

Annexure A - Weather Data (Latest weather data will be made available before conclusion of the contract)

One-in-ten-year-return *weather data* obtained from SA Weather Bureau for [weather station]

If any one of these *weather measurements* recorded within a calendar month, before the Completion Date for the whole of the *works* and at the place stated in this Contract Data is shown to be more adverse than the amount stated below then the *Contractor* may notify a compensation event.

Only the difference between the more adverse recorded weather and the equivalent measurement given above is taken into account in assessing a compensation event.

Rainfall data in the area around Medupi Power Station was sourced from the Daily Rainfall extraction utility (Kunz, 2004). The rainfall stations are presented in Table 3 and can be seen in Figure 1.

Table 3: Rainfall Stations in the Lephalale Area around the Medupi Power Station

Station	Name	Altitude (masl)	From	To	No. of Years	Distance to Medupi (km)	MAP (mm)
0717834_W	De Dam	825	1903	2000	97 (73.1% patched)	35.416	372.65
0717624_P	Parrs Halt	824	1903	2000	97 (61.9% patched)	39.994	380.63
0717595_W	Stockport (POL)	824	1903	2000	97 (35.4% patched)	39.441	416.09
0718147_W	Deelkraal	865	1908	2000	93 (86.9% patched)	29.791	410.82
0717418_P	Dikgatlong	834	1903	2000	97 (63%)	42.811	457.30

Figure 3 shows the monthly rainfall distribution for the five rainfall stations in the Lephalale area over a period of approximately 100 years. It can be seen that the monthly rainfall is fairly uniform. The South African Weather Services (SAWS) station Stockport (POL) number 0717595_W was chosen as the station used in the study due to it being the average among the stations available and is the most reliable in terms of the number of years of observed data. Figure 4 shows the cumulative plots for the five rainfall stations. This is done to check if there are any anomalies in the recorded data and compare the data record lengths of each station.

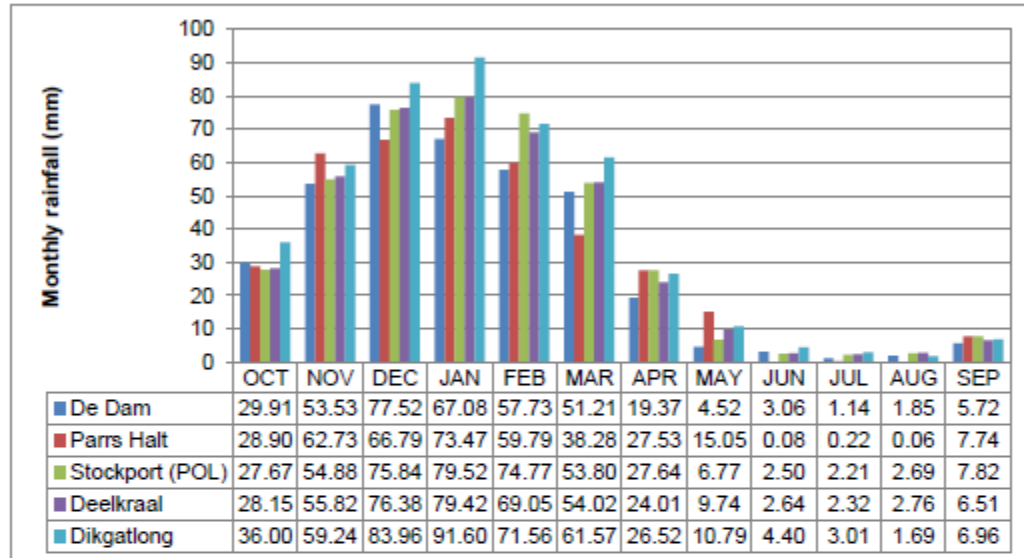


Figure 3: Monthly rainfall distribution for rainfall stations in the Lephalale area

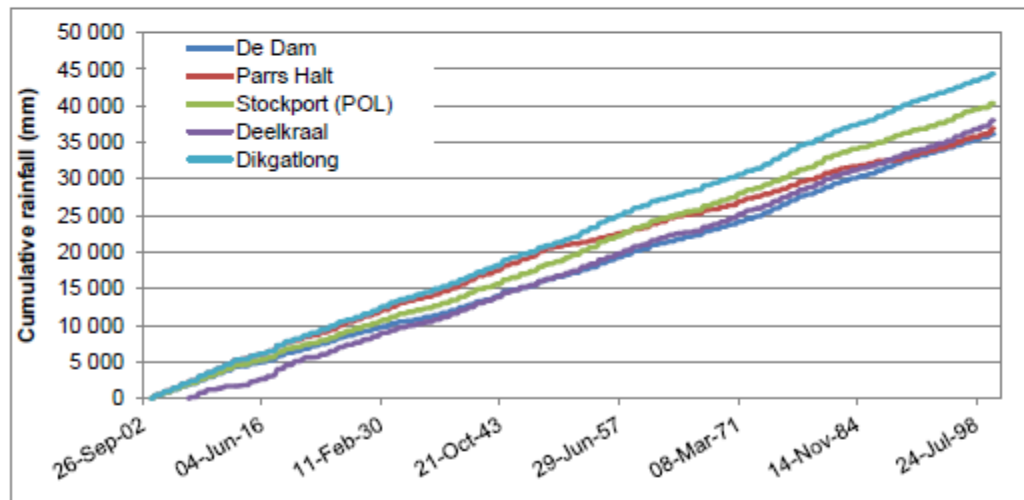


Figure 4: Cumulative rainfall for rainfall stations in the Lephalale area

Figure 5, Figure 6 and Figure 7 show the daily rainfall, monthly boxplot and the annual rainfall for the Stockport (POL) Rainfall Station respectively.

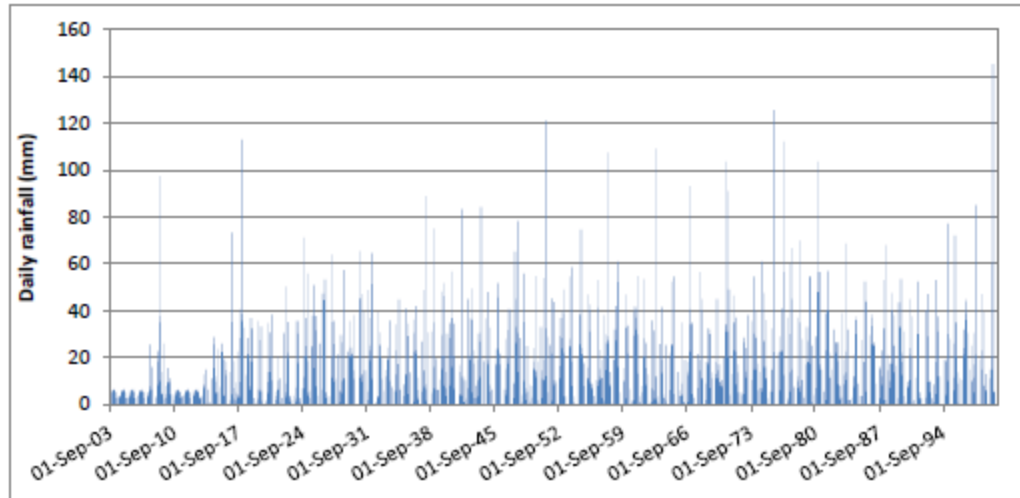


Figure 5: Daily rainfall for Stockport (POL) Rainfall Station (0717595 W)

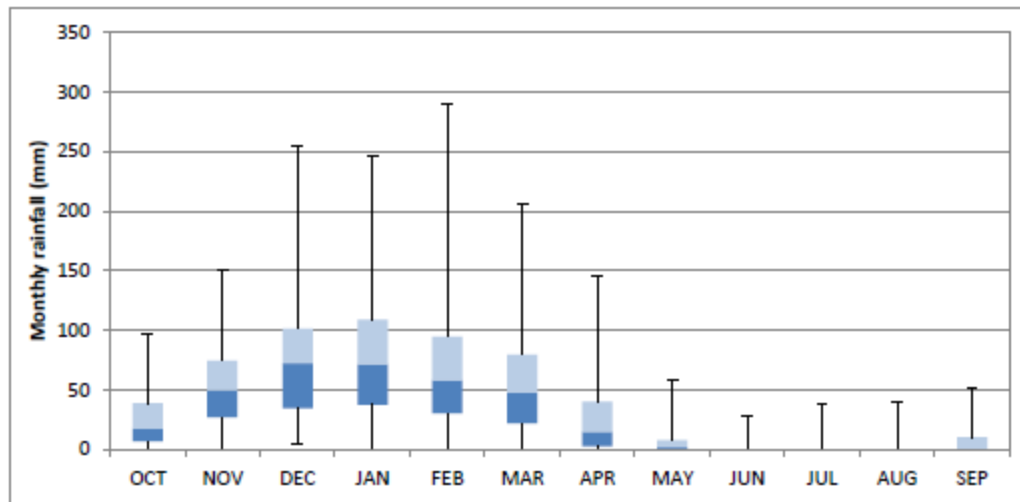


Figure 6: Monthly rainfall boxplot for Stockport (POL) Rainfall Station (0717595 W)

The boxplot in Figure 6 identifies the minimum, first quartile, median, third quartile, and maximum value in the monthly data set. It also highlights the amount of data, as a percentage, that falls below and above the 25%, 50%, and 75% mark.

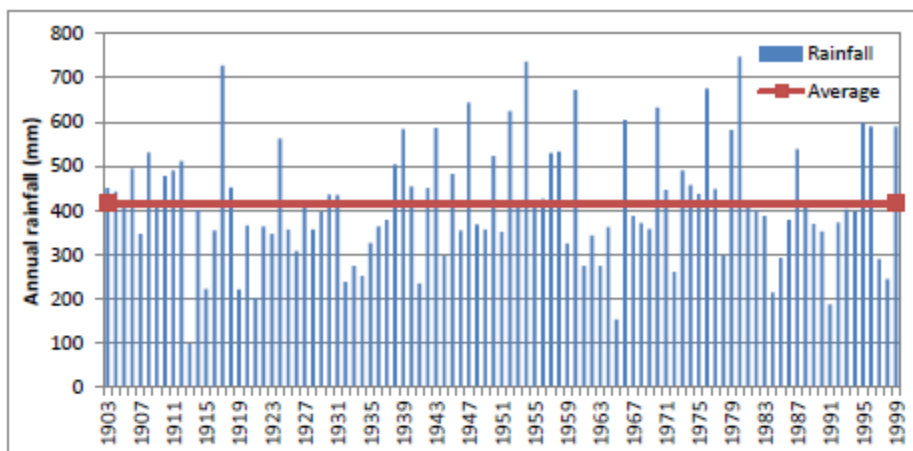


Figure 7: Annual rainfall measured at Stockport (POL) Rainfall Station (0717595 W)

The mean annual rainfall for Stockport (POL) is 416.09 mm. The lowest rainfall year was 1913 with 98.6 mm and the highest rainfall year was 1980 with 747.9 mm.

The 5, 50 and 95 percentiles of the annual rainfall totals for the rainfall station are presented in Table 4. Figure 8 shows the cumulative distribution function of the annual rainfall totals measured at the Stockport (POL) station.

Table 4: 5, 50 and 95 Percentile of the Annual Rainfall Totals

Station number	Station name	5 th percentile	50 th percentile	95 th percentile
0717595 W	Stockport (POL)	209.21	421.70	636.55

Table 4 shows for Stockport (POL) there was:

- Less than 209 mm/annum rainfall for 5 % of the time;
- Less than 422 mm/annum rainfall for 50 % of the time; and
- Less than 637 mm/annum rainfall for 95 % of the time.

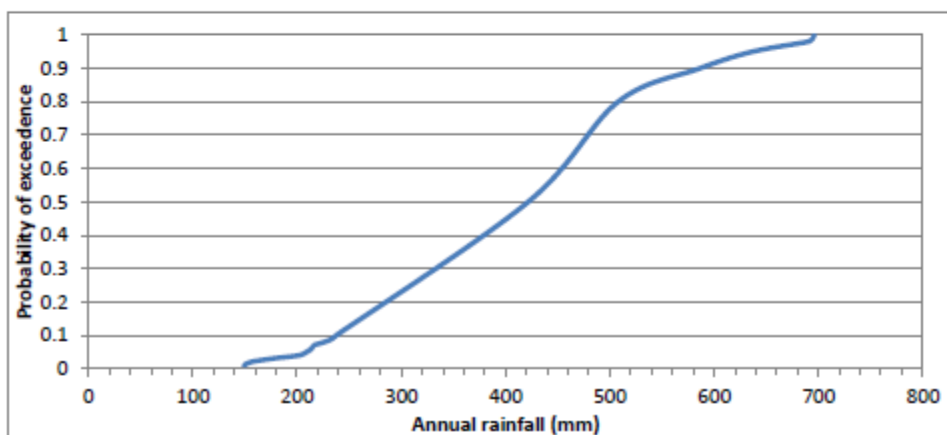


Figure 8: Annual probability curve for the Stockport (POL) Rainfall Station (0717595 W)

