a)基本設計調査

MINUTES OF DISCUSSIONS
ON
BASIC DESIGN STUDY
ON
THE WATER SUPPLY PROJECT FOR PRIMARY SCHOOLS
IN
THE KINGDOM OF LESOTHO

Based on the results of the Preliminary Study, the Japan International Cooperation Agency (JICA) decided to conduct a Basic Design Study on the Water Supply Project for Primary Schools (hereinafter referred to as "the Project").

JICA has sent to Lesotho a study team, which is headed by Mr. Mitsuru SUEMORI, Director, First Basic Study Division, Grant Aid Study & Design Department, JICA, and is scheduled to stay in the country from October 31 to December 10, 1994. The team held discussions with the officials concerned of the Government of the Kingdom of Lesotho.

In the course of discussions and field survey, both sides have confirmed the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Design Study Report.

Maseru,4,November,1994

Mr. M. Suemori
Leader
Basic Design Study Team
JICA

Mr. E. M. Matekane
Principal Secretary
Ministry of Planning,Economic
& Manpower Development
The Kingdom of Lesotho

Mr. S. Makhoalibe
Director
Department of Water Affairs
Ministry of Natural Resources
The Kingdom of Lesotho

1. Objectives

The objectives of the Project is to provide potable water at primary schools, by construction of boreholes and provision of necessary equipment.

2. Project title

The new project title is "Water Supply Project for Primary Schools in the Kingdom of Lesotho".

3. Project sites

The project sites will be selected among 70 primary schools listed in Annex Ⅰ.

4. Executing agency of the Government of Lesotho

The Department of Water Affairs of the Ministry of Natural Resources is responsible for administration and execution of the Project in close coordination with School Self Reliance and Feeding Unit of the Ministry of Education.

5. Items requested by the Government of Lesotho

After discussions with the Team, the following items are requested by the Government of Lesotho.

a) construction of boreholes and other related water facilities
b) provision of equipment and material necessary for the implementation of the project

Provisional details of the items of equipment and materials are listed in Annex Ⅱ.

The final components of the Project will be determined by the Team, after further studies and consultation with officials concerned of the Government of Lesotho.

6. Japan's Grant Aid system

1) The Government of Lesotho has understood the system of Japan's Grant Aid explained by the Team.
2) The Government of Lesotho will take necessary measures, as described in Annex Ⅲ for smooth implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.

7. Schedule of the Study

1) The consultants will proceed to further studies in Lesotho until December 10, 1994.
2) JICA will prepare the draft report in English and dispatch a mission in order to explain contents of the report in January, 1995.
3) In case that the contents of the report are accepted in principle by the Government of Lesotho, JICA will complete the final report and send it to the Government of Lesotho by April, 1995.

8. Operation and Maintenance

1) The Department of Water Affairs organizes the technical support system to monitor and maintain the boreholes constructed in the Project.
2) The Ministry of Education guarantees that the school committees will secure funds to operate and maintain the water supply facilities constructed in the Project.
3) The Government of Lesotho shall keep JICA informed on 1) & 2), before the implementation of the Project.

9. Any other issues

1) The Government of Lesotho strongly requested the water supply for the rest of the schools, which are identified as appropriate in the Preliminary Study, will be realized after the Project.
2) The Government of Lesotho desires the counterpart technical training in Japan for the maintenance and operation of water facilities including boreholes.

ANNEX-I

List of the Project Sites

District: Butha-Buthe

No.	Name of School	No. of Pupils	
1	St. Paul R.C.	1,296	
2	Manamela	544	
3	Likhutlong	162	
4	Ts'a-Le-Moleka	343	
Total	4	2,345	

District: Leribe

No.	Name of School	No. of Pupils	
1	Ngechane	572	
2	Boribeng	596	
3	Kotola	448	
4	Emmanuel	578	
Total	4	2,194	

District: Berea

No.	Name of School	No. of Pupils	
1	Mesapela	674	
2	Boose L.E.C.	185	
3	St. Theresa	862	
Total	3	1,721	

District: Mafeteng

No.	Name of School	No. of Pupils	
1	Harmory	704	
2	Qalabane L.E.C.	441	
3	Likhoele	710	
4	Mathebe	384	
5	Makaung	482	
6	Lists'okeleng(Pitseng)	116	
7	Motanyane	128	
8	Samaria	623	
9	Ralints'i A.C.L.	545	
10	Ramokoatsi A.C.L.	673	
11	Maholi	182	
12	Rabeleng	136	
13	Matlapaneng	272	
14	Tanka	234	
15	Bongalla	454	
16	Kolo	475	
17	Boleka	400	
18	Khoro	746	
19	Lit'oeneng L.E.C.	447	
20	Nkhojane	194	
21	Malimong	444	
22	Mohlalefi A.C.L.	306	
23	Phakoe	248	
24	Thoahlane R.C.	160	
25	Tanyele	183	
26	Mofumahali-oa-Fatima	340	
27	Mokhasi	303	
28	Mohlehli	116	
29	Kotoanyane	259	
30	Ts'upane	435	
31	Bolikela A.M.E.	138	
Total	31	11,278	

District: Mohale's Hoek

No.	Name of School	No. of Pupils	
1	Siloe	631	
2	Phoqoane	239	
3	Itumeleng English Medium	337	
4	Meeling	276	
5	Mokhele L.E.C.	303	
6	Morifi L.E.C.	300	
7	Tsoloane	298	
8	Morifi(St.Thomas)	430	
9	Tumo	268	
10	Mofumahali-oa-Rosari	426	
11	Qualasi	468	
12	Rantsie	310	
13	Morifi A.M.E.	154	
14	Mohale'shoek L.E.C.	570	
15	Maphutsaneng	498	
16	Liphirintg	416	
17	Mohlakana	390	
18	Makhabane	175	
19	Mekaling	424	
20	Morobong	328	
21	Makhaleng	251	
22	Lefikeng	425	
23	Sekoati R.C.	403	
24	Potsane	494	
25	Maphutseng A.M.E.	124	
26	Maphutseng L.E.C.	702	
27	Holly Cross	709	
28	Bethel	548	
Total	28	10,897	

	Grand Total 70	28,435	

ANNEX-II

LIST OF EQUIPMENT AND MATERIALS REQUESTED BY THE LESOTHO SIDE

1.	Drilling Rig with Down the Hole Hammer	1 unit
2.	High Pressure Air Compressor (20 bar)	1 unit
3.	Supporting Vehicles 1) 6 x 6 truck with 6-ton crane 2) 4 x 4 truck with 3-ton crane 3) Water tank lorry, 7 m³ 4) Pick-up light vehicle 5) Station wagon type vehicle	 1 unit 1 unit 1 unit 3 units 2 units
4.	Geoelectric Prospecting Equipment	1 unit
5.	Borehole Testing Equipment 1) Borehole logger 2) Water level detector 3) Submersible pump for test 4) Diesel generator for submersible pump	 1 unit 3 units 2 units 2 units
6.	Water Analysis Kit	3 units
7.	Hand pumps	1 lot
8.	PVC Casing & Screen for Boreholes	1 lot
9.	Drilling Agents for Boreholes	1 lot
10.	Spare Parts for necessary equipment	1 lot
11.	Supply other equipment and services for the implementation of the Project	1 lot

Annex Ⅲ

Necessary measures to be taken by the Government of Lesotho on condition that Japan's Grant Aid is extended;

1. To provide data and information necessary for the Project

2. To secure, clear, level and reclaim the sites for the Project

3. To construct the access roads to the site prior to commencement of the construction

4. To bear commissions to the Japanese foreign exchange bank to execute the banking services based upon the banking arrangement

5. To ensure prompt unloading, customs clearance at port of disembarkation in Lesotho and internal transportation therein of the products purchased under the Grant

6. To exempt Japanese Nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Lesotho with respect to the supply of the products and services under the verified contracts

7. To accord Japanese Nationals, whose services may be required in connection with the supply of the products and services under the verified contracts, such facilities as may be necessary for their entry into Lesotho and stay therein for the performance of their work

8. To use and maintain properly and effectively all the facilities constructed and equipment purchased under the Grant

9. To bear all the expenses other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and the installation of the equipment

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY
ON
THE WATER SUPPLY AND SANITATION PROJECT FOR PRIMARY SCHOOLS
IN
THE KINGDOM OF LESOTHO
(CONSULTATION ON DRAFT REPORT)

In November 1994, the Japan International Cooperation Agency(JICA) dispatched a Basic Design Study Team on the Water Supply and Sanitation Project for Primary Schools (hereinafter referred to as "the Project") to the Kingdom of Lesotho, and through discussions, field survey, and technical examination of the results in Japan, has prepared the Draft Report of the study.

In order to explain and to consult with the Government of Lesotho on the Draft Report, JICA sent to Lesotho a study team, which is headed by Mr. Kazuhiko Terao, Grand Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs, and is scheduled to stay in the country from February 15 to 22, 1995.

As a result of discussions, both parties have confirmed the main items described on the attached sheets.

At Maseru, Tuesday, February 21, 1995

寺尾和彦

Mr. Kazuhiko Terao
Leader
Draft Report Explanation Team
JICA

Matekane

Mr. E. M. Matekane
Principal Secretary
Ministry of Planning, Economic
& Manpower Development
The Kingdom of Lesotho

Mr. S. Makhoalibe
Director
Department of Water Affairs
Ministry of Natural Resources
The Kingdom of Lesotho

ATTACHMENT

1. Components of the Draft Report
The Government of the Kingdom of Lesotho has agreed and accepted in principle the components of the Draft Report proposed by the Team.

2. Japan's grant aid system

(1) The Government of the Kingdom of Lesotho has understood the system of Japanese grand aid as the Team explained it with Annex I.
(2) The Government of the Kingdom of Lesotho will take necessary measures described in Annex II for smooth implementation of the Project, on condition that the grant aid assistance by the Government of Japan is extended to the Project.

3. Further schedule
The Team will complete the final report in accordance with the confirmed items, and send it to the Government of the Kingdom of Lesotho by the end of May, 1995.

4. Other relevant issues
Lesotho has agreed with following issues raised by the Team.

(1) System for operation and maintenance of facilities which will be constructed under the Project, should be established through collaboration between the Ministry of Education and Ministry of Natural Resources (Department of Water Affairs).
(2) Necessary measures for the above, including budgetary allocation, increase in personnel and securing storage for procured equipment and materials, should be taken by the above two organizations.
(3) Above system should undertake animation activities for school committees before the construction start. The Ministry of Education should list immediately substitute schools, when school committees disagree to deposit the repairment fund of the facilities.
(4) Each school will take responsibility to dispose sludge of sanitary facilities.

Annex I

Japan's Grant Aid Scheme

1. *Grant Aid Procedures*

1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
d) Preparation of a basic design of the Project
e) Estimation of costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry (ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

3. *Japan's Grant Aid Scheme*

1) What is Grant Aid ?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed.

However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

(1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
(2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
(3) To secure buildings prior to the procurement in case the installation of the equipment.
(4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
(5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
(6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

寺尾

7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

8) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

9) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

Annex-II

Necessary measures to be taken by the Government of Lesotho on condition that Japan's Grant Aid is extended;

1. To provide data and information necessary for the Project.

2. To secure, clear, level and reclaim the sites for the Project.

3. To construct the access roads to the site prior to commencement of the construction.

4. To bear commissions to Japanese foreign exchange bank to execute the banking services based upon the banking arrangement.

5. To ensure prompt unloading and customs clearance at port of disembarkation in Lesotho and facilitate internal transportation therein of products purchased under the Grant.

6. To exempt Japanese Nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Lesotho with respect to the supply of the products and services under the verified contracts.

7. To accord Japanese Nationals, whose services may be required in connection with the supply of products and the services under the verified contracts, such facilities as may be necessary for their entry into Lesotho and stay therein for the performance of their work.

8. To use and maintain properly and effectively all the facilities constructed and equipment purchased under the Grant.

9. To bear all the expense other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and the installation of the equipment.

国名	レソト王国
	Kingdom of Lesotho

1994.12　1/2

一般指標					
政体	立憲君主制	*1	面積	30,350.0 千Km 2	*1
元首	King LETSIE III	*1	人口	1,896 千人 (1993年)	*1
独立年月日	1966年10月04日	*1	首都	マセル	*1
人種(部族)構成	ソト99.7%	*1	主要都市名	ﾌﾞｰﾀﾌﾞｰﾃ、ﾚﾘｰﾌﾞ、ﾏﾌｪﾃﾝｸﾞ、ﾏﾌﾞﾌｫｴ	*1
		*1	経済活動可人口	689 千人	*1
言語・公用語	英語、セソト語	*1	義務教育年数	3 年間 (1992年)	*2
宗教	キリスト教80%、地域信仰20%	*1	初等教育就学率	－ % (0000年)	*2
国連加盟	1966年10月		識字率	59.0 % (1966年)	*1
世銀・IMF加盟	1968年07月	*1	人口密度	61.0 人/Km 2 (1992年)	*2
		*1	人口増加率	2.52 % (1993年)	*2
			平均寿命	平均 61.73　男 59.9　女 63.6	*1
			5歳児未満死亡率	71.5 /1000 (1993年)	*1
			ｶﾛﾘｰ供給量	2,120.0 cal/日/人 (1990年)	*2

経済指標					
通貨単位	マロチ	*1	貿易量		*3
為替ﾚｰﾄ(1US$)	1US$= 0.27882	*3	輸出	－ 百万ﾄﾞﾙ	*2
会計年度	4 月～　3 月	*1	輸入	－ 百万ﾄﾞﾙ	*2
国家予算	(1991年)	*2	輸入ｶﾊﾞｰ率	2.0 % (1992年)	*4
歳入	297.5 百万ﾄﾞﾙ	*2	主要輸出品目	羊毛、小麦、家畜、豆類、ﾄｳﾓﾛｺｼ	*1
歳出	351.9 百万ﾄﾞﾙ	*2	主要輸入品目	建築材、ﾄｳﾓﾛｺｼ、衣服、車、機械	*1
国際収支	49.9 百万ﾄﾞﾙ (1992年)	*2	日本への輸出	0.08 百万ﾄﾞﾙ (1992年)	*5
ODA受取額	142.00 百万ﾄﾞﾙ (1992年)	*2	日本からの輸入	2.0 百万ﾄﾞﾙ (1992年)	*5
国内総生産(GDP)	1,121.00 百万ﾄﾞﾙ (1992年)	*4			
一人当たりGDP	677.0 ﾄﾞﾙ (1991年)	*4	外貨準備総額	286.31 百万ﾄﾞﾙ (1994年)	*1
GDP産業別構成	農業 14.0 %	*4	対外債務残高	471.6 百万ﾄﾞﾙ (1992年)	*4
	鉱工業 38.0 %		対外債務返済率	5.6 % (1992年)	*4
	ｻｰﾋﾞｽ業 48.0 %		ｲﾝﾌﾚ率	－ %	*2
産業別雇用	農業 23.0 %	*2			
	鉱工業 33.0 %				
	ｻｰﾋﾞｽ業 44.0 %		国家開発計画		*5
経済成長率	1.3 % (1992年)	*4			

*6

気象(1969 年～ 1983 年平均)　場所：Ｌｅｓｏｔｈｏ　(標高　1419 m)													
月	1	2	3	4	5	6	7	8	9	10	11	12	平均/計
最高気温	30.0	28.0	26.0	23.0	19.0	17.0	16.0	19.0	23.0	26.0	27.0	29.0	23.5 ℃
最低気温	16.0	15.0	13.0	8.0	4.0	1.0	1.0	3.0	6.0	10.0	12.0	14.0	8.5 ℃
平均気温	23.0	21.5	19.5	15.5	11.5	9.0	8.5	11	14.5	18.0	19.5	21.5	16.0 ℃
降水量	91.0	79.0	76.0	56.0	25.0	8.0	10.0	20.0	20.0	51.0	66.0	61.0	563.0 mm
雨期/乾期						乾	乾						

*1 The World Factbook(C.I.A)
*2 Human Development Report(UNDP)
*3 International Financial Statistics(IMF)
*4 World Debt Tables(WORLD)
*5 最新世界各国要覧(東京書籍)
*6 World Weather Guide

国名	レソト王国
	Kingdom of Lesotho

*7

我が国におけるＯＤＡの実績				（資金協力は約束額ベース、単位：億円）
項目＼年度	1989	1990	1991	1992
無償資金協力	2,043.46	2,382.47	2,515.30	2,699.97
技術協力	2,146.74	1,989.63	2,050.47	2,194.95
有償資金協力	5,161.42	5,676.39	7,364.47	5,852.05
総　　額	9,351.62	10,048.49	11,930.24	10,746.97

*7

当該国に対する我が国ＯＤＡの実績				（支出純額、単位：百万ﾄﾞﾙ）
項目＼歴年	1989	1990	1991	1992
無償資金協力	0.04	0.06	0.08	0.07
技術協力	0.54	0.69	0.74	1.58
有償資金協力	0.00	0.00	0.00	0.00
総　　額	0.58	0.75	0.82	1.65

*8

ＯＤＡ諸国の経済協力実績						（支出純額、単位：百万ﾄﾞﾙ）
	贈　与 (1)		有償資金協力 (2)	政府開発援助 (ODA) (1)＋(2)＝(3)	その他政府資金及び民間資金 (4)	経済協力総額 (3)＋(4)
		技術協力				
二国間援助	65.30	33.50	2.70	101.50	42.60	144.10
(主要供与国)						
1. ドイツ	14.80	7.60	0.00	22.40	8.40	30.80
2. アメリカ	12.00	6.00	0.00	18.00	0.00	18.00
3. イギリス	10.80	7.90	0.00	18.70	35.00	53.70
4. ｽｳｪｰﾃﾞﾝ	6.40	3.40	0.00	9.80	0.00	9.80
多国間援助	43.40	11.50	31.00	85.90	1.10	87.00
(主要援助機関)						
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
そ の 他	58.70	22.10	3.80	84.60	43.40	128.00
合　　計	167.40	67.10	37.50	272.00	87.10	359.10

*9

援助受入窓口機関	
技術	関係各省庁・機関→大蔵・開発計画省
無償	関係各省庁・機関→大蔵・開発計画省
協力隊	関係各省庁・機関→大蔵・開発計画省

*7 Japane's ODA(Annual Report)
*8 Geographical Distribution of Financial Flows of Developing Countris(OECD/OCDE)
*9 国別協力情報(JICA)

添付資料－6.

Detailed Cost Estimation borne by Lesotho

A. DWA

(1) Animation Activities

Salary

including in (2) Counterparts

Fuel & oil for Vehicles (pick-up 1)

Fuel 99 days X 150 km/d ÷ 8km/L X 1.65 M X 2 years	= 6,125M
Oil etc.	= 306M
Subtotal	6,431M

Total = 6,431M

(2) Counterparts

Salary

	No.		Salary/y		years		
Surpervisor	1	X	57,192 M	X	2	=	114,384 M
Project Manager	1	X	51,684 M	X	2	=	103,368 M
Animaters	2	X	20,616	X	2	=	82,464 M
Hydrogeologist(Borehole test,water quality)	2	X	38,628	X	1.5	=	115,884 M
" (siting)	1	X	38,628	X	0.5	=	19,314 M
Senior Technical Officer (Drilling)	1	X	20,616	X	1.7	=	35,047 M
" (Toilet)	1	X	20,616	X	0.7	=	14,431
" (Water system)	1	X	20,616	X	0.5	=	10,308 M
Drillers	2	X	14,100	X	1	=	28,200 M
Technical Officer	4	X	14,100	X	1	=	56,400 M
Mechanic (Supporting Service Team)	4	X	14,100	X	1.6	=	90,240 M
	19						670,040M

Drivers (heavy vehicles)	5	X	11,460	X 1	=	57,300M
" (light vehicles)	2	X	9,324	X 2	=	37,296M
" (light vehicles)	3	X	9,324	X 1	=	27,972M
	10					122,568M

Fuel & Oil for Vehicles (Pick-up 1, Station Wagon 1)

275 days/year X 150 km/d ÷ 8 km/L X 1.65 M X 2 no. X 2 years X 80%	= 27,225M
Oil etc.	= 1,361M
	28,586M

Total = 821,194 M

(3) Preparation and Maintenance of a Office

Maintenance Cost

lighting	500 Maloti/month	X 12 month	X 2years	= 12,000 ¥
Water	100	X 12	X 2	= 2,400 ¥
Paper etc.	500	X 12	X 2	= 12,000 ¥
Maintenance(computer etc.)				= 6,000 ¥
(Office)				= 15,000 ¥
		Subtotal		47,400¥

Cost of Equipment (desk-6, chair-6, office table-4, chair-6, black bord-2 bookshelf-2, etc.)

≒120,000¥

Total 167,400¥

(4) Preparation for Stock Yard

Storehouse,	200,000 ¥
Pipe hanger	20,000 ¥
Fence	40,000 ¥
Electricity etc.	60,000 ¥
Total	320,000 ¥

Total

(1)Animation Activities	6,431¥
(2)Counterparts	$21,194¥
(3)Project Office Maintenance	167,400¥
(4)Preparation for Stock Yard	320,000¥
Total	1,315,025¥

B. SSRP

(1) Animation Activities

Salary

including in (2)Counterparts

Fuel & oil for Vehicles (pick-up 1)

Fuel 99 days X 150 km/d ÷ 8km/L X 1.65 M X 2 years =	6,125M
Oil etc. =	306M
Total	6,431M

Workshop for schools

3person/1school-- school manager, principal ,committee chairman

accomodation, transportation, etc. ≒ 400 Maloti

3person X 70 school X 400 Maloti/person

=84,000M

Total =90,431 M

(2) Counterparts

Salary	No	Salary/y	years	
Project Manager	1	X 51,684	X 2 =	103,368 M
Animaters	2	X 20,616	X 2 =	82,464 M
Senior Technical Officer (Toilet)	1	X 20,616	X1.4 =	28,862 M
(Water)	2	X 20,616	X0.9 =	37,109 M
	6 person			251,803M
District Officer	5	X 38,628	X 2 =	386,280 M
				386,280 M

Fuel & Oil for Vehicles (Pick-up 1, Station Wagon 1)

275 days/year X 150 km/d ÷ 8 km/L X 1.65 M X 2 no. X 2 years X 80% =	27,225M
Oil etc. =	1,361M
	28,586M

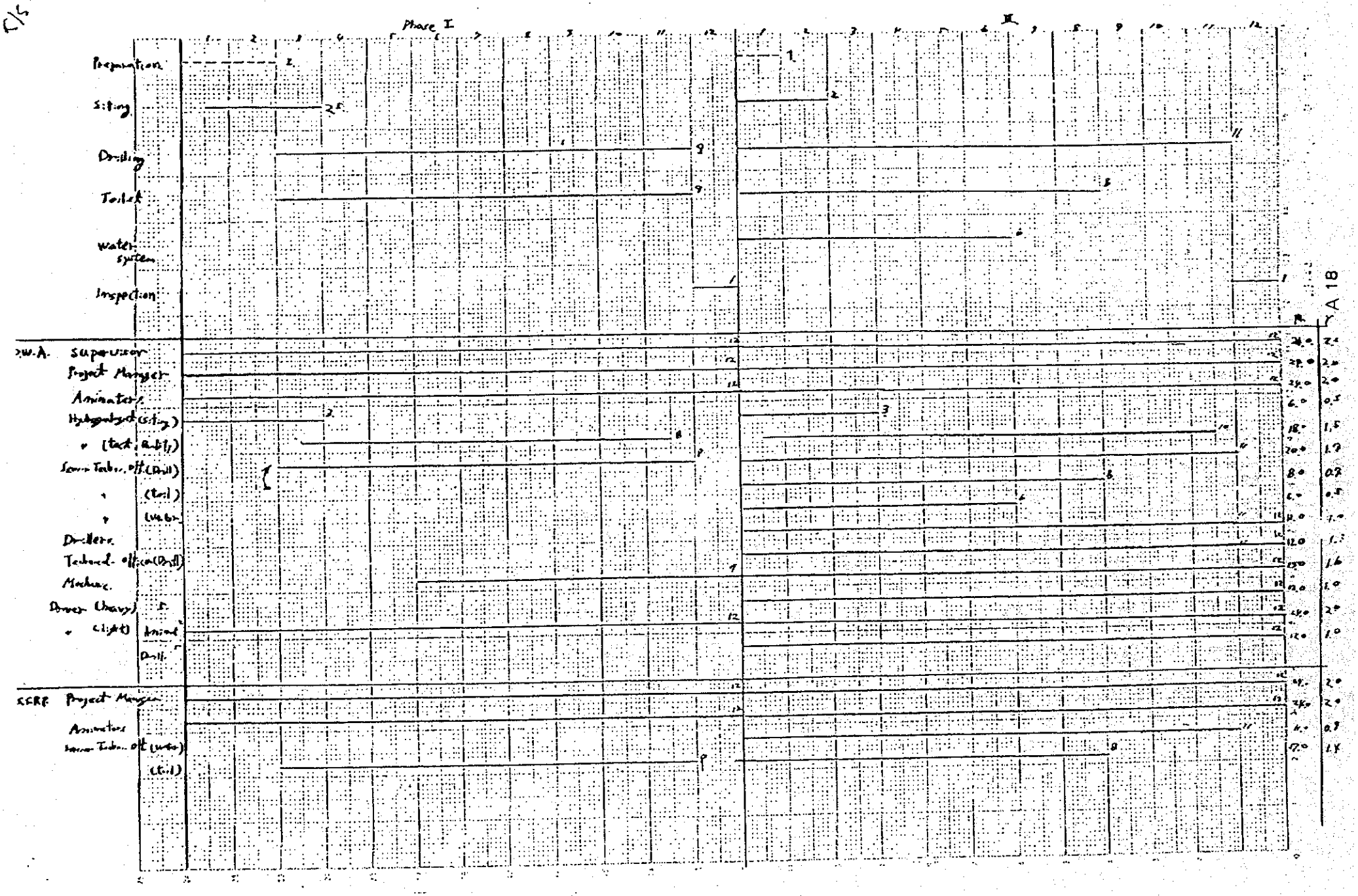
Total = 666,669M

Total

(1)Animation Activities	90,431 M
(2)Counterparts	666,669 M
Total	757,100 M

DWA + MOE

(1)Animation Activities	96,862 M
(2)Counterparts	1,487,863 M
(3)Project Office Maintenance	167,400 M
(4)Preparation for Stock Yard	320,000 M
Grand Total	2,072,125 Maloti


Phase I
II
Preparation
Siting
Drilling
Toilet
water system
Inspection
A 18
W.A.
Supervisor
Project Manager
Animators
Hydrogeologist (Siting)
" (test Drilling)
Sewer Tabu.. off (Drill)
" (Test)
" (water)
Drillers
Technol. office (Drill)
Mechanic
Driver (Heavy)
" (Light)
Animal
Drill
SCRP
Project Manager
Animators
Sewer Tabu.. off (water)
(Test)

SUMMARY OF THE FIELD SURVEY (1)

現地調査結果要約（1）

DISTRICT: Butha-Buthe

NO.	NAME OF SHOOL	COORDINATE X Y	GEOGRAPHY	*1 ACCESS	PUPILS NO.	*2 WATER FACILITY	*3 TOILET	*4 POND	SCHOOL EXPENSES (M/year)	WATER SUPPLY UNIT (lpcd)	(lpd)	GEOPHYSICAL CONDITIONS	SUPPOSED G/W CONDITIONS W/LEVEL (m)	QUANTITY (l/s)	WELL DEPTH(m)
1	St.Paul R.C.	S28°46'35" E28°15'32"	hilltop flat	○	1359	no	B	◇	75.00	2.0	2700	no fractures indicate, deatail survey needed	>40	0.1	80
2	Manamelae	S28°44'23" E28°18'43"	terrace flat	○	544	R (insuf.)	B	○	74.00	1.9	1100	no fractures indicate, detail survey needed	<40	0.1	70
3	Likhutlong	S28°47'21" E28°17'16"	hillside gentle slope	※	187	no	no	×	84.00	2.1	400	no fractures indicate, detail survey needed	<40	0.1	70
4	Ts'a-Le-Moleka	S28°45'40" E28°20'34"	hillside gentle slope	○	344	no	B	×	71.00	2.0	700	fractures expected around 40-50m deep	<40	0.2	100

DISTRICT: Leribe

NO.	NAME OF SHOOL	COORDINATE X Y	GEOGRAPHY	*1 ACCESS	PUPILS NO.	*2 WATER FACILITY	*3 TOILET	*4 POND	SCHOOL EXPENSES (M/year)	WATER SUPPLY UNIT (lpcd)	(lpd)	GEOPHYSICAL CONDITIONS	SUPPOSED G/W CONDITIONS W/LEVEL (m)	QUANTITY (l/s)	WELL DEPTH(m)
1	Ngechane	S28°46'06" E29°19'13"	mountainfoot gentle slope	○	548	no	B	○	64.50	2.0	1100	dyke distributes near the school	<40	0.2	60
2	Borlbeng	S28°49'26" E28°11'55"	terrace gentle slope	○	702	B (dry)	no	×	57.00	1.7	1200	well siting difficult, cancel	-	-	-
3	Kotola	S28°56'05" E28°50'46"	hilltop gentle slope	○	441	no	B	○	70.00	1.8	800		<40	0.1	70
4	Emmanuel	S29°55'54" E27°13'52"	hillside gentle slope	○	285	no	T	○	58.50	2.0	600	cancel	-	-	-
5	Kenya R.C.	S28°56'17" E27°50'59"	hilltop flat	○	560	no	B	○	64.80	1.8	1000	dyke distributes near the school	<40	0.2	60
6	Hleoheng L.E.C.	S28 55'31" E27 52'13"	flat	○	659	no	B	○	65.0	2.0	1400		<40	0.1	70

*1 ACCESS ○; good, △; partly civil works needed, ×; bad, civil works needed, ※; rain season impossible, *2 WATER FACILITY B; borehole, S; spring, R; roof water
*3 TOILET B ; brick, T; tinplate, ◇; under construction, *4 POND ○; exit, ×; no, ◇; under construction,

SUMMARY OF THE FIELD SURVEY (1)
DISTRICT: Mafeteng (1)

NO.	NAME OF SHOOL	COORDINATE X Y	GEOGRAPHY	*1 ACCESS	PUPILS NO.	*2 WATER FACILITY	*3 TOILET	*4 POND	SCHOOL EXPENSES (M/year)	WATER SUPPLY UNIT (lpcd)	(lpd)	GEOPHYSICAL CONDITIONS (GEOELECTRIC SURVEY)	SUPPOSED G/W CONDITIONS W/LEVEL (m)	QUANTITY (l/s)	WELL DEPTH(m)
1	Hermon	S29°43'33" E27°06'47"	hillside gentle slope	※	600	dug-well (insuf.)	T	○	41.50	1.9	1200	no fractures indicate, detail survey needed	<40	<0.1	70
2	Qalabane L.E.C.	S29°45'35" E27°11'01"	top of gentle slope	○	441	no	no	×	58.00	2.2	1000	no fracture indicates, detail survey needed	<40	<0.2	70
3	Likhoele	S29°49'30" E27°18'50"	mountainfoot flat	○	670	no	◇	×	65.50	1.8	1200	fractures around 80m, detail survey needed	>40	<0.2	100
4	Mathebe	S29°45'25" E27°23'06"	mountainfoot flat	○	454	no	no	○	80.75	1.9	900	fracture expected around 20m deep	<40	<0.2	60
5	Makaung	S29°50'23" E27°11'11"	hillside gentle slope	○	492	no	B	○	60.00	2.0	1000	fractures expected around 60m deep	<40	<0.1	70
6	Lists'okeleng (Pitseng)		school has water facility and enough quantity												
7	Motanyane		school has water facility and enough quantity												
8	Samaria R.C.	S29°44'02" E27°07'31"	terrace flat	○	598	no	no	○	61.00	1.9	1200	fractures expected 40 - 50m deep	<40	<0.1	70
9	Ralints'i A.C.L.	S29°45'38" E27°07'32"	plated slope	○	800	B (insuf.)	B	○	46.00	2.0	1600	no fractures indicate, detail survey needed	<40	<0.1	70
10	Ramokoatsi A.C.L.	S29°44'46" E27°20'56"	mountainfoot flat	○	599	no	B	○	76.00	1.7	1100	no fractures indicate, detail survey needed	>40	<0.2	100
11	Maholi A.C.L.	S29°42'41" E27°23'50"	mountainside gentle slope	○	223	no	no	○	73.00	2.4	550	fractures around 50m deep	<40	<0.2	70
12	Rebeleng R.C.	S29°39'04" E27°16'53"	hilltop gentle slope	○	335	w.system (insuf.)	no	○	47.20	1.8	600	dyke distributes in the area, cancelled			
13	Matlapaneng A.M.E.	S29°43'48" E27°14'53"	terrace flat	○	300	R (insuf.)	B	○	68.00	2.1	650	no fractures indicate, detail survey needed	<40	<0.1	80
14	Tanka	S29°42'24" E27°22'15"	mountainside gentle slope	△	222	no	B	×	73.00	2.2	500	no fractures indicate, detail survey needed	<40	<0.1	70
15	Bongalla L.E.C.	S29°41'39" E27°13'28"	mountainfoot flat	△	450	no	T	○	48.60	1.9	900	dolerite sill, fractures 40 - 50m	<40	<0.2	60

*1 ACCESS ○; good, △; partly civil work needed, ×; bad, civil work needed, ※; rain season impossible, *2 WATER FACILITY B; borehole, S; spring, R; roof water
*3 TOILET B ; built of brick, T; tinplate, ◇; under construction, *4 POND ○; exit, ×; no, ◇; under construction,

DISTRICT; Mafeteng (2)

NO.	NAME OF SHOOL	COORDINATE X Y	GEOGRAPHY	*1 ACCESS	PUPILS NO.	*2 WATER FACILITY	*3 TOILET	*4 POND	SCHOOL EXPENSES (M/year)	WATER SUPPLY UNIT (lpcd)	(lpd)	GEOPHYSICAL CONDITIONS (GEOELECTRIC SURVEY)	SUPPOSED G/W CONDITIONS W/LEVEL (m)	QUANTITY (l/s)	WELL DEPTH(m)
16	Kolo	S29°35'31" E27°29'47"	mountainfoot gentle slope	○	600	no	no	○	52.00	1.8	1100	no fractures indicate, detail survey needed	<40	<0.1	100
17	Boleka L.E.C.	S27°40'50" E27°22'37"	mountainfoot gentle slope	○	419	no	B	×	45.50	2.2	950	water basin narrow, detail survey needed	<40	<0.1	80
18	Khoro		school has good facility and enough quantity												
19	Litsoeneng L.E.C.	S29°40'03" E27°04'09"	hillside gentle slope	※	502	windmill	no	○	41.00	1.9	1000	dyke distributes in the school, cancelled	<40	>0.2	60
20	Nkhojane		school has good facility and enough quantity												
21	Malimong R.C.	S29°39'36" E27°24'24"	hilltop flat	×	428	no	B	×	43.80	1.9	850	well siting difficult, cancelled			
22	Mohlalefi A.C.L.	S29°35'22" E27°18'57"	mountainside slopy	○	276	R (insuf.)	B	○	52.00	2.0	600	fractures expected 50 to 60m deep	<40	<0.1	70
23	Phakoe A.C.L.	S29°38'22" E27°22'02"	hillside flat	○	258	no	no	×	36.50	2.0	550	fractures 50-60m deep	<40	<0.1	70
24	Thoahlane R.C.	S29°32'50" E27°16'25"	top of the gentle slope	※	203	no	no	○	46.00	2.0	400	no fractures indicate, detail survey needed	<40	<0.1	80
25	Ntanyele	S29°40'35" E27°04'49"	hilltop gentle slope	○	184	no	B	○	56.50	2.1	400	sill distributes in the area (VLF)	<40	<0.2	60
26	Mofumahali-oa-Fatima		enough water and good facilities												
27	Mokhasi	S29°35'11" E27°13'06"	top of the gentle slope	×	380	no	no	×	79.10	1.8	700	dolerite sill distributes widely	<40	<0.2	60
28	Mohlehli (A.C.L.)	S29°44'13" E27°12'42"	top of gentle slope	○	130	no	T	○	43.00	2.4	350				
29	Kotoanyane	S29°53'14" E27°12'44"	hilltop gentle slope	○	310	R (insuf.)	B	×	46.50	2.1	700	fractures expected around 60m deep	<40	<0.1	70
30	Ts'upane	S29°41'03" E27°06'23"	terrace flat	○	541	no	B	×	38.00	1.8	1000	dyke distributes in the school area (VLF)	<40	>0.2	60

*1 ACCESS ○; good, △; partly civil works needed, ×; bad, civil works needed, ※; rain season impossible *2 WATER FACILITY B; borehole, S; spring, R; roof water
*3 TOILET B ; brick, T; tinplate, ◇; under construction, *4 POND ○; exit, ×; no, ◇; under construction,

DISTRICT: Mafeteng (3)

NO.	NAME OF SHOOL	COORDINATE X Y	GEOGRAPHY	*1 ACCESS	PUPILS NO.	*2 WATER FACILITY	*3 TOILET	*4 POND	SCHOOL EXPENSES (M/year)	WATER SUPPLY UNIT (lpcd)	(lpd)	GEOPHYSICAL CONDITIONS (GEOELECTRIC SURVEY)	SUPPOSED G/W CONDITIONS W/LEVEL (m)	QUANTITY (l/s)	WELL DEPTH(m)
31	Bolikela A.M.E.	S29°37'10" E27°05'28"	low ground flat	※	162	no	no	○	76.00	2.0	350	fractures around 60 to 70m deep	<40	<0.2	70
32	Monyalotsa	S29°43'25" E27°11'51"	top of gentle slope	△	285	no	T	○	36.00	2.4	700	well siting difficult, cancelled			
33	Bolumatau L.E.C.	S29°42'39" E27°10'45"	hillside gentle slope	△	420	no	no	○	51.00	2.0	850	dykes distribute near the school (VLF)	<40	>0.2	60
34	Litsoeneng Methodist	S29°38'24" E27°02'37"	mountainfoot gentle slope	※	69	no	no	×	35.00	2.3	200	number of pupils 69 only, cancelled			
35	Bolikela L.E.C.	S29°36'31" E27°04'20"	hilltop gentle slope	※	300	no	no	○	56.00	1.9	600	dyke distributes near the school (VLF)	<40	>0.2	60
36	Lerato L.E.C. (Ramohapi)	S29°46'40" E27°17'17"	terrace flat	○	342	no	B	×	82.00	2.1	750	fractures around 40 - 50m deep	<40	<0.1	60
37	Likhetleng	S29°32'20" E27°18'12"	mountainfoot gentle slope	※	350	no	no	×	54.15	1.8	650	fractures 30-40m and 50-60m deep	<40	<0.1	70
38	Rebeleng A.C.L.	S29°39'35" E27°16'01"	hilltop gentle slope	○	130	w.system (insuf.)	no	○	54.00	2.0	300	fractures expected in 30m & 60-70m deep	<40	<0.2	70
39	Matsepe Metho. (Ramokhele)	S29°49'55" E27°15'32"	hillside gentle slope	○	160	w.system (no)	no	×	80.00	2.4	400	fracture expected in 40m deep	<40	<0.1	70
40	Bochabela	S29°43'05" E27°15'32"	top of gentle slope	○	342	no	no	○	56.00	1.8	650	fractures expected in 40m deep	<40	<0.1	70
41	Kopanong	S29°45'26" E27°15'24"	hillside gentle slope	○	478	no	T	○	67.50	2.0	1000	fractures expected in 45m deep	<40	<0.1	70
42	Motsekuoa	S29°41'56" E27°25'51"	low ground flat-gentle	○	421	no	no	×	66.70	2.0	850	fractures expected in 25 & 45m deep	<40	<0.2	70

*1 ACCESS ○; good, △; partly civil works needed, ×; bad, civil works needed, ※; rain season impossible *2 WATER FACILITY B; borehole, S; spring, R; roof water
*3 TOILET B ; brick, T; tinplate, ◇; under construction, *4 POND ○; exit, ×; no, ◇; under construction,

SUMMARY OF THE FIELD SURVEY (1)
DISTRICT: Mohale's Hoek(1)

NO.	NAME OF SHOOL	COORDINATE X Y	GEOGRAPHY	*1 ACCESS	PUPILS NO.	*2 WATER FACILITY	*3 TOILET	*4 POND	SCHOOL EXPENSES (M/year)	WATER SUPPLY UNIT (lpcd)	(lpd)	GEOPHYSICAL CONDITIONS (GEOELECTRIC SURVEY)	SUPPOSED G/W CONDITIONS W/LEVEL (m)	QUANTITY (l/s)	WELL DEPTH(m)
1	Siloe	S29°57'12" E27°17'06"	hillside gentle slope	○	600	B (insuf.)	T	○	42.00	1.7	1100	fractures 40 & 60m detail survey needed	>40	<0.2	100
2	Qhoqhoane	S29°53'18" E27°21'57"	col terrace flat	△	180	no	no	○	59.00	2.1	400	fractures in 20-40m & around 70m deep	<40	<0.2	70
3	Itumeleng English Medium	S29°55'59" E27°13'37"	hillside gentle slope	△	385	R (insuf.)	T	○	63.00	1.9	750	fractures 30 & 60m deep	<40	<0.1	70
4	Meeling	S29°55'54" E27°13'52"	hillside gentle slope	○	285	no	T	○	58.50	2.0	600	no fracture indicates, detail survey needed	<40	<0.1	70
5	Mokhele L.E.C.	S30°06'53" E27°30'53"	hillside slopy	△	302	no	T	×	84.00	1.6	500	fractures 40 & 60m deep (VLF)	<40	<0.2	60
6	Morifi L.E.C.	S30°18'13" E27°24'08"	terrace flat	※	295	no	T	○	48.00	2.0	600	dyke distributes in the school (VLF)	<40	>0.2	60
7	Tsoloane	S30°00'56" E27°21'32"	terace gentle slope	○	301	R (insuf.)	T	○	57.50	2.0	600	no fracture indicated, detail survey needed	>50	<0.2	100
8	Morifi (St.Thomas)	S30°16'07" E27°24'03"	hilltop gentle slope	※	405	no	T	×	75.00	1.9	800	dyke distributes in the school yard	<40	>0.2	60
9	Tumo	S30°13'17" E27°24'18"	hilltop gentle slope	○	201	B (suffi.)	T	○	58.00	1.9	400	dyke distributes near the school, cancelled			
10	Mofumahali-oa-Rosari	S29°58'14" E27°19'32"	hillside gentle slope	○	450	B (insuf.)	no	○	76.00	1.9	900	fractures at 40m,70m detail survey needed	<40	<0.2	100
11	Qhalasi	S30°04'24" E27°22'55"	mountainfoot gentle slope	△	420	R (insuf.)	T	○	71.00	1.9	850	fractures 20-40 & 70m deep	<40	<0.2	70
12	Rantsie	S29°56'19" E27°15'16"	mountainfoot gentle slope	○	345	S (insuf.)	◇	○	75.10	2.0	700	dyke distributes near the school	<40	>0.2	60
13	Morifi A.M.E.	S30°18'59" E27°24'33"	hilltop gentle slope	※	155	no	no	○	43.90	2.0	350				
14	Mohale'shoek L.E.C.	S30°09'29" E27°27'53"	flat	○	700	S (insuf.)	T	○	74.50	1.5	1100	fractures 30 & 80m, detail survey needed	>60	>0.2	100
15	Maphutsaneng	S30°18'04" E27°28'15"	hillside gentle slope	○	520	R (insuf.)	no	×	46.00	1.7	900	dyke distributes near school	<40	<0.1	60
16	Liphirintg	S30°07'37" E27°19'28"	hillside gentle slope	○	445	R (insuf.)	T	×	54.00	1.9	900	fractures 20-40m deep	<40	<0.2	70

*1 ACCESS ○; good, △; partly civil works needed, ×; bad, civil works needed, ※; rain season impossible, *2 WATER FACILITY B; borehole, S; spring, R; roof water
*3 TOILET B ; brick, T; tinplate, ◇; under construction, *4 POND ○; exit, ×; no, ◇; under construction,

DISTRICT: Mohale's Hoek(2)

NO.	NAME OF SHOOL	COORDINATE X Y	GEOGRAPHY	*1 ACCESS	PUPILS NO.	*2 WATER FACILITY	*3 TOILET	*4 POND	SCHOOL EXPENSES (M/year)	WATER SUPPLY UNIT (lpcd)	(lpd)	GEOPHYSICAL CONDITIONS (GEOELECTRIC SURVEY)	SUPPOSED G/W CONDITIONS W/LEVEL (m)	QUANTITY (l/s)	WELL DEPTH(m)
17	Mohlakana	S30°18'37" E27°30'33"	top of hill flat	△	386	W.system (suff.)	no	○	47.00	-	-	well siting difficult, cancelled			
18	Makhabane (A.C.L.)	S30°14'47" E27°28'29"	hillside gentle slope	※	169	no	◇	◇	73.00	2.2	400	dyke distributes near the school	<40	<0.2	60
19	Mekaling L.E.C.	S30°17'31" E27°32'36"	hillside flat	△	419	R (insuf.)	no	○	48.75	2.1	900	fractures expected in 45 & 65m deep	<40	<0.1	80
20	Morobong	S30°21'38" E27°30'08"	hillside flat	×	300	R (insuf.)	T	○	62.90	2.0	600	fractures 50-80m deep, detail survey needed	>40	>0.2	100
21	Makhaleng	S30°05'18" E27°25'12"	hillside gentle slope	○	270	B (insuf.)	B	○	75.70	2.3	650	cancel			
22	Lefikeng L.E.C.	S30°03'53" E27°18'55"	hilltop gentle slope	○	420	no	no	○	52.00	2.0	850	dolerite dyke in the vicinity of the school	<40	>0.2	60
23	Sekoati R.C.	S30°12'40" E27°26'34"	terrace	○	450	no	T	○	58.00	2.0	900	fractures 45 & 90m, detail survey needed	>50	<0.2	100
24	Potsane	S30°07'47" E27°29'39"	terrace	○	600	R (insuf.)	T	×	66.00	1.7	1100	fractures 40 - 60m deep	<40	<0.1	70
25	Maphutseng A.M.E.	S30°11'59" E27°32'22"	hilltop flat	○	127	R (insuf.)	◇	○	56.00	2.5	350	fractures around 30 & 60m deep	<40	<0.1	70
26	Maphutseng L.E.C.	S30°12'43" E27°29'29"	hilltop gentle slope	○	672	S (insuf.)	T	◇	58.00	2.0	1300	fractures around 40 & 80m deep	<40	<0.1	100
27	Holly Cross	S30°20'34" E27°32'36"	hillside rolling	○	825	B (suff.)	T	○	42.90	1.5	1300	cancelled			
28	Bethel	school has facility and enough water													
29	Phatalla L.E.C.	S30°23'06" E27°33'37"	terrace gentle-slopy	△	235	R (insuf.)	no	○	65.25	1.9	500	dolerite dyke in the vicinity of the school	<40	>0.2	60
30	Mokoanyane A.C.L.	S30°16'12" E27°30'46"	terrace gentle slope	△	800	no	no	×	61.00	1.7	1400	fractures 20 & 40m deep	<40	<0.1	70
31	Matsoareng	S29°58'32" E27°14'40"	terrace gentle slope	△	76	no	no	×	49.00	2.2	200	number of pupil 76 only, cancel	<40	>0.2	60
32	Mokoroane	S29°55'49" E27°12'50"	terrace gentle slope	○	268	no	no	○	71.00	2.0	600	dyke distributes near the school	<40	<0.2	60
33	St.Patricks	S30°09'29" E27°27'53"	flat	○	750	S (insuf.)	B	×	100.00	1.8	1350				
34	St.Stephen's	S30°09'29" E27°27'53"	flat	○	1500	S (insuf.)	B	○	116.00	1.7	2600				

SUMMARY OF THE FIELD SURVEY (2)

現地調査結果要約（2）

DISTRICT; Butha-Buhte

NO.	NAME OF SCHOOL	NO. OF PUPILS BOYS/GIRLS =TOTAL			SCHOOL EXPENSES MAINTE.	FEEDING	MATERIAL	EXAMINE	OTHERS	TOTAL	WATER SUPPLY UNIT (l/pcd) DRINK	FEEDING	IRRIGAT.	WASHING	TOTAL	SCHOOL COMMITTEE MEMBERS(NO.)	OTHERS
1	St. Paul R.C.	544	815	1359	-	24.00	14.00	6.00	31.00	75.00	1.0	0.4	0.5	0.1	2.0	7	
2	Manamela	270	274	544	2.50	30.00	14.00	6.50	21.00	74.00	1.0	0.3	0.4	0.2	1.9	7	
3	Likhutlong L.E.C.	101	86	187	-	10.00	14.00	6.00	54.00	84.00	1.0	0.6	0.3	0.2	2.1	8	
4	Ts'-a-Le-Moleka	252	308	560	12.00	25.00	14.00	6.00	14.00	71.00	1.0	0.4	0.4	0.2	2.0	7	

DISTRICT; Leribe

NO.	NAME OF SCHOOL	NO. OF PUPILS BOYS/GIRLS =TOTAL			SCHOOL EXPENSES MAINTE.	FEEDING	MATERIAL	EXAMINE	OTHERS	TOTAL	WATER SUPPLY UNIT (l/pcd) DRINK	FEEDING	IRRIGAT.	WASHING	TOTAL	SCHOOL COMMITTEE MEMBERS(NO.)	OTHERS
1	Ngechane	200	248	548	14.00	20.00	14.00	6.00	10.00	64.50	1.0	0.4	0.4	0.2	2.0	7	
2	Borlbeng	310	392	702	5.00	10.00	14.00	6.00	22.00	57.00	1.0	0.3	0.3	0.1	1.7	5	
3	Kotola	171	270	441	2.00	10.00	14.00	6.00	38.00	70.00	1.0	0.4	0.3	0.1	1.8	9	
4	Emmanuel	200	350	558	22.00	31.00	14.00	6.00	40.00	113.00	1.0	0.4	0.3	0.3	2.0	7	
5	Kenya R.C.	252	308	560	-	20.00	14.00	6.00	24.80	64.80	1.0	0.3	0.4	0.1	1.8	8	
6	Hleoheng L.E.C.			659													

DISTRICT; Berea

NO.	NAME OF SCHOOL	NO. OF PUPILS BOYS/GIRLS =TOTAL			SCHOOL EXPENSES MAINTE.	FEEDING	MATERIAL	EXAMINE	OTHERS	TOTAL	WATER SUPPLY UNIT (l/pcd) DRINK	FEEDING	IRRIGAT.	WASHING	TOTAL	SCHOOL COMMITTEE MEMBERS(NO.)	OTHERS
1	Mesapela	312	381	693	3.00	30.00	14.00	6.00	27.00	80.00	1.0	0.3	0.5	0.2	2.0	7	
2	Boose L.E.C.	55	70	125	10.00	4.00	14.00	6.00	46.00	80.00	1.0	0.5	0.5	0.2	2.2	7	
3	St. Theresa	400	600	1000	6.00	55.00	14.00	7.50	20.00	102.50	1.0	0.5	0.2	0.2	1.9	7	
4	Tsereoane			338													

DISTRICT: Berea

NO.	NAME OF SHOOL	COORDINATE X Y	GEOGRAPHY	*1 ACCESS	PUPILS NO.	*2 WATER FACILITY	*3 TOILET	*4 POND	SCHOOL EXPENSES (M/year)	WATER SUPPLY UNIT (lpcd)	(lpd)	GEOPHYSICAL CONDITIONS	SUPPOSED G/W CONDITIONS W/LEVEL (m)	QUANTITY (l/s)	WELL DEPTH(m)
1	Mesapela	S29°10'36" E27°47'46"	hillside gentle slope	○	693	W.system (suffi.)	no	×	80.00	2.0	1400	enough water, cancel	-	-	-
2	Boose L.E.C.	S29°05'39" E27°52'52"	terrace gentle slope	△	125	no	no	×	80.00	2.2	300		<40	0.1	70
3	St.Theresa	S29°01'35" E28°00'15"	mountainfoot flat	○	1000	no	B	○	102.50	1.9	1900		<40	0.1	70
4	Tsereoane	S29 11'03" E27 37'06"	on top of the hill, flat	○	338	no	B	○	60.50	2.0	700		<40	0.1	70

*1 ACCESS ○; good, △; partly civil works needed, ×; bad, civil works needed, ※; rain season impossible, *2 WATER FACILITY B; borehole, S; spring, R; roof water
*3 TOILET B ; brick, T; tinplate, ◇; under construction, *4 POND ○; exit, ×; no, ◇; under construction,

SUMMARY OF THE FIELD SURVEY (2)
DISTRICT; Mafeteng (1)

NO.	NAME OF SCHOOL	NO. OF PUPILS BOYS	GIRLS	TOTAL	SCHOOL EXPENSES MAINTE.	FEEDING	MATERIAL	EXAMINE	OTHERS	TOTAL	WATER SUPPLY UNIT (l/pcd) DRINK	FEEDING	IRRIGAT.	WASHING	TOTAL	SCHOOL COMMITTEE MEMBERS(NO.)	OTHERS
1	Hermon	306	294	600	11.00	10.00	14.00	6.00	0.50	41.50	1.0	0.5	0.3	0.1	1.9	0	
2	Qalabane L.E.C.	236	264	441	14.00	10.00	14.00	6.00	14.00	58.00	1.0	0.4	0.5	0.3	2.2	7	
3	Likhoele	268	402	670	20.00	25.00	14.00	6.50	0.00	65.50	1.0	0.4	0.3	0.1	1.8	10	
4	Mathebe	254	200	454	7.50	28.00	14.00	6.00	25.25	80.75	1.0	0.4	0.4	0.1	1.9	7	
5	Makaung	241	251	492	11.00	17.00	14.00	7.00	11.00	60.00	1.0	0.5	0.4	0.1	2.0	7	
6	Listsokeleng (Pitseng)	enough water and good facilities															
7	Motanyane	enough water and good facilities															
8	Samaria R.C.	298	300	598	6.00	25.00	14.00	6.00	10.00	61.00	1.0	0.4	0.3	0.2	1.9	7	
9	Ralints'i A.C.L.	350	450	800	-	-	14.00	6.00	26.00	46.00	1.0	0.5	0.4	0.1	2.0	8	
10	Ramokoatsi A.C.L.	295	304	599	2.00	25.00	14.00	6.00	29.00	76.00	1.0	0.3	0.3	0.1	1.7	7	
11	Maholi A.C.L.	122	101	223	4.90	25.00	14.00	6.00	23.10	73.00	1.0	0.6	0.6	0.2	2.4	7	
12	Rebeleng R.C.	151	184	335	6.00	15.00	14.00	6.00	6.20	47.20	1.0	0.2	0.4	0.2	1.8	3	
13	Matlapaneng A.M.E.	135	165	300	-	20.00	14.00	6.00	28.00	68.00	1.0	0.5	0.4	0.2	2.1	7	
14	Tanka	89	133	222	2.10	25.00	14.00	6.00	25.90	73.00	1.0	0.5	0.6	0.1	2.2	6	
15	Bongalla L.E.C.	203	242	450	14.00	10.00	14.00	6.00	4.60	48.60	1.0	0.3	0.4	0.2	1.9	7	

SUMMARY OF THE FIELD SURVEY (2)
DISTRICT: Mafeteng (2)

NO.	NANE OF SCHOOL	NO. OF PUPILS BOYS/GIRLS =TOTAL			SCHOOL EXPENSES MAINTE.	FEEDING	MATERIAL	EXAMINE	OTHERS	TOTAL	WATER SUPPLY UNIT (1/pcd) DRINK	FEEDING	IRRIGAT	WASHIN	TOTAL	SCHOOL COMMITTEE MEMBERS(NO.)	OTHERS
16	Kolo	250	350	600	10.00	10.00	14.00	6.00	12.00	52.00	1.0	0.3	0.3	0.2	1.8	8	
17	Boleka L.E.C.	168	251	419	10.00	10.00	14.00	6.00	5.50	45.50	1.0	0.4	0.6	0.2	2.2	7	
18	Khoro	enough water and good facilities															
19	Litsoeneng L.E.C.	226	276	502	5.00	5.00	14.00	6.00	11.00	41.00	1.0	0.5	0.3	0.1	1.9	21	
20	Nkojane	enough water and good facilities															
21	Mallmong R.C.	193	235	428	6.00	15.00	14.00	6.00	2.80	43.80	1.0	0.3	0.4	0.2	1.9	6	
22	Mohlalefi A.C.L.	115	161	276	5.00	11.00	14.00	6.00	16.00	52.00	1.0	0.4	0.4	0.2	2.0	5	
23	Phakoe A.C.L.	100	158	258	2.50	10.00	14.00	6.00	4.00	36.50	1.0	0.3	0.6	0.1	2.0	7	
24	Thoahlane R.C.	92	111	203	6.00	5.00	14.00	6.00	15.00	46.00	1.0	0.5	0.3	0.2	2.0	8	
25	Ntanyele	101	83	184	6.00	25.00	14.00	6.00	5.50	56.50	1.0	0.7	0.3	0.1	2.1	7	
26	Mofumahali-oa-Fatima	enough water and good facilities															
27	Mokhasi	114	266	380	19.00	24.00	14.00	7.50	15.10	79.10	1.0	0.4	0.3	0.1	1.8	7	
28	Mohlehli (A.C.L.)	50	80	130	-	-	14.00	6.00	23.00	43.00	1.0	0.5	0.6	0.1	2.2	9	
29	Kotoanyane	124	186	310	2.00	8.00	14.00	6.00	16.50	46.50	1.0	0.6	0.4	0.1	2.1	16	
30	Ts'upane	216	325	541	8.00	5.00	14.00	6.00	5.00	38.00	1.0	0.3	0.4	0.1	1.8	8	

SUMMARY OF THE FIELD SURVEY (2)
DISTRICT: Mafeteng (3)

NO.	NAME OF SCHOOL	NO. OF PUPILS BOYS	GIRLS	=TOTAL	SCHOOL EXPENSES MAINTE.	FEEDING	MATERIAL	EXAMINE	OTHERS	TOTAL	WATER SUPPLY UNIT (1/pcd) DRINK	FEEDING	IRRIGAT.	WASHING	TOTAL	SCHOOL COMMITTEE MEMBERS(NO.)	OTHERS
31	Bolikela A.M.E.	78	89	162	10.00	10.00	14.00	6.00	36.00	76.00	1.0	0.6	0.3	0.1	2.0	11	
32	Monyalotsa	110	175	285	11.00	5.00	14.00	6.00	0.00	36.00	1.0	0.5	0.8	0.1	2.4	7	
33	Bolumatau L.E.C.	188	232	420	15.00	15.00	15.00	6.00	0.00	51.00	1.0	0.6	0.3	0.1	2.0	10	
34	Litsoeneng Methodist	37	32	69	10.00	5.00	14.00	6.00	0.00	35.00	1.0	0.8	0.4	0.1	2.3	4	
35	Bolikela L.E.C.	135	165	300	12.00	10.00	14.00	6.00	14.00	56.00	1.0	0.5	0.3	0.1	1.9	7	
36	Lerato L.E.C. (Ramohapi)	103	239	342	10.00	20.00	14.00	6.00	32.00	82.00	1.0	0.5	0.5	0.1	2.1	8	
37	Likhetleng	155	195	350	10.00	20.00	14.00	6.00	4.15	54.15	1.0	0.4	0.3	0.1	1.8	5	
38	Rebeleng A.C.L.	60	70	130	2.00	10.00	14.00	6.00	22.00	54.00	1.0	0.5	0.3	0.2	2.0	8	
39	Matsepe Metho. (Ramokhhele)	64	96	160	10.00	10.00	14.00	6.00	40.00	80.00	1.0	0.6	0.6	0.2	2.4	5	
40	Bochabela	169	173	342	5.00	25.00	14.00	6.00	6.00	56.00	1.0	0.4	0.3	0.1	1.8	7	
41	Kopanong	233	245	478	21.00	20.00	14.00	6.00	6.50	67.50	1.0	0.4	0.4	0.2	2.0	7	
42	Motsekuoa	189	232	421	1.70	20.00	14.00	6.00	25.00	66.70	1.0	0.3	0.5	0.2	2.0	7	

SUMMARY OF THE FIELD SURVEY (2)
DISTRICT: Mohale's Hoek (1)

NO.	NAME OF SCHOOL	NO. OF PUPILS BOYS/GIRLS =TOTAL			SCHOOL EXPENSES MAINTE.	FEEDING	MATERIAL	EXAMINE	OTHERS	TOTAL	WATER SUPPLY UNIT (l/pcd) DRINK	FEEDING	IRRIGAT.	WASHING	TOTAL	SCHOOL COMMITTEE MEMBERS(NO.)	OTHERS
1	Siloe	200	400	600	8.00	14.00	14.00	6.00	-	42.00	1.0	0.3	0.3	0.1	1.7	7	
2	Qhoqhoane	82	98	180	-	-	14.00	6.00	39.00	59.00	1.0	0.7	0.3	0.1	2.1	7	
3	Itumeling English Medium	201	184	385	11.00	25.00	14.00	6.00	7.00	63.00	1.0	0.4	0.3	0.2	1.9	7	
4	Meeling	100	185	285	3.50	20.00	14.00	6.00	14.00	58.50	1.0	0.6	0.3	0.1	2.0	7	
5	Mokhele L.E.C.	142	160	302	16.00	30.00	14.00	6.00	18.00	84.00	1.0	0.2	0.3	0.1	1.6	8	
6	Morifi L.E.C.	130	165	295	8.00	15.00	14.00	6.00	5.00	48.00	1.0	0.5	0.3	0.2	2.0	7	
7	Tsoloane	126	175	301	4.50	11.00	14.00	6.50	21.50	57.50	1.0	0.5	0.3	0.2	2.0	7	
8	Morifi (St.Thomas)	120	285	405	10.00	40.00	14.00	6.00	5.00	75.00	1.0	0.5	0.3	0.1	1.9	7	
9	Tumo	93	108	201	4.00	20.00	14.00	6.00	14.00	58.00	1.0	0.5	0.3	0.1	1.9	8	
10	Mofumahali-oa-Rosari	216	234	450	5.00	22.00	14.00	8.00	27.00	76.00	1.0	0.5	0.3	0.1	1.9	7	
11	Qualasi	120	300	420	31.00	20.00	14.00	6.00	-	71.00	1.0	0.5	0.3	0.1	1.9	8	
12	Rantsie	145	200	345	10.00	25.00	14.00	6.00	20.10	75.10	1.0	0.6	0.3	0.1	2.0	5	
13	Morifi A.M.E.	70	85	155	1.00	5.00	14.00	6.00	17.90	43.90	1.0	0.5	0.3	0.2	2.0	8	
14	Mohale'shoek L.E.C.	300	400	700	-	-	14.00	6.50	54.00	74.50	1.0	0.2	0.2	0.1	1.5	7	
15	Maphutsaneng	320	200	520	8.75	5.00	14.00	6.00	12.25	46.00	1.0	0.3	0.3	0.1	1.7	8	
16	Liphiring	200	245	445	5.00	10.00	14.00	6.00	19.00	54.00	1.0	0.3	0.4	0.2	1.9	7	

SUMMARY OF THE FIELD SURVEY (2)
DISTRICT; Mohale's Hoek (2)

NO.	NAME OF SCHOOL	NO. OF PUPILS BOYS/GIRLS =TOTAL			SCHOOL EXPENSES MAINTE.	FEEDING	MATERIAL	EXAMINE	OTHERS	TOTAL	WATER SUPPLY UNIT (l/pcd) DRINK	FEEDING	IRRIGAT.	WASHING	TOTAL	SCHOOL COMMITTEE MEMBERS(NO.)	OTHERS
17	Mohlakana	-	-	386	-	-	14.00	6.00	27.00	47.00	-	-	-	-	-		
18	Makhabane A.C.L.	78	91	169	1.00	20.00	14.00	6.00	32.00	73.00	1.0	0.5	0.6	0.1	2.2	11	
19	Mekaling L.E.C.	203	216	419	6.75	12.00	14.00	6.00	10.00	48.75	1.0	0.4	0.6	0.1	2.1	11	
20	Morobong L.E.C.	149	151	300	6.00	20.00	14.00	6.00	16.90	62.90	1.0	0.4	0.5	0.1	2.0	9	
21	Makhaleng	176	94	270	4.50	30.00	14.00	6.00	21.20	75.70	1.0	0.6	0.6	0.1	2.3	9	
22	Lefikeng L.E.C.	180	240	420	4.00	10.00	14.00	6.00	18.00	52.00	1.0	0.5	0.3	0.2	2.0	7	
23	Sekoati R.C.	135	315	450	-	20.00	14.00	6.00	18.00	58.00	1.0	0.5	0.3	0.2	2.0	7	
24	Potsane	288	312	600		40.00	14.00	6.00	6.00	66.00	1.0	0.3	0.3	0.1	1.7	7	
25	Maphutsaneng A.M.E.	37	90	127	-	5.00	14.00	6.00	31.00	56.00	1.0	0.6	0.8	0.1	2.5	12	
26	Maphutsaneng L.E.C.	420	252	672	-	10.00	14.00	6.00	28.00	58.00	1.0	0.2	0.6	0.2	2.0	7	
27	Holly Cross	300	525	825	5.00	10.00	14.00	6.00	7.90	42.90	1.0	0.1	0.3	0.1	1.5	S.C. 5 SSRP 5	
28	Bethel	enough water and good facilities															
29	Phatalla L.E.C.	111	124	235	6.00	20.00	14.00	6.00	19.25	65.25	1.0	0.5	0.3	0.1	1.9	7	
30	Mokoanyane A.C.L.	400	400	800	-	0.00	14.00	6.00	41.00	61.00	1.0	0.3	0.2	0.2	1.7	8	
31	Matsoareng	26	50	76	10.00	5.00	14.00	6.00	14.00	49.00	1.0	0.8	0.3	0.1	2.2	7	
32	Mokoroane	100	168	268	-	30.00	14.00	6.00	21.00	71.00	1.0	0.5	0.3	0.2	2.0	7	
33	St Patricks	290	460	750	-	50.00	14.00	6.00	30.00	100.00	1.0	0.3	0.4	0.1	1.8	7	
34	St Stephen's	675	825	1500	-	50.00	14.00	6.00	46.00	116.00	1.0	0.3	0.3	0.1	1.7	9	

物 理 探 査 結 果

Table . . List of estimated resistivity structures

1. DISTRICT; BOTHA-BUTHA

SCHOOL NO.	R1 (ohm-m)	R2 (ohm-m)	R3 (ohm-m)	R4 (ohm-m)	R5 (ohm-m)	R6 (ohm-m)	T1 (m)	T2 (m)	T3 (m)	T4 (m)	T5 (m)	REMARKES
1	165.4	13.66	24.12	108.5	25.47		0.74	2.58	14.4	52.5		
2	1427	37.2	100.4	52.27			1	9.5	60.9			
3	63.3	77.64	26.64	80.54			2.8	7.1	41.8			
4	101.4	17.4	245.5	16.89	320.6		1.48	9.1	6	48.6		

2. DISTRICT; LERIBE

SCHOOL NO.	R1 (ohm-m)	R2 (ohm-m)	R3 (ohm-m)	R4 (ohm-m)	R5 (ohm-m)	R6 (ohm-m)	T1 (m)	T2 (m)	T3 (m)	T4 (m)	T5 (m)	REMARKES
1												VLF-EM
2												CANCEL
3	741.1	18.39	51.34				1.1	37.4				
4												CANCEL
5	24.83	18.25	32.63				1.3	7.5				
6	66.11	180.3	28.53	270.6			6.6	6.9	48.4			

3. DISTRICT; BEREA

SCHOOL NO.	R1 (ohm-m)	R2 (ohm-m)	R3 (ohm-m)	R4 (ohm-m)	R5 (ohm-m)	R6 (ohm-m)	T1 (m)	T2 (m)	T3 (m)	T4 (m)	T5 (m)	REMARKES
1												CANCEL
2	152.1	78.28	14.73	202.8	21.89		1.8	4.5	10.2	39.1		
3	71.48	12.16	95.64	21.54	33.17		1.8	3.2	3.9	9.6		
4	168.6	12.31	58.55	26.83	54.01		1.4	1.4	5.6	25.6		

R ; 比抵抗層

T ; 比抵抗層層厚

4. DISTRICT; MAFETENG

SCHOOL NO.	R1 (ohm-m)	R2 (ohm-m)	R3 (ohm-m)	R4 (ohm-m)	R5 (ohm-m)	R6 (ohm-m)	T1 (m)	T2 (m)	T3 (m)	T4 (m)	T5 (m)	REMARKES
1	13.78	102.7	37.76	99.74			5.5	10.8	57.2			
2	111	235.5	51.45	86.46			7	10.9	29.9			
3	738.4	7.45	29.25	39.28			0.7	0.5	39.6			
4	41.87	98.38	12.01	118	16.26	125.7	3.1	2.5	4	14.5	39.9	
5	1104.2	2263.5	82.43	35.87			1.1	7.5	72.1			
6												CANCEL
7												CANCEL
8	1202.5	44.38	292.8	8.26	360.5	14.43	0.8	3.9	2.6	8	12.9	
9	70.5	7.19	86.65	34.9	56.29		1	2.1	16	135.9		
10	164.3	47.52	77.58	159			2.1	5.6	26			
11	881.1	12.27	87.21	17.7			0.7	25	93.2			
12												CANCEL
13	135.2	11.19	47.33	7.81			1.4	12.5	73.3			
14	28.56	12.53	117.8	46.4			1.8	3.7	13.2			
15	128.3	5406	74.46	2145.5			0.6	2.1	4			
16	140.6	49.29	170.7	45.94			0.7	5.7	24.9			
17	400	52.05	34.5	131.3			0.8	6.4	13.7			
18												CANCEL
19												CANCEL
20												CANCEL
21												CANCEL
22	190.5	27.12	71.32				2.7	70.6				
23	590.5	171.4	772.7	41.28	59.23		1.3	1.8	3	71.6		
24	113.7	31.78	52.77				12.4	47.22				
25	61.93	126.2	1388.7				6.5	12.22				VLF-EM
26												
27	116.3	923	134.6				6.3	13.5				

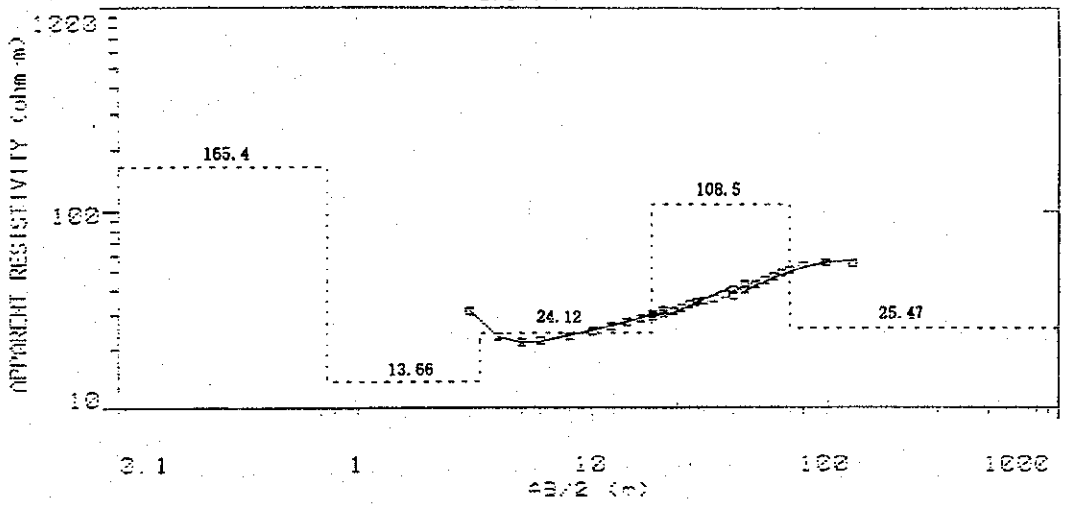
28	674.6	27.87	80.19	19.81	127.9		0.7	1.1	21.9	61.7		
29	380	75.68	147.7	22.55	69.2		1	7.2	5.9	30.5		
30	58.22	35.98	554.6	19.83			5.3	26	41.1			VLF-EM
31	214.4	40.64	145.5	12.84			0.8	12	80.3			
32												CANCEL
33												VLF-EM
34												CANCEL
35												VLF-EM
36	235.8	15.25	69.17	10.06			1.3	15.2	78.7			
37	159.7	21.35	40.5	10.49	153		1.5	8	12.5	21.5		
38	73.45	23.59	90.96	156.2	27.17		1.1	3.4	1.9	25.5		
39	62.43	12.53	37.87	63.67			5.9	5.7	124.1			
40												VLF-EM
41	1016.2	58.11	185.1	23.6	54.48		0.9	2.6	7.6	77.1		
42	362.8	17.4	157.3	3.01	73.68	0.8	15	16.3	48.8			

5. DISTRICT; MOHALE'S HOEK

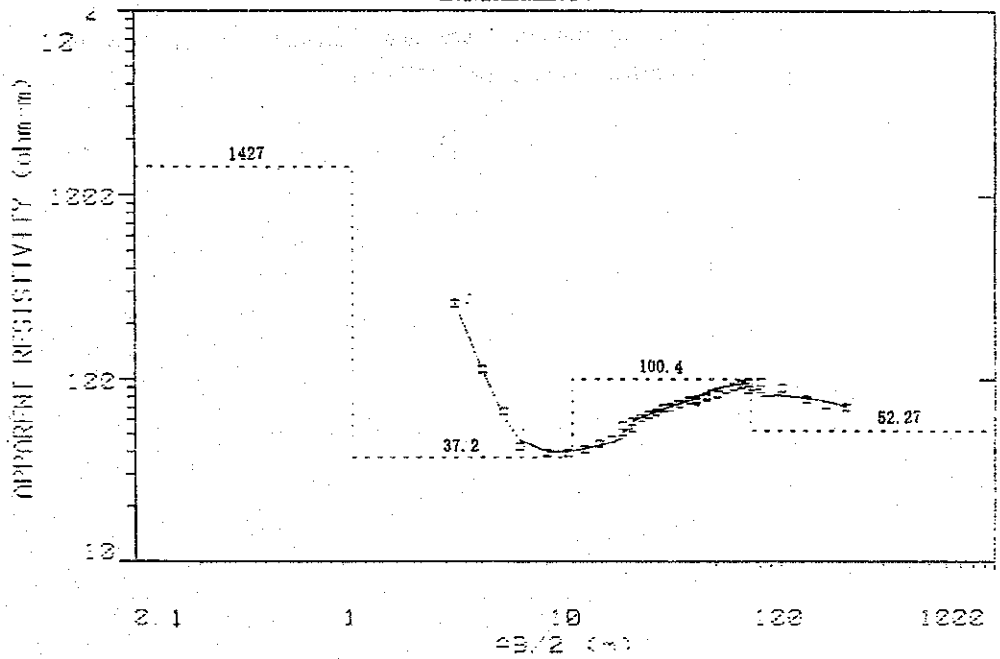
SCHOOL NO.	R1 (ohm-m)	R2 (ohm-m)	R3 (ohm-m)	R4 (ohm-m)	R5 (ohm-m)	R6 (ohm-m)	T1 (m)	T2 (m)	T3 (m)	T4 (m)	T5 (m)	REMARKES
1	93.19	63.26	452.9	47.73			11.29	9.9	45.92			
2	201.3	23.76	102.5	18.99	74.57		1	1.5	2.7	21.8		
3	17.1	28.63	37.55				17.5	27.6				
4	36.7	27.56	48.48				5.4	158				
5	8.33	651	7.95	492.1			0.7	3.4	4.9			VLF-EM
6												VLF-EM
7	1660	221.4	75.35	43.85			0.9	8	43.8			
8	534.5	45.04	119.3	40.98			2.7	17.1	10.6			
9												CANCEL
10	128.6	24.57	59.07				3.2	99.4				
11	119.1	30.52	526	15.72	503.3		1.6	3.3	6.8	13.6		
12												VLF-EM
13	33.83	8.03	85.5	10.72	44.53		2.7	2.6	6.8	17.5		
14	61.41	13.12	271.8	5.57	736.9		2.2	2.6	6.7	10.2		
15												VLF-EM
16	178.4	25.43	57.9	23.38			1	19.2	58.1			
17												CANCEL
18												VLF-EM
19	14.09	111.4	22	178.2			1.4	21.9	64.1			
20	334.8	44.09	159	65.22	29.04		0.9	1.3	2.9	47.9		
21												
22												VLF-EM
23	48.49	227.5	40.27	21.21			3.3	7.8	97.4			
24	71.7	31.6	51.76	28.07	678.9		0.9	2.8	17.8	35.7		
25	38.53	67.89	38.79	61.72	22.17	305.4	0.9	1.8	3	31.5	43.5	
26	21.74	11.15	51.74	10.71	518.5		1.7	3.6	17.2	26.1		
27												CANCEL

28												CANCEL
29												VLF-EM
30	19.79	55.93	38.21	12.37			2.7	5.8	108.2			
31												VLF-EM
32												VLF-EM
33												
34												

1. St.Paul R.C.



2. Manamelae



3. Lithutlong

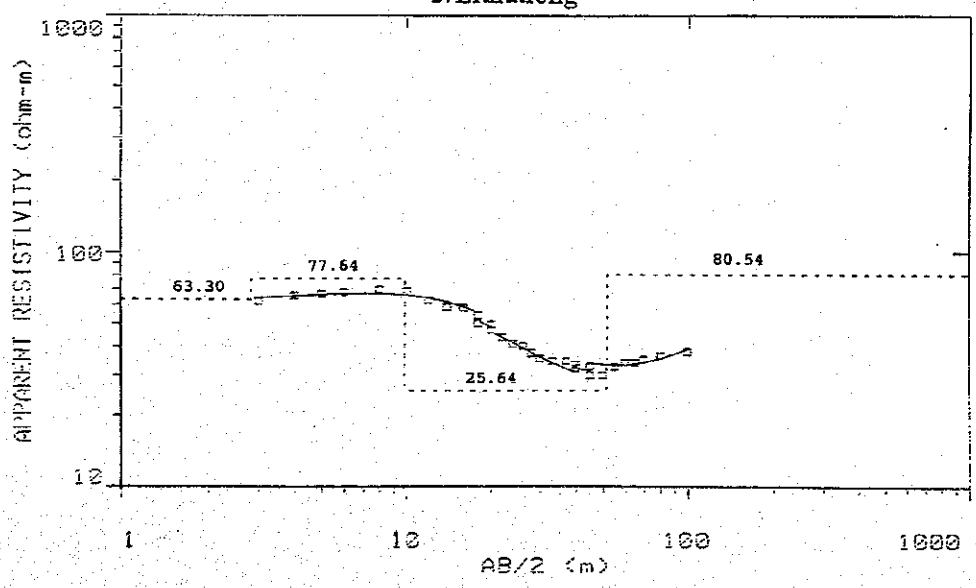


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Botha-Buthe, NO.1. 2.and 3.)

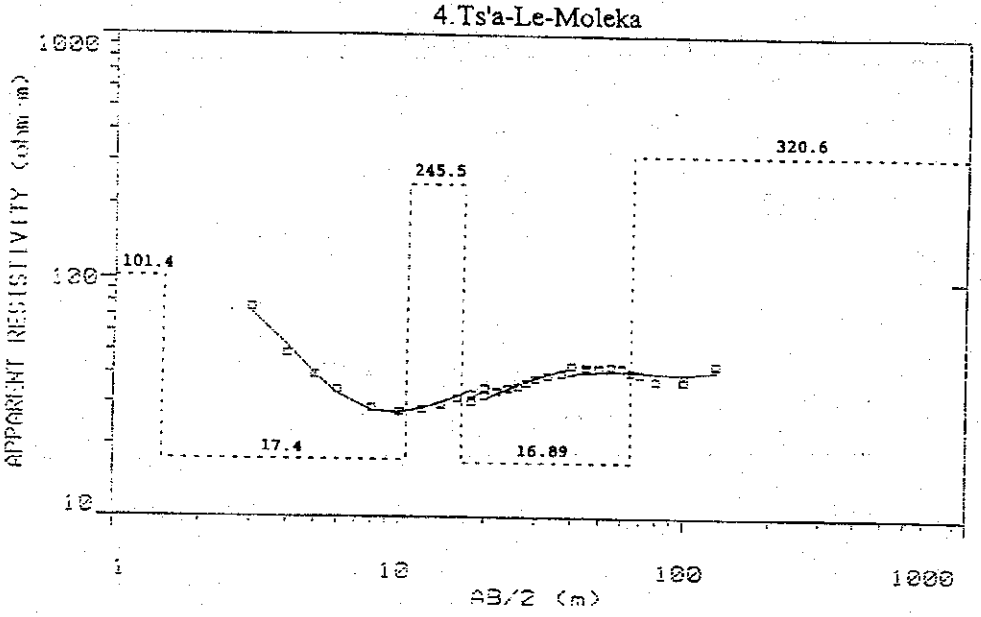
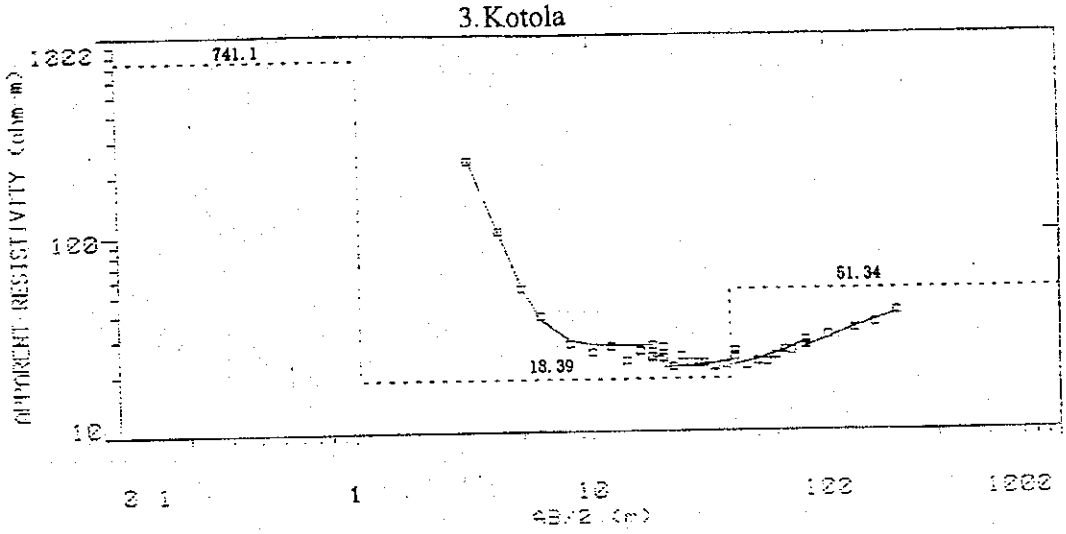
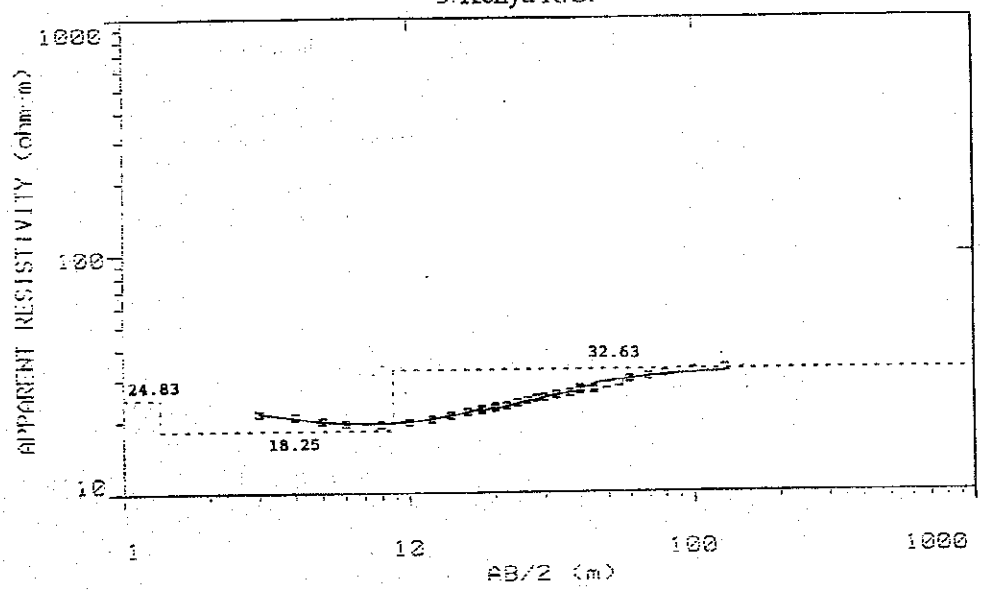


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Botha-Buthe, NO.4.)

3. Kotola



5. Kenya R.C.



6. Hleoheng L.E.C.

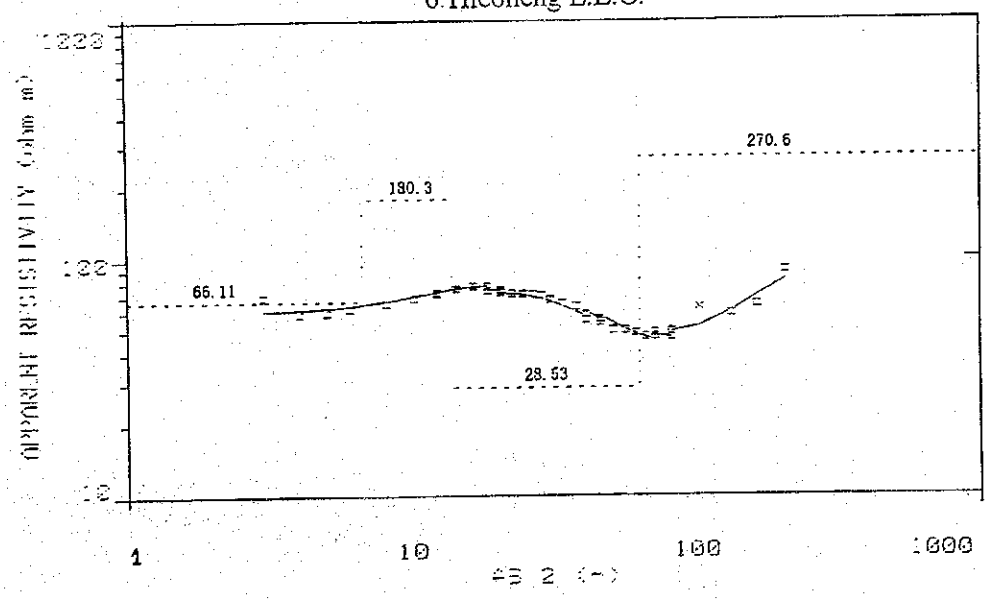
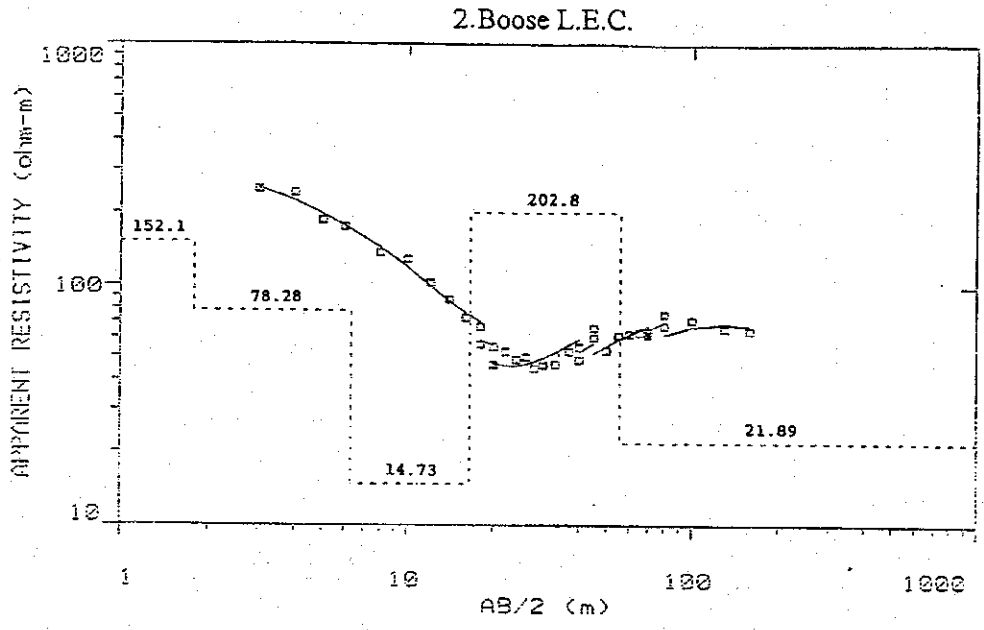
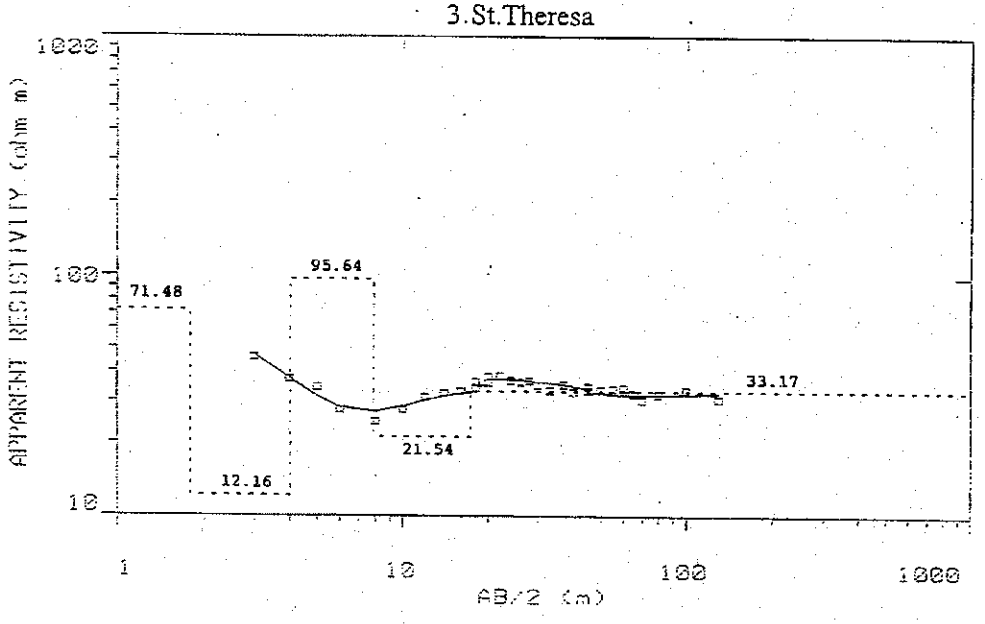


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Leribe,NO.3. 5. and 6.)





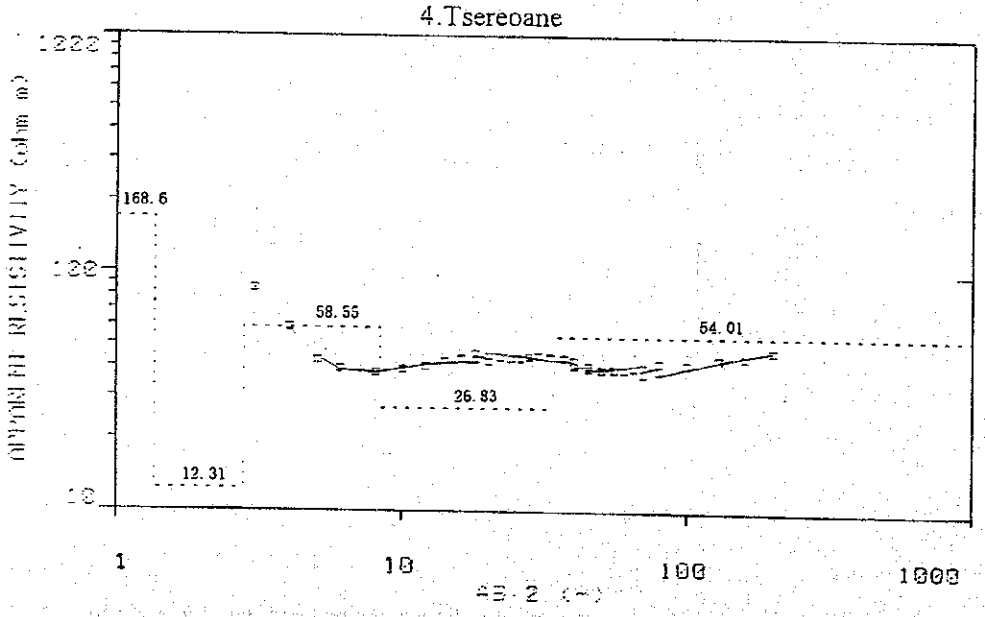
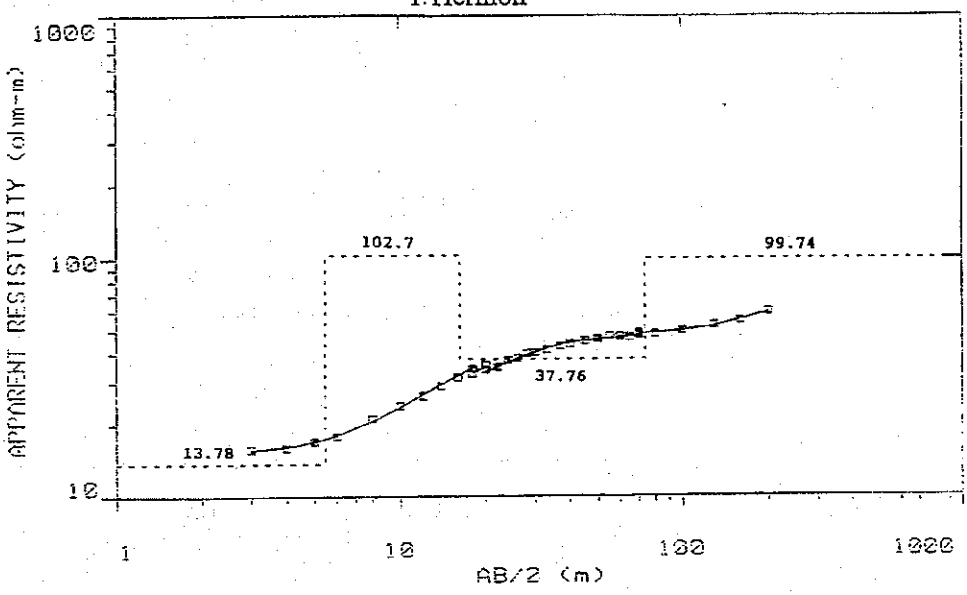
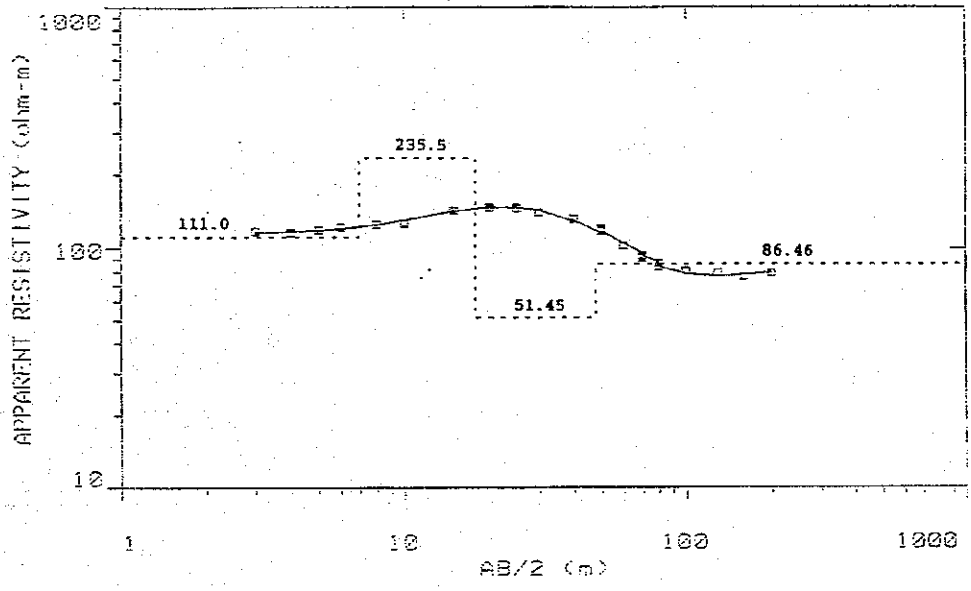


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Berea,NO.2. 3.and 4.)

1. Hermon



2. Qalabane L.E.C.



3. Likhoele

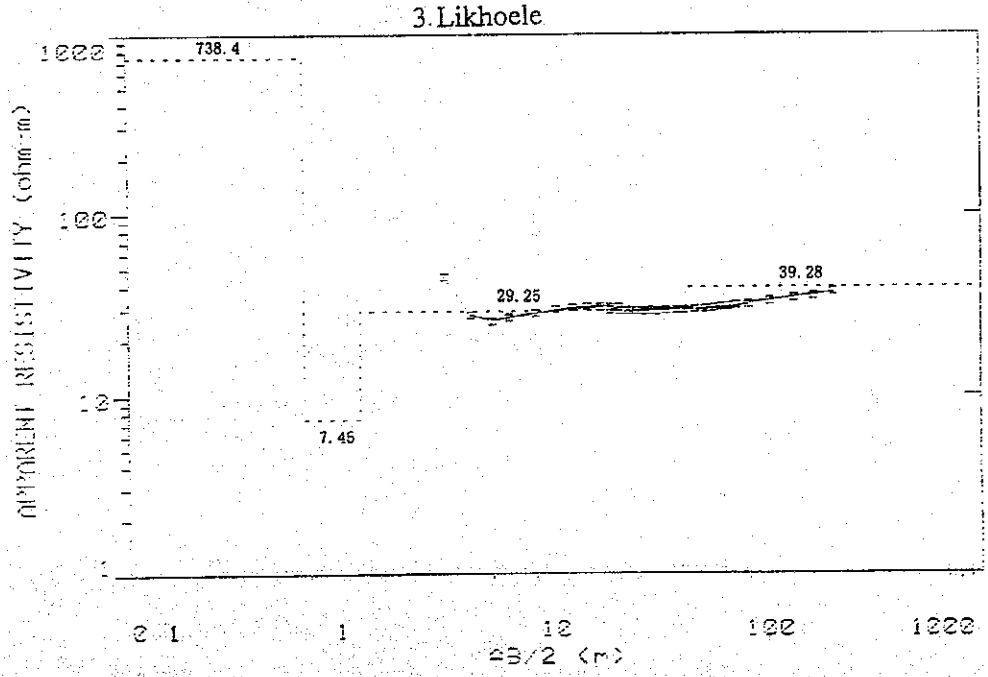
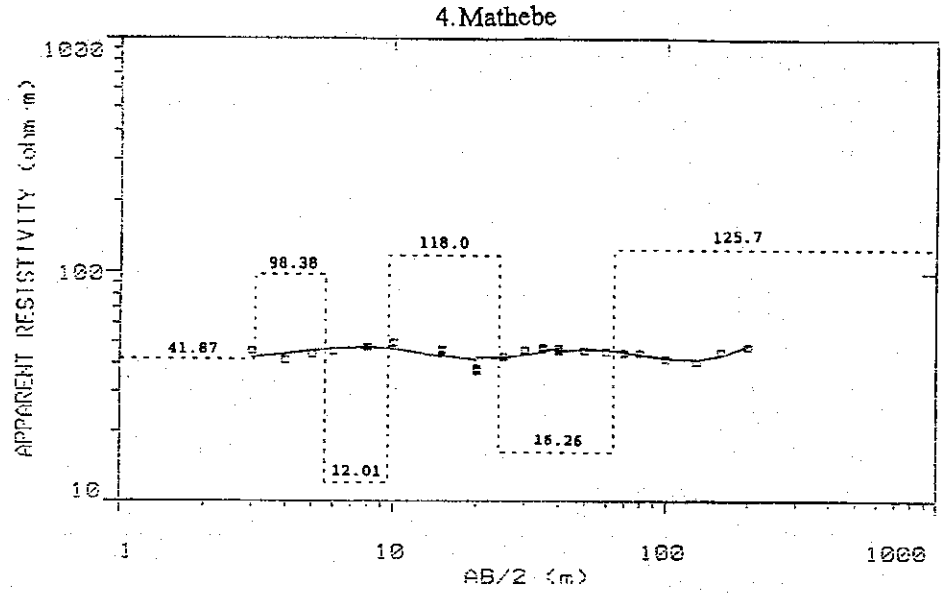
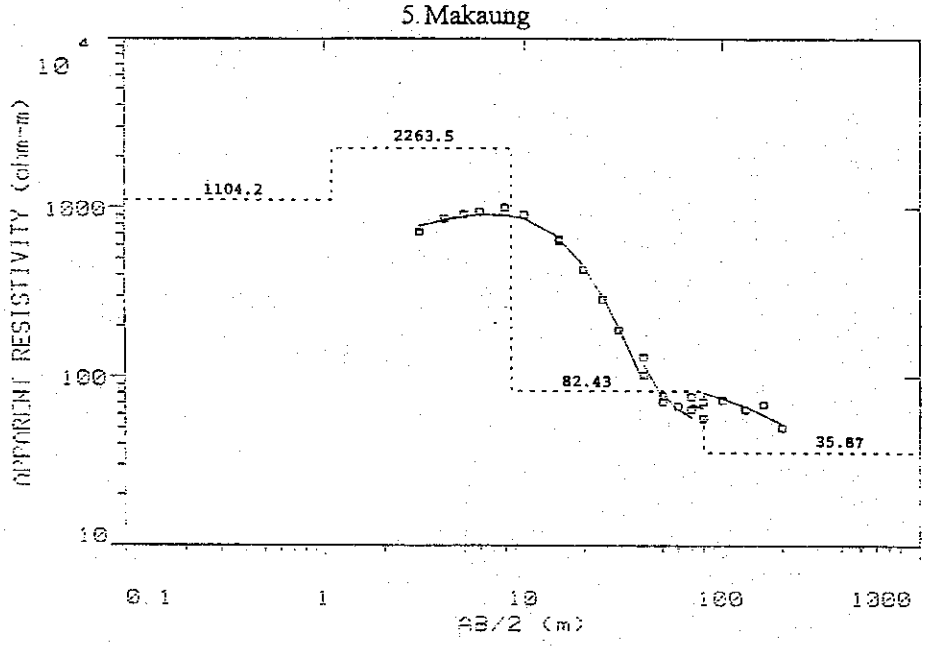


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mafeteng ,NO.1. 2.and 3.)





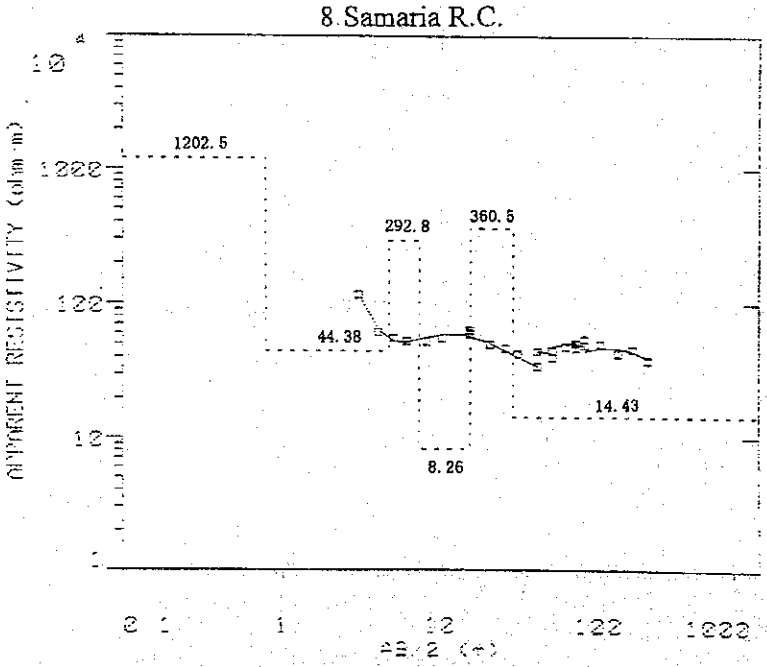
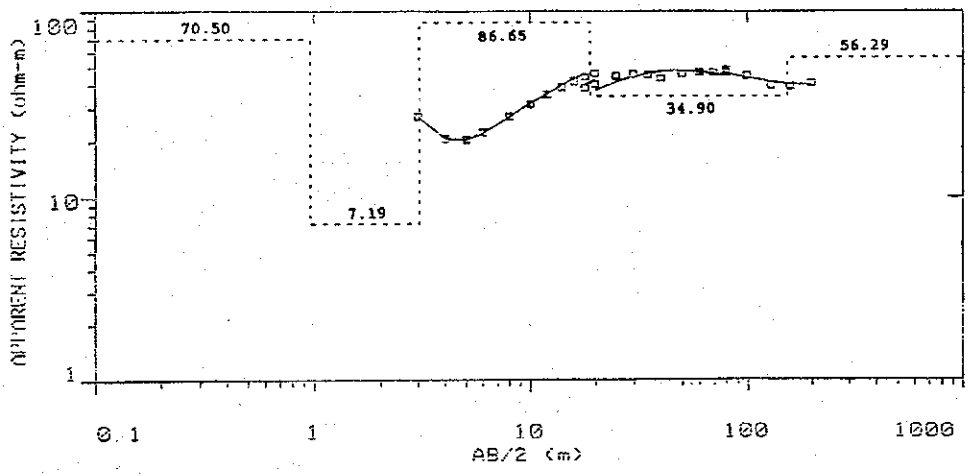
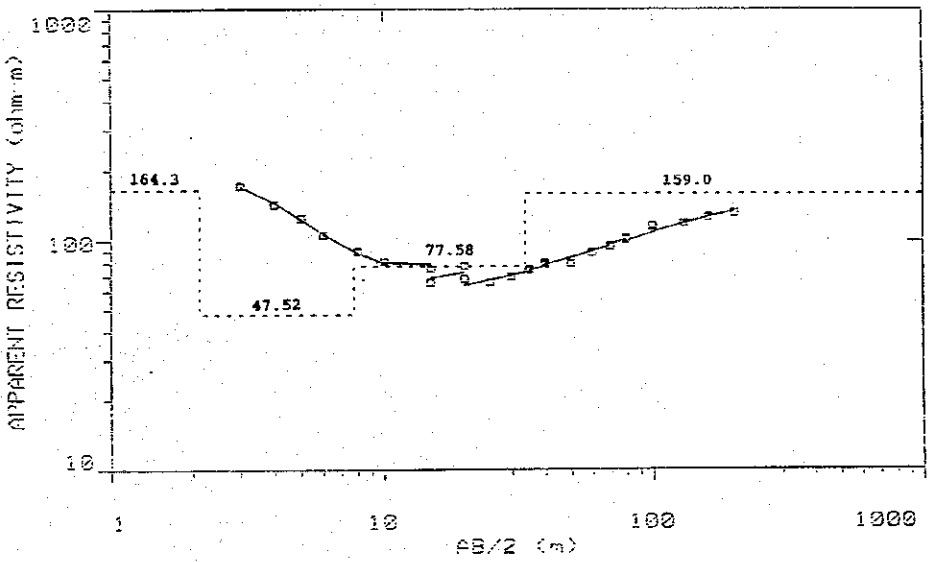


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mafeteng ,NO.4. 5.and 8.)

9.Ralints'i A.C.L.



10.Ramokoatsi A.C.L.



11.Maholi

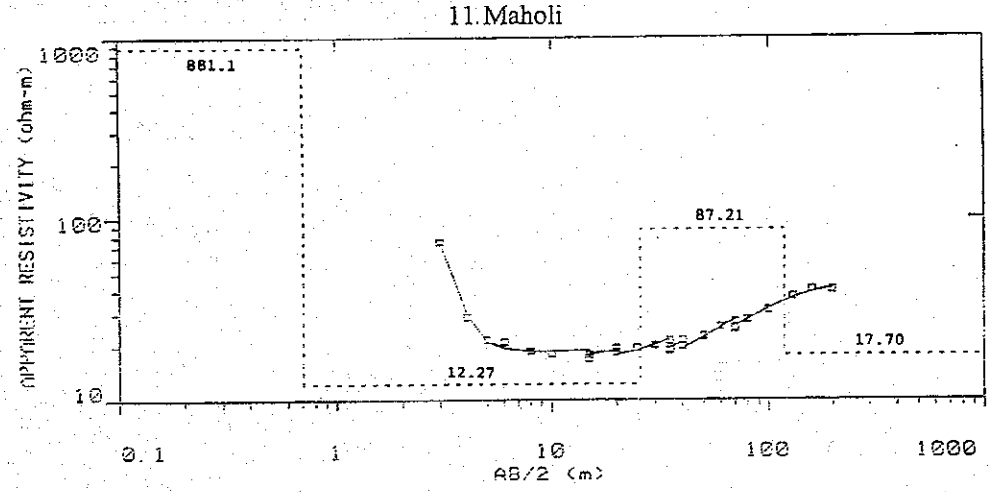
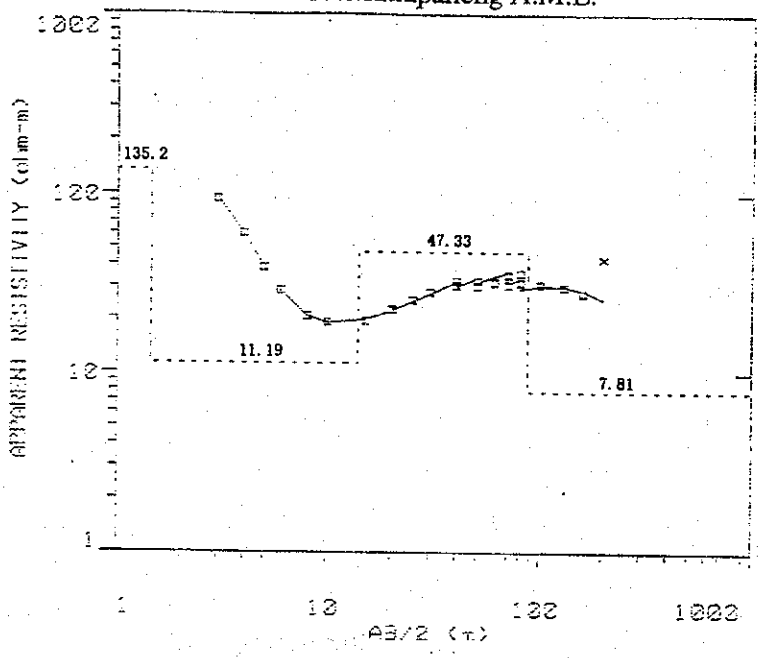
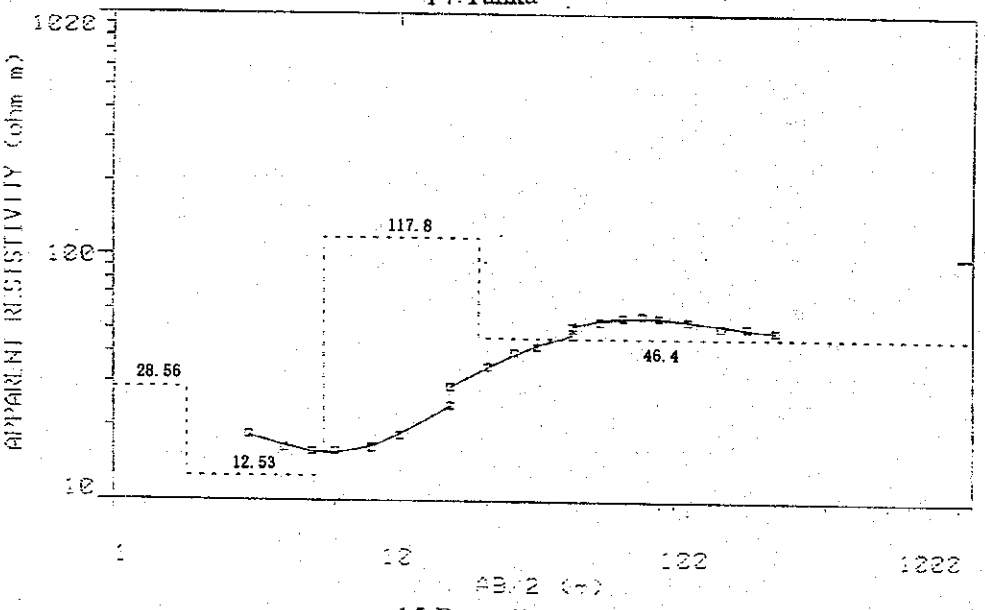


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mafeteng ,NO.9. 10.and 11.)

13. Matlapaneng A.M.E.



14. Tanka



15. Bongalla L.E.C.

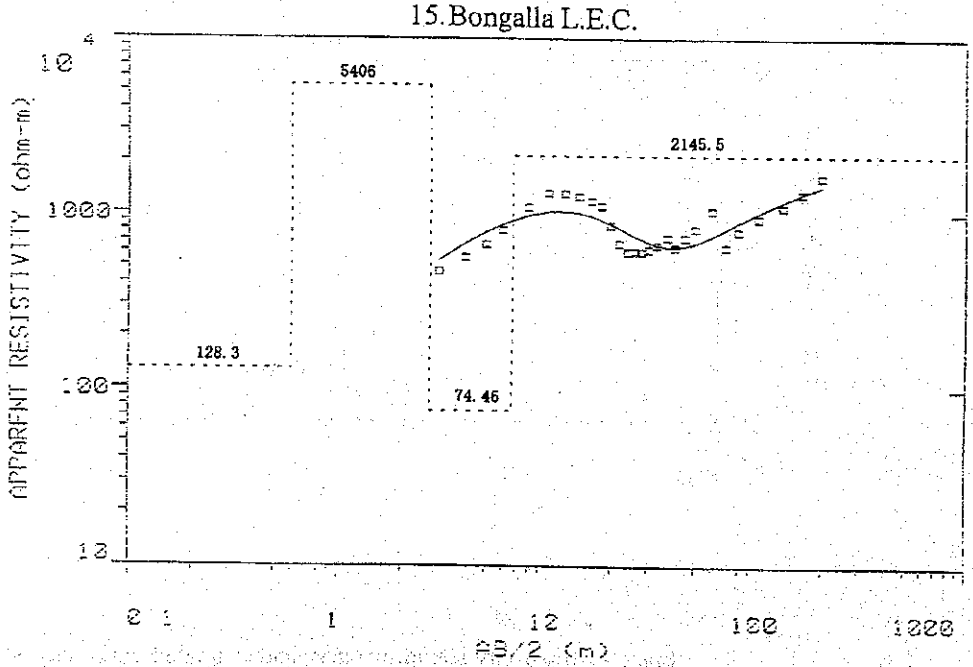
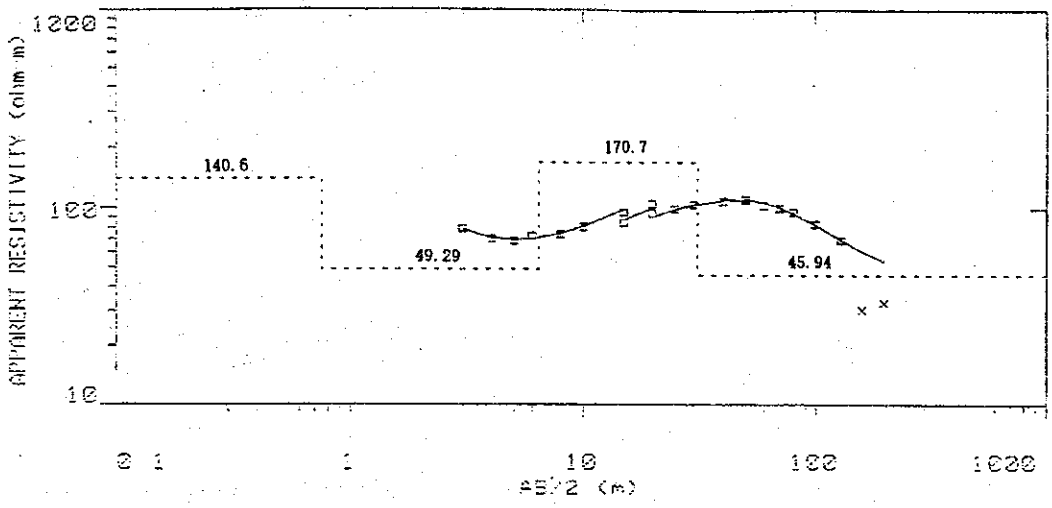
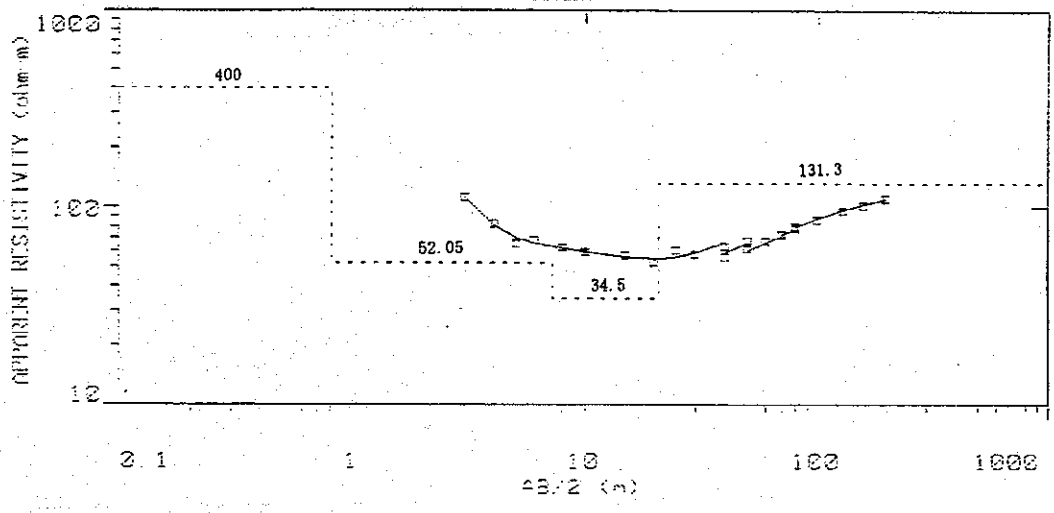


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mafeteng ,NO.13. 14.and 15.)

16.Kolo



17.Boleka



22.Mohlalefi A.C.L

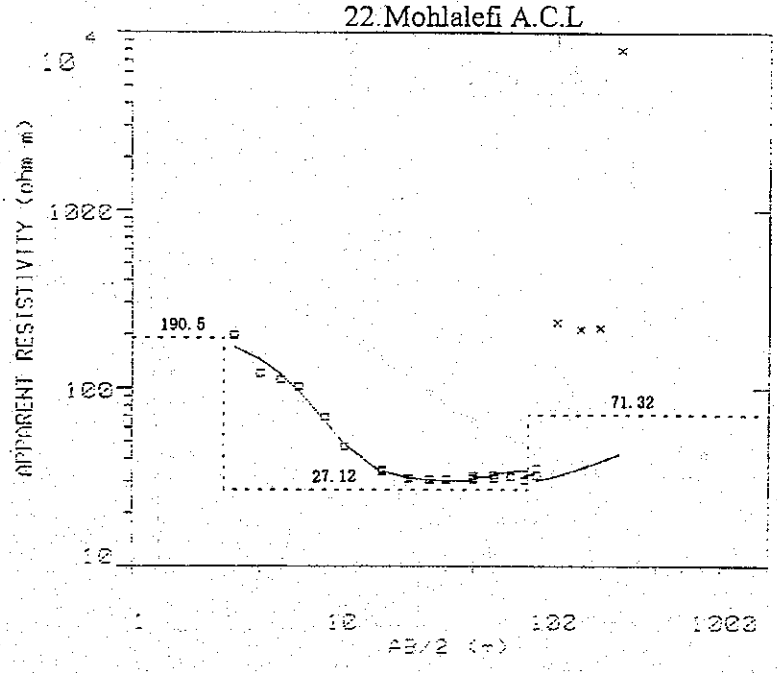
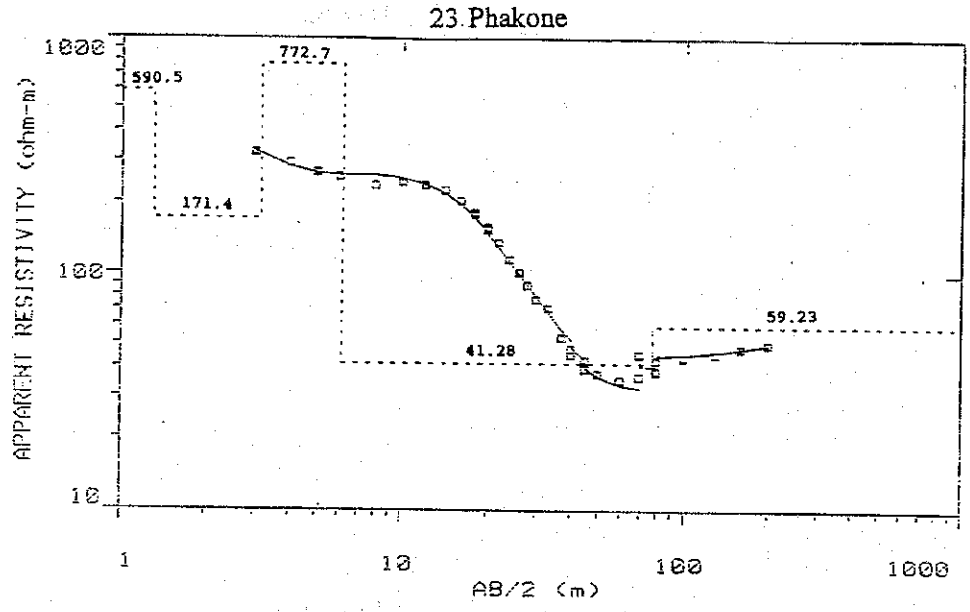
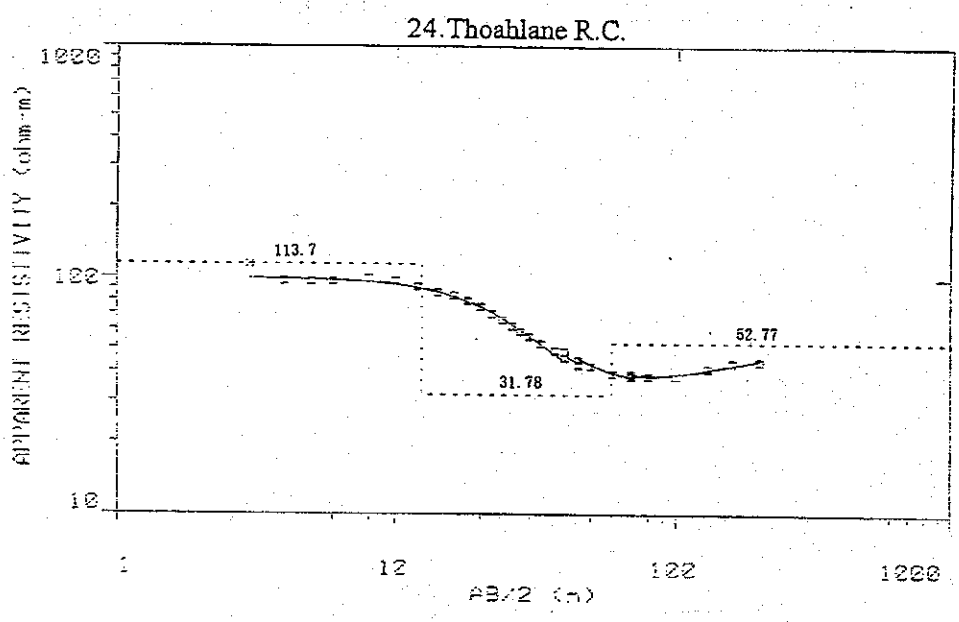


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mafeteng ,NO.16. 17.and 22.)





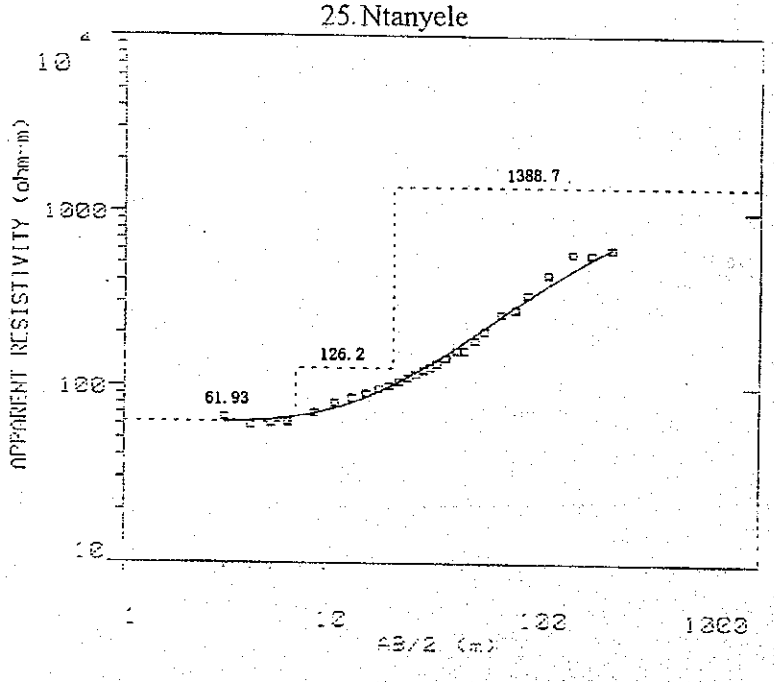
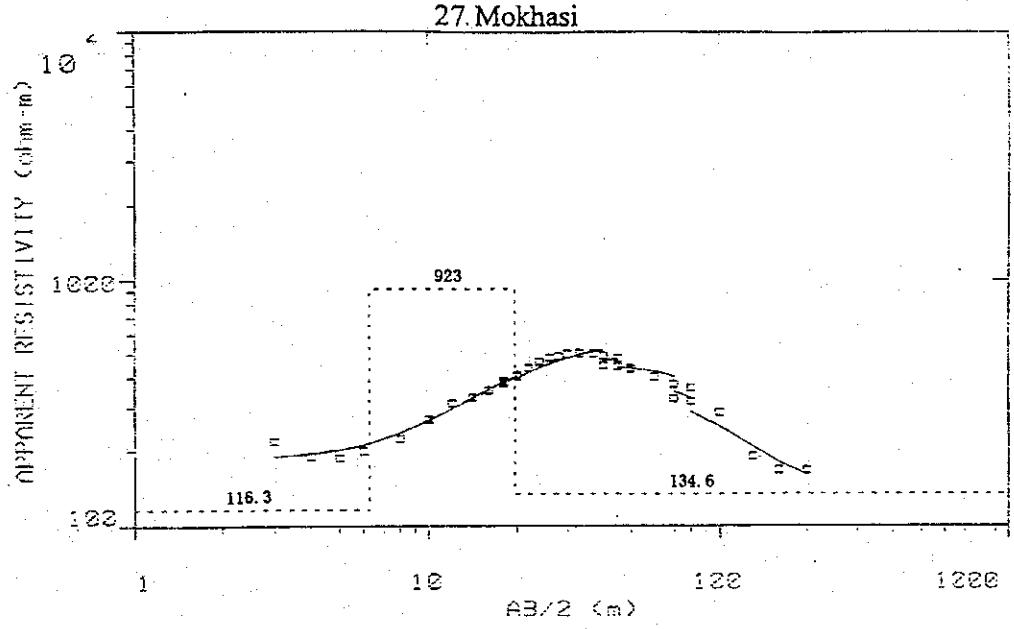
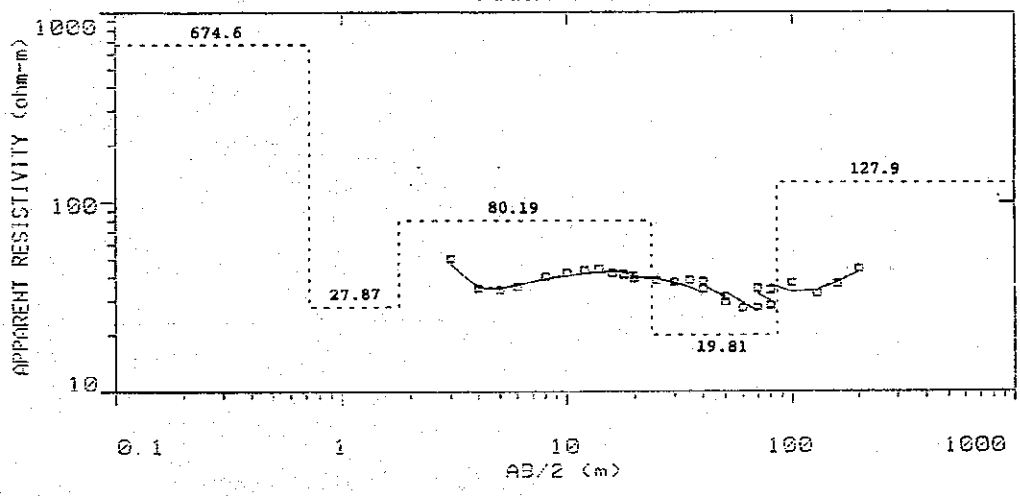


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mafeteng ,NO.23. 24.and 25.)

27.Mokhasi



28.Mohlehli A.C.L.



29.Kotoanyane

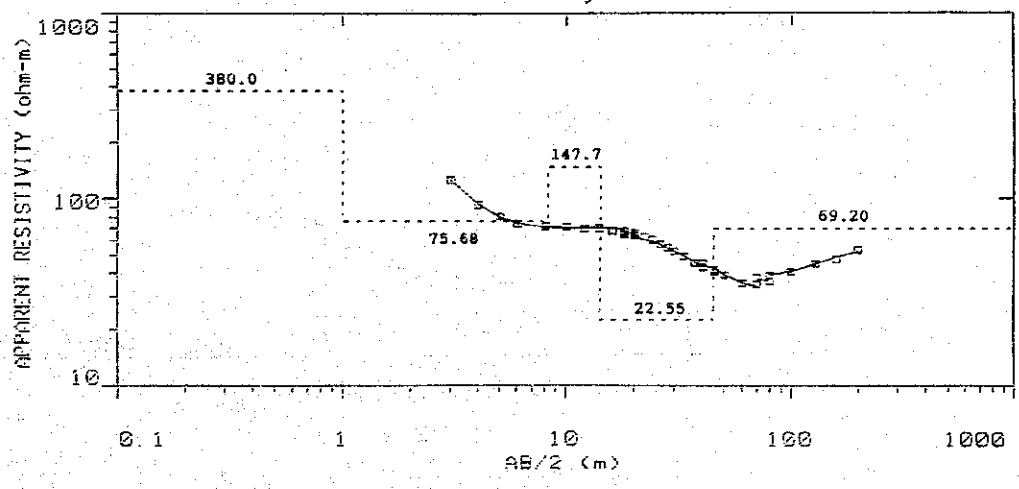
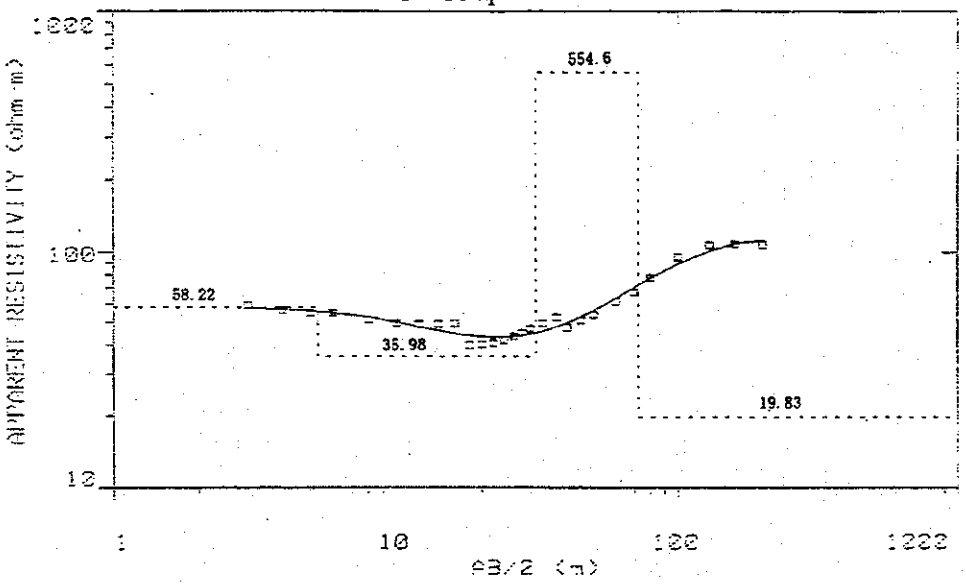
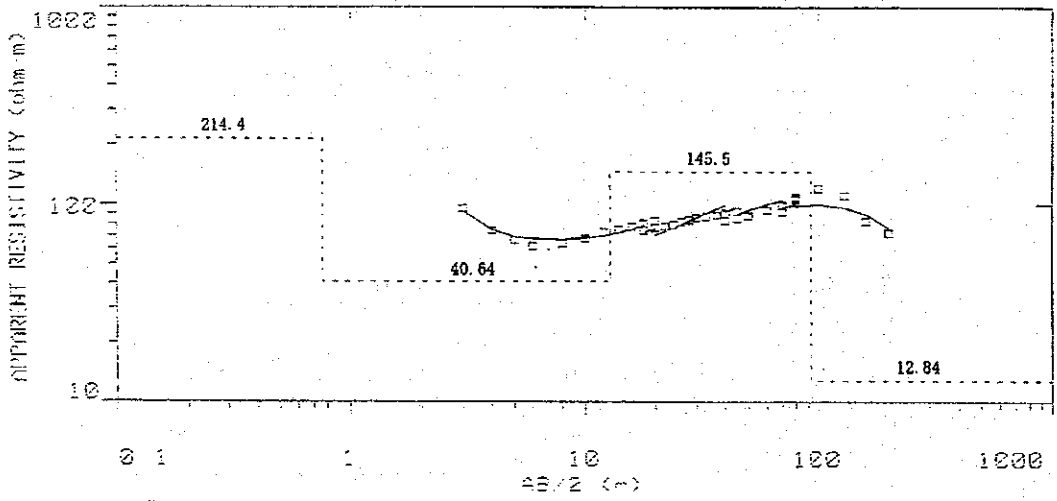


Fig. . . . Resistivity sounding curve and estimated resistivity structure
(District; Mafeteng ,NO.27. 28.and 29.)

30.Ts'upane



31.Blikela A.M.E.



36.Lerato L.E.C. (Ramohapi)

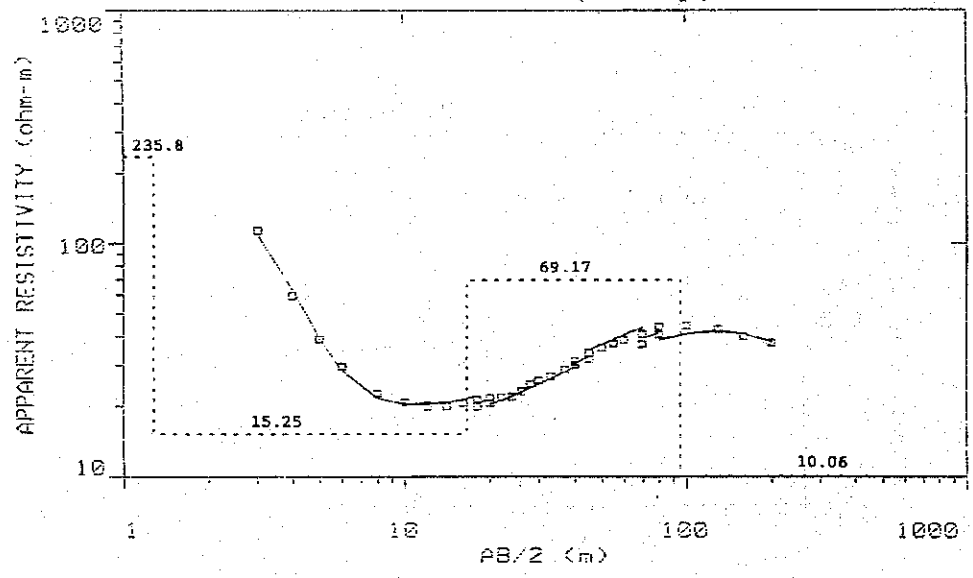
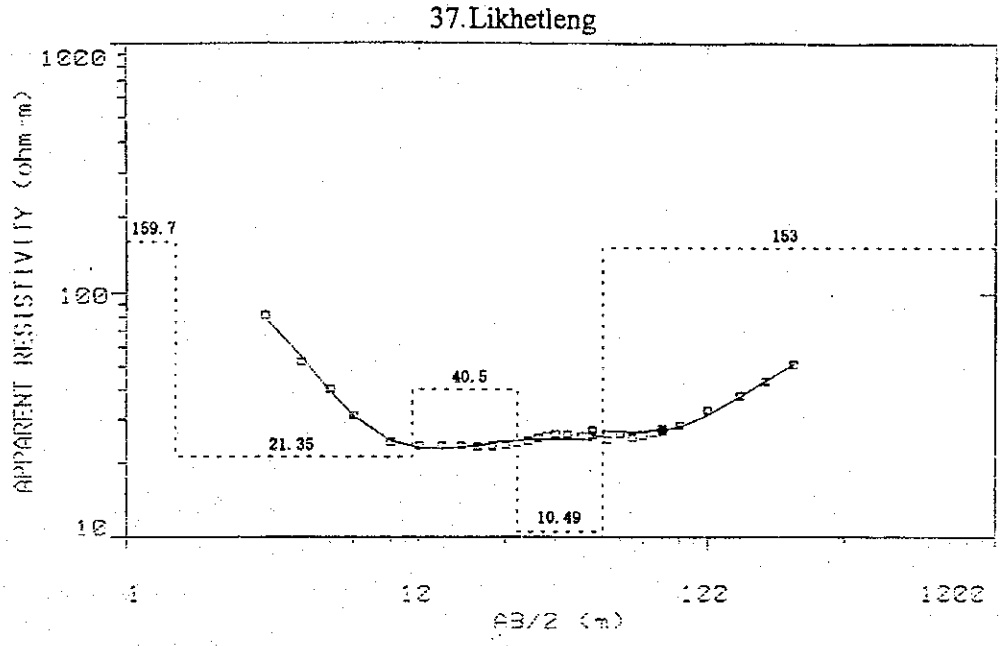
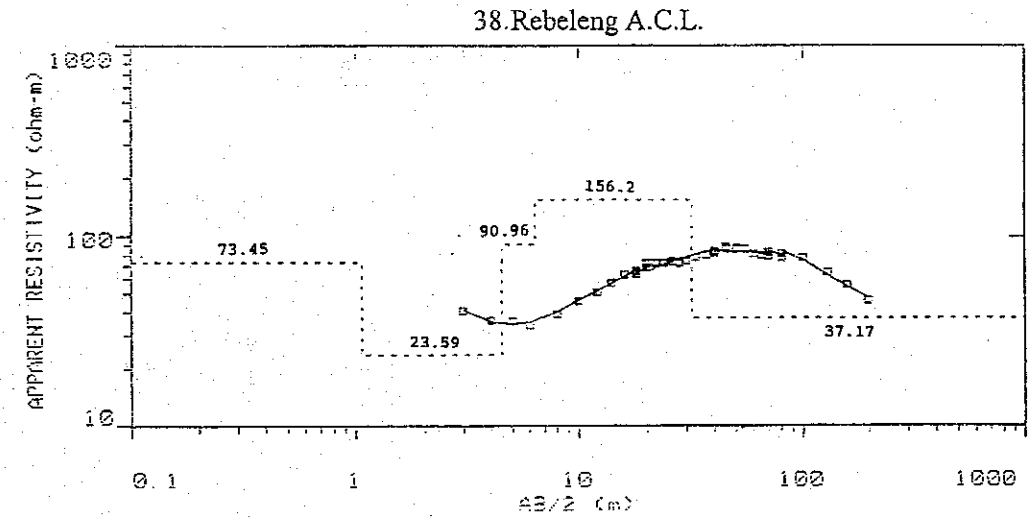


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mafeteng ,NO.30. 31.and 36.)





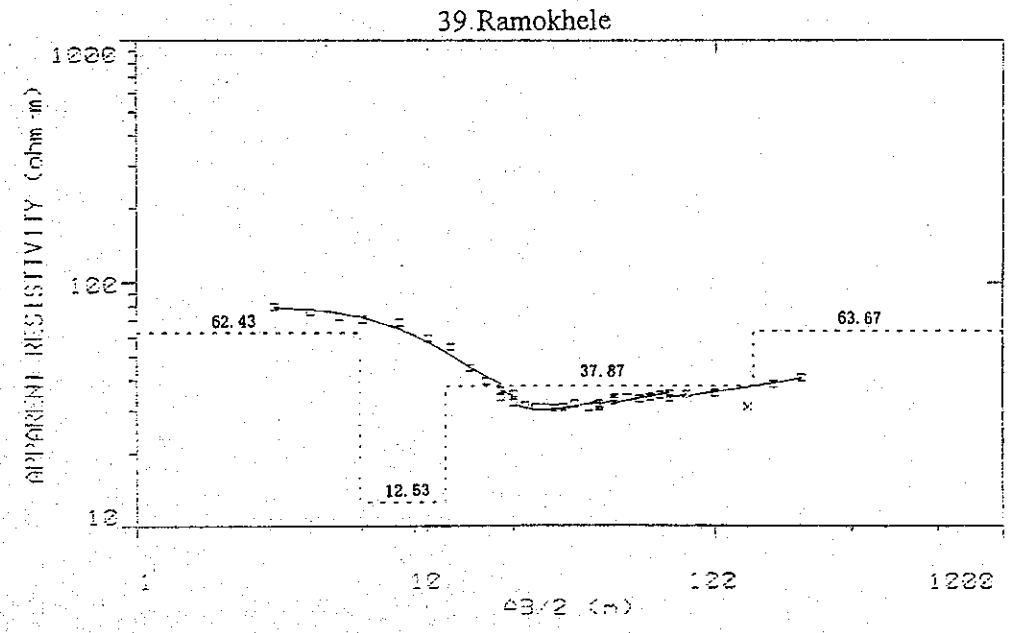
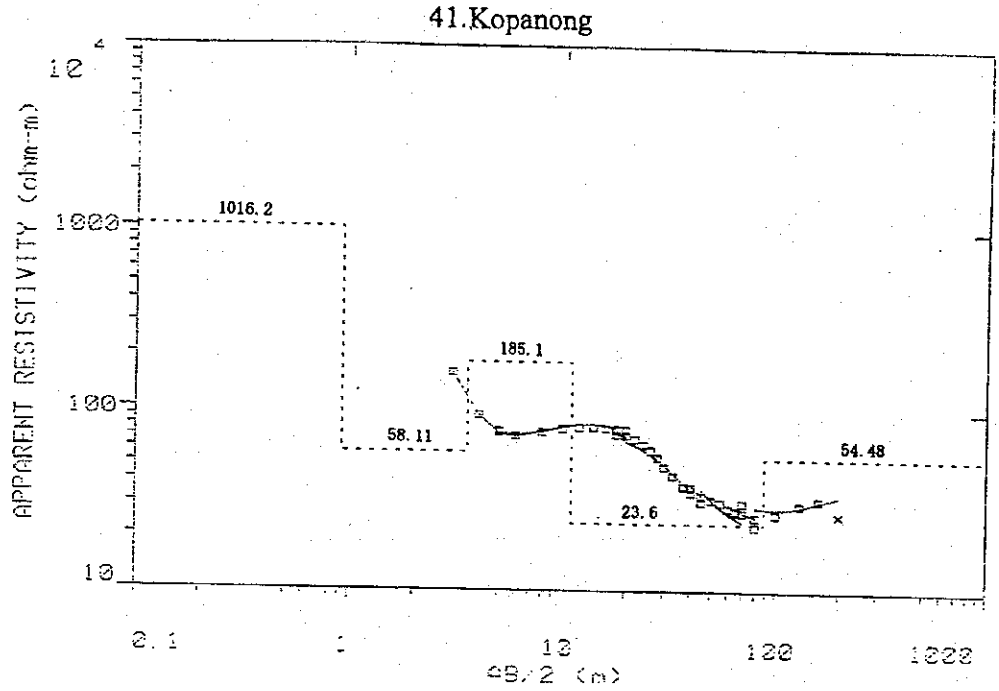


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mafeteng ,NO.37. 38.and 39.)



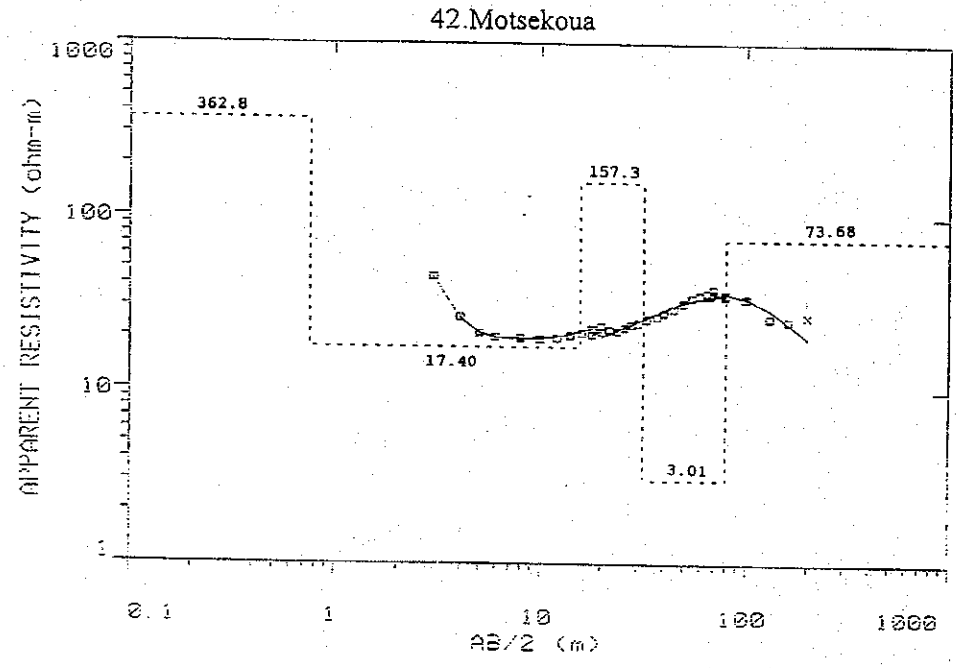
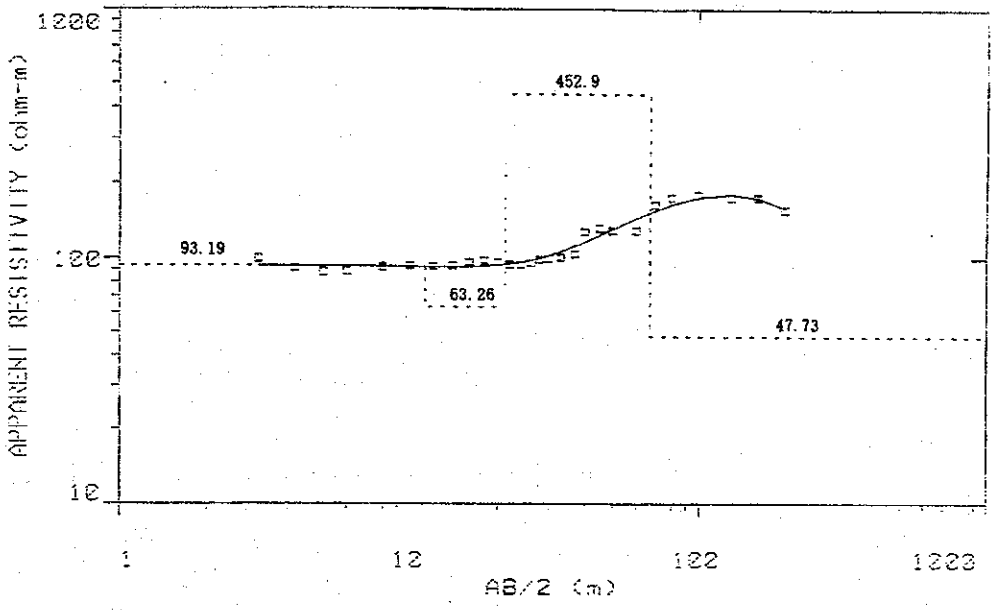
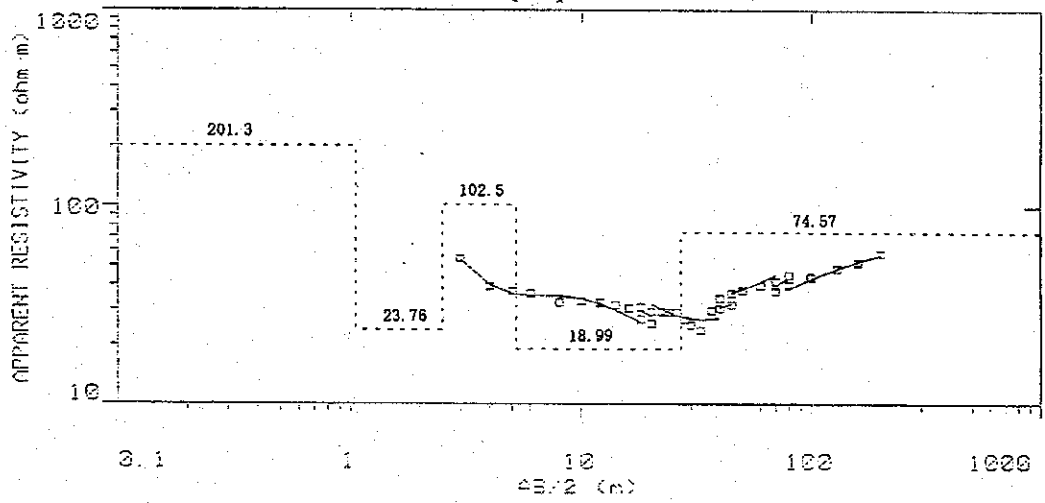


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mafeteng ,NO.41.and 42.)

1. Siloe



2. Qhoqoane



3. Itumeleng English Medium

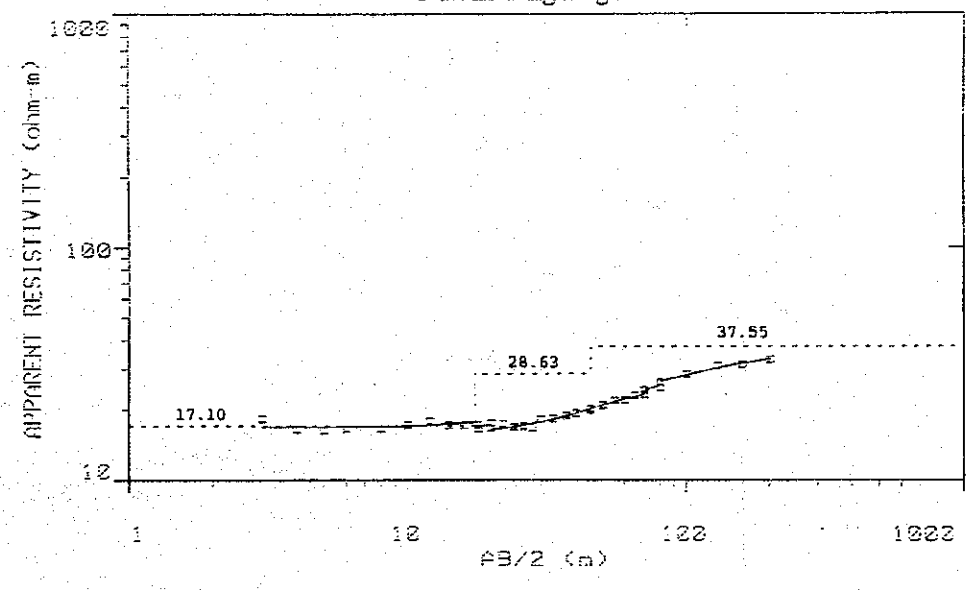
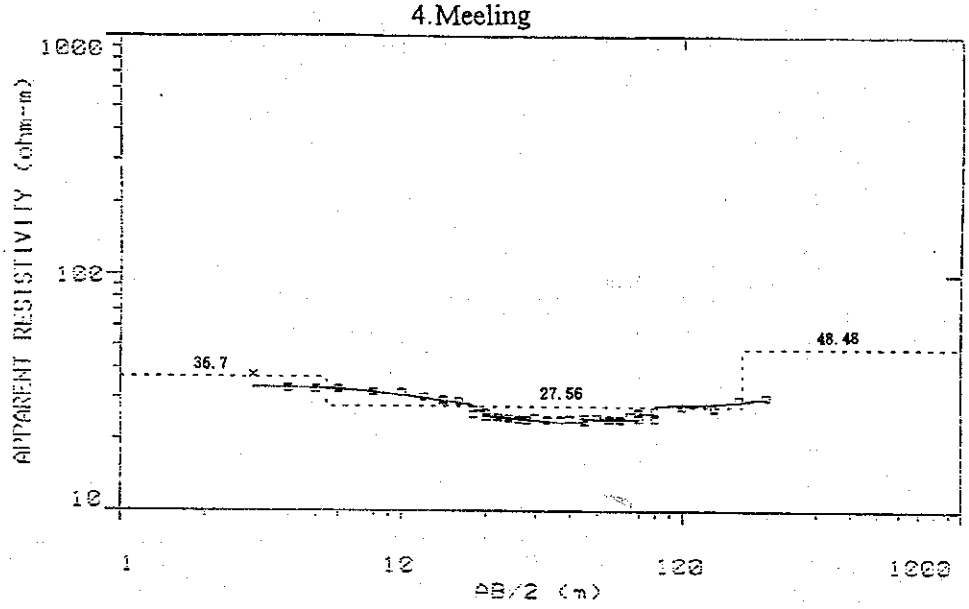
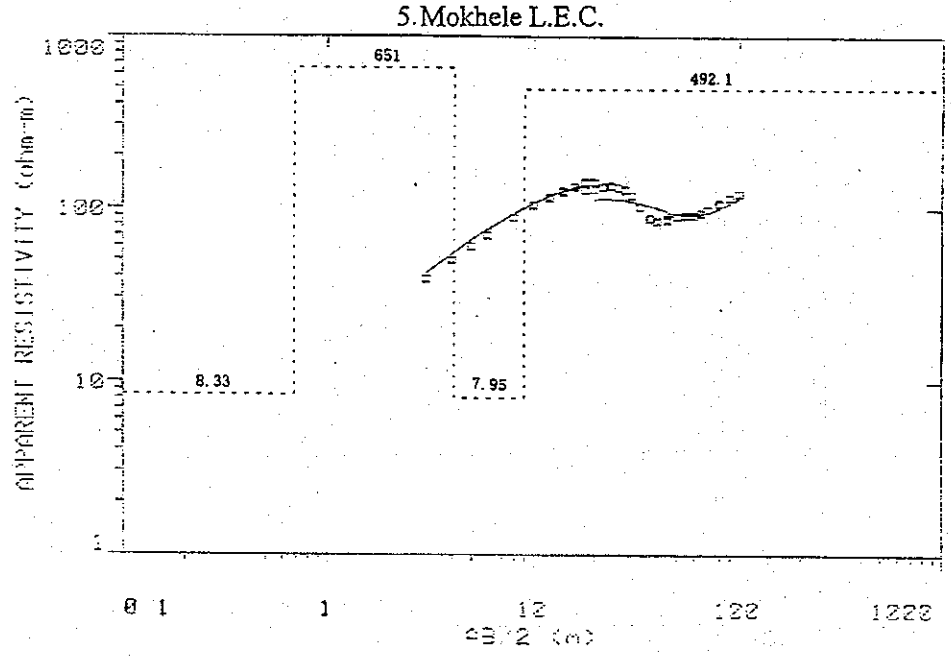


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mohale's Hoek,NO.1. 2.and 3.)

4.Meeling



5.Mokhele L.E.C.



7.Tsoloane

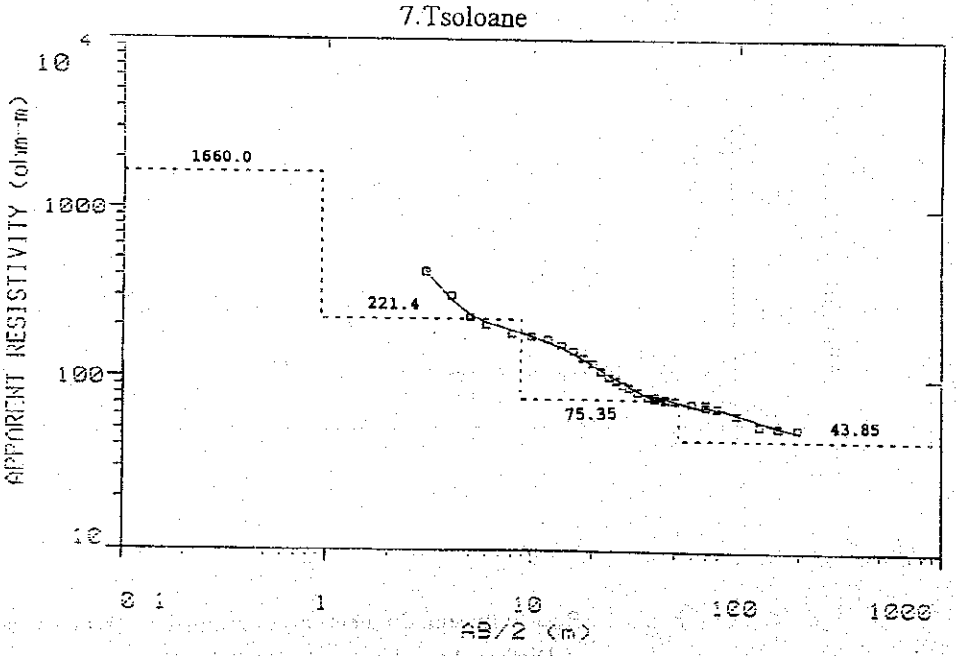
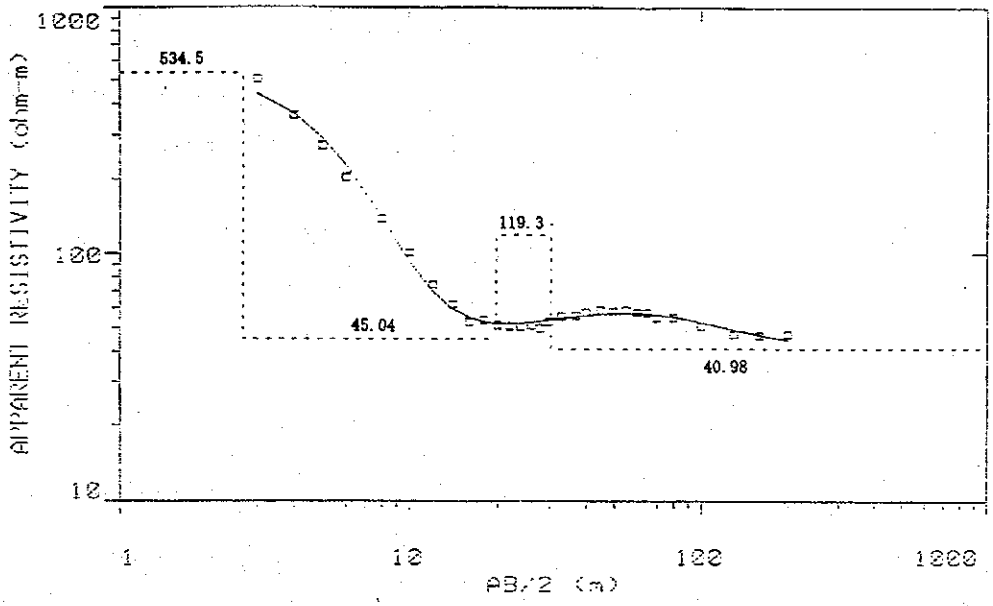
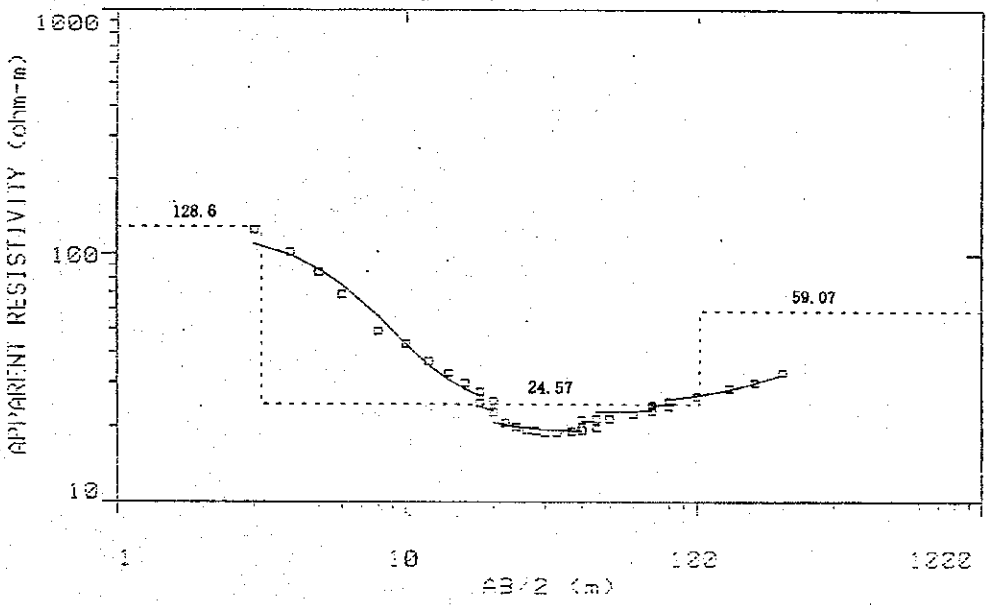


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mohale's Hoek,NO.4. 5.and 7.)

8.Morifi (St.Thomas)



10.Mofumahali-oa-Rosari



11.Qhalasi

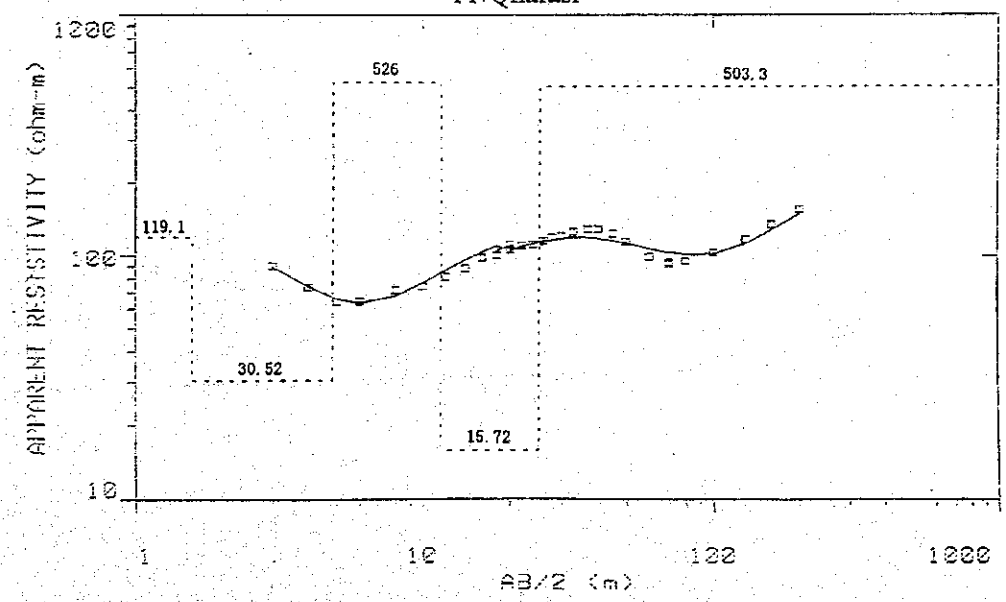
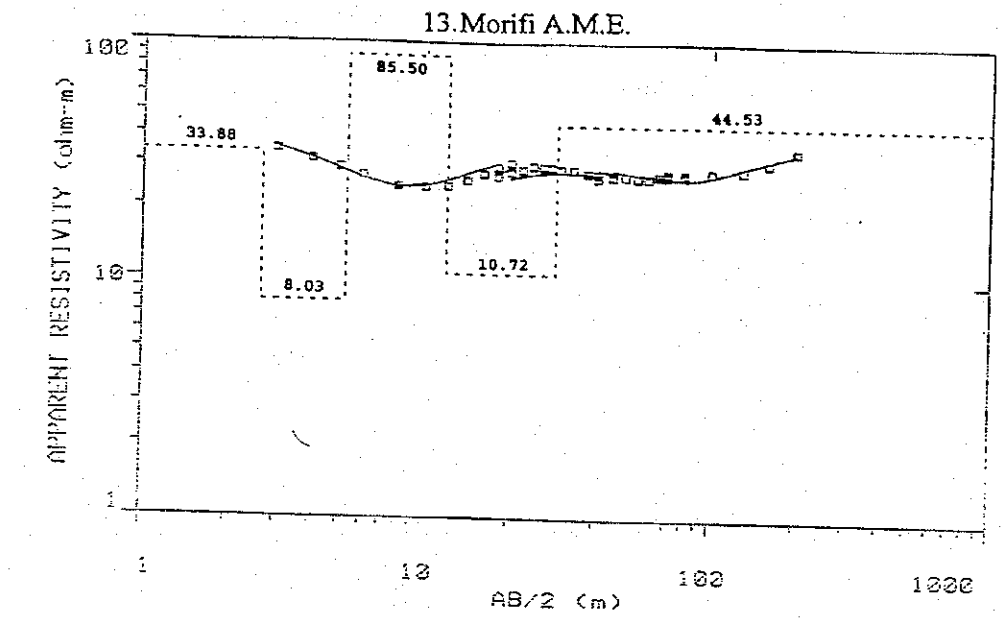
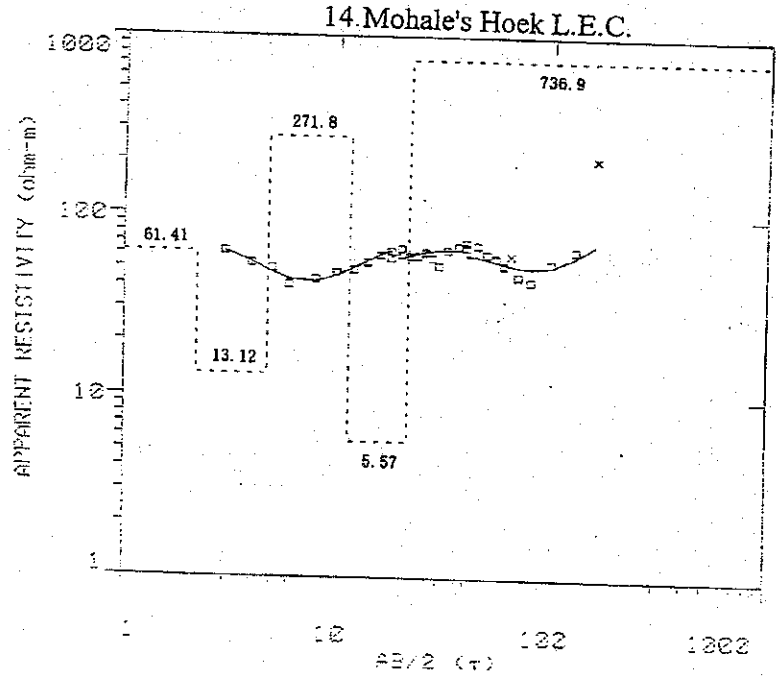


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mohale's Hoek,NO.8. 10.and 11.)





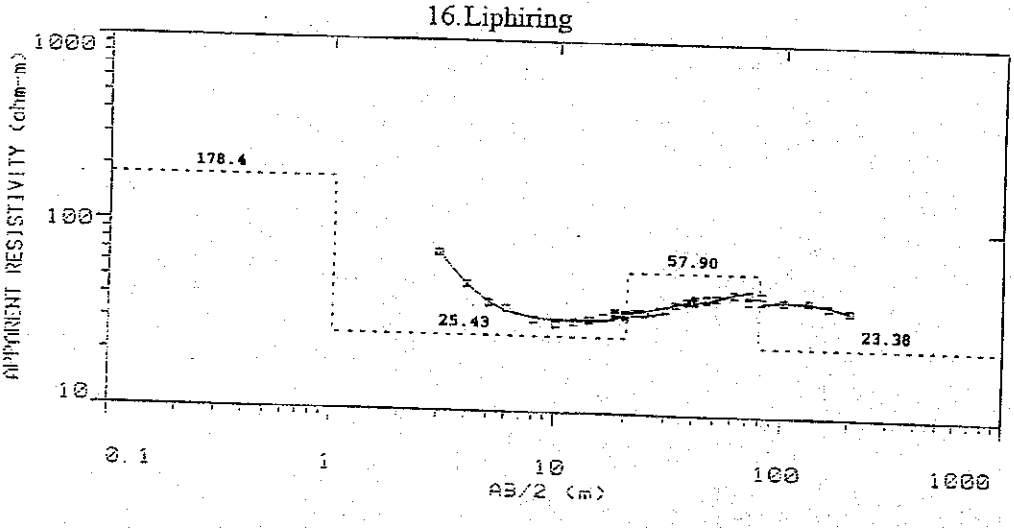
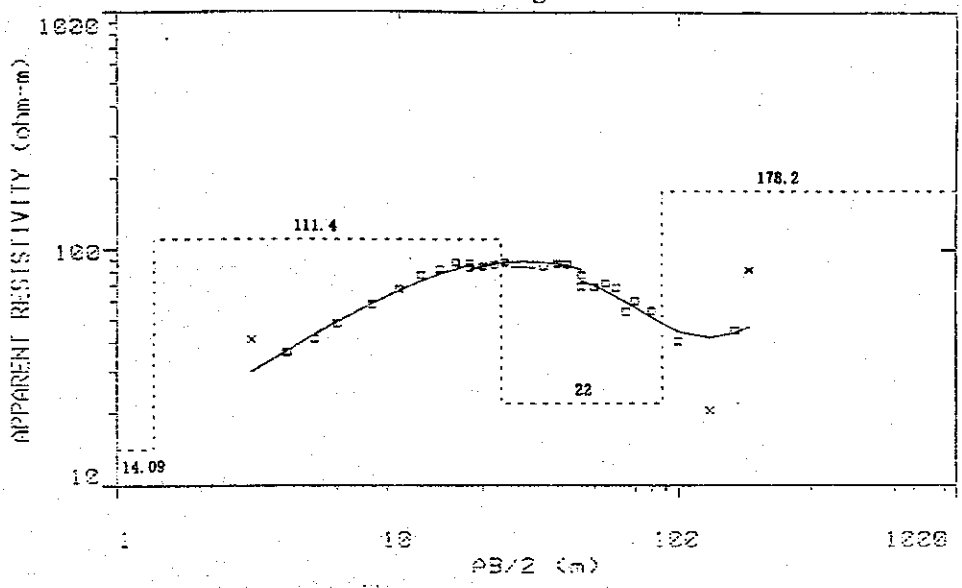
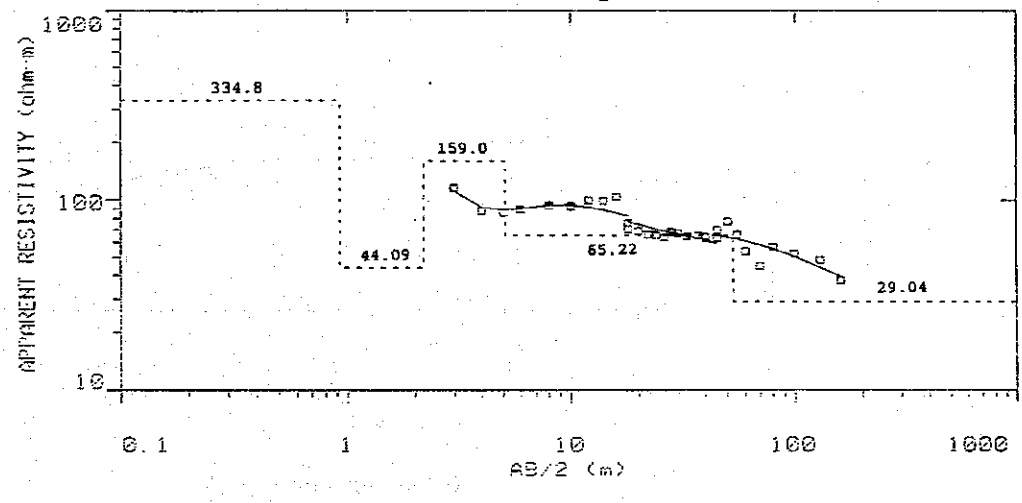


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mohale's Hoek,NO.13. 14.and 16.)

19.Mekaling L.E.C.



20.Morobong



23.Sekoati R.C.

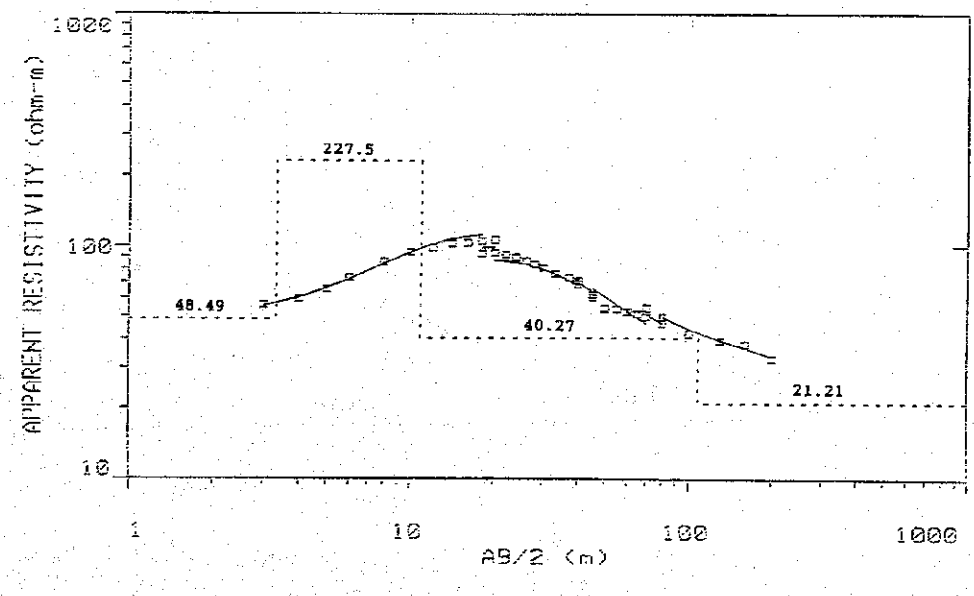
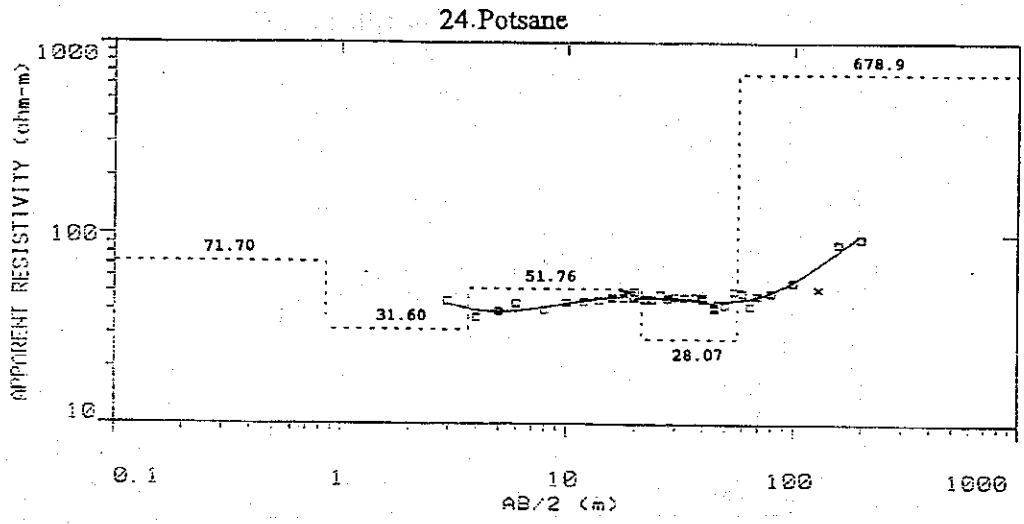
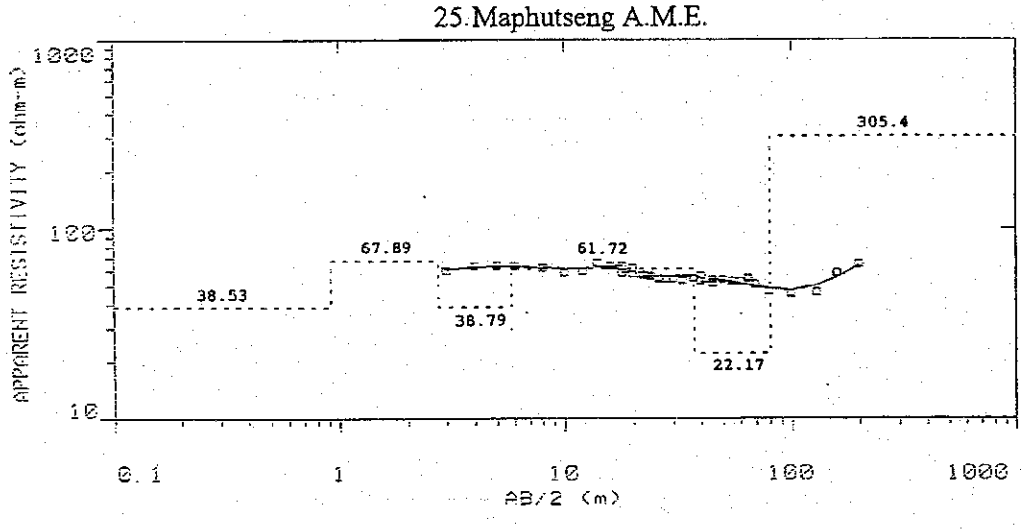


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mohale's Hoek,NO.19. 20.and 23.)





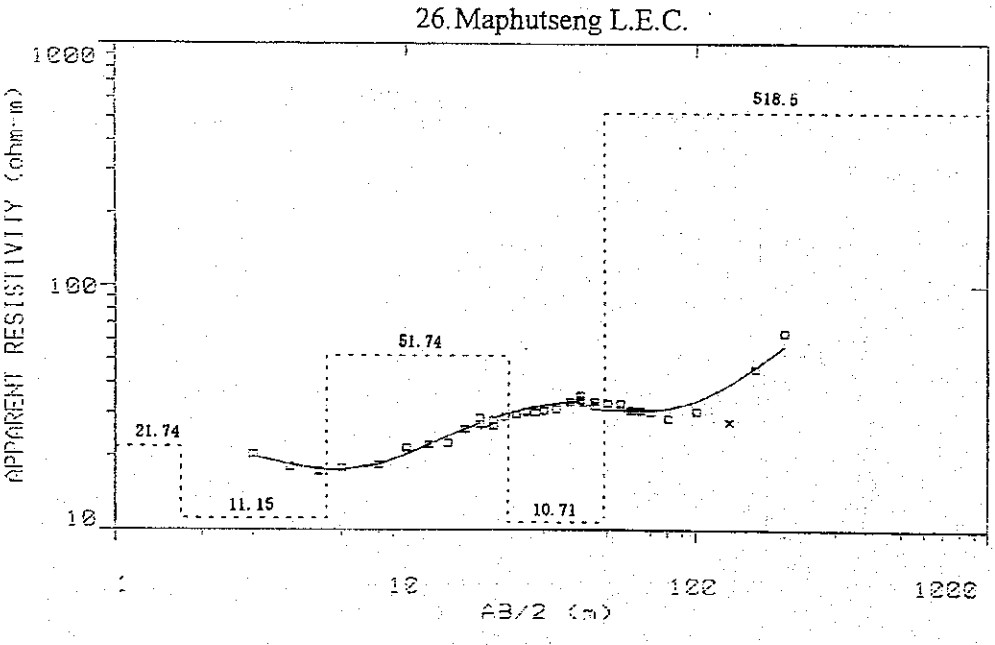


Fig. . Resistivity sounding curve and estimated resistivity structure
(District; Mohale's Hoek,NO.24. 25.and 26.)

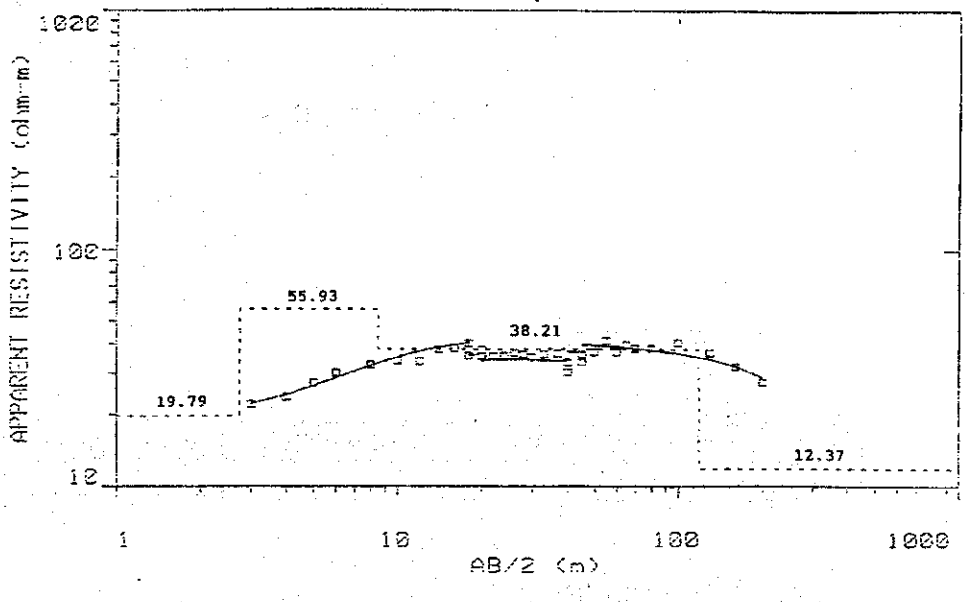


Fig. . Resistivity sounding curve and estimated resistivity structure (District; Mohale's Hoek,NO.30.)

(2) V L F – E M

VLF-EM Graphs

2.LERIBE DISTRICT

NO.	NAME OF SCHOOL	REMARKES	VLF Graph No.
1	Ngechane L.E.C.	1	1

4.MAFETENG DISTRICT

NO.	NAME OF SCHOOL	REMARKES	VLF Graph No.
25	Ntanyele	1	2
30	Ts'upane	1	3
33	Bolumatau L.E.C.	4	4,5,6,7
35	Blikela L.E.C	2	8,9
40	Bochabela	1	10

5.MOHALE'SHOEK DISTRICT

NO.	NAME OF SCHOOL	REMARKES	VLF Graph No.
5	Mokhele L.E.C.	1	11
6	Morifi L.E.C.	1	12
12	Rantsie	1	13
15	Maphutsaneng	1	14
18	Makhabane	1	15
22	Lefikeng	1	16
29	Phatalla L.E.C.	1	17
31	Matsoareng	2	18,19
32	Mokoroane	1	20

2. Electromagnetic survey

A. VLF-EM Theory

The VLF-EM (very low frequency electromagnetic) method, which is a "passive" electromagnetic technique, utilizes existing stations transmitting VLF radio waves as the primary signal source and measures the secondary magnetic field (Fig. _) which results when conductors near the measuring station are excited by the primary signals. The VLF radio stations were originally developed for navigation of submarines. The low-frequency field that is used is sent out from military radio transmitters. The transmittion frequency is normally between 15 and 30 KHz. In this case, we used transmittions from the Rugby, England station (GBR 16KHz, 750Kw). The VLF-EM method is well suited to prospecting for underground water resources in fracture zones or along dikes.

Typical VLF anomalies, produced by a conductive dike, are shown in the following vertical cross section:

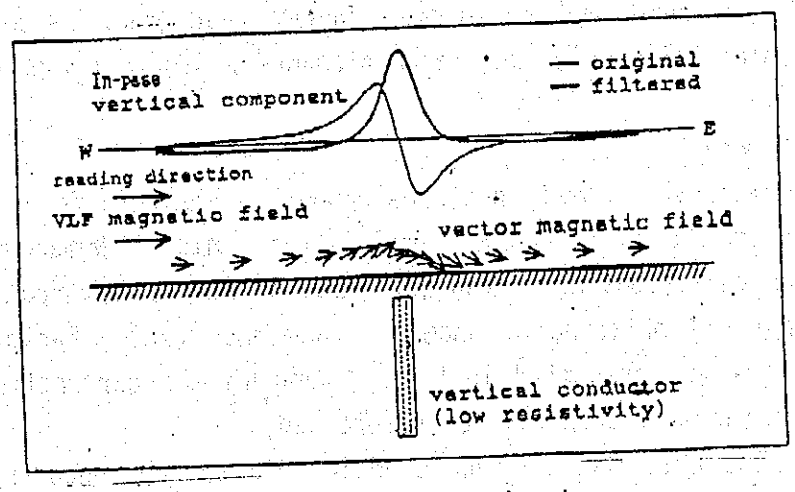


Fig. _ VLF-EM anomaly shape

When a vertical conductor such as a wet fracture zone or a conductive dike intrusion is penetrated by a primary VLF magnetic field, electric currents are produced in the conductive body. These currents induce a secondary magnetic field which adds an anomalous vertical component to the total VLF field measured upon the surface (Fig. _).

VLF data is commonly presented in the form of the dip angle of the observed total magnetic field. Simply speaking, the conductive target lies under the point of the highest gradient of dip angle between the positive and negative peaks. This point is not above the center of the body, but is somewhat closer to the upper edge of the body. So that anomalies can be easily recognized, a filtering method known as Fraser filtering should be used after data smoothing. After filtering, the anomalous vertical component response curve is represented as a peak of high positive polarity. The smoothing process is used to minimize random errors which may occur during measurement of the dip angle.

The Fraser filtering process, which is applied to smoothed data, can

be expressed mathematically by the following formula,

$$F_{2,3} = 1/4(M_2-M_1)+1/2(M_3-M_2)+1/4(M_4-M_3)$$
$$= 1/4\{(M_3+M_4)-(M_1+M_2)\}$$

where M_1, M_2, M_3 and M_4 are any four consecutive data points and $F_{2,3}$ is plotted midway between the M_2 and M_3 dip-angle stations.

Advantages of the VLF-EM method include the ease and simplicity of operation and the freedom from having to transport and operate a primary source. In addition, primary signals from transmitters located far from the survey site may have relatively deep penetration, compared with "active" electromagnetic methods. This may enhance sensitivity to extensive targets with weak conductivity contrast rather than focusing upon small shallow isolated conductors. The VLF-EM method has been applied to exploration for mineral and geothermal energy resources, as well as to engineering geological studies and reconnaissance geological mapping.

A. VLF-EM Survey

In practice, VLF anomaly aptterns appear in variable form, depending on the target body's size, shape, inclination, etc.. Numerous studies concerning such variations have been performed by several geophysicists and published with model patterns of anomalies and the related targets. Some of these patterns are presented in Fig. _ ,and in the explanation of the interpretation, these figures will be referenced.

The Geonics EM16 VLF receiver used in this survey measures in-phase (tilt angle) and quadrature (ellipticity) components of the vertical magnetic field. For this survey, five plug-in crystals provided with the EM16 (FUO: Bordeaux, France; NWC: N.W.Australia; NAA: Maine, U.S.A.; GBR: Rugby, England and UMS: Moscow, Russia) were prepared. Only GBR (16.0KHz, 750Kw) was available for the entire survey period, however.

Practical field procedures

Orientation and measurement

The direction of the survey lines should be selected approximately along the lines of the primary magnetic field, at right angles to the

direction to the station being used. Before starting a survey, the instrument can be used to orient onself in that respect. By turning the instrument sideways, the signal is minimized when the instrument is pointing towards the station, thus indicating that the magnetic field is at right angles to the receiving coil inside the handle.

To make a measurement, first orient the reference coil (in the lower end of the handle) along the magnetic field lines. Swing the instrument back and forth to achieve minimum sound intensity from the speaker. Use the volume control to set the sound level for comfortable listening. Then use your left hand to adjust the quadrature component dial on the front left corner of the instrument to further minimize the sound. After finding the minimum signal strength on both adjustments, read the inclinometer by looking into the small lens and also record the quadrature reading.

The right-hand scale of the inclinometer dials indicates the in-phase percentage. This percentage is, in fact, the tangent of the dip angle. While traveling between stations, one may keep the instrument in the operation position. If rapid changes in the readings occur between survey stations, extra stations may be needed to add detail and pinpoint anomalies.

The dials inside the inclinometer are calibrated in positive and negative percentages. The instrument is calibrated so that when approaching a conductor, the in-phase component angles are positive. For this reason, during the course of a survey, readings should always be taken while facing in the same direction, regardless of the direction of travel along the survey line.

In that the Rugby station in England is nearly magnetic north of the survey area, VLF readings were taken along East-West survey lines in most of the survey area. Two of the survey lines, however, had to be oriented N45°45°E by S45°W due to topographic conditions.

Results and interpretation

The results of the VLF survey are attached at the end of this report and profiles of the original, smoothed and Fraser filtered data along each survey line are shown in Figures 1 through 20, respectively. Three grades of anomalies (strong, moderate and weak) have been marked on the filtered profiles. This is done only after review of the original and smoothed data profiles and comparison of the profiles to model patterns. The grade of an

anomaly is related to the scale and depth of the conductive dike or fault target.

A program for personal computer processing of VLF data has been written. This program is capable of producing a final data profile within a few hours of input of the original unprocessed data.

While this survey area was very far from the transmitting station in England, reception of the VLF signal was moderately good throughout the survey area. In regions of the survey area where the geology was evident, clear coincidence was observed between anomalous response and the location of dike intersections with the survey lines. In Bolimatau (Wafeteng Dist.), anomalies are seen along three parallel survey lines where dikes or fracture zones are crossed. In Bolikela in the same district, two profiles show anomalies which coincide with the location of three dikes or fracture zones. When we must determine the direction of dikes in areas where no outcrop can be seen, we must do as we have in the above mentioned examples. That is, plan parallel survey lines to cross the suspected locations of conductors normal to the suspected strike, if possible.

It can be theoretically shown that, the depth to a target, beneath an anomaly, is equivalent to 80 to 100% of the anomaly width. The anomaly width is the distance between the positive and negative peaks of the anomaly. It should be noted that this depth should be less than 20 to 30m, due to the limited skin depth of electromagnetic fields of the VLF band. Given this information, with sufficient geological control at the surface, the dip of the target can also be determined.

The specifications of the EM16 are given in Table _.

Instrument	Specifications
Geonics EM16	Measured quantity: In-phase and quadrature components of vertical magnetic field as a percentage of horizontal primary field Sensitivity: In-phase: +/- 150%, Quadrature: +/- 40% Resolution: +/- 1 % Output: Nulling by audio tone Operating frequency: 15-25 KHz

Table _. VLF-EM survey instrument specifications

anomaly is related to the scale and depth of the conductive dike or fault target.

A program for personal computer processing of VLF data has been written. This program is capable of producing a final data profile within a few hours of input of the original unprocessed data.

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It can be theoretically shown that, the depth to a target, beneath an anomaly, is equivalent to 80 to 100% of the anomaly width. The anomaly width is the distance between the positive and negative peaks of the anomaly. It should be noted that this depth should be less than 20 to 30m, due to the limited skin depth of electromagnetic fields of the VLF band. Given this information, with sufficient geological control at the surface, the dip of the target can also be determined.

The specifications of the EM16 are given in Table _.

Instrument	Specifications
Geonics EM16	Measured quantity: In-phase and quadrature components of vertical magnetic field as a percentage of horizontal primary field Sensitivity: In-phase: +/- 150%, Quadrature: +/- 40% Resolution: +/- 40% Output: Nulling by audio tone Operating frequency: 15-25 KHz

Table _ VLF-EM survey instrument specifications

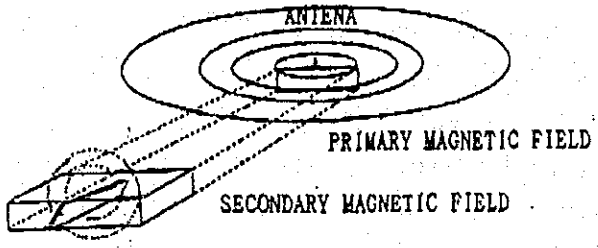
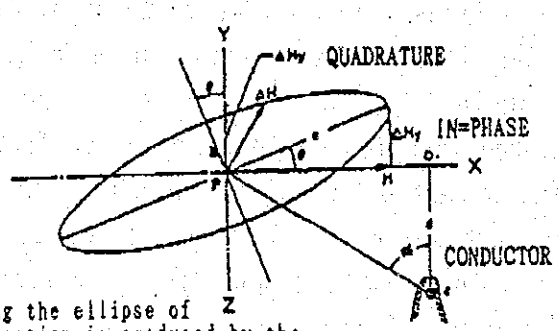


Fig.1 Illustration of VLF-EM method



Showing the ellipse of polarization is produced by the good anisometric conductor in VLF.-EM method. In the case VLF waves are sent away from the transmitting station in the direction of perpendicular to this paper plane.

Fig.2 Illustration of the ellipse of polarization.

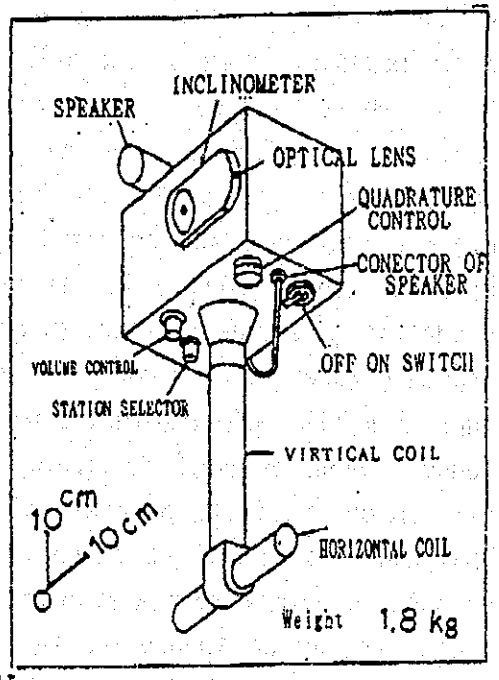


Fig.3 VLF Survey instrument EM-16 (Geonics)

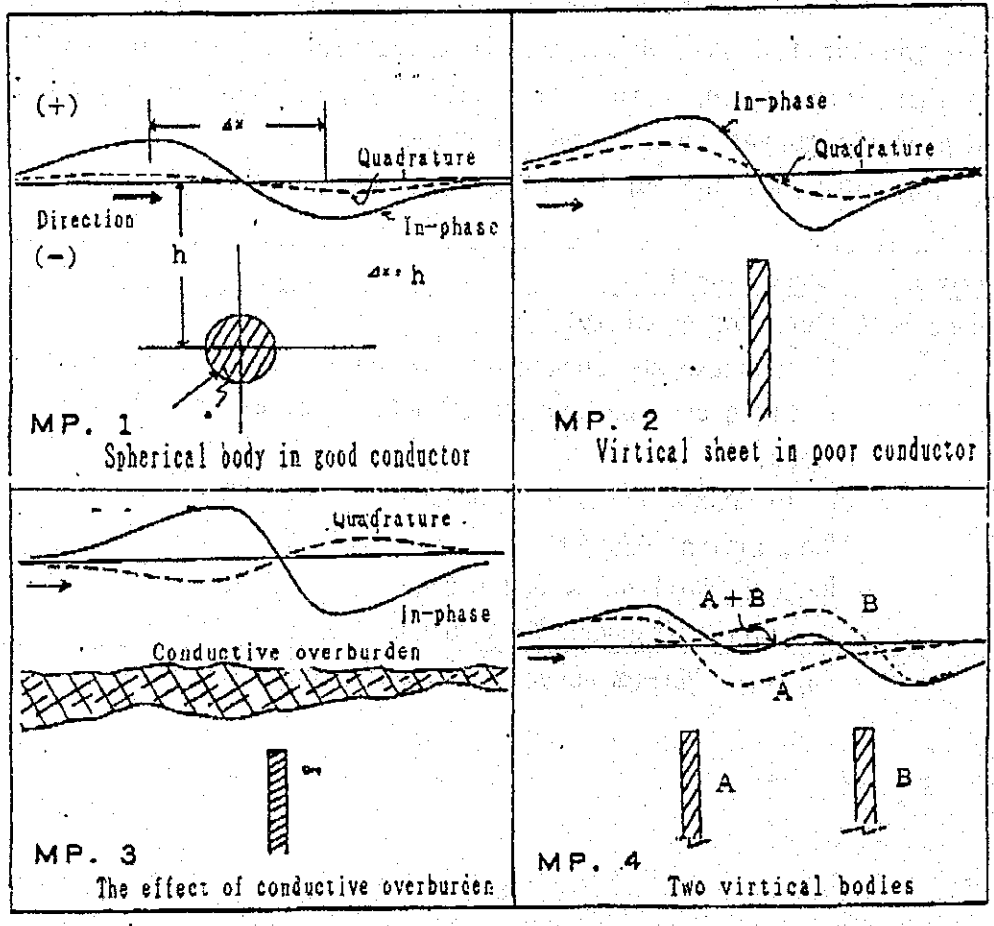


Fig.4 Model pattern of VLF graph

資料

VLF調査
測線位置関係図

凡例

Anomaly point (grade)

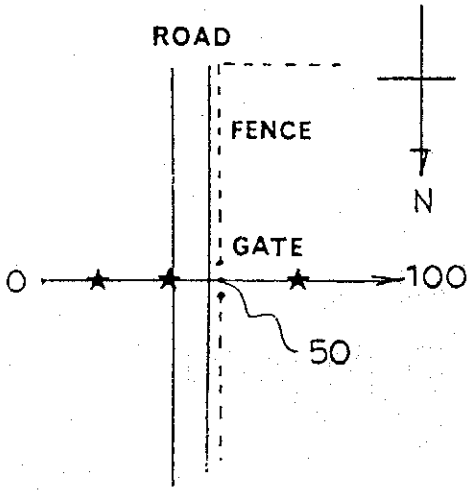
★ strong

● moderate

▲ weak

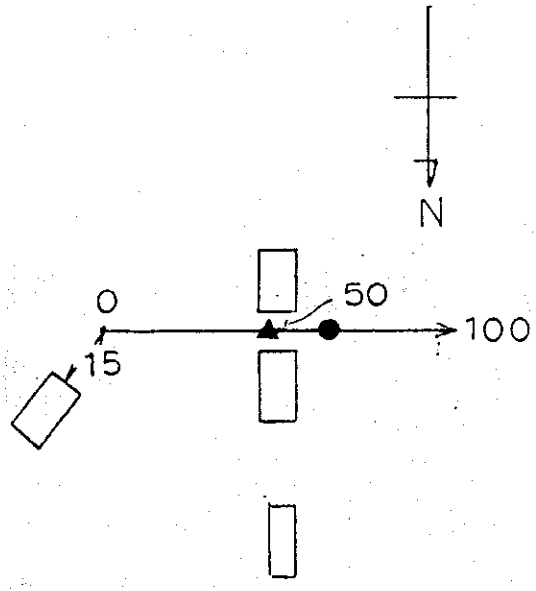
Scale 0 50m

→ : reading direction



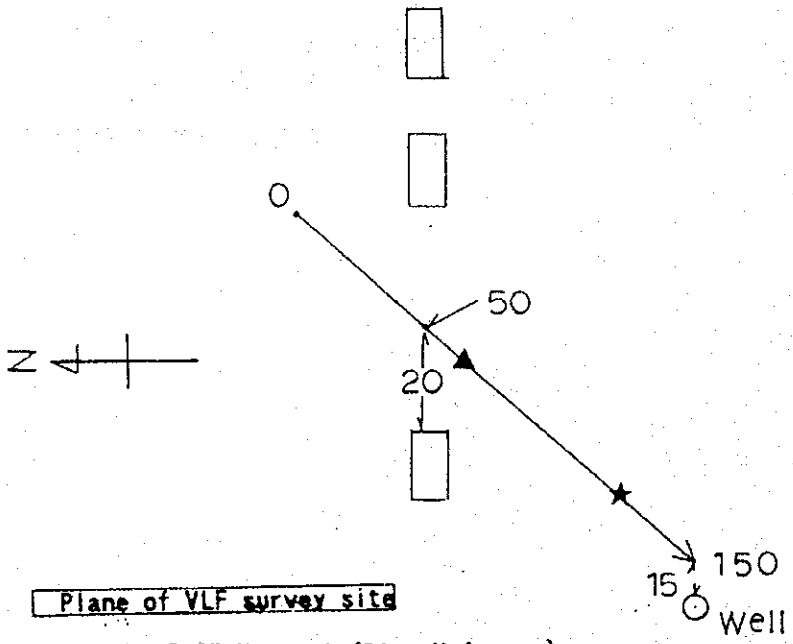
Plane of VLF survey site

No.1,1. Nquechane(Dist. Leribe)



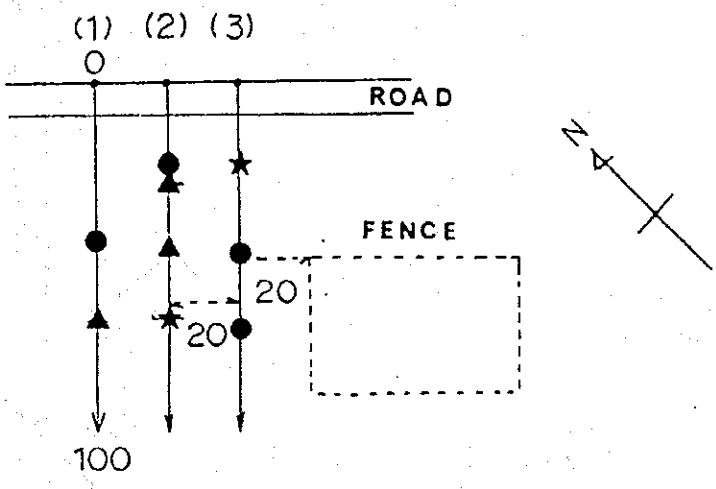
Plane of VLF survey site

No.3,30. Ts' upane(Dist. Mafeteng)



Plane of VLF survey site

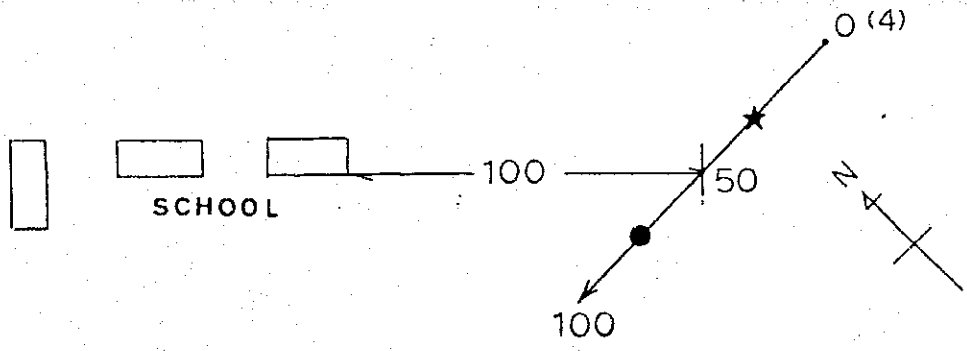
No.2,25. Ntanyele(Dist. Mafeteng)



Plane of VLF survey site.

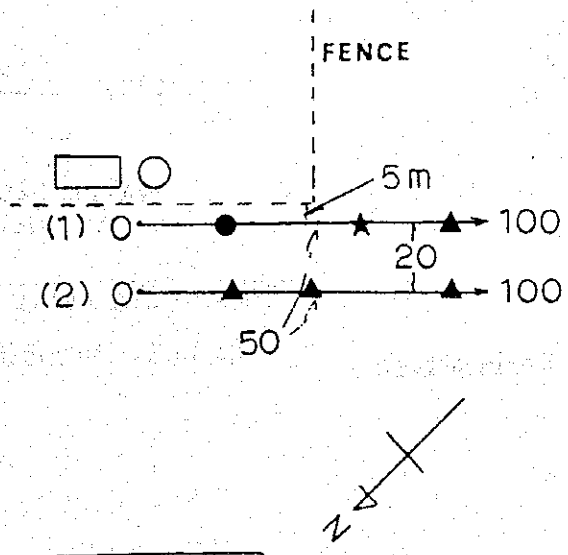
No. 4, 33. Bolimatau L. E. C. (Dist. Mafeteng)-(1)(2)(3)

(No. 5, No. 6.)



Plane of VLF survey site

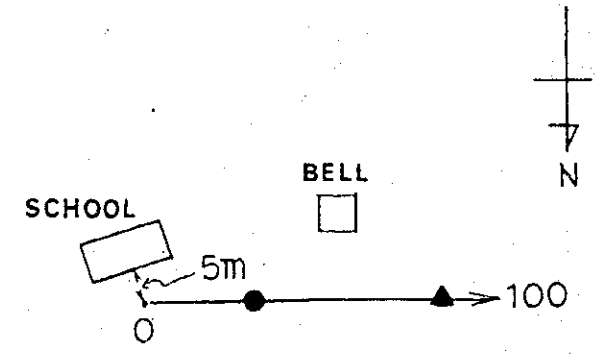
No. 7, 33. Bolimatau L. E. C. (Dist. Mafeteng)-(4)



Plane of VLF survey site

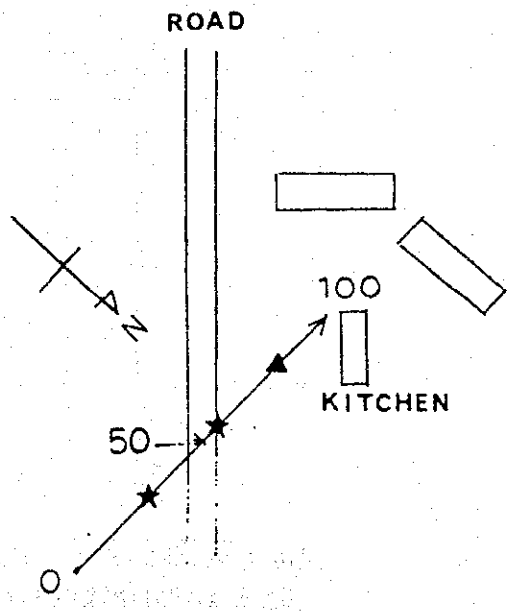
No. 8, 35. Bolikela L. E. C. (Dist. Mafeteng)-(1)(2)

(No. 9)



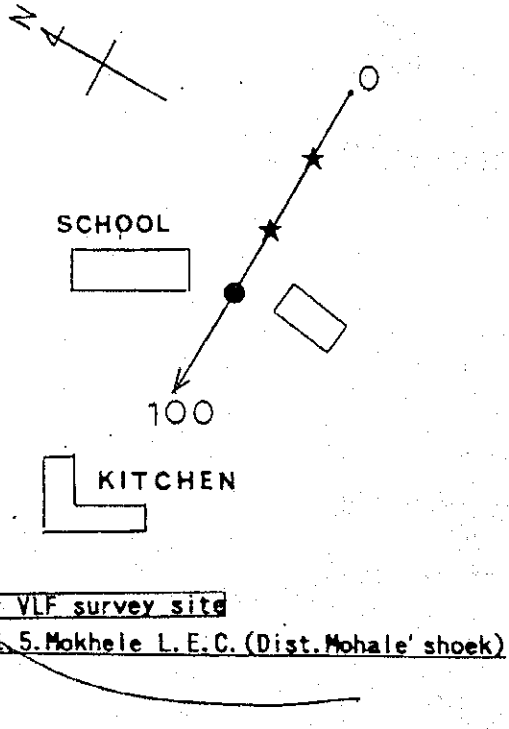
Plane of VLF survey site

No.10,40.Bochabela(Dist.Mafeteng)



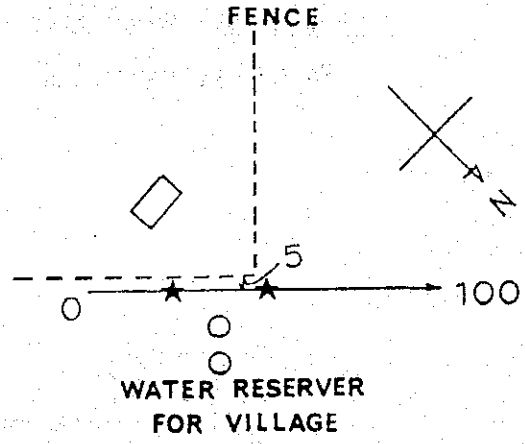
Plane of VLF survey site

No.12,6.Morifi L.E.C(Dist.Mohale' shoek)



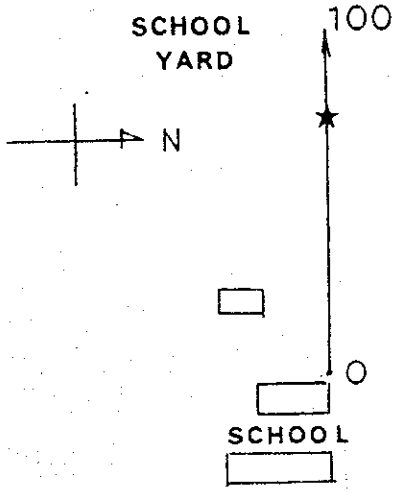
Plane of VLF survey site

No.11,5.Mokhele L.E.C.(Dist.Mohale' shoek)



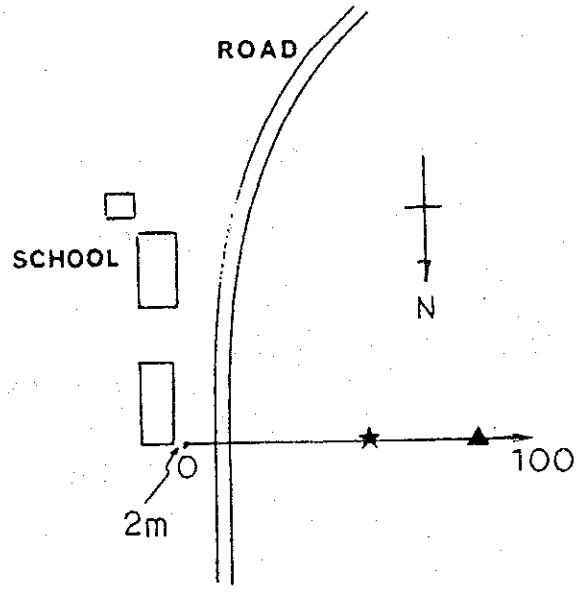
Plane of VLF survey site

No.13,12.Rantsie(Dist.Mohale' shoek)



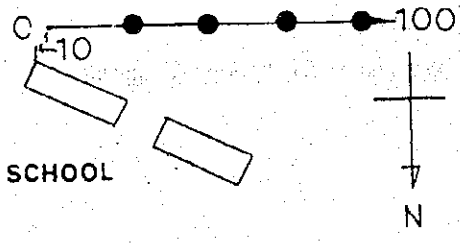
Plane of VLF survey site

No. 14, 15. Maphutsanen (Dist. Mohale' shoek)



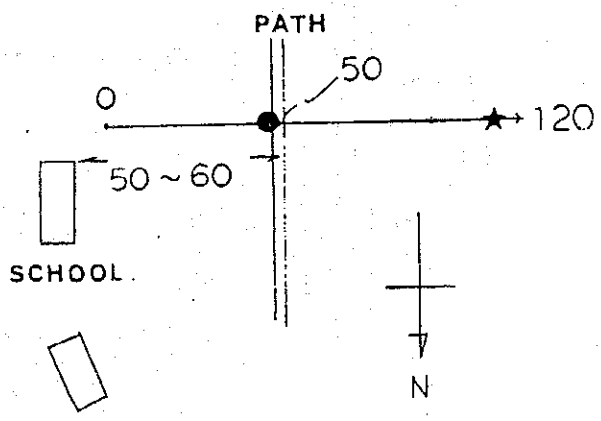
Plane of VLF survey site

No. 16, 22. Lefikeng (Dist. Mohale' shoek)



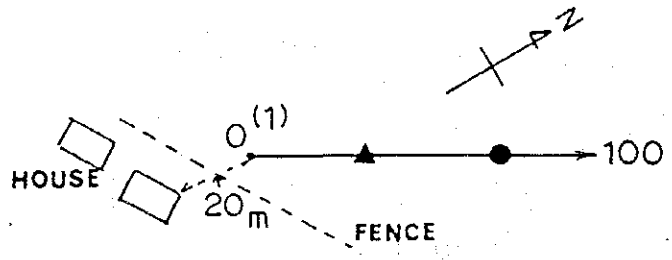
Plane of VLF survey site

No. 15, 18. Makabane (Dist. Mohale' shoek)



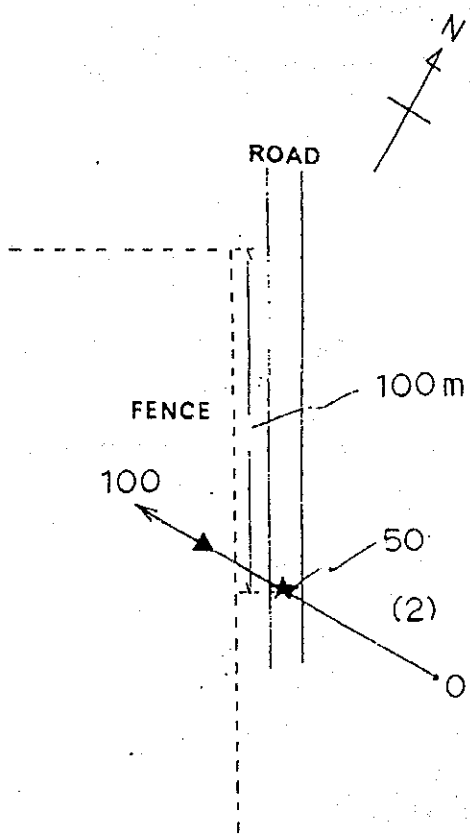
Plane of VLF survey site

No. 17, 29. Phatalla L. E. C. (Dist. Mohale' shoek)



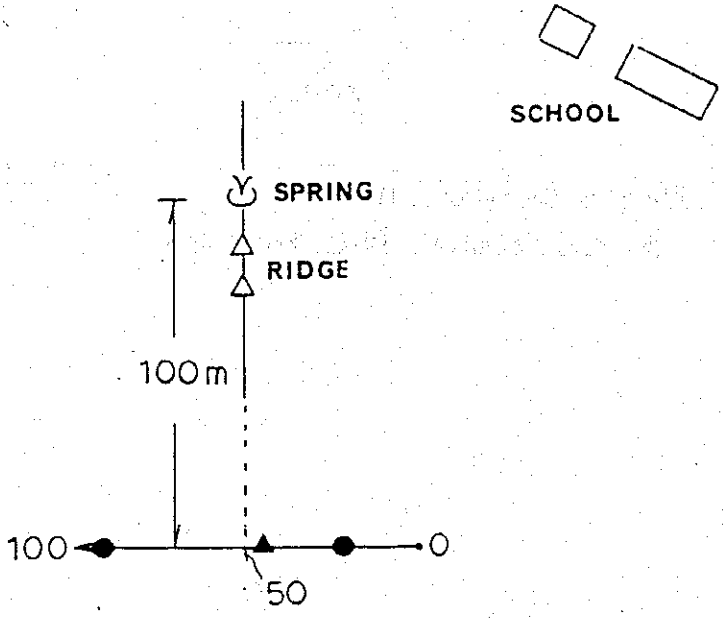
Plane of VLF survey site

No.18,31,Matsoareng(Dist.Mohale' shoek)-(1)



Plane of VLF survey site

No.19,31.Matsoareng(Dist.Mohale' shoek)-(2)



Plane of VLF survey site

No.20,32.Mokoroane(Dist.Mohale' shoek)

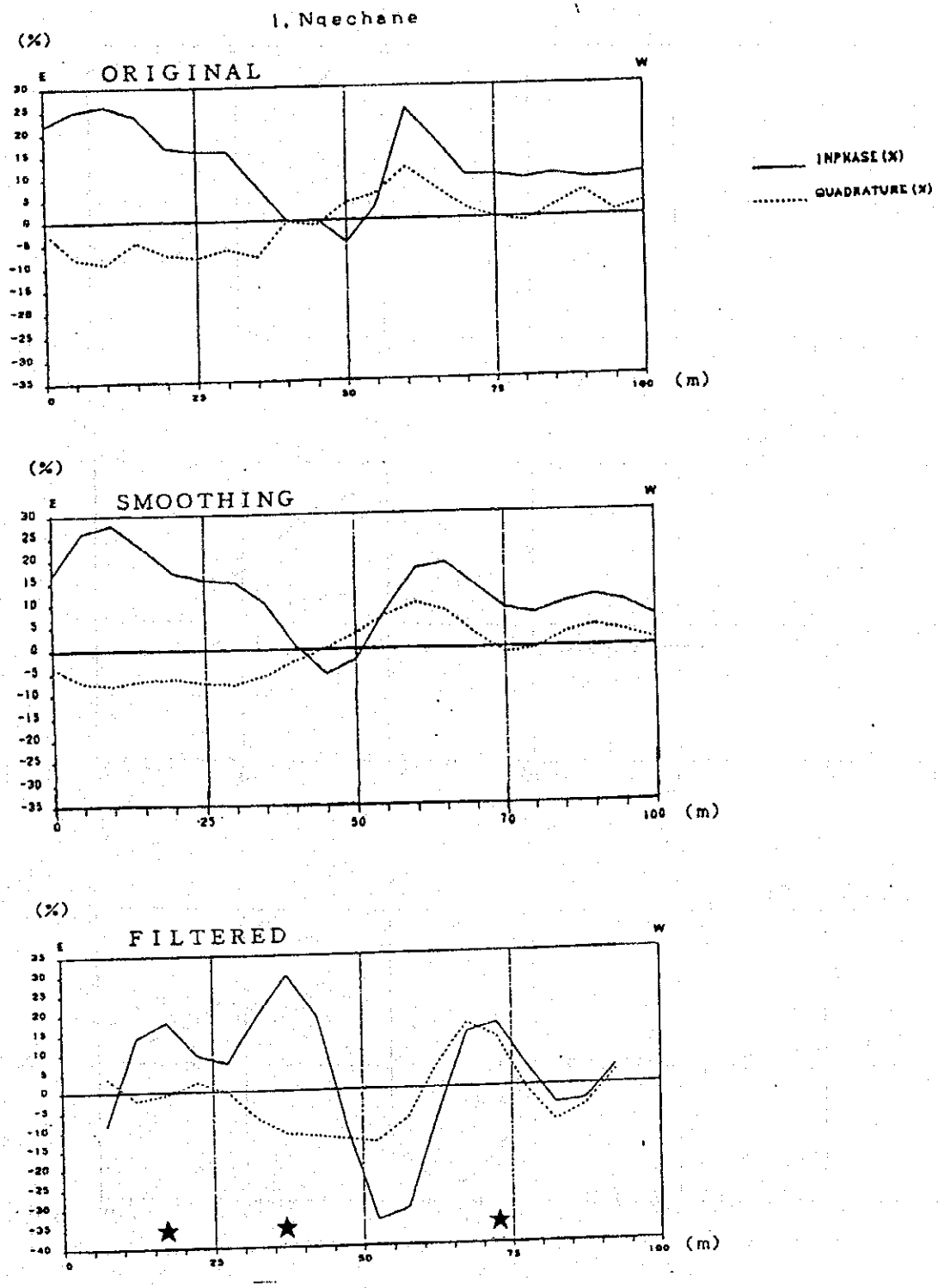


Fig. VLF Graphs-No.1,1.Nquechane(Dist.Leribe)

25. Ntanyele

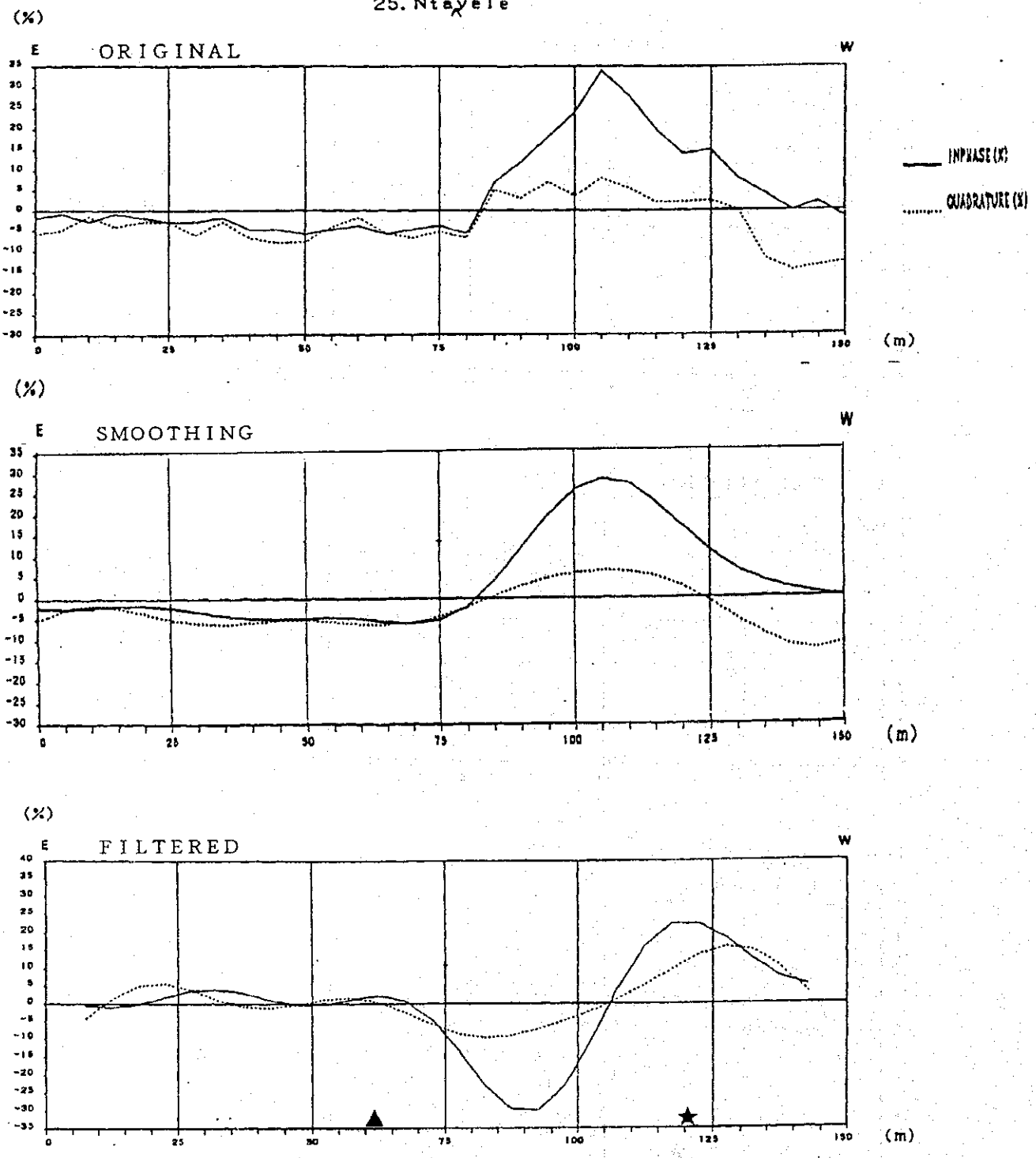


Fig. VLF Graphs-No. 2, 25. Ntanyele(Dist. Mafeteng)

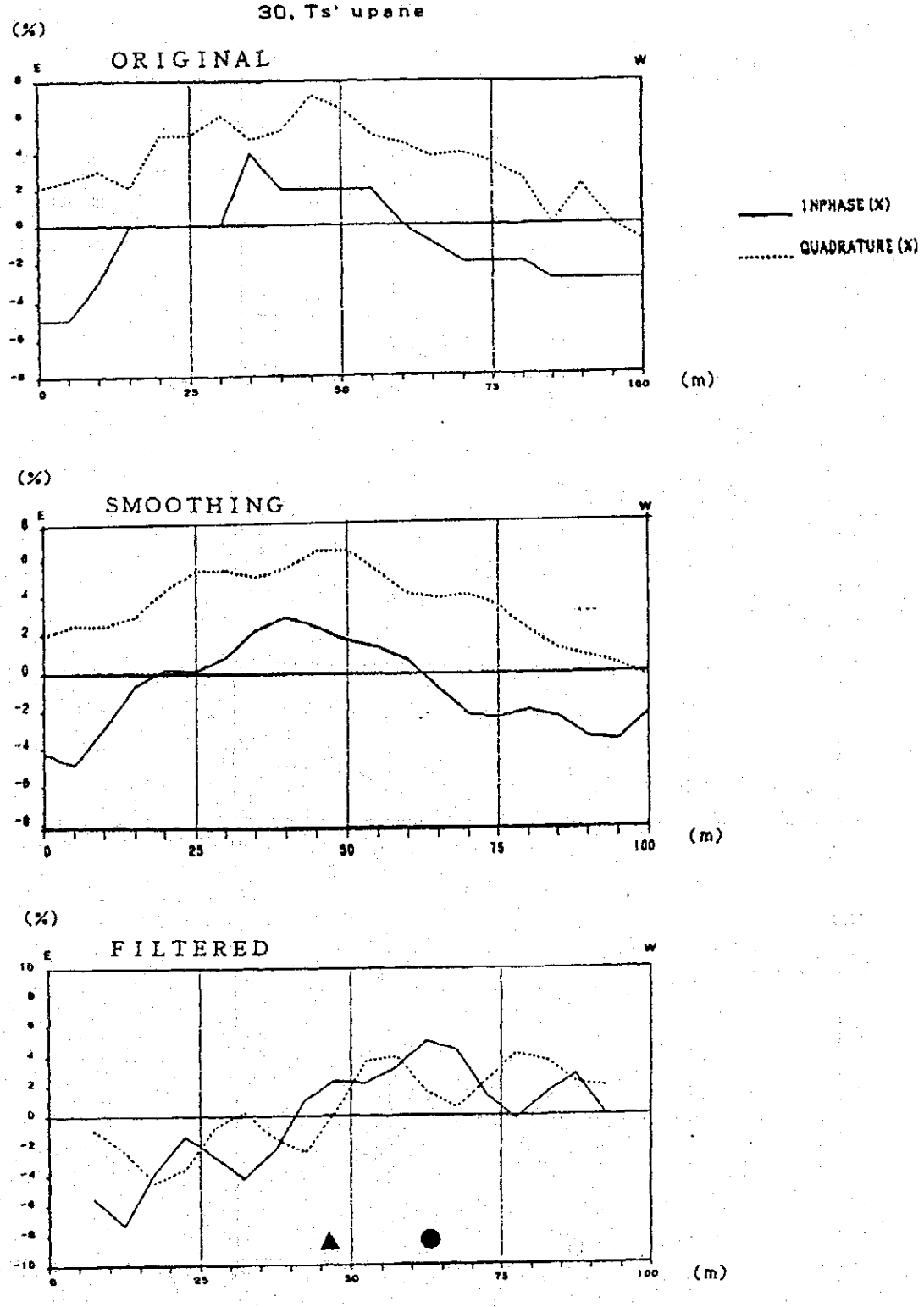


Fig. VLF Graphs-No.3, 30. Ts' upane(Dist. Mafeteng)

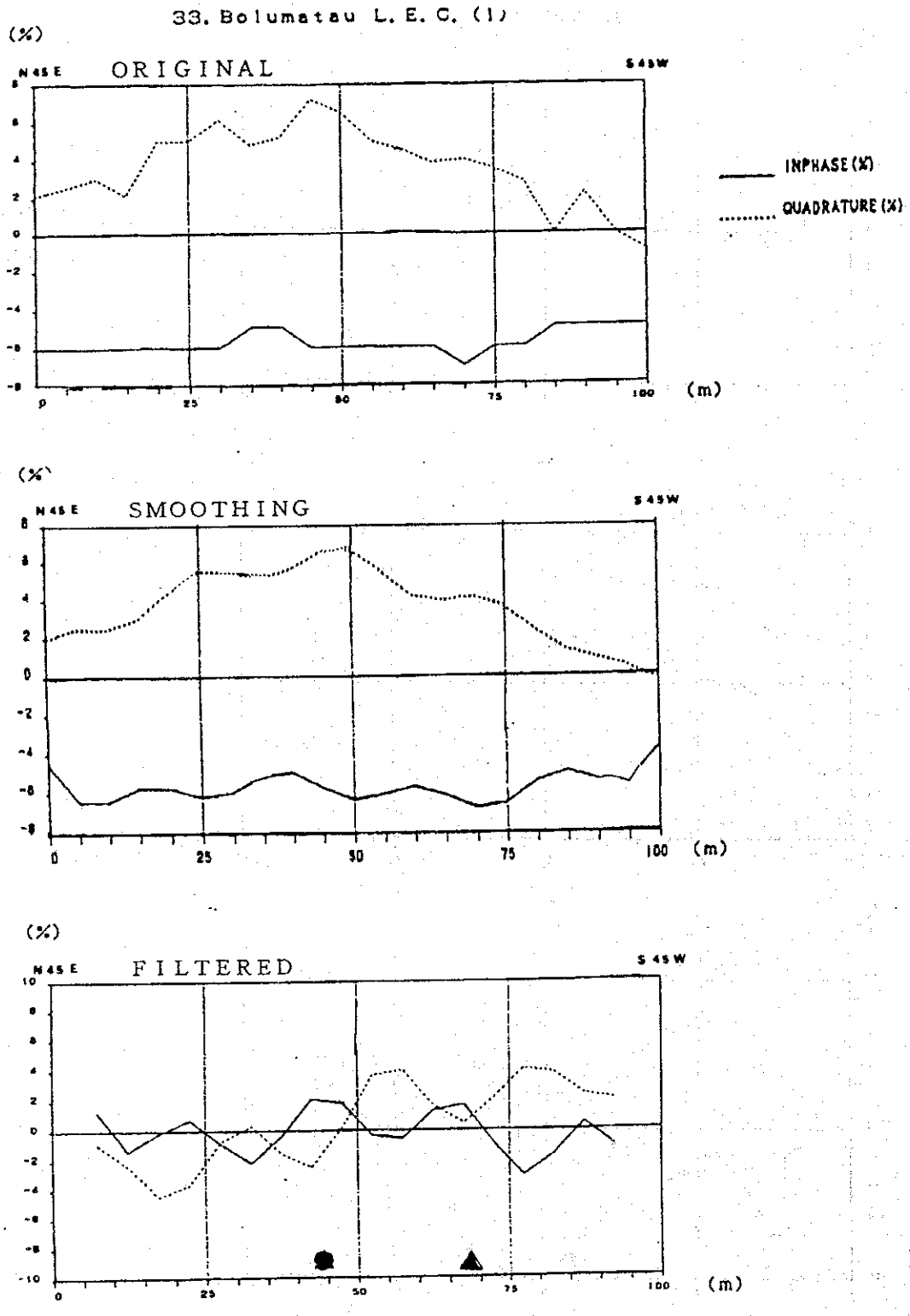


Fig. VLF Graphs-No.4, 33. Bolimatau L.E.C. (Dist. Mafeteng)-(1)

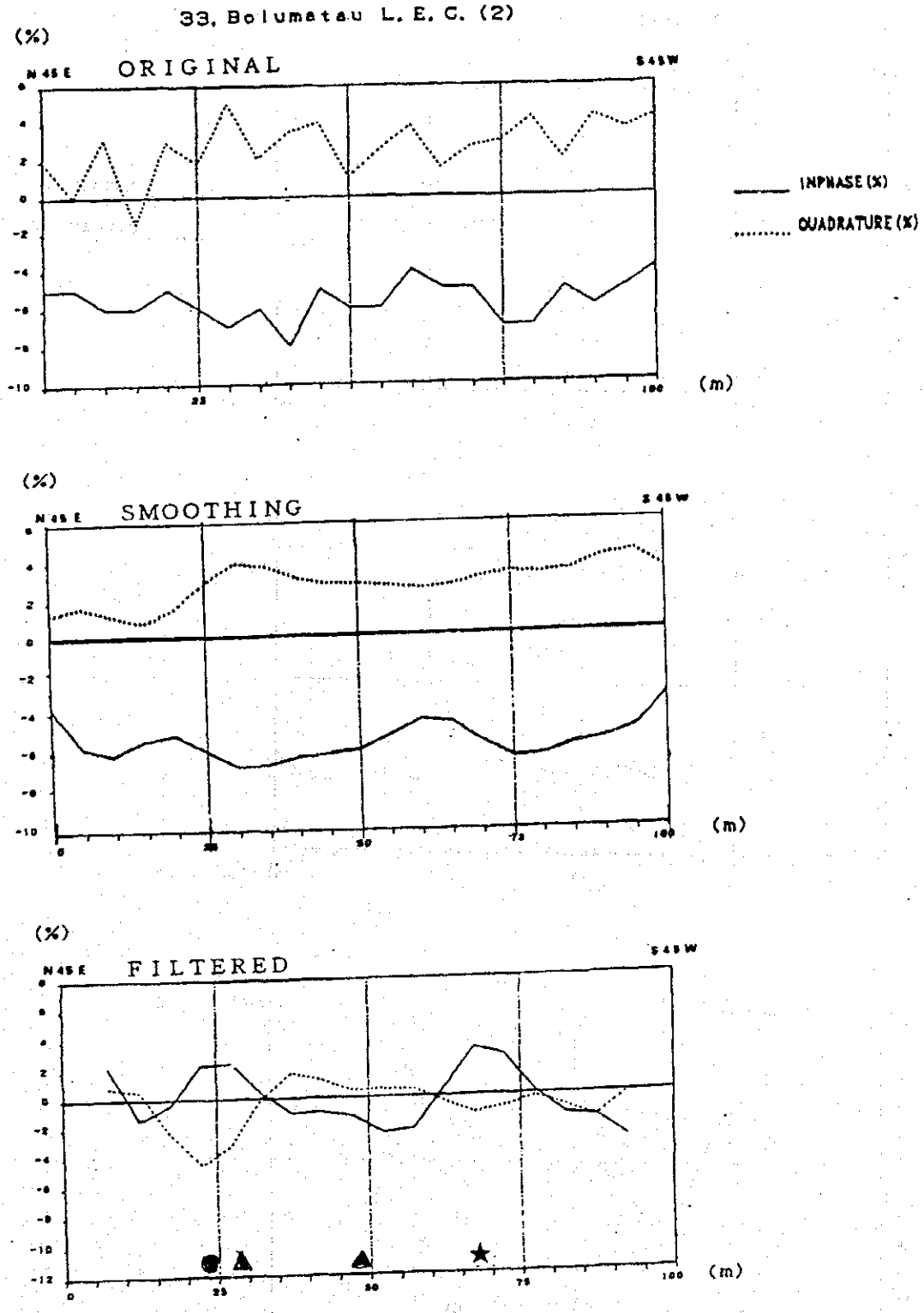


Fig. VLF Graphs-No. 5, 33. Bolimatau L. E. C. (Dist. Mafeteng)-(2)

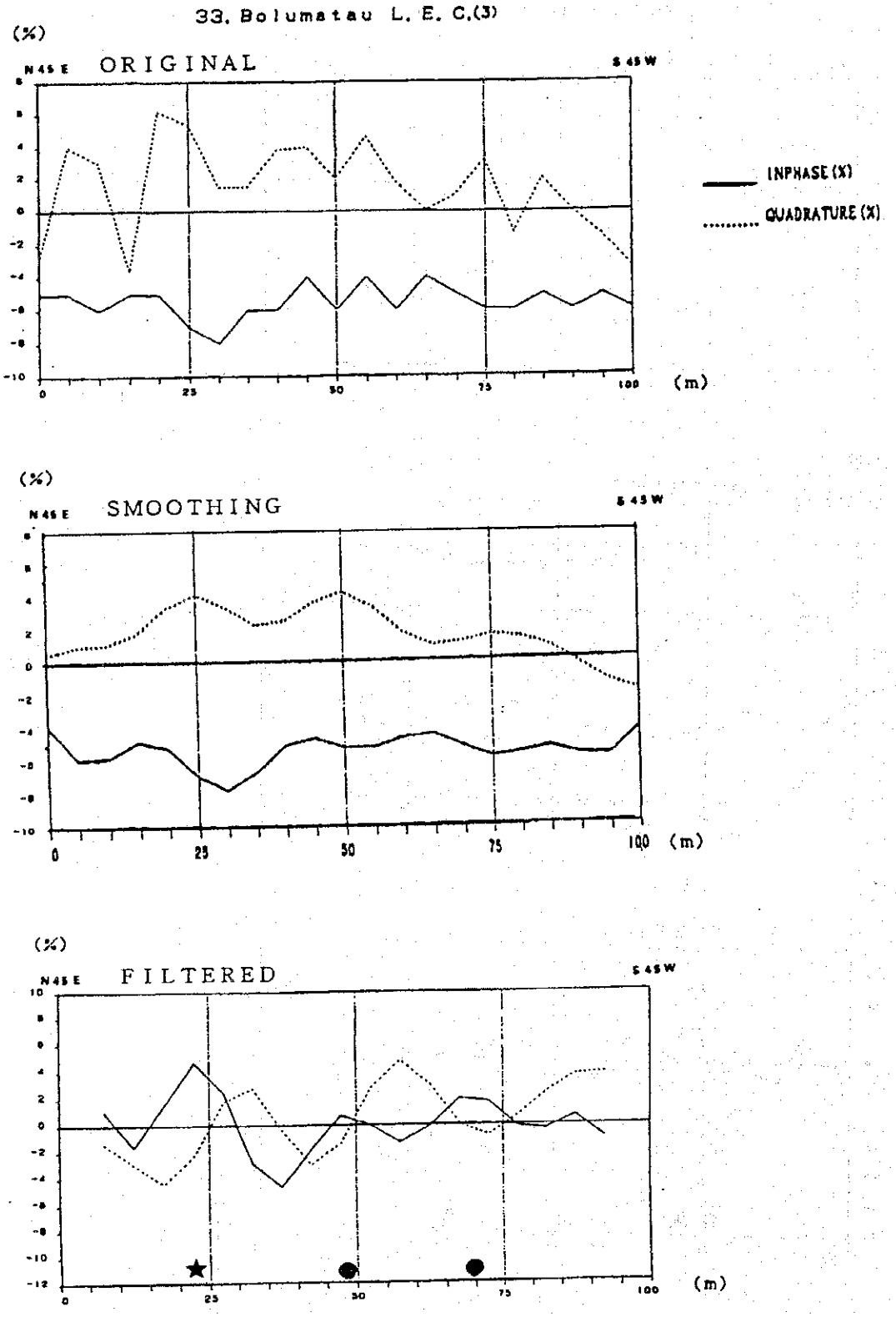


Fig. VLF Graphs-No.6,33.Bolimatau L.E.C.(Dist.Mafeteng)-(3)

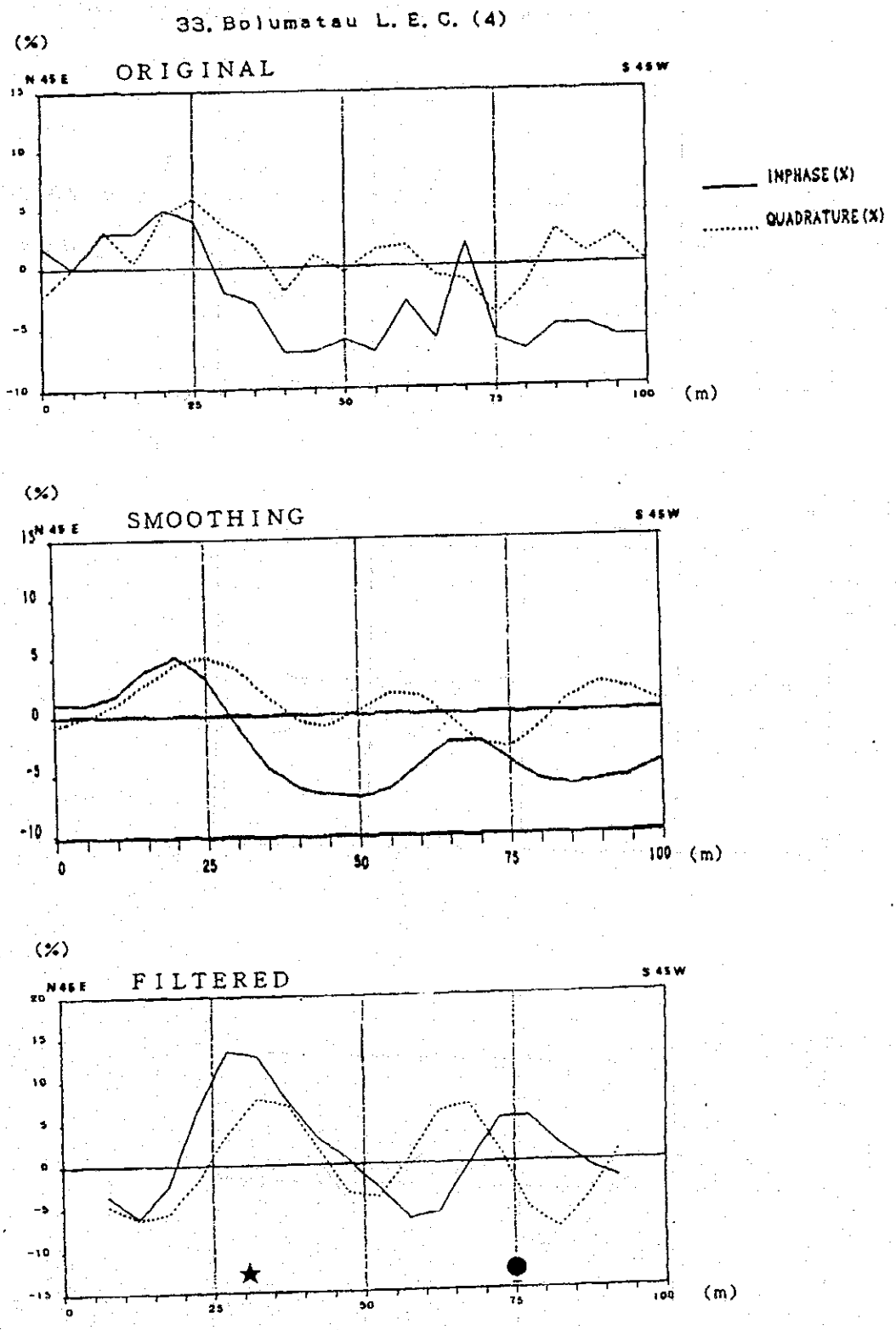
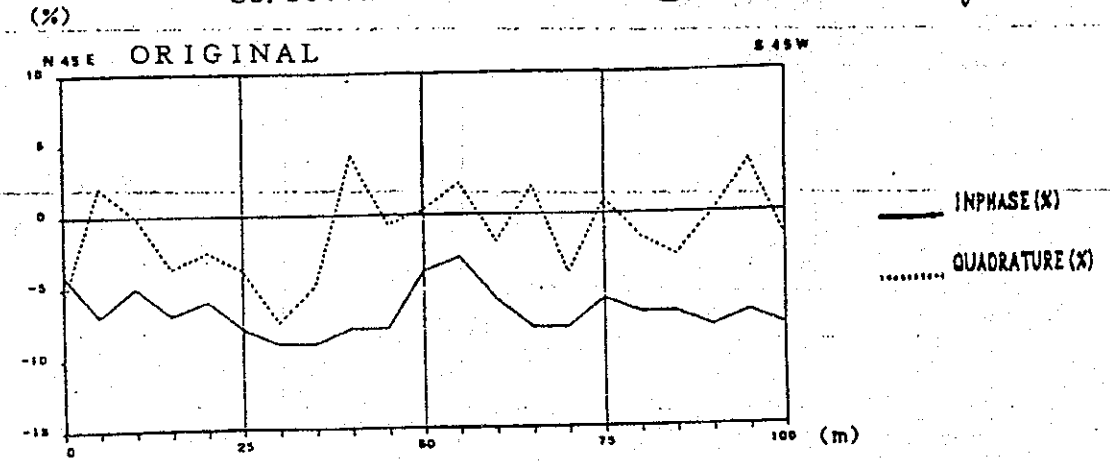
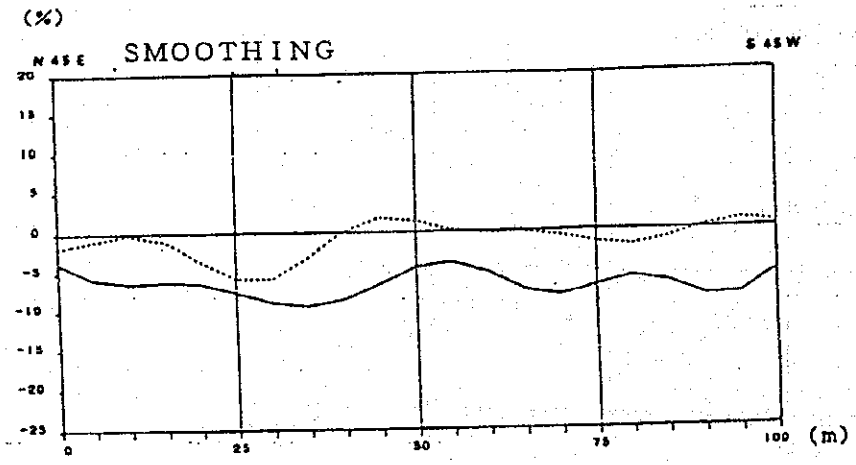
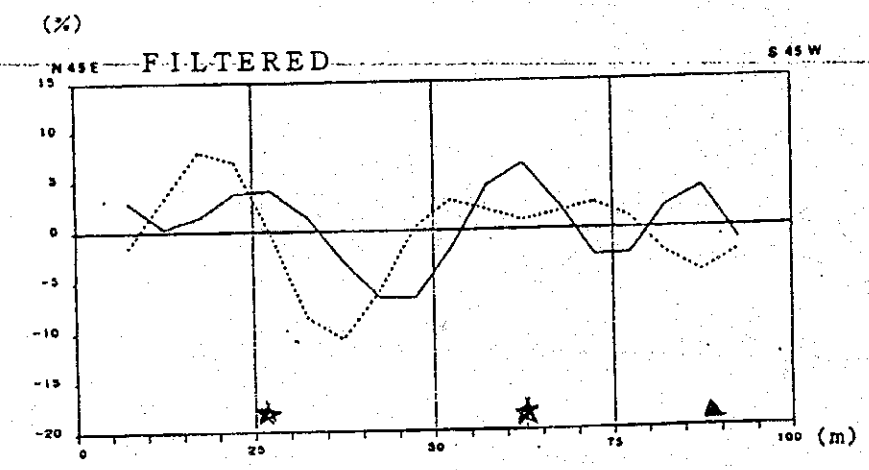


Fig. VLF Graphs-No. 7, 33. Bolimatau L.E.C. (Dist. Mafeteng)-(4)

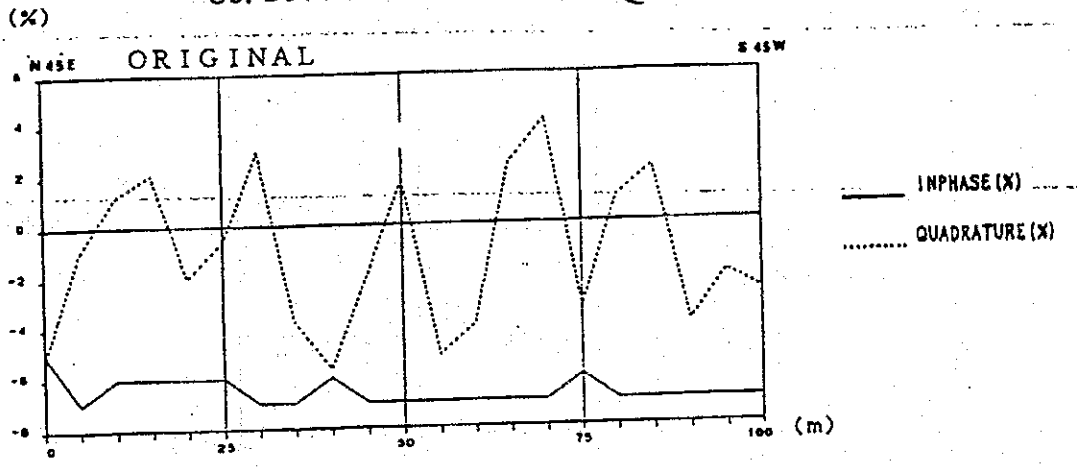
35. Bolikela L. E. C. (1) (Dist. Mateteng)

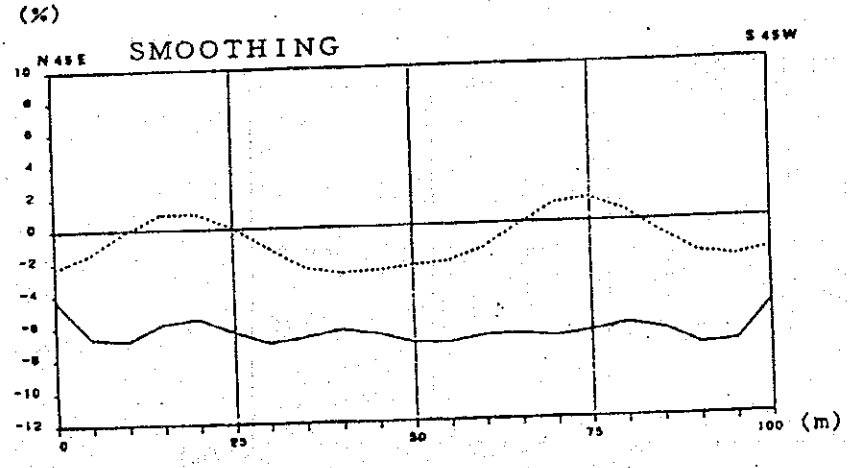


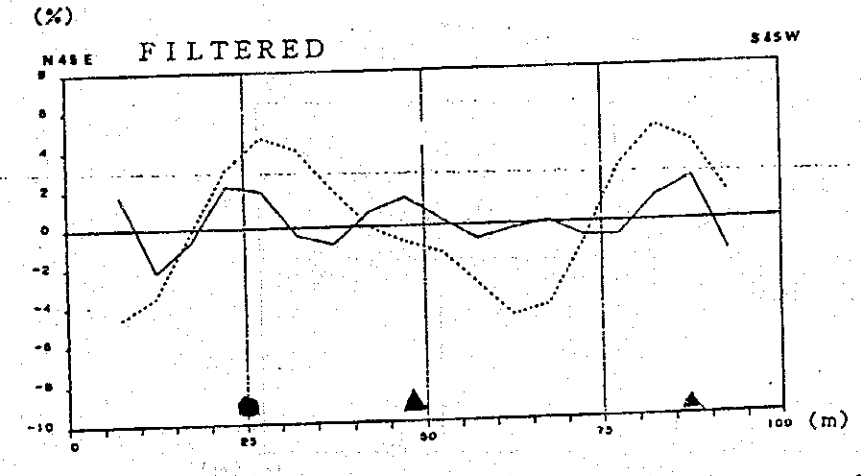




35. Bolikela L. E. C. (2) (Dist. Mateteng)

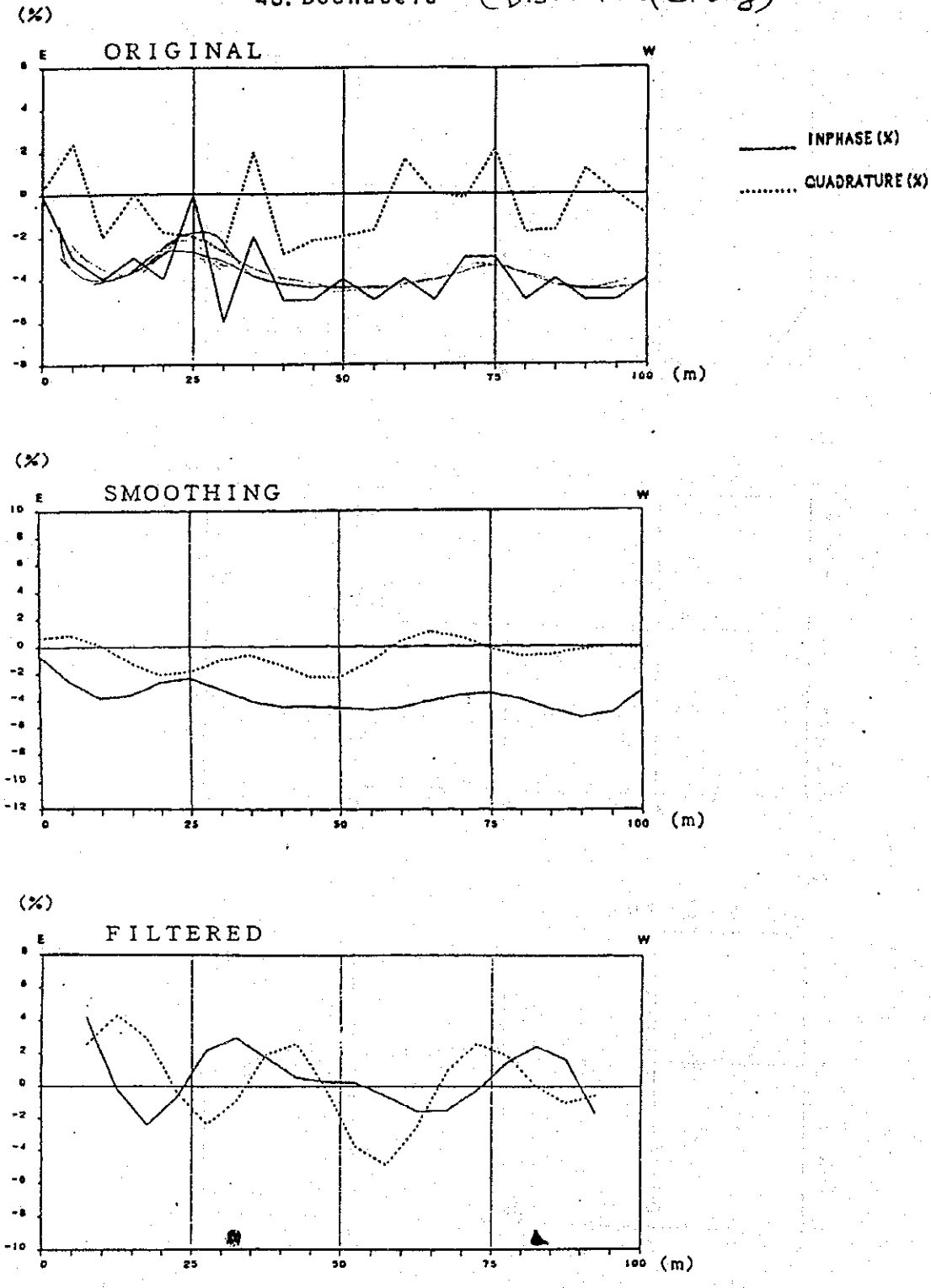






deep conductors?

40. Bochabela (Dist. Maseru)



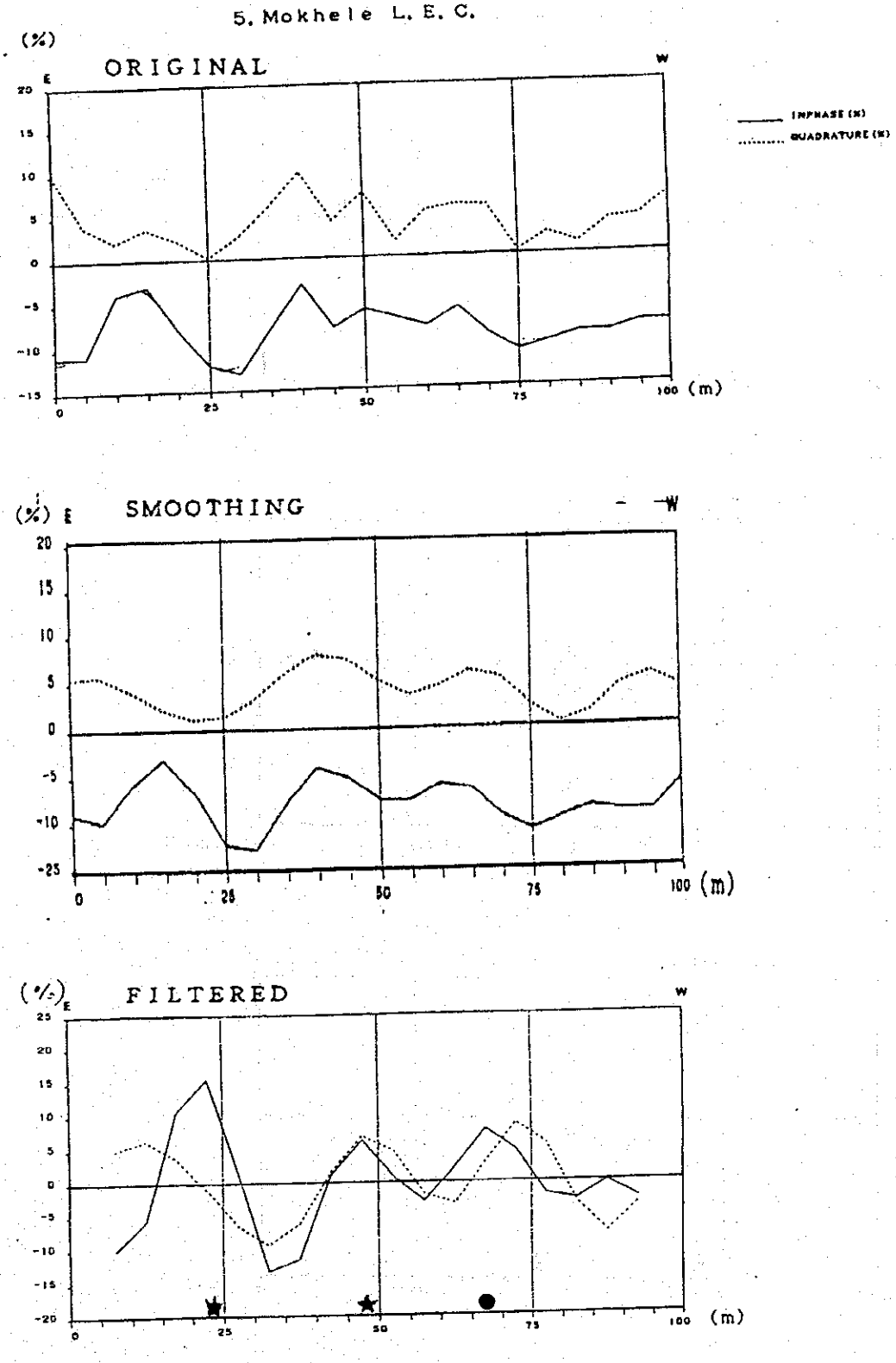


Fig. VLF Graphs-No.11, 5. Mokhele L.E.C. (Dist. Mohale' shoek)

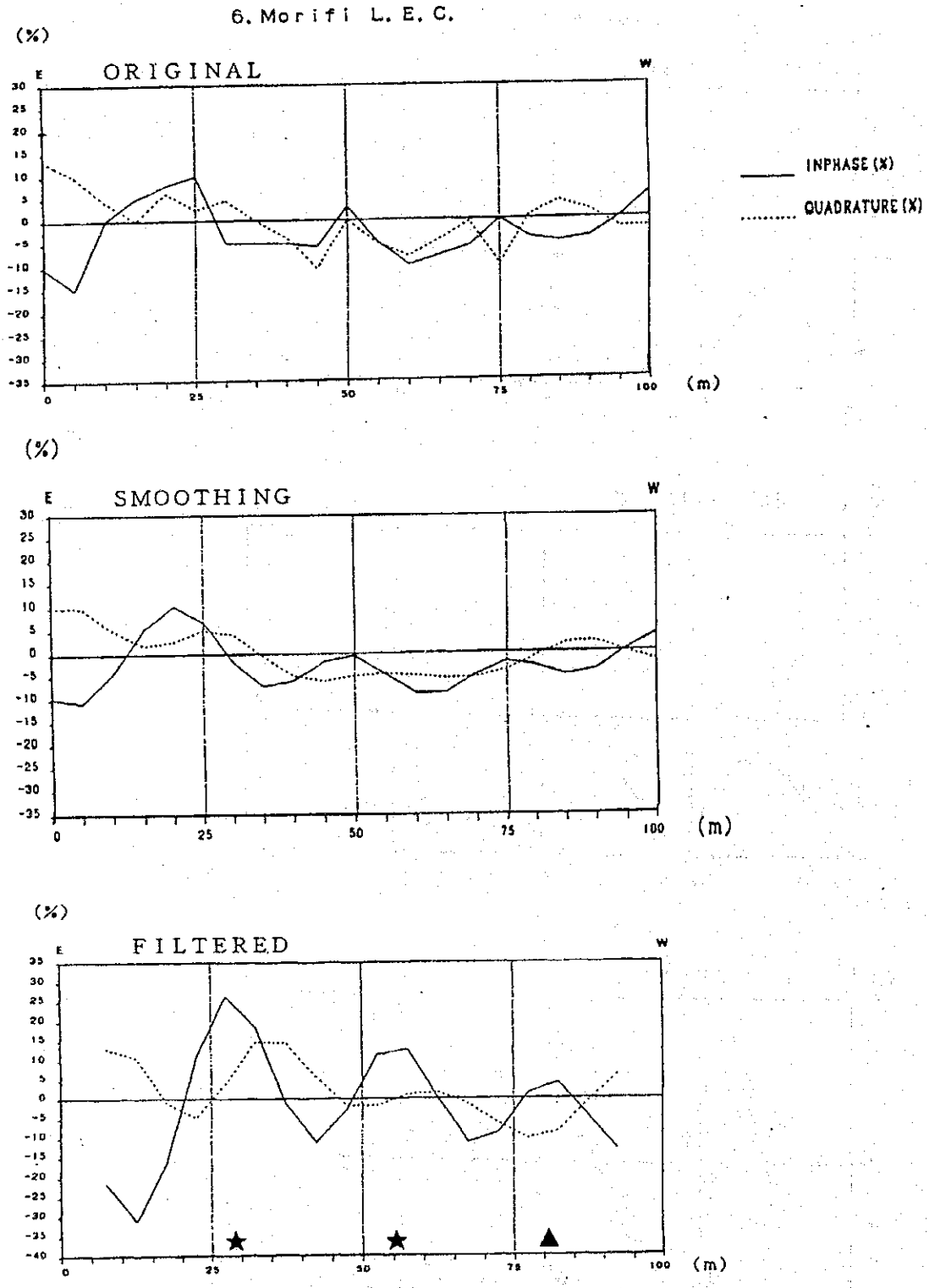


Fig. VLF Graphs-No.12, 6. Morifi L.E.C(Dist. Mohale' shoek)

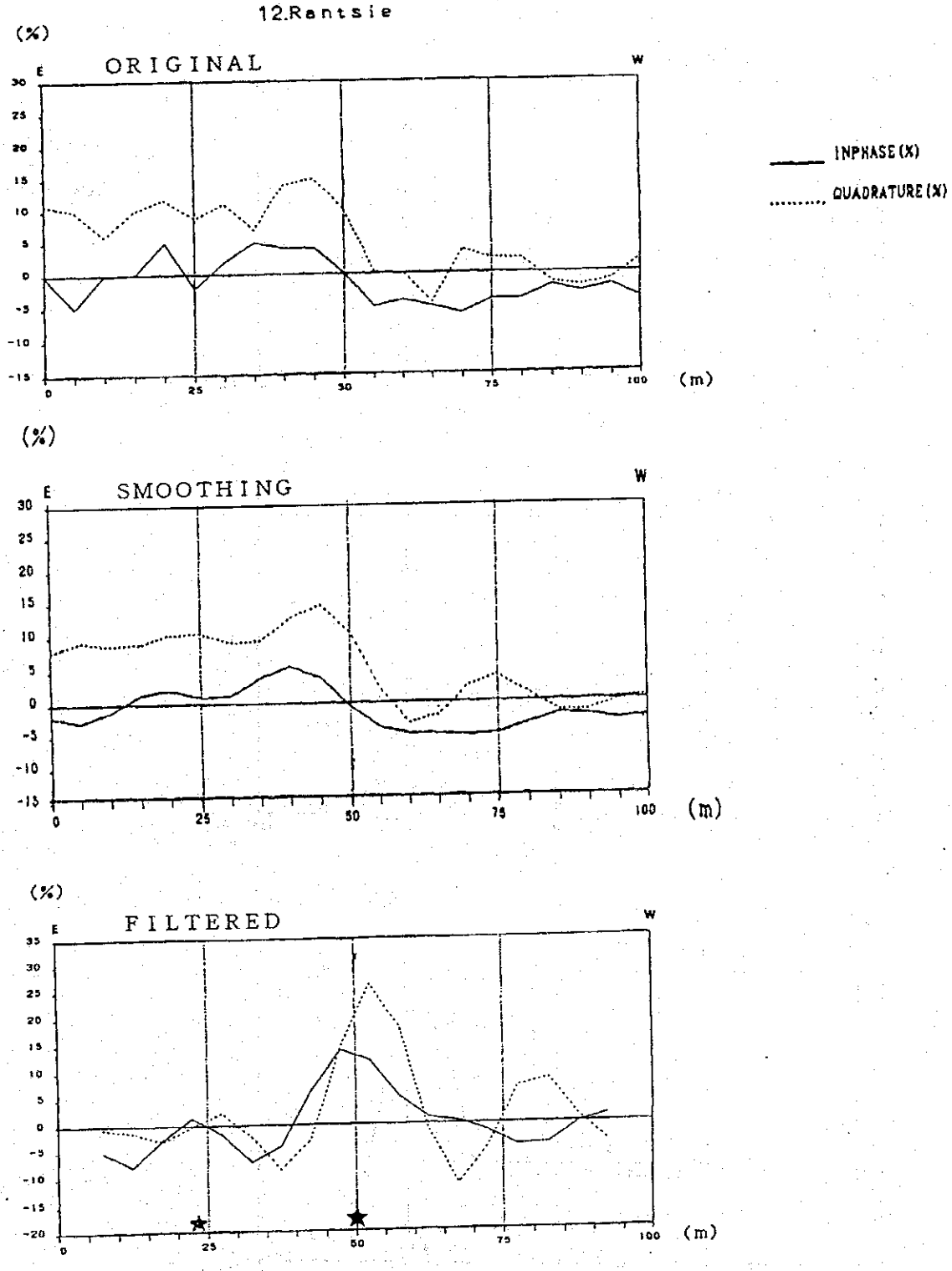


Fig. VLF Graphs-No.13, 12. Rantsie(Dist. Mohale' shoek)

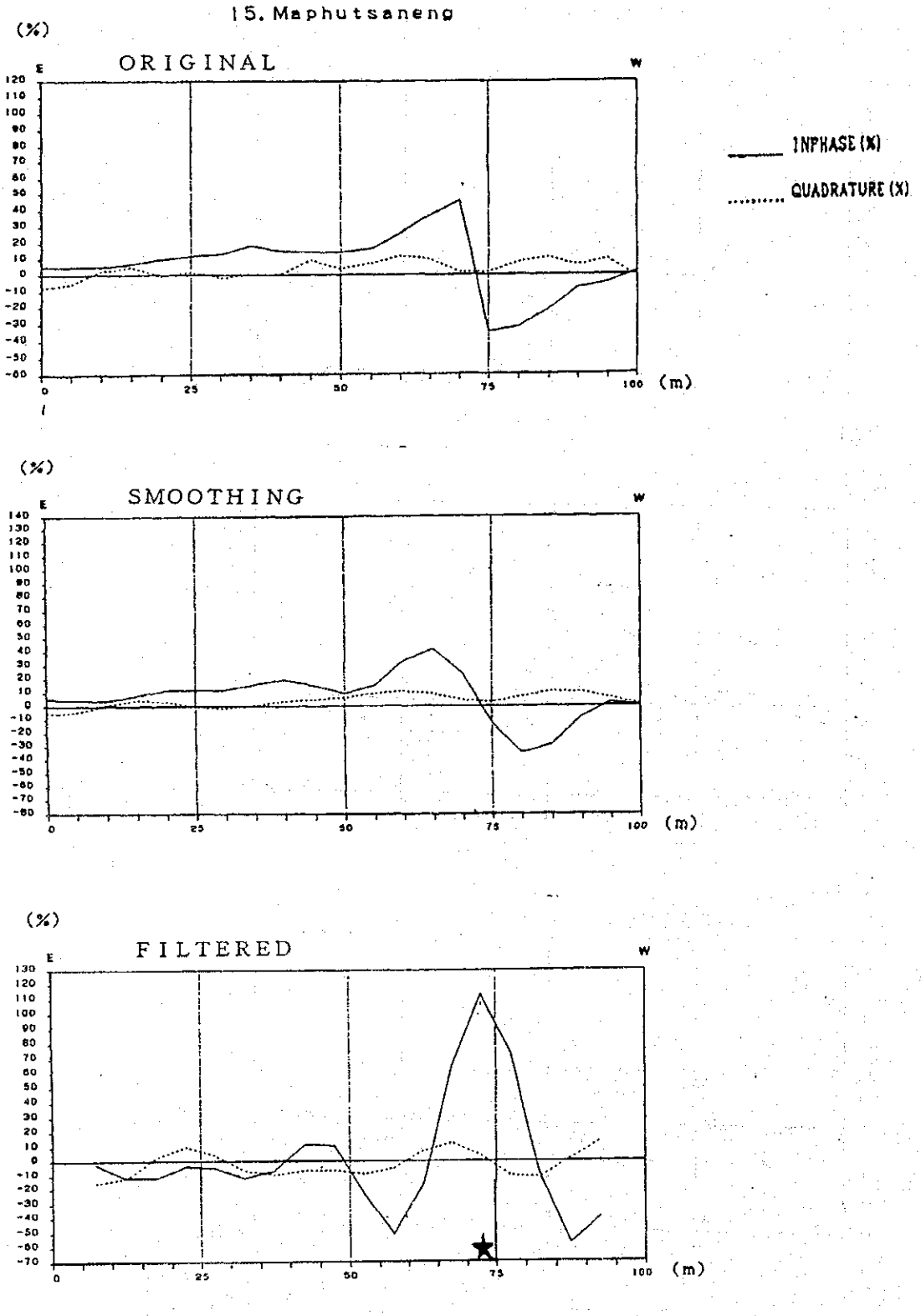


Fig VLF Graphs-No.14,15.Maphutsanen(Dist.Mohale' shoek)

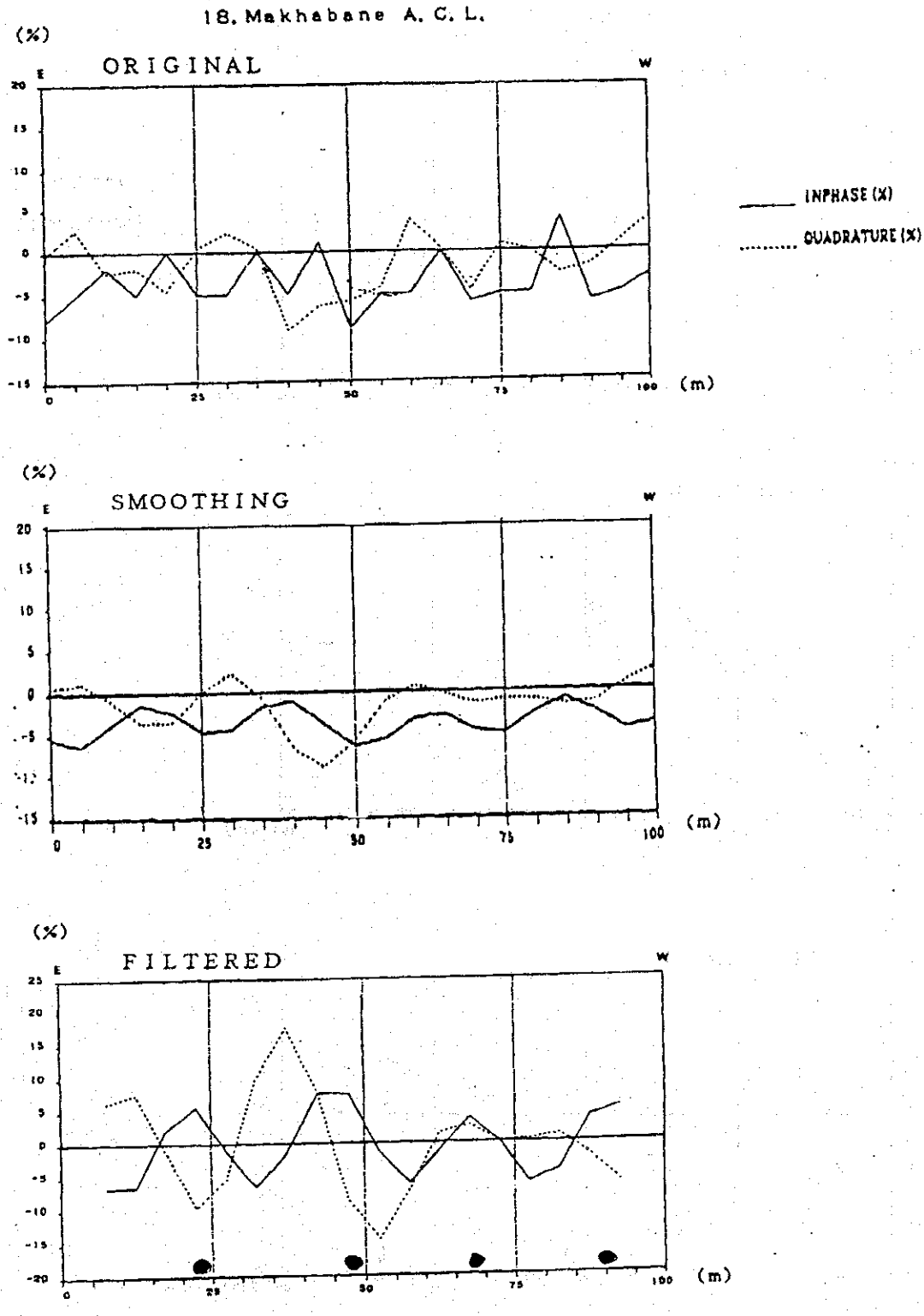


Fig. VLF Graphs-No.15,18.Makabane(Dist.Mohale' shoek)

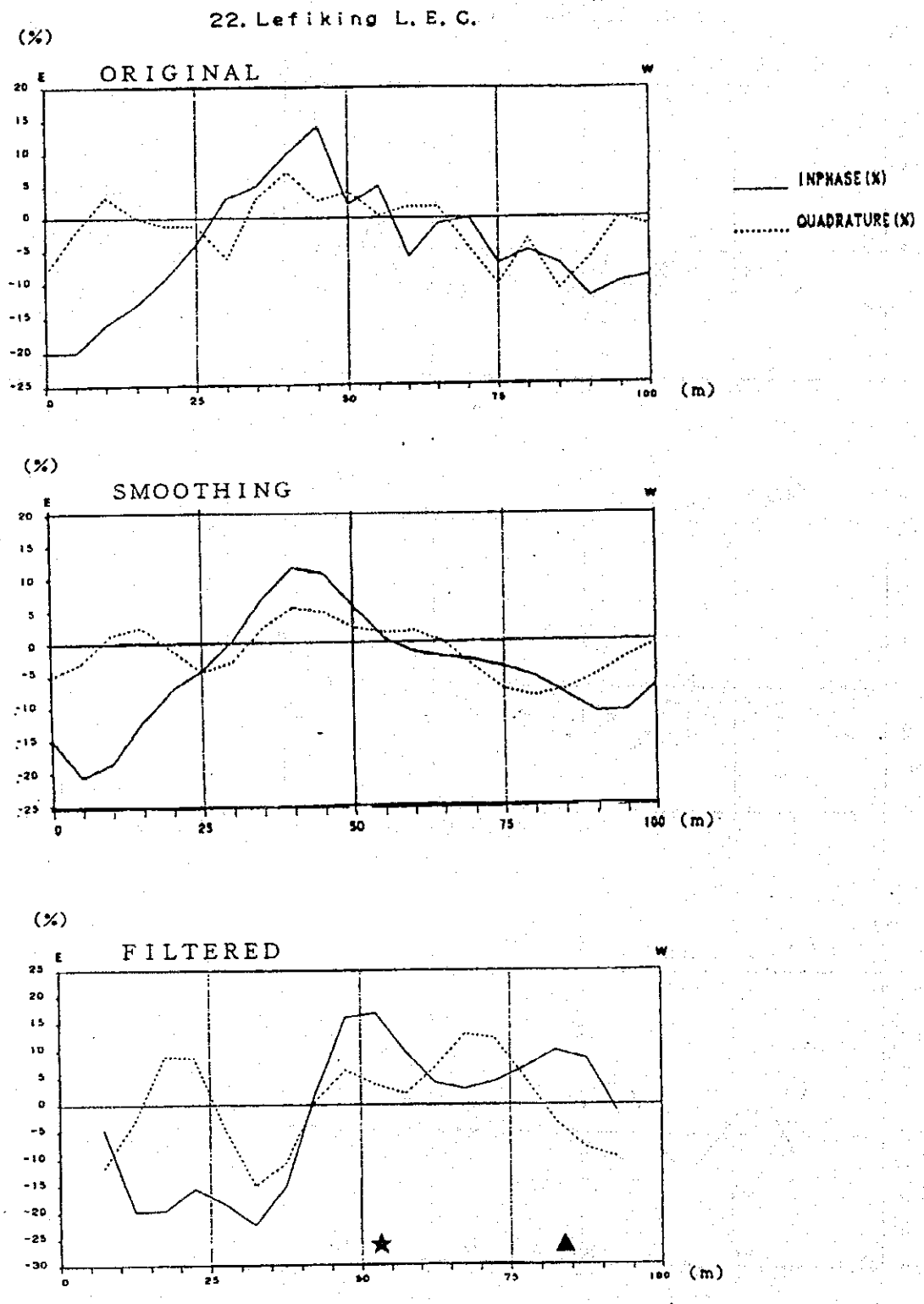


Fig. VLF Graphs-No. 16, 22. Lefikeng (Dist. Mohale' shoek)

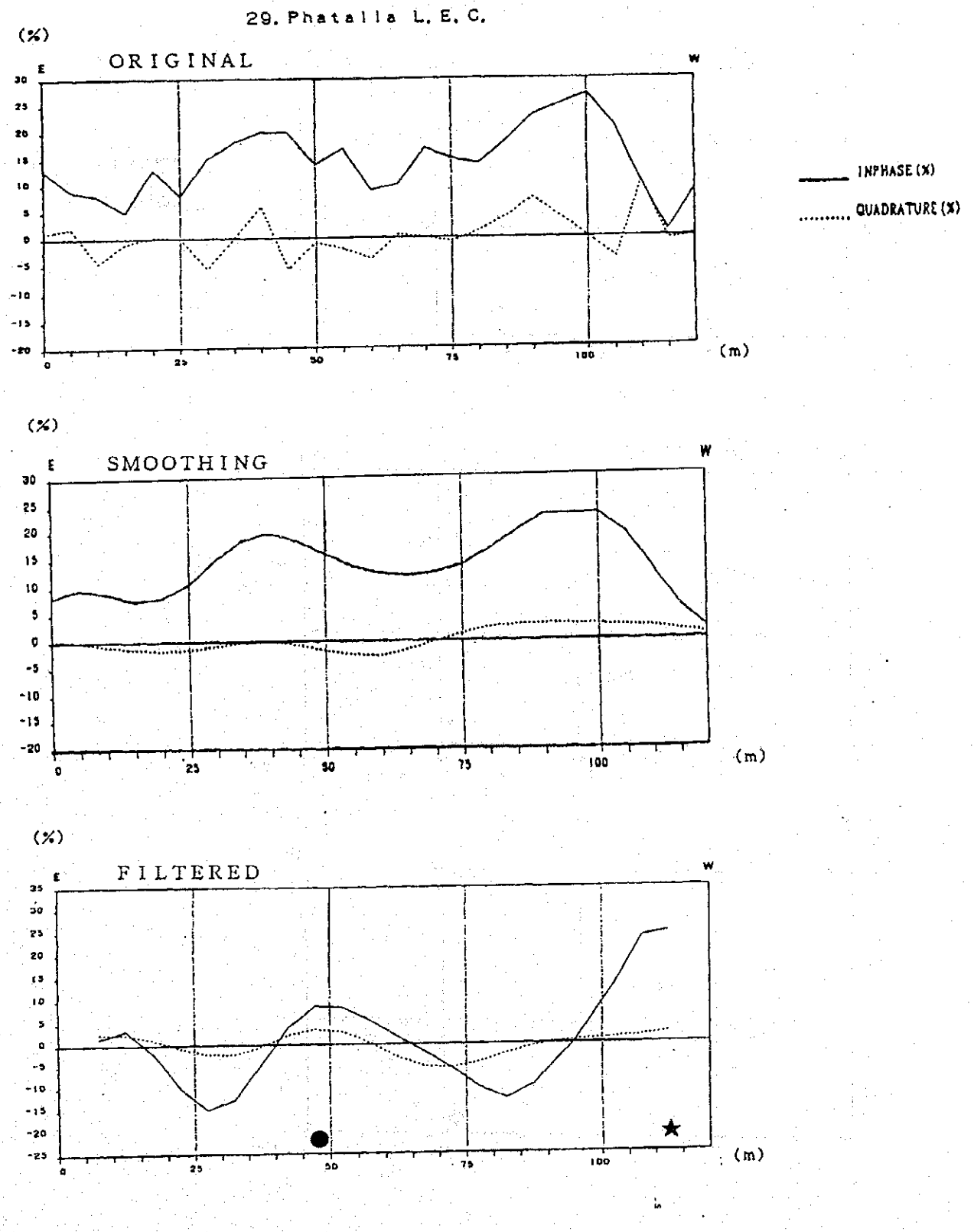


Fig. VLF Graphs-No. 17, 29. Phatalla L. E. C. (Dist. Mohale' shoek)

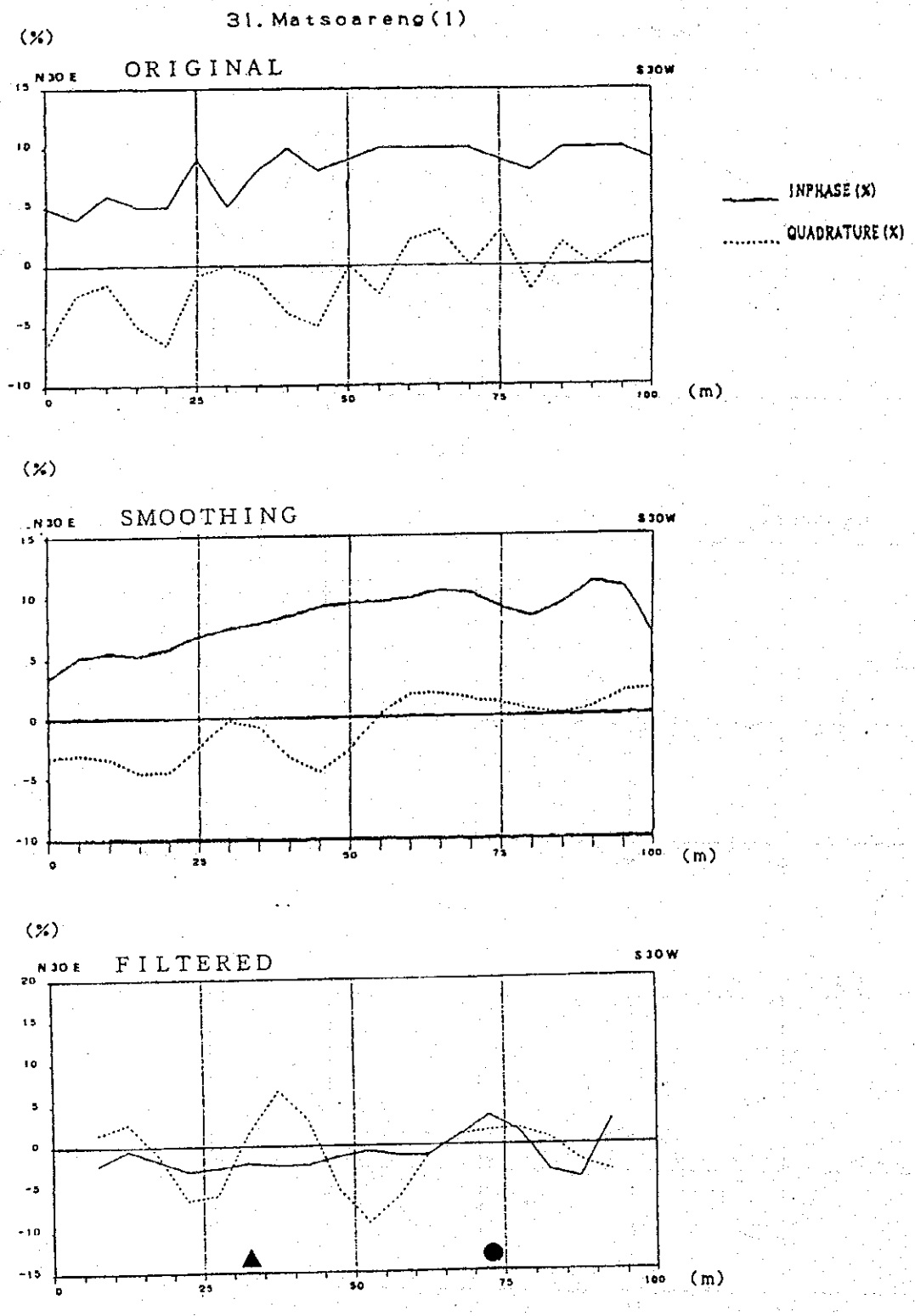


Fig. VLF Graphs-No.18,31.Matsoareng(Dist.Mohale' shoek)-(1)

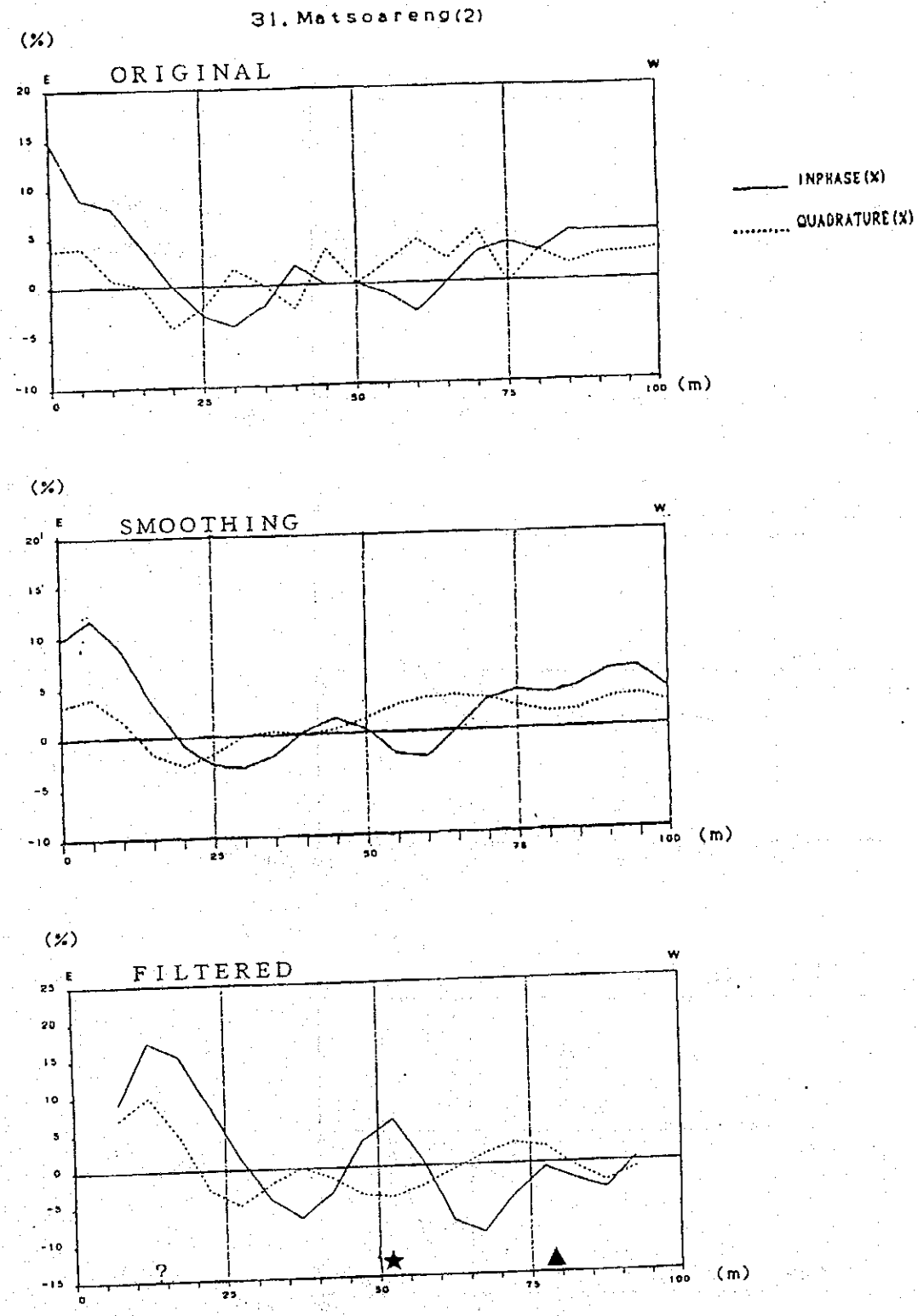


Fig. VLF Graphs-No.19,31.Matsoareng(Dist.Mohale' shoek)-(2)

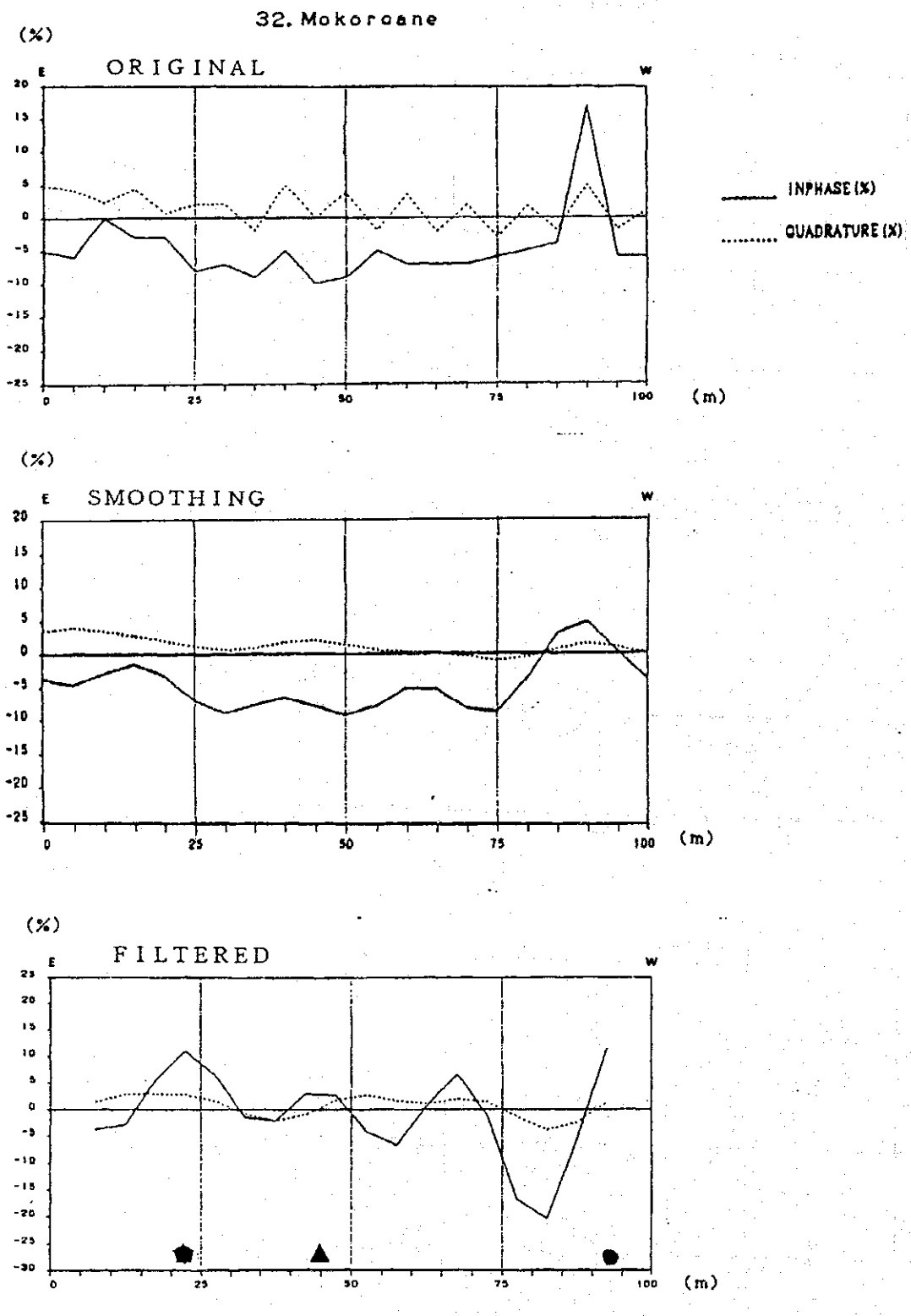


Fig. VLF Graphs-No. 20, 32. Mokoroane (Dist. Mohale' shoek)

便所施設必要校諸元

DISTRICT	NAME OF SCHOOL	NO. OF PUPILS		
		BOYS	GIRLS	TOTAL
Butha-Buhte	Likhutlong L.E.C.	101	86	187
Berea	Boose L.E.C.	55	70	125
Mafeteng	Qalabane L.E.C.	236	264	500
	Mathebe	254	200	454
	Samaria R.C.	298	300	598
	Maholi A.C.L.	122	101	223
	Kolo	250	350	600
	Phakoe A.C.L.	100	158	258
	Thoahlane R.C.	92	111	203
	Mokhasi	114	266	380
	Bolikela A.M.E.	78	89	167
	Bolumatau L.E.C.	188	232	420
	Bolikela L.E.C.	135	165	300
	Likhetleng	155	195	350
	Rebeleng A.C.L.	60	70	130
	Matsepe Metho. (Ramokhele)	64	96	160 0
	Bochabela	169	173	342
	Motsekuoa	189	232	421
Mohale's Hoek	Qhoqhoane	82	98	180
	Mofumahali-oa-Rosari	216	234	450
	Morifi A.M.E.	70	85	155
	Maphutsaneng	320	200	520
	Mekaling L.E.C.	203	216	419
	Lefikeng L.E.C.	180	240	420
	Phatalla L.E.C.	111	124	235
	Mokoanyane A.C.L.	400	400	800
	Mokoroane	100	168	268
合　計		4,342	4,923	9,265
平　均		161	182	331
最　大		400	400	800
最　少		55	70	0

収集資料リスト

Documents and Reports

1.	Water Resources Act 1987	GOL(DWA)
2.	Estimates for the Year 1992/93, 1993/94, 1994/95	GOL
3.	LESOTHO Government Gazette Extraordinary, 1992	GOL
4.	LESOTHO Government Gazette Extraordinary, 1994	GOL
5.	Lesotho Population Data Sheet, 1992 and 1993	MOP
6.	Proceedings of the 1986 Population Census	Bureau of Statistics
7.	Statistical Report, 1994	Bureau of Statistics
8.	1993/94 Lesotho's Economic Report	Bureau of Statistics
9.	Lesotho Statistical Yearbook 1993	Bureau of Statistics
11.	Out-Patients Morbidity Report -1992, 1993-	MOH
12.	School Feeding	MOE
13.	SSRP Work Plan for 1995/96	MOE
14.	Lesotho Highlands Water Project	DWA
15.	Application Form for Borehole Drilling	DWA
16.	Oraganization Chart of DWA	DWA
17.	Recurrent Estimates, Programme GWD, 1995/96	DWA
18.	Capital Estimates, Programme GWD, 1995/96	DWA
19.	Water Resources Action Plan, 1994	DWA
20.	Drought Relief Well Construction Project, 1994	MOLISV/DWA
21.	Meteorological Data, to Dec. 1970	DWA
22.	Department of Water Affairs, 1991	DWA
23.	Maseru Water Supply Project, Phase II Project- Stage II	WASA
24.	Water Source Capacities	WASA
25.	The National Data Base on Rural Water Supply, 1993	VWSS
26.	Women and Children in Lethotho -Draft-	UNICEF
26.	A Note on Drilling Contract Number Four	UNCDF
27.	Village Water Suply (Phase II) - Mission Report -Summary	UNDP
28.	Report on Exploration Mission to Swaziland and Lesotho on Water Sector Assessment, 1994	UNDP
29.	Minutes of Rural Water supply Sector Donor Meeting, 1993	UNDP
30.	Final Report for Contract No.1, No.3, No.4	UNDP
31.	Invitation for Quoation for Contract, Phase II, No.2, No.3, No.4	UNDP
32.	On Going Project of Water and Sanitation Sector, Summary Table	UNDP
32.	Education Sector Development Plan 1991/92-1995/96	MOE
33.	Interim Evaluation Summary Report on Project LESOTHO 3853	WFP
34.	Project Lesotho 3853(Exp.1), Food assistance to Primary Schools	WFP
35.	CANADA Fund, End of Project Report	Canadian High Commission

Maps

36.	Lesotho Map Ctalogue	Department of Land Survey
37.	Map of Lesotho 1/250,000	Department of Land Survey
38.	Satellite Image Map of Lesotho 1/250,000	Department of Land Survey
39.	Topographic Maps in the Project Area 1/50,000	Department of Land Survey
40.	Hydrogeological Map of Lesotho, 1/300,000, 1994	DWA/MOLISV
41.	Geological Map 1/250,000, South and North Sheet	Department of Mines and Geology
42.	Geological Maps of the Project Area 1/50,000 and 1/100,000	Department of Mines and Geology