



KALKFONTEIN DAM

COORDINATES (degrees, minutes, seconds)

LATITUDE	LONGITUDE
29° 29' 49" S	25° 13' 17" E

LOCATION

This dam is situated in quaternary C51J on the Riet River near the town of Koffiefontein in the Free State, South Africa.

DESCRIPTION

Kalkfontein Dam is a concrete-faced rockfill dam, and is part of a system designed to supply irrigators with water. The dam was raised in 1977 by 2.2 m. The dam has a catchment area of 9,473 km², and a spillway capacity of 1,700 m³/s. The dam has a full supply level of 1,229.0 m. The dead storage level and bottom of the reservoir are at 1,210.1 m.

PURPOSE

Kalkfontein Dam originally supplied the Scholtzburg and Ritchie irrigation boards, riparian irrigators along the Riet River (Riet River Settlement), the town of Jacobsdal, and the mining centre of Koffiefontein. The dam now supplies the Riet River Government Water Scheme via a left bank canal from the dam. The dam still supplies the mining centre and Jacobsdal but the newer Sarel Hayward Canal now supplies the settlement and irrigation boards. Kalkfontein is not supported by the upstream Tierpoort Dam.

OPERATING RULE

The operating rule within the current study is that the dam supports all demands, with priority given to urban and mining demands (ORASECOM, 2007).



Kalkfontein Dam (source: www.panoramio.com)



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PHYSICAL INFORMATION

Dam name	River	Quaternary catchment	FSC* (million m ³)	FSA (km ²)	Owner	DWA code	Wall height (m)	Wall length (m)
Kalkfontein	Riet	C51J	319.62	45.32	DWA	C5R002	36	317

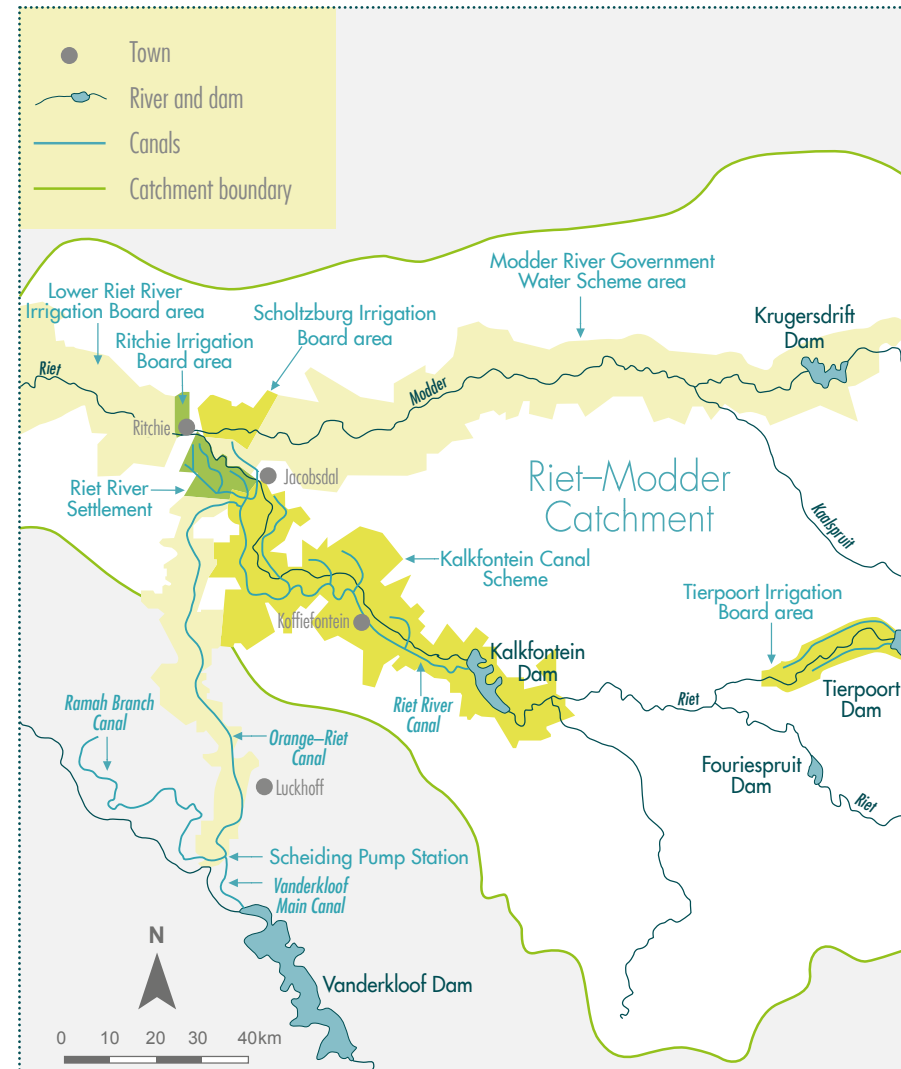
* Live full supply capacity (ORASECOM, 2007a, WRYM datasets and DWA, 1990)

Year of completion	Demands/abstractions (million m ³ /a)			1:50 yield (million m ³ /a)	Maximum spillway capacity (m ³ /s)
	Domestic	Irrigation	Other		
1938	350.64 †	Unknown	Unknown	148.50	1,700

† ORASECOM, 2007a

AREA-CAPACITY RELATIONSHIP

Elevation (m)	Storage (million m ³)	Surface area (km ²)
1,229.0	319.62	45.32
1,227.6	258.16	39.28
1,226.7	224.13	36.43
1,225.8	192.70	33.08
1,223.5	129.80	22.80
1,221.9	96.20	19.23
1,220.1	65.27	14.95
1,215.6	15.66	7.06
1,210.3	0.05	0.27
1,210.1	0.00	0.00



Riet River Government Water Scheme (adapted from ORASECOM, 2007a)

