

the 100-year 24-hour rainfall over Cheesman is less than the 100-year 24-hour rainfall over Montana.

5.4 ESTIMATION OF PMP FOR SHORT DURATIONS AND SMALL AREAS IN AUSTRALIA

5.4.1 Introduction

Only a small number of intense short-duration storms have been documented in Australia due to sparse rain gauge networks with few recording rain gauges. The few storms which have been documented indicate that rainfall potential in Australia is similar to that in the United States. This has led to the introduction of a procedure to estimate PMP in Australia using a method of adjusted United States data (Australian

Bureau of Meteorology, 1985), known as the generalized short-duration method (GSDM). Since 1985, this method has been refined and revised twice (Australian Bureau of Meteorology, 1994, 2003).

5.4.2 Comparison of record storms in Australia and the United States

Basic to any procedure for using data from another region of the world is a comparison of the meteorology of storms in the different regions and their depth–area–duration characteristics. In each region considered here, extreme rainfall amounts for short durations and small areas will be produced by large, efficient and virtually stationary thunderstorms, or by part of a meso-scale or synoptic-scale storm system with embedded cumulonimbus cells. The precipitation is considered to be a function of the available moisture and a convergence factor.

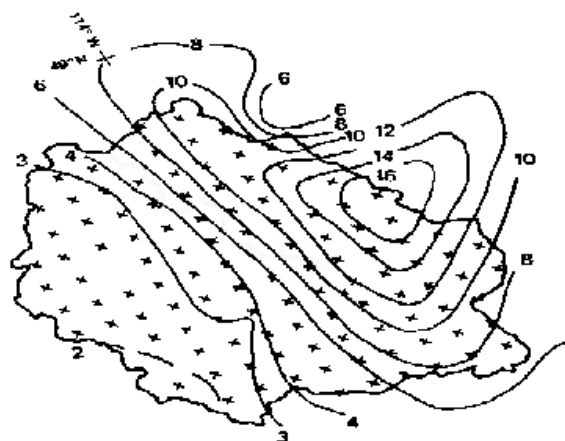


Figure 5.59. Montana storm isohyets (inches) transposed to Cheesman basin



Figure 5.61. Cheesman 100-year 24-hour rainfall (inches)



Figure 5.60. Montana 100-year 24-hour rainfall (inches)