET

Area LEFROY DEEP LEAD	Prospect LINE 2 (N4)	Survey No
Title ORIENTATION SURVEY	Sheet 1 of 2	Date 21/10/82 Oper. M. FLIS

Motor LACOSTE & ROMBERG #G64	Scale factor 1.01212	Trav. NTH LINE
------------------------------	----------------------	----------------

Station	Time	Dial Units	Height (AHD)	mN	Bouguer Anom	Comments
2050 *	8.06	56.753	22.926	669.8	3.73	BASE STATION #1 TO 20/10/82
3700 *	8.19	53.918	48.442	1308.6	6.38	
2050 *	8.32	56.780			3.73	BASE STATION #1
3700 *	8.45	53.893			6.38	
2550	9.12	54.858	38.285	867.6	5.01	
2600	9.20	54.672	40.348	887.9	5.25	
2650	9.26	54.411	42.085	908.0	5.34	
2700	9.34	54.423	42.718	927.0	5.50	NOISY
2750	9.42	54.446	43.186	947.7	5.63	
2800	9.53	54.303	45.014	968.4	5.87	NOISY
2850	9.58	53.871	47.414	990.1	5.92	
2900	10.06	53.746	48.770	1009.3	6.08	
2950	10.13	53.582	49.322	1027.3	6.04	NOISY
3000	10.18	53.663	49.479	1047.1	6.17	
3050	10.23	53.820	48.961	1065.2	6.25	
3100	10.30	53.915	49.407	1083.2	6.45	
3150	10.36	53.928	48.444	1101.7	6.29	
3200	10.44	53.790	48.754	1120.2	6.23	
3250	10.50	53.703	49.989	1138.9	6.40	
3300	10.58	53.245	50.767	1157.2	6.10	
3350	11.02	53.345	50.486	1176.4	6.17	
3400	11.08	53.620	49.756	1195.6	6.32	
3450	11.22	53.580	49.726	1214.1	6.29	
"	11.25	53.933	49.726	1214.1	6.65	SUSPECTED TARE Δ = 0.337
3400	11.30	53.940	49.756	1195.6	6.65	CHECK READING Δ = 0.337
TARE OF +0.337 DIAL UNITS OBSERVED. FOLLOWING VALUES ADJUSTED						
ACCORDINGLY BY SUBTRACTING 0.337 DIAL UNITS.						
3450	11.38	53.584	49.726	1214.1	6.30	
3500	11.42	53.546	49.588	1233.0	6.25	
3550	11.47	53.566	49.448	1252.0	6.26	
3600	11.55	53.681	49.177	1270.2	6.34	
3650	12.01	53.731	49.057	1289.2	6.39	
3700 *	12.08	53.826	48.442	1308.6	6.38	BASE STATION #1
TARE ADJUSTMENT NO LONGER MADE AS NEW						
BASE STATION INTERVAL SET-UP.						
3700 *	13.09	53.983	48.442	1308.6	6.38	BASE STATION #1
3750	13.17	54.075	48.044	1327.5	6.40	
3800	13.24	54.17	(48.015)	(1346.4)	6.50	MARSH - V. NOISY
3850	13.32	54.310	47.987	1365.4	6.65	
3900	13.39	54.485	47.912	1384.1	6.82	
3950	13.46	54.808	46.689	1403.0	6.92	
4000	13.52	55.018	45.193	1422.1	6.85	
4050	13.58	55.136	44.839	1441.9	6.91	
4100	14.05	55.089	45.047	1461.0	6.91	

ATTACHMENT II

LEFROY DEEP LEAD GEOPHYSICAL MODELLING

(a)

LEFROY DEEP LEED GRAVITY TRAV 127

** MODEL **

40, 50., 5, 0.001, 8, 0.450, 5, 5 INTERPOLATED

POSITION	INTERPOLATED	CALCULATED	CALCULATED
METRE	GRAVITY	GRAVITY	DEPTHS
	mGAL	mGAL	KM
0.0	1.550	1.547	0.123
50.0	1.270	1.275	0.032
100.0	1.183	1.180	0.065
150.0	1.009	1.014	0.059
200.0	0.597	0.597	0.007
250.0	0.709	0.710	0.032
300.0	0.677	0.678	0.033
350.0	0.362	0.362	0.006
400.0	0.092	0.193	0.000
450.0	0.032	0.195	0.000
500.0	0.000	0.238	0.000
550.0	0.359	0.360	0.001
600.0	0.505	0.589	0.000
650.0	1.278	1.251	0.150
700.0	1.390	1.402	0.096
750.0	1.351	1.355	0.075
800.0	1.267	1.273	0.057
850.0	1.219	1.207	0.084
900.0	1.078	1.083	0.047
950.0	0.993	0.993	0.043
1000.0	0.981	0.984	0.046
1050.0	0.986	0.933	0.061
1100.0	0.916	0.918	0.029
1150.0	1.031	1.033	0.052
1200.0	1.147	1.143	0.071
1250.0	1.197	1.202	0.058
1300.0	1.268	1.270	0.076
1350.0	1.301	1.270	0.099
1400.0	1.221	1.227	0.064
1450.0	1.151	1.150	0.059
1500.0	1.090	1.099	0.052
1550.0	1.005	0.990	0.097
1600.0	0.524	0.526	0.008
1650.0	0.207	0.208	0.000
1700.0	0.040	0.123	0.000
1750.0	0.021	0.087	0.000
1800.0	0.072	0.073	0.000
1850.0	0.207	0.207	0.010
1900.0	0.123	0.123	0.004
1950.0	0.003	0.039	0.000

LEFROY GRAVITY TRAVERSE #2 (NTH) RESIDUALS (SURFACE ORDER 4)

** MODEL **

02, 50, 5, 0.001, B, 0.450, 3, 5

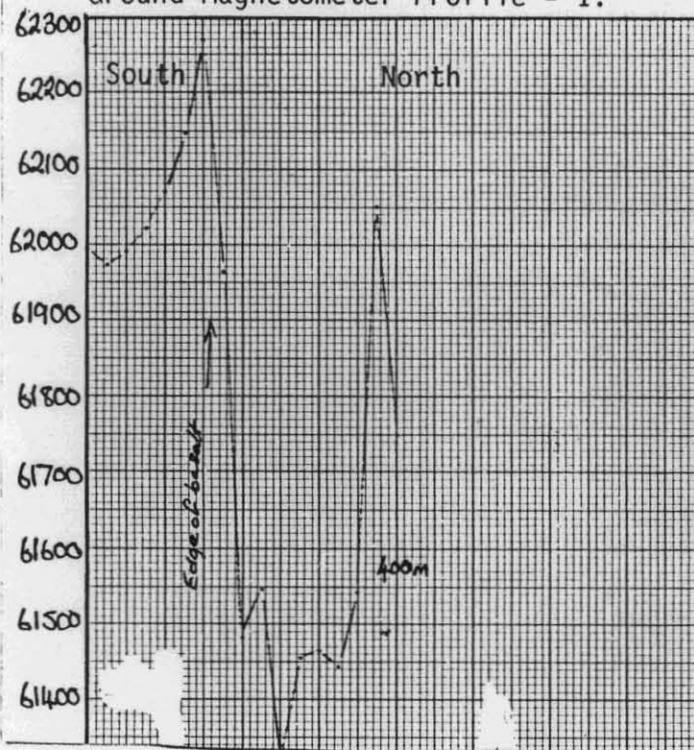
(b)

POSITION METRE	CALCULATED GRAVITY mGAL	CALCULATED DEPTHS KM
300.0	0.018	0.000
350.0	0.024	0.000
400.0	0.040	0.000
450.0	0.170	0.007
500.0	0.260	0.009
550.0	0.481	0.024
600.0	0.648	0.037
650.0	0.766	0.040
700.0	0.875	0.063
750.0	0.854	0.061
800.0	0.706	0.030
850.0	0.647	0.036
900.0	0.572	0.025
950.0	0.598	0.037
1000.0	0.541	0.028
1050.0	0.470	0.021
1100.0	0.521	0.030
1150.0	0.509	0.034
1200.0	0.290	0.011
1250.0	0.140	0.005
1300.0	0.037	0.000
1350.0	0.031	0.000
1400.0	0.044	0.000
1450.0	0.260	0.015
1500.0	0.240	0.012
1550.0	0.240	0.013
1600.0	0.053	0.000
1650.0	0.090	0.001
1700.0	0.311	0.017
1750.0	0.128	0.000
1800.0	0.260	0.000
1850.0	0.790	0.073
1900.0	0.800	0.062
1950.0	0.533	0.021
2000.0	0.220	0.005
2050.0	0.068	0.000
2100.0	0.048	0.000
2150.0	0.045	0.000
2200.0	0.101	0.003
2250.0	0.191	0.004
2300.0	0.497	0.043
2350.0	0.251	0.006
2400.0	0.301	0.015
2450.0	0.260	0.011
2500.0	0.330	0.016
2550.0	0.391	0.018
2600.0	0.490	0.029
2650.0	0.492	0.022
2700.0	0.570	0.032
2750.0	0.606	0.025
2800.0	0.738	0.055
2850.0	0.722	0.029
2900.0	0.765	0.059
2950.0	0.658	0.024
3000.0	0.689	0.039
3050.0	0.702	0.027
3100.0	0.778	0.075
3150.0	0.578	0.021
3200.0	0.442	0.014
3250.0	0.540	0.042
3300.0	0.171	0.001
3350.0	0.171	0.006
3400.0	0.261	0.014
3450.0	0.180	0.008
3500.0	0.070	0.002
3550.0	0.030	0.000
3600.0	0.060	0.002
3650.0	0.060	0.002
3700.0	0.018	0.000
3750.0	0.020	0.000
3800.0	0.060	0.002
3850.0	0.180	0.008
3900.0	0.320	0.017
3950.0	0.400	0.026
4000.0	0.310	0.013
4050.0	0.360	0.020
4100.0	0.351	0.014
4150.0	0.518	0.035
4200.0	0.511	0.027
4250.0	0.511	0.026
4300.0	0.538	0.035
4350.0	0.461	0.023

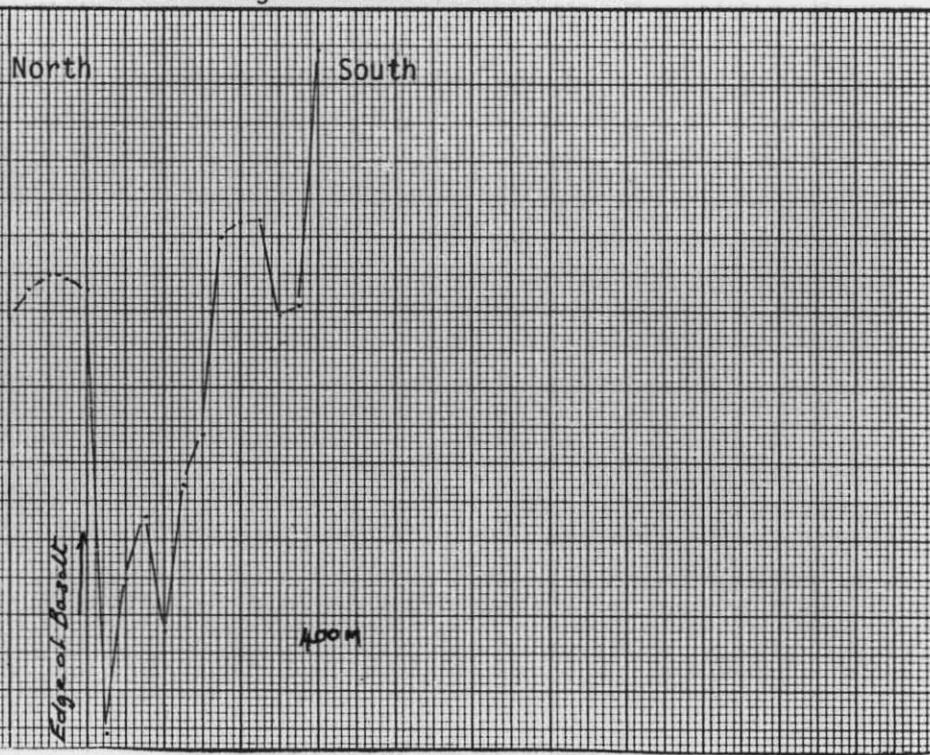
APPENDIX THREE

Lefroy Deep Lead - Ground Magnetic Profiles	1 - 17
	18 - 27
	29 - 34

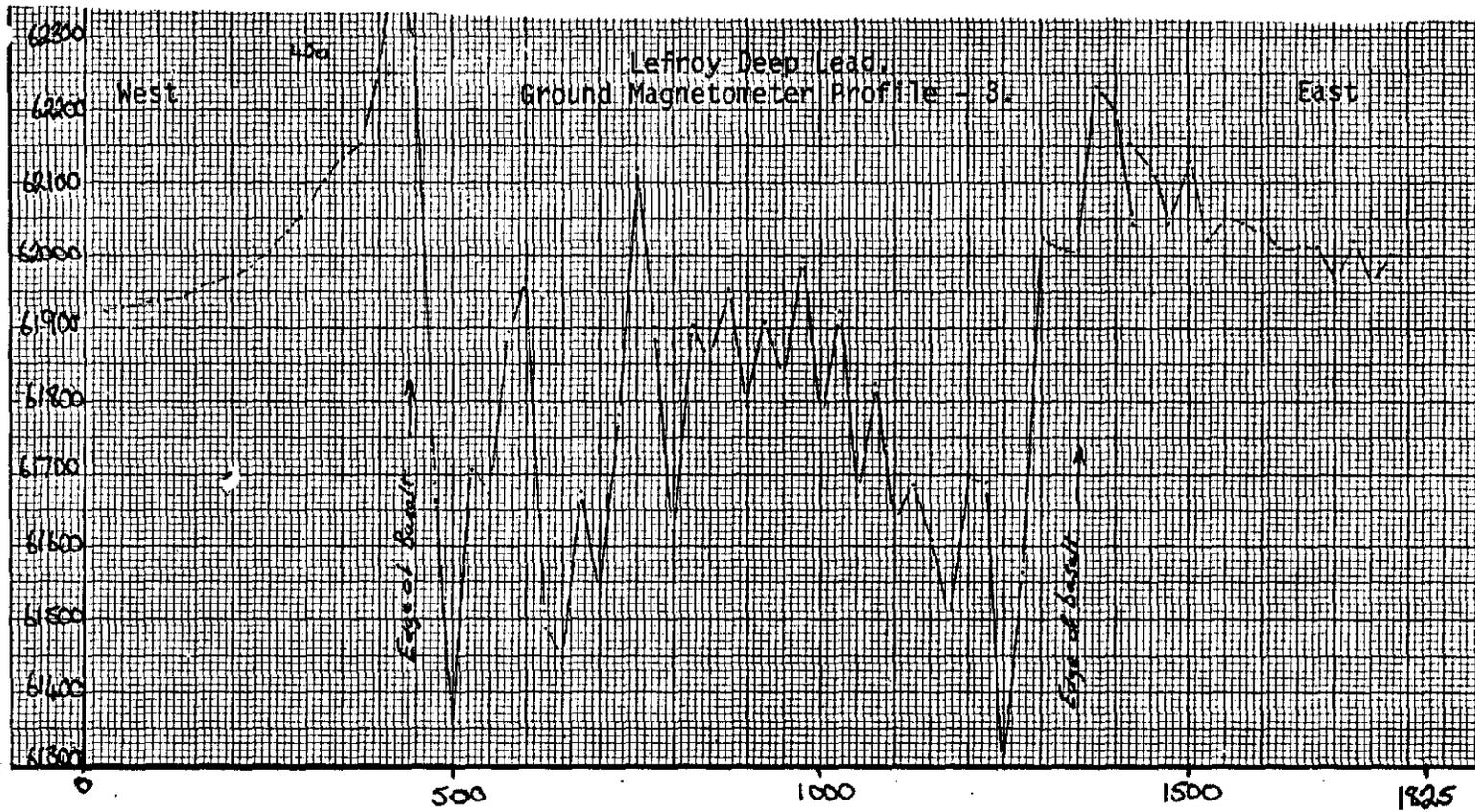
Lefroy Deep Lead.
Ground Magnetometer Profile - 1.



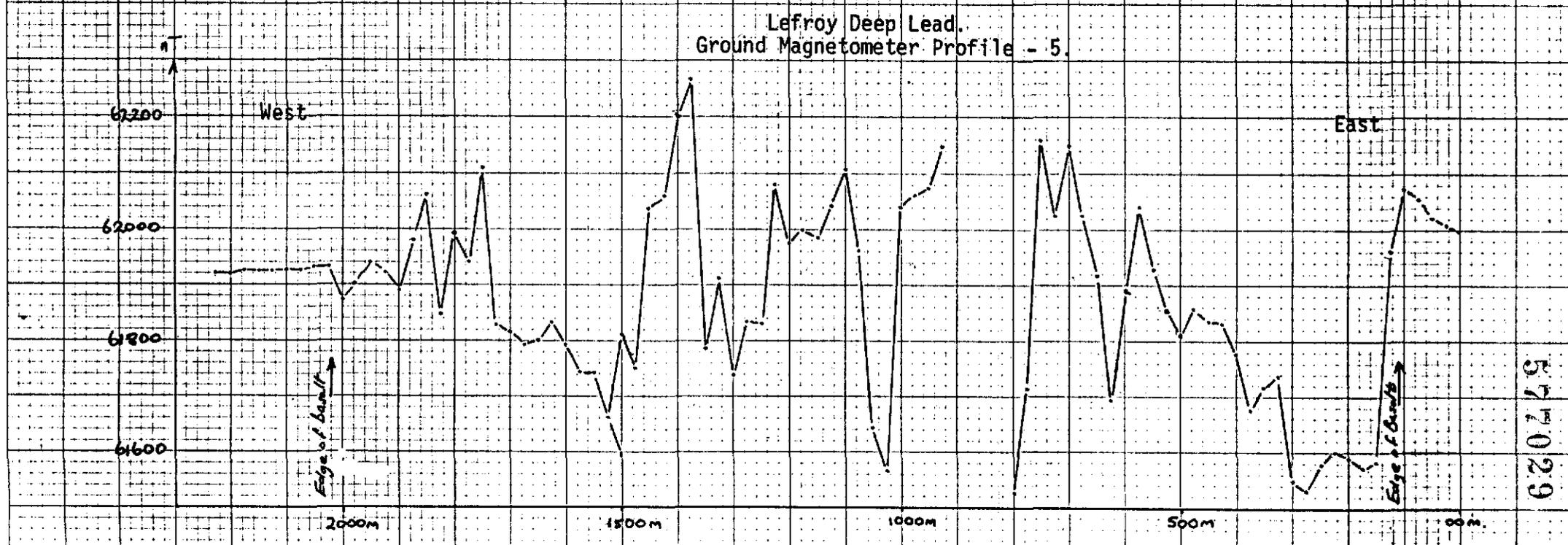
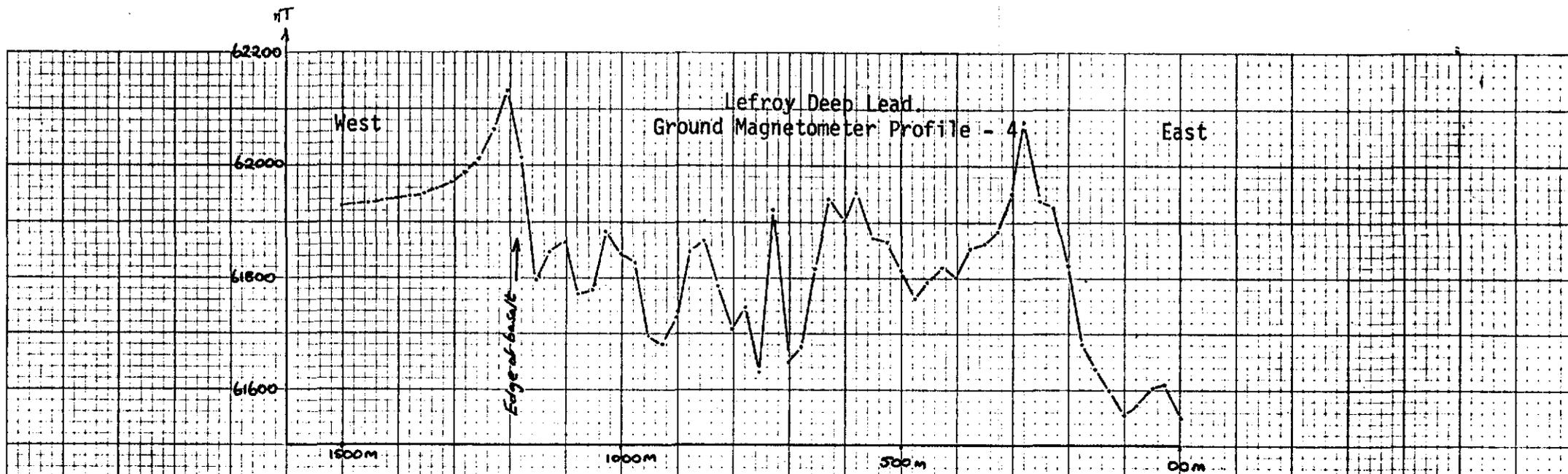
Lefroy Deep Lead.
Ground Magnetometer Profile - 2.



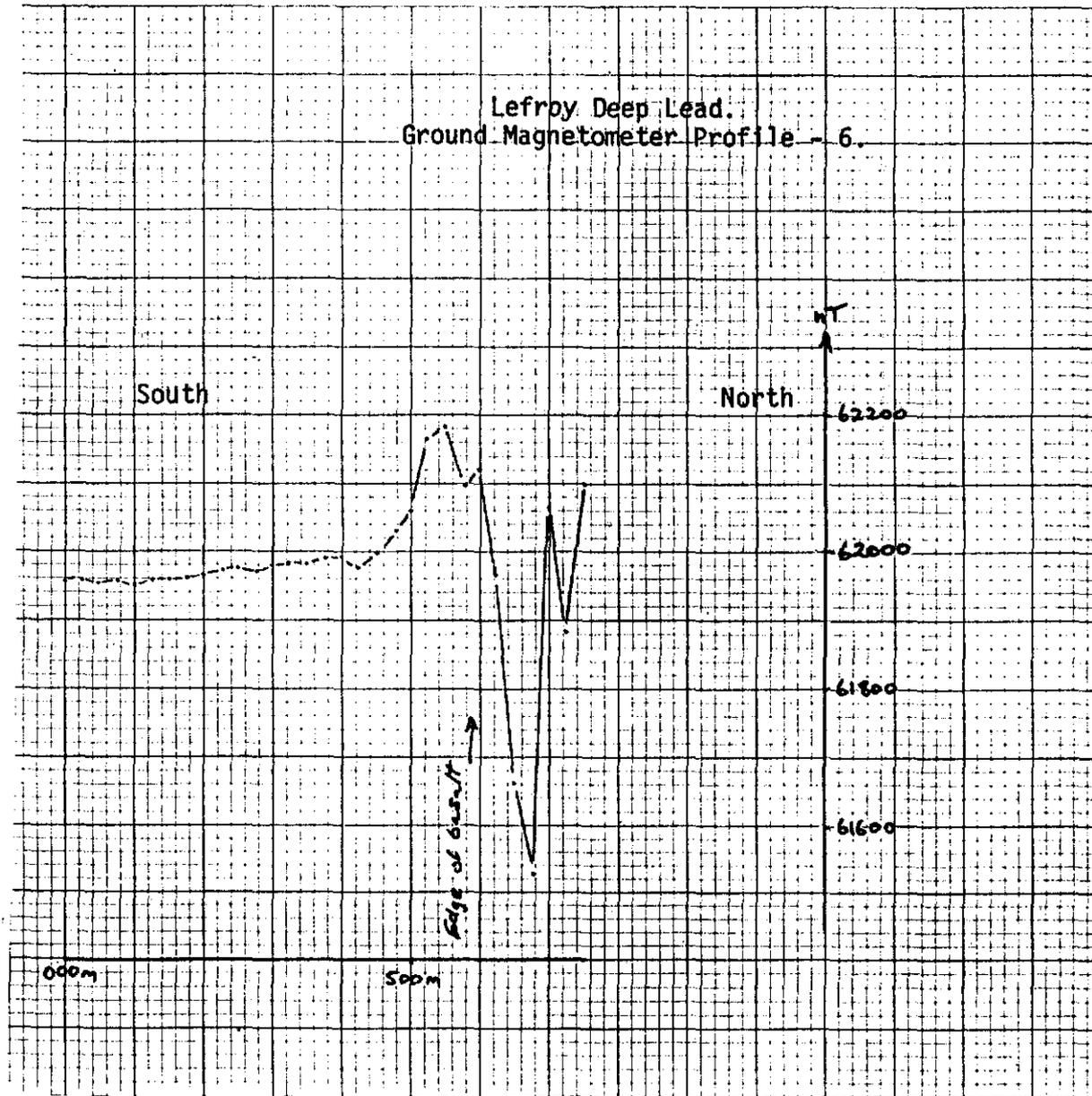
577027



577028



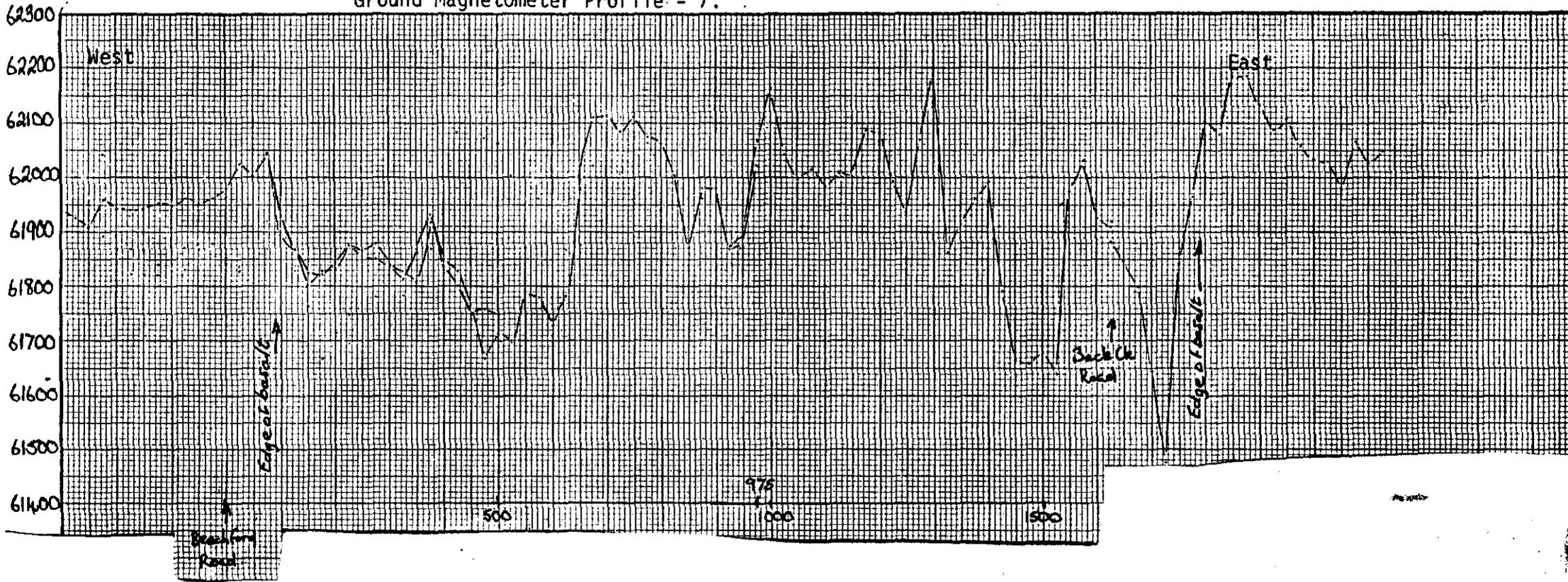
577029



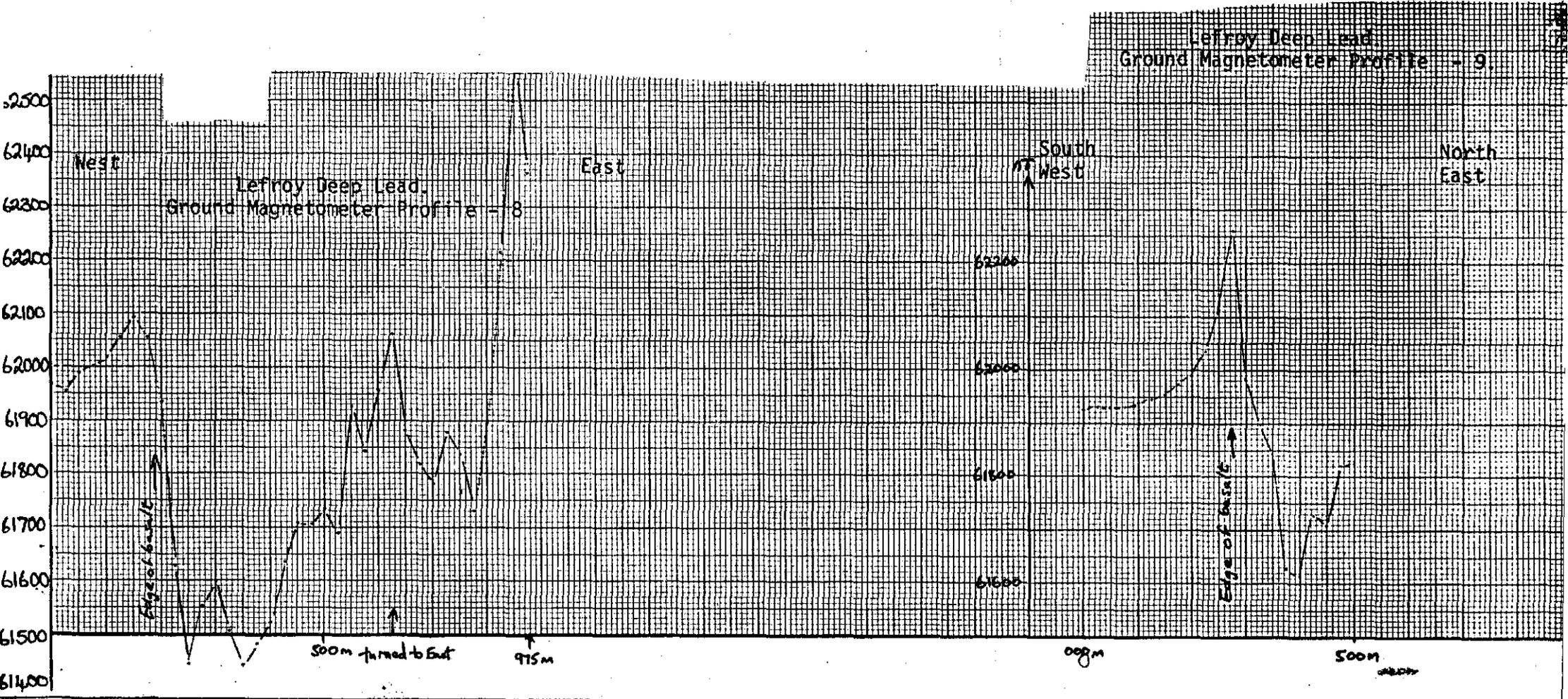
577030

577031

Lefroy Deep Lead.
Ground Magnetometer Profile - 7.



577032



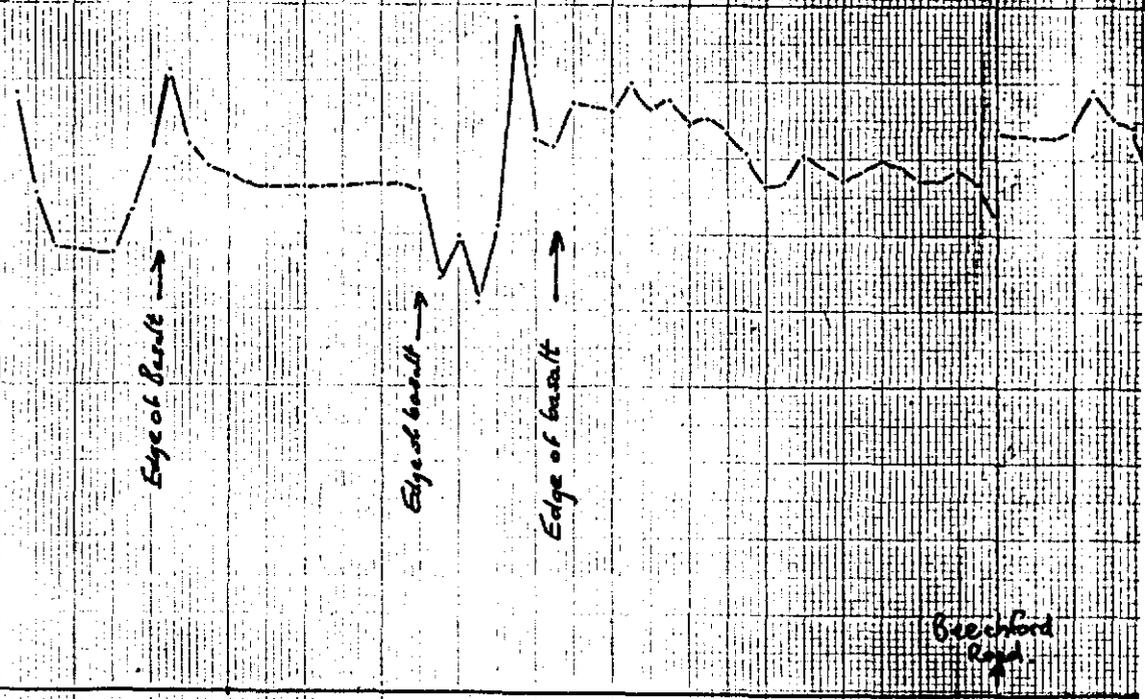
577033

Lefroy Deep Lead.
Ground Magnetometer Profile - 10.
000 metres to 1275 metres West.

62700
62600
62500
62400
62300
62200
62100
62000
61900
61800
61700
61600
61500
61400
61300
61200
61100

West

East



Edge of basalt →

Edge of basalt →

Edge of basalt →

+ 1000

Beechford Bay

Lefroy Deep Lead.
Ground Magnetometer Profile - 10.
000 metres to 2125 metres East.

West

East

Edge of basalt

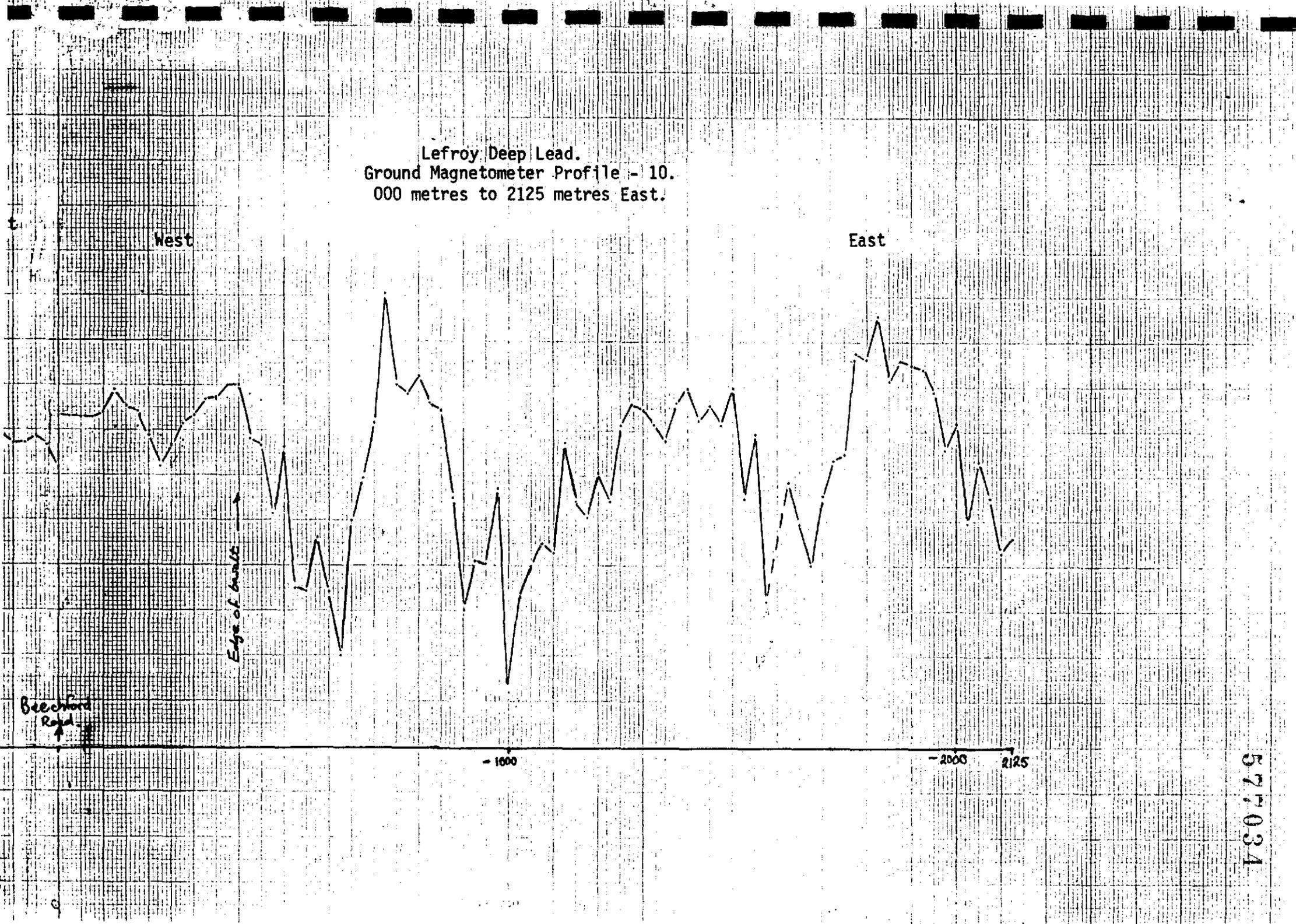
Beechford
Road

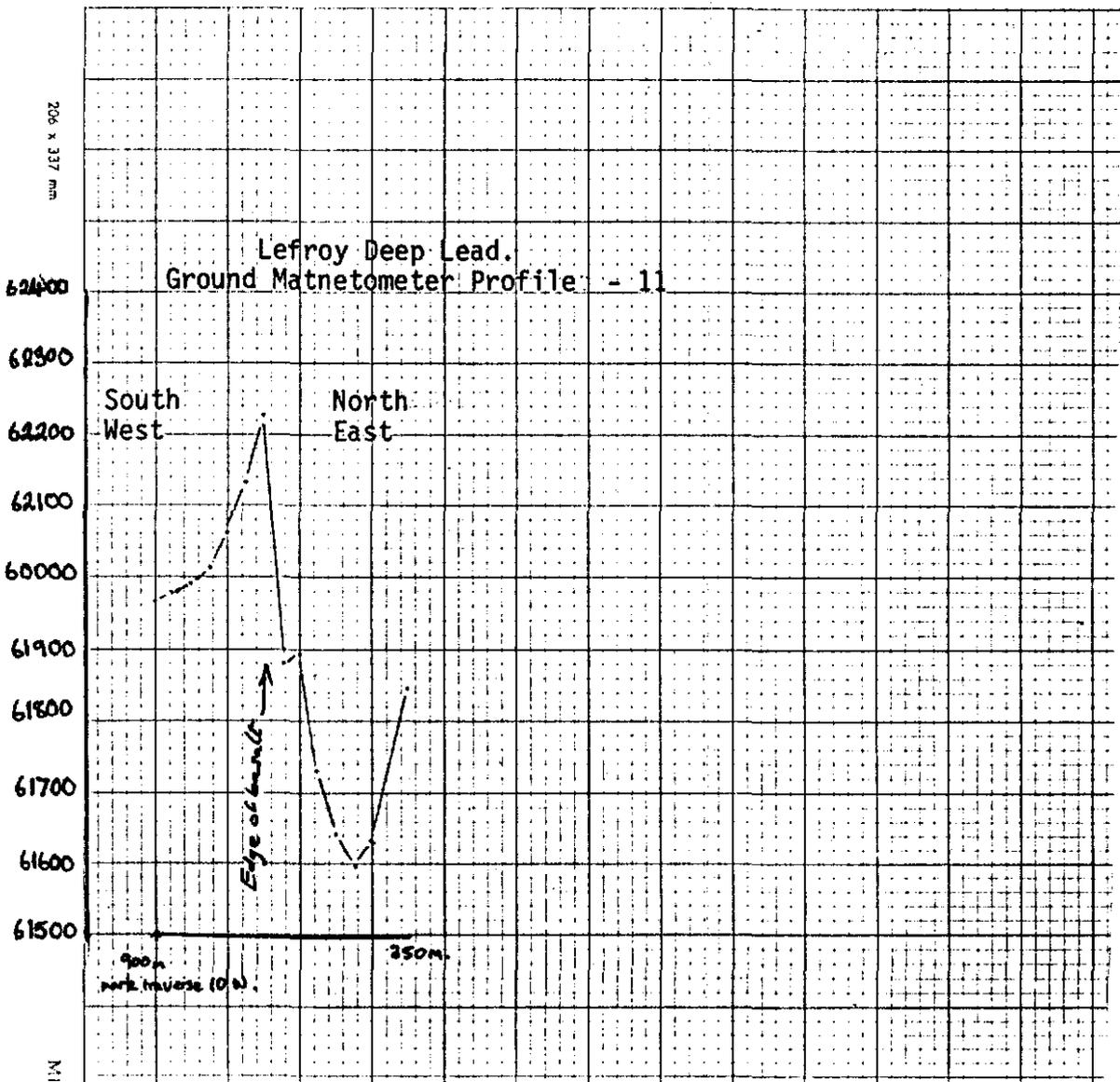
- 1000

- 2000

2125

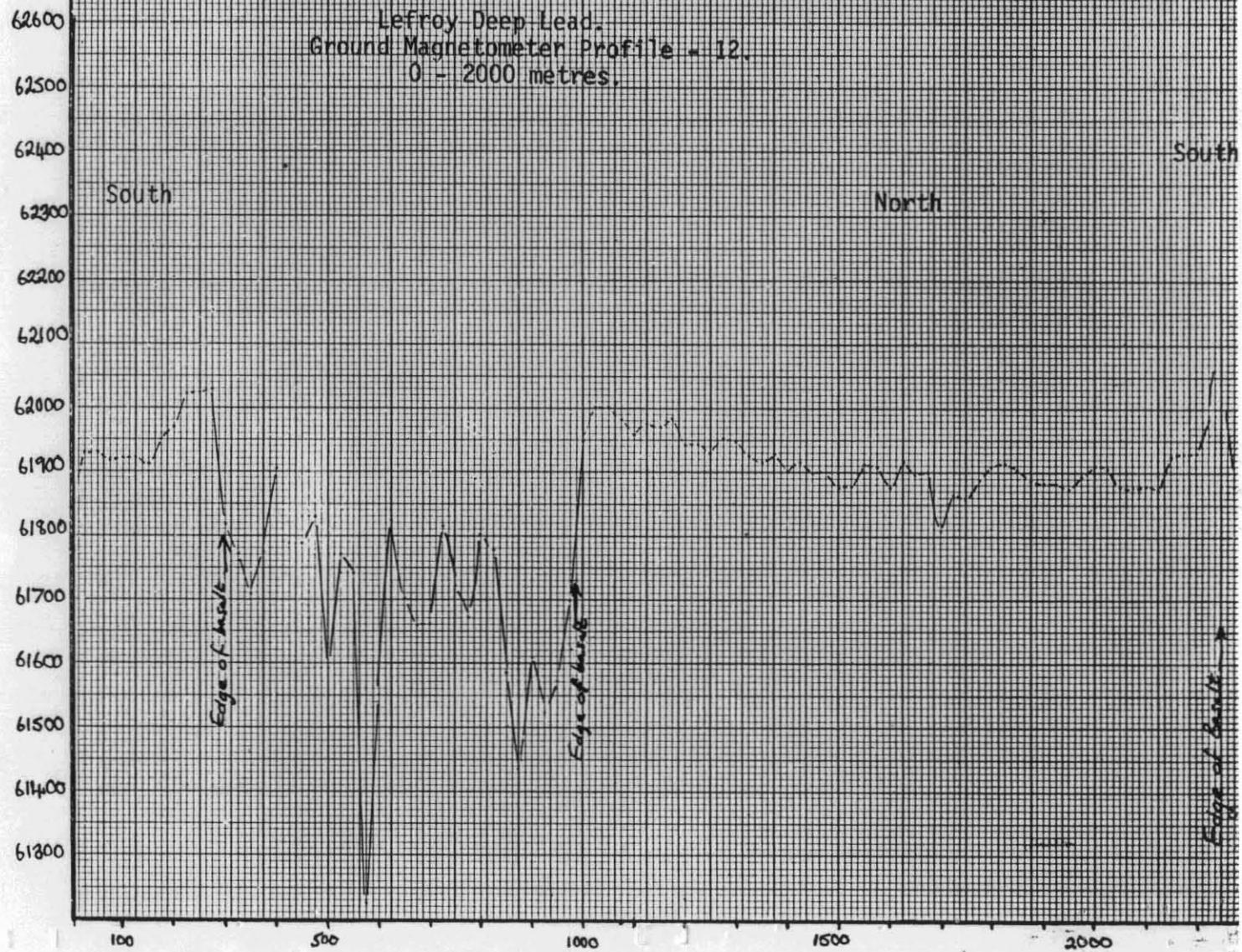
577034





577035

577036



Iefroy Deep Lead.
Ground Magnetometer Profile - 12.
2000 metres to 5125 metres.

North

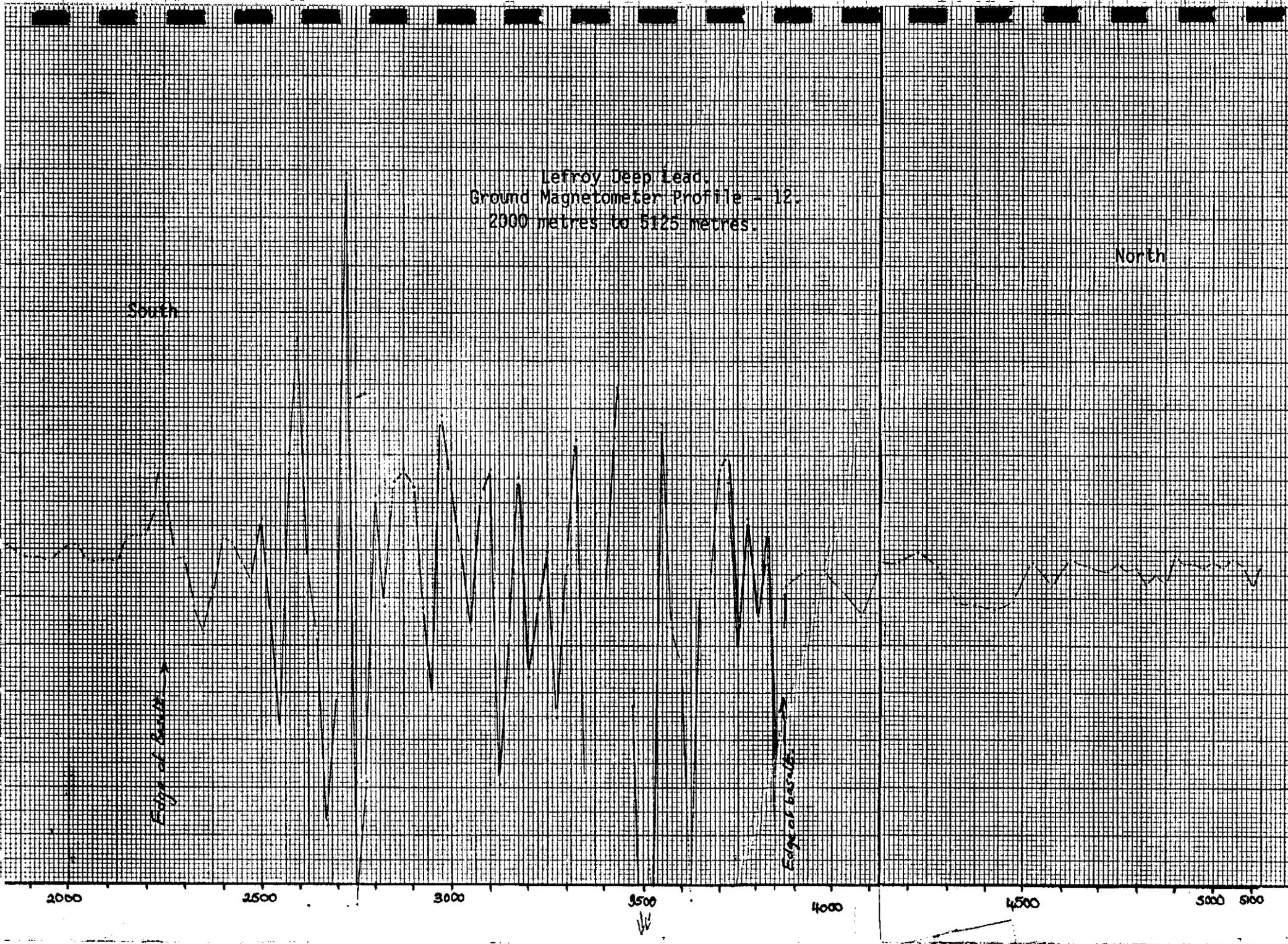
South

Edge of beach

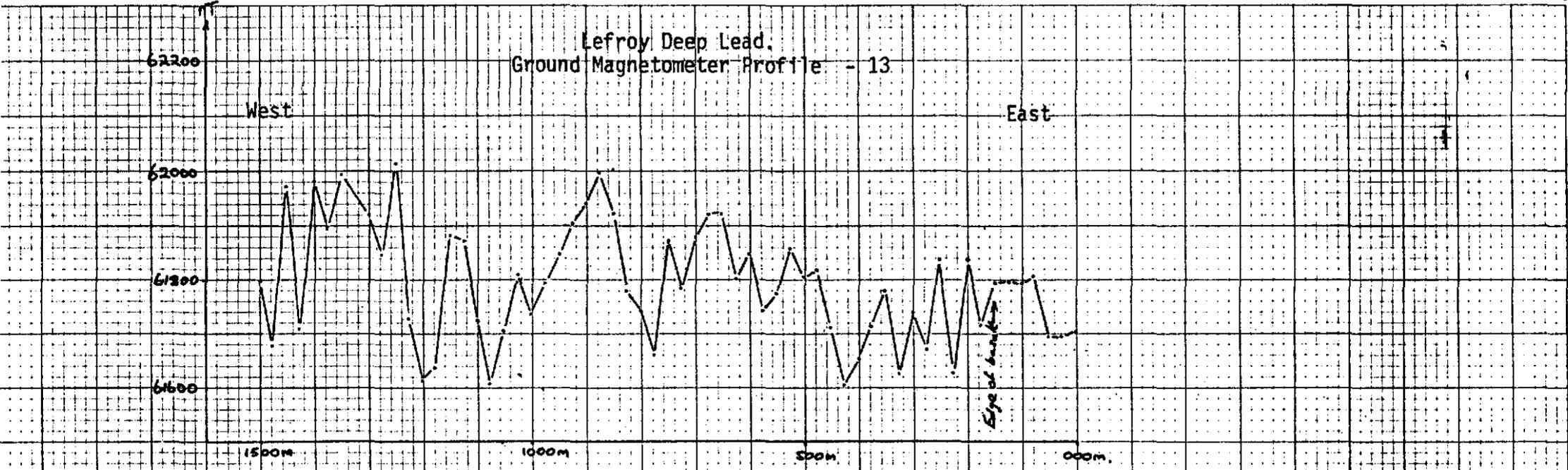
Edge of beach

2000 2500 3000 3500 4000 4500 5000 5500

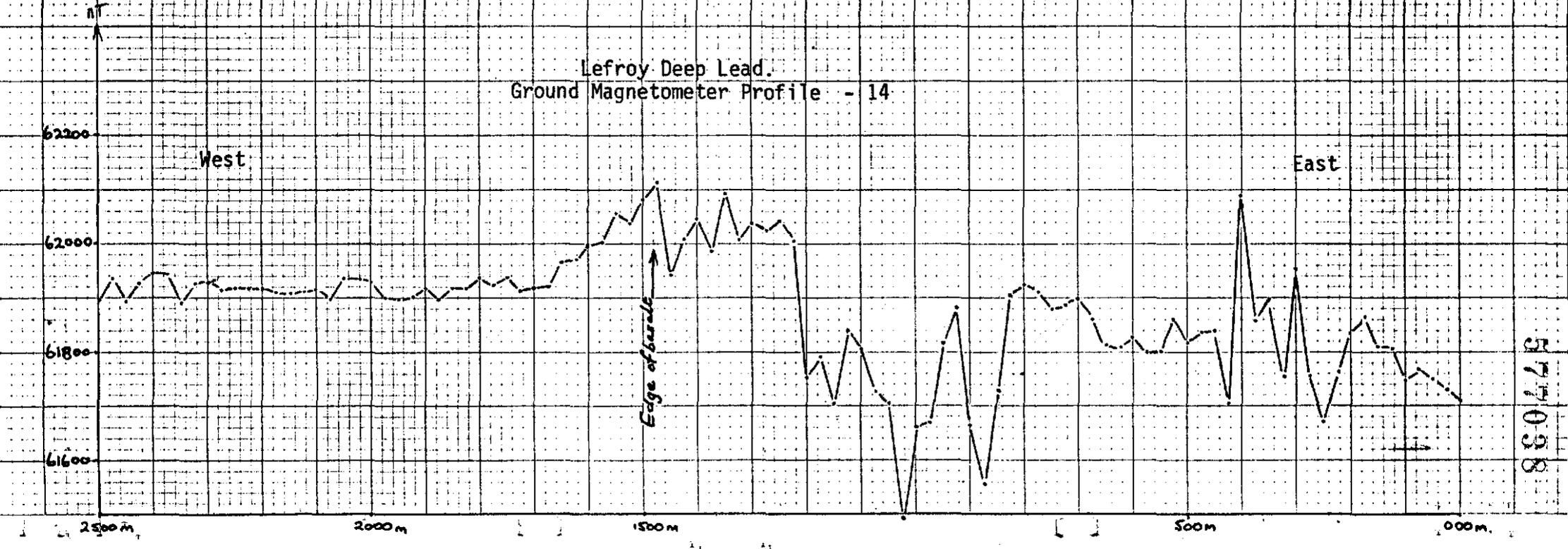
577037



Lefroy Deep Lead.
Ground Magnetometer Profile - 13

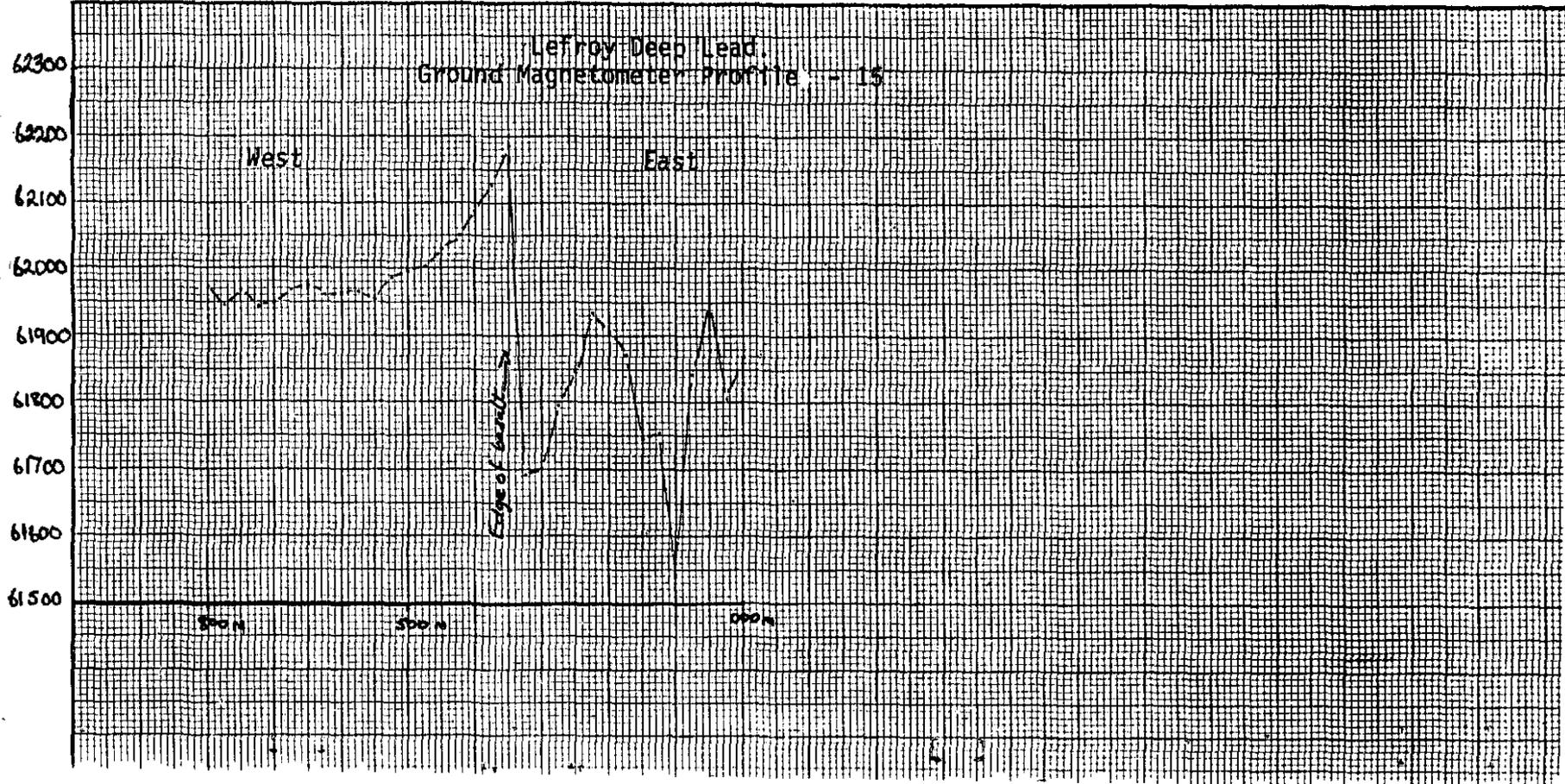


Lefroy Deep Lead.
Ground Magnetometer Profile - 14

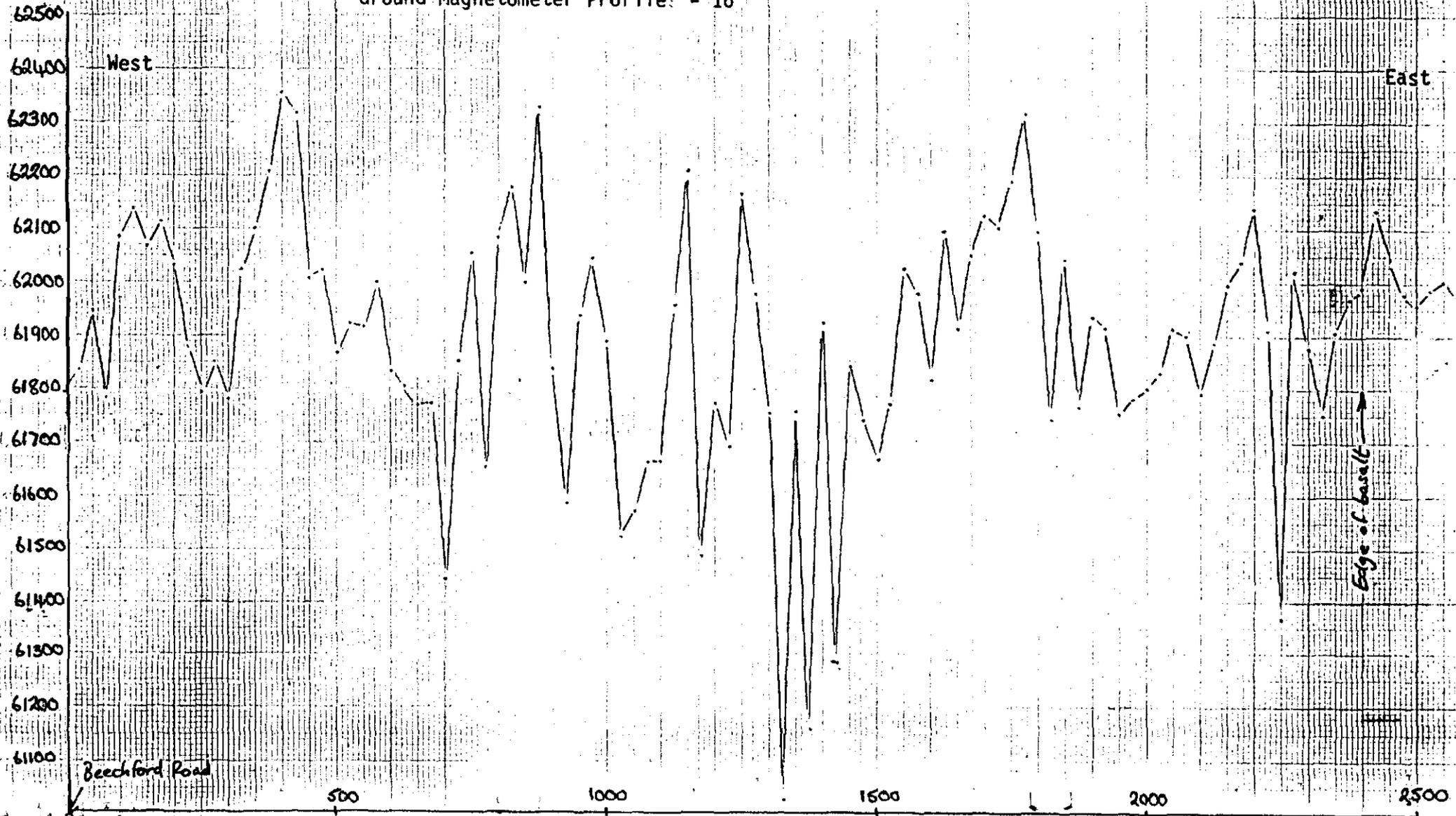


574038
880448

577039

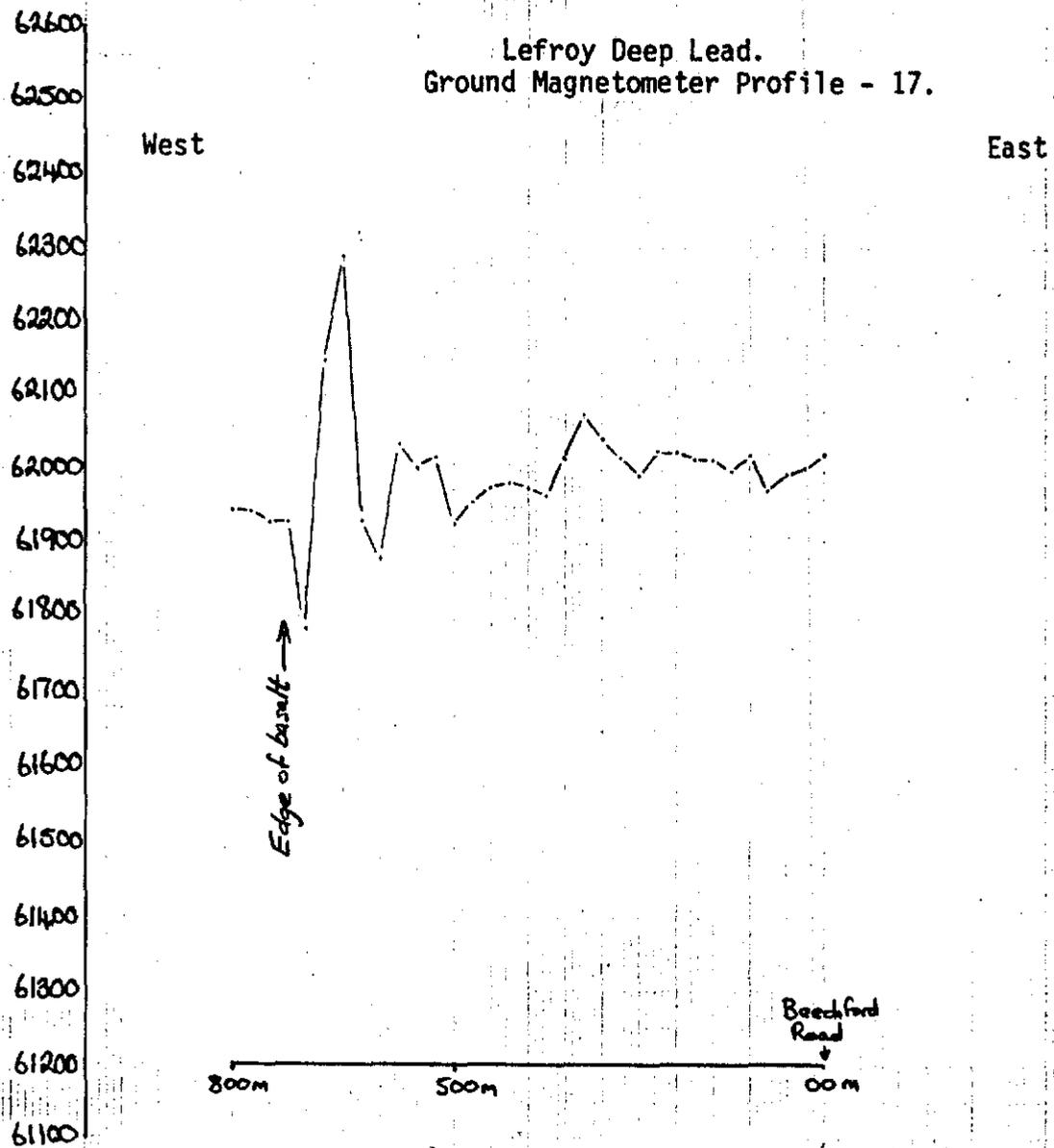


Lefroy Deep Lead.
Ground Magnetometer Profiles - 16



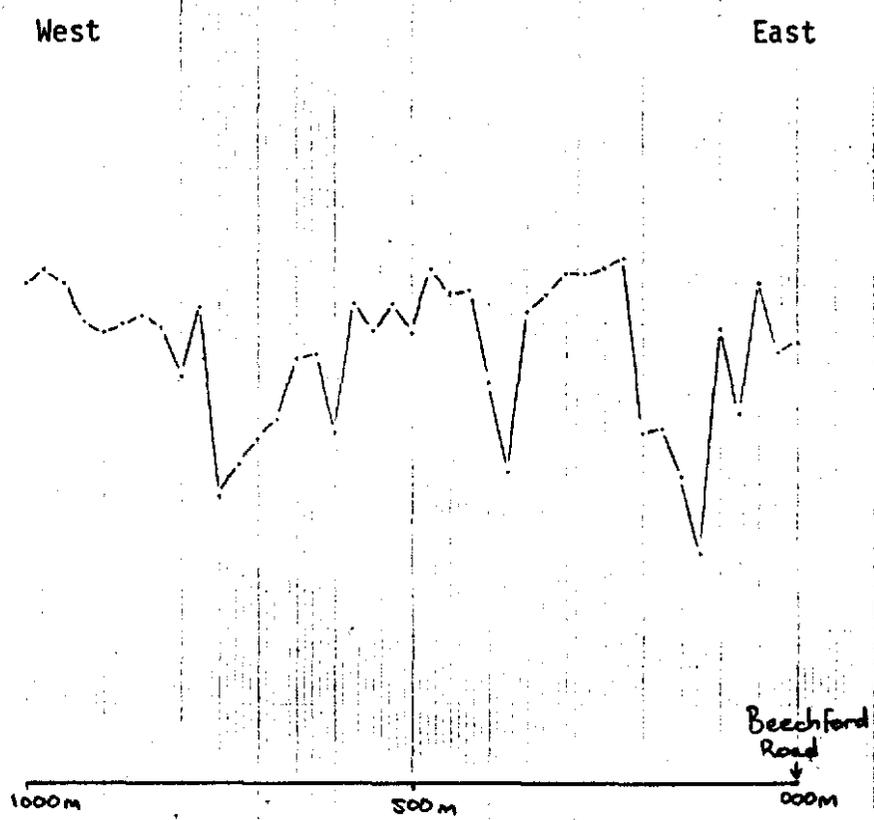
577040

Lefroy Deep Lead.
Ground Magnetometer Profile - 17.



574011

Lefroy Deep Lead.
Ground Magnetometer Profile - 19.



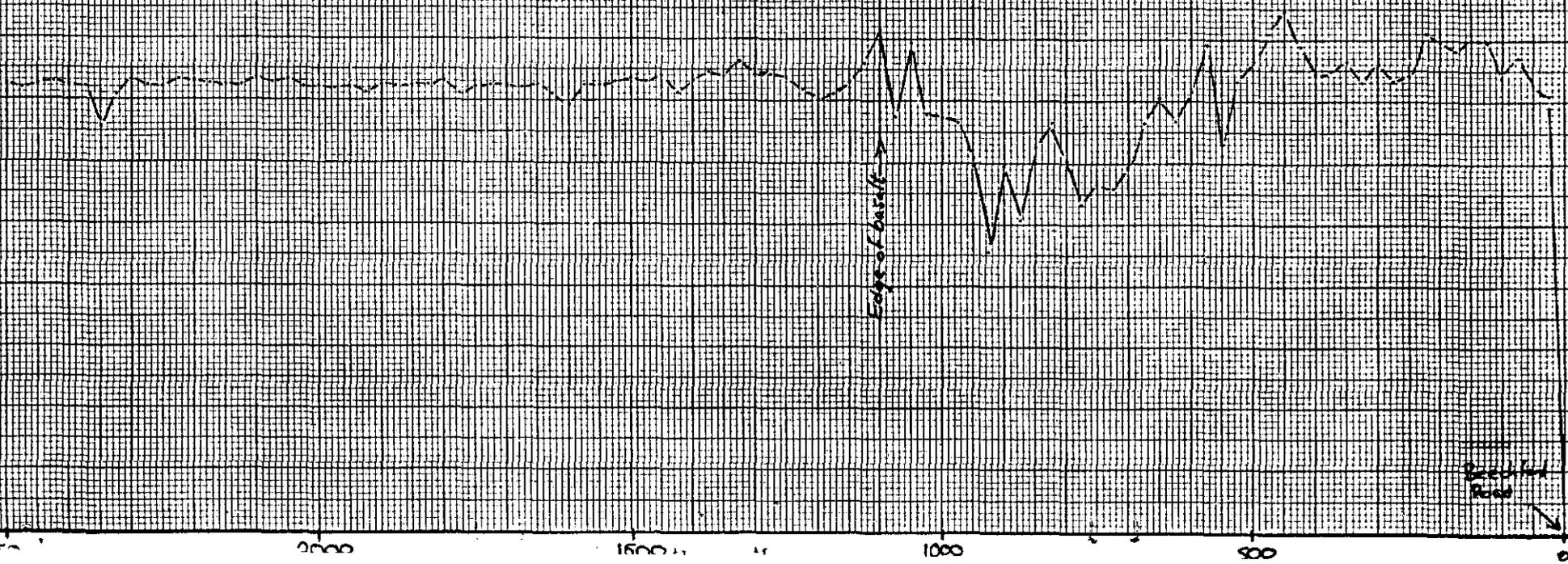
577042

577043

West

Lefroy Deep Lead
Ground Magnetometer Profile - 20.

East



Station 21

Letchy Does head
Ground magnetic profile - 21

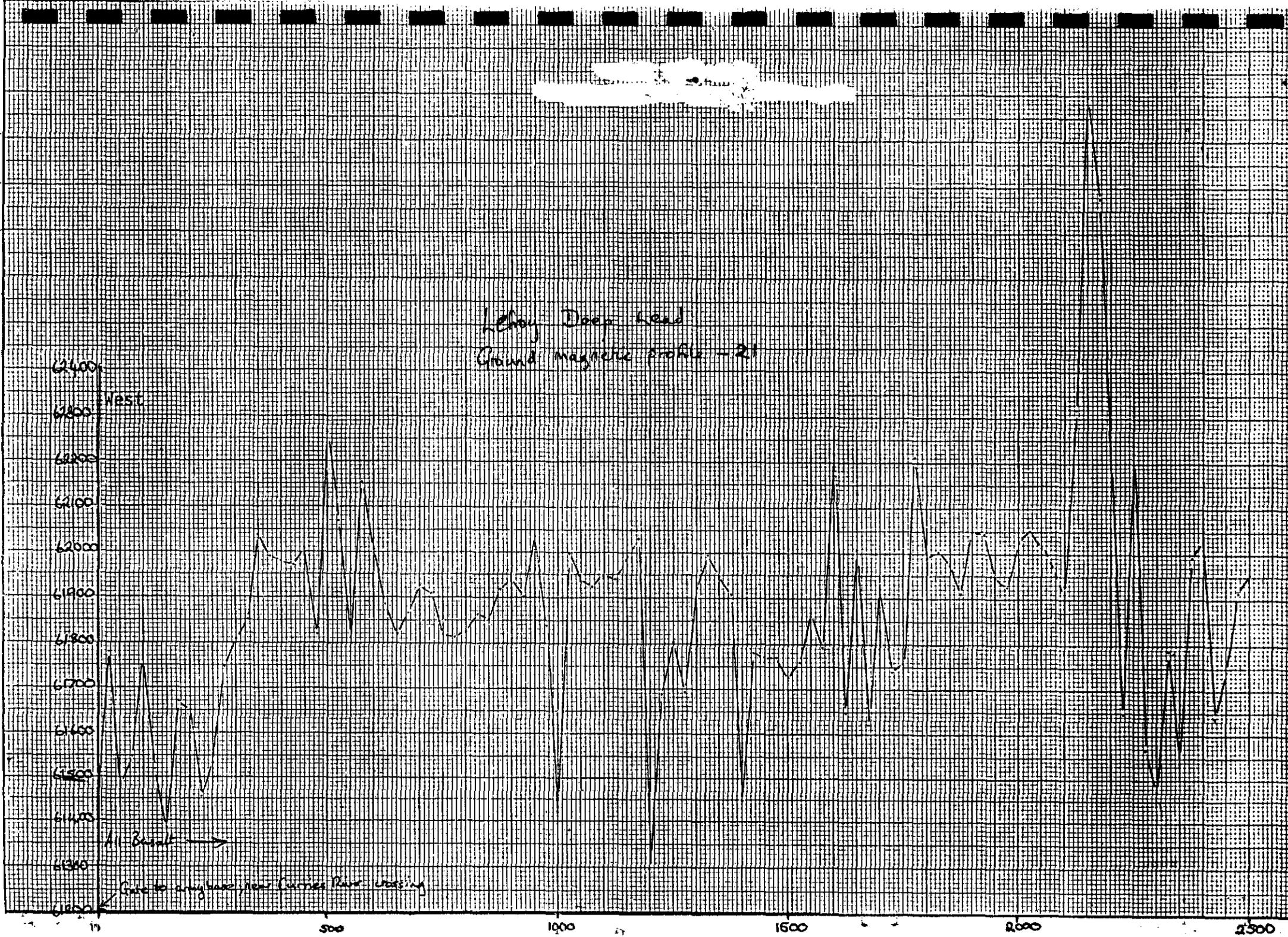
62400
62000
61800
61600
61400
61200
61000
60800
60600
60400
60200
60000
59800
59600
59400
59200
59000
58800
58600
58400
58200
58000

WEST

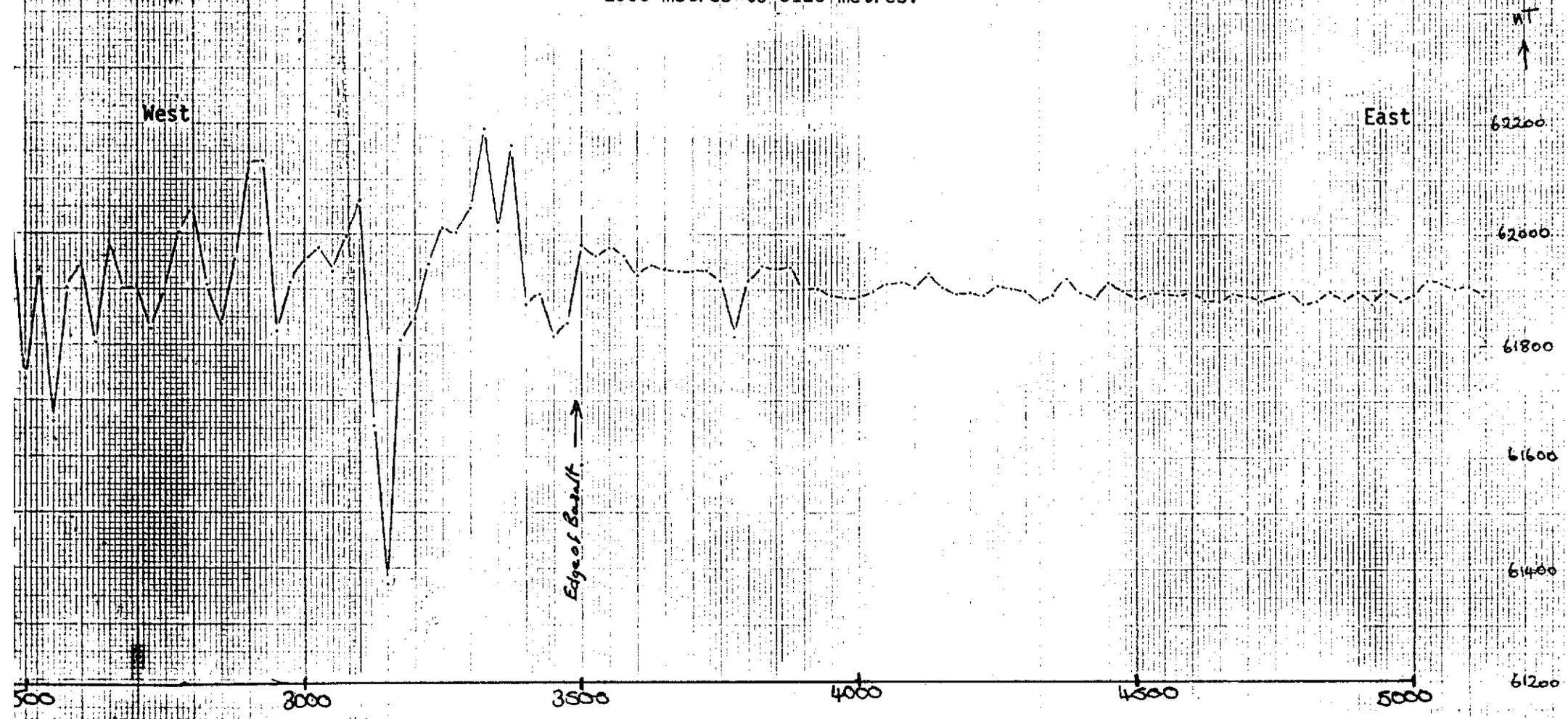
11 Break →

Due to anomaly near Currier Park station

7990111



Lefroy Deep Lead.
Ground Magnetometer Profile - 22.
2500 metres to 5125 metres.



577045

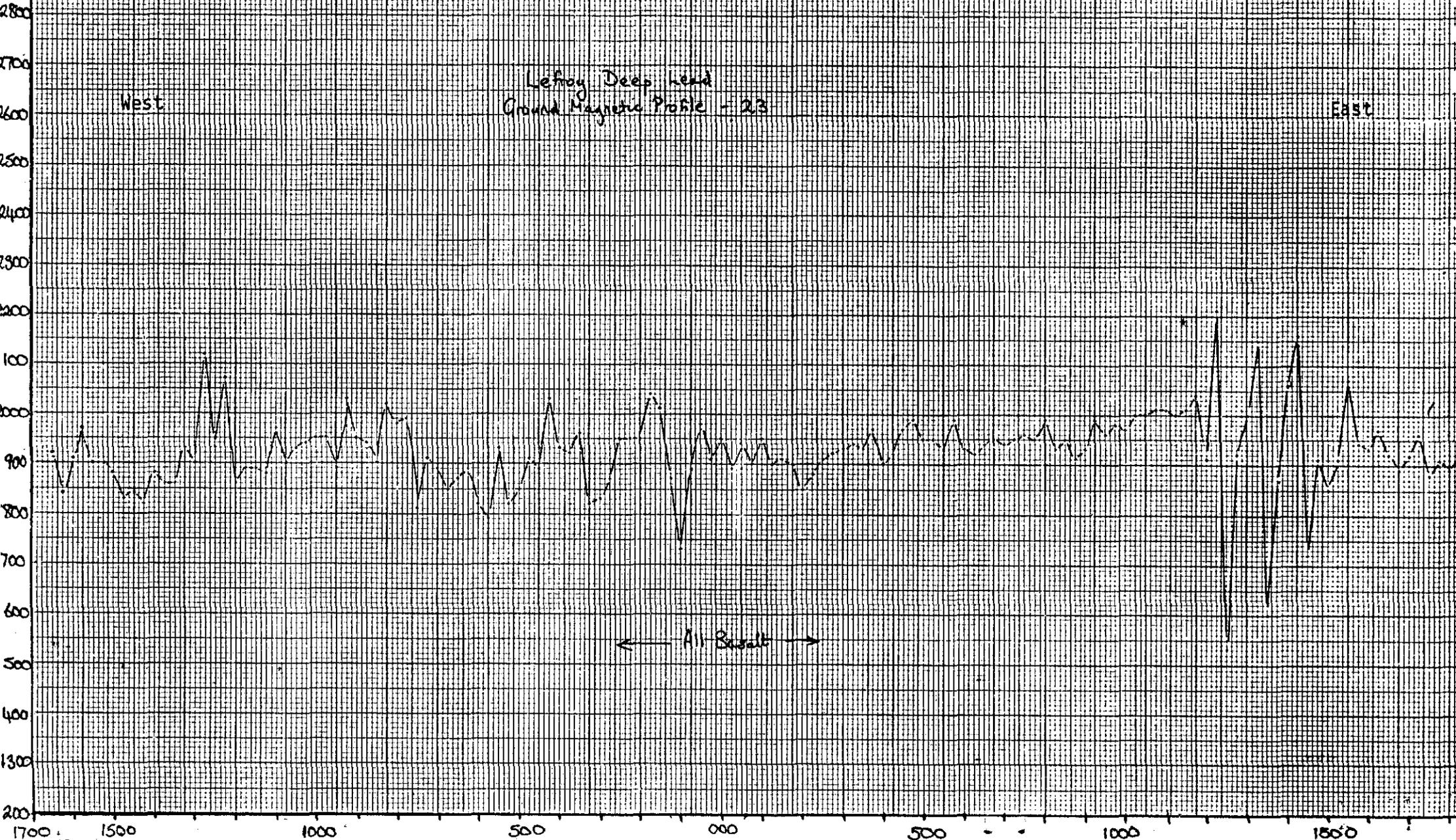
577046

Lefroy Deep Lead
Ground Magnetic Profile - 23

West

East

← All Result →



577047

Lefroy Deep head
Ground Magnetic Profile - 24

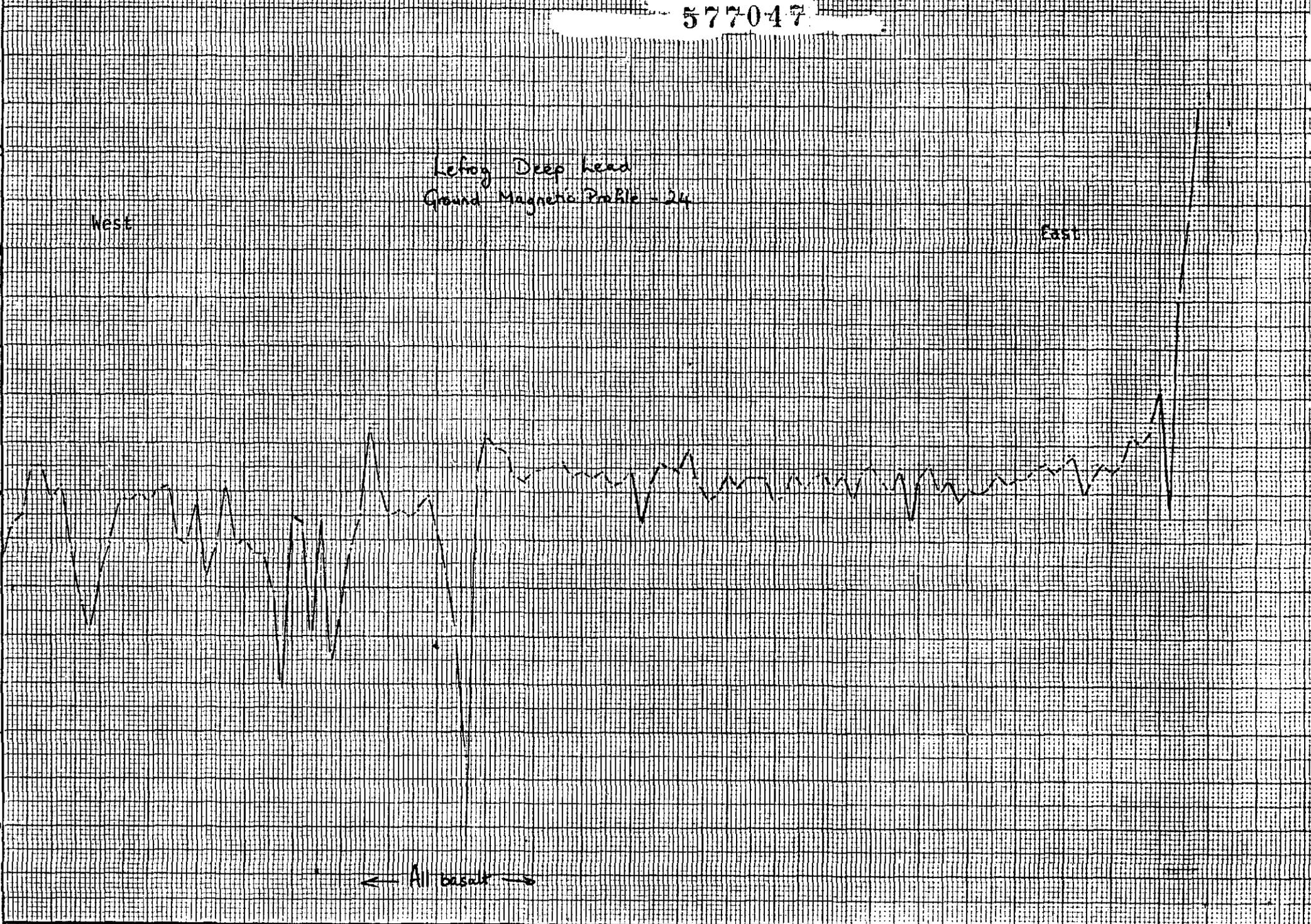
West

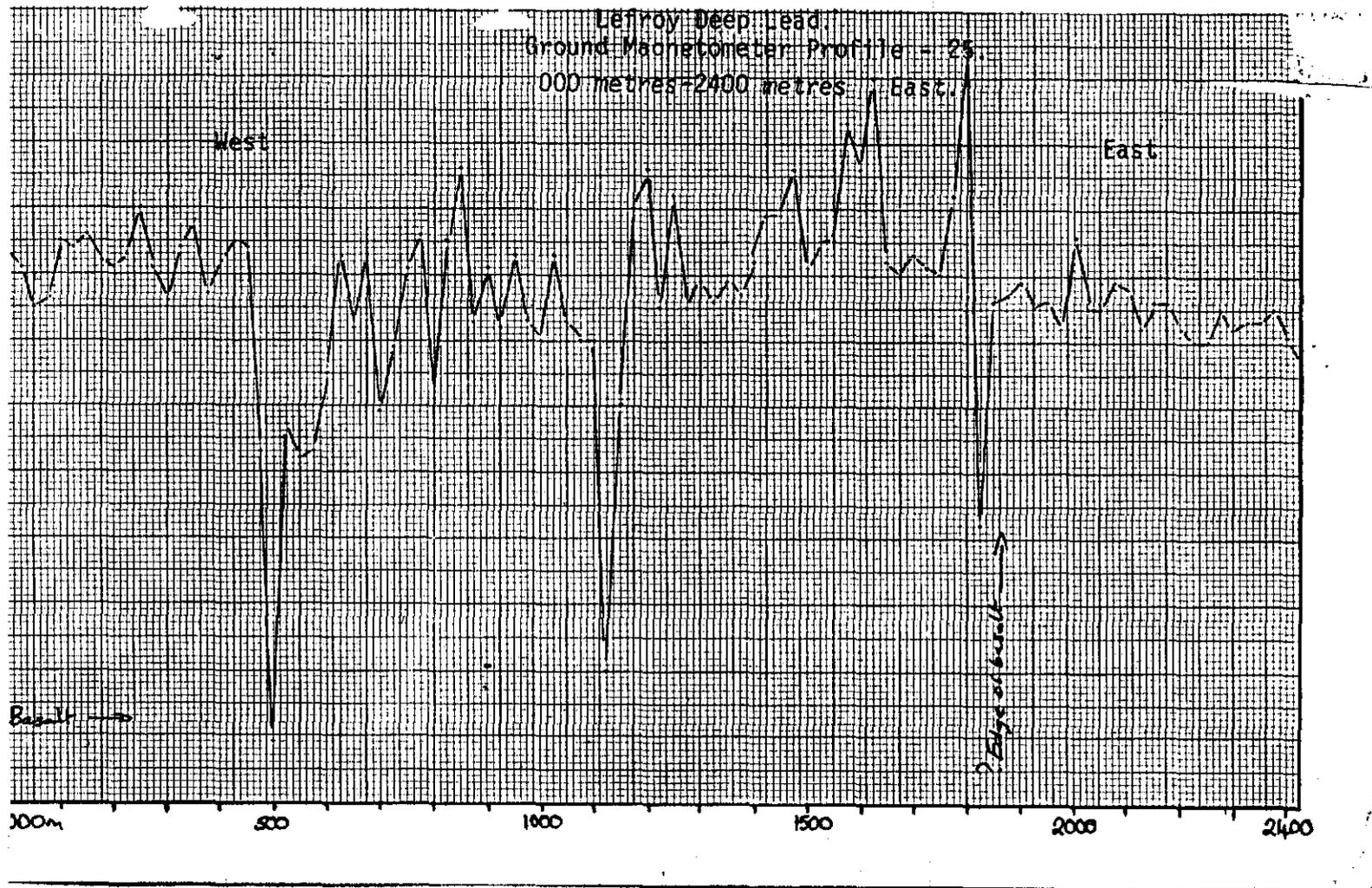
East

← All basalt →

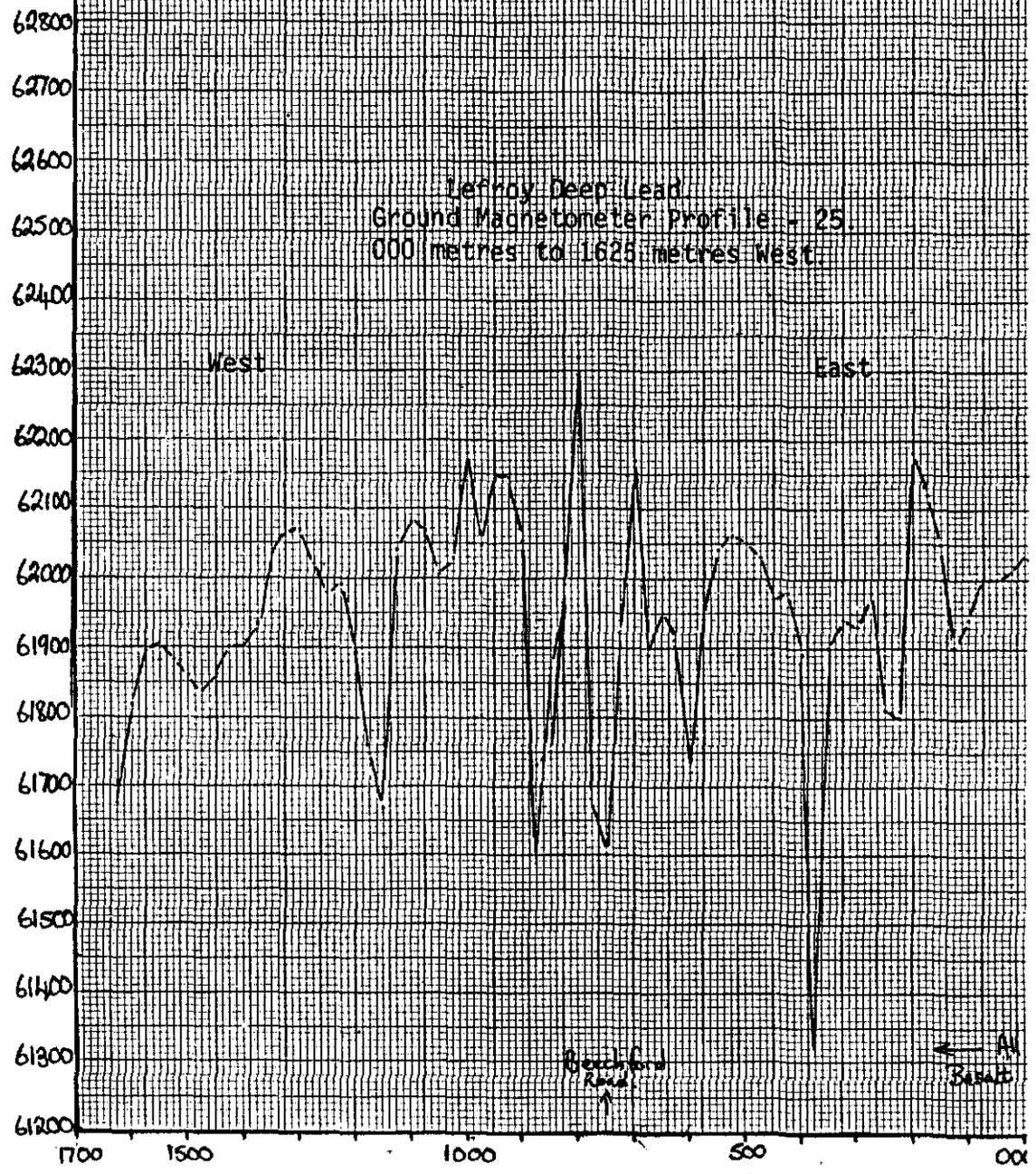
62900
62800
62700
62600
62500
62400
62300
62200
62100
62000
61900
61800
61700
61600
61500
61400
61300
61200
61100

1200 1000 500 0 500 1000 1500 2000





577048



577049

527050

62800
62700
62600
62500
62400
62300
62200
62100
62000
61900
61800
61700
61600
61500
61400
61300
61200
61100

Lefroy Deep head
Ground Magnetic Profile - 26

West

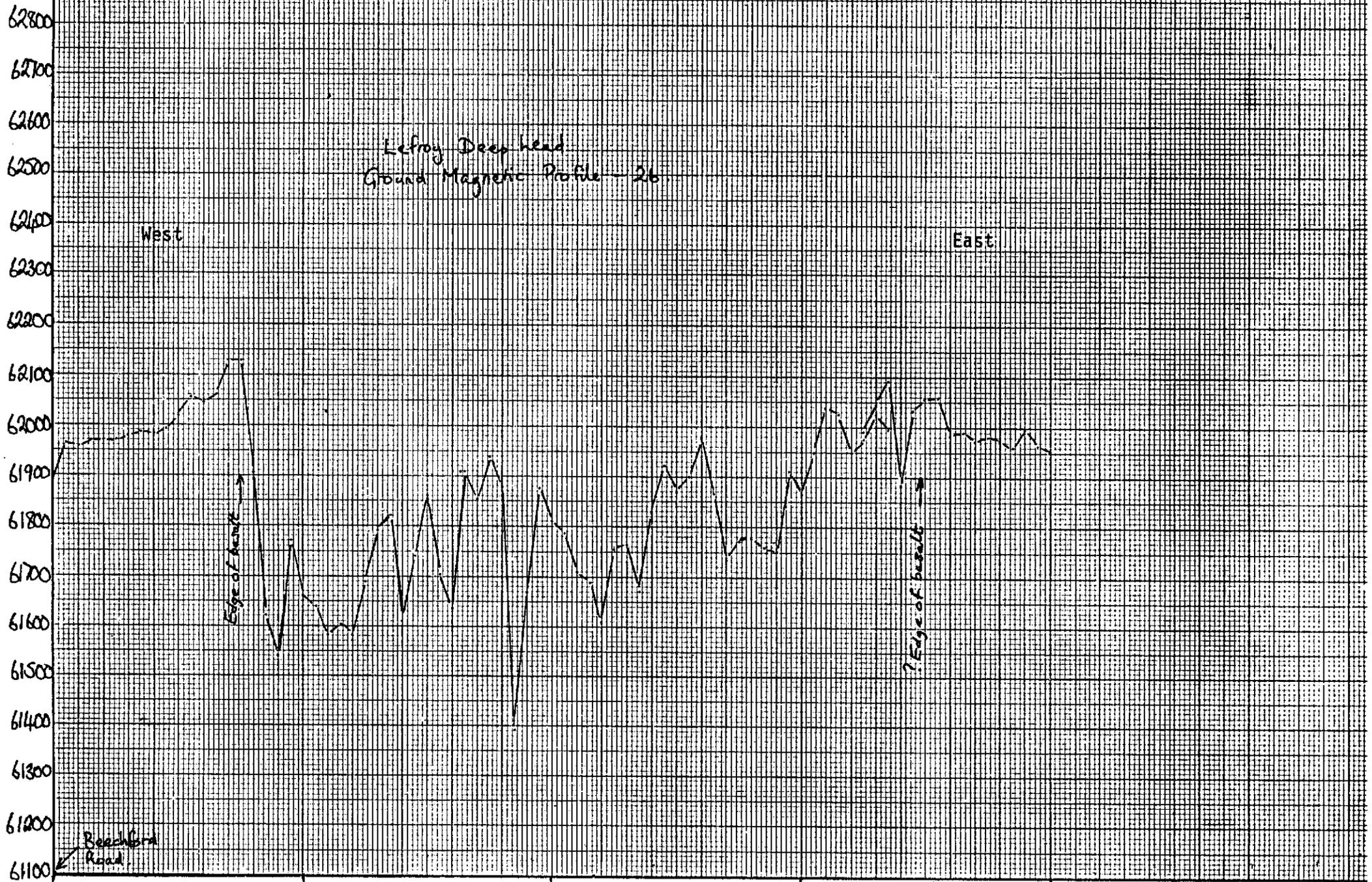
East

Edge of basalt

? Edge of basalt

Beach Road

0 500 1000 1500 2000



577051

62700
62600
62500
62400
62300
62200
62100
62000
61900
61800
61700
61600
61500
61400
61300
61200
61100
61000

Lefroy Deep Lead
Ground Magnetometer Profile - 27.

West

East

Edge of bank

Edge of bank

Beckenford Road

Bark Creek Road

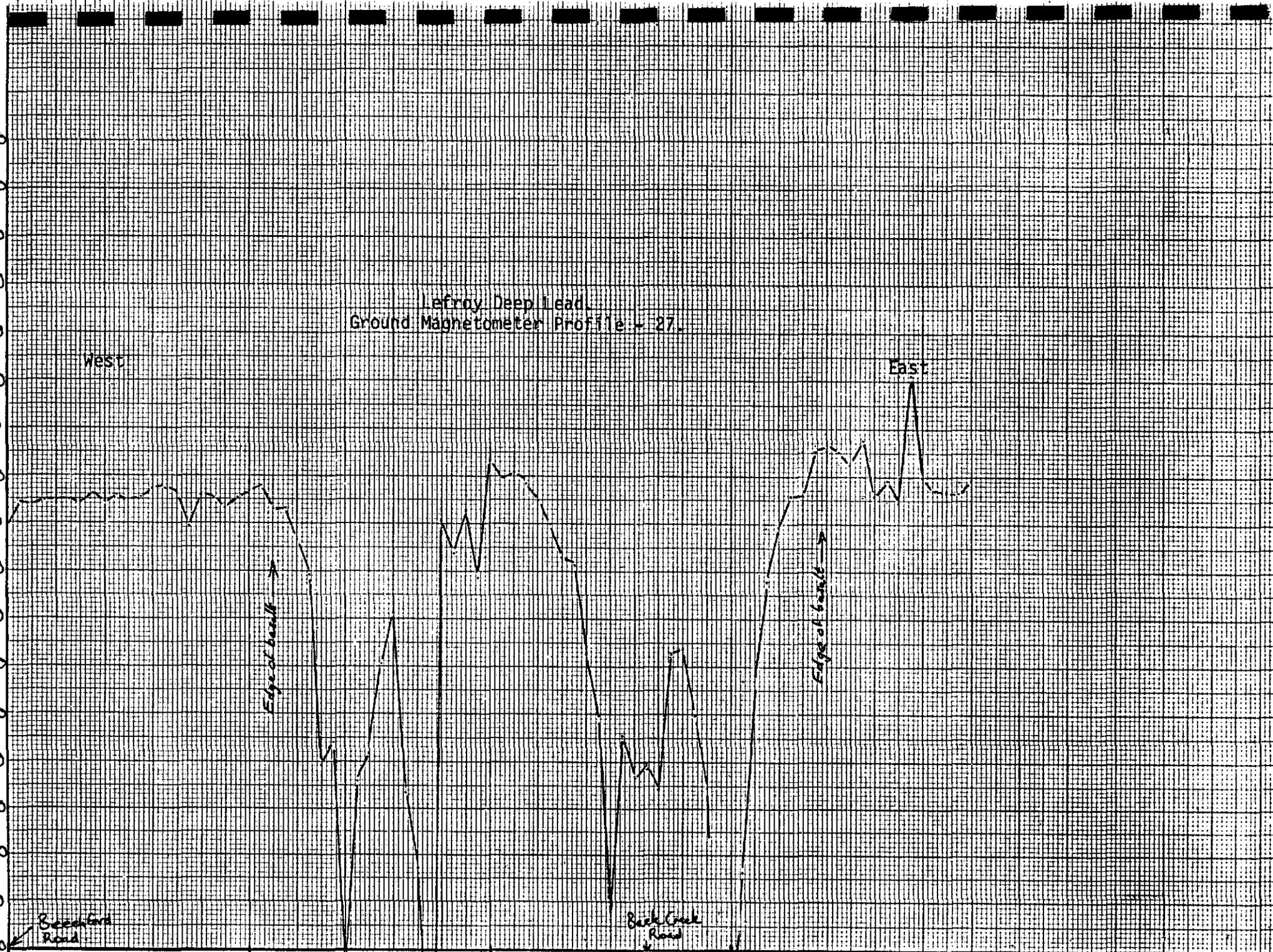
500

1000

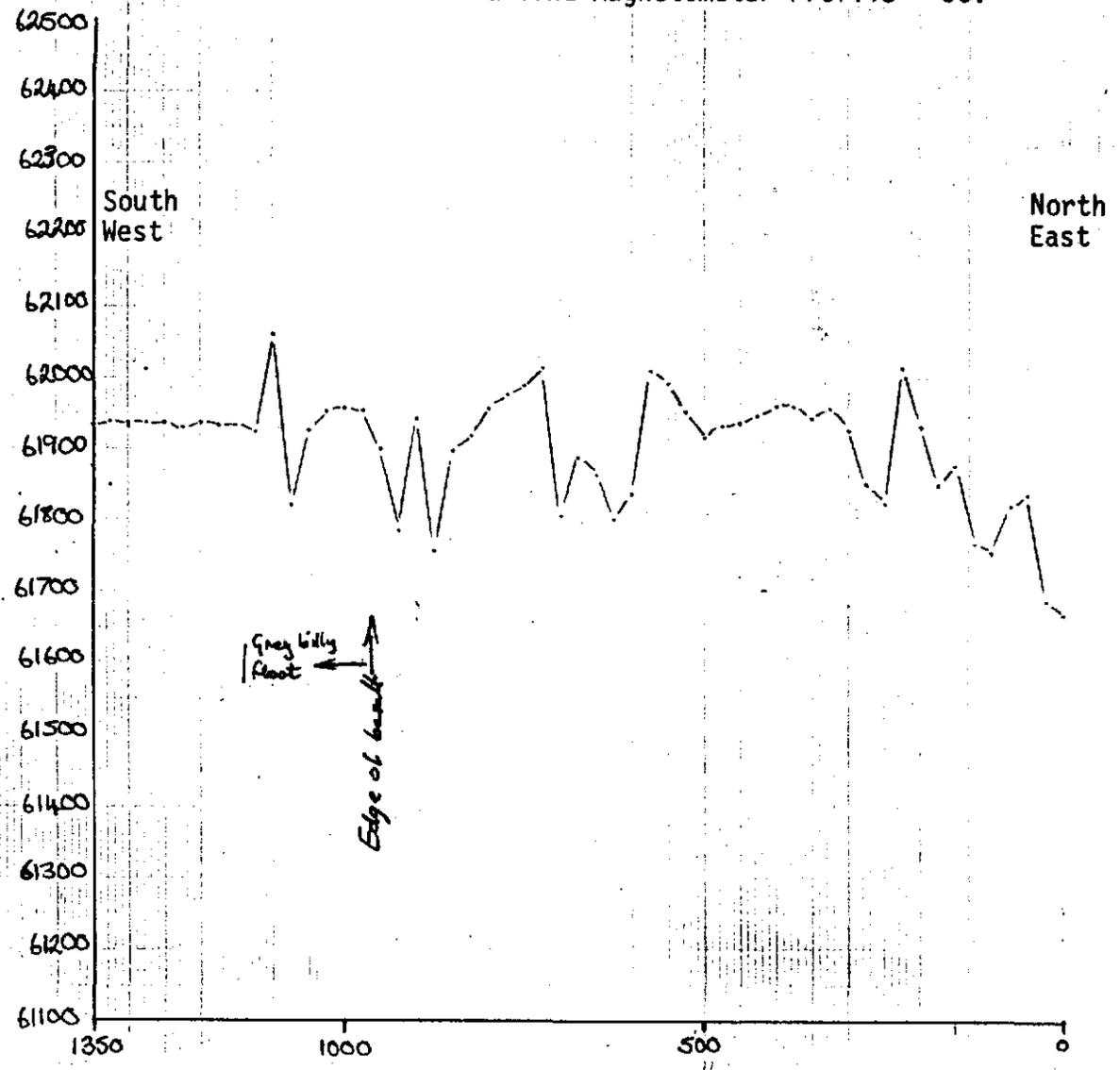
1500

2000

0



Lefroy Deep Lead.
Ground Magnetometer Profile - 30.



577053

Lefroy Deep Lead.
Ground Magnetometer Profile - 31 + 32.

62500
62400
62300
62200
62100
62000
61900
61800
61700
61600
61500
61400
61300
61200
61100

North

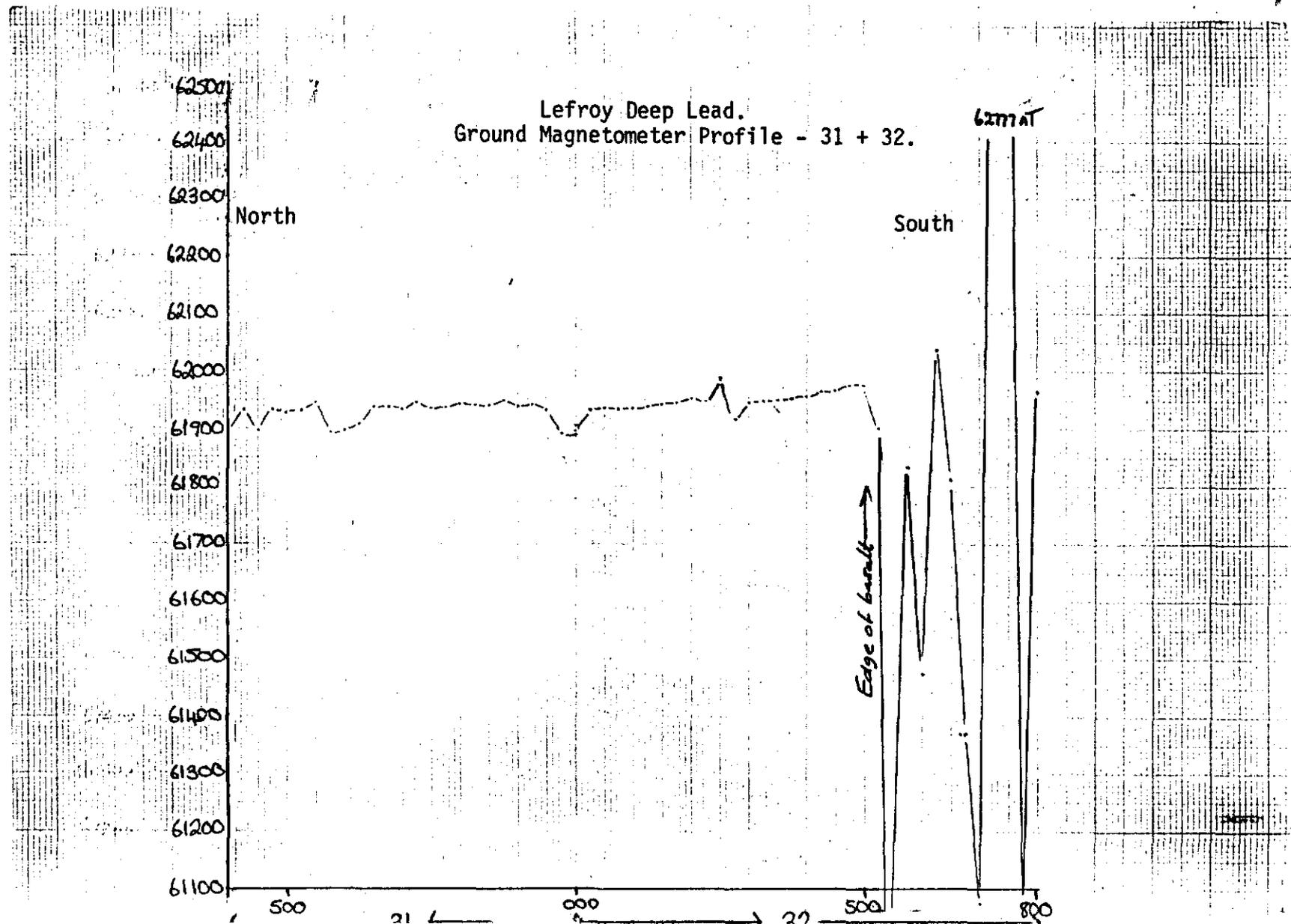
South

6277 AT

Edge of basalt

500 200 500 800

577054



Lefroy Deep Lead.
Ground Magnetometer Profile - 33.

62600
62500
62400
62300
62200
62100
62000
61900
61800
61700
61600
61500
61400
61300
61200
61100

North

South

Edge of basalt

000

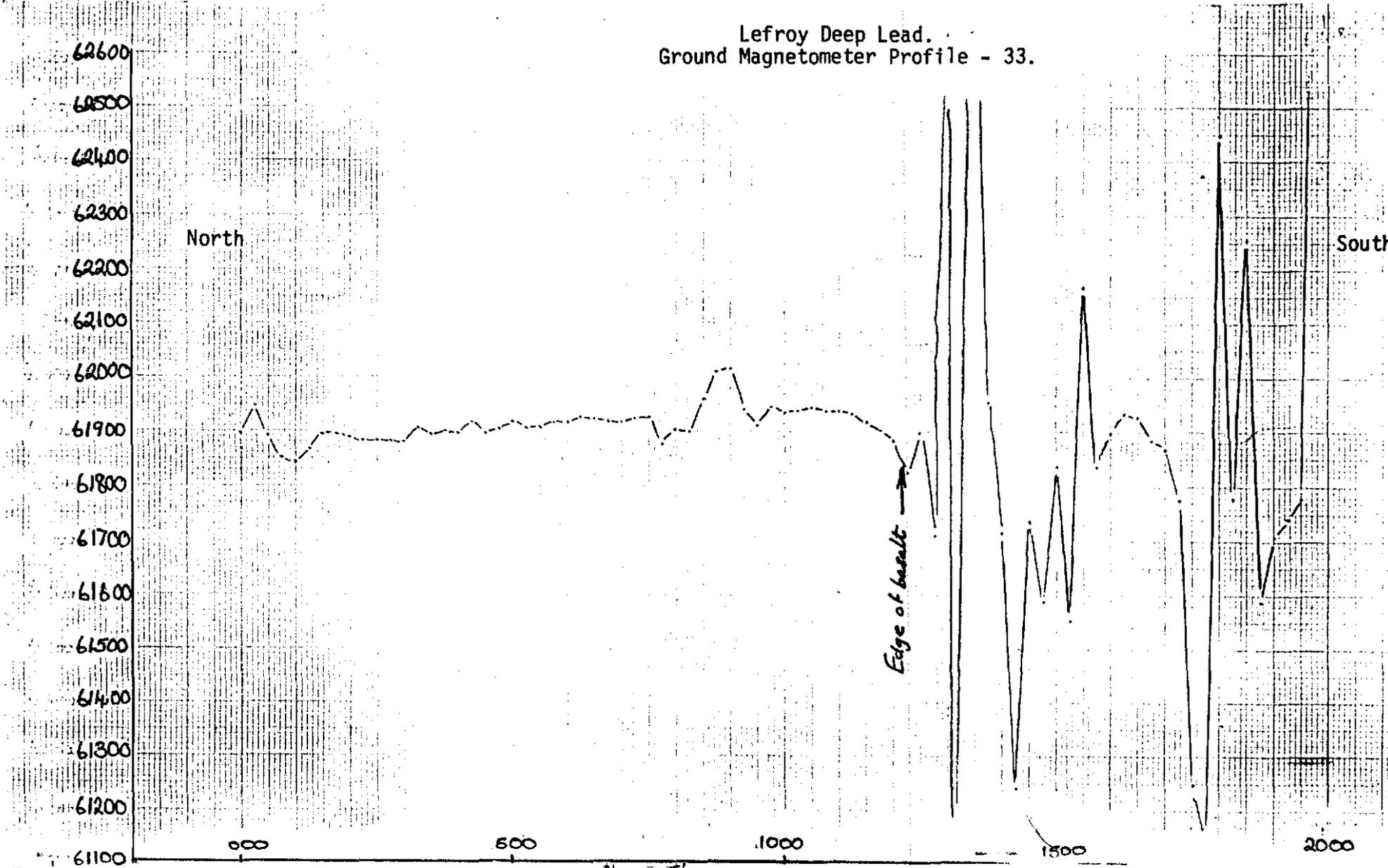
500

1000

1500

2000

577055

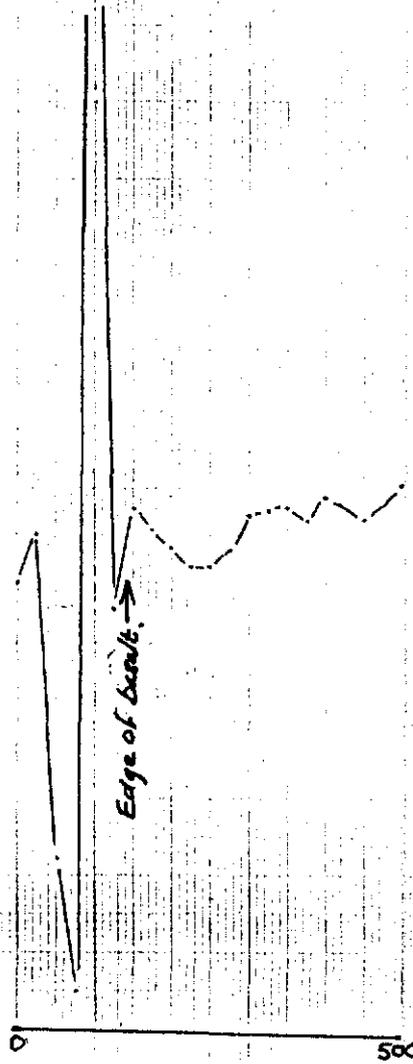


Lefroy Deep Lead.
Ground Magnetometer Profile - 34.

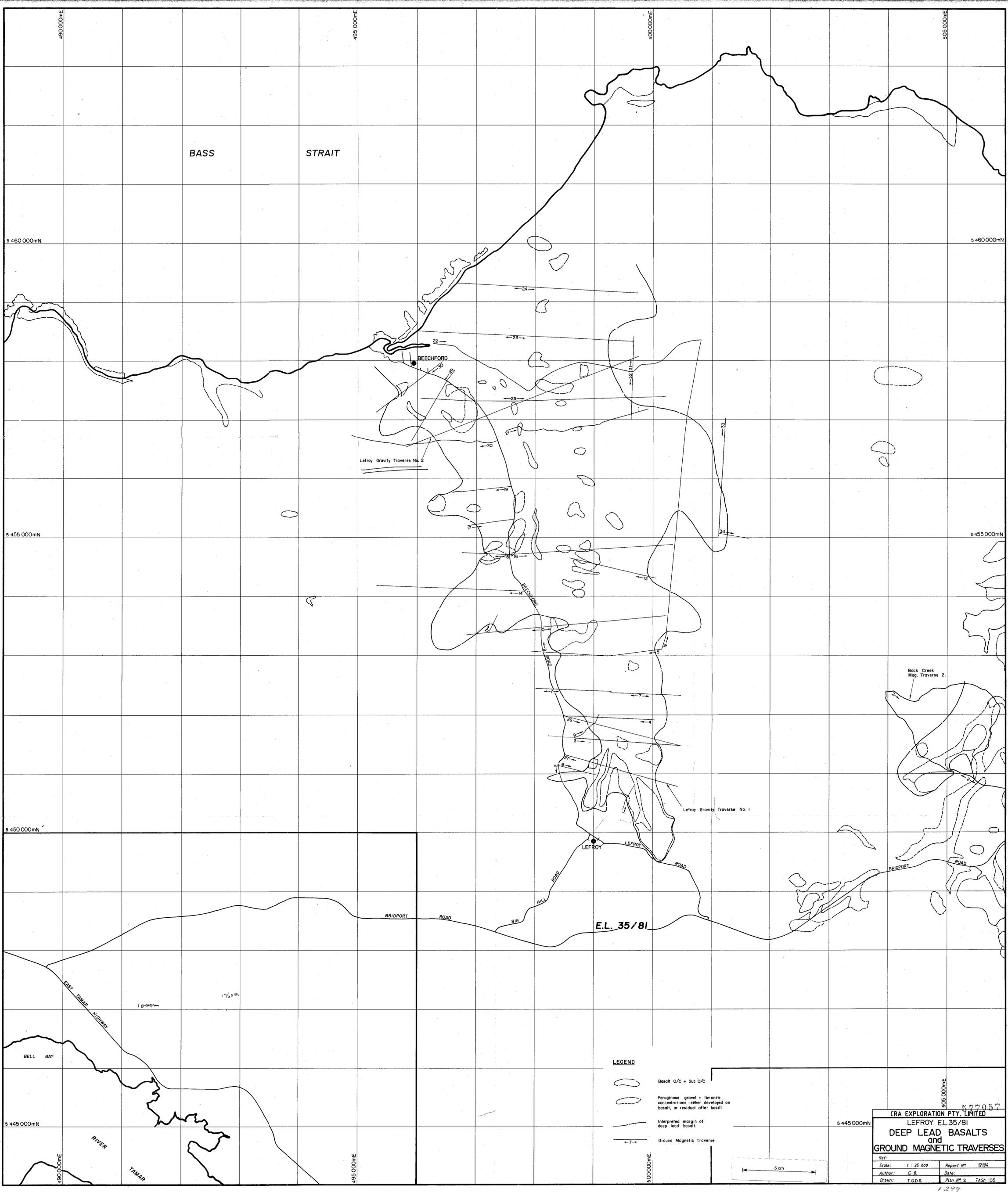
[3212

West

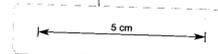
East



577056



- LEGEND**
- Basalt O/C + Sub O/C
 - Feruginous gravel + limonite concentrations - either developed on basalt, or residual after basalt.
 - Interpreted margin of deep lead basalt.
 - Ground Magnetic Traverse



577057

CRA EXPLORATION PTY. LIMITED
LEFROY E.L.35/81
**DEEP LEAD BASALTS
and
GROUND MAGNETIC TRAVERSES**

Ref:	1 : 25 000	Report No.:	12104
Author:	G. B.	Date:	
Drawn:	T.G.D.S.	Plan No.:	2 TASH 105

505 000mE

490 000mE

495 000mE

500 000mE

505 000mE

5 445 000mN

5 445 000mN

5 450 000mN

5 455 000mN

5 460 000mN

490 000mE

495 000mE

500 000mE

505 000mE

BASS

STRAIT

BEECHFORD

Lefroy Gravity Traverse No. 2

Lefroy Gravity Traverse No. 1

LEFROY

E.L. 35/81

BRIDPORT ROAD

BIG HILL ROAD

EAST TAMAR HIGHWAY

BELL BAY

RIVER

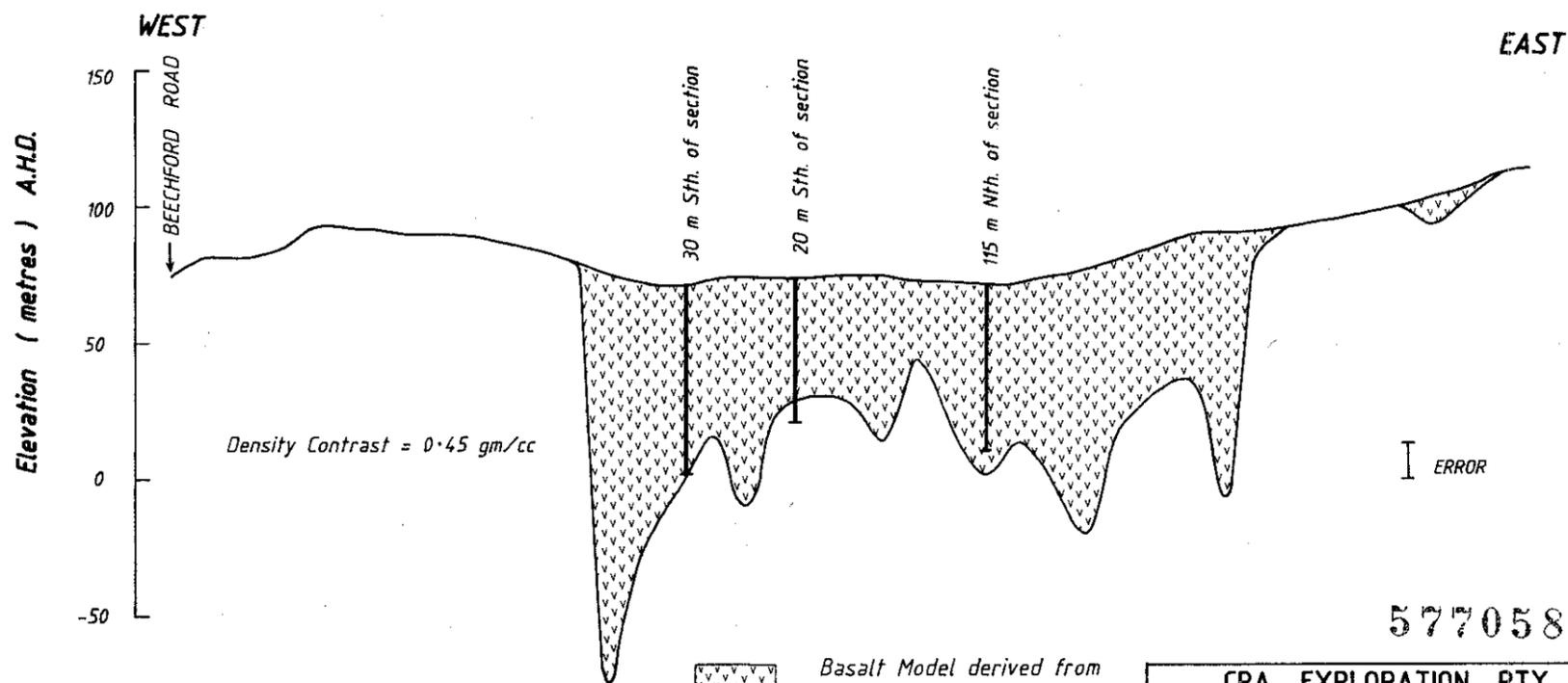
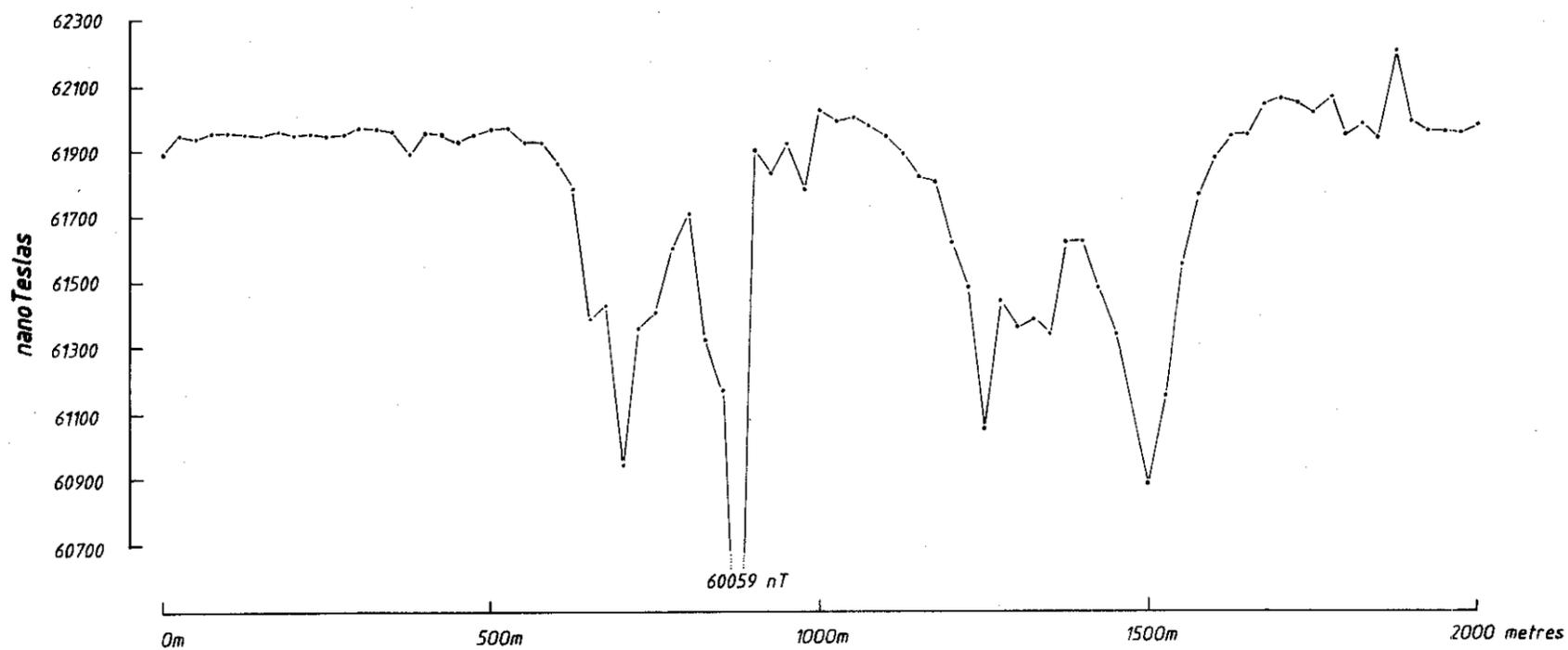
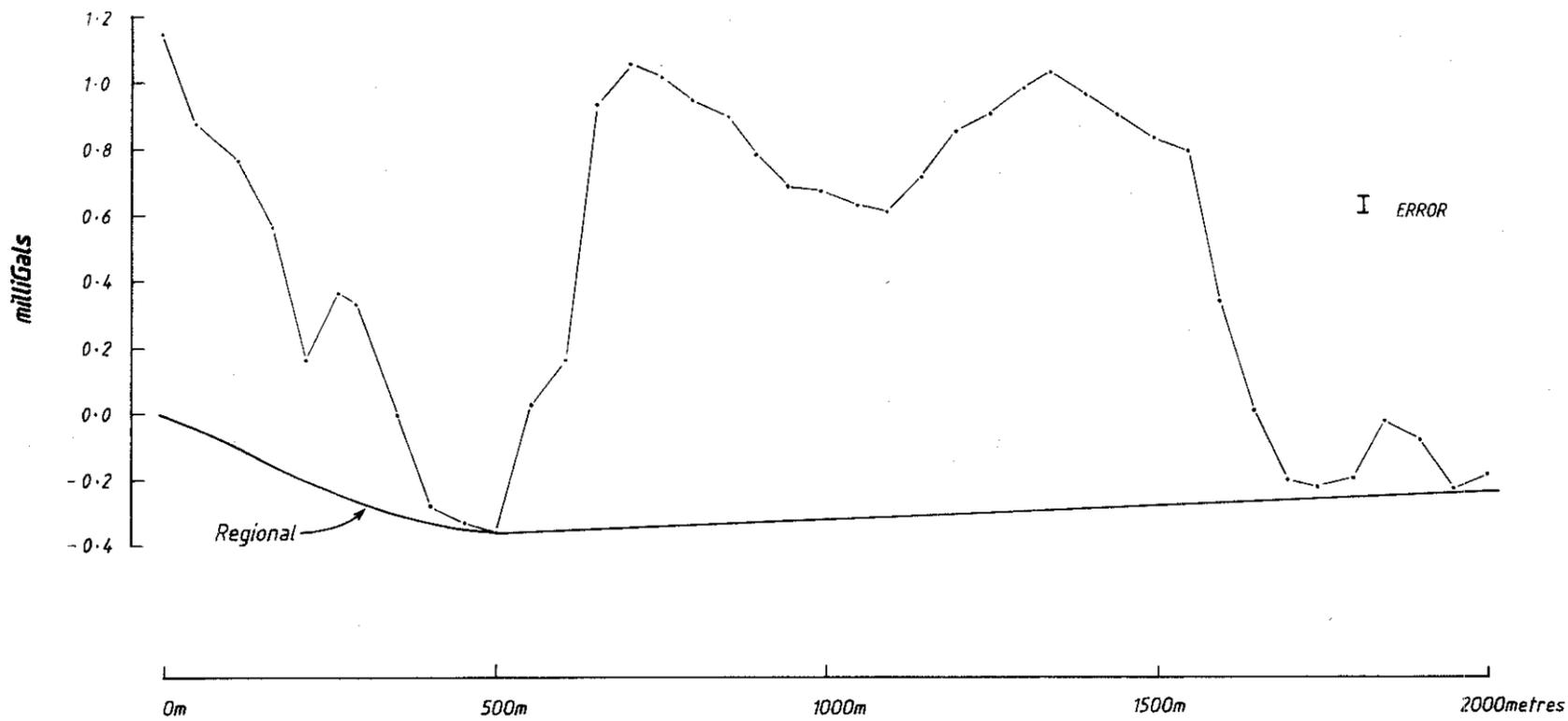
TAMAR

Back Creek
Mag. Traverse 2.

BRIDPORT ROAD

1000m

1760m



577058

CRA EXPLORATION PTY. LIMITED

LEFROY E.L. 35/81
GEOPHYSICAL TRAVERSE N^o. 1
GROUND MAGNETICS
& GRAVITY SURVEY

Ref: SK55 - 4

Scale: 1 : 10,000

Author: M. FLIS

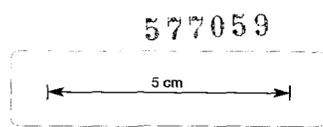
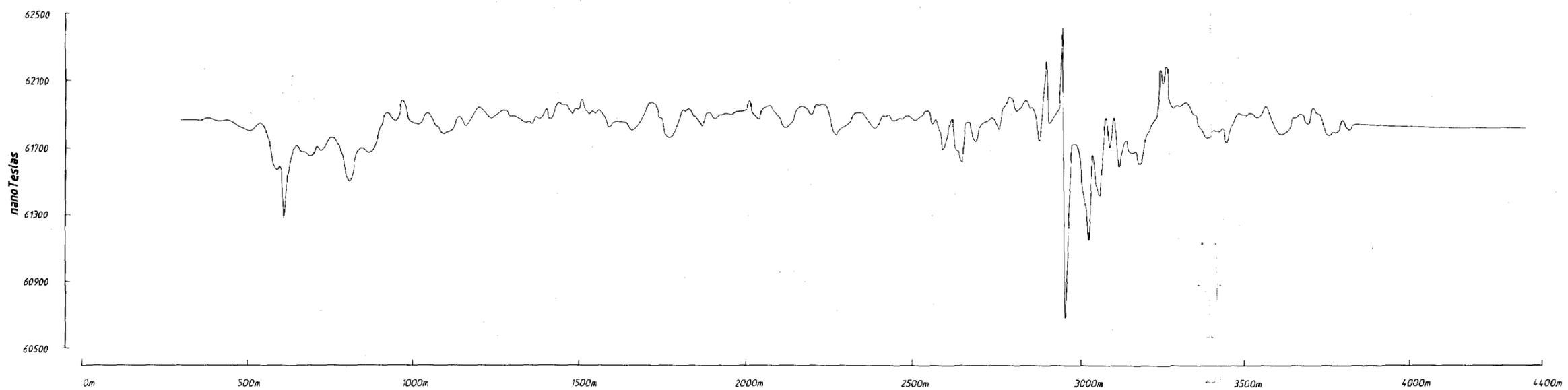
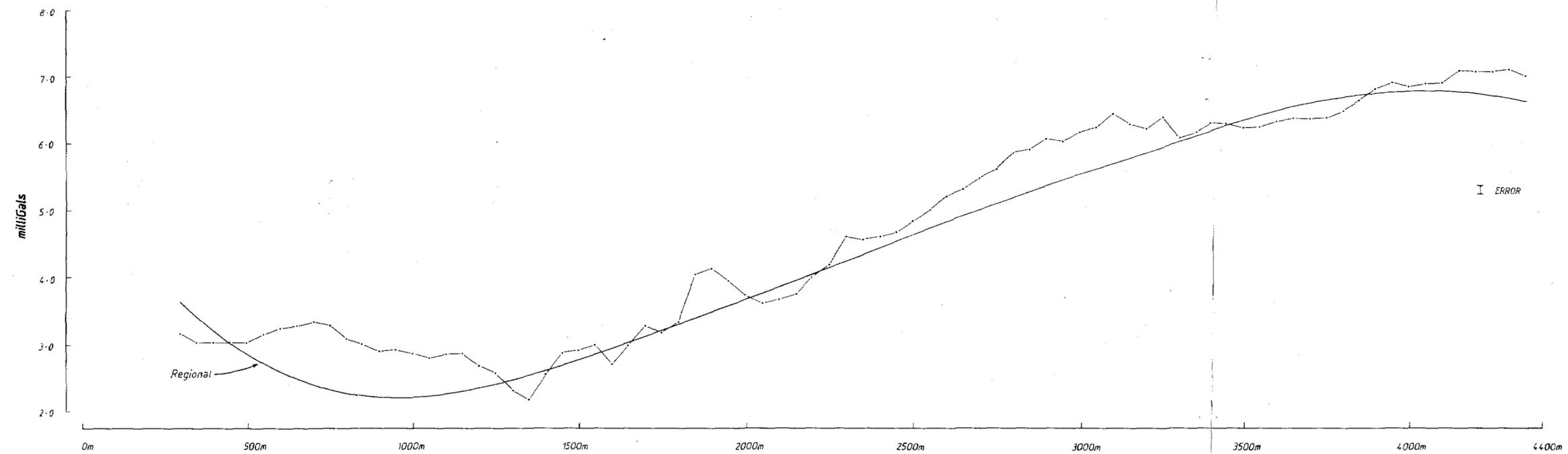
Date: 15 - 11 - 1982

Drawn: R. T.

Report N^o. 12104

Plan N^o. TASH 93

5 cm



CRA EXPLORATION PTY. LIMITED	
LEFROY E.L. 35/81	
GEOPHYSICAL TRAVERSE N ^o . 2	
GROUND MAGNETICS & GRAVITY SURVEY	
Ref: SK55 - 4	Drawn: R. T.
Scale: 1 : 10,000	Report N ^o : 12104
Author: M. FLIS	Plan N ^o : TASH 1370
Date: 3 - 5 - 1983	

577059