

A REPORT ON THE CATCHMENT TO  
ROLLO CREEK RESERVOIR  
(YARRAGON WATERWORKS TRUST)

Prepared for consideration by the  
Land Conservation Council

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SOIL CONSERVATION AUTHORITY  
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## **INTRODUCTION**

The Land Conservation Council in its final recommendations for the Melbourne Study Area has stated that it considers all domestic water supply catchments within the study area should be investigated by the Soil Conservation Authority and where appropriate recommended for proclamation.

This report presents the results of such an investigation into the catchment of Rollo Creek Reservoir and recommends that the catchment be proclaimed.

## **SUPPLY SYSTEM**

Yarragon Waterworks Trust was constituted in 1950 to provide water for the township of Yarragon. The water is drawn mainly from Rollo creek and is supplemented by water from a groundwater bore in the vicinity of the town. Rollo Creek feeds an on-stream storage reservoir and from there water is gravitated through a 305 mm diameter pipe into a water tower and town reticulation system.

Rollo Creek is a seasonal stream and may be dry during the summer months. A number of springs in the catchment near the streams add to the flow of the creek. The reservoir has a holding capacity of approximately 60 ML. The bore is used at times of water shortage or at times of heavy stream flow when the water becomes muddy and unsuitable for domestic use. The Trust supplies 206 consumers within the urban area plus 70 additional consumers outside the township.

## **WATER QUALITY AND TREATMENT**

Latrobe Valley Water and Sewerage board monitors the bacterial parameters of the Rollo Creek reservoir, the groundwater bore and the reticulation water at monthly intervals.

Recent results from the reticulation samples are satisfactory, although the results of bacterial tests from the water show high *E. coli* and high plate counts, especially during heavy rainfall periods.

Chemical and physical analyses conducted in 1973 by the State Rivers and Water Supply commission on water in the reservoir indicated high colour and turbidity.

Discussion with members of the Waterworks trust, with residents of Yarragon and with the consulting engineers indicates that the water quality of Rollo Creek reservoir is often undesirable and unacceptable.

Water from the groundwater bore is satisfactory and when mixed with Rollo Creek water improves the quality of water supplied. At present the water is not treated, but chlorination plant and detention tanks are expected to be operating April 1981.

# THE CATCHMENT

## **(a) General**

The catchment, which covers an area of approximately 6 km<sup>2</sup>, is 125 km east of Melbourne and 7 km south of Yarragon, and is located within the LCC Melbourne Study Area. Land in the catchment falls within the Parishes of Mow and Warragul, and within the municipality of the Shire of Narracan.

## **(b) Geology and Topography**

The whole catchment is situated on Cretaceous sedimentary rocks of the Strzelecki Group. It is located just south of the Yarragon Monocline. The catchment consists of a deeply dissected V-shaped drainage basin with a shallower basin adjoining it on its north-western side. A number of V-shaped lateral valleys drain into the main valley from east and west.

## **(c) Soil and Vegetation**

Soils in the catchment have developed from Cretaceous sedimentary rocks. These soils are generally shallow, mottled yellow gradational types with a clay loam surface texture with an average depth of 0.5 m. Deeper profiles are present on gently crests and creek banks.

Soils of Cretaceous parent material are subject to landslips and a number of inactive slips are evident on the catchment slopes. However, because of high rainfall and favourable growing conditions, the slipped faces are well covered with pasture species.

Most of the native vegetation of the catchment has been cleared for agricultural use but some has been left along creeks and drainage lines. The native vegetation is dominated by Blue gum, manna gum, Grey gum, blackwood, shiny Cassinia and some species of tree-ferns.

## **(d) Climate**

There is a dearth of climatic data in the Strzelecki Ranges. The nearest rainfall recording station to rollo Creek catchment is about 9 km north-east of the reservoir at Trafalgar where the average annual rainfall, from 59 years of records, is 1011 mm. The Bureau of meteorology has reported in the Victoria Resources Survey on the West Gippsland Region that the annual rainfall in the Strzelecki Ranges generally exceeds 1000 mm and is fairly well distributed throughout the year.

There are no temperature records available for comparable areas near the catchment. However, a mean maximum daily temperature of 22°C could be expected with a frost incidence in the catchment from mid-April to mid-September.

## **LAND USE AND TENURE**

About 13 ha of the catchment is public land owned by the Yarragon Waterworks Trust. The reservoir covers about 1.6 ha of this area. In its final Recommendations for the Melbourne Study Area, the Land Conservation Council has recommended that the present tenure and management of such land continue for the time-being, pending a determination of land use for the catchment. The remaining land is freehold and is owned by twelve landholders. Property sizes range from 0.5 ha to 80 ha. There are six houses within the catchment with the potential for about twelve more, on the basis of one house allotment. Freehold land is used for grazing, mainly be dairy cattle and there is some sheep and beef cattle grazing.

The entire catchment area is included in the Rural Zone of the Shire of Narracan's Interim Development Order. Since 1976, subdivisions of less than 16 ha have not been permitted. There is, however, provision for the excision of small house blocks (0.4 – 1.8 ha) from allotments which existed prior to 1976.

Roads in the catchment are situated on or along the ridges and are not a cause for concern but unsealed tracks leading to farms and paddocks are prone to erosion. Any further subdivision which requires additional access tracks would be undesirable.

## HAZARD TO THE WATER SUPPLY

High *E. coli*, turbidity, colour and odour are the main subjects for complaint about water from the Rollo Creek reservoir. Possible sources of contamination include:

1. Droppings from birds and grazing stock flushed into streams and the reservoir due to the rapid runoff from the very steep land; also stock have access to the streams and to some parts of the reservoir.
2. Sediments and colloid from tracks, together with applied fertilizers, can wash into the streams due to the steep nature of catchment land. Landslips in the catchment are probably another source of suspended sediments.
3. Sediment and adsorbed nutrient which appear to provide a very rich medium for the growth of various algae and water weeds in the reservoir. Various species of mansphytes and algae with different seasonal requirements grow in the reservoir throughout the year. These contribute to the colour and odour in the reservoir waters.
4. The water from the springs after the autumn break is observed to be heavily stained, probably with iron oxide.

As mentioned earlier the quality of reticulated water in Yarragon has recently improved. This is expected to continue as reservoir water with its poorer quality, is diluted with a good quality bore water thus lifting overall quality to a satisfactory level.



## **RECOMMENDATIONS**

1. That the authority approve this report and forward it to the Land Conservation council for consideration.
2. That the Land Conservation council recommend to the Governor-in-council that the catchment to Rollo Creek reservoir as shown on plan S871 be proclaimed under the provisions of Section 5(1)b of the Land Conservation Act 1970 and Section 22(1) of the soil Conservation and Land Utilization Act 1958.
3. That the land in this catchment be further investigated with a view to making a land use determination or introducing other catchment improvement measures.

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