

# **HONG KONG RAINFALL AND LANDSLIDES IN 1993**

**GEO REPORT No. 43**

**W.L. Chan**

**GEOTECHNICAL ENGINEERING OFFICE  
CIVIL ENGINEERING DEPARTMENT  
HONG KONG**

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## PREFACE

In keeping with our policy of releasing information of general technical interest, we make available some of our internal reports in a series of publications termed the GEO Report series. The reports in this series, of which this is one, are selected from a wide range of reports produced by the staff of the Office and our consultants.

Copies of GEO Reports have previously been made available free of charge in limited numbers. The demand for the reports in this series has increased greatly, necessitating new arrangements for supply. Henceforward a charge will be made to cover the cost of printing.

The Geotechnical Engineering Office also publishes guidance documents and presents the results of research work of general interest in GEO Publications. These publications and the GEO Reports may be obtained from the Government's Information Services Department. Information on how to purchase these publications is given on the last page of this report.

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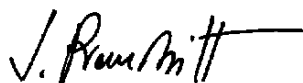
A. W. Malone  
Principal Government Geotechnical Engineer  
June 1995



## FOREWORD

This report presents a review of the rainfall and landslides in Hong Kong in 1993. Geotechnical engineers of the District Divisions of the Geotechnical Engineering Office provided details of the notable landslides. Supplementary landslide data were provided by the Agriculture and Fisheries Department, Architectural Services Department, Drainage Services Department, Fire Services Department, Highways Department, Housing Department and Water Supplies Department. The Royal Observatory provided rainfall information. All contributions are gratefully acknowledged.

The report was compiled by Ms W.L. Chan under the supervision initially of Dr J. Premchitt and later Mr H.N. Wong.

A handwritten signature in black ink, appearing to read 'J. Premchitt', with a long horizontal stroke extending to the right.

(J. Premchitt)

Acting Chief Geotechnical Engineer/Special Projects

### ABSTRACT

This report reviews the rainfall and landslides in Hong Kong throughout 1993. Rainfall information has been obtained from the Geotechnical Engineering Office (GEO) automatic raingauge system and from the Royal Observatory (RO). Most of the landslide data have been taken from the records of incidents reported to the GEO during the year. Supplementary data have been obtained from other Government departments.

The annual rainfall in 1993 was about 6% higher than average. A total of 835 landslide incidents was reported to the GEO, and many of them occurred during periods of heavy rainfall in June, September and November.

The landslides resulted in one fatality and injuries to six people.

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## 1. INTRODUCTION

This report reviews rainfall and landslide occurrence in Hong Kong throughout 1993. Rainfall information has been obtained from the Geotechnical Engineering Office (GEO) automatic raingauge system and from the Royal Observatory (RO). Most of the landslide data have been taken from the records of incidents reported to the GEO during the year. Supplementary data have been obtained from other Government departments. Only landslides reported the GEO are analyzed and described in details in this report, since these were inspected by the geotechnical engineers of the GEO and detailed information is available.

In this report, a landslide is defined as the collapse of a soil or rock mass, and includes the failure of fill slopes, cut slopes, natural slopes, retaining structures and rock or boulder falls. A 'major' landslide is defined as a failure in which the volume of the collapsed mass exceeds 50 m<sup>3</sup> or fatalities are involved.

The GEO received a total of 835 incident reports in 1993. Of these, 827 were classified as genuine landslides and 93 of them were major. The remaining incidents included minor ground or structural movements, flooding and fallen trees, and were of little geotechnical concern. It is notable that many of the landslide incidents were reported to have occurred during four heaviest rainstorms; namely nineteen incidents between 10 and 11 June, 108 between 15 and 16 June, 108 between 24 and 26 September and 377 between 4 and 5 November.

The arrangement of this report is similar to the previous annual rainfall-landslide reports (Premchitt, 1991a-1991e; Siu, 1991; Tang, 1992; Evans, 1992 and Chen, 1993). This report reviews rainfall and landslide occurrences throughout the whole year rather than emphasising any one specific rainstorm. Information has been compiled from many sources throughout the government. A separate report on the landslips occurred in Lantau Island during the 4 and 5 November rainstorm (Wong & Ho, 1994) is under preparation in view of the uncommonly high intensity of rainfall and the large number of landslides that occurred in Lantau Island.

## 2. RAINFALL

### 2.1 The Raingauge System

In the rugged terrain of Hong Kong, the distribution and intensity of rainfall during a storm can vary dramatically with respect to both geography and time. In order to provide sufficient coverage for a meaningful analysis of rainfall distribution, the RO has installed a network of raingauges which, in 1993, comprised 21 automatic and 104 manual raingauges at a total of 82 locations. These raingauges range from those with a detailed automatic and instantaneous rate-of-rainfall recorder to raingauges which are read manually once every month. A 'principal' raingauge is located at the RO's headquarters in Tsim Sha Tsui, and a continuous rainfall record has been kept at this location since 1884. Weather summaries and rainfall statistics are normally based on the measurements made at this principal location.

Since 1978, the GEO, in cooperation with the RO, has installed a number of automatic raingauges which transmit current rainfall data via telephone lines to the GEO's Emergency

Control Headquarters. Improvements have been made regularly. At the end of 1993, this system comprised 48 GEO automatic raingauges in addition to the 21 RO raingauges. The raingauges provide up-to-date rainfall data every five minutes to the GEO and RO. These data are also stored on computer tape and diskettes for future reference. The locations of these automatic raingauges (Figure 1) were selected to supplement the network of other types of raingauges and to provide specific information in areas of particular geotechnical interest.

In this report, where a comparison is being made for 'daily' rainfalls, the 24-hour maximum rainfall will be used instead of daily rainfall, since the latter is based on an arbitrary fixed period of midnight to midnight which does not necessarily represent the maximum rainfall over a 24-hour period. In addition, when a rainfall amount is quoted without reference to the location of measurement, this refers to the amount recorded at the RO headquarters.

## 2.2 Royal Observatory Records

The year's weather for 1993 was summarised by the RO in the Weather Summary for 1993. Their comments on rainfall are as follows:

"1993 was an eventful year in terms of weather. Extremes in seasonal temperature variations were marked by a prolonged cold spell in January and an unusually hot and dry summer in July and August. In a year of frequent tropical cyclone activity, the No. 8 Gale or Storm signals were hoisted four times, just one short of the record set in 1964. The rather long typhoon season spanned from late June to early November. Apart from seasonal monsoon rain in June, there were also severe rainstorms occurring with the passage of tropical cyclones, most notably during Dot in September and Ira in November. The total rainfall in 1993 amounted to 2343.9 millimetres, six per cent above the annual mean of 2214.3 millimetres.

"[ In January ] ... The monthly rainfall of 33.5 millimetres was 43 per cent above the January normal of 23.4 millimetres.

"[ In February ] ... The monthly rainfall of 1.0 millimetre was only about two per cent of the February normal of 48.0 millimetres, making it the seventh driest February on record.

"[ In March ] ... The first thunderstorm of the year occurred on 16 March. However, the monthly rainfall of 49.0 millimetres fell short of the March normal of 66.9 millimetres by 27 per cent.

"[ In April ] ... Although rain was recorded at the Royal Observatory for 23 days in the month, the monthly rainfall of 136.3 millimetres was still 16 per cent below the April normal of 161.5 millimetres.

"The weather in May was typical of the season in both temperature and precipitation. Most of the rain was associated with monsoon troughs which affected the south China coastal areas from time to time. The monthly rainfall was 338.4 millimetres, seven per cent above the normal of 316.7 millimetres for May.

"With moist southwest monsoon and the presence of active troughs near the south China coast, June was cloudier than normal and unusually humid ... The Torrential downpours on 11 and 16 June caused widespread flooding in the urban areas, necessitating the issuance of Red Rainstorm Warnings on both occasions and also the Black Rainstorm Warning in the latter case... With only one rain-free day in the month, the monthly total rainfall of 485.2 millimetres was 29 per cent above the June normal of 376.0 millimetres.

"[ In July ] ... Overall it was a relatively dry month despite more than 100 millimetres of rain during the passage of Severe Tropical Storm Lewis. The monthly rainfall of 213.7 millimetres was 34 per cent below the July normal of 323.5 millimetres.

"The very hot and dry conditions continued into August ... The monthly rainfall amounted to 182.8 millimetres only, less than half of the August normal of 391.4 millimetres. This was despite the stormy weather brought by Typhoon Tasha on 20 August when the No. 8 Gale or Storm signal was hoisted for the second time in the year.

"Then came three typhoons in quick succession within a fortnight in September. Becky and Dot necessitated the hoisting of the No. 8 Gale or Storm signals on 17 and 26 September respectively. The 223.9 millimetres of rain brought by Dot on 26 September was the third highest daily amount on record for September. By early next morning, the northern part of the New Territories was inundated with flood water as deep as seven metres in some areas. With a monthly rainfall of 655.9 millimetres, more than twice the September normal of 299.7 millimetres. September 1993 became the fifth wettest September on record.

"October was much drier ... The monthly rainfall of 87.8 millimetres was 39 per cent below the October normal of 144.8 millimetres.

"November was unusually cloudy and humid. The monthly rainfall of 144.6 millimetres, more than four times the November normal of 35.1 millimetres, and ... The most significant weather event was the late-season passage of Typhoon Ira early in the month. Rain associated with Ira was quite exceptional as intense convection embedded within one of its trailing rainbands brought concentrated heavy rain of more than 700 millimetres to the western part of the territory on 4 and 5 November. There were extensive landslides in Lantau and widespread flooding in Tuen Mun and Yuen Long. An inundated water treatment plant in Tuen Mun and a burst of water mains in Cheung Chau resulted in these areas having no fresh water supply for a period of four days...

"[ In December ] ... it was rather dry. The monthly rainfall of 15.7 millimetres was 42 per cent below the December normal of 27.3 millimetres ..."

A summary of heavy rainstorms and resulting landslides in 1993 is given in Table 1. This Table shows all periods (mutually exclusive) in which the 24-hour rainfall at the RO exceeded 50 mm. The four-day and fifteen-day antecedent rainfalls which occurred prior to these 24-hour periods are also shown in the Table. The five heaviest 24-hour period rainfalls

in 1993 are 10 to 11 June (144 mm), 15 to 16 June (155 mm), 24 to 25 September (123 mm), 26 September (224 mm) and 4 to 5 November (107 mm). Two of the above were recorded in the rainstorm between 24 and 26 September. Apart from the 28 incidents on 27 September, (24-hour rainfall: 37.9 mm), landslide incidents were reported to have occurred on 47 other occasions in 1993. On these 47 occasions, which are not listed in Table 1, no more than seven incidents were reported to have occurred on any one day.

The rainfall data as recorded at the RO, Tsim Sha Tsui, are presented in Figures 2 to 9. Cumulative rainfall since 1 January is shown in Figure 2. Daily and monthly rainfalls are shown in Figures 3 and 4 respectively. Figures 5 to 9 show the hourly rainfalls for the five highest 24-hour rainfalls of 1993.

### 2.3 Geotechnical Engineering Office Records

Rainfall data are also available from 48 GEO automatic raingauges. The rainfall data are kept in the Civil Engineering Library.

The maximum 24-hour, five-hour and one-hour rainfalls recorded by the GEO raingauges during the heavy rainstorms in 1993 are given in Table 1.

For the rainstorm of 4 and 5 November, the highest 24-hour rainfall recorded by the GEO raingauges was 742 mm, which about seven times of that recorded at the RO.

The maximum one-hour rainfall was 117 mm recorded on 1 May.

Appendix B shows hourly rainfall data recorded by the GEO raingauges for the five heaviest 24-hour rainstorms, i.e. during 10 to 11 June, 15 to 16 June, 24 to 25 September, 26 September and 4 to 5 November.

### 2.4 Rainfall Distribution

Rainfall distribution with time and location can be assessed by referring to detailed GEO and RO records.

The isohyets of 24-hour rainfalls, produced by the RO, are shown in Figures 10 to 14 for the five heaviest rainstorms of 1993. The locations of landslides occurred during the rainstorms are also marked on these Figures. It can be seen that there is generally a direct correlation between the locations of reported landslide incidents and areas of high rainfall intensity.

### 2.5 Warnings Issued by the Royal Observatory

Relevant warnings issued by the RO, and Landslip Warnings jointly issued by the GEO and the RO, are summarised in Table 2.

In 1993 there were 77 days on which Thunderstorm Warnings were issued and 25 days



on which Flood Warnings were issued. Nine Tropical Storm Warnings were also issued. The highest Tropical Storm Warning signal number hoisted during the year was No. 8, which was issued on four occasions in June, August and September during the passage of Severe Tropical Storm Koryn (26 to 28 June), Storm Tasha (18 to 21 August), Storm Becky (16 to 17 September) and Storm Dot (25 to 26 September). The No. 3 signal was issued on one other occasion from 2 to 5 November. All Tropical Storm Warnings were issued in the period between 26 June and 5 November. A Red Rainstorm Warnings were issued on 11 June, and both the Red and the Black Rainstorm Warnings were issued on 16 June.

Four Landslip Warnings were issued in 1993 (at 15:15 hrs on 11 June, at 12:00 hrs on 16 June, at 14:50 hrs on 25 September and at 05:50 hrs on 5 November) on the basis of predetermined rainfall criteria, after consultation between the GEO and the RO. A comparison of rainstorm damage during these events with those on all other notable rainfall-landslide days is shown in Table 1.

Twenty landslide incidents were reported to have occurred on 11 and 12 June. The times of occurrence are recorded to within one hour for thirteen of the incidents. Of these thirteen incidents, six occurred before the Landslip Warning was issued at 15:15 hrs on 11 June, with the rest occurring after this time on 11 and 12 June. The Landslip Warning was effective until 08:15 hrs on 12 June.

Of the 113 landslide incidents known to have occurred on 16 and 17 June. The times of occurrence are known to within one hour for 23 incidents. Of these 23 incidents, ten occurred before the Landslip Warning was issued at 12:00 hrs on 16 June, with the rest occurring after this time on 16 and 17 June. The Landslip Warning ceased to be effective after 11:50 hrs on 17 June.

Of the 135 incidents reported to have occurred during 25 to 27 September. The times of occurrence of 33 of them are recorded to within one hour. Of these 33 incidents, one occurred before the Landslip Warning was issued at 14:50 hrs on 25 September and the rest occurred afterwards. This Landslip Warning cancelled at 12:30 hrs on 27 September.

A total of 377 incidents were reported to have occurred on 4 and 5 November. The times of occurrence of 81 of them are known. Of these 81 incidents, four occurred before the Landslip Warning was issued at 05:50 hrs on 5 November and the rest occurred afterwards. This Landslip Warning was effective until 14:05 hrs on the same day.

## 2.6 Comparison with Past Rainstorms

The maximum rainfall intensities for different durations recorded at the GEO and RO raingauges for heavy rainstorms in 1993 are shown in Table 1. These are compared with the three major rainstorms (May 1982, May 1989 and May 1992) recorded since 1982. The highest 24-hour rainfall recorded at the RO in 1993 was less than those recorded in the three major rainstorms. However, the highest 24-hour rainfall recorded in 1993 in the Territory, i.e. 742 mm at GEO raingauge No. 17, far exceeded those recorded in the three previous rainstorms. The area coverage of this high intensity rain was mainly concentrated on Lantau Island. The estimated returned period of this 24-hour rainfall was of the order of 100 years.

The return periods of heavy rainstorms in 1993 were estimated for rainfall durations of one-hour to fifteen-days at the RO (Table 3). The estimated return periods range from 2 years to 6 years.

In Figure 2, the cumulative rainfall for 1993 is shown in comparison with the average (1961-1990), the wettest year (1982) and the driest year (1963) since records began in 1884. The annual cumulative rainfall was 2343.9 mm, which is 6% above the average annual amount of 2214.3 mm. The cumulative rainfall was slightly higher than the mean cumulative rainfall for the whole year. Figure 4 shows monthly rainfalls in 1993 in comparison with the recorded maximum (since 1884) and mean (1961-1990) monthly rainfalls. Monthly rainfalls for five months of the year were above the mean monthly rainfall. The monthly rainfalls in September and November were more than two and four times their corresponding mean values. In February, July, August, October and December the monthly rainfalls were substantially lower (less than 34%) than the monthly average.

### 3. LANDSLIDES

#### 3.1 Landslide Occurrence in 1993

The numbers of incidents reported to various Government departments in 1993 are shown in Table 4.

A list containing details of all 835 incidents reported to the GEO is given in Appendix A. Eight of them were of no geotechnical concern as they were incidents of flooding, fallen tree etc. The eight incidents were therefore ignored in the statistical analysis below. In total, 827 incidents were considered to be of geotechnical concern. A location map for all the reported incidents is shown in Drawing No. GCSP 8/13. Selected incidents are illustrated in Plates 1 to 32. Details of these incidents are given in the incident files of the District Divisions of the GEO. The locations of the landslides are also marked in the 1:5000 incident location maps kept in the Civil Engineering Library.

Wherever possible, the dates and times of the landslides were assessed by the geotechnical engineers during site inspection. Some incidents were not reported for several days or weeks. For these, it was difficult to determine the exact time of occurrence. Out of the 827 reported incidents, the time of occurrence was recorded to within one day for 726 incidents. The daily numbers of these incidents are plotted in Figure 3. Of these 726 incidents, the time of occurrence was determined to within one hour for 181 incidents.

The highest numbers of reported landslide incidents in a single 24-hour period were 377 during the 4 and 5 November rainstorm, 108 during 15 and 16 June, and 104 on 26 September. These events are included in Table 1, where the number of incidents reported in the newspapers and by the Fire Services Department are also shown for comparison.

Based on the inspection reports by the GEO, there were 225 landslide incidents in 1993 in which the failure was associated with poor maintenance. Of these 225 events, 22 incidents occurred on 15 to 16 June, nineteen on 26 September and 133 during 4 to 5 November rainstorm. This amounted to about 27% of all the reported landslide incidents in 1993.

There were other landslides which were not included in the GEO's incident reports, such as failures in remote areas, open spaces and construction sites where the consequence of failure is of little concern. For instance, it were estimated that about 800 natural slope failures occurred on Lantau Island during the 4 and 5 November rainstorm, and the majority of which were not reported to the GEO. This should be borne in mind when reading the following landslide statistics.

### 3.2 Areas Affected by Incidents

The numbers of incidents affecting various types of area (building lot, road etc) in Hong Kong, Kowloon and the New Territories are shown in Table 5. The number of major failures affecting different types of areas is also given in this Table. There were, in total, 93 major landslides in 1993. Landslide consequences, classified according to failure type, are shown in Table 6.

#### 3.2.1 Squatter Areas

A total of 96 incidents affected squatter areas. Of these, nine occurred on Hong Kong Island, six in Kowloon and 81 in the New Territories. There were two major failures which affected squatter areas (ME 5/7 and ME 9/18).

The failures which affected squatter areas led to the permanent evacuation of 151 squatter huts and the temporary evacuation of 53 huts in total (Table 6). Most of these evacuations resulted from failures of natural and soil cut slopes. A number of evacuations were also caused by retaining wall failures and rock or boulder falls. Examples of failures which affected squatter areas are shown in Plates 4, 15, 18 and 19, and incident ME 9/18 (Plates 18 and 19) is discussed in Section 4.4.

Failures tend to occur in squatter areas due to indiscriminate cutting and filling on steep hillsides. Uncontrolled leakage and discharge from water supply, sewage and stormwater pipes would also adversely affect slope stability in these areas.

#### 3.2.2 Building Lots

There were 91 incidents affecting building lots and private properties, ten of which were major (HK 9/28, K 9/12, ME 6/13, ME 6/21, ME 10/18, MW 9/9, MW 11/4, MW 11/48, MW SP/258 and MW SP/274). Examples of these incidents are shown in Plates 13, 21, 22, 25, 26, 27 and 31. Incidents MW 9/9 (Plates 21 and 22), K 9/12 and MW 11/4 (Plates 25 and 26) are discussed in Sections 4.5, 4.7 and 4.9 of this report correspondingly. Incidents in this category resulted in the temporary evacuation of eight buildings, 24 houses and 23 apartments in part or in total (Table 6).

#### 3.2.3 Roads and Access

A total of 434 incidents affected roads and access, including footpaths and pedestrian

pavements and walkways. Examples of these failures are shown in Plates 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 17, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31 and 32. Sixty-four of these incidents were major (HK 6/3, HK 6/4, HK 6/9, HK 6/14, HK 6/19, HK 9/6, HK 9/10, K 9/2, ME 3/1, ME 5/7, ME 6/11, ME 6/12, ME 6/13, ME 6/19, ME 9/3, ME 9/4, ME 9/5, ME 9/11, ME 9/12, ME 9/20, ME 9/21, ME 9/22, ME 9/37, ME 9/45, ME 9/52, ME 10/15, MW 5/13, MW 6/14, MW 6/18, MW 6/21, MW 6/53, MW 9/9, MW 9/19, MW 11/4, MW 11/72, MW SP/2, MW SP/21, MW SP/28, MW SP/29, MW SP/31, MW SP/32, MW SP/33, MW SP/36, MW SP/78, MW SP/84, MW SP/92, MW SP/116, MW SP/133, MW SP/134, MW SP/135, MW SP/184, MW SP/192, MW SP/199, MW SP/201, MW SP/204, MW SP/208, MW SP/218, MW SP/219, MW SP/223, MW SP/232, MW SP/233, MW SP/257, MW SP/258 and MW SP/273). Six incidents, MW 6/14, MW 6/53, MW 9/9, K 9/2, MW 9/19 and MW 11/4 are discussed in Sections 4.1, 4.2, 4.5, 4.6, 4.8 and 4.9 of this report.

#### 3.2.4 Construction Sites

There were eight incidents affecting construction sites of which two were major. The two major incidents are HK 9/6 (Plate 12) and MW 9/19 (Plates 23 and 24). Incident MW 9/19 is discussed in Section 4.8 of this report.

#### 3.2.5 Catchwaters and Reservoirs

Incidents affecting catchwaters and reservoirs were dealt with separately by the Water Supplies Department. There were 100 reported cases of slope failure which affected catchwaters and culverts, nineteen of which were major. The nineteen major cases are MW SP/130, MW SP/162, MW SP/170, MW SP/177, MW SP/181, MW SP/203, MW SP/209, MW SP/211, MW SP/212, MW SP/213, MW SP/215, MW SP/216, MW SP/218, MW SP/219, MW SP/232, MW SP/238, MW SP/249, MW SP/257 and MW SP/259. All of the cases took place in the New Territories. An example of these failures is shown in Plate 32.

#### 3.2.6 Country Parks and Open Areas

A total of 140 incidents affecting country parks, open areas, car parks and playgrounds was reported directly to the GEO, eleven of which were major (K 9/2, K 9/17, K 9/21, ME 6/17, ME 6/34, MW 6/14, MW 6/18, MW 11/4, MW SP/50, MW SP/67 and MW SP/139). Four incidents, MW 6/14 (Plates 7 and 8), K 9/17 (Plate 16), K 9/2 (Plate 14) and MW 11/4 (Plates 25 and 26) are discussed in Sections 4.1, 4.3, 4.6 and 4.9 of this report. Other examples of these failures are shown in Plates 9 and 10.

### 3.3 Types of Incidents

The incidents inspected by the GEO have been classified into six types of failure, i.e. fill slopes, cut slopes, natural slopes, retaining walls, rock or boulder falls and others. The number of each type is shown in Table 7.

### 3.3.1 Fill Slopes

There were 38 fill slope failures, forming 4.6% of all landslide incidents reported. Ten of these failures were major, viz. incidents HK 6/3, HK 6/4 (Plates 1 and 2), HK 6/14, HK 6/19, MW 5/13, MW 6/53 (Plate 11), MW 9/19 (Plates 23 and 24), MW 11/72, MW SP/31 and MW SP/273 (Plate 32).

### 3.3.2 Cut Slopes

There were 617 cut slope failures, forming 74.6% of all landslide incidents reported. These failures were classified further according to types of material, i.e. soil, soil/rock and rock cut slope failures (Tables 6 and 7).

There were 550 reported incidents in soil cut slopes, 63 of which were major (HK 6/9, HK 9/10, HK 9/28, K 9/2, K 9/12, K 9/21, ME 3/1, ME 5/7, ME 6/12, MW 6/17, ME 6/21, ME 6/34, ME 9/3, ME 9/4, ME 9/5, ME 9/11, ME 9/12, ME 9/20, ME 9/22, ME 9/37, ME 9/45, ME 9/52, ME 10/18, MW 6/21, MW 11/4, MW SP/2, MW SP/21, MW SP/28, MW SP/29, MW SP/33, MW SP/36, MW SP/50, MW SP/67, MW SP/78, MW SP/84, MW SP/92, MW SP/116, MW SP/130, MW SP/133, MW SP/134, MW SP/139, MW SP/162, MW SP/170, MW SP/177, MW SP/181, MW SP/184, MW SP/192, MW SP/199, MW SP/208, MW SP/209, MW SP/211, MW SP/212, MW SP/213, MW SP/215, MW SP/216, MW SP/218, MW SP/219, MW SP/223, MW SP/233, MW SP/238, MW SP/249, MW SP/257 and MW SP/259). Examples are shown in Plates 6, 13, 14, 20, 25 and 26.

There were 61 soil/rock cut slope failures reported, six of which were major (ME 6/11, ME 6/19, ME 9/21, MW 6/14, MW 9/9 and MW SP/232). Failures of this type are shown in Plates 5, 7, 8, 21 and 22.

Six failures in rock cut slopes were reported, two (HK 9/6 and K 9/17) of which were major. Failures of this type are shown in Plates 12 and 16.

### 3.3.3 Retaining Walls

There were 25 reported incidents related to retaining walls or walls having earth materials piled up behind them, forming 3.0% of all incidents reported. None of these failures were major. Examples of this type of failure are shown in Plates 17 and 27.

### 3.3.4 Natural Slopes

Ninety four natural slope failures were reported, forming 11.4% of all incidents. Eleven of these failures were major: Incidents ME 9/18 (Plates 18 and 19), ME 10/15, MW 6/18 (Plates 9 and 10), MW 11/48, MW SP/32 (Plates 28 and 29), MW SP/135, MW SP/201 (Plate 30), MW SP/203, MW SP/204, MW SP/258 (Plate 31) and MW SP/274. Plate 4 also shows a failure of this type.

### 3.3.5 Rock and Boulder Falls

There were 41 cases of rock and boulder falls, forming 5.0% of all landslide incidents reported. None of these failures was major. Example of failures of this type is shown in Plate 15.

### 3.3.6 Other Failures

There are twelve incidents which cannot be classified according to the above categories, e.g. those due to subsidence etc., forming 1.4% of all reported landslide incidents. One of them was major (Incident ME 6/13). Plate 3 is an example of this category of incidents.

### 3.4 Landslide Size Distribution

Table 8 shows the distribution of landslide size for all landslide incidents which were reported to the GEO. The approximate landslide size was recorded for 808 out of the total of 827 reported landslides. Of the landslides for which the size was recorded, 290 (about 35%) incidents involved less than 5 m<sup>3</sup> of material. About 11% of the reported landslide involved a failure volume of 50 m<sup>3</sup> or above.

### 3.5 Rainfall-Landslide Relationships

The relationship between rainfall and landslides in 1993 can be seen from the plot of daily rainfall and daily number of landslide in Figure 3. The majority of recorded landslides occurred at times of heavy rainfall. The geographical distribution of rainfall had a considerable influence on the occurrence of landslides in various areas. Figures 10 to 14 show the location of landslides for which dates of occurrence are known (see Section 3.1), imposed on the 24-hour rainfall maps for the corresponding time period for the events on 10 and 11 June, 15 and 16 June, 24 and 25 September, 26 September and 4 and 5 November. These figures indicate that about 95 % of the landslides that could be related to one of these events occurred in areas where 100 mm or more of rainfall were recorded in 24 hours, with 51 % of these incidents occurring in areas where the 24 hour rainfall was 200 mm or more. Further details on the relationship between rainfall and landslides in Hong Kong can be found in Brand et al (1984) and Premchitt (1991, 1994).

## 4. NOTABLE INCIDENTS

Out of the 835 incidents reported to the GEO, nine are discussed in more detail in this section and are presented in chronological order. The nature of the incident is referenced under the caption for each incident. These incidents have been selected mainly on the basis of size, consequence and technical interest.

4.1 Incident MW 6/14, Cheung Shan Estate Bus Terminus, Tsuen Wan

(Date : 16 June 1993. Major failure of a soil/rock cut slope resulting in one fatality and injuries to five people. Plates 7 and 8.)

On 16 June, a landslide occurred suddenly at about 12:25 hrs at the crest of a soil/rock cut slope (No. 7SW-C/C128) adjacent to Cheung Shan Estate bus terminus, Kwai Chung, New Territories. At the time of the landslide, a double-decker bus was parked at a bus shelter in front of the cut slope. The landslide debris first hit a temporary shed at the foot of the slope and then slid towards the bus. Debris with thicknesses ranging from 0.5 metre to 2 m was trapped in the space enclosed by the bus, the cut slope and an adjacent bus regulator's kiosk. Six persons were partially or wholly buried by the debris. A woman at the bus shelter was fatally injured and the other five people were also injured. The slipped material bulked to about 50 m<sup>3</sup> of debris. The landslide was likely to be caused by the development of 'perched water' in the very loose colluvium due to the intense rainfall on 16 June. Possible overflow of water from a partially silted U-channel along the crest of the cut slope could have also contributed to the landslide.

4.2 Incident MW 6/53, Chainage 4680, Section H & I, Tai Lam Chung Catchwater, Tai Lam Chung

(Date : 16 June 1993. Major failure of a fill slope resulting in temporary closure of Castle Peak Road. Plate 11.)

The failure occurred at about 16:20 hrs on 16 June after intense rainfall on the same day. The landslide occurred at a fill slope along an access road within the Tai Lam Chung catchwater. The failure volume was about 1000 m<sup>3</sup>. The slipped materials travelled some 200 m down to Castle Peak Road. This resulted in the blockage of Castle Peak Road. The failure was probably caused by prolonged rainfall and water infiltration.

4.3 Incident K 9/17, Hui Ming Street, Sau Mau Ping

(Date : 26 September 1993. Major failure of a rock cut slope resulting in closure of two tennis courts. Plate 16.)

At about 18:00 hrs on 26 September, a failure occurred in a rock cut slope (No. 11NE-D/C-45) adjacent to two tennis courts, near Hui Ming Street, Sau Mau Ping, Kwun Tong. The portion of slope failed was located at about 10 m above the ground and the failure scar covered an area of about 12 m by 4 m. The fallen material bulked to about 200 m<sup>3</sup> debris. This resulted in closure and fenced-off of the tennis courts. The probable cause of the failure was mainly due to infiltration and possibly the blockage of inaccessible drainage channels as a result of lack of maintenance.

4.4 Incident ME 9/18, Miu Keng, Tai Tong Wu, Sha Tau Kok

(Date : 26 September 1993. Major failure of a natural slope resulting in permanent evacuation of three huts. Plates 18 and 19.)

The failure occurred on 26 September after intense rainfall during the previous few days. The natural slope was located behind the huts RTP/TTW/190-192 of Miu Keng, Tai

Tong Wu, Sha Tau Kok. The portion of slope that failed was about 30 m high. The debris damaged and pushed a chicken shed forward by 4 m. Some of the debris also run into huts at the slope toe. As a result, three huts were permanently evacuated. The slipped materials amounted to 300 m<sup>3</sup>. The cause of the failure was mainly due to erosion.

**4.5 Incident MW 9/9, Block F, Allway Gardens, Tsuen Wan**

(Date : 27 September 1993. Major failure of a soil/rock cut slope resulting in the temporary evacuation of 24 flats and the damage of a gas main. Plates 21 and 22.)

The failure occurred at about 5:45 hrs on 27 September after the prolonged rainfall during the period between 23 and 27 September. The landslide occurred at the fourth batter of a soil/rock cut slope (No. 6SE-D/CR87) near Block F of Allway Gardens, Tsuen Wan. The whole cut slope was about 45 m high and was covered with chunam. The failure scar covered an area of about 10 m by 16 m. Part of the landslide debris entered two flats of Block F at Allway Gardens. Twenty-four flats in Block F were immediately evacuated. Among the flats affected, closure orders were subsequently served to fifteen flats. None was reported to have been injured in the incident. The debris also covered an area of about 50 m<sup>2</sup> on On Yat Street. The slipped material was estimated to be about 200 to 250 m<sup>3</sup> in volume. Gas leakage from a gas main ruptured in the landslide was also reported. The failure was likely the result of prolonged rainfall and the presence of pre-existing tension cracks and relict joints in the soil.

**4.6 Incident K 9/2, Jat's Incline, Fei Ngo Shan Road, Kowloon Peak**

(Date : 27 September 1993. Major failure of a soil cut slope and a minor rubble wall resulting in the closure of a road. Plate 14.)

The landslide occurred on 27 September in a soil cut slope within the country park near Jat's Incline, Fei Ngo Shan Road, Kowloon Peak. A minor rubble wall, part way up the slope, was also destroyed during the landslide. The landslide involved mainly colluvium. The scar of the failure was about 30 m by 30 m. The debris blocked the country park road. The failure volume was about 1000 m<sup>3</sup>. The failure was probably due to prolonged rainfall and water infiltration as well as the blockage of drains resulted from lack of maintenance.

**4.7 Incident K 9/12, Fung Shing Street, Hammer Hill, Ngau Chi Wan**

(Date : 27 September 1993. Major failure of a soil cut/natural slope resulting in the damage of a building and exposure of a 600 mm diameter gas main.)

The failure occurred on 27 September after persistent rainfall during the period between 23 and 27 September. The landslide occurred at a soil cut/natural slope behind Ka Woo Film Studios, Fung Shing Street, Hammer Hill. Before the landslide, the whole slope was covered with dense vegetation. The portion of slope that failed was about 15 m high and the failure scar covered an area of about 15 m by 25 m. The volume of the slipped material was about 750 m<sup>3</sup>. The landslide debris damaged a storage building of the film studios at the slope toe. The building was permanently evacuated by the owner and later demolished. The landslide also exposed a 600 mm diameter gas main on the failure scar of the slope. Immediate remedial works was carried out to support the gas main. A footpath at the top of the failed



slope was also closed. The failure was probably caused by infiltration and rise in groundwater, although the installation of the gas pipe itself within the previous two years may have contributed to the failure.

4.8 Incident MW 9/19, Cornwall Street Temporary Housing Area, Lung Cheung Road, Kowloon Tong

(Date : 27 September 1993. Major failure of a fill/soil cut slope resulting in the closure of a road. Plates 23 and 24.)

In the early hours of the morning of 27 September, a 30 m high slope (No. 11NW-B/C146 & F33) below Lung Cheung Road flanking the vacated Cornwall Street Temporary Housing Area (THA) failed and debris was deposited on three platforms of the THA. The upper part of the landslide was sited within an area of fill, with the bulk of the failure through an over-steepened cut slope in weathered granite. Part of the pedestrian pavement of Lung Cheung Road collapsed in the landslide. A salt water main located beneath the pedestrian pavement and a branch of the fresh water main connecting to a water tank at the top of the slope ruptured. The failure resulted in temporary closure of the nearside westbound lanes of Lung Cheung Road. The THA was cleared about two months prior to the failure with demolition nearing completion. None was injured in the incident. The failure volume was about 2600 m<sup>3</sup>. The most probable cause of the failure was the presence of an oversteepened slope of marginal stability subjected to the build-up of pore water pressure, due to the possible flow along old streamcourses located in close proximity to the failed section and/or surface infiltration near the slope crest or through cracked chunam.

4.9 Incident MW 11/4, Alpine Garden, Tuen Mun

(Date : 5 November 1993. Severe flooding in Alpine Garden and major erosion of soil cut slopes severely affecting the traffic flow of two roads. Plates 25 and 26.)

At about 6:00 hrs on 5 November, a large volume of muddy water was seen gushing into Alpine Garden from adjacent cut slopes causing major erosion of two slopes to the east of the area and severe flooding at Alpine Garden. The total volume of debris from the eroded slopes was about 500 to 1000 m<sup>3</sup>. About 300 m<sup>3</sup> of debris was washed onto the podium of Alpine Garden. The debris and flooding also severely affected the traffic flow in Fu Fat Lane, Castle Peak Road and Chi Lok Fa Yuen. Most of the muddy water was probably discharged from an overflow weir at the Tai Lam Chung catchwater at a location east of Alpine Garden. The cause of the overflow was probably due to the heavy rainfall and partial blockage of the catchwater.

## 5. CONCLUSIONS

Rainfall during 1993 was moderate for whole of the year and the annual rainfall was 6% higher than average. The intense rainfalls in September and November were sharply contrasted by the very dry weather during July, August and October of the year.

Four Landslip Warnings were issued in 1993, during the heavy rainstorms of 11 and 12 June, 16 and 17 June, 25 to 27 September and 5 November. There were 835 landslide

incidents reported to the GEO during the year. Six injuries and one fatality occurred due to two of these landslides. Damages resulting from the landslide incidents included: 204 squatter huts were evacuated (53 temporarily and 151 permanently), seven buildings were temporarily evacuated and 225 sections of road, pedestrian pavement and access were blocked.

The large number of landslides in 1993 can be directly related to the high rainfall in June, September and November. Over one-fourth of the landslides were judged to be related to poor slope maintenance.

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Table 1 - Rainfall-Landslide Events in 1993 with 24-hour Rainfall Greater than 50 mm

Date <sup>(1)</sup> of Event	Maximum Rainfall								Landslide Consequences				
	Royal Observatory					GEO Raingauges <sup>(2)</sup>			Number of Landslides			Persons Killed (Injured)	Number of Huts Evacuated Permanently
	24-hr	5-hr	1-hr	Antecedent		24-hr	5-hr	1-hr	GEO <sup>(3)</sup>	Newspaper <sup>(4)</sup>	FSD		
				4-day	15-day								
26 Sep 93 <sup>(5)</sup>	224	66	23	236	393	374(N14)	160(N05)	58(N05)	104	29	2	-	24
15-16 Jun 93 <sup>(5)</sup>	155	129	54	18	275	285(N13)	195(N13)	91(N01)	108	66	8	1(5)	30
10-11 Jun 93 <sup>(5)</sup>	144	69	37	42	134	270(N02)	139(N02)	79(N05)	19	24	1	-	20
24-25 Sep 93 <sup>(5)</sup>	123	47	18	104	261	221(H13)	86(H13)	27(N09)	4	2	-	-	-
4-5 Nov 93 <sup>(5)</sup>	107	31	9	8	8	742(N17)	350(N17)	94(N17)	377	15	2	-	25
24-25 May 93	90	32	23	75	131	108(H13)	55(K04)	29(K02)	4	-	-	-	2
13-14 Oct 93	83	67	39	0	5	156(N14)	98(K04)	72(K05)	6	-	-	-	-
22 Jul 93	81	77	60	0	120	108(H06)	107(H06)	52(K01)	-	-	-	-	-
17 Sep 93	74	54	16	56	56	122(N14)	88(H13)	28(H15)	7	-	-	-	-
23-24 Sep 93	73	32	13	0	157	101(H13)	36(H13)	25(N02)	-	-	-	-	-
20-21 Apr 93	65	41	22	16	42	100(N02)	74(N02)	37(N02)	1	-	-	-	-
9 May 93	55	48	24	0	98	93(N10)	82(N06)	55(N01)	-	-	-	(1)	3
13 Sep 93	56	54	32	0	0	64(H17)	64(H17)	46(H06)	-	-	-	-	-
1-2 May 93	51	29	19	33	125	194(N06)	185(N06)	117(N06)	21	9	1	-	18
Recent Major Rainstorms(For Comparison Only)													
29 May 82	394	153	44	1	11	430	237	111	551	498	15	22(26)	1153
20-21 May 89	388	149	37	28	42	566	224	51	340	100	3	2(3)	199
8 May 92	324	196	110	65	71	385	244	110	350	40	9	3(5)	92
Notes:	(1) The events are arranged in order of magnitude of 24-hour rainfall at the Royal Observatory, Tsim Sha Tsui. (2) The maxima are selected from the 48 GEO Raingauges for the same rainstorm period. The GEO Raingauge reference number is shown in brackets. (3) Reported totals are for incidents known to have occurred on specific dates. Apart from 27 September no more than 7 incidents were reported to have occurred on any one day for the rest of 1993. Reported incidents of no geotechnical concern have been ignored. (4) Newspapers searched are the South China Morning Post, the Hongkong Standard, the Sing Tao Daily and the Wen Wei Po. (5) Landslip warnings were issued for these events.												
Abbreviations: GEO = Geotechnical Engineering Office; FSD = Fire Services Department													

Table 2 - Type and Date of Warnings Issued by the Royal Observatory in 1993

Month	Monthly Rainfall (mm)	Dates on which warnings were in effect				
		Thunderstorm	Flood	*Landslip	Tropical Storm	Rainstorm
January	33.5	-	-	-	-	-
February	1.0	-	-	-	-	-
March	49.0	16,17	-	-	-	-
April	136.3	7,8,17,18,20-23, 25-27,29,30	20	-	-	-
May	338.4	1,2,4,9,10,15,22-26,31	1,2,9,23,24	-	-	-
June	485.2	1-13,15-18,21,24-26	2-4,7,9,11,16,17	11(15:15) - 12(08:15) 16(12:00) - 17(11:50)	26-28 (Signals 1-8, Koryn)	11 (Red) 16 (Red-Black)
July	213.7	10,11,13,22,28-31	22	-	10 (Signal 1, Lewis)	-
August	182.8	1,3,8-10,15,17,21,31	10,16,17	-	18-21 (Signals 1-8, Tasha) 25-26 (Signal 1, Winona)	-
September	655.9	14-16,18,23,24,26,27,30	14,17,25-27	25(14:50) - 27(12:30)	12-14 (Signal 1, Abe) 16-17 (Signals 1-8, Becky) 25-26 (Signals 3-8, Dot)	-
October	87.8	13,14	14	-	12-13 (Signal 1, Tropical Depression)	-
November	144.6	5	5	5(05:50 - 14:05)	2-5 (Signals 1-3, Ira)	-
December	15.7	-	-	-	-	-
<b>Total</b>	<b>2343.9</b>	<b>77 days</b>	<b>25 days</b>	<b>4 Warnings</b>	<b>9 Warnings</b>	<b>2 Warnings</b>
Legend: * Landslip warnings were issued after consultation between GEO & RO						

Table 3 - Maximum Rainfalls Recorded at the Royal Observatory in 1993 and their Estimated Return Periods

Duration	Rainfall <sup>(2)</sup> (mm)	Ending Time		Estimated Return Period (Years) <sup>(1)</sup>
		Date	Time	
1 hour	59.7	22 July	5:00	3
2 hours	101.3	16 June	13:00	4
5 hours	128.6	16 June	15:00	2
12 hours	146.4	16 June	22:00	2
24 hours	223.9	26 September	24:00	2
2 days	345.7	26 September	24:00	4
4 days	459.9	26 September	10:00	6
7 days	497.9	27 September	24:00	6
15 days	654.9	27 September	24:00	6
<p>Notes: (1) Return periods derived from the Gumbel equation, after Peterson and Kwong (1981). The return periods are calculated to the nearest year.</p> <p>(2) Rainfall maxima as recorded at the Royal Observatory, Tsim Sha Tsui.</p>				

Table 4 - Number of Incidents Reported to Various Offices/Departments in 1993

Office/Department	Total Number	Types of Incident		
		Landslide	Flooding	Others
Agriculture & Fisheries Department	138	138	0	0
Architectural Services Department	78	50	5	23
Drainage Services Department	391	0	391	0
Fire Services Department	67	18	46	3
Geotechnical Engineering Office, CED	835	827	2	6
Highways Department	144	42	6	96
Housing Department	18	18	0	0
Water Supplies Department	228	197	3	28
Note: Landslides reported to HyD and ASD were referred to GEO and are included in the GEO incidents				



Table 5 - Number of Incidents Reported to GEO Affecting Different Areas in 1993

Affected Area	Hong Kong	Kowloon	New Territories		All Districts
			ME	MW	
Squatters	9 (0)	6 (0)	33 (2)	48 (0)	96 (2)
Building Lots/Properties	7 (1)	3 (1)	33 (3)	48 (5)	91 (10)
Roads	41 (6)	6 (1)	40 (15)	172 (36)	259 (58)
Pedestrian Pavements	19 (5)	11 (0)	16 (1)	105 (15)	151 (21)
Footpaths, Lanes, Private Access, Footbridges	12 (1)	2 (0)	26 (2)	40 (0)	80 (3)
Construction Sites	5 (1)	0 (0)	2 (0)	1 (1)	8 (2)
Country and Urban Parks	0 (0)	1 (1)	0 (0)	2 (0)	3 (1)
Open Areas/Hillside	11 (0)	6 (1)	29 (2)	71 (3)	117 (6)
Catchwaters/ Conduits/Culvert	0 (0)	0 (0)	3 (0)	97 (19)	100 (19)
Carpark/Playground Garden/Yard	6 (0)	3 (1)	2 (0)	10 (3)	21 (4)
Cemetery/Urns	0 (0)	0 (0)	0 (0)	8 (0)	8 (0)
<p>Legend: 11 (2) Eleven incidents of which two are <u>major</u> failures</p>					
<p>Notes: (1) Incidents of no geotechnical concern were ignored. (2) One incident may affect more than one type of area.</p>					



Table 7 - Number of Incidents Reported to GEO in 1993 Classified by Type of Failure

Type of Failure		Number	Percentage (%)
Fill Slope		38 (10)	4.6
Cut Slope	Soil	550 (63)	66.5
	Soil/rock	61 (6)	7.4
	Rock	6 (2)	0.7
Retaining wall		25 (0)	3.0
Natural slope		94 (11)	11.4
Rock/boulder fall		41 (0)	5.0
Others (subsidence, etc.)		12 (1)	1.4
TOTAL		827 (93)	100.0
Legend : 12 (1) - Twelve incidents of which one is <u>major</u> failure			
Notes : (1) The total number of incidents reported to the GEO in 1993 was 835. (2) Eight incidents of no geotechnical concern were ignored.			

Table 8 - Landslide Size Distribution

Size of Failure (m <sup>3</sup> )	Failures of known size expressed as a total number and as a percentage				
	Hong Kong	Kowloon	New Territories		All Districts
			ME	MW	
<5	52(53.61%)	13(37.14%)	48(29.09%)	177(33.40%)	290
≥5 to <10	16(16.50%)	4(11.43%)	30(18.18%)	96(18.11%)	146
≥10 to <20	9 (9.28%)	7(20.00%)	24(14.55%)	94(17.74%)	134
≥20 to <50	7 (7.21%)	7(20.00%)	38(23.03%)	93(17.55%)	145
≥50 (major)	8 (8.25%)	4(11.43%)	23(13.94%)	58(10.94%)	93
unknown	5 (5.15%)	0 (0.00%)	2 (1.21%)	12 (2.26%)	19
no geotechnical concern	[2]	[1]	[0]	[5]	[8]
Total <sup>(3)</sup>	97	35	165	530	827
Notes: (1) Total reported failures - 835 (2) There were 8 incidents of no geotechnical concern (3) These totals do not include incidents of no geotechnical concern					

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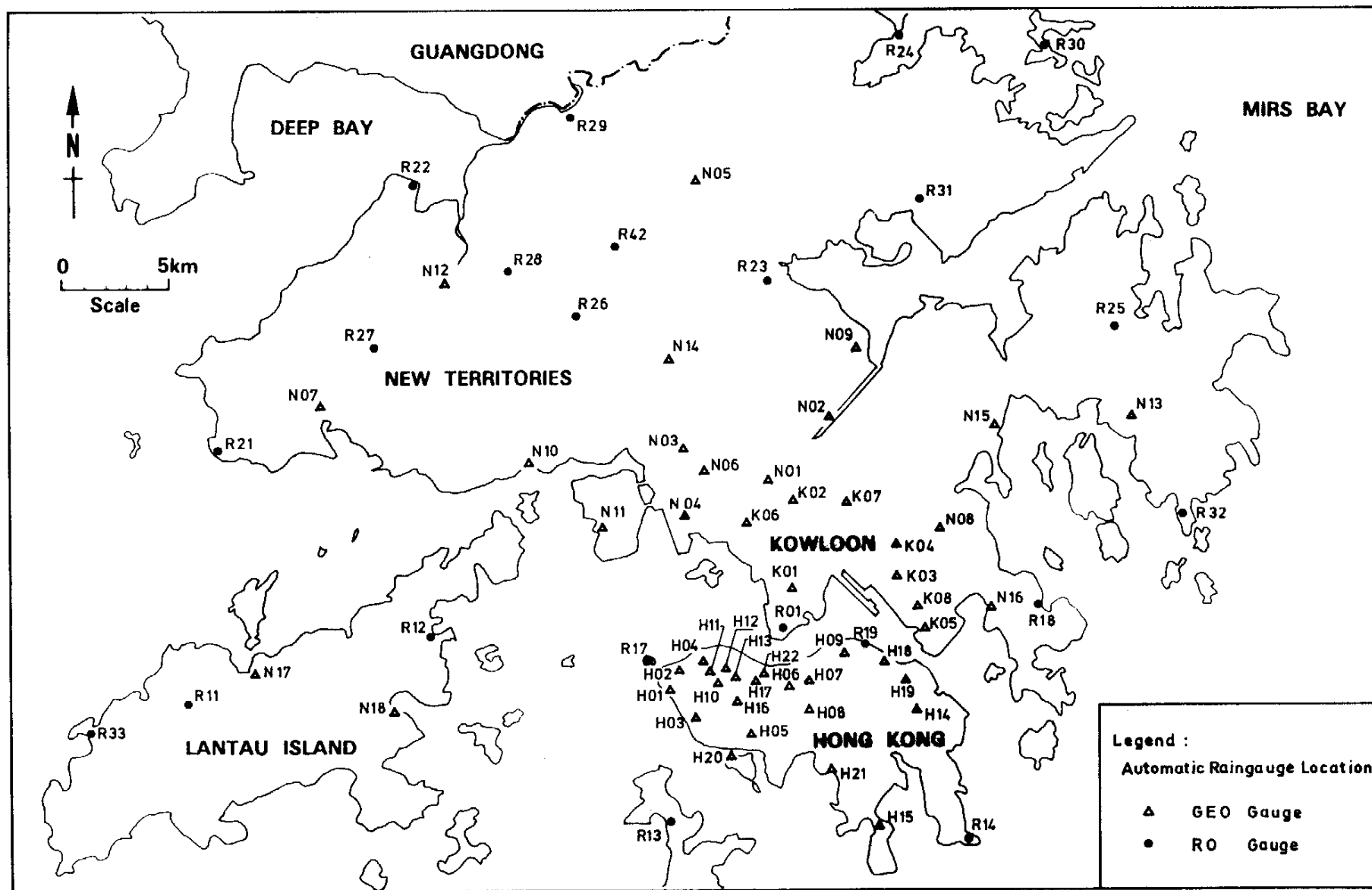


Figure 1 - Location of GEO and RO Automatic Raingauges

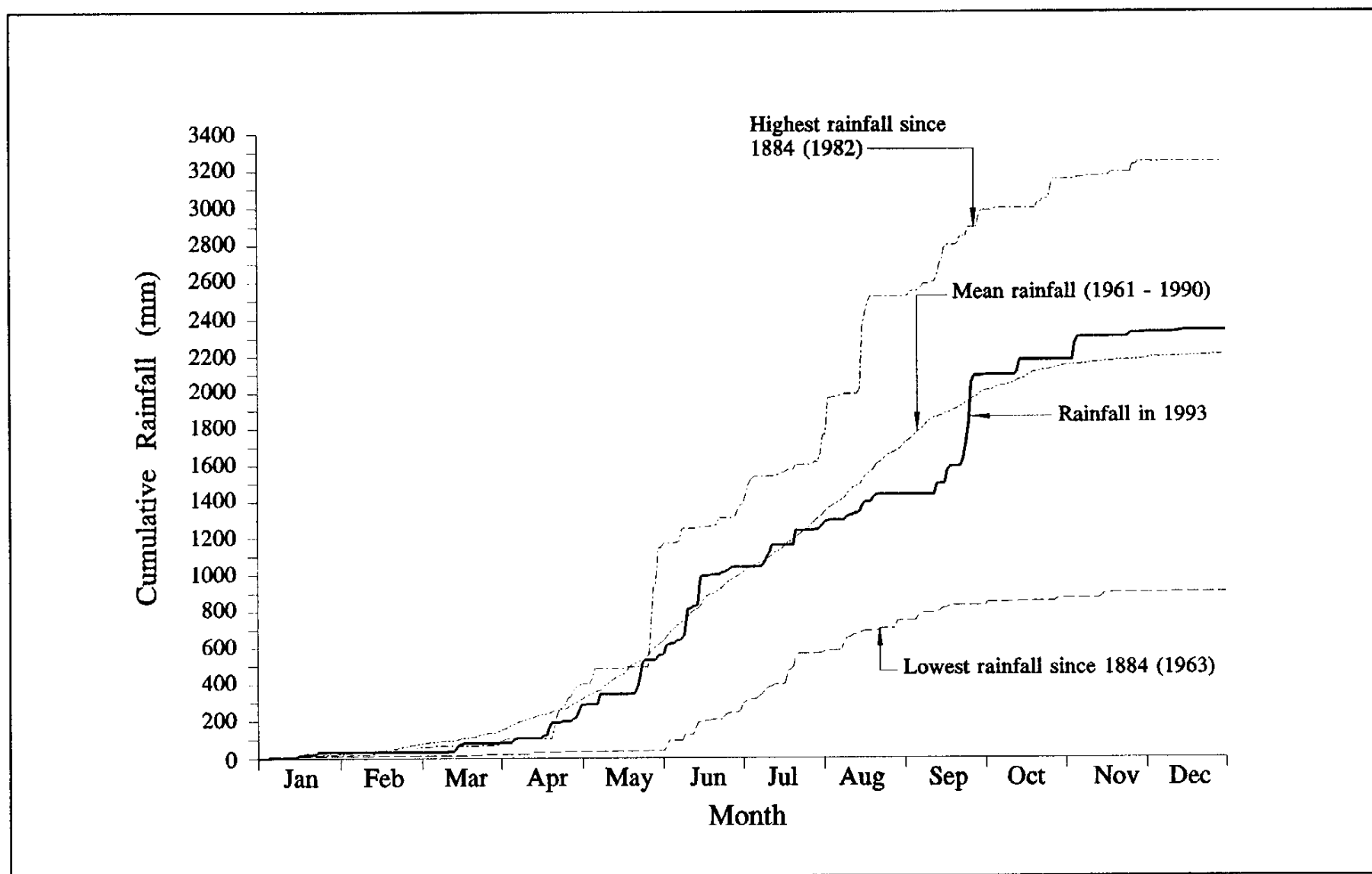


Figure 2 - Cumulative Rainfall for 1993 and Recorded Highest, Mean and Lowest Cumulative Rainfalls

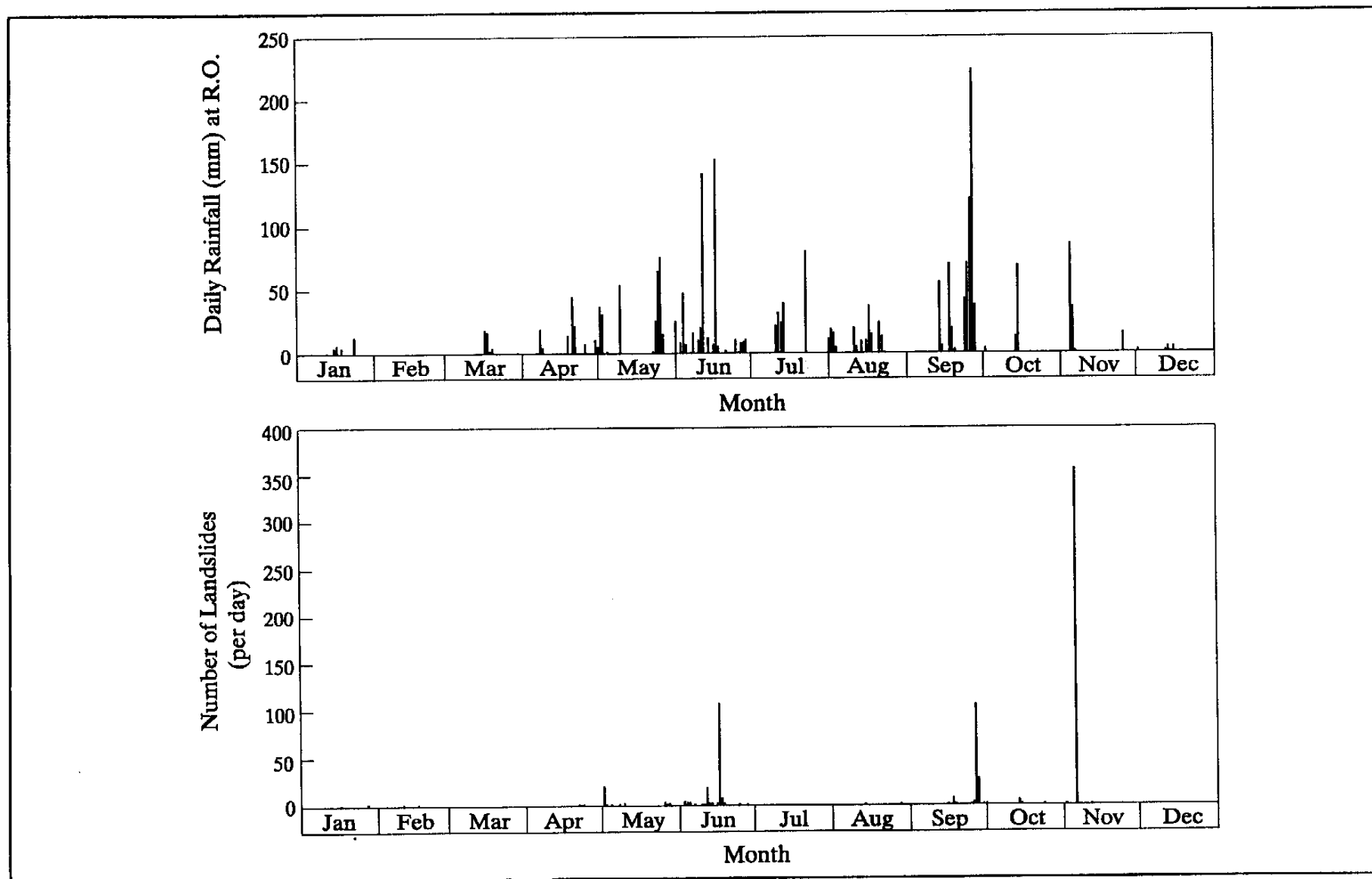


Figure 3 - Daily Rainfall and Distribution of Number of Landslides in 1993



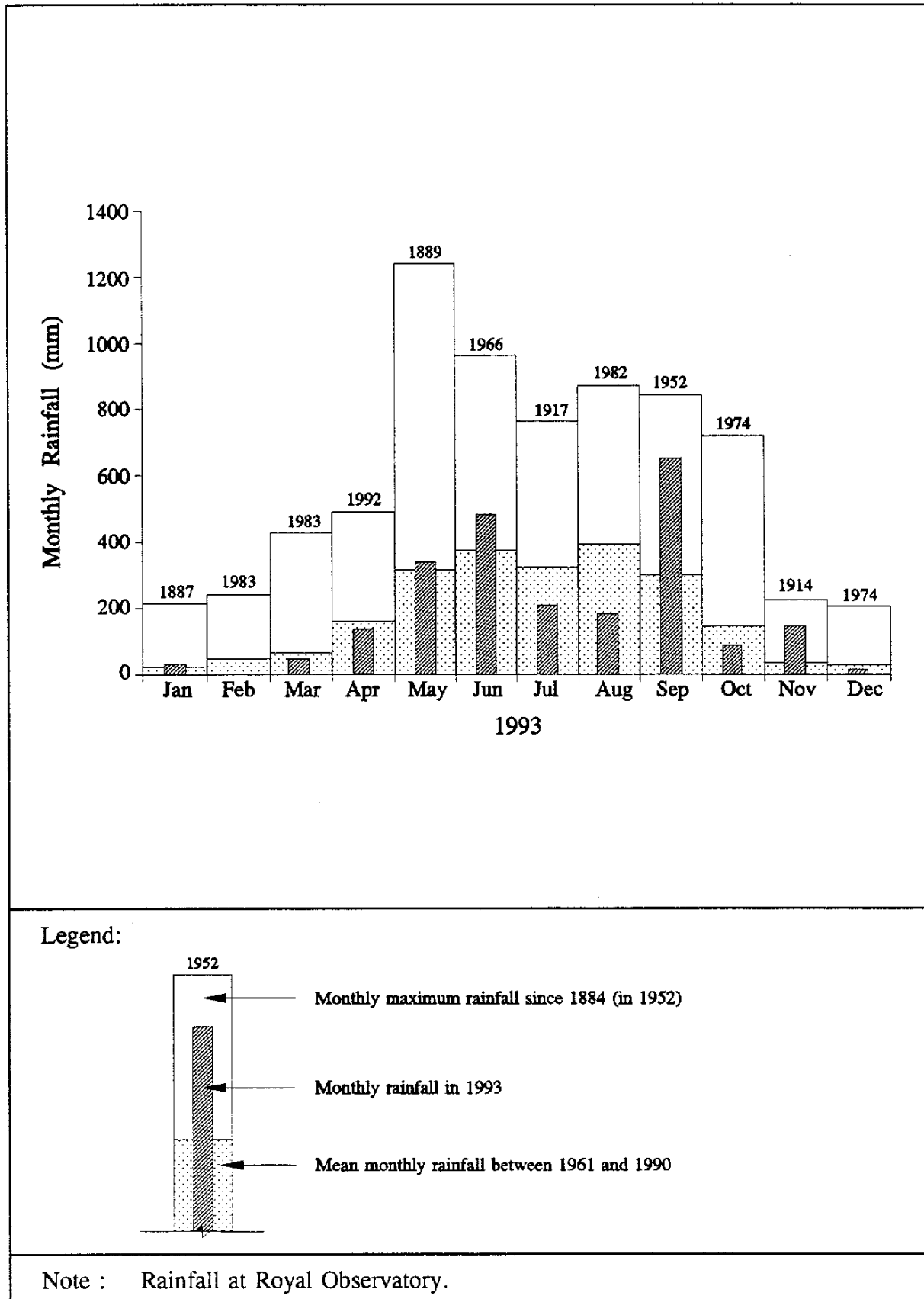


Figure 4 - Monthly Rainfalls in 1993 in Comparison with Recorded Maximum and Mean Monthly Rainfalls

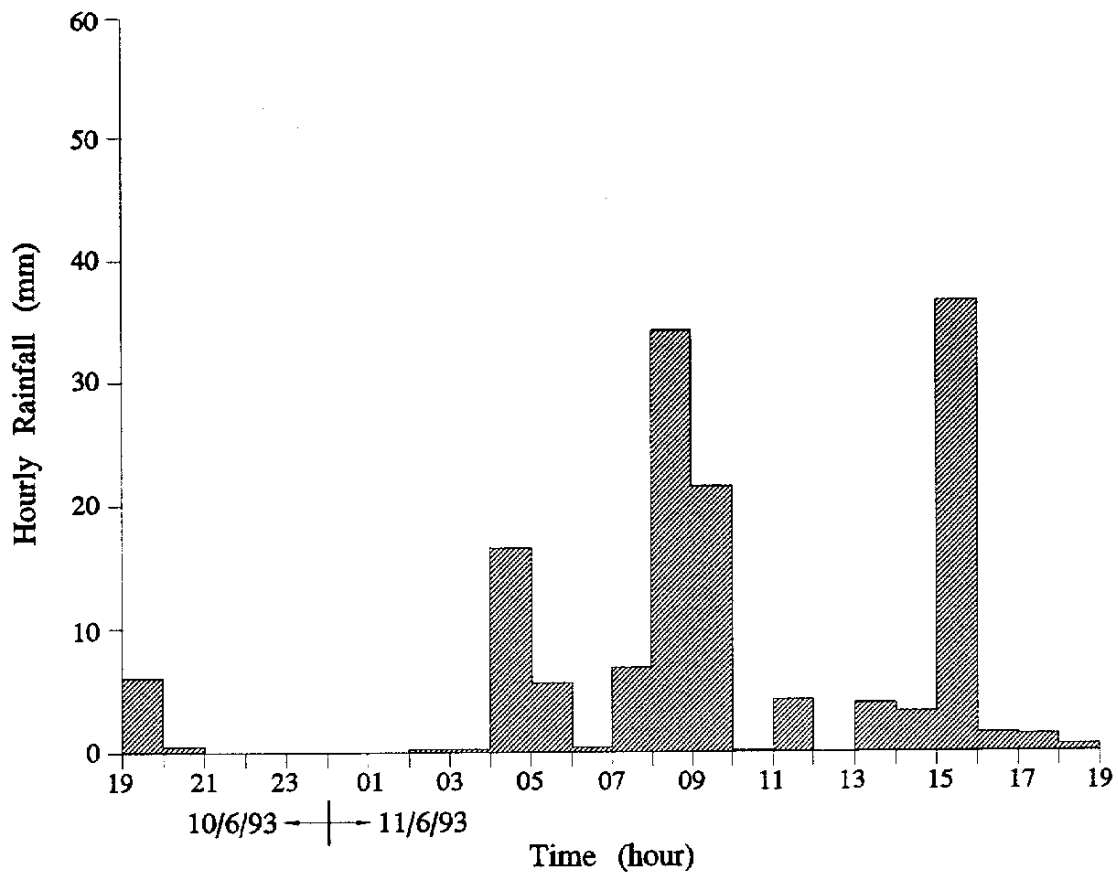


Figure 5 - Histogram of Hourly Rainfall at the Royal Observatory for the Highest 24-hour Rainfall during 10 and 11 June 1993

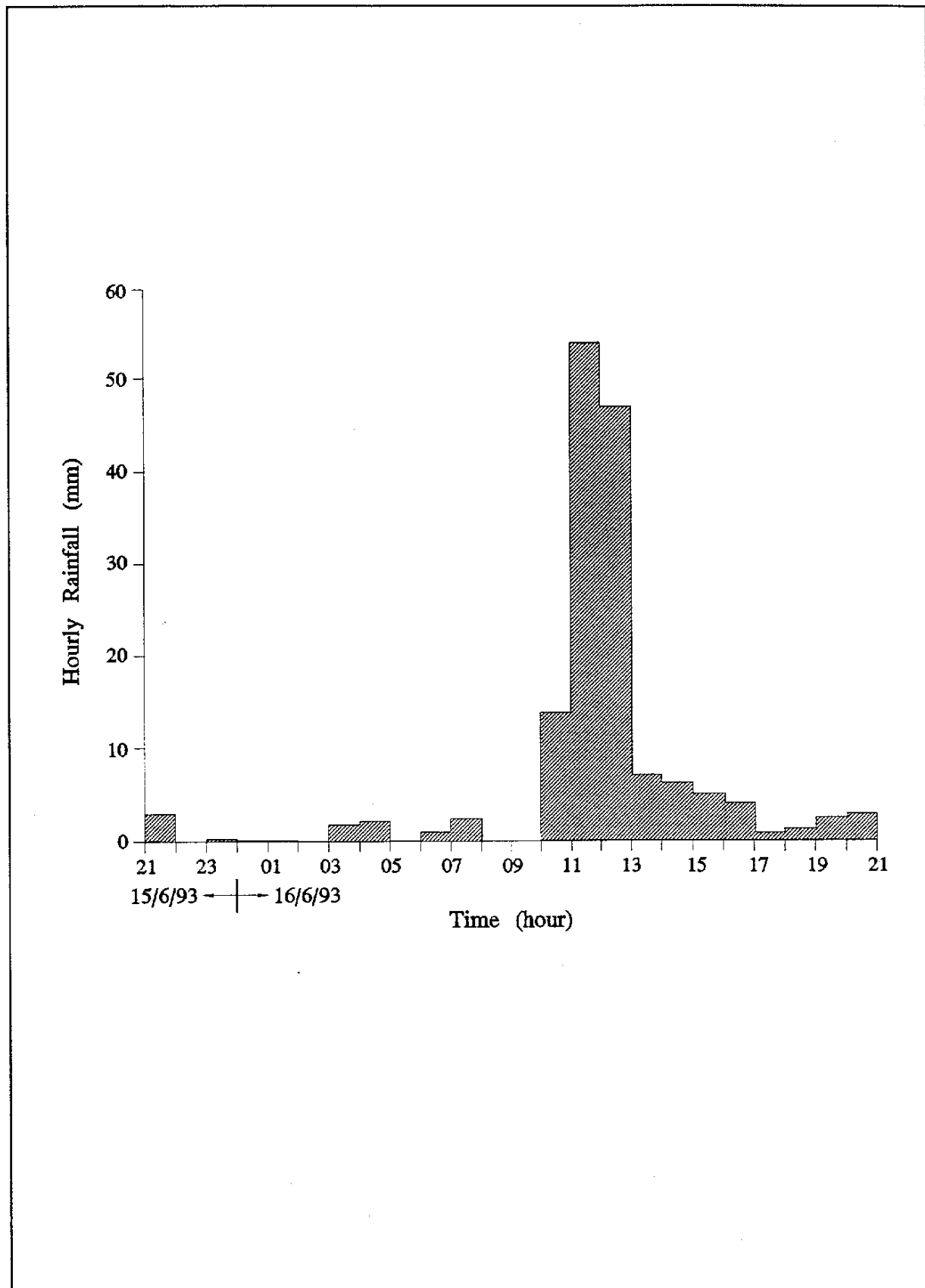


Figure 6 - Histogram of Hourly Rainfall at the Royal Observatory for the Highest 24-hour Rainfall during 15 and 16 June 1993

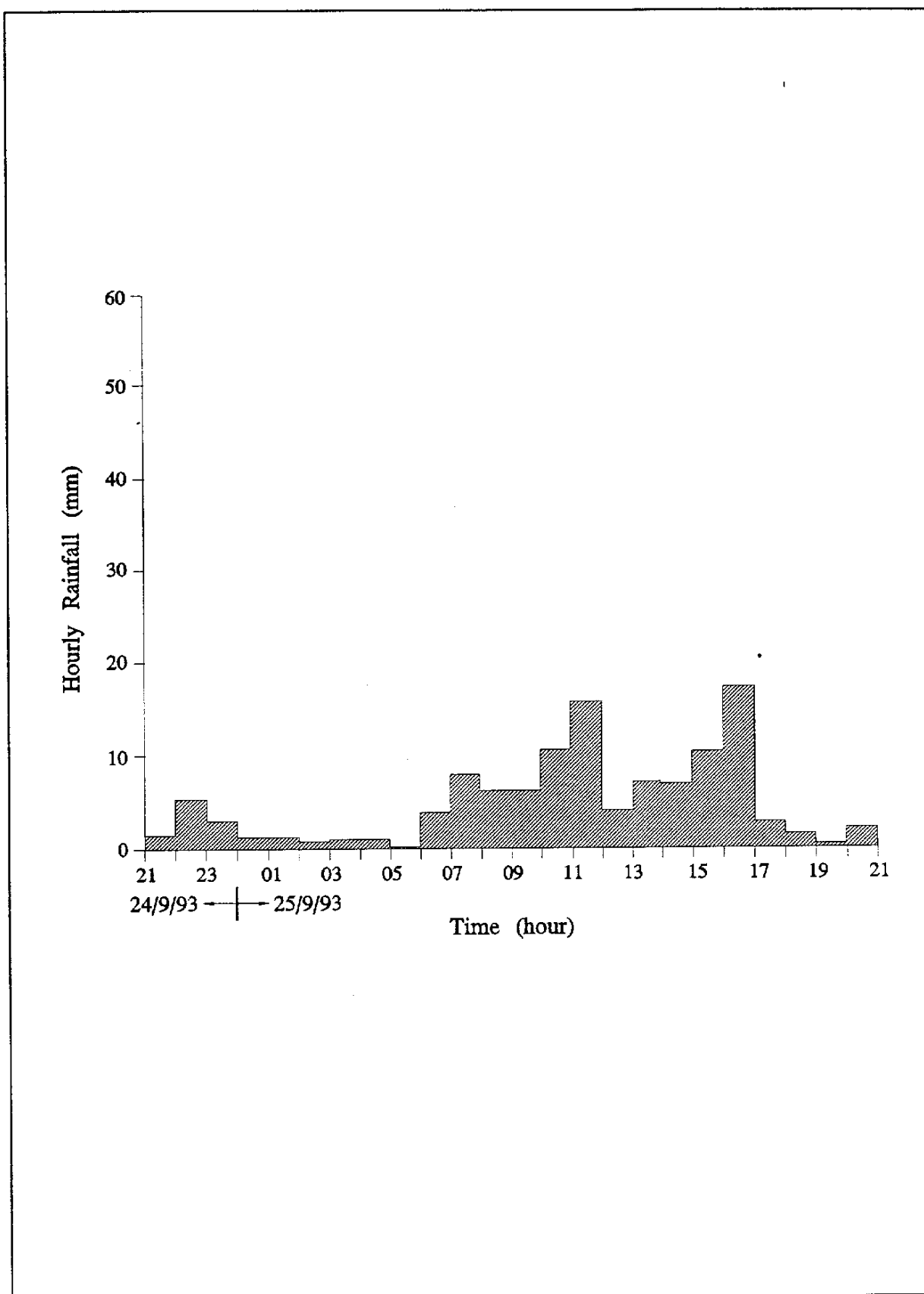


Figure 7 - Histogram of Hourly Rainfall at the Royal Observatory for the Highest 24-hour Rainfall during 24 and 25 September 1993

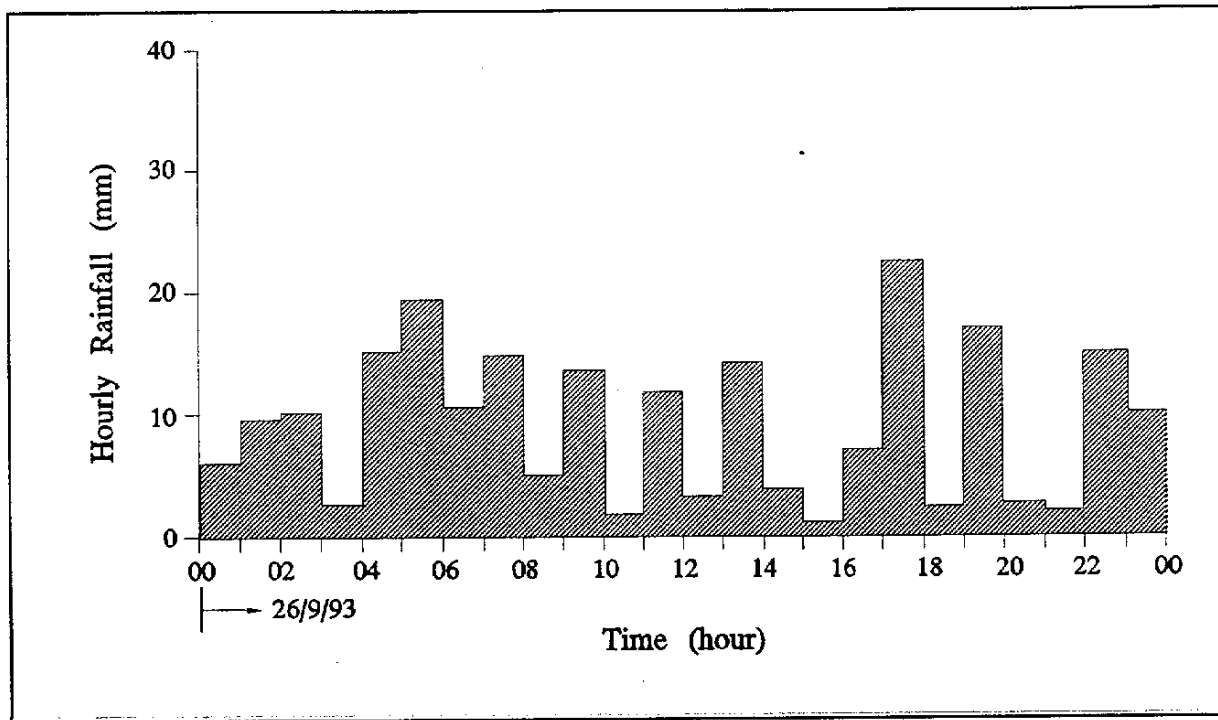


Figure 8 - Histogram of Hourly Rainfall at the Royal Observatory for the Highest 24-hour Rainfall on 26 September 1993

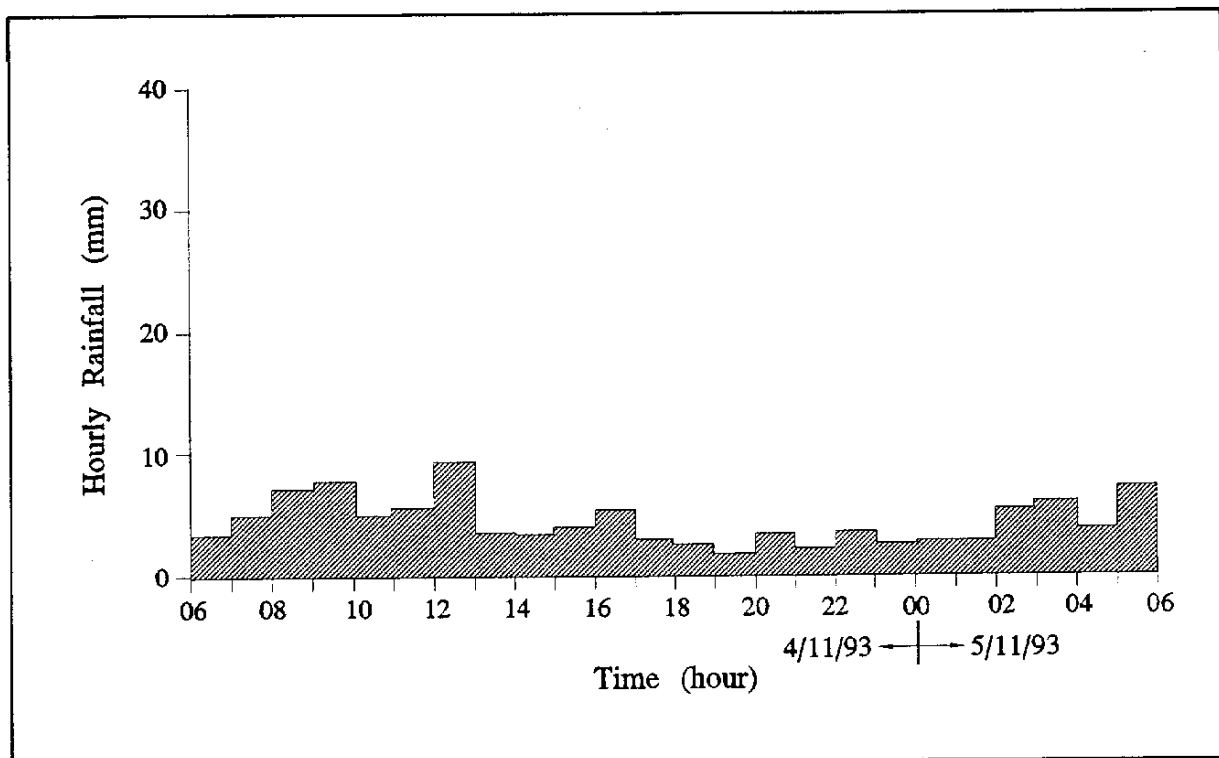


Figure 9 - Histogram of Hourly Rainfall at the Royal Observatory for the Highest 24-hour Rainfall during 4 and 5 November 1993

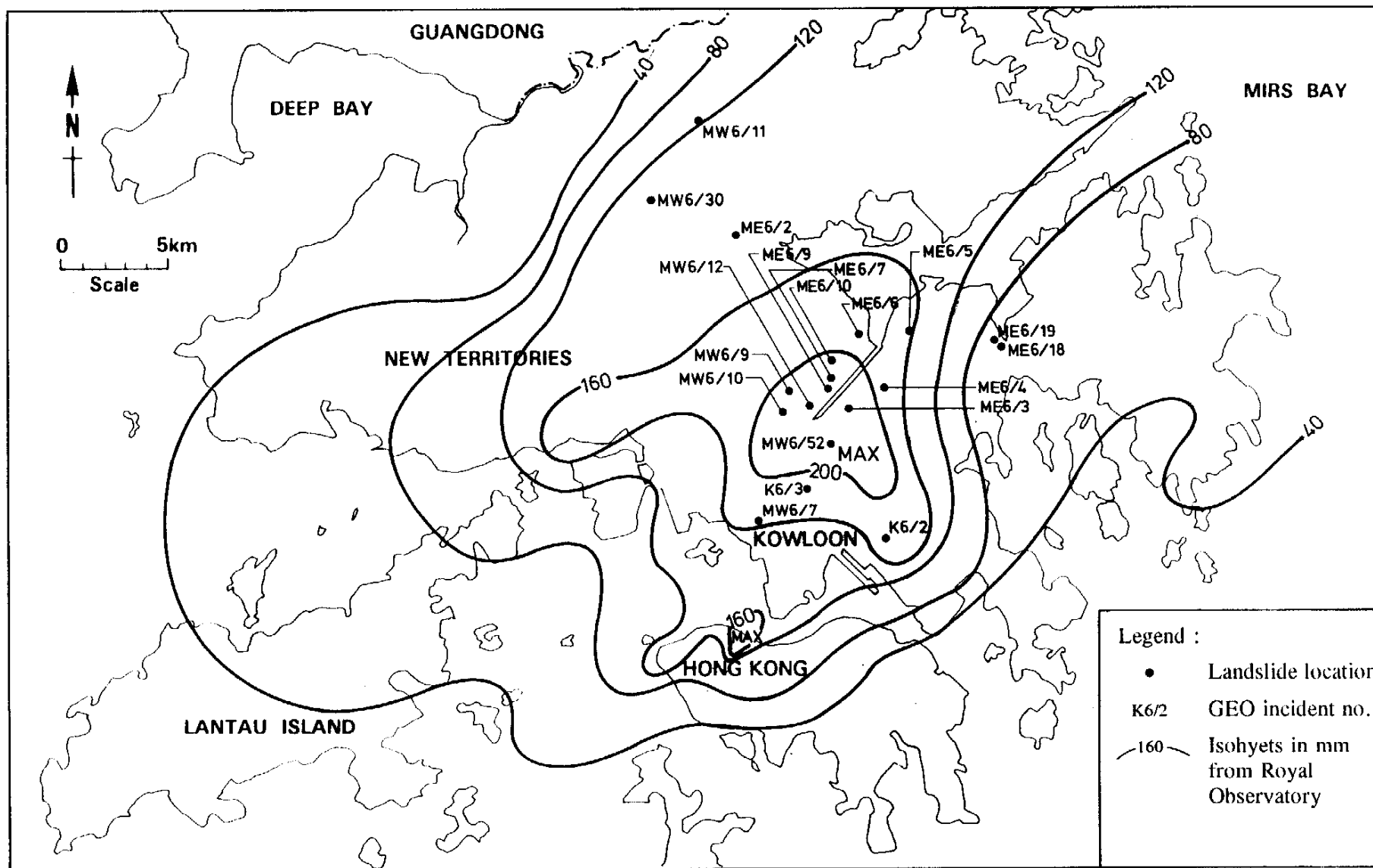


Figure 10 - 24-hour Rainfall Distribution Ending at 19:00 on 11 June 1993 and Locations of GEO Landslide Incident

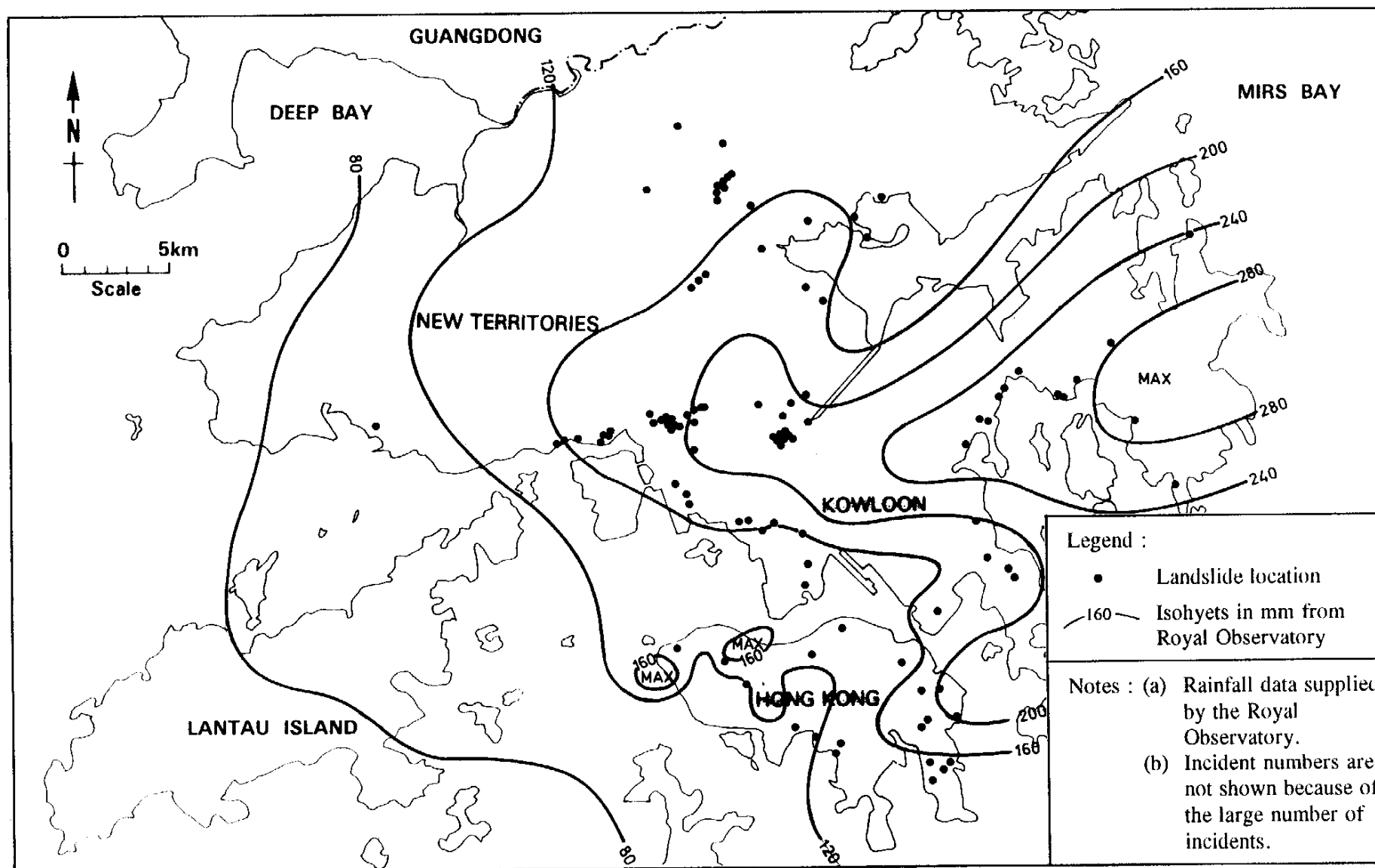


Figure 11 - 24-hour Rainfall Distribution Ending at 21:00 on 16 June 1993 and Locations of GEO Landslide Incident

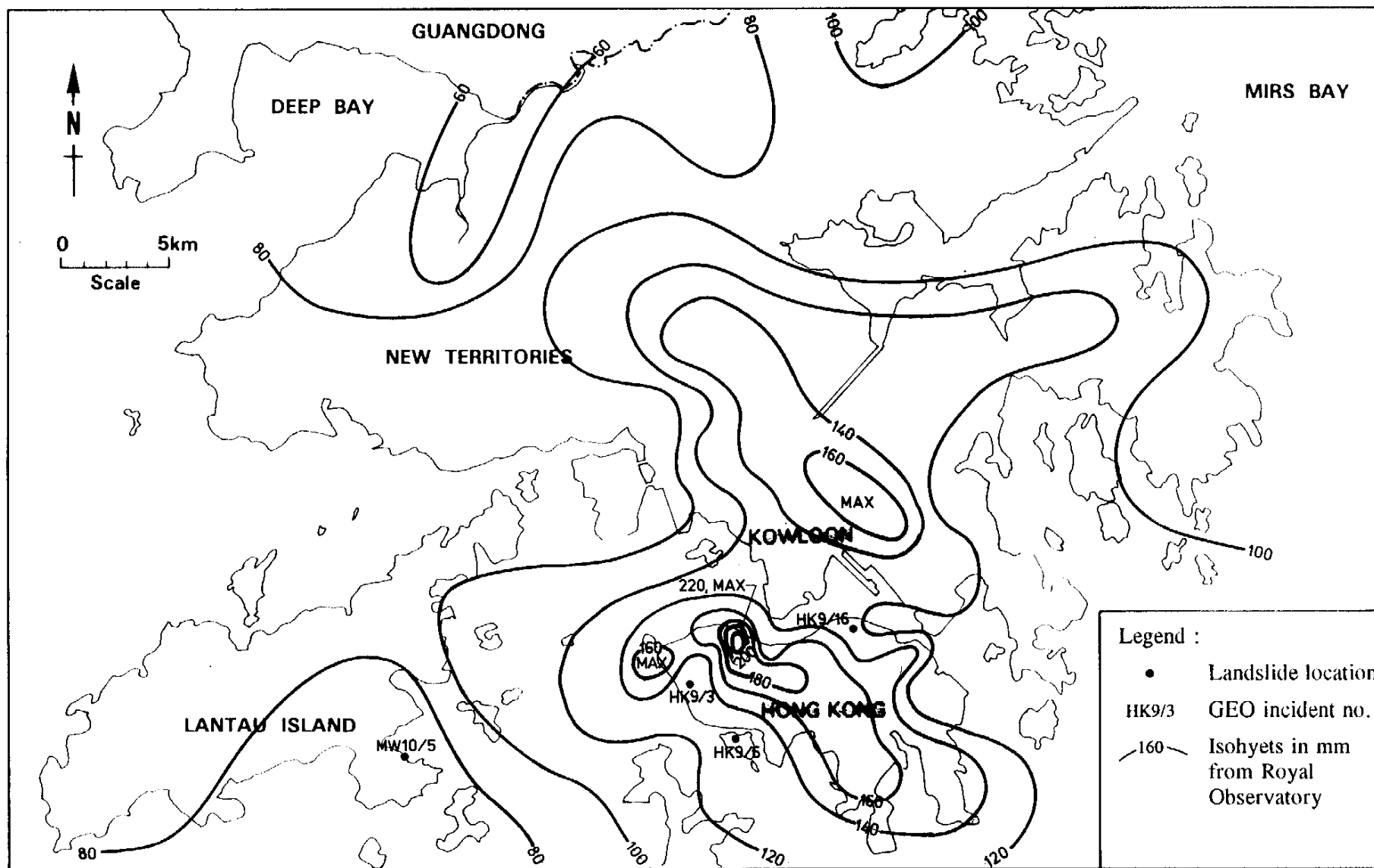


Figure 12 - 24-hour Rainfall Distribution Ending at 21:00 on 25 September 1993 and Locations of GEO Landslide Incident



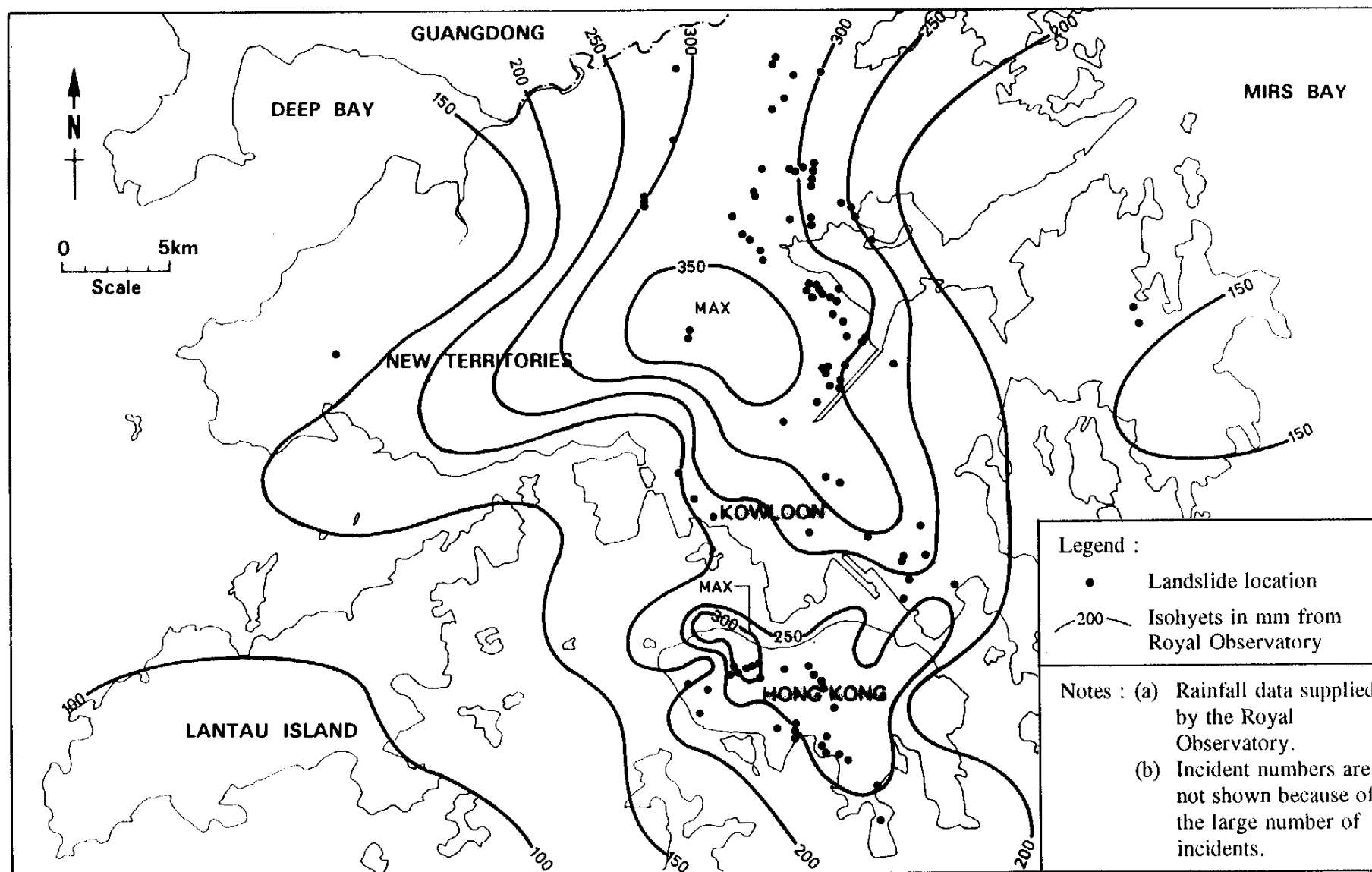


Figure 13 - 24-hour Rainfall Distribution Ending at 24:00 on 26 September 1993 and Locations of GEO Landslide Incident

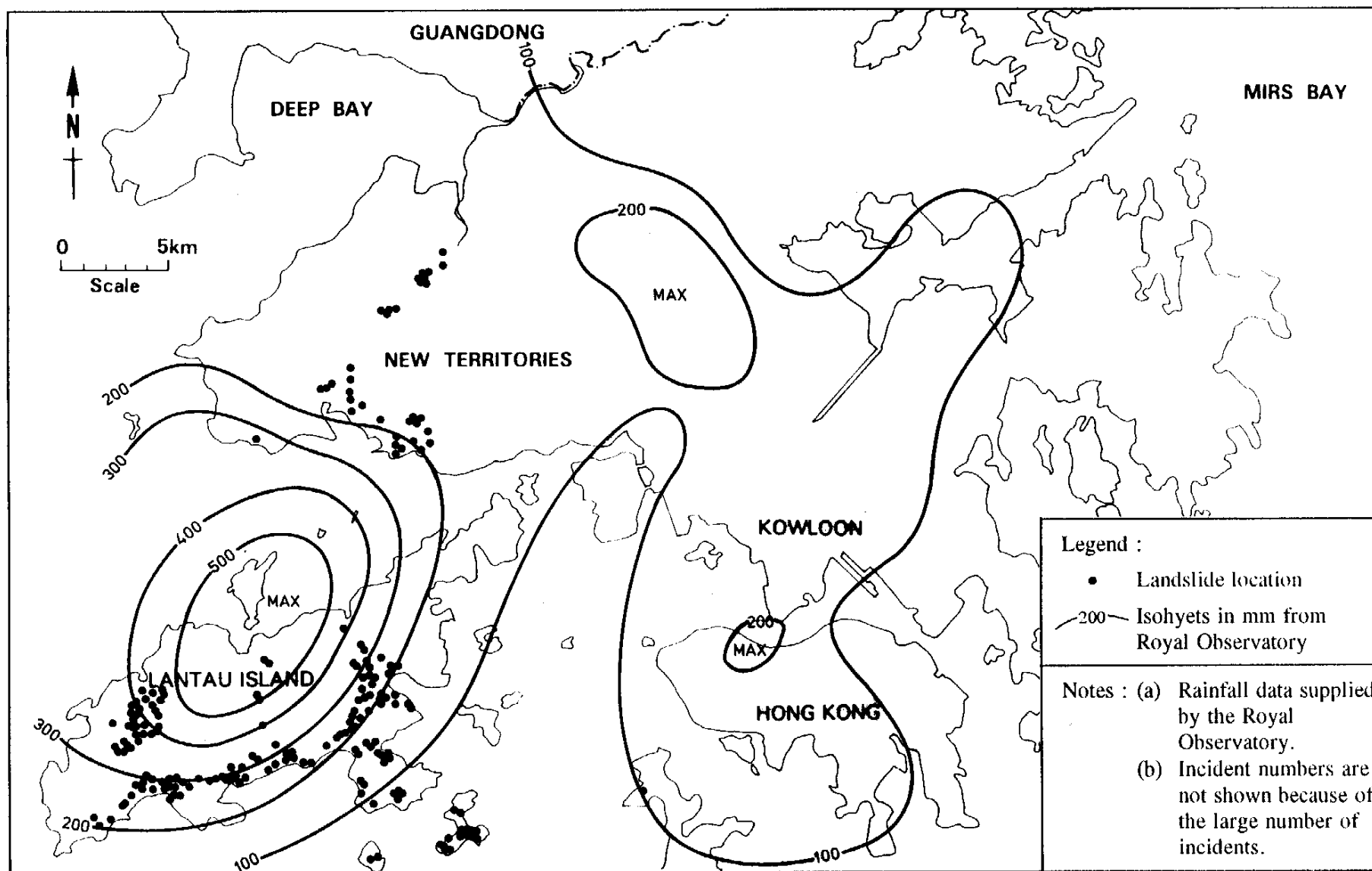


Figure 14 - 24-hour Rainfall Distribution Ending at 06:00 on 5 November 1993 and Locations of GEO Landslide Incident

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Plate 1 : Negative No. I9327211 Taken on : 25-6-93



Plate 2 : Negative No. I9323709 Taken on : 4-6-93

Description : Major failure of a retaining wall and fill slope (about 100 m<sup>3</sup>) leading to the closure of one lane of road and pedestrian pavement.

Plates 1 & 2 - Junction of Repulse Bay Road, Black's Link and Wong Nai Chung Gap Road (Incident HK 6/4)





Plate 3 : Negative No. ME9339118 Taken on : 11-6-93

Description : Subsidence of a road (about 4 m<sup>3</sup>) resulting in road closure.

Plate 3 - Next to Nullah, Jordan Valley Road South, Ngau Tau Kok  
(Incident K 6/2)



Plate 4 : Negative No. ME9352911 Taken on : 30-7-93

Description : Failure of a natural slope (about 45 m<sup>3</sup>) resulting in the permanent evacuation of fifteen huts.

Plate 4 - No. 1, Ngau Kwu Leng Village, Lam Tsuen, Tai Po (Incident ME 6/2)



Plate 5 : Negative No. ME9340208 Taken on : 16-6-93

Description : Major failure of a soil/rock cut slope (about 83 m<sup>3</sup>) resulting in the closure of a road.

Plate 5 - Near Long Keng, Sai Sha Road, Sai Kung, Slope No. 8SW-A/C3 & C4 (Incident ME 6/11)





Plate 6 : Negative No. ME9341405 Taken on : 17-6-93

Description : Major failure of a soil cut slope (about 300 m<sup>3</sup>) leading to the blockage of a backlane.

Plate 6 - Behind House Nos. 64-65, Wai Sum Village, Clear Water Bay Road, Mang Kung Uk, Sai Kung (Incident ME 6/21)





Plate 7 : Negative No. SP9306424 Taken on : 16-6-93



Plate 8 : Negative No. SP9306208 Taken on : 16-6-93

Description : Major failure of a soil/rock cut slope (about 50 m<sup>3</sup>). One dead and five injured. Pedestrian pavement was closed.

Plates 7 & 8 - Adjacent to Cheung Shan Estate Bus Terminus, Tsuen Wan,  
Slope No. 7SW-C/C128 (Incident MW 6/14)





Plate 9 : Negative No. MW9311901 Taken on : 16-6-93

Plate 10 :  
Negative No. MW9311908  
Taken on : 16-6-93

Description : Major failure of a natural slope (about 500 to 1000 m<sup>3</sup>) resulting in the blockage of a road and a carpark.

Plates 9 & 10 - Behind Ting Kau Carpark, Castle Peak Road, Tsuen Wan (Incident MW 6/18)





Plate 11: Negative No. MW9312413 Taken on : 17-6-93

Description : Major failure of a fill slope (about 1000 m<sup>3</sup>) leading to the closure of an access road.

Plate 11 - Tai Lam Chung Catchwater CH 4680, Tai Lam Chung (Incident MW 6/53)





Plate 12 : Negative No. I9344414 Taken on : 8-10-93

Description : Major failure of a rock cut slope (about 100 m<sup>3</sup>) resulting in the closure of one road lane and pedestrian pavement.

Plate 12 - Opposite Fire Station, and above Caisson Wall No. CW3, Ap Lei Chau Bridge Road, Ap Lei Chau (Incident HK 9/6)



Plate 13 : Negative No. I9344420 Taken on : 8-10-93

Description : Major failure of a soil cut slope (about 115 m<sup>3</sup>) resulting in the evacuation of flats.

Plate 13 - Behind 8 Severn Road, Mount Gough (Incident HK 9/28)



Plate 14 : Negative No. SP9403117 Taken on : 11-4-94  
(Reproduced from Negative Nos. ME9365301 to 09 Taken on : 27-9-93)

Description : Major failure of a soil cut slope (about 1000 m<sup>3</sup>) resulting in the closure of a road.

Plate 14 - Near Jat's Incline, Fei Ngo Shan Road, Kowloon Peak  
(Incident K 9/2)





Plate 15 : Negative No. ME9364805 Taken on : 27-9-93

Description : Boulder fall from a natural slope ( $1.8 \text{ m}^3$ ) resulting in the temporary evacuation of one hut.

Plate 15 - Behind Hut No. 32B1, On Sai Lee Tsuen, Lei Yue Mun (Incident K 9/6)



Plate 16 : Negative No. SP9403121 Taken on : 11-4-94  
(Reproduced from Negative Nos. ME9365321 to 25 Taken on : 29-9-93)

Description : Major failure of a rock cut slope (about 200 m<sup>3</sup>) leading to the closure of tennis courts.

Plate 16 - Behind Tennis Courts of Hiu Ming Street Playground, Hiu Ming Street,  
Sau Mau Ping, Slope No. 11NE-D/C45 (Incident K9/17)





Plate 17 : Negative No. ME9364408 Taken on : 28-9-93

Description : Failure of a retaining wall (about 2 m<sup>3</sup>) leading to the blockage of a footpath.

Plate 17 - Front of House No. 175, Ha Wo Che Village, Shatin (Incident ME 9/17)



Plate 18 : Negative No. ME9367411 Taken on : 5-10-93

Plate 19 :  
Negative No. ME9367412  
Taken on : 5-10-93

Description : Major failure of  
a natural slope (about 300 m<sup>3</sup>)  
resulting in the permanent  
evacuation of three huts.

Plates 18 & 19 - Behind Huts  
RTP/TTW/190-192, Miu Keng,  
Tai Tong Wu, Sha Tau Kok  
(Incident ME 9/18)







Plate 20 : Negative No. ME9364819 Taken on : 28-9-93

Description : Major failure of a soil cut slope (about 168 m<sup>3</sup>) resulting in the temporary evacuation of seven houses.

Plate 20 - Behind House Nos. 144-150, Sam Mun Tsai New Village, Tai Po  
(Incident ME 9/37)

Plate 21 :  
Negative No. MW9323701  
Taken on : 27-8-93

Description : Major failure  
of a soil/rock cut slope  
(about 200-250 m<sup>3</sup>) leading  
to the evacuation of 15 flats,  
the blockage of a cul-de-sac and  
the damage of gas installation.



Plate 22 : Negative No. SP9311011 Taken on : 27-9-93

Plates 21 & 22 - Behind Block F, Allway Gardens, Tsuen Wan,  
Slope No. 6SE-D/CR87 (Incident MW 9/9)





Plate 23 : Negative No. MW9324825 Taken on : 28-9-93



Plate 24 : Negative No. MW9324702 Taken on : 28-9-93

Description : Major failure of a fill and soil cut slope (about 2600 m<sup>3</sup>) leading to the closure of one road lane and pedestrian pavement.

Plates 23 & 24 - Below Lung Cheung Road and behind Cornwall Street Abandoned Temporary Housing Area, Kowloon Tong, Slope Nos. 11NW-B/C146 & F33 (Incident MW 9/19)





Plate 25 : Negative No. MW9330108 Taken on : 8-11-93



Plate 26 : Negative No. MW9330104 Taken on : 8-11-93

Description : Major failure of a soil cut slope (about 500 to 1000 m<sup>3</sup>) affecting the building lot, carpark, road and pedestrian pavement.

Plates 25 & 26 - Alpine Garden, NV350, Castle Peak Road, Tuen Mun  
(Incident MW 11/4)



Plate 27 : Negative No. SP9314207 Taken on : 6-11-93

Description : Failure of a retaining wall (about 30 m<sup>3</sup>) affecting the yard area of a building.

Plate 27 - Fu Kong Shan, South Lantau Road, Lantau (Incident MW SP/26)





Plate 28 : Negative No. SP9314301 Taken on : 6-11-93



Plate 29 : Negative No. MW9333723 Taken on : 5-11-93

Description : Major failure of a natural slope (about 245 m<sup>3</sup>) resulting in the closure of one road lane and pedestrian pavement.

Plates 28 & 29 - Nam Shan, South Lantau Road, Lantau (Incident MW SP/32)





Plate 30 : Negative No. SP9315606 Taken on : 9-11-93

Description : Major failure of a natural slope (about 422 m<sup>3</sup>) resulting in the closure of an access road.

Plate 30 - Near Sham Wat Road, Lantau (Incident MW SP/201)



Plate 31 : Negative No. SP9314503 Taken on : 6-11-93

Description : Major failure of a natural slope (about 450 m<sup>3</sup>) leading to the closure of an access road and affecting buildings in Tong Fuk, Lantau.

Plate 31 - Near CH 154, Lantau Trail, Tong Fuk, Lantau (Incident MW SP/258)





Plate 32 : Negative No. SP9314333 Taken on : 6-11-93

Description : Major failure of a fill slope affecting an access road

Plates 32 - Lantau Trail, Cheung Sha, Lantau, Slope No. 13NE-B/FR21  
(Incident MW SP/273)

APPENDIX A  
LIST OF INCIDENTS  
REPORTED TO GEO

LIST OF TABLES

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Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 1 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 2/1	Behind Dominion Centre, 43-59 Queen's Road East, Wan Chai (11SW-B/R604)	10/2	Public	10/2 (4:00)	Retaining wall	Minor (3)	Building lot Construction site		Rupture of water main/drain
HK 2/2	Adjacent to Flat LG2, Bo Kwong Apartments, 5E Bowen Road, Mid-levels (11SW-B/C93)	17/2	Public	27/1	Soil cut slope	Minor (0.4)	Open space		Lack of maintenance
HK 4/1	Outside 7 Shiu Fai Terrace, Kennedy Road, Wan Chai (11SW-D/C404)	22/4	Police	22/4 (15:50)	Soil cut slope	Minor (5)	Road Pedestrian pavement	1 lane of road closed	
HK 5/1	Behind Hut RH/5C/19, Ngai Choi Hang Village, North Point	4/5	HyD/HK	4/5 (am)	Soil cut slope	Minor (3)	Squatters		
HK 5/2	Behind Hut 205, Ching Man Tsuen, So Kon Po Cottage Area, So Kon Po (11SE-C/N2)	9/5	Police FSD	9/5	Fallen tree	Minor (3)	Squatters	1 person injured 3 huts temporarily evacuated	No geotechnical concern
HK 5/3	Behind 72 Macdonnell Road, Mid-levels, Central (11SW-B/C177)	10/5	Public	7/5 (am)	Rock cut slope	Minor (0.03)	Open space		
HK 5/4	Opposite BBQ Area, Island Road, Deep Water Bay	26/5	HyD/HK	Unknown	Rock fall	Minor (1.5)	Road		

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 2 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 5/5	Below 27 Barker Road, the Peak	26/5	HyD/HK	25/5	Rock fall	Minor (0.75)	Pedestrian pavement		
HK 5/6	Adjacent to Block A, Cape Mansions, 60 & 62 Mount Davis Road, Mo Sing Leng (11SW-C/CR203)	28/5	Resident	26/5	Boulder fall	Minor (0.01)	Carpark		
HK 6/1	Front of Huts RH/4B/133-134, Lin Fa Kung Village, Causeway Bay	31/5	Resident	24/5 (13:00)	Soil cut slope	Minor (0.5)	Squatters	2 huts permanently evacuated	
HK 6/2	Behind Shaukeiwan Jockey Club Clinic, Chai Wan Road, Shau Kei Wan (11SE-B/C69)	26/5	ASD	23/4	Rock fall	Minor (0.1)	Open space		
HK 6/3	Near 16 Repulse Bay Road, Repulse Bay	2/6	HyD/HK	2/6 (1:50)	Fill slope	Major (150)	Road Pedestrian pavement	1 lane of road closed	Rupture of water main
HK 6/4	Junction of Repulse Bay Road, Black's Link and Wong Nai Chung Gap Road	4/6	HyD/HK	4/6	Fill slope Retaining wall	Major (100)	Road Pedestrian pavement	1 lane of road closed Pedestrian pavement closed	Rupture of water main
HK 6/5	Below Cheung Chuk Shan College, 11 Cloud View Road, North Point (11SE-A/C32)	7/6	ASD	2/6	Rock fall	Minor (0.05)	Open space		

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 3 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 6/6	King George V Memorial Park, Hospital Road, Sai Ying Pun (11SW-A/CR78)	9/6	ASD	Unknown	Soil cut slope	Minor	Playground		
HK 6/7	Behind House No.45, Tai Hang Old Village, Tai Hang Road, Causeway Bay	9/6	Resident	2/6 (am)	Boulder fall	Minor (0.2)	Squatters		
HK 6/8	Behind House No.2, Wesley Village, Tai Hang Road, So Kong Po	12/6	Police	12/6 (am)	Subsidence	Minor (8)	Squatters	1 hut temporarily evacuated	
HK 6/9	Behind Sui Keung House, Siu Sai Wan Estate, Chai Wan (11SE-D/SSW2)	16/6	HyD/HK	16/6 (11:00)	Soil cut slope	Major (150)	Road Building access Pedestrian pavement	1 lane of road blocked	
HK 6/10	Cape Collinson Road, Chai Wan (11SE-D/C152)	16/6	CSD	16/6 (11:00)	Soil/rock cut slope Rock fall	Minor (30)	Road	1 lane of road blocked	
HK 6/11	Adjacent to Kam Ping Mansion, 63-69 Kam Ping Street, North Point (11SE-A/CR171)	16/6	BOO	16/6	Boulder fall	Minor (1)	Open space		
HK 6/12	62 Peak Road, Mount Gough	16/6	HyD/HK	16/6	Soil/rock cut slope	Minor (3)	Road	½ lane of road closed	Lack of maintenance

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 4 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 6/13	Behind Block A, South Bay Villas, 4 South Bay Close, Repulse Bay (15NE-A/CR9)	16/6	HyD/HK	16/6 (12:30)	Soil cut slope	Minor (20)	Building lot	Pedestrian pavement closed	Lack of maintenance
HK 6/14	Near Tung Ah Village, Shek O Road, Shek O	16/6	HyD/HK	16/6 (14:00)	Fill slope	Major (200)	Road Pedestrian pavement	2 lanes of road closed	
HK 6/15	Shek O Road, Shek O	16/6	HyD/HK	16/6	Fill slope	Minor (40)	Road	1 lane of road closed Pedestrian pavement closed	
HK 6/16	Below 132-142 Tin Hau Temple Road, North Point	17/6	DO/E	Unknown	Natural slope	Minor (1)	Staircase		
HK 6/17	Chung Hom Kok Road, Chung Hom Kok (15NE-C/C75)	17/6	Police	17/6	Rock fall	Minor (2)	Road		
HK 6/18	Shek O Road, Shek O (15NE-B/C16)	17/6	HyD/HK	16/6	Soil cut slope	Minor (3)	Road		
HK 6/19	Opposite BBQ Area, Island Road, Deep Water Bay	16/6	HyD/HK	16/6 (12:00)	Fill slope	Major (120)	Road	1 lane of road closed	
HK 6/20	Between 26-27 Lugard Road, the Peak	17/6	HyD/HK	16/6 (4:40)	Soil cut slope	Minor (5)	Road	½ lane of road blocked	



Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 5 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 6/21	Junction of Shouson Hill Road East and Shouson Hill Road, Shouson Hill (11SW-D/FR91)	16/6	HyD/HK	16/6 (16:15)	Retaining wall	Minor	Construction site		
HK 6/22	San Ha Street, Chai Wan (11SE-D/C17)	17/6	Contractor	16/6	Rock fall	Minor (2)	Pedestrian pavement	Pedestrian pavement closed	
HK 6/23	Opposite Sai Wan War Cemetery, Cape Collinson Road, Chai Wan (11SE-D/C124)	17/6	HyD/HK	16/6	Soil/rock cut slope	Minor (10)	Road	1 lane of road closed	
HK 6/24	Buddhist Cemetery, Cape Collinson Road, Chai Wan (11SE-D/CR122)	17/6	HyD/HK	16/6	Soil/rock cut slope	Minor (10)	Road	1 lane of road closed	
HK 6/25	Behind Salesian School, 16 Chai Wan Road, Shau Kei Wan	17/6	School	16/6	Natural slope	Minor	Open space		
HK 6/26	Opposite Marine Police Station, 28 Shum Wan Road, Shum Wan (15NW-B/C46)	17/6	HyD/HK	17/6 (16:45)	Rock fall	Minor (1.5)	Temporary container office		
HK 6/27	15 Middle Gap Road, the Peak (11SW-D/C551)	18/6	HyD/HK	17/6 (18:00)	Soil cut slope	Minor (10)	Road	½ lane of road blocked	

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 6 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 6/28	Behind Female Latrine, Victoria Peak Garden (11SW-A/C341)	22/6	ASD	18/6	Soil/rock cut slope	Minor (1.5)	Access		
HK 6/29	Lugard Road, the Peak	23/6	HyD/HK	17/6	Soil/rock cut slope	Minor (0.3)	Road	½ lane of road blocked	
HK 6/30	Above Tung Yuen Terrace, Sai Wan Estate, Kennedy Town	16/6	HD	15/6 (14:00)	Soil cut slope	Minor (3)	Carpark		
HK 6/31	Behind 80 Repulse Bay Road, Repulse Bay (15NE-A/CR79)	22/6	Resident	16/6	Soil cut slope	Minor (7)	Building access		Lack of maintenance
HK 7/1	Below 2 Big Wave Bay Road, Shek O (15NE-B/C67)	19/7	DO/S	16/6	Soil cut slope	Minor (4)	Road		
HK 8/1	Behind Doctor's Quarter, Tung Wah Eastern Hospital, and near Huts XH/3B/C3/7 & TH/R3/1D/H, So Kon Po (11SE-A/C141)	27/7	Hospital	16/6	Boulder fall	Minor (8)	Building lot Squatters		
HK 8/2	Above Findlay Road, the Peak	6/8	HyD/HK	Unknown	Boulder fall	Minor (0.7)	Road	Road closed	
HK 8/3	Near junction of Tai Hang Road & Blue Pool Road, Happy Valley	13/8	HyD/HK	13/8 (7:00)	Boulder fall	Minor (3.4)	Road		

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 7 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 8/4	Near junction of Tai Hang Road & Perkins Road, Jardine's Lookout (11SE-C/C87)	27/8	HyD/HK	27/8	Soil cut slope	Minor (0.15)	Pedestrian pavement		
HK 8/5	Cape D'Aguilar Road, Cape D'Aguilar	25/8	DO/S	August	Soil cut slope	Minor (1.5)	Road		
HK 9/1	4 Shiu Fai Terrace, Stubbs Road, Wan Chai (11SW-D/R206 & R210)	17/9	Public	17/9 (am)	Wall	N/A	Carpark		No geotechnical concern
HK 9/2	70 Kennedy Road	22/9	Resident	17/9	Rock fall	Minor (0.1)	Pedestrian pavement		Lack of maintenance
HK 9/3	Near Baguio Villa, Victoria Road, Pok Fu Lam	25/9	Police	25/9 (8:00)	Soil cut slope	Minor (10)	Road	2 lanes of road closed	
HK 9/4	Near Hong Kong Country Club, Island Road, Deep Water Bay	27/9	Police	26/9 (23:00)	Soil cut slope	Minor (15)	Road	1 lane of road closed	
HK 9/5	Near Maryknoll Sisters School, Tai Hang Road, Happy Valley (11SE-C/C54)	26/9	Public	26/9	Soil cut slope	Minor (5)	Road	1 lane of road closed	

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 8 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 9/6	Opposite Fire Station, and above Caisson Wall No.CW3, Ap Lei Chau Bridge Road, Ap Lei Chau	26/9	Public	25/9 (17:30)	Rock cut slope	Major (100)	Road Construction site	1 lane of road closed Pedestrian pavement closed	Lack of maintenance
HK 9/7	Opposite 90 Repulse Bay Road, Repulse Bay (15NE-A/C107)	26/9	HyD/HK	26/9 (18:30)	Rock fall	Minor (2.3)	Road	1 lane of road closed	
HK 9/8	Behind 22 Shouson Hill Road, Shouson Hill	26/9	Police	26/9 (12:00)	Soil cut slope	Minor (2.5)	Road		
HK 9/9	Behind 27-31 Blue Pool Road, Happy Valley (11SW-D/CR181)	26/9	Police	26/9 (20:00)	Soil/rock cut slope	Minor (8)	Construction site		
HK 9/10	Opposite Ronsdole Garden, 25 Tai Hang Drive, Tai Hang	27/9	Public	27/9	Soil cut slope	Major (100)	Pedestrian pavement	Pedestrian pavement closed	Lack of maintenance
HK 9/11	Opposite Chai Wan Baptist Church Pre-school Education Centre, 30 Fei Tsui Road, Chai Wan (11SE-D/C42)	27/9	Church	26-27/9	Soil/rock cut slope	Minor (30)	Building lot		
HK 9/12	Below On Hing House, Hing Wah Estate, Wan Tsui Road, Chai Wan (11SE-D/C49)	27/9	HyD/HK	27/9	Soil/rock cut slope	Minor (5)	Pedestrian pavement	Pedestrian pavement closed	

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 9 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 9/13	Below Chinese Permanent Cemetery, Cape Collinson Road, Chai Wan (11SE-D/C100)	27/9	HyD/HK	Unknown	Soil cut slope	Minor (5)	Pedestrian pavement	Pedestrian pavement closed	
HK 9/14	Below 10-12 Mount Butler Road, Tai Hang Road, Tai Hang (11SE-C/C56)	27/9	HyD/HK	26/9	Soil cut slope Natural slope	Minor (6)	Road	1 lane of road closed	
HK 9/15	Behind Rose Court, 115-117 Wong Nai Chung Road, Happy Valley (11SW-B/CR271)	27/9	Public	27/9 (8:00)	Soil cut slope	Minor (0.7)	Carpark	1 car damaged	Lack of maintenance
HK 9/16	Behind Police Married Quarters, Pak Fuk Road, North Point (11SE-A/C229)	27/9	Resident	25/9	Rock fall	Minor (0.4)	Open space		
HK 9/17	Near Huts YH/R3/1D/H & YH/R3/2D/H, and behind Quarters, Tung Wah Eastern Hospital, Eastern Hospital Road, So Kon Po	27/9	Hospital	15/9	Boulder fall	Minor (2)	Building lot Squatters	2 huts permanently evacuated	
HK 9/18	Behind Pui Chi Boy's Home, 986 King's Road, Quarry Bay (11SE-A/C78)	27/9	Resident	27/9	Soil cut slope	Minor (0.05)	Open space	Channel blocked	Lack of maintenance

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 10 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 9/19	Adjacent to 66-68 Kennedy Road	26/9	Police	Unknown	Rock fall	Minor (<0.5)	Pedestrian pavement		
HK 9/20	Below 23 Repulse Bay Road, Repulse Bay (11SE-C/C9)	27/9	HyD/HK	26/9	Soil cut slope	Minor (7)	Road		
HK 9/21	Below Monte Varde, 41 Repulse Bay Road, Repulse Bay (15NE-A/C18)	26/9	Public	26/9	Soil/rock cut slope	Minor (8)	Road	2 lanes of road closed	
HK 9/22	Below Kui Lok Villa, 99 Repulse Bay Road, Repulse Bay (15NE-A/C45)	27/9	HyD/HK	26/9	Soil cut slope	Minor (2)	Road	½ lane of road closed	
HK 9/23	Wong Ma Kok Road, Stanley (15NE-C/C16)	27/9	HyD/HK	26/9	Soil cut slope	Minor (20)	Road	1 lane of road closed	Lack of maintenance
HK 9/24	Opposite 8 Plunkett's Road, the Peak	27/9	Public	27/9 (9:30)	Soil cut slope	Minor (49)	Access	Access closed Pedestrian pavement closed	
HK 9/25	Access road to 39A Shouson Hill Road, Shouson Hill	27/9	Public	26/9 (9:00)	Soil cut slope	Minor (2)	Building access		

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 11 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 9/26	Junction of Shouson Hill Road and access to 35 Shouson Hill Road, Shouson Hill (11SW-D/C142)	27/9	Public	27/9	Rock fall	Minor (0.3)	Access		
HK 9/27	Borrett Road, Mid-Levels (11SW-B/C194)	26/9	HyD/HK	26/9	Soil/rock cut slope Rock fall	Minor (12)	Road	1 lane of road closed	
HK 9/28	Behind 8 Severn Road, Mount Gough	26/9	Public	26/9 (18:45 & 23:00)	Soil cut slope	Major (115)	Building lot	Flats at 8 Severn Road evacuated	
HK 9/29	Hut RH/21A/112, Telegraph Bay Village, Victoria Road, Pok Fu Lam	26/9	BOO	26/9 (10:00)	Retaining wall	Minor (3.6)	Squatters	1 hut temporarily evacuated	
HK 9/30	Below Access Road to 27-33 Mount Kellett Road, Mount Kellett	28/9	Public	27/9 (am)	Soil cut slope	Minor (1-2)	Road	½ lane of road blocked	
HK 9/31	Between Houses No.1 & 3, Happy View Terrace, Link Road, Leighton Hill	24/9	BOO	Unknown	Retaining wall	Minor	Building lot		Rupture of water main
HK 9/32	Opposite AIA Building, Stubbs Road, Wan Chai (11SW-B/C24)	27/9	Resident	26/9	Soil cut slope	Minor	Pedestrian pavement		
HK 9/33	Black's Link, Mount Nicholson	28/9	Police	Unknown	Rock fall	Minor (5)	Road	1 lane of road closed	

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 12 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 9/34	Black's Link, Middle Gap	28/9	Police	Unknown	Soil cut slope	Minor (10)	Road	1 lane of road closed	
HK 9/35	Behind Gee Chong Hong Centre, 65 Wong Chuk Hang Road, Wong Chuk Hang (11SW-D/C631)	28/9	HyD/HK	26/9 (pm)	Soil/rock cut slope	Minor (10)	Building access	Access closed	Lack of maintenance
HK 9/36	Access road to WSD Pump House and below Brewin Path, the Peak (11SW-B/C8)	29/9	HyD/HK	26/9 (pm)	Soil cut slope	Minor (2)	Building access		Lack of maintenance
HK 9/37	Access road to Magazine Height, 17 Magazine Gap Road, Magazine Gap (11SW-C/CR302)	26/9	Public	26/9 (21:00)	Soil cut slope	Minor (8)	Building access Pedestrian pavement	2 lanes of road closed Pedestrian pavement closed	Lack of maintenance
HK 9/38	Huts RH/23D/115 & 116, Tai Hau Wan Village, Bisney Road, Sha Wan	27/9	Police	27/9 (am)	Soil cut slope Natural slope	Minor (20)	Squatters	2 huts permanently evacuated	
HK 9/39	Below 5 Repulse Bay Road, Repulse Bay (11SE-C/C168)	28/9	HyD/HK	26/9	Soil cut slope	Minor (1)	Road		
HK 9/40	Access road to 119A Repulse Bay Road, Repulse Bay (15NE-A/C76)	28/9	Resident	26/9	Soil cut slope	Minor (5)	Building access	½ lane of road closed Pedestrian pavement closed	



Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 13 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 9/41	1 Chatham Path, the Peak	25/9	Police	26/9	Rock fall	Minor (2-3)	Pedestrian pavement		
HK 9/42	Opposite Shan Pin Terrace, 27 A Kung Ngam Road, Shau Kei Wan (11SE-B/C89)	29/9	GEO	24-26/9	Rock fall	Minor (10)	Pedestrian pavement	Pedestrian pavement closed	
HK 9/43	Below 33 Magazine Gap Road, Magazine Gap (11SW-D/C526)	29/9	HyD/HK	26/9	Soil cut slope	Minor (<1)	Road		
HK 10/1	Near 30 Po Shan Road, Mid-levels	4/10	HyD/HK	Unknown	Rock fall	Minor (0.25)	Road		Lack of maintenance
HK 10/2	Near 29 Lugard Road, Che Kei Shan (11SW-A/C228)	29/9	BOO	27/9 (am)	Soil cut slope	Minor (8-10)	Open space		
HK 10/3	Front of 63 Mount Kellett Road, Mount Kellett (11SW-C/C244)	29/9	BOO	26/9 (23:00)	Soil cut slope	Minor (3-5)	Carpark		
HK 10/4	Hut XH/22E/G6/125, Upper Kai Lung Wan Village	5/10	DO/HKS	26/9 (am)	Soil cut slope	Minor (1)	Squatters	1 hut permanently evacuated	
HK 10/5	113 Tai Hang Road (11SE-C/C66)	15/10	Resident	13/10	Fill slope	Minor (0.45)	Pedestrian pavement Building access		Lack of maintenance

Table A1 - List of Incidents in Hong Kong Island Reported to GEO in 1993 (Sheet 14 of 14)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
HK 10/6	Near WSD Pump House, Stanley Gap Road (15NE-A/C241)	13/10	HyD/HK	13/10	Soil/rock cut slope	Minor (1)	Road		
HK 10/7	Opposite 44 Island Road (15NW-B/C53)	14/10	HyD/HK	13/10 (mid-night)	Soil/rock cut slope	Minor (1.3)	Road		Lack of maintenance
HK 10/8	Footpath between Stanley Main Beach and Hair Pin Beach, Stanley	27/9	USD	26/9	Rock fall	Minor (0.5)	Pedestrian pavement BBQ area	Pedestrian pavement closed	
HK 11/1	Behind Block A, 55 Island Road, and below House No.3, 36 Repulse Bay Road, Sham Shui Wan	28/10	Resident	26/9	Fill slope	Minor (3)	Carpark		Lack of maintenance
HK 12/1	Adjacent to Montgomery Block 42B, Kennedy Road (11SW-B/C156)	16/12	DLO/HK	Sept.	Soil cut slope	Minor (3.5)	Open space		Lack of maintenance

Table A2 - List of Incidents in Kowloon Reported to GEO in 1993 (Sheet 1 of 6)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m³)			
K 5/1	Behind 504 Nathan Road, Yaumatei	24/5	Police	24/5 (15:30)	Rock fall	Minor (1)	Back lane		
K 6/1	Fei Ngo Shan Road near junction of Jat's Incline & Kowloon Peak	2/6	HyD/K	2/6 (am)	Rock fall	Minor (5)	Road	1 lane of road blocked	
K 6/2	Next to nullah, Jordan Valley Road South, Ngau Tau Kok	11/6	Police	11/6 (am)	Subsidence	Minor (4)	Road	Road closed	
K 6/3	Behind Block No.6, Tsui Chuk Garden, Wong Tai Sin	15/6	DO/WTS	11/6	Fill slope	Minor (3)	Pedestrian pavement		
K 6/4	Huts RKT/5B/24, 25, 36, 52 & 54, Heung Yeung Village, Tsz Wan Shan	11/6	DO/WTS	11/6	Flooding	N/A	Squatters	5 huts temporarily evacuated	No geotechnical concern
K 6/5	Behind Huts RKT/12/E/184 & 185, XKE/12/G/198, Che Tang Chuen, Lei Yue Mun	16/6	Police	Unknown	Fill slope	Minor (5-7)	Squatters	2 huts permanently evacuated 1 hut temporarily evacuated	
K 6/6	Near junction of Sheung Shing Street & access road leading to Tin Kwong Road Police Quarters, Homantin (11NW-D/C53)	16/6	HyD/K	16/6 (17:15)	Soil cut slope	Minor (45)	Road Pedestrian pavement	2 lanes of road closed	

Table A2 - List of Incidents in Kowloon Reported to GEO in 1993 (Sheet 2 of 6)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
K 6/7	Ko Chiu Road, Kwun Tong (11SE-B/C18)	18/6	HyD/K	16/6 (15:00)	Soil cut slope	Minor (18)	Pedestrian pavement		
K 6/8	Behind Huts USD/NSM/58-64, Nam Shan Mei Village, adjacent to Diamond Hill Urn Cemetery	17/6	Police	Unknown	Soil cut slope	Minor (1-2)	Squatters	7 huts permanently evacuated	
K 6/9	Opposite Inverness Road Garden, Inverness Road, Kowloon Tong (11NW-B/C175)	16/6	HyD/K	16/6 (pm)	Soil/rock cut slope	Minor (6)	Pedestrian pavement	Pedestrian pavement closed	
K 6/10	Behind 283 Chatham Road North, Hung Hom (11NW-D/C81)	17/6	Public	16/6 (pm)	Soil/rock cut slope	Minor (<1)	Back lane		
K 9/1	Near junction of Chatham Road and Salisbury Road, Tsim Sha Tsui, Kowloon (11SW-B/C46)	17/9	HyD/K	17/9 (am)	Rock fall	Minor (1-2)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	
K 9/2	Near Jat's Incline, Fei Ngo Shan Road, Kowloon Peak	27/9	HyD/K	27/9	Soil cut slope	Major (1000)	Country park Road	Road closed	Lack of maintenance
K 9/3	Behind Hut RKT/5/N/9, Heung Yeung Village, Tsz Wan Shan	26/9	Police	26/9 (17:00)	Retaining wall	Minor (0.25)	Squatters	1 hut permanently evacuated	Lack of maintenance

Table A2 - List of Incidents in Kowloon Reported to GEO in 1993 (Sheet 3 of 6)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
K 9/4	Behind USD Plant Nursery and opposite Wai Yip Steet Flyover, Kwun Tong Road, Ngau Tau Kok (11NE-A/C72)	29/9	ASD	26/9	Rock fall	Minor (20)	Open space	U-channel blocked	Lack of maintenance
K 9/5	Ma Wan Tsuen, Lei Yue Mun	26/9	Police	Unknown	Soil cut slope	Minor (10.5)	Squatters	2 huts permanently evacuated	
K 9/6	Behind Hut No.32B1, On Sai Lee Tsuen, Lei Yue Mun	26/9	DO/KT	Unknown	Rock fall	Minor (1.8)	Squatters	1 hut temporarily evacuated	
K 9/7	Behind 70 Cha Kwo Ling Road, Kwun Tong	26/9	Police	26/9	Soil cut slope	Minor (45)	Open space		Lack of maintenance
K 9/8	Opposite Yau Tong Road, Lei Yue Mun Road, Yau Tong (11NE -D/C117)	27/9	HyD/K	Unknown	Soil cut slope	Minor (15)	Pedestrian pavement	Pedestrian pavement closed	
K 9/9	Kai Tin Road near Junk Bay Road (11NE-D/CR112)	27/9	HyD/K	26/9	Soil/rock cut slope	Minor (2.5)	Pedestrian pavement	Pedestrian pavement closed	
K 9/10	Behind Ka Woo Film Studios South, Fung Shing Street, Hammer Hill, Ngau Chi Wan (11NE-A/C97)	27/9	Police	27/9 (6:00-7:00)	Soil cut slope	Minor (49)	Building lot	1 house permanently evacuated Several houses temporarily evacuated	



Table A2 - List of Incidents in Kowloon Reported to GEO in 1993 (Sheet 4 of 6)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
K 9/11	Ka Woo Film Studios, Fung Shing Street, Hammer Hill, Ngau Chi Wan	29/9	BOO	27/9	Retaining wall	Minor (4)	Building lot	Part of house temporarily evacuated	
K 9/12	Behind Ka Woo Film Studios East, Fung Shing Street, Hammer Hill, Ngau Chi Wan	27/9	Town Gas	27/9	Soil cut slope Natural slope	Major (750)	Building lot	1 house damaged Major gas pipe exposed Footpath closed	
K 9/13	Opposite school at Ping Ting Road, Ngau Chi Wan	27/9	HyD/K	27/9 (am)	Soil cut slope	Minor (10)	Pedestrian pavement		Lack of maintenance
K 9/14	Opposite Munsang College and adjacent to Kowloon Tsai Park, Inverness Road, Kowloon City (11NW-B/C175)	28/9	ASD	26/9	Rock fall Soil cut slope	Minor (11)	Pedestrian pavement		Lack of maintenance
K 9/15	Opposite Yan Shun Street	29/9	HyD/K	Unknown	Soil cut slope	Minor (5)	Pedestrian pavement		
K 9/16	Access to Chinese Permanent Cemetery, Yau Tong (11SE-B/C104)	29/9	HyD/K	Unknown	Soil cut slope	Minor (3)	Open space		

Table A2 - List of Incidents in Kowloon Reported to GEO in 1993 (Sheet 5 of 6)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
K 9/17	Behind Tennis Courts, Hiu Ming Street Playground, Hiu Ming Street, Sau Mau Ping (11NE-D/C/45)	26/9	ASD	26/9 (18:00)	Rock cut slope	Major (200)	Playground	2 tennis courts closed	Lack of maintenance
K 9/18	Hiu Ming Street Playground, Hiu Ming Street, Sau Mau Ping (11NE-D/C/46)	29/9	ASD	26/9 (19:30)	Soil/rock cut slope	Minor (15)	Playground		
K 9/19	Hiu Ming Street Playground, Hiu Ming Street, Sau Mau Ping (11NE-D/C/47)	29/9	ASD	26/9 (19:30)	Soil cut slope	Minor (40)	Playground		
K 9/20	Behind Chuk Yuen North Estate, Wing Chuk Street	29/9	HD	27/9 (am)	Boulder fall	Minor (15)	Open space		
K 9/21	Behind Service Reservoir Playground, East End of Yuk Wah Street, Tsz Wan Shan (11NE-A/C/13)	8/10	WSD	26/9	Soil cut slope	Major (375)	Open space		
K 10/1	Diamond Hill New Village near Fung Tak Road Extension and Chi Un Nunnery	12/10	HD	27/9	Subsidence	Minor (<1)	Squatters	2 huts permanently evacuated	

Table A2 - List of Incidents in Kowloon Reported to GEO in 1993 (Sheet 6 of 6)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
K 10/2	Shatin Pass above Kwun Yam Temple	13/10	HyD/NT	13/10 (21:00)	Rock fall	Minor (1)	Road	1 lane of road blocked	Lack of maintenance
K 12/1	Access road to Sau Mau Ping Road near Tseung Kwan O Tunnel Toll Gate (11NE-D/C156)	8/12	HyD/M	Unknown	Soil cut slope	Minor (24)	Open space		
K 12/2	Pik Wan Road, Lam Tin South	8/12	HyD/M	Unknown	Subsidence	Minor (33)	Pedestrian pavement	Pedestrian pavement closed	Rupture of drains

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 1 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 2/1	Behind House Nos.61-62, near Hiram's Highway, Sai Kung	3/2	DO/SK	27/1	Subsidence	Minor	Private access	Access road closed	Rupture of water main
ME 3/1	Beside temporary track at Waste Reception area, Shui Ngau Tso	10/3	Consultant	June 92	Soil cut slope	Major (150)	Access road		
ME 5/1	Adjacent to House No.20, Ngau Pei Sha New Village, Siu Lek Yuen, Shatin	1/5	Resident	1/5	Soil cut slope	Minor (4)	Building access Pedestrian pavement	Pedestrian pavement closed	
ME 5/2	Chut Shui Wan Tsuen, Ha Wo Che, Shatin	1/5	GEO	1/5 (6:45)	Soil cut slope	Minor (6)	Abandoned hut		
ME 5/3	16 Sui Wo Road, Shatin	1/5	GEO	1/5	Natural slope	Minor (<20)	Building lot		
ME 5/4	Below Hut No.428, Ha Wo Che Village, Shatin	1/5	HyD/NT	1/5 (am)	Soil cut slope	Minor (3)	Squatters	1 hut temporarily evacuated	
ME 5/5	Below House No.2, Ma Liu Village, Kau To Shan, Shatin	3/5	Public	2/5	Fill slope	Minor (8)	Pedestrian pavement		Lack of maintenance
ME 5/6	Behind Hut No.121, Pai Tau Hang Village, Pai Tau Hang, Shatin	3/5	GEO	Unknown	Soil cut slope	Minor (5)	Squatters	1 hut temporarily evacuated	Lack of maintenance

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 2 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m³)			
ME 5/7	Behind Huts RMOS/B63-71,73,75-79 & RMOS/X9-12,15, Ma On Shan Upper Village, Shatin	3/5	HD	1/5 (18:00)	Soil cut slope Natural slope Boulder fall	Major (75)	Pedestrian pavement Squatters	20 huts temporarily evacuated	
ME 5/8	Behind Hut No.353, Pai Tau Village, Pai Tau, Shatin	5/5	HD	1/5	Soil cut slope	Minor (<1)	Squatters	1 hut permanently evacuated	Lack of maintenance
ME 5/9	Yan Kwong Lutheran Church, Ma On Shan Tsuen Upper, Ma On Shan, Shatin	4/5	GEO	1/5 (am)	Soil cut slope	Minor (5)	Open space		Lack of maintenance Rupture of water main/drain
ME 5/10	Near 33 To Fung Shan Road, To Fung Shan, Shatin	5/5	HyD/NT	1/5	Soil cut slope	Minor (2)	Road		Lack of maintenance
ME 6/1	Adjacent to House No.21, Tap Mun New Fishermen's Village, Tap Mun Chau	6/6 & 12/6	Police	6/6 (2:00) 12/6 (8:30)	Soil cut slope	Minor (13)	Building lot Building access	1 flat evacuated Pedestrian access closed	2 failures
ME 6/2	No.1, Ngau Kwu Leng Village, Lam Tsuen, Tai Po	11/6	Resident	11/6 (8:00-9:00)	Natural slope	Minor (45)	Squatters Footpath	15 huts permanently evacuated	
ME 6/3	Behind House No.31, To Shek, Shatin	11/6	DO/ST	11/6 (15:45)	Soil cut slope	Minor (2)	Building lot		



Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 3 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 6/4	Behind House No.29, Tai Lam Liu, Shatin	15/6	DLO/ST	11/6 (15:00)	Soil cut slope	Minor (3)	Back lane		
ME 6/5	Front of Hut No.34, Ha Pun Shan Tsuen, Ma On Shan	11/6	Police	11/6 (15:00-16:00)	Soil/rock cut slope	Minor (40)	Building lot	2 huts permanently evacuated Footpath closed	
ME 6/6	Behind Chung Chi College, the Chinese University of Hong Kong, Ma Liu Shui	11/6	Public	11/6 (17:00)	Soil cut slope	Minor (49)	Building lot	1 flat evacuated	Lack of maintenance
ME 6/7	Behind Hut XRCSW/13, Chut Shui Wan, Shatin	11/6	Public	11/6 (pm)	Soil cut slope	Minor (2)	Squatters	1 hut permanently evacuated	
ME 6/8	Behind House No.21, Chap Wai Kon Shan Tsuen, Siu Lek Yuen, Shatin	12/6	Police	12/6 (mid-night)	Soil/rock cut slope	Minor (30)	Building lot Building access		Lack of maintenance
ME 6/9	Behind House No.7, Sheung Wo Che, Shatin	11/6	Public	11/6 (pm)	Soil cut slope	Minor (15)	Building lot	3 houses evacuated	
ME 6/10	Behind Wah Lai Industrial Building, Tat Yip Lane, Shatin	11/6	Police	11/6 (16:56)	Soil cut slope	Minor (20)	Pedestrian pavement Road	Road closed 2 houses permanently evacuated	
ME 6/11	Near Long Keng, Sai Sha Road, Sai Kung (8SW-A/C3 & C4)	16/6	Police	16/6	Soil/rock cut slope	Major (83)	Road	Road closed	

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 4 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 6/12	Opposite Tai Mong Tsai Outdoor Training Camp, Tai Mong Tsai Road, Sai Kung (8SW-B/C22)	16/6	Police	16/6	Soil cut slope	Major (250)	Road	1 lane of road blocked	Lack of maintenance
ME 6/13	Front of House Nos.1-4, Sun King Terrace, Lot 628 in DD215, Sai Kung	16/6	Police	16/6 (11:30)	Subsidence	Major (80)	Building lot Footpath	4 houses temporarily evacuated Footpath collapsed	
ME 6/14	Behind House Nos.61-62, Hiram's Highway, Sai Kung (8SW-C/FR6)	16/6	DO/SK	16/6 (11:30)	Fill slope	Minor (30)	Back lane		
ME 6/15	Tai Wan, Tai Mong Tsai Road, Sai Kung	16/6	HyD/NT	16/6 (11:30)	Fill slope	Minor (45)	Pedestrian pavement	Pedestrian pavement closed	
ME 6/16	Lam Kam Road, Tai Po (6NE-D/C2)	16/6	HyD/NT	16/6 (9:00-10:00)	Soil/rock cut slope	Minor (1.5)	Road		
ME 6/17	Hong Lok Yuen, Tai Po (3SW-D/C3 & 7NW-B/C24)	16/6	BOO	16/6 (9:00-11:00)	Soil cut slope Natural slope	Major (52)	Open space		
ME 6/18	Sai Sha Road, Sai Kung	12/6	HyD/NT	11/6 (pm)	Soil/rock cut slope	Minor (30)	Road	1 lane of road closed	

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 5 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 6/19	Near Kei Ling Ha Lo Wai junction, Sai Sha Road, Sai Kung (8NW-C/C11)	12/6	HyD/NT	11/6 (21:00)	Soil/rock cut slope	Major (400)	Road	2 lanes of road closed	Lack of maintenance
ME 6/20	Access road near Ngau Liu, Sai Kung	16/6	HyD/NT	16/6	Soil cut slope	Minor (5)	Open space	Channel blocked	
ME 6/21	Behind House Nos.64-65, Wai Sum Village, Clear Water Bay Road, Mang Kung Uk, Sai Kung	17/6	Police	16/6 (11:00)	Soil cut slope	Major (300)	Building lot	Back lane blocked	
ME 6/22	Behind Hut SK/HH/1, Ming Oi San Tsuen, Hang Hau Road, Sai Kung	16/6	Public	16/6 (pm)	Soil cut slope	Minor (5)	Squatters		
ME 6/23	Near 31 Tao Fung Shan Road, Shatin	16/6	DO/ST	16/6 (pm)	Soil cut slope	Minor (1)	Road	Road blocked	
ME 6/24	Behind House No.56, Pai Tau Village, Shatin	17/6	Public	17/6 (am)	Soil cut slope	Minor (2)	Building lot Back lane	Back lane blocked	
ME 6/25	Behind House No.43, Wo Liu Hang, Fo Tan, Shatin	17/6	Public	17/6 (am)	Soil cut slope	Minor (1)	Building lot	Front yard of village house blocked	
ME 6/26	Front of 1B, Ha Hang Village, Tai Po	18/6	DO/TP	16/6 (pm)	Fill slope	Minor (1)	Carpark		Lack of maintenance

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 6 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 6/27	Adjacent to House No.95, Shuen Wan Chan Uk, Tai Po	17/6	DO/TP	16/6 (pm)	Soil cut slope	Minor (5)	Open space		
ME 6/28	Behind House Nos.41-44, Sam Mun Tsai New Village, Tai Po	16/6	Public	16/6 (pm)	Soil cut slope	Minor (20)	Back lane		
ME 6/29	Behind House No.27B, Hung Uk Village, Man Kung Uk, Sai Kung	18/6	BOO	16/6 (am)	Soil/rock cut slope	Minor (2)	Open space		
ME 6/30	Near Kwun Yam Keng, Lam Kam Road, Tai Po	17/6	HyD/NT	16/6	Soil cut slope	Minor (10)	Construction site		Lack of maintenance
ME 6/31	Between Ng Tung Chai and Kwun Yam Keng, Lam Kam Road, Tai Po	17/6	HyD/NT	16/6	Soil cut slope	Minor (10)	Construction site Squatters		Lack of maintenance
ME 6/32	Near Savanna Garden, Tai Po Road, Tai Po Kau	18/6	HyD/NT	16/6	Soil/rock cut slope	Minor (2)	Road		
ME 6/33	Adjacent to Tai Po Road-Tai Po Kau near Tsung Tsai Yuen	18/6	HyD/NT	16/6	Soil cut slope	Minor (3)	Road		Lack of maintenance
ME 6/34	Ka Lok Horticulture near Fat Kwong Temple, Man Kung Wo, Sai Kung	17/6	BOO	16/6	Soil cut slope	Major (150)	Open space		

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 7 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 6/35	Near Suri Villa, Tsam Chuk Wan, Bamboo Bay, Sai Kung	17/6	HyD/NT	16/6	Soil cut slope	Minor (7.2)	Open space	2 huts temporarily evacuated	
ME 6/36	Behind Hut No.2, Tung Ah Village, High Island, Sai Kung	16/6	Police	16/6 (13:30)	Soil/rock cut slope	Minor (15)	Building lot		
ME 6/37	Chong Hing Water Sports Centre, Sai Kung	16/6	ASD	16/6	Rock fall	Minor (10)	Boat shed		
ME 6/38	Access road, Wo Mei, Sai Kung	18/6	DO/SK	Unknown	Soil cut slope	Minor (6)	Village Access		
ME 6/39	Behind House No.50, Pik Shui Sun Tsuen, Tai Po Tsai, Sai Kung	18/6	DO/SK	16/6	Soil cut slope	Minor (1)	Open space		
ME 6/40	Behind House Nos.4A & 5, Chap Wai Kon Old Village, Shatin	17/6	DO/ST	Unknown	Soil cut slope	Minor (15)	Squatters	4 huts permanently evacuated	
ME 6/41	Tai Mong Tsai Road, San Tin Hang, Sai Kung (8SW-A/C11)	16/6	Police	16/6	Soil/rock cut slope	Minor (45)	Road	1 lane of road blocked	
ME 6/42	Behind Rural Committee, Ho Chung, Sai Kung	21/6	BOO	Unknown	Soil cut slope	Minor (1.5)	Open space		Lack of maintenance

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 8 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 6/43	Behind Public Toilet No.46, Tui Min Hoi, Sai Kung	19/6	RSD	Unknown	Soil cut slope	Minor (5)	Public toilet		
ME 6/44	Footpath from Hong Kin Road to Tui Min Hoi Chuen, Sai Kung	21/6	DO/SK	Unknown	Natural slope	Minor (2)	Village access		
ME 6/45	Below House No.3, Hon Ka Road, Kam Shan, Tai Po	18/6	GEO	16/6	Natural slope	Minor (2)	Building lot Streamcourse		
ME 6/46	Access road to Lady Maclehose Holiday Village, Sai Kung (8SW-B/C10)	18/6	ASD	16/6	Soil cut slope	Minor (28)	Pedestrian pavement		
ME 6/47	Access road to Lady Maclehose Holiday Village Entrance, Sai Kung	18/6	ASD	13/6	Soil cut slope	Minor (15)	Road		
ME 6/48	Behind Hut RSLY/343, Lung Pei Tau, Tai Lam Liu, Shatin	28/6	Public	Unknown	Soil cut slope	Minor (0.25)	Squatters		
ME 6/49	Behind Huts RTP/MH/A487 & 488, Pinehill Village, Tai Po	30/6	DO/TP	27/6 (3:00)	Soil cut slope	Minor (12.5)	Squatters	2 huts permanently evacuated	Lack of maintenance
ME 6/50	Behind Hut X/PNS/5 & 6, Pak Ngau Shek, Tai Po	30/6	DO/TP	Unknown	Soil cut slope	Minor (0.5)	Squatters		



Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 9 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 6/51	Adjacent to Ting Kok Road near Ting Kok Village, Tai Po (3SE-C/N1)	23/6	DO/TP	16/6	Soil cut slope	Minor (15)	Pedestrian pavement		
ME 6/52	Behind House No.58, Ko Lau Wan, Sai Kung	25/6	DO/TP	16/6	Soil/rock cut slope	Minor (48)	Back lane		
ME 7/1	Tung Tsz Staff Quarter, Tung Tsz, Shuen Wan, Tai Po (3SE-C/C11)	30/6	ASD	June	Soil cut slope	Minor (25)	Access road		
ME 7/2	Access road between Bride's Pool Road and Tai Mei Tuk Government Quarter, Tai Mei Tuk, Tai Po	30/6	ASD	June	Soil cut slope	Minor (6)	Access road		
ME 7/3	Adjacent House No.40, Muk Min Shan, Sai Kung	19/7	DO/SK	Unknown	Soil cut slope	Minor (1.2)	Back lane		
ME 7/4	Sheung Tam Shui Hang Village, Sha Tau Kok	6/7	DSD	Unknown	Natural slope	Minor (30)	Open space		
ME 7/5	Ap Chau	30/7	DO/N	Before June	Soil cut slope	Minor (0.6)	Vacant huts		
ME 8/1	Front of Huts RTP/TPT/ B27, B31 & B32, Ying Pun Ha, Tai Po	4/8	GEO	June	Soil cut slope	Minor (5)	Squatters Building lot	3 huts permanently evacuated	

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 10 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 8/2	Above House No.21, Ngau Pei Sha New Village, Shatin	5/8	HD	Unknown	Soil cut slope	Minor (6)	Open space		
ME 8/3	Behind Hut No.262, Pai Tau Village, Shatin	20/8	DO/ST	Unknown	Soil cut slope	Minor ( < 1)	Back lane		
ME 8/4	Front of House No.23A, Sun King Terrace, Fui Yiu Ha, Sai Kung	25/8	GEO	Unknown	Fill slope	Minor (3)	Staircase		
ME 9/1	Behind House No.1, Sheung Wong Yi Au, Area DD32, Lot 661, Tai Po	24/9	Resident	Unknown	Soil cut slope	Minor (1)	Open space		
ME 9/2	No.77, Nam Wa Po Village, Tai Po	26/9	Resident	26/9 (21:00)	Soil cut slope	Minor (5)	Squatters	2 huts permanently evacuated and 3 huts temporarily evacuated	
ME 9/3	M.S.42, Tai Po Road-Tai Po Tau, near Tsung Tsai Yuen, Tai Po (7NW-D/C1)	27/9	HyD/NT	26/9 (21:00)	Soil cut slope	Major (100)	Road	2 lanes of road blocked	
ME 9/4	Near Pavilion, Tai Po Road- Tai Po Tau, Tsung Tsai Yuen, Tai Po	27/9	HyD/NT	26/9 (20:00)	Soil cut slope	Major (80)	Road	2 lanes of road blocked	

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 11 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 9/5	Access road between Tai Po Road-Tai Po Kau and Cheung Shue Tan, Tai Po	27/9	DO/TP	26/9 (22:00)	Soil cut slope	Major (80)	Road	1 lane of road blocked	Lack of maintenance
ME 9/6	Tai Po Road-Tai Po Kau, between Tsiu Hang and Cheung Shue Tan, Tai Po (7NE-C/C84)	27/9	HyD/NT	26/9 (mid-night)	Soil cut slope	Minor (3)	Pedestrian pavement		
ME 9/7	Opposite to Villa Deux Ponte, Tai Po Road-Tai Po Kau, Tai Po Mei, Tai Po (7NE-C/C82)	27/9	HyD/NT	26/9 (pm)	Soil cut slope	Minor (3-6)	Open space		
ME 9/8	Access road between Tai Po Road-Tai Po Kau and Tai Po Kau Tsuen, Tai Po	27/9	DO/TP	Unknown	Soil cut slope	Minor (35)	Road	1 lane of road blocked	
ME 9/9	Access road between Tai Po Road-Tai Po Kau and Tai Po Kau Tsuen, Tai Po	27/9	DO/TP	Unknown	Soil cut slope	Minor (40)	Road	1 lane of road blocked	
ME 9/10	Pak Tam Road near Pak Tam Au, Sai Kung	26/9	Police	26/9	Soil cut slope	Minor (40)	Road	1 lane of road closed	
ME 9/11	Pak Tam Road at 625m north from Pak Tam Au, Sai Kung	26/9	Police	26/9	Soil cut slope	Major (60)	Road	1 lane of road closed	

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 12 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 9/12	Access road to Mui Tze Lam, Shatin	27/9	Public	26/9	Soil cut slope	Major (100)	Road	2 lanes of access road blocked	Lack of maintenance
ME 9/13	Access road between Chung Nga Road and Pinehill Village, Tai Po	27/9	EPD	26/9 (pm)	Soil cut slope	Minor (6)	Open space		Lack of maintenance
ME 9/14	Between House Nos.8A, 8C & 8D, Tan Shan, Tseng Lan Shue	26/9	Resident	26/9	Retaining wall	Minor (6)	Building lot	1 house evacuated Courtyard closed	Lack of maintenance
ME 9/15	Front of Hut Nos.33-35, Rennie's Mill	26/9	HD	26/9 (noon)	Retaining wall	Minor (1-2)	Squatters Pedestrian pavement	4 huts temporarily evacuated Pedestrian pavement closed	Lack of maintenance
ME 9/16	Behind House Nos.11 & 12, Ma Yau Tong Village, Junk Bay	26/9	Resident	26/9 (am)	Soil cut slope	Minor (20)	Building lot		
ME 9/17	Front of House No.175, Ha Wo Che Village, Shatin	28/9	GEO	Unknown	Retaining wall	Minor (2)	Footpath	Footpath blocked	
ME 9/18	Behind Huts RTP/TTW/190-192, Miu Keng, Tai Tong Wu, Sha Tau Kok	28/9	DO/N	26/9	Natural slope	Major (300)	Squatters	3 huts permanently evacuated	
ME 9/19	Lai Ping Road, 600m from Tai Po Road, Ma Liu Shui (7NE-C/C95)	27/9	HyD/NT	26/9	Soil/rock cut slope	Minor (40)	Open space		

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 13 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 9/20	Lai Ping Road, Ma Liu Shui (7NE-C/C78)	26/9	HyD/NT	26/9	Soil cut slope	Major (100)	Road	2 lanes of road closed Footpath closed	
ME 9/21	Lai Ping Road, 160m from Tai Po Road, Ma Liu Shui (7NE-C/C78)	26/9	HyD/NT	26/9	Soil/rock cut slope	Major (120)	Road	1 lane of road closed	
ME 9/22	Tai Po Road, near Chek Lai Ping Village, Tai Po	26/9	Public	26/9	Soil cut slope	Major (60)	Road	1 lane of road closed	
ME 9/23	Above the streamcourse, Shek Kwu Lung Village, Tai Po	27/9	Public	26/9	Soil cut slope	Minor (7)	Stream course		
ME 9/24	Behind Huts RTP/KSB/144 & 146, Kam Shan Village, Tai Po	27/9	DO/TP	26/9	Soil cut slope	Minor (12)	Squatters	3 huts permanently evacuated	
ME 9/25	Below footpath in Mui Shue Hang, Tai Po	27/9	DO/TP	26/9	Soil cut slope	Minor (5)	Pedestrian pavement		
ME 9/26	Hong Ka Road, Kam Shan, Tai Po	27/9	DO/TP	Unknown	Soil cut slope	Minor (40)	Access road	Access road blocked	
ME 9/27	Behind House No.4, Wo Liu Hang Village, Wo Liu Hang, Shatin	27/9	DO/ST	26/9 (20:30)	Soil cut slope	Minor (1)	Building lot Squatters	1 hut permanently evacuated	

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 14 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 9/28	Behind House No.5, Wo Liu Hang Village, Wo Liu Hang, Shatin	28/9	DO/ST	27/9 (21:30)	Soil cut slope	Minor (2)	Building lot		
ME 9/29	Adjacent to House No.224, Pai Tau Village, Shatin	27/9	DO/ST	26/9 (19:00)	Soil cut slope	Minor (0.5)	Building lot		
ME 9/30	Opposite Fortune Garden, Ting Kok Road, Tai Po	28/9	HyD/NT	Unknown	Soil cut slope	Minor (10)	Pedestrian pavement		
ME 9/31	Ting Kok Road near Sam Mun Tsai Road, Tai Po	28/9	HyD/NT	Unknown	Soil cut slope	Minor (45.5)	Pedestrian pavement Road	Pedestrian pavement closed and 1 lane of road blocked	
ME 9/32	Behind House No.14, Shuen Wan Chim Uk, Ting Kok Road, Tai Po (3SE-C/C23)	28/9	DO/TP	26/9	Soil cut slope	Minor (10)	Open space		Lack of maintenance
ME 9/33	Behind House No.4, Ha Hang Tsuen, Ha Hang, Tai Po	28/9	DO/TP	26/9	Soil cut slope	Minor (15)	Building access	Part of house temporarily evacuated	
ME 9/34	No.49B, Shan Tau Kok Village, Ting Kok Road, Tai Po	26/9	Public	26/9 (18:00)	Soil cut slope	Minor (40)	Building lot	Part of 2 buildings evacuated	
ME 9/35	Access road from Sha Tau Kok Road to Sheung Wo Hang, Sha Tau Kok	28/9	DO/N	26/9	Soil cut slope	Minor (42)	Access road	Access road blocked	

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 15 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 9/36	Access road from Sha Tau Kok Road to Wu Shek Kok, Sha Tau Kok	27/9	DO/N	Unknown	Soil cut slope	Minor (20)	Access road	Access road blocked	Lack of maintenance
ME 9/37	Behind House Nos.144-150, Sam Mun Tsai New Village, Tai Po	27/9	FSD	27/9	Soil cut slope	Major (168)	Building access	7 houses temporarily evacuated	
ME 9/38	Behind House No.95, Pai Tau Village, Shatin	24/9	DO/ST	18/9 (3:00)	Soil cut slope	Minor (0.5)	Back lane		
ME 9/39	Behind House No.8, Lok Lo Ha, Shatin	24/9	DO/ST	Unknown	Soil cut slope	Minor (0.5)	Building lot		
ME 9/40	Near Huts RTP/TH/345,347 & 385, Tong Hang Tung Village, Tong Hang, Tai Po	29/9	HD	26/9 (20:30)	Natural slope	Minor (40)	Building lot Squatters	2 huts permanently evacuated 1 hut temporarily evacuated 2 houses evacuated	
ME 9/41	Front of Hut No.PLC/76/370, Po Lo Che, Sai Kung	28/9	BOO	Unknown	Fill slope	Minor (7)	Squatters	1 hut permanently evacuated	
ME 9/42	Behind House No.108, Sam Mun Tsai New Village, Tai Po	28/9	DO/TP	26/9	Soil cut slope	Minor (15)	Building lot	1 house temporarily evacuated	
ME 9/43	Behind House No.119, Sam Mun Tsai New Village, Tai Po	28/9	DO/TP	Unknown	Soil cut slope	Minor (9)	Building lot	1 house permanently evacuated	



Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 16 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 9/44	Behind House No.160, Sam Mun Tsai New Village, Tai Po	28/9	DO/TP	26/9	Soil cut slope	Minor (8)	Building lot	Part of 1 house temporarily evacuated	
ME 9/45	Access to Sha Lo Tung, near Ha Hang Services Reservoir	28/9	DO/TP	26/9	Soil cut slope Natural slope	Major (100)	Road	Road closed	
ME 9/46	Front of Police Staff Bungalow, Tung Tsz, Tai Po	28/9	ASD	26/9	Soil cut slope Natural slope	Minor (10)	Open space		
ME 9/47	Access road from Sha Tau Kok Road to Tai Tong Wu near House No.10E, Sha Tau Kok	28/9	DO/N	Unknown	Soil cut slope	Minor (40)	Roadside		
ME 9/48	Access road, North-East N.T. Landfill Phase 1, Wo Keng Shan, Ta Kwu Ling	5/10	CEO	26/9	Soil cut slope	Minor (4)	Pedestrian pavement		
ME 9/49	Access road, North-East N.T. Landfill Phase 1, Wo Keng Shan, Ta Kwu Ling	5/10	CEO	26/9	Soil cut slope	Minor (12)	Pedestrian pavement		
ME 9/50	Behind Huts RTP/KSB/455 & 456A, Kam Shan Village, Tai Po	4/10	DO/TP	27/9 (am)	Soil cut slope	Minor (6)	Squatters	2 huts permanently evacuated	

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 17 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 9/51	Adjacent to House No.33, Nam Hang, Tai Po	4/10	GEO	Unknown	Soil cut slope	Minor (0.5)	Building lot		Lack of maintenance
ME 9/52	Uphill Roadside slope, access road to Cloudy Hill near Bird's Pass, Tai Po	7/10	ASD	26/9	Soil cut slope Natural slope	Major (90)	Road	1 lane of road blocked	
ME 9/53	Downhill Roadside slope, access road to Cloudy Hill near Bird's Pass, Tai Po	7/10	ASD	26/9	Natural slope	Minor (35)	Road	Apparent cracks on road	
ME 9/54	Uphill Roadside slope at Bird's Pass, access road to Cloudy Hill, Tai Po	7/10	ASD	26/9	Soil cut slope	Minor (6)	Road	½ lane of road blocked	
ME 9/55	Uphill Roadside slope, access road to Cloudy Hill near Lau Shui Heung Family Walk, Tai Po	7/10	ASD	26/9	Soil cut slope	Minor (15)	Roadside		
ME 9/56	Uphill Roadside slope, access road to Cloudy Hill near Lau Shui Heung Family Walk, Tai Po	7/10	ASD	26/9	Soil cut slope	Minor (35)	Road	1 lane of road blocked	
ME 9/57	Uphill Roadside slope at 700m to Cloudy Hill Wireless Transmitting Station, Tai Po	7/10	ASD	26/9	Natural slope	Minor (6)	Road		

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 18 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 9/58	Uphill Roadside slope at 600m to Cloudy Hill Wireless Transmitting Station, Tai Po	7/10	ASD	26/9	Soil cut slope	Minor (5)	Road	½ lane of road blocked	Lack of maintenance
ME 10/1	Fei Ngo Shan Road, Pak Kung Au	6/10	HyD	30/9	Soil cut slope	Minor (30-35)	Building access		
ME 10/2	Front of No.2, Chuk Shui Wan Village, Ha Wa Che, Shatin	11/10	HyD/NT	26/9	Natural slope	Minor (30)	Pedestrian pavement	Pedestrian pavement closed	
ME 10/3	Beside KCR fence opposite Wo Che Estate, Shatin (7SE-A/C39)	11/10	HyD/NT	Unknown	Soil cut slope	Minor (10)	Footpath		
ME 10/4	Beside KCR fence near 207 Ha Wo Che Village, Shatin	10/10	HyD/NT	26/9	Soil cut slope	Minor (8)	Footpath		
ME 10/5	Near House No.166, Ha Wo Che, Shatin	11/10	DO/ST	26/9 (23:00)	Fill slope Natural slope	Minor (40)	Latrine Footpath		
ME 10/6	Footpath, Tsz Tong Tsuen, Fanling	7/10	Resident	26/9	Natural slope	Minor (2)	Footpath		
ME 10/7	No.1 Ma Wor Road, Pan Chung, Tai Po	11/10	Resident	26/9	Natural slope	Minor (2)	Open space		
ME 10/8	Hut No.20C, Tai Po Kau San Wai, Tai Po Kau	13/10	DO/TP	26/9	Subsidence	Minor (1)	Squatters	3 huts permanently evacuated	

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 19 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 10/9	Behind Hut Nos.RTP/TPK/690-692, Tai Po Kau	12/10	ASD	26/9	Soil cut slope	Minor (8)	Squatters	3 huts temporarily evacuated	Lack of maintenance
ME 10/10	Behind Hut Nos.RTP/TPK/685-686, Tai Po Kau	12/10	ASD	26/9	Soil cut slope	Minor (0.5)	Open space		Lack of maintenance
ME 10/11	Front of Hut Nos.RTP/TH/18A-D, Tsiu Hang Tsuen, Tai Po Kau	15/10	HD	26/9	Natural slope	Minor (10)	Squatters	4 huts permanently evacuated	
ME 10/12	Behind Hut Nos.RTP/TPL/397-399, Chuen Pei Lung, Lam Tsuen	14/10	DO/TP	26/9	Natural slope	Minor (3)	Squatters	4 huts temporarily evacuated	
ME 10/13	Behind Hut No.RTP/TPT/A647, Ying Pun Ha, Tai Po	13/10	GEO	13/10 (20:00)	Soil cut slope	Minor (15)	Squatters Building lot		
ME 10/14	Access road to Gilwell Campsite, Fei Ngo Shan, Shatin	18/10	GEO	Unknown	Soil/rock cut slope	Minor (15)	Road	½ lane of road blocked	
ME 10/15	Mang Kung Wo Road near Fat Kwong Temple, Sai Kung	15/10	DO/SK	Unknown	Natural slope Fill slope	Major (84)	Access road		Lack of maintenance
ME 10/16	Behind House No.41A, Ha Hang Village, Tai Po (3SW-D/C2)	4/10	Public	Unknown	Soil cut slope	Minor (4.5)	Open space		Lack of maintenance

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 20 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 10/17	Access road to Ha Hang Reservoir, Tai Po	14/10	DO/TP	Unknown	Soil cut slope	Minor (32)	Open space		
ME 10/18	Behind House Nos.13-15, Burma Lines Camp, Queen's Hill, Fanling	19/10	ASD	26/9	Soil cut slope	Major (200)	Building lot	Flats in 3 buildings evacuated	
ME 10/19	Footpath below Hut Nos.RKT/242-245, Man Hang, Fo Tan	21/10	DO/ST	26/9	Natural slope	Minor (20)	Pedestrian pavement	1 hut permanently evacuated	
ME 10/20	Behind Hut No.RKT/242, Man Hang, Fo Tan	21/10	DO/ST	26/9	Soil cut slope	Minor (6)	Open space		
ME 10/21	Behind Hut No.RKT/231, Man Hang, Fo Tan	21/10	DO/ST	26/9	Soil cut slope	Minor (1)	Open space		
ME 10/22	Behind No.13A, Tai Po Kau Village, Tai Po	25/10	DO/TP	Unknown	Soil cut slope	Minor (8)	Building lot Footpath		
ME 10/23	Behind House Nos.15-17, Nam Chung Lo Uk, Sha Tau Kok	25/10	DO/N	Unknown	Soil cut slope	Minor (23)	Building lot	2 flats evacuated	
ME 11/1	Entrance of Police Station, Tiu Keng Leng	2/11	HyD/NT	1/11 (night)	Subsidence	Minor (12)	Access road		Lack of maintenance Rupture of water main
ME 11/2	Behind Hut Nos.RTP/CH/127-128 & 130, Chuk Hang, Tai Po	28/10	GEO	Unknown	Soil cut slope	Minor (12)	Squatters	3 huts permanently evacuated	

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 21 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 11/3	No incident report filed								
ME 11/4	Behind House Nos.2-3B Chap Wai Kon, Shatin	24/11	HD	Unknown	Soil cut slope	Minor (30)	Building lot Squatters		
ME 12/1	Front of House No.5, Chuk Hang, Tai Po	1/12	GEO	Unknown	Soil cut slope	Minor (25)	Squatters Streamcourse		
ME 12/2	Behind House No.73, Nam Wa Po Village	10/12	DO/TP	26/9	Soil cut slope	Minor (2)	Squatters		
ME 12/3	Nam Wa Po, Tai Po	13/12	DO/TP	Unknown	Soil cut slope	Minor (4)	Footpath		
ME 12/4	Adjacent to Hut No.RTP/ TPK/683, Tai Po Kau	14/12	DO/TP	26/9	Soil cut slope	Minor (8)	Squatters	1 hut temporarily evacuated	
ME 12/5	Behind Block B1, Police Cadet School Staff Quarter, Tung Tsz, Tai Po (3SE-C/C13)	17/12	GEO	Unknown	Soil cut slope	Minor (4.5)	Open space		Lack of maintenance
ME 12/6	Adjacent to basketball court of Scout Training Centre, Tung Tsz, Tai Po (3SE-C/C4)	17/12	Public	Sept.	Soil cut slope	Minor (33.6)	Open space		
ME 12/7	Behind canteen of Scout Training Centre, Tung Tsz, Tai Po	17/12	Resident	Sept.	Soil cut slope	Minor (36)	Open space		

Table A3 - List of Incidents in Eastern New Territories Reported to GEO in 1993 (Sheet 22 of 22)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
ME 12/8	Access road to Scout Training Centre, Tung Tsz, Tai Po (3SE-C/C2)	17/12	Resident	Unknown	Soil cut slope	Minor (4)	Open space		



Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 1 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 1/1	No.61, Lung Tsai Tsuen, Cheung Chau	18/1	DLO/IS	16/1 (7:00)	Rock cut slope	Minor (0.5)	Back lane	Backlane closed	Lack of maintenance
MW 2/1	Ngau Kwo Tin, Keung Shan, Tai O, Lantau	4/2	DO/IS	Unknown	Natural slope	Minor (40)	Streamcourse	Footpath closed	
MW 2/2	Kwai Tai Road, Kwai Chung (11NW-A/C158)	16/2	RSD	16/2	Soil cut slope	Minor (20-30)	Footpath	Footpath blocked	
MW 3/1	Tai O Cemetery, Lantau	21/1	ASD	Unknown	Soil cut slope	Minor (2)	Graves		
MW 3/2	Lots 378A & RP in DD186, To Fung Shan Road, Shatin	9/3	DO/ST	Nov.92	Soil cut slope	Minor (2)	Open space	U-channel blocked	
MW 4/1	Tai Wor Tsuen Squatter Village, Tsuen Wan	28/4	DO/TW	21/4	Natural slope	Minor (<2)	Footpath		
MW 5/1	Near House Nos.51A & B, Lo Wai Village, Tsuen Wan	1/5	DO/TW	1/5 (6:30)	Fill slope	Minor (20)	Culvert	2 houses temporarily evacuated	
MW 5/2	Shek Lei Hill Squatter, Kwai Chung (7SW-C/C182)	1/5	HD	1/5 (5:30)	Subsidence	Minor (5)	Squatters	7 huts permanently evacuated	
MW 5/3	Shek Lei Hill Squatter, Kwai Chung	1/5	HD	1/5 (5:30)	Fill slope	Minor (4)	Squatters	2 huts permanently evacuated	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 2 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 5/4	Shek Lei Hill Squatter, Kwai Chung	1/5	HD	1/5 (5:30)	Soil cut slope	Minor (5)	Open space		
MW 5/5	Sheung Yat Chuen, Kwai Chung	1/5	HD	1/5 (5:30)	Soil cut slope	Minor (8)	Squatters	5 huts permanently evacuated	
MW 5/6	Opposite Lai Yiu Estate, Castle Peak Road, Lai Yiu (11NW-A/C36)	1/5	HyD/NT	1/5	Soil/rock cut slope Rock fall	Minor (10)	Road	1 lane of road closed	
MW 5/7	Opposite Ha Kwai Chung Village, Castle Peak Road, Lai Yiu (11NW-A/C36)	1/5	HyD/NT	1/5	Soil/rock cut slope	Minor (15)	Road	1 lane of road closed	
MW 5/8	No incident report filed								
MW 5/9	Sam Tuk Uk Road, Lo Wai, Tsuen Wan (7SW-C/C353)	3/5	DO/TW	1/5	Rock slope	Minor (10)	Pedestrian pavement	Fencing damaged	
MW 5/10	Behind Hut RTW/7E/295, Shek Lei Hang Village, Shek Lei	3/5	HD	Unknown	Soil cut slope	Minor (9)	Squatters	1 hut permanently evacuated	
MW 5/11	Behind Huts RTW/7E/344A & B, Shek Lei Hang Village, Shek Lei	3/5	HD	1/5 (6:00)	Soil cut slope	Minor (3)	Squatters	2 huts permanently evacuated	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 3 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 5/12	Behind Hut RTW/7E/342, Shek Lei Hang Village, Shek Lei	3/5	HD	1/5 (6:00)	Soil cut slope	Minor (4)	Squatters	1 hut permanently evacuated	Lack of maintenance
MW 5/13	Opposite petrol station near Tai Wo Hau MTR Station below Housing Estate, Castle Peak Road, Kwai Chung	3/5	HyD/NT	1/5 (6:00)	Fill slope Natural slope Soil cut slope	Major (100- 200)	Pedestrian pavement		
MW 5/14	Behind school at 6 Kwai Yip Street, facing YMCA, Kwai Shing (7SW-C/C68)	1/5	School	1/5 (6:00)	Soil/rock cut slope	Minor (5)	Building lot		
MW 5/15	Hut RTW/9E/53 at Kam Shan Village, Kwai Chung	4/5	HD	Unknown	Subsidence	Minor	Squatters	1 hut permanently evacuated	
MW 5/16	Wonderland Villa, Kwai Chung	3/5	Public	Unknown	Natural slope	Minor (10)	Open space		
MW 5/17	Hut RTW/9E/44 at Kam Shan Village, Kwai Chung	11/5	HD	Unknown	Subsidence	Minor (0.1)	Squatters	1 hut permanently evacuated	
MW 5/18	Behind Hut No.61, Shatin Tau New Village, 6th District, Shatin	23/5	HyD/NT	Unknown	Rock fall	Minor (0.5)	Squatters		
MW 5/19	Behind Hut RTW/7A/47 at Sheung Yat Tsuen, Kwai Chung	20/5	HD	Unknown	Natural slope	Minor (0.5)	Squatters	1 hut permanently evacuated	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 4 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 5/20	Behind House No.95, Tung Lo Wan Village, Lot 742 in DD179, Tai Wai, Shatin	28/5	Public	24/5	Soil cut slope	Minor (3)	Backlane		
MW 5/21	Shek Pai Street, Kwai Chung (7SW-C/C175)	26/5	HyD/NT	26/5	Rock fall	Minor (1)	Pedestrian pavement	Pedestrian pavement closed	
MW 6/1	Behind House No.1A, Lung Tsai Chuen, Cheung Chau	3/6	HyD/NT	3/6 (pm)	Soil cut slope	Minor (<1)	Building lot		
MW 6/2	Behind House No.49A, Lung Tsai Chuen, Cheung Chau	3/6	HyD/NT	3/6 (20:30)	Soil cut slope	Minor (<7)	Building lot Backlane	1 flat temporarily evacuated	
MW 6/3	Near Wong Wing Kee Preserved Fruit Factory, Pak She New Village, Cheung Chau	4/6	Police	3/6 (8:00)	Soil cut slope Retaining wall	Minor (<10)	Building lot Pedestrian pavement	Pedestrian pavement partially closed	Lack of maintenance
MW 6/4	Near 1B, Pak Yuen, Cheung Chau	4/6	Public	4/6	Soil/rock cut slope	Minor (<4)	Building lot Backlane	1 flat temporarily evacuated	
MW 6/5	Hak Pai Road, Kwun Yum Wan, Cheung Chau	7/6	HyD/NT	4/6	Natural slope	Minor (8)	Pedestrian pavement	Pedestrian pavement closed	
MW 6/6	Front of Chi Ma Wan Officers' Mess, Chi Ma Wan Road, Lantau	15/6	HyD/NT	13/6 (6:00)	Soil cut slope	Minor (2)	Access road		Lack of maintenance

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 5 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 6/7	Front of petrol station opposite Li Cheng Uk Public Swimming Pool, Tai Po Road, Kowloon (11NW-B/C62)	11/6	HyD/K	11/6 (5:25)	Soil/rock cut slope	Minor (20-30)	Road	2 lanes of slip road closed 1 taxi damaged	Lack of maintenance
MW 6/8	Front of Hut RPAK/C/84, Pak Tin Area 5, Shatin	10/6	Public	9/6 (pm)	Natural slope	Minor (1)	Pedestrian pavement		
MW 6/9	Behind Hut RPAK/1261, Pak Tin Area 3, Shatin	10/6	Public	10/6 (8:30)	Soil cut slope	Minor (3)	Squatters	1 hut temporarily evacuated	
MW 6/10	Behind Hut RTPR/51, 2B Shatin Heights Road, Shatin	11/6	Public	11/6 (5:00)	Soil cut slope	Minor (1)	Squatters	1 hut temporarily evacuated	
MW 6/11	Access road near Sheung Shui Wa Shan Public School, Sheung Shui	11/6	DO/N	11/6 (9:15)	Soil cut slope	Minor (16)	Access road Pedestrian pavement		
MW 6/12	Behind Canberra Villa, On Lok Road, Tung Lo Wan, Shatin	11/6	Public	11/6 (16:00)	Soil cut slope	Minor (8)	Building lot		
MW 6/13	Behind House No.18, Yung Shu Long New Village, Lamma	8/6	GEO	Unknown	Soil cut slope	Minor (1)	Open space		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 6 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 6/14	Adjacent to Cheung Shan Estate bus terminus, Tsuen Wan (7SW-C/C128)	16/6	Police	16/6 (12:25)	Soil/rock cut slope	Major (50)	Bus terminus	Pedestrian pavement closed 1 person killed and 5 persons injured	
MW 6/15	Near Hut No.1204A, Pa Tin Pa Tsuen, Tsuen Wan	16/6	Police	16/6	Retaining wall	Minor (2)	Squatters Pedestrian pavement	Road closed	
MW 6/16	Near Hut No.1204A, Pa Tin Pa Tsuen, Tsuen Wan	16/6	Police	16/6	Soil cut slope	Minor (1-2)	Pedestrian pavement	Pedestrian pavement closed	
MW 6/17	Footpath near Hut No.358, Fu Yung Shan, Tsuen Wan	16/6	Police	16/6 (11:00)	Natural slope	Minor (45)	Pedestrian pavement	Pedestrian pavement closed	
MW 6/18	Behind Ting Kau carpark, Castle Peak Road, Tsuen Wan	16/6	Police	16/6 (noon)	Natural slope	Major (500-1000)	Road Carpark	2 lanes of roads blocked Carpark blocked	
MW 6/19	M.S.6½ Castle Peak Road, Kwai Chung (11NW-A/C36)	16/6	Public	Unknown	Soil/rock cut slope	Minor (3-5)	Road	1 lane of road blocked	
MW 6/20	Near M.S.10 Castle Peak Road, Tsuen Wan (6SE-D/C25)	16/6	HyD/CW	16/6 (noon)	Soil cut slope	Minor (7-10)	Road	1 lane of road blocked	Lack of maintenance

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 7 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 6/21	Tai Po Road near Shatin Heights Road, Shatin	16/6	HyD/K	16/6 (pm)	Soil cut slope	Major (>100)	Road	2 lanes of road closed	
MW 6/22	Behind Hut RTW/9C/106, Pump Fong Sheung Tsuen, Kwai Chung	16/6	HD	16/6	Natural slope	Minor (3)	Squatters	1 hut permanently evacuated	
MW 6/23	Behind Hut RTW/9A/489-493, Cheung Hang Village, Kwai Chung	16/6	HD	16/6	Soil cut slope	Minor (5)	Squatters		
MW 6/24	Behind Hut RTW/9A/361, Cheung Hang Village, Kwai Chung	16/6	HD	16/6	Soil cut slope	Minor (5)	Squatters	1 hut permanently evacuated	
MW 6/25	Castle Peak Road near Wah King Hill Road, Lai Chi Kok (11NW-A/C36)	16/6	HyD/NT	16/6	Rock fall	Minor (10)	Road	1 lane of road closed	
MW 6/26	Access road near Sheung Shui Wa Shan Public School, Sheung Shui	16/6	Public	16/6 (15:00)	Soil cut slope	Minor (14)	Access road Pedestrian pavement		
MW 6/27	Tso Kung Tam Squatter, Tsuen Wan	17/6	HD	16/6 (noon)	Natural slope	Minor (15)	Squatters	5 huts permanently evacuated	
MW 6/28	Fu Yung Shan San Tsuen, Tsuen Wan	17/6	HD	16/6 (noon)	Natural slope	Minor (15)	Squatters	5 huts permanently evacuated	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 8 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 6/29	Wo Yi Hop Village, Tsuen Wan	17/6	HD	16/6 (noon)	Flooding	N/A	Squatters		No geotechnical concern
MW 6/30	Adjacent to House No.39, Ying Pun Tsuen, Sheung Shui	18/6	DLO/N	11/6 (6:00)	Retaining wall	Minor (5)	Open space		Lack of maintenance
MW 6/31	Behind Hut RTP/WKS/A /31, Wong Kong Shan, Fanling	18/6	DO/N	16/6	Soil cut slope	Minor (4)	Squatters	3 huts permanently evacuated	Lack of maintenance
MW 6/32	No.452, Ting Kau Village, Tsuen Wan	16/6	Police	16/6 (18:00)	Soil cut slope	Minor (8)	Building lot	Flat partially closed	Lack of maintenance
MW 6/33	Behind Buddhist Chi Hong Kindergarten, Lots 768-769, Sun Tin Village, Shatin	17/6	Public	16/6 (pm)	Soil cut slope	Minor (1)	Backlane		
MW 6/34	Behind Hut RTW/100/106, 107 & 110, Liu To, Tsing Yi	18/6	HD	17/6	Soil cut slope	Minor (5)	Squatters	3 huts permanently evacuated	
MW 6/35	Behind Hut XTW/SLH/64, Shek Lei Hang Village, Kwai Chung	17/6	HD	16/6	Natural slope	Minor (10)	Squatters	1 hut permanently evacuated	
MW 6/36	Behind Hut WSD/HLW/5, Ha Lo Wai Village, Kwai Chung	17/6	HD	16/6	Natural slope	Minor (5)	Squatters	1 hut permanently evacuated	



Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 9 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 6/37	Access road at Ying Pun Tsuen, Sheung Shui	18/6	DLO/N	16/6	Soil cut slope	Minor (17)	Access road Pedestrian pavement		Lack of maintenance
MW 6/38	Track road at Ying Pun Tsuen, Sheung Shui	18/6	GEO	18/6 (am)	Soil cut slope	Minor (10)	Access road Pedestrian pavement		Lack of maintenance
MW 6/39	Adjacent to Tai Po Road near Shatin Height Road, Shatin (7SW-D/FR10)	17/6	Public	15/6 (pm)	Fill slope	Minor (1)	Open space	U-channel blocked	
MW 6/40	Adjacent to access road to Yau Oi Village, near Shing Mun Tunnel Road and Pak Tin Bungalow, Shatin	16/6	Public	16/6	Soil cut slope	Minor (25)	Access road	Access road closed	
MW 6/41	Behind 39-41 Tung Lo Wan Village, Tai Wai	16/6	DO/ST	16/6	Soil cut slope	Minor (1)	Open space	U-channel blocked	
MW 6/42	Adjacent to Mei Tin Road, Tai Wai	18/6	Public	May & 16/6	Soil cut slope	Minor (10)	Pedestrian pavement	U-channel blocked	Lack of maintenance
MW 6/43	Shatin Heights Road, Shatin	17/6	DO/ST	16/6	Soil cut slope	Minor (1)	Road		
MW 6/44	Shatin Heights Road, Shatin	17/6	DO/ST	16/6	Soil cut slope	Minor (2)	Road		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 10 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 6/45	Shatin Heights Road, Shatin	17/6	DO/ST	16/6	Soil cut slope	Minor (4)	Road		
MW 6/46	Near Pink House, Shatin Heights Road, Shatin	16/6	Public	16/6	Soil cut slope	Minor (3)	Road	Road partially blocked	
MW 6/47	Near Happy View House, Shatin Heights Road, Shatin	17/6	DO/ST	16/6	Soil cut slope	Minor (1)	Road		
MW 6/48	Near access road to Happy View House, Shatin Heights Road, Shatin	17/6	DO/ST	16/6	Soil cut slope	Minor (1)	Road		
MW 6/49	Below Shek Kip Mei Park, Nam Cheong Street, Kowloon (11NW-B/C104)	17/6	USD	16/6	Soil/rock cut slope	Minor (5)	Open space		Lack of maintenance
MW 6/50	Behind Hut RTW/7B/114, Shing Mun Road Upper Village, Tsuen Wan	16/6	HD	16/6 (noon)	Natural slope	Minor (10)	Squatters	1 hut permanently evacuated	
MW 6/51	Below No.7 Golden Times Villa, 33 Shatin	18/6	BOO	16/6 (pm)	Fill slope	Minor (20)	Building lot	Building foundation affected	
MW 6/52	Behind Wing Shing House, Fung Shing Court, Shatin	17/6	Public	11/6 (16:00)	Fill slope	Minor (5)	Open space	U-channel blocked	
MW 6/53	Tai Lam Chung Catchwater CH4680, Tai Lam Chung	17/6	WSD	16/6 (16:20)	Fill slope	Major (1000)	Access road	Access road closed	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 11 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 6/54	Same incident as MW 6/76								
MW 6/55	Below Hut RTW/2BD/324 & 328, Hon Man Tsuen Squatter Area, Tsuen Wan	18/6	DO/TW	Unknown	Natural slope	Minor (7-8)	Squatters	2 huts permanently evacuated	
MW 6/56	Hon Man Tsuen drainage culvert, Tsuen Wan	18/6	DO/TW	16/6	Wash down of boulders	Minor (5)	Culvert	Culvert blocked	
MW 6/57	Hon Man Tsuen stream-course, Tsuen Wan	18/6	DO/TW	16/6	Retaining wall	Minor (2-3)	Open space	Bathing place affected	
MW 6/58	Behind Huts RTW/28C/120-123, 115 & 116, Hon Man Tsuen Squatter Area, Tsuen Wan	18/6	DO/TW	16/6	Soil cut slope	Minor (2)	Squatters	6 huts permanently evacuated	
MW 6/59	Pak Tin Pa San Tsuen, Tsuen Wan	17/6	DO/TW	Unknown	Fill slope	Minor (1)	Pedestrian pavement		
MW 6/60	350 Castle Peak Road, Alpine Garden, Tuen Mun	17/6	Public	Unknown	Natural slope	Minor (1.5)	Open space		
MW 6/61	Behind Hut RTW/4B/76, Tai Wo Tsuen, Tsuen Wan	18/6	DLO/TW	Unknown	Soil cut slope	Minor (<1)	Squatters		
MW 6/62	Near Hut RTW/4B/158, Tai Wo Tsuen, Tsuen Wan	18/6	DO/TW	Unknown	Blockage of drains	N/A	Squatters		No geotechnical concerns
MW 6/63	Below Hut RTW/4B/60, Tai Wo Tsuen, Tsuen Wan	18/6	DO/TW	16/6	Natural slope	Minor (7)	Squatters	1 hut permanently evacuated	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 12 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 6/64	Footpath adjoining Chuk Lam Sim Yuen, Tsuen Wan	18/6	DO/TW	16/6	Natural slope	Minor (2)	Footpath	3 huts permanently evacuated	
MW 6/65	Same incident as MW 6/17								
MW 6/66	Below Huts 158, 159 & 159A, Yi Pei Chun, Tsuen Wan	18/6	DO/TW	16/6	Natural slope	Minor (6-7)	Squatters		
MW 6/67	Behind House No.274, Lot 1798, DD450, Yau Ma Hom Road, Kwai Chung	22/6	HD	Unknown	Soil cut slope	Minor (3)	Backlane		
MW 6/68	Below House No.5, Ko Long Village, North Lamma (14NE-B/C21)	24/5	GEO	Unknown	Soil/rock cut slope	Minor (2-3)	Open space		
MW 6/69	Slip-road connecting Shing Mun Road, Tsuen Wan	17/6	HD	16/6	Soil cut slope	Minor (3-5)	Access road		
MW 6/70	Access road adjacent to Yuen Yuen Hok Yuan, Lo Wai, Tsuen Wan	24/6	Public	24/6	Natural slope Retaining wall	Minor (6)	Access road		
MW 6/71	North Kowloon Magistracy, Sham Shui Po	18/6	HD	16/6	Soil/rock cut slope	Minor (1)	Carpark		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 13 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 6/72	Behind San Wui Commercial Society Primary School, So Uk Estate, Kowloon	18/6	HyD/K	16/6	Natural slope	Minor (15)	Open space		
MW 6/73	Slip-road connecting Wing Ming Street behind Hang Cheung Factory Building, Cheung Sha Wan	18/6	HD	16/6	Soil/rock cut slope	Minor (2)	Building access		
MW 6/74	Below Hut RTW/4AE/439 Wo Yip Hop Village, Tsuen Wan	28/6	DO/TW	16/6	Natural slope	Minor (5-7)	Squatters		
MW 6/75	Below Hut RTW/4AE/296B Licence No.W4514, Wo Yip Hop Village, Tsuen Wan	28/6	DO/TW	16/6	Natural slope	Minor (6)	Squatters	2 huts permanently evacuated	
MW 6/76	Pak Tin Pa Tsuen, Tsuen Wan	28/6	DO/TW	16/6	Natural slope	Minor (7)	Pedestrian pavement	Pedestrian pavement closed	
MW 6/77	No.293 Castle Peak Road, Ting Kau (6SE-D/CR45)	25/6	DLO/TW	16/6 (11:00)	Fill slope	Minor (20)	Building lot		
MW 6/78	Wo Hop Shek Cemetery, Fanling	23/6	RSD	16/6	Soil cut slope	Minor (10)	Urns		Lack of maintenance

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 14 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 6/79	Wo Hop Shek Cemetery, Fanling	23/6	RSD	16/6	Soil cut slope	Minor (16)	Urns		Lack of maintenance
MW 6/80	Adjacent to access road, Wo Hop Shek Cemetery, Fanling	23/6	RSD	16/6	Soil cut slope	Minor (1)	Open space		Lack of maintenance
MW 6/81	Wo Hop Shek Cemetery, Fanling	23/6	RSD	16/6	Soil cut slope	Minor (22)	Urns		Lack of maintenance
MW 6/82	Wo Hop Shek Cemetery, Fanling	23/6	RSD	16/6	Soil cut slope	Minor (10)	Urns		Lack of maintenance
MW 6/83	Wo Hop Shek Cemetery, Fanling	23/6	RSD	16/6	Soil cut slope	Minor (1)	Urns		Lack of maintenance
MW 6/84	Wo Hop Shek Cemetery, Fanling (3SW-C/F10)	23/6	RSD	16/6	Fill slope	Minor (20)	Urns		Lack of maintenance
MW 6/85	Wo Hop Shek Cemetery, Fanling	23/6	RSD	16/6	Soil cut slope	Minor (18)	Urns		Lack of maintenance
MW 7/1	Above Ching Cheung Road (11NW-A/C55)	23/7	HyD/NT	Unknown	Soil cut slope	Minor (1)	Open space		
MW 9/1	Adjacent to Garden Bakery, Castle Peak Road, Sham Tseng	7/9	DLO/TW	Unknown	Rock fall	Minor (2)	Building lot		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 15 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 9/2	Near Hut No.164, Tseng Tau Chung Tsuen, Tuen Mun	17/9	Police	Unknown	Soil cut slope	Minor (1)	Squatters		Lack of maintenance
MW 9/3	Near Hut Nos.172 & 175, Tseng Tau Chung Tsuen, Tuen Mun	17/9	Police	17/9 (10:00)	Retaining wall	Minor (20)	Squatters Pedestrian pavement	2 huts temporarily evacuated Pedestrian pavement closed	Rupture of water main /drain
MW 9/4	Opposite Yum Yuen House, Castle Peak Road, Ting Kau	17/9	Public	17/9 (am)	Rock fall	Minor	Road		
MW 9/5	Adjacent to 102 Tsuen King Circuit, Tsuen Wan (6SE-D/C58)	17/9	Public	17/9 (am)	Rock fall	Minor (1-2)	Building access		Lack of maintenance
MW 9/6	Fu Yung Shan Village, Tsuen Wan	28/9	HD	27/9	Natural slope	Minor (1)	Squatters	2 huts permanently evacuated	
MW 9/7	Route Twisk, Tai Mo Shan (6NE-D/C6)	27/9	GEO	26/9 (mid- night)	Soil/rock cut slope	Minor (40)	Road	1 lane of road closed	
MW 9/8	Route Twisk, Tai Mo Shan	26/9	Public	26/9	Soil/rock cut slope	Minor (15-20)	Road	1 lane of road closed	
MW 9/9	Behind Block F, Allway Gardens, Tsuen Wan (6SE-D/CR87)	27/9	Public	27/9 (5:45)	Soil/rock cut slope	Major (200- 250)	Building lot Road	15 flats evacuated Gas installation damaged Cul-de-sac blocked	Lack of maintenance

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 16 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 9/10	Cheung Sha Beach, Cheung Sha, Lantau	24/9	HyD/NT	17/9	Retaining wall	Minor (30)	Pedestrian pavement Beach	1 hut permanently evacuated	Lack of maintenance
MW 9/11	Behind House No.121 Shek Tsai Po Street, Tai O, Lantau	22/9	Resident	17/9	Soil/rock cut slope	Minor (2)	Building access		
MW 9/12	Behind House No.12, Ying Pun Tsuen, Sheung Shui	27/9	Public	26/9 (23:30)	Soil cut slope	Minor (2)	Squatters		
MW 9/13	Behind House No.14, Ying Pun Tsuen, Sheung Shui	27/9	Public	26/9	Soil cut slope	Minor (6)	Building lot Backlane		
MW 9/14	Behind House No.23, Ying Pun Tsuen, Sheung Shui	27/9	Resident	26/9	Retaining wall	Minor (3)	Backlane		
MW 9/15	Front of Hut No.RTP/DK/ 93-94, Ping Kong Village, A52H, Sheung Shui	27/9	Public	26/9	Fill slope	Minor (2)	Building lot		
MW 9/16	Behind Hut No.168, Tseng Tau Chung Tsuen, Tuen Mun	28/9	DO/TM	26/9	Soil cut slope	Minor (4.5)	Pedestrian pavement		
MW 9/17	Sandy Ridge, Wong Tai Hang, Sheung Shui	28/9	DO/N	26/9	Soil cut slope Natural slope	Minor (15)	Pedestrian pavement Track road		



Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 17 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 9/18	Behind Huts RPAK/B/954-955, 4th Street, District 8, Heung Fan Liu, Shatin	28/9	DO/ST	26/9 (pm)	Soil cut slope	Minor (5)	Squatters	2 huts temporarily evacuated	Lack of maintenance Rupture of water main closed
MW 9/19	Below Lung Cheung Road and behind Cornwall Street Abandoned Temporary Housing Area, Kowloon Tong (11NW-B/C146 & F33)	27/9	Police	27/9	Fill slope Soil cut slope	Major (2600)	Construction site Pedestrian pavement Road	1 lane of road closed Pedestrian pavement closed	
MW 9/20	Near Huts RTW/9D/157 & XTW/QB/8, above M.S.6½ Castle Peak Road, Kwai Chung	27/9	HD	26/9	Subsidence	Minor	Squatters	2 huts permanently evacuated	
MW 9/21	Behind Hut No.45, Kau Wah Keng New Village, Kwai Chung	26/9	Police	26/9 (17:00)	Soil/rock cut slope	Minor (25)	Building lot	1 hut temporarily evacuated 1 hut recommended Closure Order	
MW 9/22	Fan Kam Road, Ta Shek Wu	28/9	HyD/NT	27/9 (am)	Soil cut slope	Minor (10)	Pedestrian pavement		
MW 9/23	Same incident as MW 10/2								
MW 9/24	Opposite 93 King Lam Street, Ching Cheung Road, Lai Chi Kok (11NW-A/C54)	27/9	HyD/NT	26/9	Soil/rock cut slope	Minor (13)	Open space		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 18 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 9/25	Behind Island Hostel Tung Wan School, Shek Pik, Lantau	27/9	Police	27/9 (14:30)	Soil cut slope	Minor (10)	Building access		Lack of maintenance
MW 9/26	Wong Lung Hang, Tung Chung, Lantau	28/9	HyD/NT	27/9	Soil/rock cut slope	Minor (4)	Pedestrian pavement		
MW 9/27	Wang Pui Road, Shek Pik, Lantau	28/9	Public	27/9	Soil cut slope	Minor (10)	Country park		
MW 9/28	Opposite Sha Tsui Detention Centre, Wang Pui Road, Shek Pik, Lantau	28/9	Public	27/9	Soil cut slope	Minor (5)	Country park		
MW 10/1	Below Hut RYOT/B/45, Yau Oi Village, Shatin	30/9	Public	29/9 (am)	Soil cut slope	Minor (0.5)	Squatters Footpath	Footpath blocked	
MW 10/2	Behind Hut No.MP/928, Mai Po	30/9	HD	27/9 (4:00)	Soil cut slope Subsidence	Minor (3-4)	Squatters	6 huts permanently evacuated	
MW 10/3	DD116, Yau Shin Street, Shek Tong Tsuen, Au Tau, Yuen Long	30/9	Public	Unknown	Soil cut slope	Minor (2-3)	Building lot		Lack of maintenance
MW 10/4	Above Kwai Chung Road near Tin Hau Temple, Kwai Chung	2/10	Public	Unknown	Soil/rock cut slope Subsidence	Minor (10)	Open space		Lack of maintenance

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 19 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 10/5	Chi Ma Wan, Lantau	4/10	DO/IS	24/9	Soil cut slope	Minor (9)	Pedestrian pavement		
MW 10/6	Behind House No.105, Pak Sha San Tsuen, Cheung Chau	14/10	DO/IS	14/10 (3:00-4:00)	Soil cut slope	Minor (3)	Pedestrian pavement Building lot	Pedestrian pavement closed	
MW 11/1	Adjacent to House No.23, Nam She Tong, Cheung Chau	5/11	DO/IS	5/11 (4:00)	Retaining wall	Minor (5)	Backlane		Lack of maintenance
MW 11/2	Behind House No.58A, Lung Tsai Tsuen, Cheung Chau	5/11	DO/IS	5/11 (5:00)	Soil cut slope	Minor (5)	Building lot Backlane		Lack of maintenance
MW 11/3	Behind House No.40, Ying Sin Leung Care Village, Cheung Chau	5/11	DO/IS	5/11 (5:00)	Soil cut slope	Minor (2)	Building lot	U-channel blocked	
MW 11/4	Alpine Garden, NV350, Castle Peak Road, Tuen Mun	5/11	Public	5/11 (6:00)	Soil cut slope	Major (500-1000)	Road Carpark Building lot Pedestrian pavement		Lack of maintenance
MW 11/5	Lot 3, Shui Hang near Round Table Third Village, Cheung Chau	5/11	DO/IS	5/11 (am)	Retaining wall	Minor (10)	Pedestrian pavement	Pedestrian pavement partially closed	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 20 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/6	Opposite Block 9, Western roadside of Hung Cheung Road, Tuen Mun	5/11	Public	5/11 (7:00)	Soil/rock cut slope	Minor (20)	Road Pedestrian pavement	1 lane of road blocked	Lack of maintenance
MW 11/7	Behind Huts TM/MLS/200, 202 & 203, Mo Lo Shan, Tuen Mun	5/11	Public	5/11	Soil cut slope	Minor (3)	Squatters	3 huts permanently evacuated	
MW 11/8	Behind Huts TM/M/S/224, 55B-1, Tsing Shan Tsuen, Tuen Mun	5/11	DLO/TM	5/11	Soil cut slope	Minor (4)	Squatters		
MW 11/9	Behind Ju Ching Chu College, Tuen Mun Kau Hui, Tuen Mun	5/11	DLO/TM	5/11	Soil cut slope	Minor	Open space		
MW 11/10	Lung Mun Road, Siu Lang Shui, Tuen Mun (5SE-D/C2)	5/11	Public	5/11	Soil/rock cut slope	Minor (45)	Road	1 lane of road closed	
MW 11/11	Front of Hut No.174, Tan Kwai Tsuen, Yuen Long	5/11	DO/YL	5/11 (7:00)	Retaining wall	Minor (5)	Squatters		
MW 11/12	Behind Hut No.220A, Tan Kwai Tsuen, Yuen Long	5/11	Public	5/11 (7:00)	Soil cut slope	Minor (20)	Squatters	3 huts permanently evacuated	
MW 11/13	Front of Hut No.205, Tan Kwai Tsuen, Yuen Long	5/11	DO/YL	5/11	Soil cut slope	Minor (2.5)	Squatters	2 huts permanently evacuated	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 21 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/14	Behind Hut No.263, Tan Kwai Tsuen, Yuen Long	5/11	DO/YL	5/11 (7:00)	Soil cut slope	Minor (3.5)	Squatters		
MW 11/15	Adjacent to Bus Terminal at Tsing Ha Lane near Dragon Inn, Tuen Mun	5/11	HyD/TM	5/11	Soil cut slope	Minor (15)	Pedestrian pavement		
MW 11/16	Adjacent to No.1, Nam She Tong, Cheung Chau	5/11	DO/IS	5/11 (7:00)	Soil cut slope	Minor (3)	Pedestrian pavement Building lot		
MW 11/17	Hut No.435, Tan Kwai Tsuen, Yuen Long	5/11	DO/YL	5/11 (7:00)	Soil cut slope	Minor (20)	Squatters	8 huts permanently evacuated	
MW 11/18	Behind House No.59, Lung Tsai Tsuen, Cheung Chau	5/11	DO/IS	5/11 (5:00)	Soil cut slope	Minor (10)	Building lot Backlane		Lack of maintenance
MW 11/19	Behind House No.6, Ying Sin Leung Care Village, Cheung Chau	5/11	DO/IS	5/11	Natural slope Retaining wall	Minor (1)	Backlane	U-channel blocked	
MW 11/20	Same incident as MW 11/3								
MW 11/21	Near Fa Peng Road, Cheung Chau	5/11	DO/IS	5/11	Soil cut slope	Minor (3)	Pedestrian pavement		
MW 11/22	Near Regional Services Office at Kwun Yam Wan Road, Cheung Chau	5/11	DO/IS	5/11	Natural slope	Minor (5)	Pedestrian pavement		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 22 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/23	Near Pegasus Villa, 3 the Peak, Kwun Yam Wan Road, Cheung Chau	5/11	DO/IS	5/11	Soil cut slope	Minor (3)	Pedestrian pavement		
MW 11/24	Adjacent to Tsan Tuen Road, Cheung Chau	5/11	DO/IS	5/11	Natural slope	Minor (2)	Open space		
MW 11/25	Pak She San Tsuen, Lot 26 R.P., Cheung Chau	5/11	DO/IS	5/11	Soil cut slope	Minor (5)	Pedestrian pavement Building lot	Pedestrian pavement partially closed	
MW 11/26	Same incident as MW SP/32 & 33								
MW 11/27	Same incident as MW SP/31								
MW 11/28	Same incident as MW SP/26, 27 & 28								
MW 11/29	Same incident as MW SP/37								
MW 11/30	Same incident as MW SP/36								
MW 11/31	Same incident as MW SP/39								
MW 11/32	Behind No.8, Wo Tin, Mui Wo, Lantau	5/11	Public	5/11 (7:00)	Natural slope	Minor (20)	Building lot Building access		
MW 11/33	Same incident as MW SP/258 & 261								

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 23 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/34	Same incident as MW SP/257								
MW 11/35	Same incident as MW SP/184								
MW 11/36	Behind House No.15, Luk Wu Tsuen, Lantau	8/11	Police	5/11 (7:00)	Retaining wall	Minor (10)	Building lot		
MW 11/37	Kiosk in front of Temple at Tsan Tuen Road, Sai Wan, Cheung Chau	5/11	DO/IS	5/11 (9:00)	Natural slope	Minor (5)	Kiosk	Kiosk damaged	
MW 11/38	Behind Hut No.196, Tan Kwai Tsuen, Yuen Long	5/11	DO/YL	5/11	Soil/rock cut slope	Minor (20)	Squatters	9 huts permanently evacuated	
MW 11/39	Handsome Court, Castle Peak Road, Tuen Mun	8/11	DO/TM	5/11	Soil cut slope	Minor (10)	Pedestrian pavement		
MW 11/40	Behind Hut No.93, Tan Kwai Tsuen, Yuen Long	6/11	DO/YL	5/11	Fence wall	N/A	Squatters		No geotechnical concern
MW 11/41	House No.102, Shui Chiu San Tsuen, Shap Pat Heung, Yuen Long	6/11	DO/YL	5/11	Structure	N/A	Building lot		No geotechnical concern

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 24 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/42	Behind House No.UKS/ GPAI/31, Luk Wu Tsuen, Lantau	8/11	Police	5/11 (7:00)	Retaining wall	Minor (20)	Building lot		
MW 11/43	Near House No.UKS/ GPAI/38, Luk Wu Tsuen, Lantau	8/11	Resident	5/11 (7:00)	Soil cut slope	Minor (20)	Building access		
MW 11/44	Luk Wu Tsuen, Lantau	8/11	Resident	5/11 (7:00)	Soil cut slope	Minor (5)	Open space		
MW 11/45	Behind No.8, Tseng Tau Sheung Tsuen, Tuen Mun	5/11	Public	5/11	Soil cut slope	Minor (5)	Road	1 lane of road blocked	
MW 11/46	Behind Hong Kong Girl Guides Association, Ping Shan Lane, Ping Shan (6NW-B/C5)	8/11	BOO	5/11	Soil/rock cut slope	Minor (5)	Pedestrian pavement		
MW 11/47	Behind House No.62, Beaulieu Peninsula, Tsing Lung Road, Tuen Mun	5/11	Public	5/11 (8:00)	Fill slope	Minor (5)	Carpark		
MW 11/48	Chau House, Shek Kwu Wan	5/11	Resident	5/11 (9:00)	Natural slope	Major (450)	Building lot		
MW 11/49	Below gymnasium, Shek Kwu Chau	5/11	Public	5/11 (7:00)	Fill slope	Minor (45)	Road	Road blocked	



Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 25 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m³)			
MW 11/50	Behind House No.1, Tai Kwai Wan, Cheung Chau	8/11	BOO/DB	Unknown	Soil cut slope	Minor (16)	Building lot		
MW 11/51	Footpath at Tai Kwai Wan, Cheung Chau	8/11	DO/IS	Unknown	Soil cut slope	Minor (10)	Footpath		
MW 11/52	Behind House No.69A, Lung Tsai Tsuen, Cheung Chau	8/11	BOO/DB	5/11 (7:00)	Soil cut slope	Minor (2.5)	Building lot		
MW 11/53	Behind House No.53, Lung Tsai Tsuen, Cheung Chau	8/11	BOO/DB	5/11 (8:00)	Soil cut slope	Minor (40)	Building lot		Lack of maintenance
MW 11/54	Same incident as MW 11/80								
MW 11/55	Same incident as MW SP/109 & 280								
MW 11/56	Same incident as MW SP/110								
MW 11/57	Tai Lam Chung Catchwater Section H & I	9/11	GEO	5/11	Soil cut slope	Minor (20)	Catchwater	Catchwater blocked	
MW 11/58	Same incident as MW SP/78								
MW 11/59	Same incident as MW SP/83								
MW 11/60	Same incident as MW SP/30								

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 26 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/61	Same incident as MW SP/29								
MW 11/62	Adjacent to tennis court of Sea Ranch, Lantau	8/11	Police	5/11 (7:00)	Soil cut slope	Minor (20)	Open space Tennis court		
MW 11/63	Behind Hut No.51A, Siu Sau Village, Tuen Mun	10/11	DO/TM	5/11 (8:00)	Natural slope	Minor (4)	Squatters	U-channel blocked 1 hut temporarily evacuated	
MW 11/64	Behind House No.21, Siu Lam San Tsuen, Tuen Mun	10/11	DO/TM	5/11 (7:00)	Natural slope	Minor (6)	Farmland		
MW 11/65	Behind House No.7E, Siu Lam Chung Village, Castle Peak, Tuen Mun	10/11	DO/TM	5/11 (6:00)	Soil cut slope	Minor (2)	Building access Carpark		
MW 11/66	Near House No.8B, District 4, So Kwun Wat Village, Tuen Mun	10/11	DO/TM	5/11 (15:00)	Natural slope	Minor (5)	Streamcourse	Streamcourse blocked	
MW 11/67	Adjacent to Wang Pui, District 4, So Kwun Wat Village, Tuen Mun	10/11	DO/TM	5/11	Natural slope	Minor (10)	Pedestrian pavement	Pedestrian pavement closed U-channel blocked	
MW 11/68	Pei Tau, District 4, So Kwun Wat Village, Tuen Mun	10/11	DO/TM	5/11 (15:00)	Natural slope	Minor (2)	Streamcourse	Streamcourse blocked	
MW 11/69	Adjacent to So Kwun Wat Road, Tuen Mun	10/11	DO/TM	5/11	Soil cut slope	Minor (10)	Road	Road partially blocked	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 27 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/70	Lo Tsing Shan, So Kwun Wat, Tuen Mun	10/11	DO/TM	5/11 (am)	Natural slope	Minor (20)	Farmland Streamcourse		
MW 11/71	Behind House No.24, Tung Wan Tau Road, Mui Wo, Lantau	5/11	DO/IS	5/11 (7:00)	Natural slope	Minor (4)	Building lot		
MW 11/72	Caritas Medical Centre, Sham Shui Po, Kowloon	11/11	WSD	11/11 (00:40)	Fill slope Natural slope	Major (150)	Pedestrian pavement Road	2 lanes of road blocked	Rupture of water main
MW 11/73	Near House No.TM/LT703-707, Fu Tei Ha Tsuen, Tuen Mun	9/11	DO/TM	5/11	Soil cut slope	Minor (25)	Pedestrian pavement		
MW 11/74	Near House No.TM/LT712, Fu Tei Ha Tsuen, Tuen Mun	9/11	DO/TM	5/11	Soil cut slope	Minor (10)	Open space		
MW 11/75	Near House No.LM1497, TM/LT723-725, Fu Tei Ha Tsuen, Tuen Mun	9/11	DO/TM	5/11	Soil cut slope	Minor (10)	Open space		
MW 11/76	Footpath to Fu Tei Ha Tsuen, Tuen Mun	9/11	DO/TM	5/11	Soil cut slope	Minor (7)	Pedestrian pavement		
MW 11/77	Castle Peak Road near Tai Lam, Tuen Mun	9/11	HyD/NT	5/11 (am)	Rock fall	Minor (0.5)	Road	1 lane of road blocked	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 28 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/78	Opposite Custom Officer Quarter, Castle Peak Road, Tai Lam, Tuen Mun (6SW-D/C11)	9/11	HyD/NT	5/11 (am)	Soil cut slope	Minor (30)	Road	1 lane of road blocked	Lack of maintenance
MW 11/79	Castle Peak Road, Tai Lam, Tuen Mun	9/11	HyD/NT	5/11 (am)	Soil cut slope	Minor (20)	Road	1 lane of road blocked	
MW 11/80	Behind House No.1, Tai Shan East, Lamma Island	9/11	Public	5/11 (am)	Soil cut slope	Minor (1)	Open space		
MW 11/81	Behind Tung Wan School, Lantau	9/11	Public	5/11 (8:00)	Natural slope	Minor (40)	Building lot		
MW 11/82	Behind Tung Wan School, Lantau	9/11	Public	5/11 (8:00)	Soil cut slope	Minor (3)	Building access		
MW 11/83	Same incident as MW SP/123								
MW 11/84	Same incident as MW SP/121								
MW 11/85	Same incident as MW SP/122								
MW 11/86	Same incident as MW SP/117 & 118								

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 29 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m³)			
MW 11/87	Same incident as MW SP/116								
MW 11/88	Same incident as MW SP/115								
MW 11/89	Same incident as MW SP/114								
MW 11/90	Same incident as MW SP/113								
MW 11/91	Same incident as MW SP/134								
MW 11/92	Same incident as MW SP/141 & 142								
MW 11/93	Same incident as MW SP/139								
MW 11/94	Same incident as MW SP/138								
MW 11/95	Same incident as MW SP/93								
MW 11/96	Ma Po Ping Road, Lantau	12/11	HyD/NT	5/11 (8:00)	Soil cut slope	Minor (3)	Road		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 30 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/97	House No.5, Luk Tei Tong, Mui Wo, Lantau	12/11	HyD/NT	Unknown	Debris washout	N/A			No geotechnical concern
MW 11/98	Behind House No.18, Wang Tong, Mui Wo, Lantau	12/11	HyD/NT	Unknown	Natural slope	Minor (10)	Building lot		
MW 11/99	Behind House No.24, Wang Tong, Mui Wo, Lantau	5/11	HyD/NT	5/11 (8:00)	Soil cut slope	Minor (20)	Building lot		
MW 11/100	Behind House No.1, Tseng Tau San Tsuen, Mui Wo, Lantau	12/11	HyD/NT	5/11 (8:00)	Soil cut slope	Minor (20)	Pedestrian pavement Building lot		
MW 11/101	Behind House No.5, Tai Long Tsuen, Lantau	10/11	DO/IS	5/11	Natural slope	Minor (5)	Building lot		
MW 11/102	Same incident as MW SP/2								
MW 11/103	Behind House No.10, Tai Long Tsuen, Lantau (14NW-A/N1)	10/11	DO/IS	5/11	Soil cut slope	Minor (5)	Building access		
MW 11/104	Behind House No.10B, Tai Long Tsuen, Lantau	10/11	DO/IS	5/11	Soil cut slope	Minor (5)	Building access		
MW 11/105	Behind House No.1B, Pak Yuen, Cheung Chau	10/11	DO/IS	Unknown	Soil cut slope	Minor (5)	Pedestrian pavement		Lack of maintenance

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 31 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/106	Front of House No.10A, Tai Kwai Wan San Tsuen, Cheung Chau	10/11	DO/IS	5/11	Soil cut slope	Minor (25)	Open space		
MW 11/107	Same incident as MW SP/25								
MW 11/108	Same incident as MW SP/24								
MW 11/109	Same incident as MW SP/22								
MW 11/110	Same incident as MW SP/23								
MW 11/111	Chi Ma Wan Road, Lantau	10/11	DO/IS	5/11	Natural slope	Minor (10)	Access road		
MW 11/112	Same incident as MW SP/21								
MW 11/113	Same incident as MW SP/14								
MW 11/114	Near Tsang Tai Uk Burial Ground, Shatin	2/11	DO/ST	23/10	Soil cut slope	Minor (35)	Pedestrian pavement	Pedestrian pavement closed	Lack of maintenance
MW 11/115	Same incident as MW SP/3								
MW 11/116	Mong Tung Wan, Lantau	16/11	DO/IS	5/11 (8:00)	Natural slope	Minor (20)	Pedestrian pavement		
MW 11/117	Mong Tung Wan, Lantau	16/11	DO/IS	5/11 (8:00)	Soil cut slope	Minor (5)	Open space		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 32 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/118	Between Siu Lam Hospital and Castle Peak Road, Siu Lam	15/11	Resident	5/11	Natural slope	Minor (30)	Road	1 lane of road blocked	
MW 11/119	Fu Yung Shan Tsuen, Tsuen Wan	19/11	Public	Unknown	Soil cut slope	Minor (2)	Footpath		
MW 11/120	Behind House Nos.134-136, Pui O Kau Tsuen, Lantau	10/11	DO/IS	5/11	Soil cut slope	Minor (2)	Building access		
MW 11/121	Behind House No.148, Pui O Kau Tsuen, Lantau	10/11	DO/IS	5/11	Soil cut slope	Minor (2)	Building access		
MW 11/122	Behind House No.144, Pui O Kau Tsuen, Lantau	10/11	DO/IS	5/11	Soil cut slope Natural slope	Minor (15)	Building access		
MW 11/123	Behind House Nos.37-38, Lo Uk Tsuen, Pui O, Lantau	10/11	DO/IS	5/11	Soil cut slope	Minor (5)	Building access		
MW 11/124	Behind House No.CS/ IPA6/153, Cheung Sha Ha Tsuen, Lantau	10/11	DO/IS	5/11	Natural slope	Minor (10)	Building access		
MW 11/125	Behind Hut No.20, Tung Wan Tau Tsuen, Lantau	10/11	DO/IS	5/11	Soil cut slope	Minor (4.5)	Building access		
MW 11/126	Opposite Chi Ma Wan Centre Lower, Lantau	12/11	ASD	5/11	Fill slope	Minor (3)	Road		



Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 33 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/127	Opposite House No.6, Chi Ma Wan Closed Centre Lower, Lantau	12/11	ASD	5/11	Natural slope	Minor (5)	Building access		
MW 11/128	Near Staff Quarter of Ma Po Ping Prison, Lantau	12/11	ASD	5/11 (8:00)	Fill slope	Minor (20)	Building access		
MW 11/129	Same incident as MW SP/273								
MW 11/130	Behind Sha Tsui Detention Centre, Shek Pik, Lantau	12/11	ASD	5/11 (8:00)	Natural slope	Minor (8)	Open space		
MW 11/131	Behind Wai Sau Yuen, Sheung Keung Shan, Tai O, Lantau	29/11	DO/IS	5/11 (8:00)	Soil cut slope	Minor (20)	Building access		
MW 11/132	Same incident as MW SP/201-204								
MW 11/133	Behind Chow Kee Store, No.13, Mui Wo Ferry Pier Road, Mui Wo	24/11	DO/IS	5/11 (00:00- 06:00)	Soil cut slope	Minor (22)	Building lot		
MW 11/134	Near House No.26, Nang Bin Wai, Mui Wo	24/11	DO/IS	5/11 (8:00)	Retaining wall	Minor (30)	Building lot	Flat partially evacuated	
MW 11/135	Front of House No.5A, Ha Tsuen Long, Luk Tei Tong, Mui Wo	24/11	DO/IS	5/11	Retaining wall	Minor (32)	Pedestrian pavement Building lot	1 building evacuated	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 34 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW 11/136	Behind House No.7, Ha Tsuen Long, Luk Tei Tong, Mui Wo	24/11	DO/IS	5/11	Soil cut slope	Minor (25)	Building lot	1 building evacuated	
MW 11/137	Near Yik Yuen, Pak Ngan Heung, Mui Wo	24/11	DO/IS	5/11	Natural slope	Minor (45)	Pedestrian pavement	Pedestrian pavement closed	
MW 11/138	Near House No.7, Wang Tong, Mui Wo	Unknown	DO/IS	5/11	Soil cut slope	Minor (5)	Pedestrian pavement	Pedestrian pavement partially closed	
MW 11/139	Footpath to Sam Shing Temple, Tuen Mun	24/11	DO/TM	Unknown	Soil cut slope	Minor (10)	Pedestrian pavement		
MW 11/140	Adjacent to access to Tai Lam Chung Catchwater, So Kwun Wat, Tuen Mun	17/11	GEO	Unknown	Soil cut slope	Minor (5)	Footpath		
MW 11/141	Ki Lun Kong Public Park, Castle Peak Road, Tuen Mun (6SW-A/C1)	24/11	GEO	Unknown	Soil cut slope	Minor (15)	Pedestrian pavement		
MW 11/142	Front of 52 Tseng Tau Chung Tsuen, Tuen Mun (6SW-A/C12)	25/11	DO/TM	5/11	Soil cut slope	Minor (7)	Streamcourse		
MW 11/143	Behind House No.TYST/ 2267, Tong Yau San Tsuen, Yuen Long	24/11	DO/YL	5/11	Soil cut slope	Minor (15)	Building access		

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m³)			
MW 11/144	Sau Fung Chuen, Tai O	7/12	DO/IS	5/11	Natural slope	Minor (20)	Building lot		
MW 11/145	Tai Lam Chung Catchwater Section H & I	17/11	GEO	Unknown	Soil cut slope	Minor (3)	Catchwater		
MW 11/146	Adjacent Tai Kok Chi, Sheung Keung Shan, Luk Wu Tsuen, Tai O	26/1	DLO/IS	Nov.	Natural slope	Minor (5)	Building lot		
MW 11/147	Adjacent House No.123, Wang Tong, Mui Wo, Lantau	1/2/94	DO/IS	5/11	Retaining wall	Minor (5)	Open space		
MW 11/148	Footpath at Ngau Kwu Long, Lantau	16/2/94	DO/IS	5/11	Natural slope	Minor (4)	Pedestrian pavement		
MW 11/149	Footpath at Hung Fa Ngan, Lantau	1/2/94	DO/IS	5/11	Natural slope	Minor (30)	Pedestrian pavement		
MW 11/150	Footpath at Tai Long, Lantau	1/2/94	DO/IS	5/11	Natural slope	Minor (10)	Pedestrian pavement		
MW 12/1	Adjacent House No.9A, Tai Kwai Wan San Tsuen, Cheung Chau	22/12	DLO/IS	Unknown	Soil cut slope	Minor (20)	Squatters	2 huts temporarily evacuated	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 36 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/1	Chi Ma Wan Closed Centre, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (1)	Open space	1 lane of road closed	
MW SP/2	Upper Chi Ma Wan Closed Centre, Lantau	10/11	DO/IS	5/11	Soil cut slope	Major (225)	Road		
MW SP/3	Chi Ma Wan Closed Centre, Lantau	10/11	DO/IS	5/11	Soil cut slope	Minor (32)	Road		
MW SP/4	Chi Ma Wan Closed Centre, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (2)	Road		Lack of maintenance
MW SP/5	Chi Ma Wan Closed Centre, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (1)	Road		Lack of maintenance
MW SP/6	Chi Ma Wan Closed Centre, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (1)	Open space		Lack of maintenance
MW SP/7	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (5)	Building lot		Lack of maintenance
MW SP/8	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (3)	Pedestrian pavement		
MW SP/9	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (12)	Open space		Lack of maintenance
MW SP/10	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (1)	Road		Lack of maintenance

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m³)			
MW SP/11	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (4)	Road		
MW SP/12	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (9)	Road	1 lane of road blocked	
MW SP/13	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (11)	Road		
MW SP/14	Chi Ma Wan Road, Lantau	10/11	DO/IS	5/11	Soil cut slope	Minor (31)	Road	1 lane of road blocked	
MW SP/15	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (2)	Open space		Lack of maintenance
MW SP/16	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (14)	Road	1 lane of road blocked	Lack of maintenance
MW SP/17	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (2)	Open space		
MW SP/18	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (2)	Road		Lack of maintenance
MW SP/19	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (11)	Road		Lack of maintenance
MW SP/20	Chi Ma Wan Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (3)	Road		Lack of maintenance

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/21	Chi Ma Wan Road, Lantau	10/11	DO/IS	5/11	Soil cut slope	Major (50)	Road	1 lane of road blocked	Lack of maintenance
MW SP/22	Chi Ma Wan Road, Lantau	10/11	DO/IS	5/11	Soil cut slope	Minor (12)	Road	1 lane of road blocked	Lack of maintenance
MW SP/23	Ham Tin Tsuen, Lantau	10/11	DO/IS	5/11	Soil cut slope	Minor (21)	Road	1 lane of road blocked	
MW SP/24	Pier Road near Helipad, Mui Wo, Lantau	9/11	WSD	5/11 (8:00)	Natural slope Soil cut slope	Minor (20)	Open space		
MW SP/25	Pier Road near Helipad, Mui Wo, Lantau	9/11	WSD	5/11 (8:00)	Natural slope Soil cut slope	Minor (20)	Open space		
MW SP/26	Fu Kong Shan, South Lantau Road, Lantau	5/11	HyD/NT	5/11 (8:00)	Retaining wall	Minor (30)	Building lot		Lack of maintenance
MW SP/27	Fu Kong Shan, South Lantau Road, Lantau	5/11	HyD/NT	5/11 (8:00)	Soil cut slope	Minor (12)	Road	1 lane of road closed	Lack of maintenance
MW SP/28	Fu Kong Shan, South Lantau Road, Lantau	5/11	HyD/NT	5/11 (8:00)	Soil cut slope	Major (53)	Road	1 lane of road closed	
MW SP/29	Near M.S. ¼, South Lantau Road, Lantau (10SW-C/C12)	8/11	HyD/NT	5/11 (7:00)	Soil cut slope	Major (86)	Road	1 lane of road closed	
MW SP/30	Near M.S. ½, South Lantau Road, Lantau (10SW-C/C12)	8/11	HyD/NT	5/11 (7:00)	Soil cut slope	Minor (41)	Road	1 lane of road closed	Lack of maintenance

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/31	Nam Shan, South Lantau Road, Lantau (10SW-C/F11)	5/11	HyD/NT	5/11 (7:00)	Fill slope	Major (50)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	Lack of maintenance
MW SP/32	Nam Shan, South Lantau Road, Lantau	5/11	HyD/NT	5/11 (7:00)	Natural slope	Major (245)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	
MW SP/33	Nam Shan, South Lantau Road, Lantau (10SW-C/C21)	5/11	HyD/NT	5/11 (7:00)	Soil cut slope	Major (61)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	
MW SP/34	Near Nam Shan, South Lantau Road, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (5)	Road	1 lane of road closed	
MW SP/35	Near Nam Shan, South Lantau Road, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (27)	Access road	Access road closed	
MW SP/36	Opposite M.S.1½, South Lantau Road, Lantau	5/11	HyD/NT	5/11 (7:00)	Soil cut slope	Major (72)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	
MW SP/37	Near M.S.1½, South Lantau Road, Lantau	5/11	HyD/NT	5/11 (7:00)	Natural slope	Minor (21)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	
MW SP/38	Near Nam Shan, South Lantau Road, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (2)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/39	South of M.S.1½, South Lantau Road, Lantau	5/11	HyD/NT	5/11 (7:00)	Soil cut slope	Minor (40)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	Lack of maintenance
MW SP/40	Near M.S.2, South Lantau Road, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (7)	Pedestrian pavement Road		
MW SP/41	Electric Sub-Station, near M.S.2, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (14)	Pedestrian pavement		
MW SP/42	Electric Sub-Station, near M.S.2, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (2)	Road		
MW SP/43	Near Pui O, South Lantau Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (2)	Pedestrian pavement		
MW SP/44	Near Pui O, South Lantau Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (4)	Pedestrian pavement		
MW SP/45	Near Pui O, South Lantau Road, Lantau	30/11	GEO	5/11	Soil cut slope	Minor (3)	Road	1 lane of road blocked	
MW SP/46	Near Pui O, South Lantau Road, Lantau	30/11	GEO	5/11	Soil cut slope	Minor (2)	Road	1 lane of road blocked	
MW SP/47	Near Pui O, South Lantau Road, Lantau	30/11	GEO	5/11	Soil cut slope	Minor (9)	Road	1 lane of road blocked	



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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/48	Near Pui O, South Lantau Road, Lantau	30/11	GEO	5/11	Soil cut slope	Minor (5)	Road	1 lane of road blocked	Lack of maintenance
MW SP/49	Near Pui O, South Lantau Road, Lantau	30/11	GEO	5/11	Soil cut slope	Minor (27)	Road	1 lane of road blocked	
MW SP/50	Near Pui O, South Lantau Road, Lantau	30/11	GEO	5/11	Soil cut slope	Major (370)	Open space		
MW SP/51	Near Pui O, South Lantau Road, Lantau	30/11	GEO	5/11	Soil cut slope	Minor (6)	Road	1 lane of road blocked	Lack of maintenance
MW SP/52	Near Pui O, South Lantau Road, Lantau	30/11	GEO	5/11	Soil/rock cut slope	Minor (8)	Road	1 lane of road blocked	Lack of maintenance
MW SP/53	Near Pui O, South Lantau Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (6)	Pedestrian pavement Road	1 lane of road blocked	
MW SP/54	Near Pui O, South Lantau Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (3)	Pedestrian pavement		
MW SP/55	Near Cheung Sha Ha Tsuen, South Lantau Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (3)	Pedestrian pavement		Lack of maintenance
MW SP/56	Near Cheung Sha Ha Tsuen, South Lantau Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (49)	Pedestrian pavement Road	1 lane of road blocked	Lack of maintenance
MW SP/57	Near Cheung Sha Ha Tsuen, South Lantau Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (1)	Pedestrian pavement		

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m³)			
MW SP/58	Near Cheung Sha Ha Tsuen, South Lantau Road, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (30)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	Lack of maintenance
MW SP/59	Near Cheung Sha Ha Tsuen, South Lantau Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (2)	Pedestrian pavement		
MW SP/60	Near Cheung Sha Ha Tsuen, South Lantau Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (13)	Pedestrian pavement Road		
MW SP/61	Near Cheung Sha Ha Tsuen, South Lantau Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (1)	Pedestrian pavement		
MW SP/62	No incident report filed								
MW SP/63	Near South Lantau Road, Tung Chung Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (1)	Road		Lack of maintenance
MW SP/64	Near M.S.4, Tung Chung Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Open space		
MW SP/65	Near Pak Kung Au, Tung Chung Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (2)	Pedestrian pavement Road		
MW SP/66	Near Pak Kung Au, Tung Chung Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (6)	Pedestrian pavement Road		
MW SP/67	Near M.S.3, Tung Chung Road, Lantau	10/11	GEO	5/11	Soil cut slope	Major (108)	Open space		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 43 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/68	Near Shek Sz Shan, Tung Chung Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (22)	Pedestrian pavement Road	1 lane of road blocked	Lack of maintenance
MW SP/69	Near Shek Sz Shan, Tung Chung Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (25)	Pedestrian pavement Road	1 lane of road blocked	Lack of maintenance
MW SP/70	Near Shek Sz Shan, Tung Chung Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (6)	Pedestrian pavement Road		
MW SP/71	Near Shek Sz Shan, Tung Chung Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (1)	Open space		Lack of maintenance
MW SP/72	Wong Lung Hang Road, Tung Chung, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (12)	Open space		
MW SP/73	Wong Lung Hang Road, Tung Chung, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (13)	Pedestrian pavement		
MW SP/74	Wong Lung Hang Road, Tung Chung, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (5)	Open space		Lack of maintenance
MW SP/75	Wong Lung Hang Road, Tung Chung, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (8)	Open space		Lack of maintenance
MW SP/76	Wong Lung Hang Road, Tung Chung, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (8)	Footpath		Lack of maintenance
MW SP/77	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (1)	Pedestrian pavement		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 44 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/78	Near Cheung Sha Beach, South Lantau Road, Lantau (13NE-B/CR5)	8/11	HyD/NT	5/11 (7:00)	Soil cut slope	Major (245)	Road	1 lane of road closed	
MW SP/79	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Fill slope	Minor (8)	Open space		
MW SP/80	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil/rock cut slope	Minor (17)	Pedestrian pavement Road	1 lane of road blocked	
MW SP/81	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Fill slope	Minor (8)	Open space		
MW SP/82	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (7)	Pedestrian pavement Road		
MW SP/83	Opposite Cheung Sha Beach, South Lantau Road, Lantau	8/11	HyD/NT	5/11 (7:00)	Soil cut slope	Minor (22)	Road	1 lane of road closed	
MW SP/84	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Major (420)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	
MW SP/85	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (11)	Road	2 lanes of road closed	
MW SP/86	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (18)	Road	1 lane of road closed	Lack of maintenance

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 45 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/87	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (10)	Pedestrian pavement Road		
MW SP/88	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (1)	Pedestrian pavement		Lack of maintenance
MW SP/89	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (14)	Pedestrian pavement Road		
MW SP/90	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (18)	Open space		Lack of maintenance
MW SP/91	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Fill slope	Minor (3)	Open space		
MW SP/92	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Major (192)	Pedestrian pavement Road	1 lane of road closed	
MW SP/93	Ma Po Ping Road, Lantau	12/11	HyD/NT	5/11 (8:00)	Soil cut slope	Minor (20)	Road	1 lane of road blocked	
MW SP/94	Near Tong Fuk Miu Wan, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Pedestrian pavement Road		Lack of maintenance
MW SP/95	Near Tong Fuk Miu Wan, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (1)	Pedestrian pavement		
MW SP/96	Near Shui Hau, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Open space		Lack of maintenance

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 46 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/97	Near Shui Hau, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (6)	Open space		Lack of maintenance
MW SP/98	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (2)	Open space		Lack of maintenance
MW SP/99	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (41)	Pedestrian pavement		Lack of maintenance
MW SP/100	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (5)	Open space		
MW SP/101	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (4)	Open space		
MW SP/102	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Open space		
MW SP/103	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Open space		Lack of maintenance
MW SP/104	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (4)	Open space		Lack of maintenance
MW SP/105	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Open space		Lack of maintenance
MW SP/106	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (45)	Pedestrian pavement Road	1 lane of road blocked	

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/107	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (16)	Pedestrian pavement Road	1 lane of road blocked	Lack of maintenance
MW SP/108	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11 (7:00)	Soil cut slope	Minor (8)	Road	1 lane of road blocked	Lack of maintenance
MW SP/109	Near Shek Pik Reservoir, South Lantau Road, Lantau	8/11	HyD/NT	5/11 (7:00)	Soil cut slope	Minor (11)	Road	1 lane of road closed	
MW SP/110	Near Shek Pik Reservoir, South Lantau Road, Lantau	8/11	HyD/NT	5/11 (7:00)	Soil cut slope	Minor (14)	Road	1 lane of road closed	Lack of maintenance
MW SP/111	Near Shek Pik Reservoir, South Lantau Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (2)	Road	1 lane of road closed	
MW SP/112	Near Shek Pik Reservoir, South Lantau Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (9)	Pedestrian pavement Road	1 lane of road blocked	
MW SP/113	Lantau Trail near Shek Pik Reservoir Road, Lantau	9/11	HyD/NT	5/11 (8:00)	Natural slope	Minor (14)	Access road	Access road blocked	
MW SP/114	Lantau Trail near Shek Pik Reservoir Road, Lantau	9/11	HyD/NT	5/11 (8:00)	Soil cut slope	Minor (18)	Access road	Access road blocked	Lack of maintenance
MW SP/115	Lantau Trail near Shek Pik Reservoir Road, Lantau	9/11	HyD/NT	5/11 (8:00)	Natural slope	Minor (19)	Access road	Access road blocked	
MW SP/116	Lantau Trail near Shek Pik Reservoir Road, Lantau	9/11	Public	5/11 (8:00)	Soil cut slope	Major (146)	Access road	Access road blocked	

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/117	Lantau Trail, Shek Pik, Lantau	9/11	Public	5/11	Soil cut slope	Minor (2)	Access road	Access road blocked	Lack of maintenance
MW SP/118	Lantau Trail, Shek Pik, Lantau	9/11	Public	5/11	Soil cut slope	Minor (2)	Access road	Access road blocked	Lack of maintenance
MW SP/119	Lantau Trail, Shek Pik, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (1)	Access road		Lack of maintenance
MW SP/120	Lantau Trail, Shek Pik, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Access road		Lack of maintenance
MW SP/121	Lantau Trail, Shek Pik, Lantau	9/11	Public	5/11 (8:00)	Soil cut slope	Minor (4)	Access road	Access road blocked	
MW SP/122	Lantau Trail, Shek Pik, Lantau	9/11	Public	5/11 (8:00)	Soil cut slope	Minor (5)	Access road	Access road blocked	
MW SP/123	Lantau Trail, Shek Pik, Lantau	9/11	Public	5/11 (8:00)	Soil cut slope	Minor (1)	Access road	Access road blocked	
MW SP/124	Shek Pik Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (29)	Catchwater	Catchwater blocked	
MW SP/125	Shek Pik Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (11)	Catchwater		Lack of maintenance
MW SP/126	Shek Pik Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (8)	Catchwater	Catchwater blocked	Lack of maintenance



Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 49 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/127	Shek Pik Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (29)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/128	Shek Pik Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (34)	Catchwater		
MW SP/129	Shek Pik Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (12)	Access road	Access road blocked	Lack of maintenance
MW SP/130	Shek Pik Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Major (194)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/131	Shek Pik Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (2)	Catchwater		
MW SP/132	Access road to Shek Pik Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (17)	Catchwater		Lack of maintenance
MW SP/133	Access road to Shek Pik Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Major (55)	Access road	Access road blocked	Lack of maintenance
MW SP/134	Lantau Trail near Shek Pik Reservoir Road, Lantau	9/11	HyD/NT	5/11 (8:00)	Soil cut slope	Major (102)	Access road	Access road blocked	
MW SP/135	Near Tai Long Wan Tsuen, Wang Pui Road, Lantau	10/11	GEO	5/11	Natural slope	Major (72)	Road	1 lane of road blocked	
MW SP/136	Near Tai Long Wan Tsuen, Wang Pui Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Access road		

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/137	Wang Pui Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (20)	Road		Lack of maintenance
MW SP/138	Wang Pui Road, Lantau (13NW-B/C9)	12/11	HyD/NT	5/11 (8:00)	Soil cut slope	Minor (22)	Open space		
MW SP/139	Wang Pui Road near junction of Keung Shan Road, Lantau	12/11	HyD/NT	5/11 (8:00)	Soil cut slope	Major (144)	Open space		
MW SP/140	Shek Pik Reservoir Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (1)	Road		Lack of maintenance
MW SP/141	Lantau Trail near Shek Pik Reservoir Road, Lantau	9/11	HyD/NT	5/11 (8:00)	Soil cut slope	Minor (1)	Road	1 lane of road blocked	Lack of maintenance
MW SP/142	Lantau Trail near Shek Pik Reservoir Road, Lantau	9/11	HyD/NT	5/11 (8:00)	Soil cut slope	Minor (9)	Road	1 lane of road blocked	Lack of maintenance
MW SP/143	Lantau Trail near Shek Pik Reservoir Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (2)	Open space		Lack of maintenance
MW SP/144	Lantau Trail near Shek Pik Reservoir Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (2)	Open space		Lack of maintenance
MW SP/145	Near M.S.10, Keung Shan Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (14)	Pedestrian pavement Road		
MW SP/146	Near M.S.10, Keung Shan Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (22)	Pedestrian pavement Road		

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/147	Access road to northern Shek Pik Reservoir, near Junction of Keung Shan Road and the access road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Open space		Lack of maintenance
MW SP/148	Near Kwun Yam Shan, Keung Shan Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (7)	Road		Lack of maintenance
MW SP/149	Near Kwun Yam Shan, Keung Shan Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (1)	Pedestrian pavement		Lack of maintenance
MW SP/150	Near Kwun Yam Shan, Keung Shan Road, Lantau	9/11	GEO	5/11	Rock cut slope	Minor (2)	Open space		Lack of maintenance
MW SP/151	Near Kwun Yam Shan, Keung Shan Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (2)	Pedestrian pavement Road		
MW SP/152	Keung Shan Road, near junction of the access road to Luk Wu, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (22)	Road	1 lane of road blocked	Lack of maintenance
MW SP/153	Keung Shan Road, near junction of the access road to Luk Wu, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (10)	Road	1 lane of road blocked	Lack of maintenance
MW SP/154	Keung Shan Road, near junction of the access road to Luk Wu, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (1)	Road		Lack of maintenance

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Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/155	Keung Shan Road, near junction of the access road to Luk Wu, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (1)	Road		Lack of maintenance
MW SP/156	Keung Shan Road, near junction of the access road to Luk Wu, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (1)	Open space		
MW SP/157	Near M.S.12, Keung Shan Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (4)	Open space		Lack of maintenance
MW SP/158	Near M.S.12, Keung Shan Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (1)	Open space		
MW SP/159	Tai O Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (14)	Pedestrian pavement		
MW SP/160	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (7)	Access road	Access road blocked	
MW SP/161	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (3)	Catchwater		
MW SP/162	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Major (68)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/163	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (46)	Catchwater	Catchwater blocked	
MW SP/164	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (10)	Catchwater	Catchwater blocked	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 53 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/165	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (4)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/166	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (5)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/167	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (1)	Catchwater		Lack of maintenance
MW SP/168	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (2)	Catchwater		
MW SP/169	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (14)	Catchwater	Catchwater blocked	
MW SP/170	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Major (58)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/171	Keung Shan South Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (17)	Catchwater	Catchwater blocked	
MW SP/172	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (36)	Catchwater	Catchwater blocked	
MW SP/173	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (1)	Catchwater		Lack of maintenance
MW SP/174	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (27)	Catchwater	Catchwater blocked	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 54 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/175	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (11)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/176	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (1)	Catchwater	Catchwater blocked	
MW SP/177	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Major (101)	Catchwater	Catchwater blocked	
MW SP/178	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (34)	Catchwater	Catchwater blocked	
MW SP/179	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (10)	Catchwater	Catchwater blocked	
MW SP/180	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (4)	Catchwater	Catchwater blocked	
MW SP/181	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Major (67)	Catchwater	Catchwater blocked	
MW SP/182	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (16)	Catchwater	Catchwater blocked	
MW SP/183	Keung Shan North Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (4)	Catchwater	Catchwater blocked	
MW SP/184	Access road to Luk Wu, Lantau	8/11	Public	5/11 (7:00)	Soil cut slope	Major (210)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 55 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/185	Sham Wat Road, near junction of Ngong Ping Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (1)	Pedestrian pavement		Lack of maintenance
MW SP/186	Sham Wat Road, near junction of Ngong Ping Road and Sham Wat Road, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (2)	Open space		
MW SP/187	Sham Wat Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (5)	Open space		
MW SP/188	Sham Wat Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (4)	Road	1 lane of road blocked	
MW SP/189	Sham Wat Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (5)	Road	1 lane of road blocked	
MW SP/190	Sham Wat Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (1)	Road		
MW SP/191	No incident report filed								
MW SP/192	Sham Wat Road, Lantau	10/11	GEO	5/11	Soil cut slope	Major (70)	Pedestrian pavement Road	Pedestrian pavement and 1 lane of road closed	Lack of maintenance
MW SP/193	Sham Wat Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (36)	Pedestrian pavement		
MW SP/194	Sham Wat Road, Lantau	10/11	GEO	5/11	Natural slope	Minor	Open space		

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 56 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/195	Sham Wat Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (10)	Pedestrian pavement Road	Pedestrian pavement and access road closed	
MW SP/196	Sham Wat Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (38)	Access road	Access road blocked	
MW SP/197	Sham Wat Road, Lantau	15/11	GEO	5/11	Natural slope	Minor	Road		
MW SP/198	Sham Wat Road, Lantau	15/11	GEO	5/11	Soil cut slope	Minor (25)	Road	One lane of road blocked	Lack of maintenance
MW SP/199	Sham Wat Road, Lantau	15/11	GEO	5/11	Soil cut slope	Major (594)	Pedestrian pavement Road	1 lane of road closed	Lack of maintenance
MW SP/200	Sham Wat West Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (5)	Catchwater	Catchwater blocked	
MW SP/201	Near Sham Wat Road, Lantau	22/11	WSD	5/11 (8:00)	Natural slope	Major (422)	Access road	Access road closed	
MW SP/202	Near Sham Wat Road, Lantau (9SW-D/FR13)	22/11	WSD	5/11 (8:00)	Soil cut slope	Minor (36)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/203	Near Sham Wat Road, Lantau	22/11	WSD	5/11 (8:00)	Natural slope	Major (94)	Catchwater		



Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 57 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/204	Near Sham Wat Road, Lantau	22/11	WSD	5/11 (8:00)	Natural slope	Major (65)	Access road	Access road closed	Lack of maintenance
MW SP/205	Sham Wat West Catchwater, Lantau	9/11	GEO	5/11	Soil cut slope	Minor (4)	Catchwater	Catchwater blocked	
MW SP/206	Sham Wat West Catchwater, Lantau	9/11	GEO	5/11	Natural slope	Minor	Access road	Access road blocked	
MW SP/207	Sham Wat West Catchwater, Lantau	9/11	GEO	5/11	Natural slope	Minor	Access road	Access road closed	
MW SP/208	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (432)	Access road	Access road closed	
MW SP/209	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (139)	Catchwater	Catchwater blocked	
MW SP/210	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (38)	Catchwater	Catchwater blocked	
MW SP/211	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (317)	Catchwater	Catchwater blocked	
MW SP/212	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (108)	Catchwater	Catchwater blocked	
MW SP/213	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (79)	Catchwater	Catchwater blocked	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 58 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/214	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (1)	Catchwater		Lack of maintenance
MW SP/215	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (205)	Catchwater	Catchwater blocked	
MW SP/216	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (72)	Catchwater	Catchwater blocked	
MW SP/217	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Natural slope	Minor	Catchwater	Catchwater blocked	
MW SP/218	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (180)	Access road Catchwater	Access road closed Catchwater blocked	
MW SP/219	Sham Wat East Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (189)	Access road Catchwater	Access road closed Catchwater blocked	
MW SP/220	Sham Wat East Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (38)	Access road	Access road blocked	
MW SP/221	Sham Wat East Catchwater, Lantau	18/11	GEO	5/11	Soil/rock cut slope	Minor (22)	Access road	Access road blocked	Lack of maintenance
MW SP/222	Sham Wat East Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (29)	Access road	Access road closed	
MW SP/223	Sham Wat East Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Major (63)	Access road	Access road closed	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 59 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m³)			
MW SP/224	Sham Wat East Catchwater, Lantau	30/11	GEO	5/11	Soil/rock cut slope	Minor (9)	Access road	Access road closed	Lack of maintenance
MW SP/225	Sham Wat East Catchwater, Lantau	30/11	GEO	5/11	Soil cut slope	Minor (30)	Access road	Access road closed	Lack of maintenance
MW SP/226	Sham Wat East Catchwater, Lantau	30/11	GEO	5/11	Soil cut slope	Minor (24)	Access road	Access road blocked	Lack of maintenance
MW SP/227	Sham Wat East Catchwater, Lantau	30/11	GEO	5/11	Natural slope	Minor	Access road	Access road blocked	
MW SP/228	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (8)	Catchwater		
MW SP/229	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (2)	Catchwater		Lack of maintenance
MW SP/230	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (8)	Catchwater	Catchwater blocked	
MW SP/231	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (9)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/232	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil/rock cut slope	Major (140)	Pedestrian pavement Road Catchwater	Pedestrian pavement and 1 lane of road closed Catchwater blocked	Lack of maintenance
MW SP/233	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (86)	Access road		Lack of maintenance

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 60 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/234	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Natural slope	Minor (13)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/235	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (7)	Catchwater		
MW SP/236	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (8)	Catchwater		
MW SP/237	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (4)	Catchwater		
MW SP/238	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (146)	Catchwater		
MW SP/239	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Natural slope	Minor (4)	Access road		
MW SP/240	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (2)	Access road		Lack of maintenance
MW SP/241	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (5)	Catchwater		Lack of maintenance
MW SP/242	Near Shui Hau, South Lantau Catchwater, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (2)	Catchwater		Lack of maintenance
MW SP/243	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (33)	Catchwater	Catchwater blocked	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 61 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/244	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (1)	Catchwater		Lack of maintenance
MW SP/245	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (2)	Catchwater		
MW SP/246	Near Shui Hau, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (6)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/247	Near Ma Po Ping Prison, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (12)	Catchwater		
MW SP/248	Near Ma Po Ping Prison, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (18)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/249	Near Ma Po Ping Prison, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Major (60)	Catchwater	Catchwater blocked	
MW SP/250	Near Ma Po Ping Prison, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (29)	Catchwater	Catchwater blocked	
MW SP/251	Near Ma Po Ping Prison, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (11)	Catchwater	Catchwater blocked	Lack of maintenance

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 62 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/252	Near Ma Po Ping Prison, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Catchwater		Lack of maintenance
MW SP/253	Near Ma Po Ping Prison, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (3)	Catchwater		Lack of maintenance
MW SP/254	Near Ma Po Ping Prison, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (11)	Catchwater	Catchwater blocked	
MW SP/255	Near Tong Fuk, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (12)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/256	Near Tong Fuk, South Lantau Catchwater, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (2)	Catchwater		
MW SP/257	Near CH152, Lantau Trail, Tong Fuk, Lantau	8/11	Police	5/11 (7:00)	Soil cut slope	Major (559)	Catchwater Access road	Catchwater blocked Access road closed	
MW SP/258	Near CH154, Lantau Trail, Tong Fuk, Lantau	8/11	Police	5/11 (7:00)	Natural slope	Major (450)	Building lot Access road	Access road closed	
MW SP/259	Near Tong Fuk, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Major (72)	Catchwater	Catchwater blocked	
MW SP/260	Near Tong Fuk, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (17)	Catchwater	Catchwater blocked	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 63 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/261	Near CH154, Lantau Trail, Tong Fuk, Lantau	8/11	Police	5/11 (7:00)	Soil cut slope	Minor (12)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/262	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (12)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/263	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (27)	Catchwater	Catchwater blocked	
MW SP/264	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (2)	Catchwater		Lack of maintenance
MW SP/265	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Retaining wall	Minor (2)	Catchwater	Catchwater blocked	
MW SP/266	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (43)	Catchwater	Catchwater blocked	
MW SP/267	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (1)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/268	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (15)	Catchwater	Catchwater blocked	
MW SP/269	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (1)	Catchwater		Lack of maintenance
MW SP/270	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (10)	Catchwater	Catchwater blocked	

Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 64 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m <sup>3</sup> )			
MW SP/271	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil cut slope	Minor (9)	Catchwater	Catchwater blocked	Lack of maintenance
MW SP/272	Near Cheung Sha, South Lantau Catchwater, Lantau	6/11	GEO	5/11	Soil/rock cut slope	Minor (10)	Catchwater	Catchwater blocked	
MW SP/273	Lantau Trail, Cheung Sha, Lantau (13NE-B/FR21)	22/11	WSD	5/11 (8:00)	Fill slope	Major (173)	Access road		
MW SP/274	Wang Tong, Mui Wo, Lantau	18/11	GEO	5/11	Natural slope	Major (65)	Building lot		
MW SP/275	Wang Tong, Mui Wo, Lantau	18/11	GEO	5/11	Soil cut slope	Minor (4)	Building lot		
MW SP/276	Wang Tong, Mui Wo, Lantau	19/11	GEO	5/11	Soil cut slope	Minor (7)	Building lot		
MW SP/277	Wang Tong, Mui Wo, Lantau	19/11	GEO	5/11	Soil cut slope	Minor (15)	Building lot		
MW SP/278	Wang Tong, Mui Wo, Lantau	18/11	GEO	5/11	Natural slope	Minor (14)	Open space		
MW SP/279	Wang Tong, Mui Wo, Lantau	18/11	GEO	5/11	Natural slope	Minor (27)	Open space		
MW SP/280	Near Shek Pik Reservoir, South Lantau Road, Lantau	8/11	HyD/NT	5/11 (7:00)	Soil cut slope	Minor (20)	Road	1 lane of road closed	



Table A4 - List of Incidents in Western New Territories Reported to GEO in 1993 (Sheet 65 of 65)

Incident No.	Location (Slope Ref. No. if any)	Call		Failure			Area Affected	Consequence	Remarks
		Date	From	Date (Time)	Type	Scale (m³)			
MW SP/281	Near Shek Pik Reservoir, South Lantau Road, Lantau	10/11	GEO	5/11	Soil cut slope	Minor (5)	Open space		Lack of maintenance
MW SP/282	Near Cheung Sha Beach, South Lantau Road, Lantau	10/11	GEO	5/11	Natural slope	Minor (6)	Open space		
MW SP/283	Keung Shan South Catchwater, Lantau	25/11	GEO	5/11	Soil cut slope	Minor (2)	Catchwater		Lack of maintenance

APPENDIX B

RECORDS FROM GEO RAINGAUGES DURING  
THE FIVE HEAVIEST 24-HOUR RAINSTORM  
OF 1993

LIST OF FIGURES

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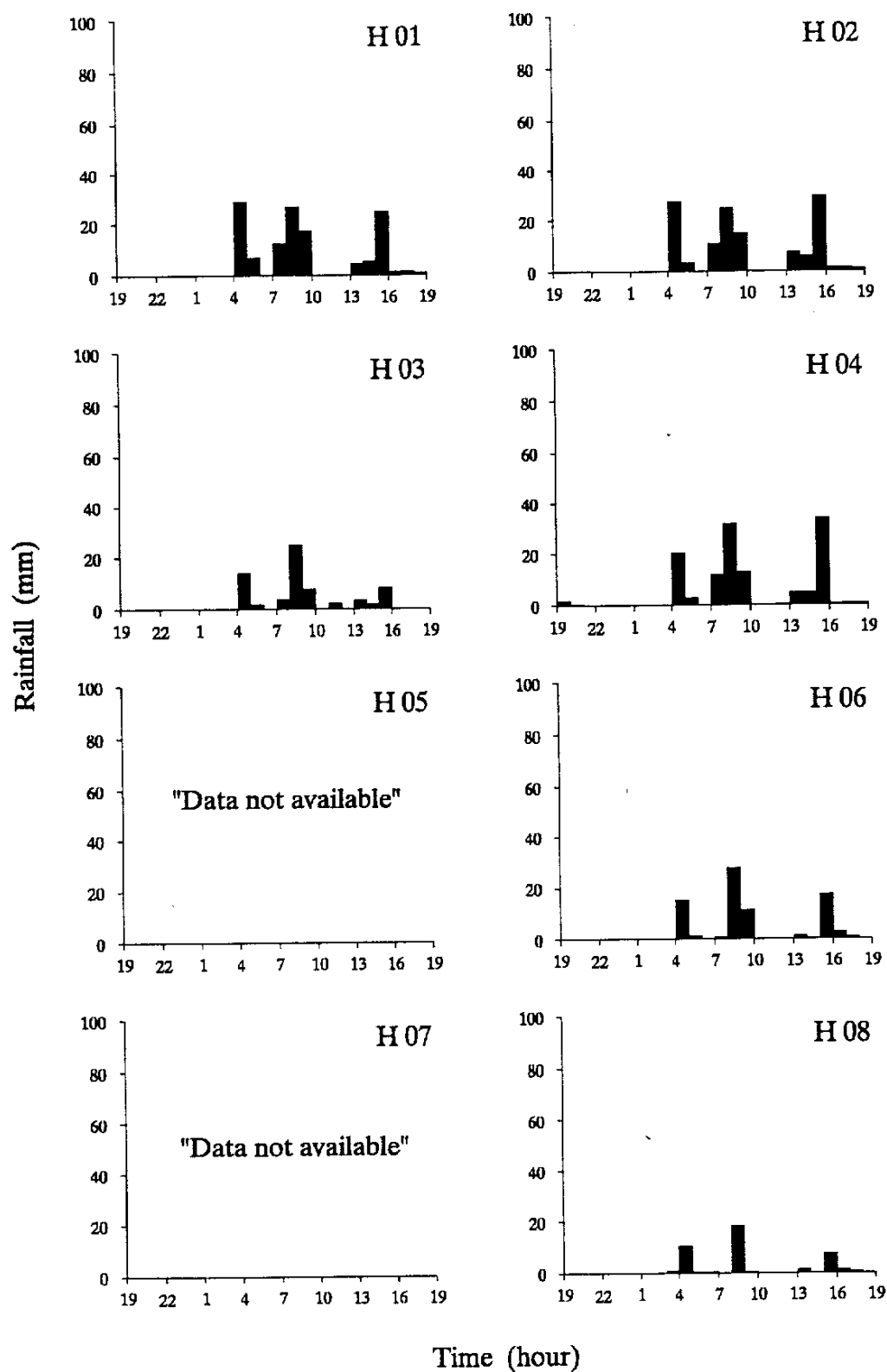


Figure B1 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 10 to 11 June 1993 (Sheet 1 of 6)

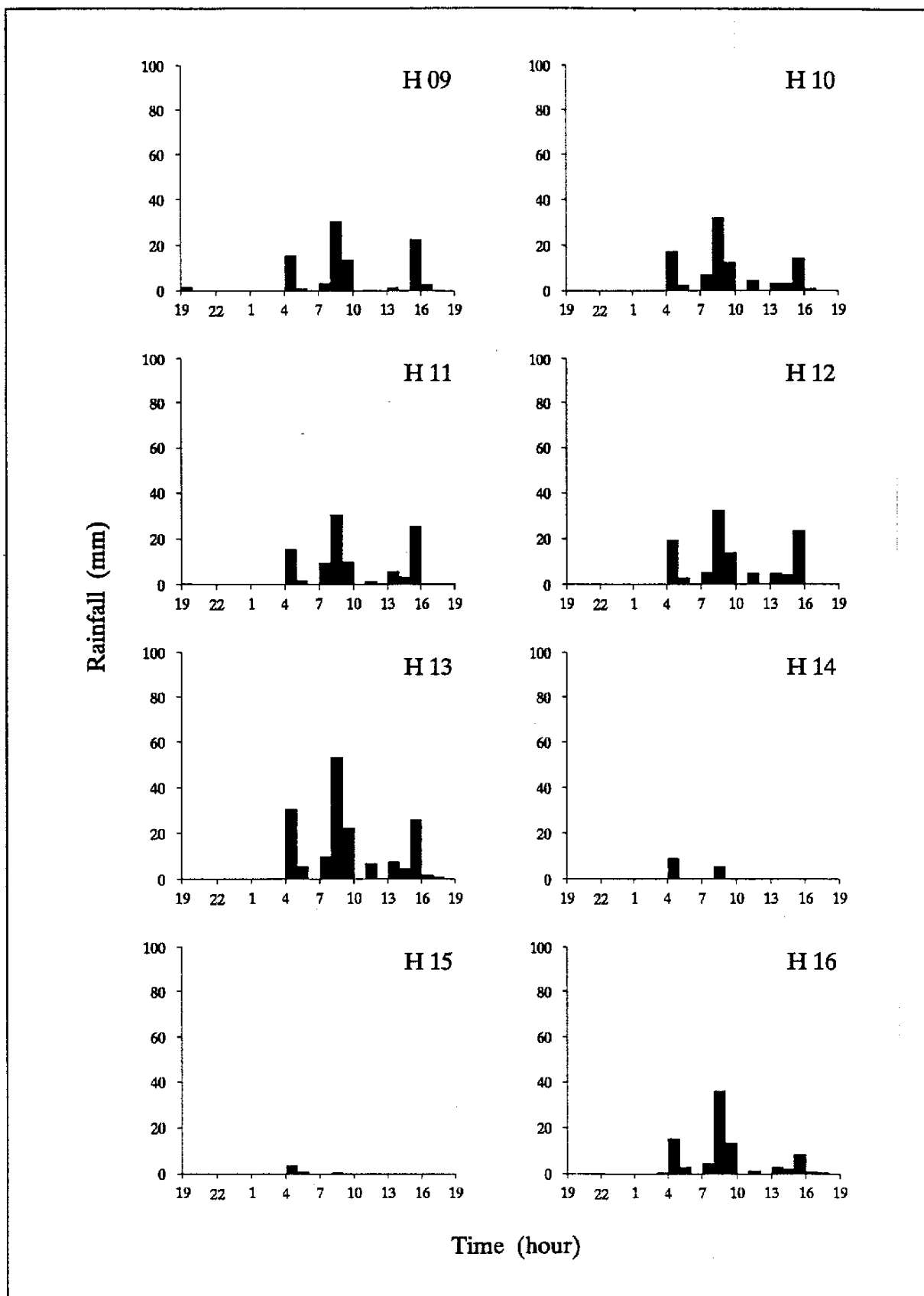


Figure B1 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 10 to 11 June 1993 (Sheet 2 of 6)

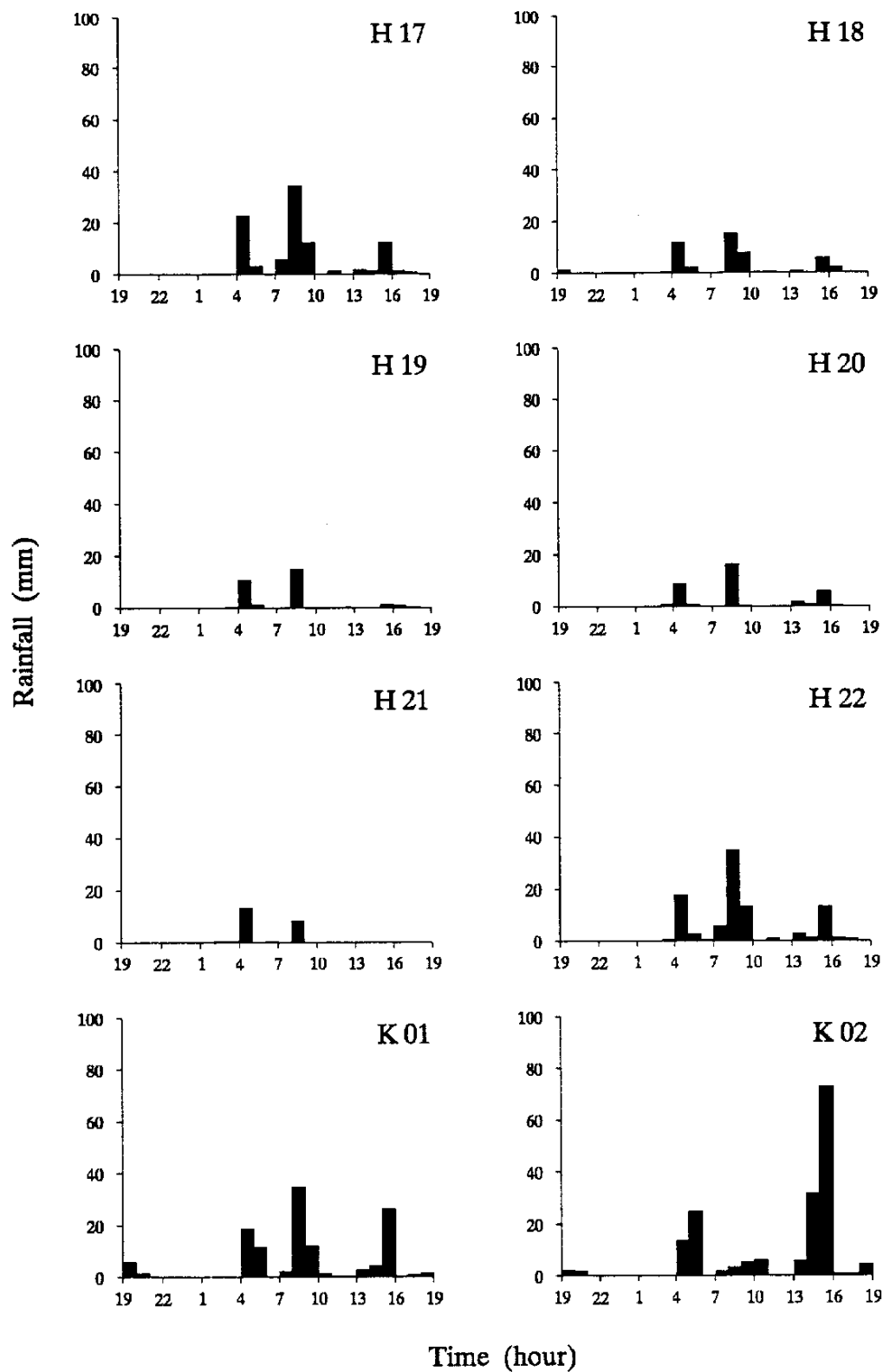


Figure B1 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 10 to 11 June 1993 (Sheet 3 of 6)

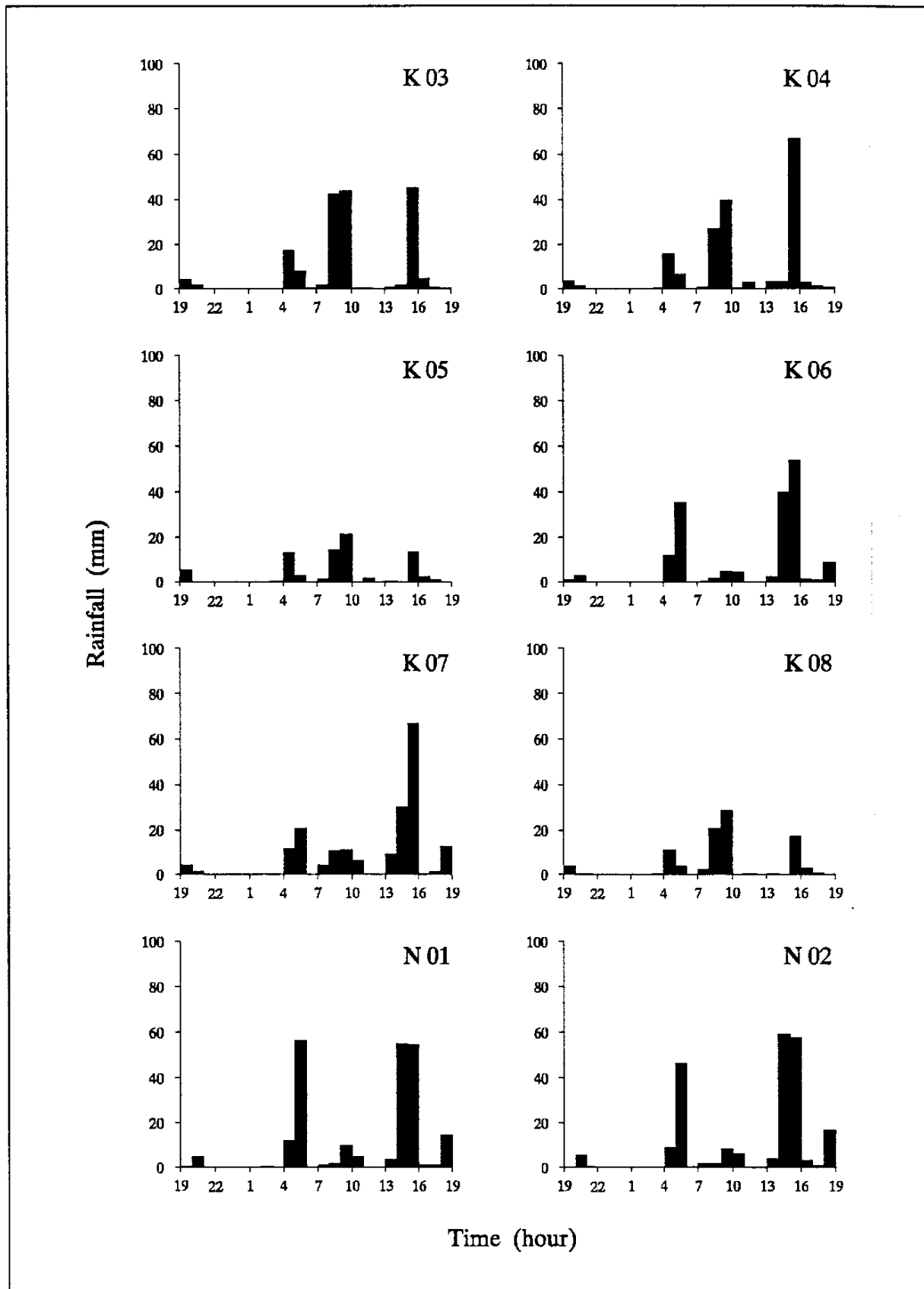


Figure B1 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 10 to 11 June 1993 (Sheet 4 of 6)

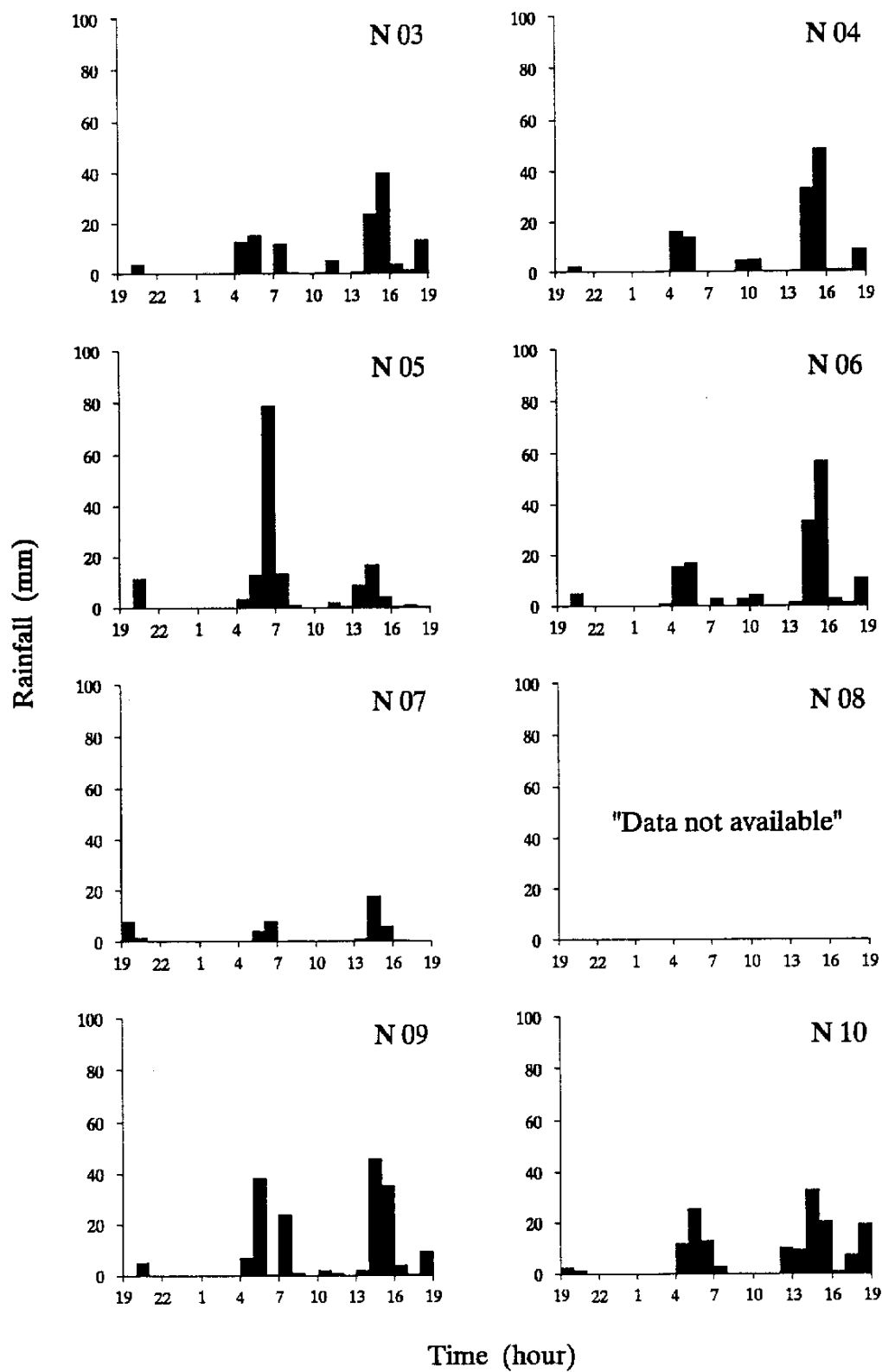


Figure B1 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 10 to 11 June 1993 (Sheet 5 of 6)



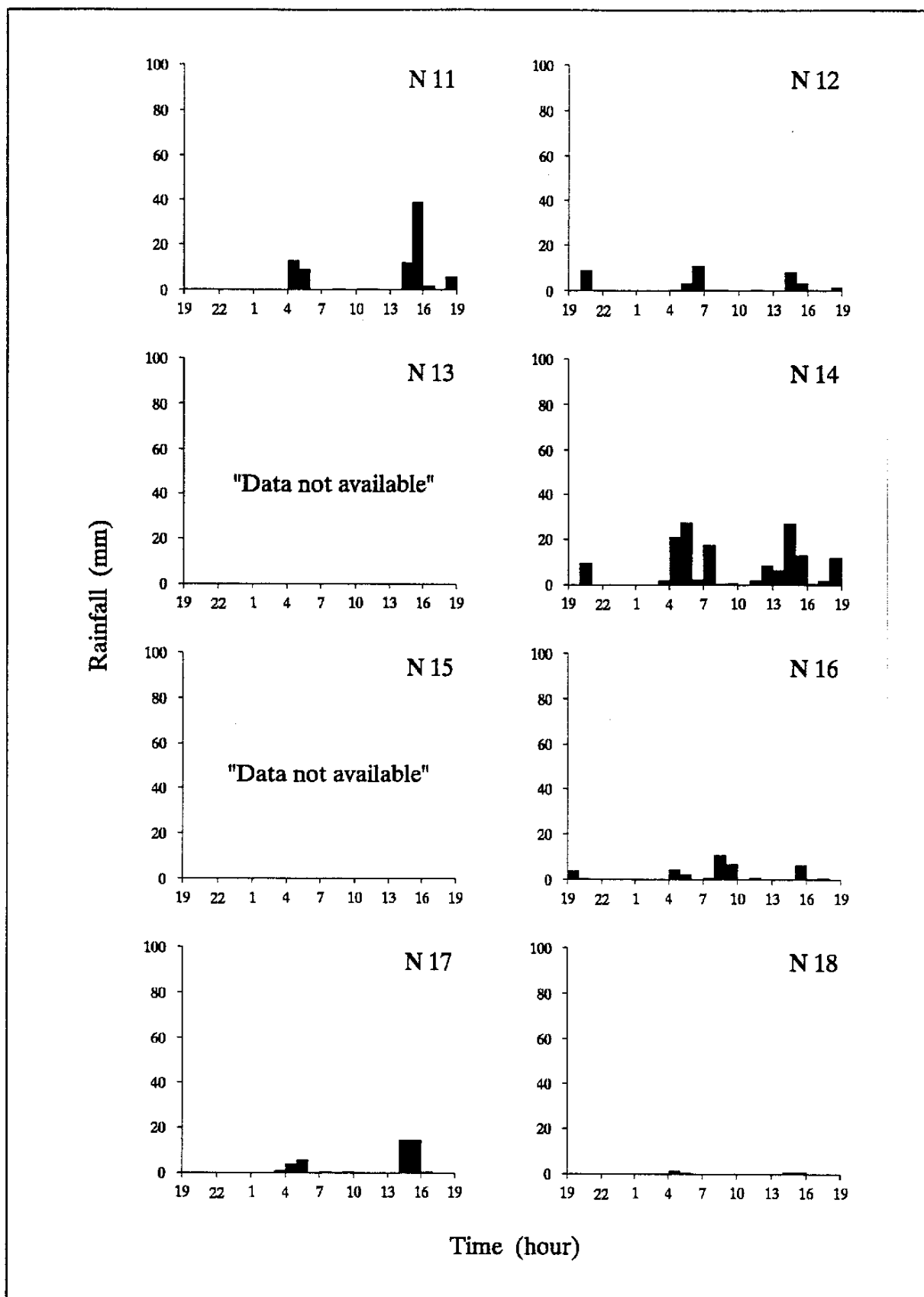


Figure B1 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 10 to 11 June 1993 (Sheet 6 of 6)

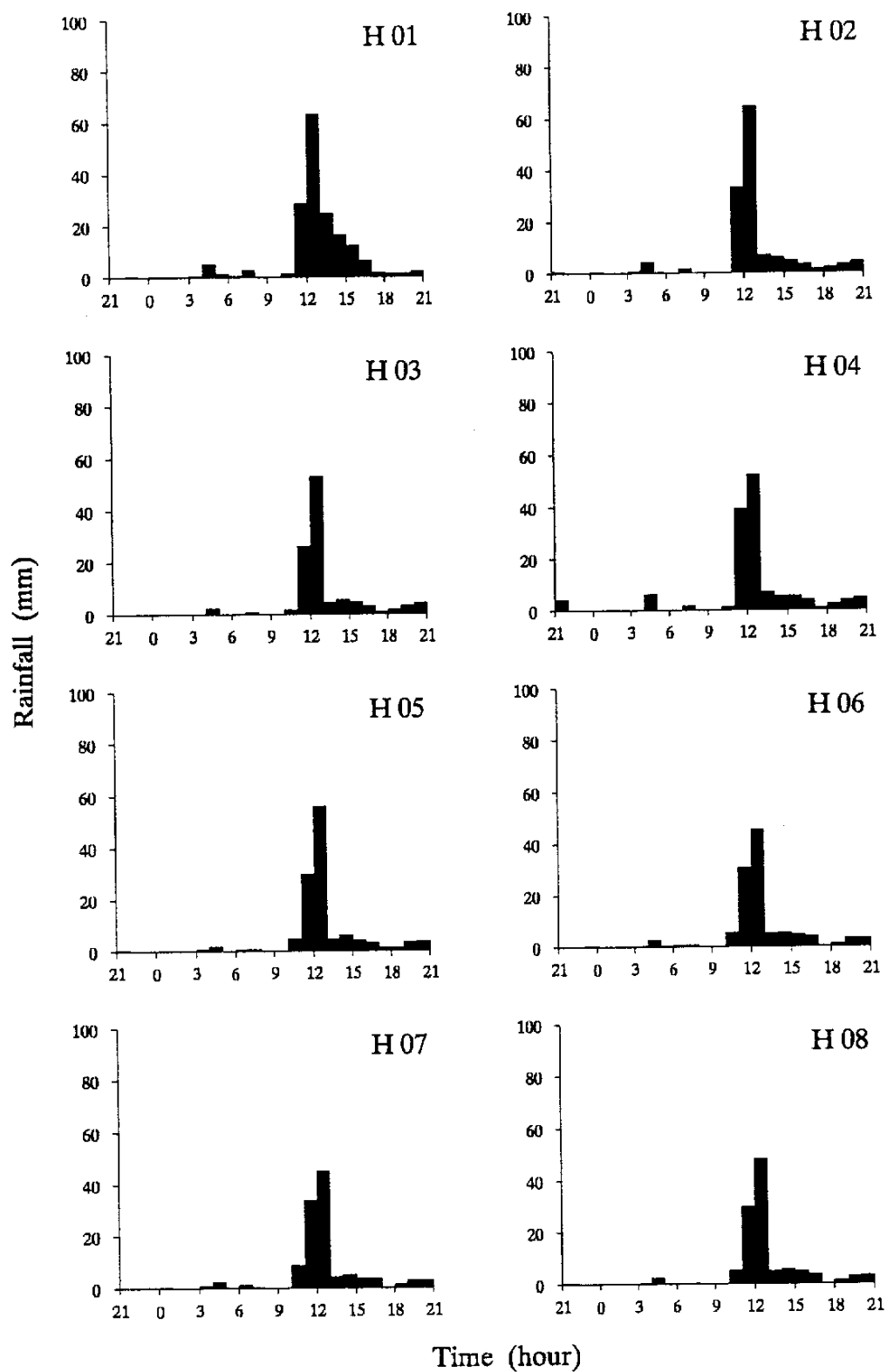


Figure B2 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 15 to 16 June 1993 (Sheet 1 of 6)

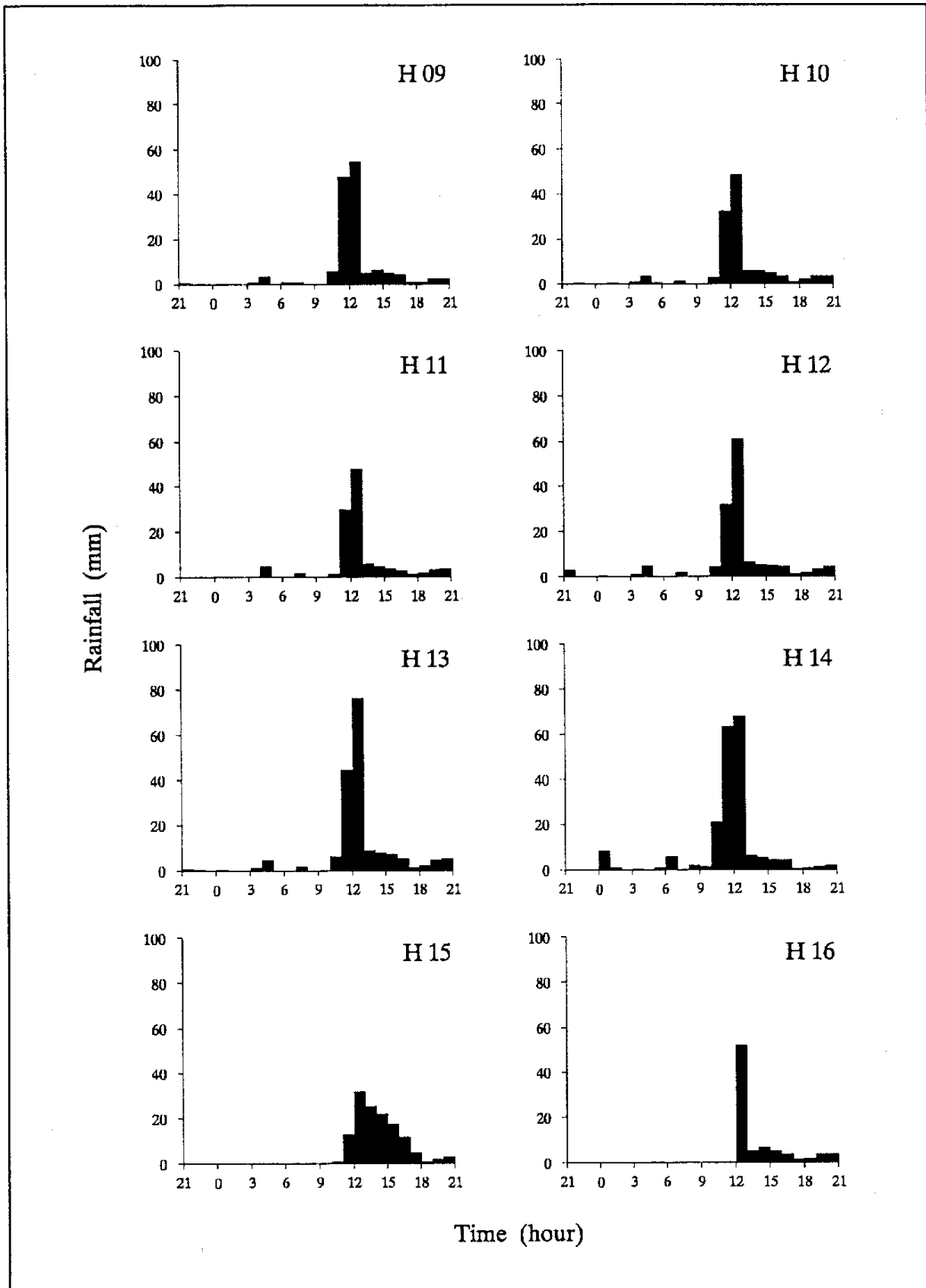


Figure B2 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 15 to 16 June 1993 (Sheet 2 of 6)

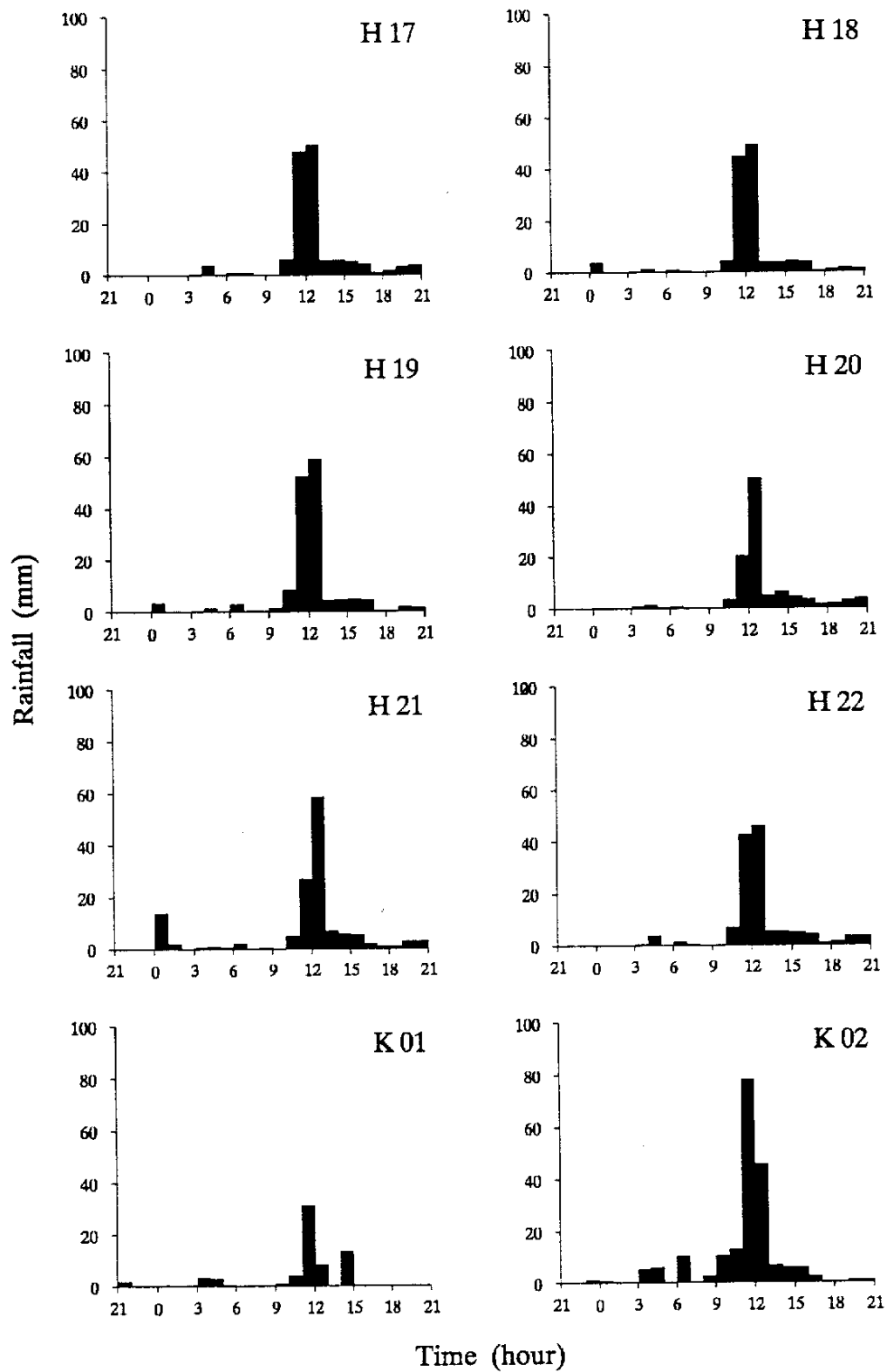


Figure B2 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 15 to 16 June 1993 (Sheet 3 of 6)

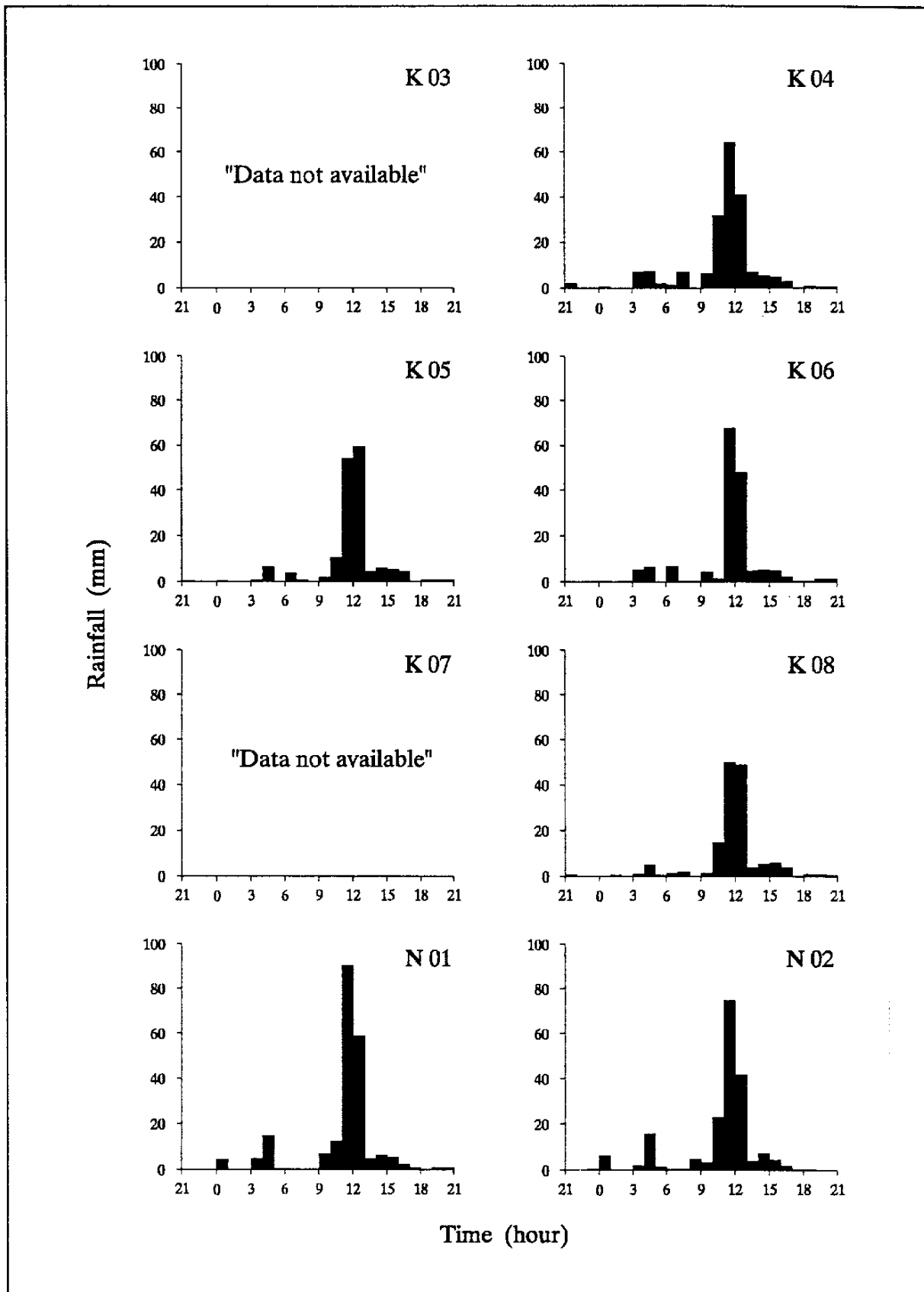


Figure B2 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 15 to 16 June 1993 (Sheet 4 of 6)

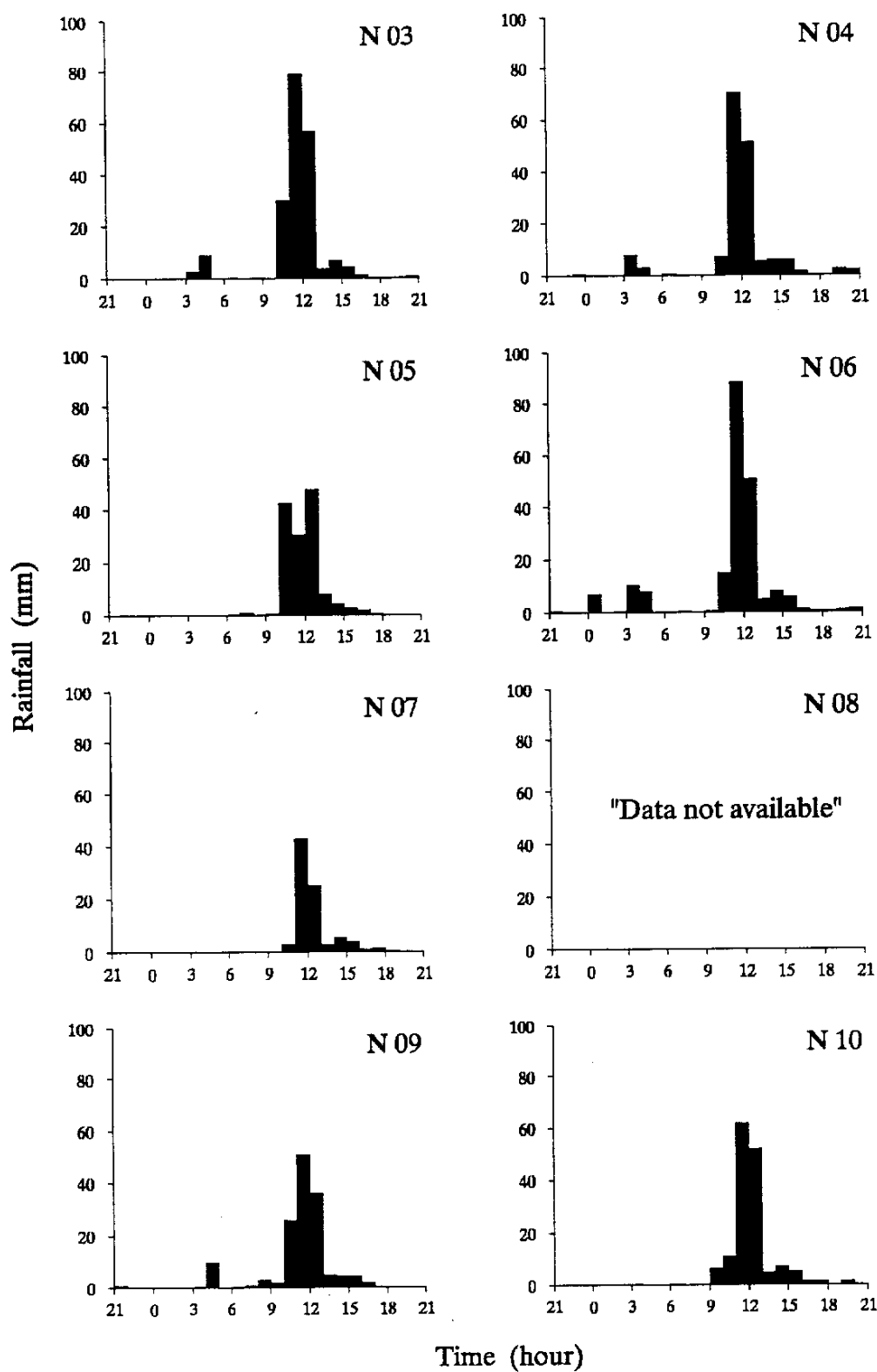


Figure B2 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 15 to 16 June 1993 (Sheet 5 of 6)

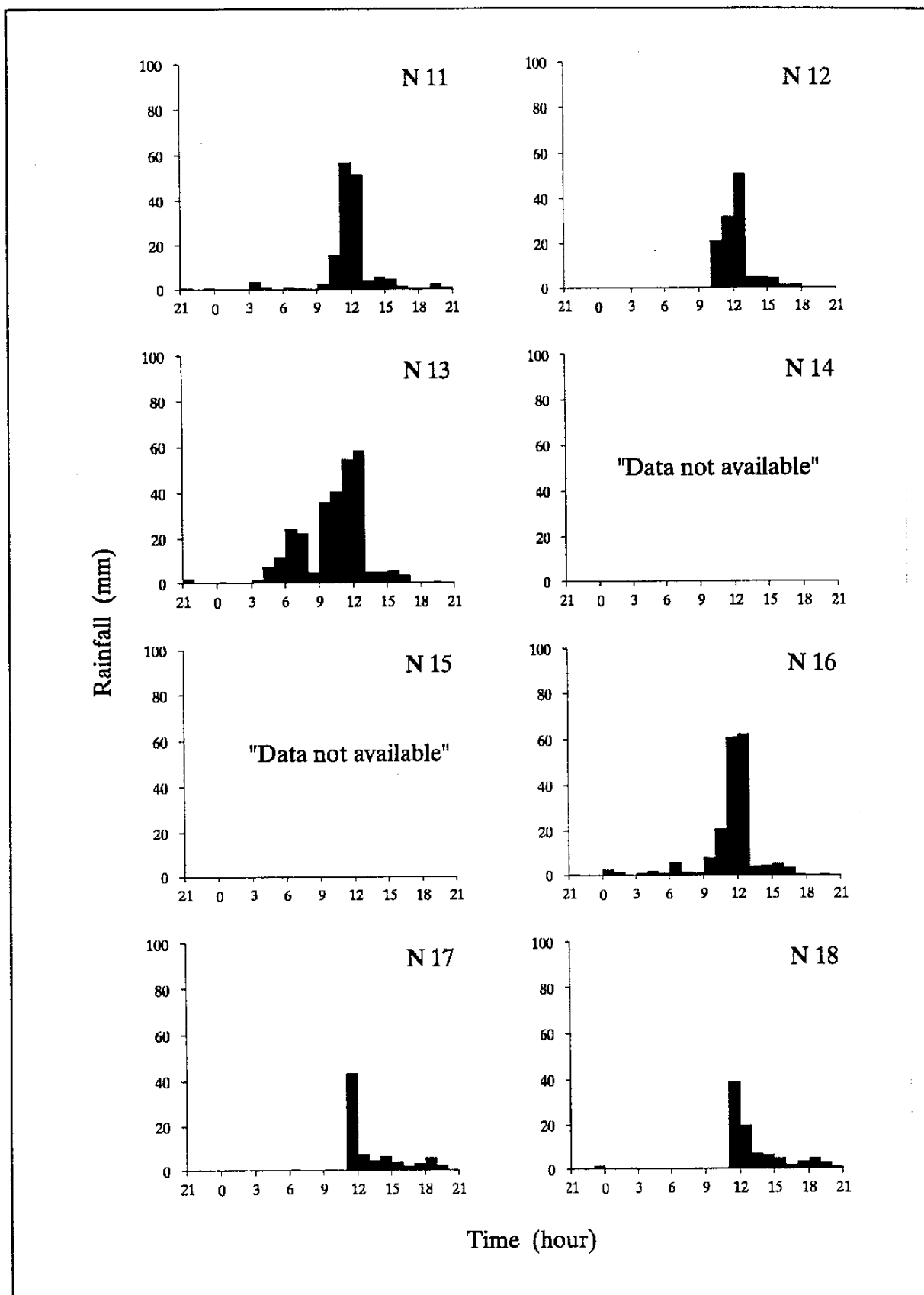


Figure B2 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 15 to 16 June 1993 (Sheet 6 of 6)

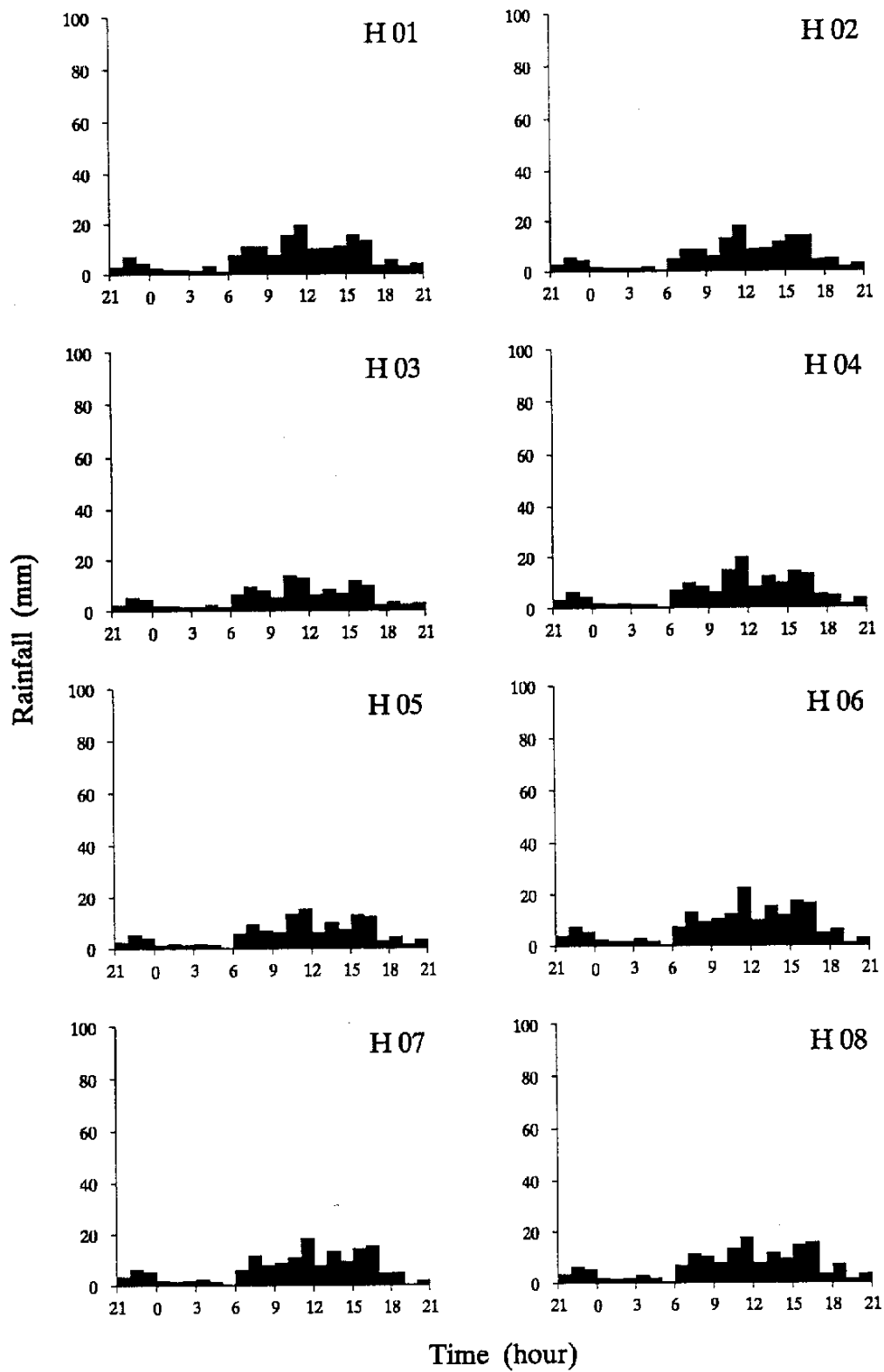


Figure B3 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 24 to 25 September 1993 (Sheet 1 of 6)



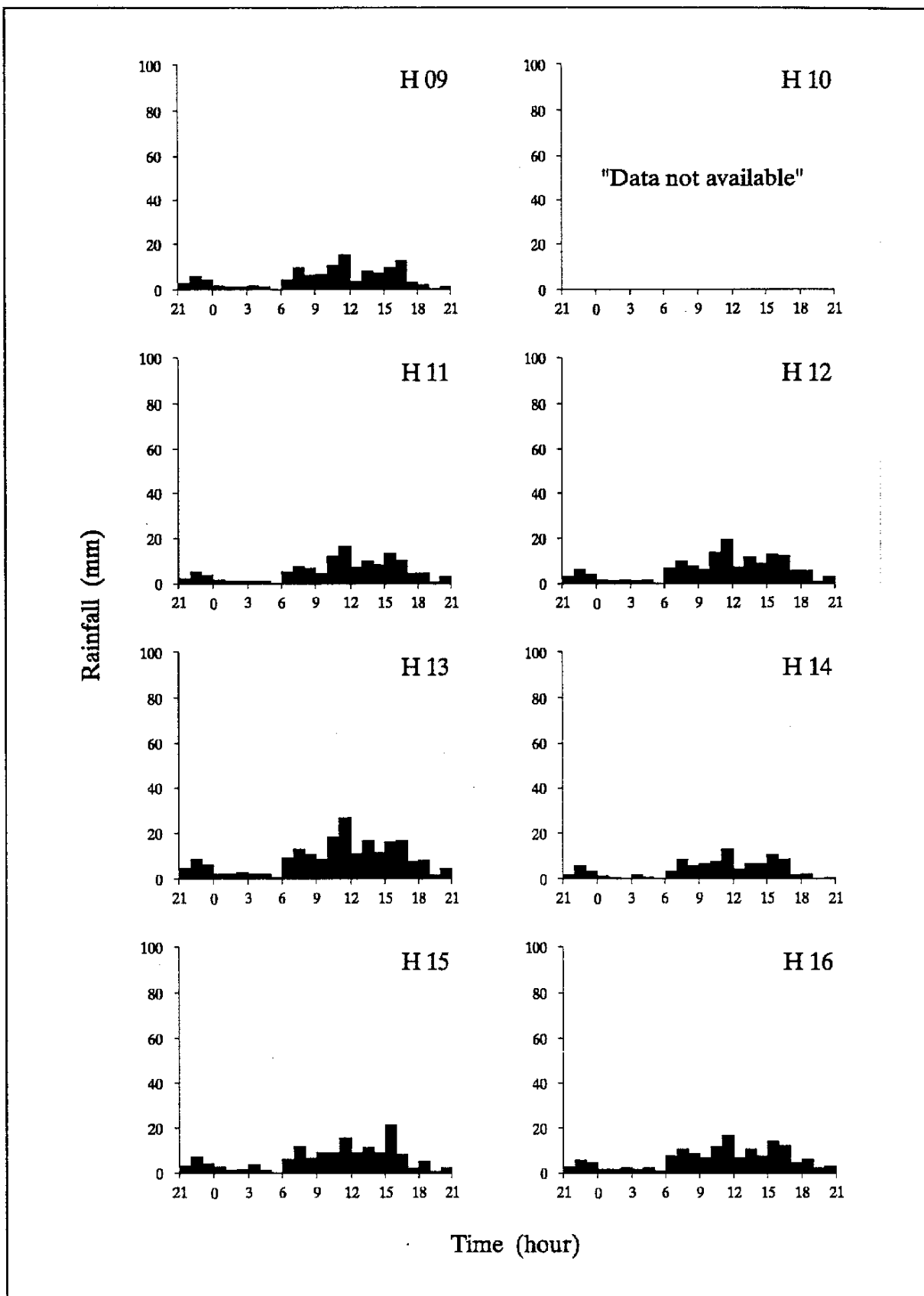


Figure B3 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 24 to 25 September 1993 (Sheet 2 of 6)

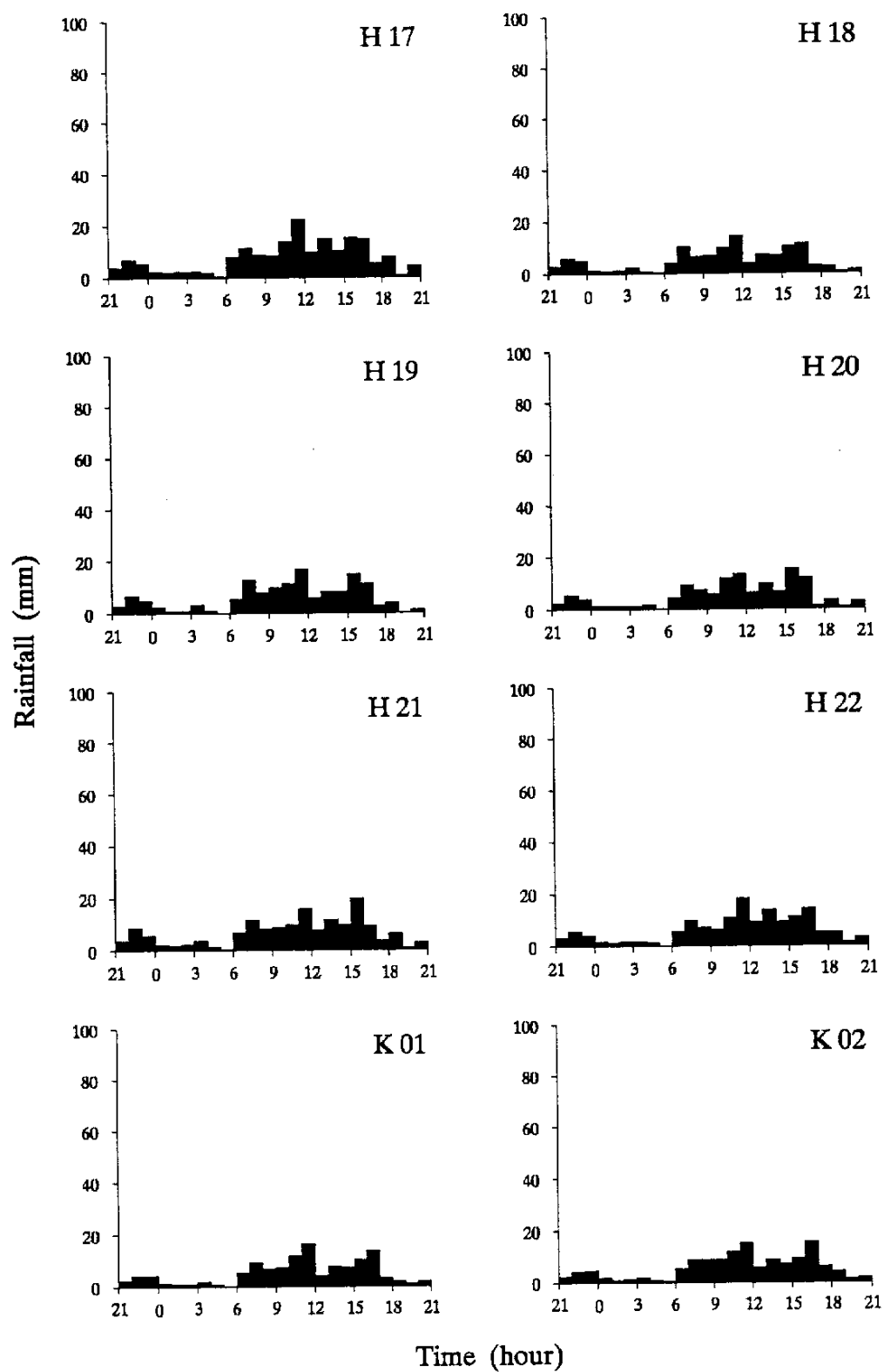


Figure B3 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 24 to 25 September 1993 (Sheet 3 of 6)

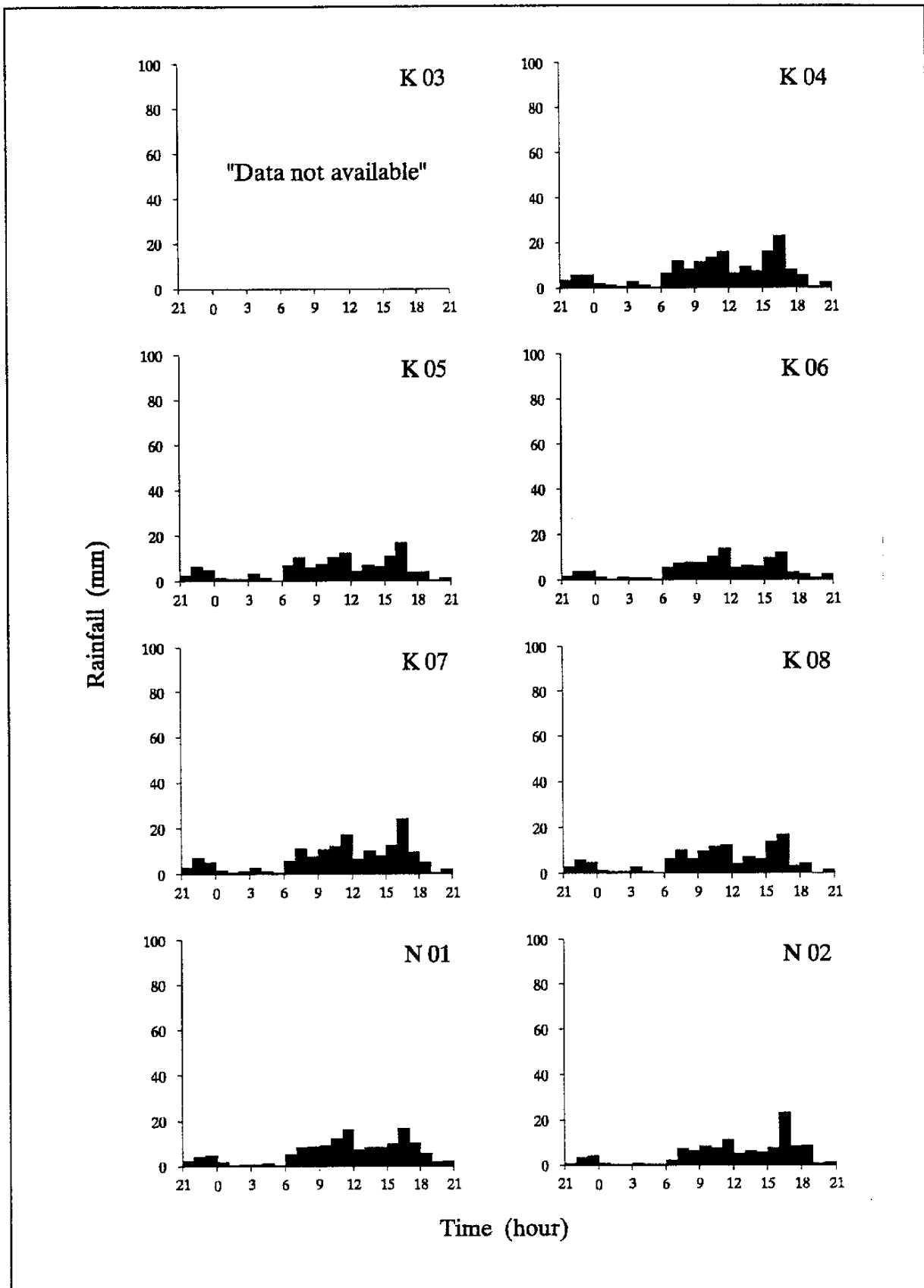


Figure B3 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 24 to 25 September 1993 (Sheet 4 of 6)

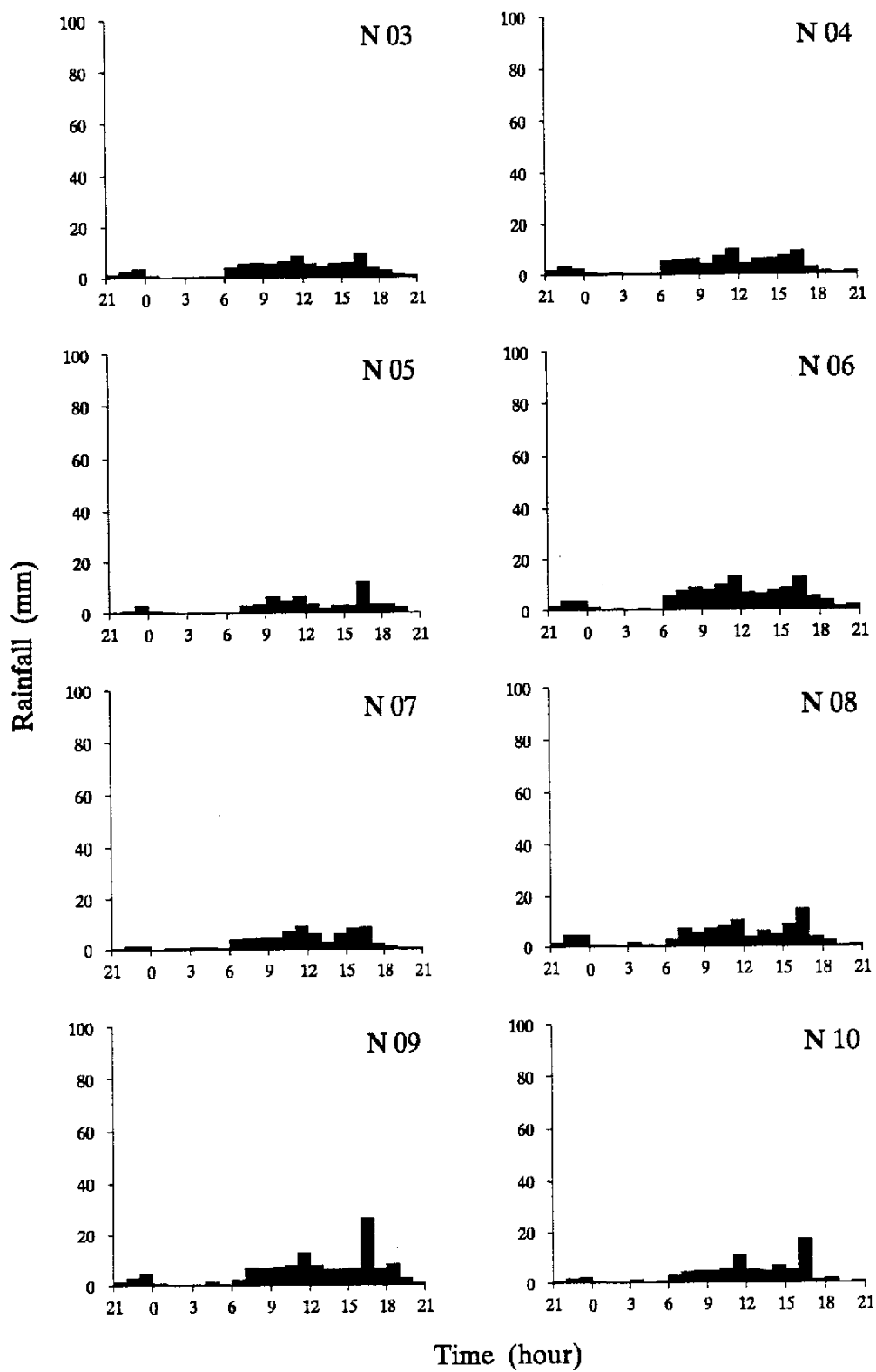


Figure B3 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 24 to 25 September 1993 (Sheet 5 of 6)

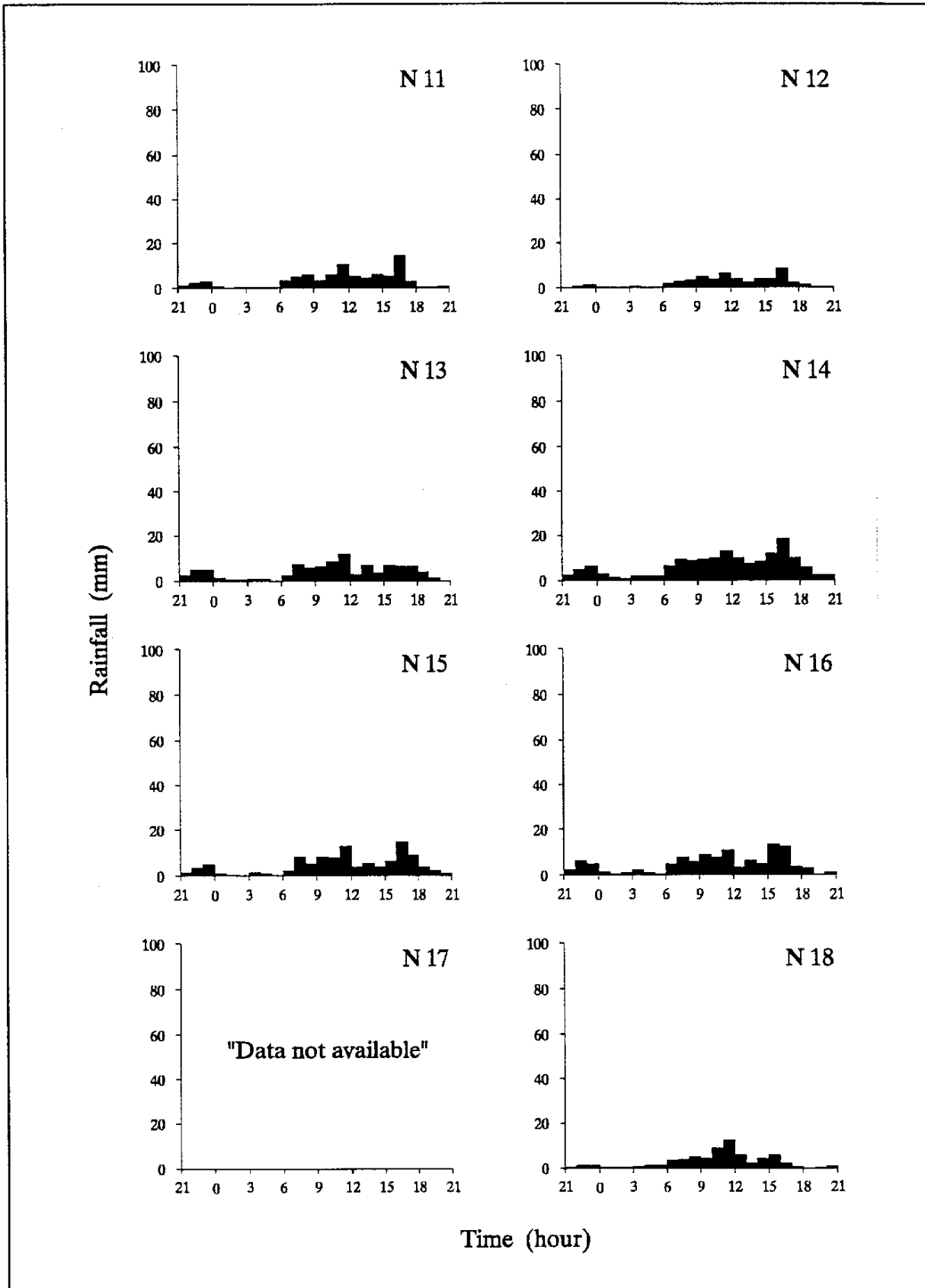


Figure B3 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 24 to 25 September 1993 (Sheet 6 of 6)

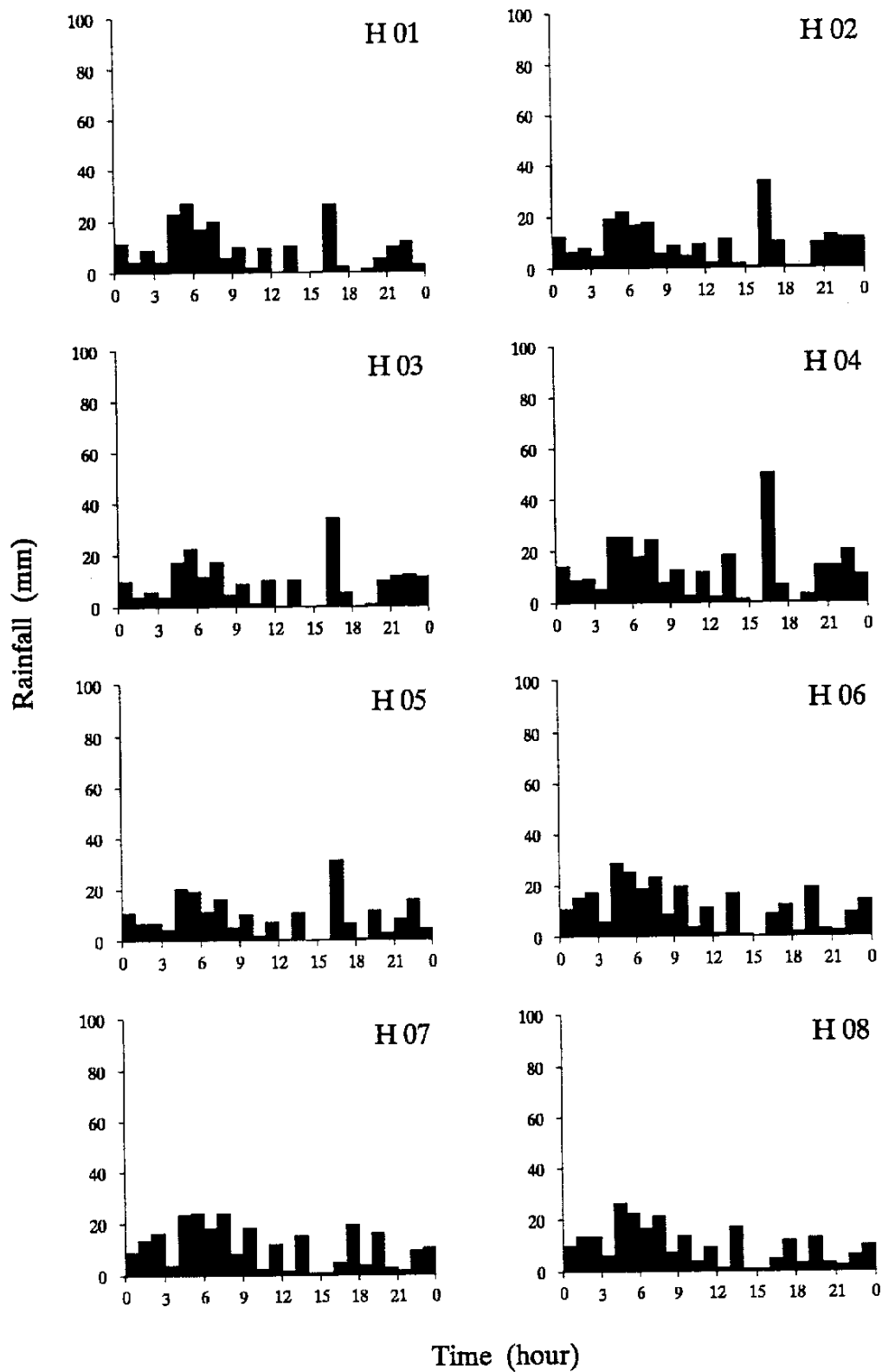


Figure B4 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 26 September 1993 (Sheet 1 of 6)

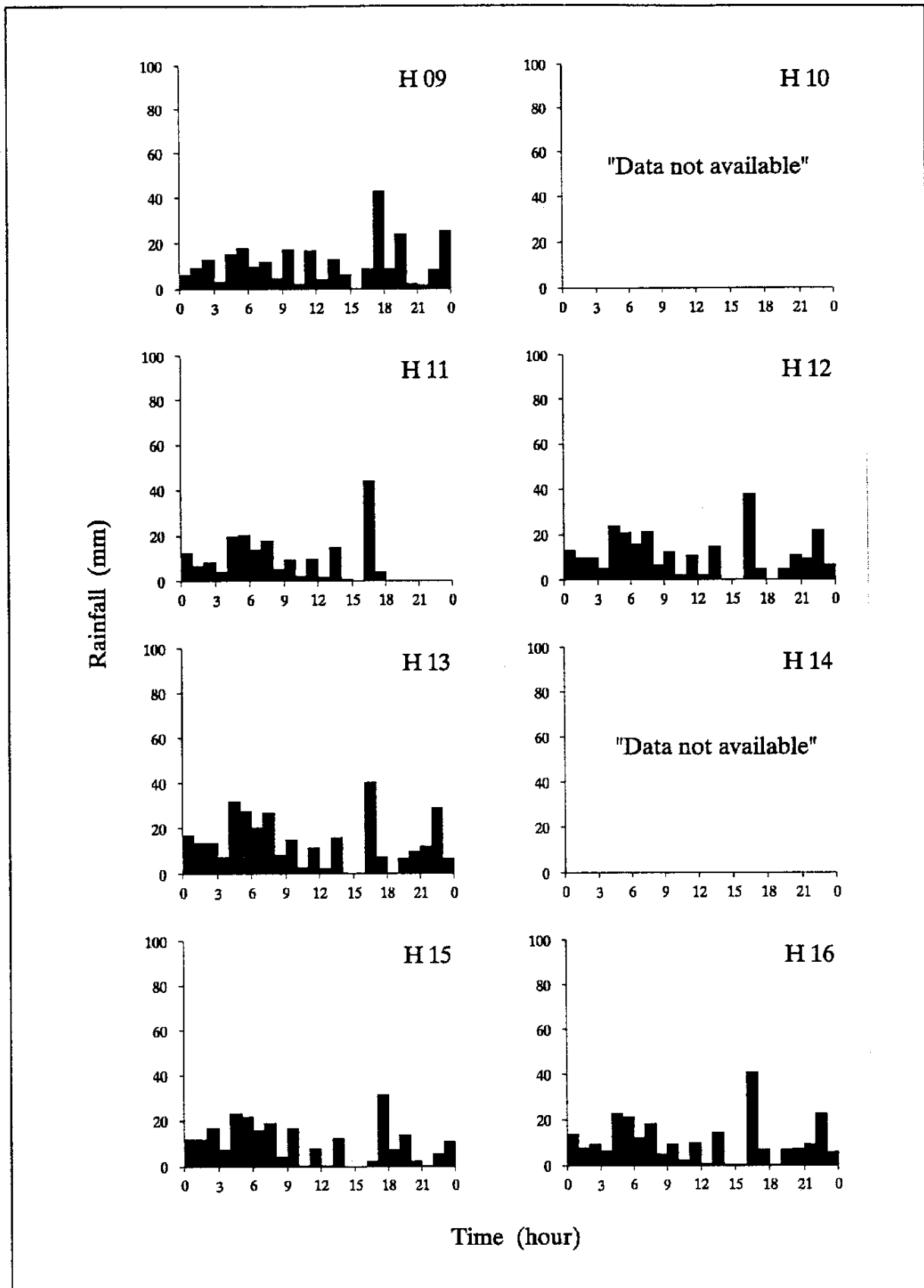


Figure B4 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 26 September 1993 (Sheet 2 of 6)

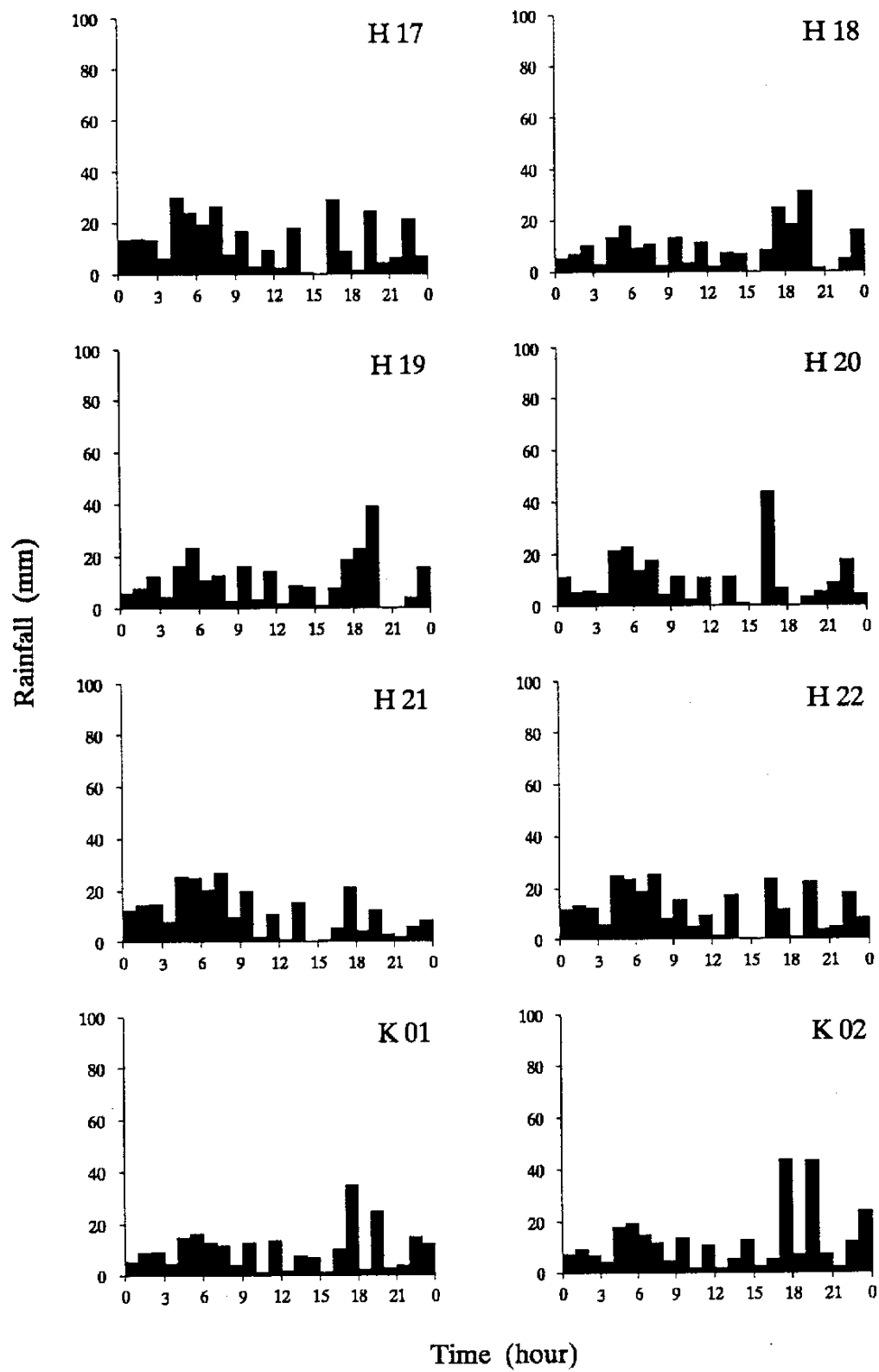


Figure B4 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 26 September 1993 (Sheet 3 of 6)



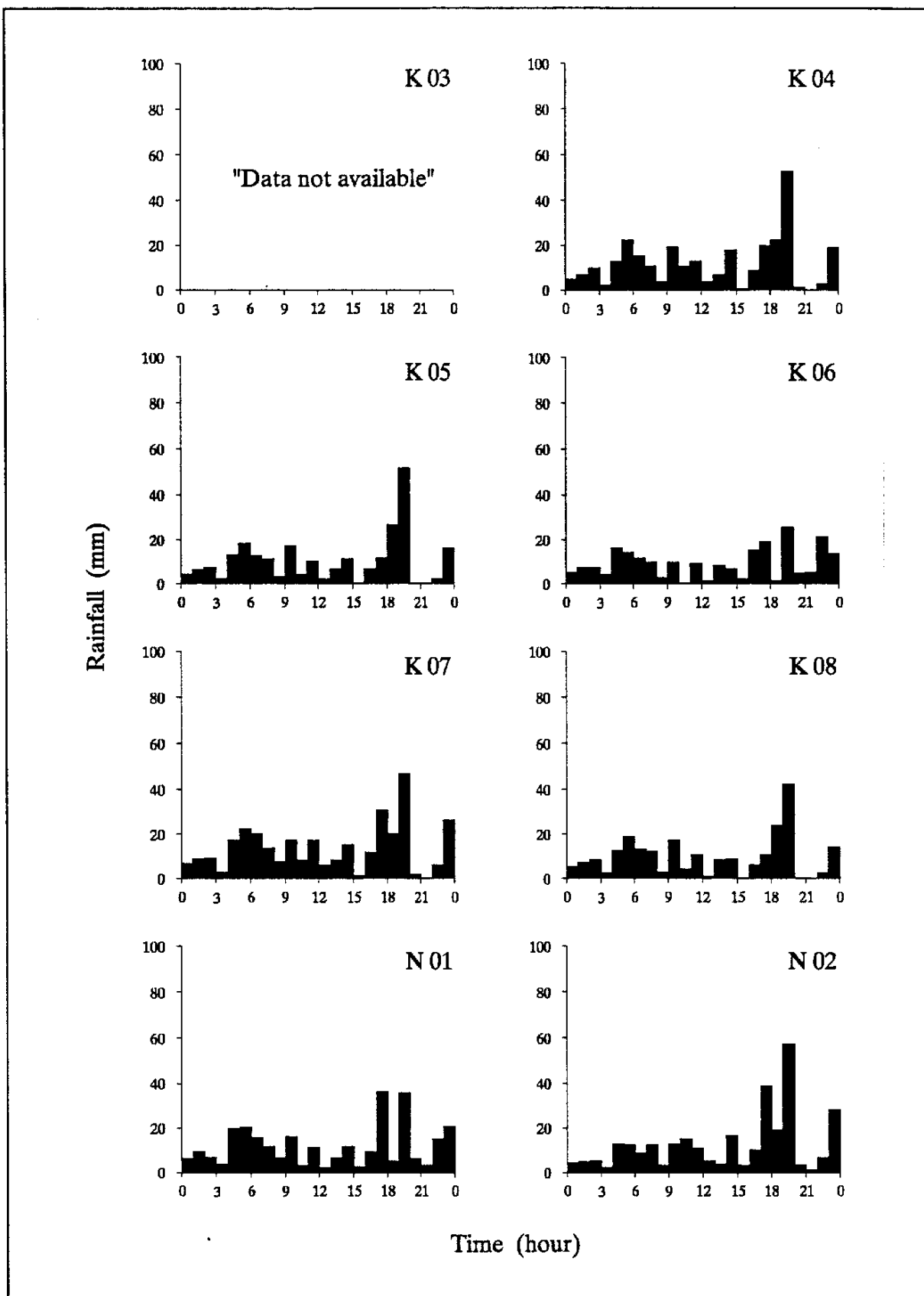


Figure B4 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 26 September 1993 (Sheet 4 of 6)

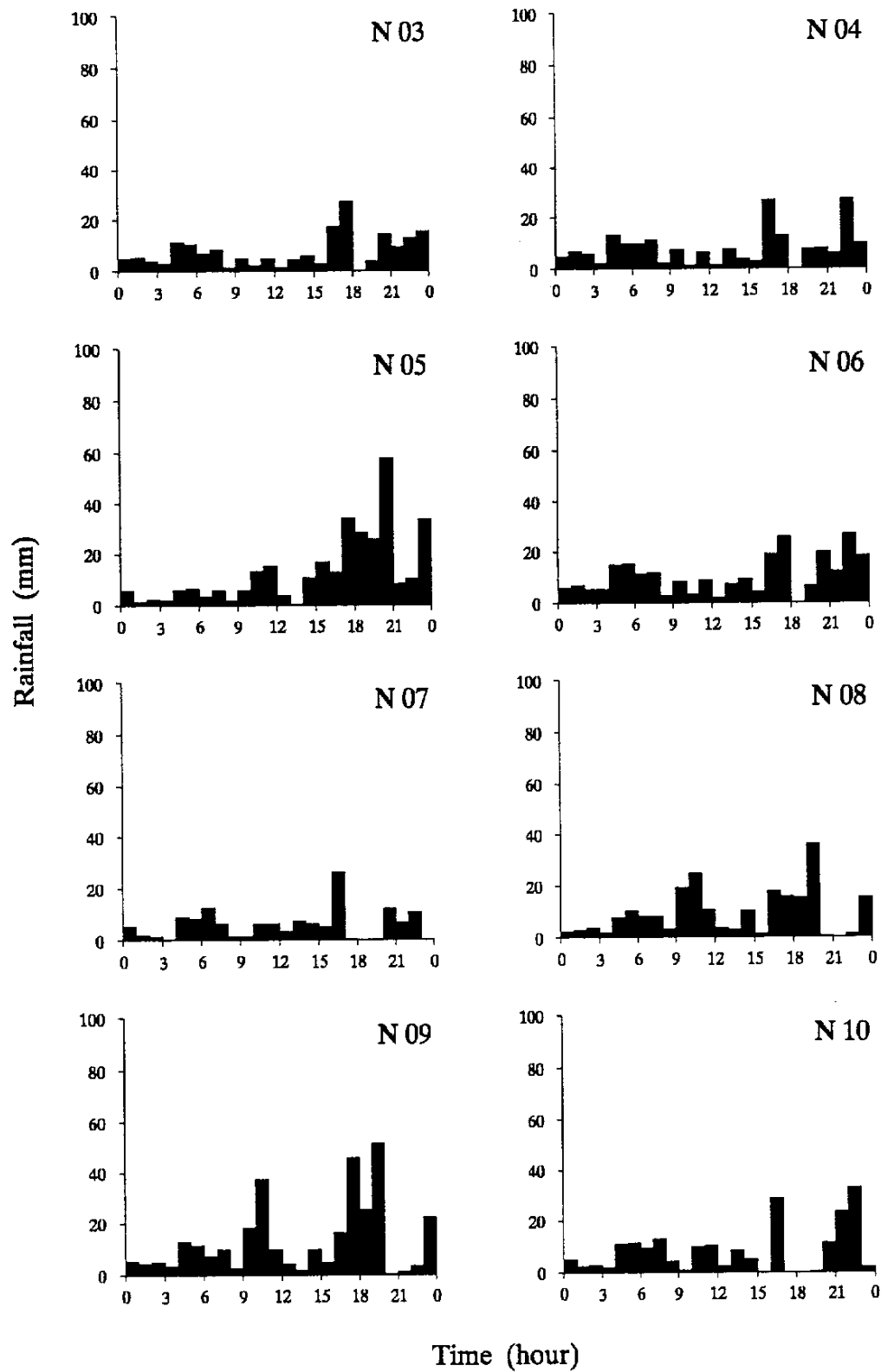


Figure B4 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 26 September 1993 (Sheet 5 of 6)

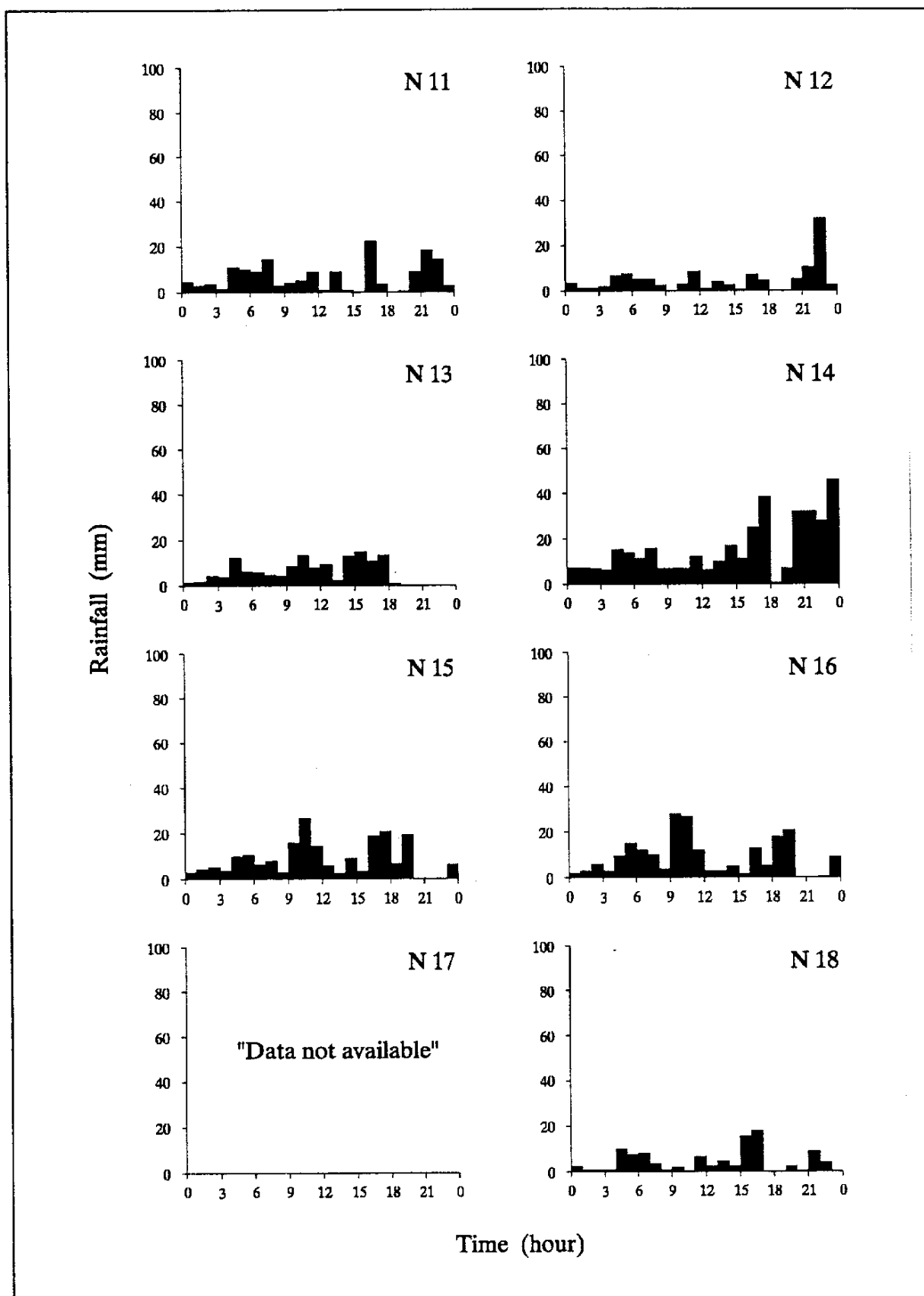


Figure B4 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 26 September 1993 (Sheet 6 of 6)

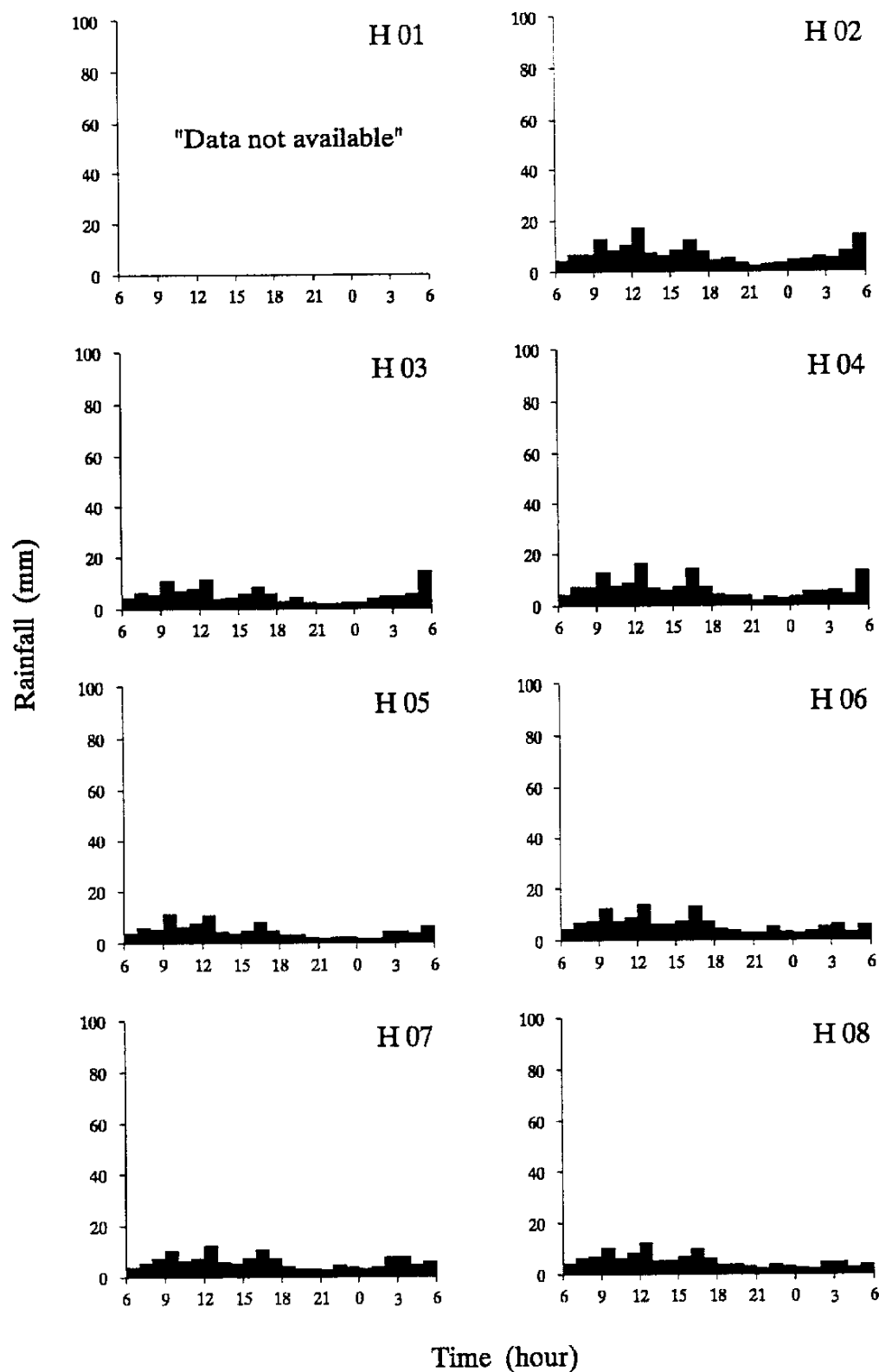


Figure B5 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 4 to 5 November 1993 (Sheet 1 of 6)

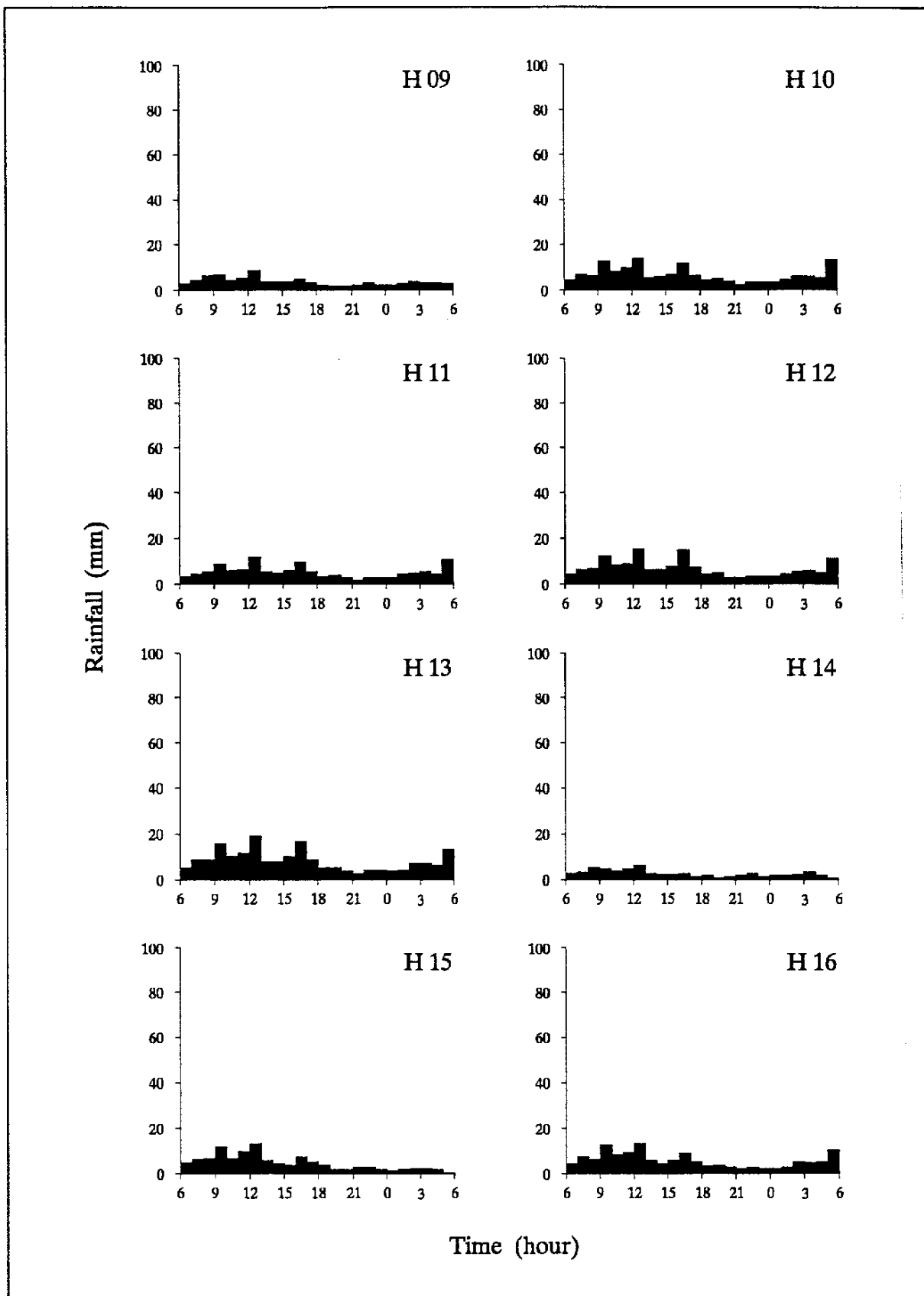


Figure B5 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 4 to 5 November 1993 (Sheet 2 of 6)

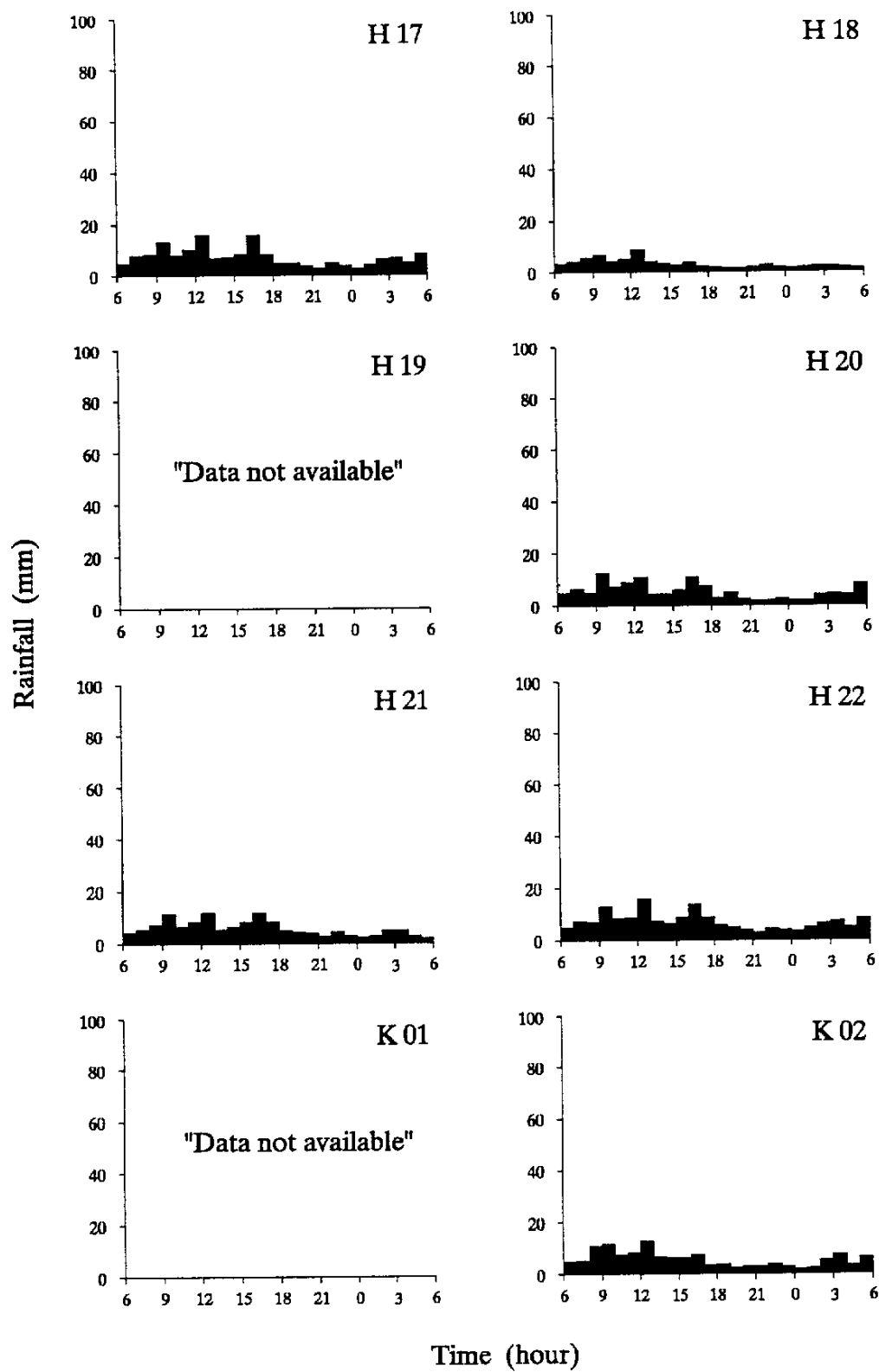


Figure B5 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 4 to 5 November 1993 (Sheet 3 of 6)

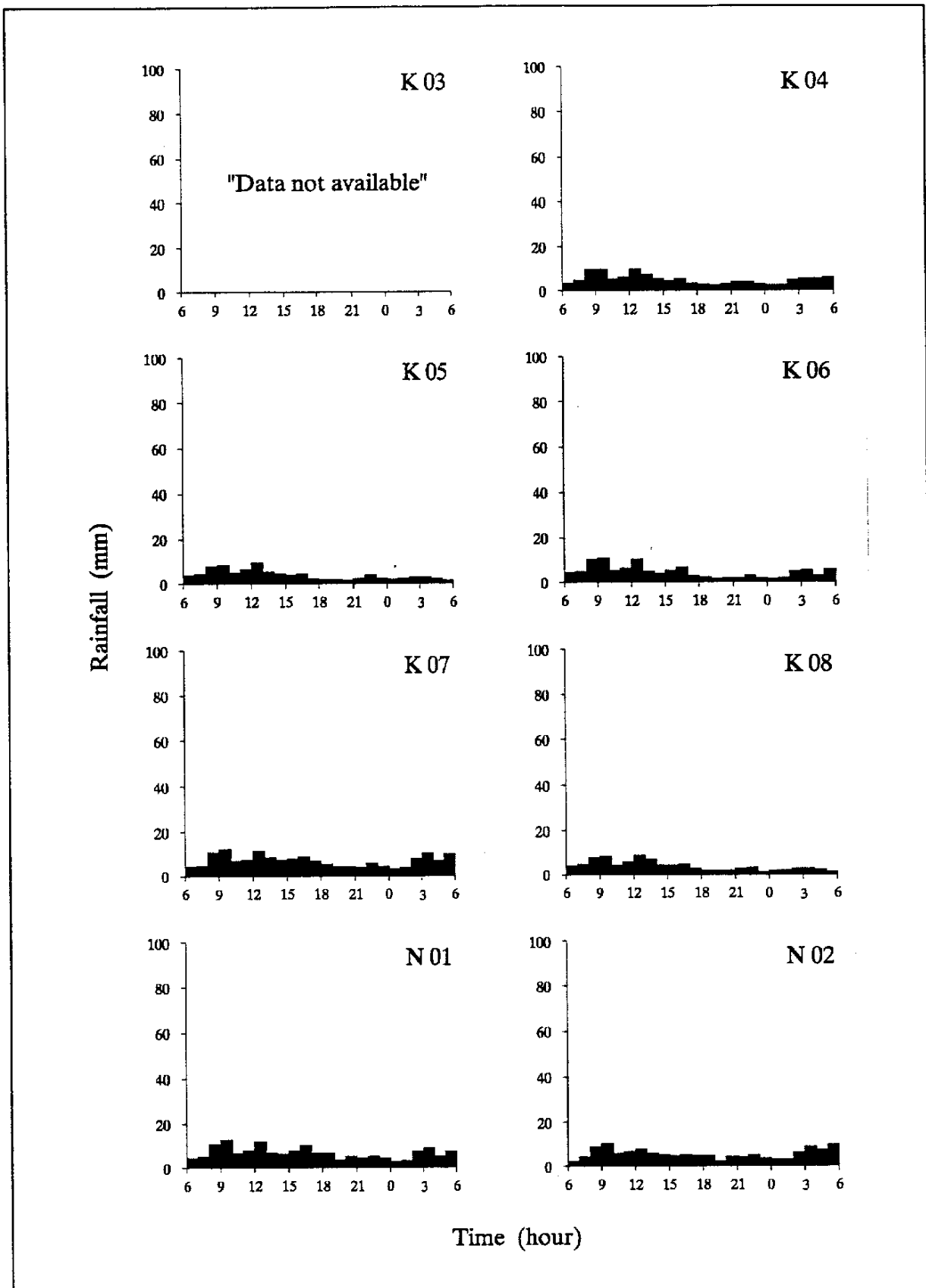


Figure B5 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 4 to 5 November 1993 (Sheet 4 of 6)

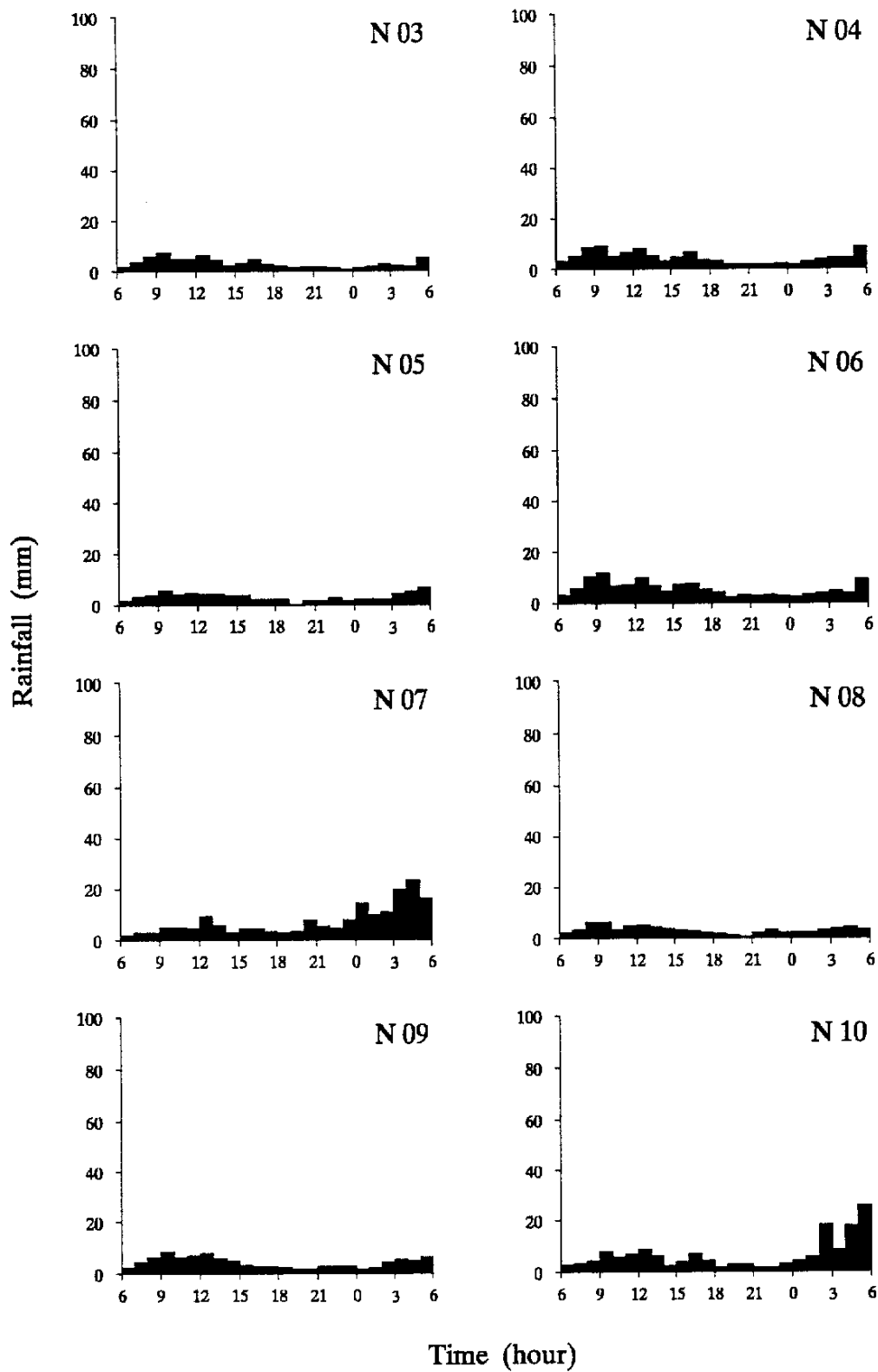


Figure B5 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 4 to 5 November 1993 (Sheet 5 of 6)



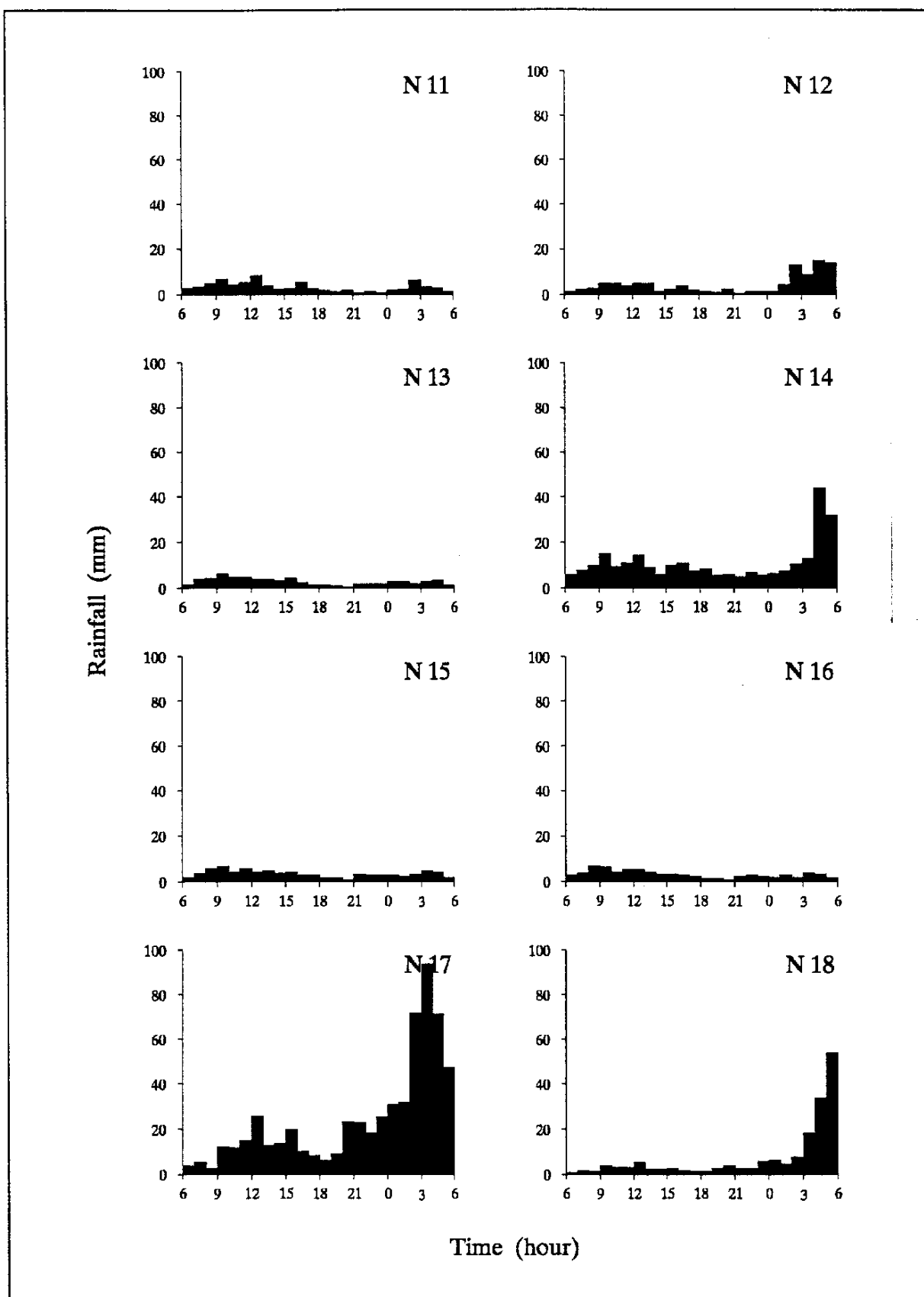


Figure B5 - Histograms of Hourly Rainfall Recorded by GEO Raingauges during 4 to 5 November 1993 (Sheet 6 of 6)

APPENDIX C

DAILY RAINFALL AT THE ROYAL OBSERVATORY IN 1993

LIST OF TABLES

Table No.		Page No.
C1	Summary of Daily Rainfall at the Royal Observatory in 1993	213

Table C1 - Summary of Daily Rainfall at the Royal Observatory in 1993

DATE	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	NOV	DEC
1	0.0	0.0	0.0	Trace	36.9	Trace	Trace	19.2	0.4	4.2	0.0	2.8
2	0.0	0.0	0.0	0.2	31.1	9.1	0.0	16.4	0.0	0.0	0.0	Trace
3	0.0	0.0	Trace	0.0	0.3	47.6	Trace	5.2	0.0	0.0	Trace	0.0
4	0.0	0.0	0.2	0.0	2.3	7.5	Trace	0.3	Trace	0.0	86.1	0.0
5	Trace	0.0	0.0	0.4	0.1	0.9	0.0	0.0	0.0	0.0	36.2	0.0
6	1.2	Trace	0.0	1.0	0.0	1.3	Trace	0.0	0.0	0.0	2.1	0.0
7	0.0	0.0	0.0	19.4	0.0	16.4	Trace	0.0	0.0	0.0	0.3	0.0
8	Trace	Trace	0.0	5.1	0.0	Trace	0.1	1.0	0.0	0.0	0.0	0.0
9	0.0	0.5	0.0	Trace	54.5	11.1	0.0	0.2	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	Trace	0.2	20.7	22.2	20.3	0.0	0.0	0.5	Trace
11	Trace	0.0	0.0	Trace	1.0	142.1	32.1	6.1	0.0	0.0	0.0	0.0
12	1.4	0.0	0.0	0.0	Trace	0.0	24.8	0.9	Trace	0.0	0.7	2.3
13	Trace	0.0	1.1	0.0	0.0	12.8	39.7	9.9	56.2	13.6	0.0	4.7
14	Trace	0.0	0.3	0.0	0.0	0.9	0.0	Trace	5.8	69.4	0.0	0.9
15	5.1	0.0	1.0	0.0	0.1	7.6	0.8	10.7	0.1	0.3	0.0	4.8
16	7.3	0.0	18.8	0.0	Trace	153.0	Trace	37.2	0.3	0.0	0.0	0.0
17	0.1	0.0	17.3	Trace	Trace	5.9	Trace	15.2	70.8	0.3	0.0	0.0
18	5.1	0.4	3.0	14.7	0.0	Trace	0.0	0.0	20.4	0.0	0.0	0.2
19	0.0	0.1	4.8	Trace	0.0	0.1	0.0	0.2	3.4	0.0	0.2	0.0
20	0.0	Trace	1.1	45.4	0.0	3.0	Trace	24.6	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	22.5	0.0	0.8	Trace	13.9	0.0	0.0	Trace	Trace
22	0.0	Trace	Trace	Trace	2.0	0.1	80.8	1.5	0.1	0.0	0.0	0.0
23	13.3	0.0	0.0	Trace	26.1	1.4	Trace	0.0	43.0	0.0	0.0	0.0
24	0.0	0.0	Trace	1.1	65.6	11.2	0.1	0.0	71.2	0.0	0.6	0.0
25	0.0	0.0	0.0	8.1	76.5	1.6	0.0	0.0	121.8	Trace	16.2	0.0
26	0.0	Trace	0.0	0.4	16.0	8.7	Trace	0.0	223.9	Trace	0.5	0.0
27	0.0	Trace	0.0	Trace	0.0	9.5	0.4	0.0	37.9	Trace	0.0	0.0
28	0.0	0.0	0.0	Trace	0.0	10.9	0.0	Trace	0.0	0.0	0.5	0.0
29	0.0	-	1.1	11.5	0.0	0.7	0.4	Trace	0.0	0.0	Trace	0.0
30	0.0	-	Trace	6.5	Trace	0.3	0.1	0.0	0.6	0.0	0.7	0.0
31	0.0	-	0.3	-	25.7	-	12.2	Trace	-	0.0	-	0.0
TOTAL	33.5	1.0	49.0	136.3	338.4	485.2	213.7	182.8	655.9	87.8	144.6	15.7
Note: Annual Rainfall of 1993 is 2343.9 mm												

LIST OF DRAWINGS

Drawing  
No.

GCSP 8/13      Location Map of Landslides and Related Incidents in 1993