

<b>Site code<sup>1</sup></b>	<b>MM5102</b>
<b>Location</b>	<b>Wurdiboluc Reservoir (Mathison Road), Winchelsea district, south-west Victoria</b>
<b>Landform</b>	Gently undulating basalt rises
<b>Geology</b>	Quaternary Newer Volcanics: <i>extrusive tholeiitic to alkaline basalts, minor scoria and ash</i>
<b>Element</b>	Crest

### Profile morphology

Horizon	Depth (cm)	Description
A1	0–20	Very dark greyish brown (10YR3/2); fine sandy clay loam; apedal massive structure; weak consistence (dry); boundary to:
A2	20–45	Sporadically bleached, light grey (10YR7/2 dry); fine sandy clay loam; apedal massive structure; weak consistence (dry); boundary to:
B21	45+	Yellowish brown (10YR5/6) with red (2.5YR4/6) mottles; medium clay; strong coarse blocky structure; very firm consistence (moderately moist).

**ASC:** Melanic, Mottled-Subnatric, Brown Sodosol

### Analytical data<sup>2</sup>

Site MM5102 Horizon	Sample depth cm	pH		EC	NaCl	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	Ex acidity
		H <sub>2</sub> O	CaCl <sub>2</sub>	dS/m	%	cmol <sub>c</sub> /kg	cmol <sub>c</sub> /kg	cmol <sub>c</sub> /kg	cmol <sub>c</sub> /kg	mg/kg	cmol <sub>c</sub> /kg
A1	0–20	5.6	N/R	0.05	N/R	1.9	1.9	0.2	0.2	21	10.4
A2	20–45	6.2	N/R	0.03	N/R	0.9	0.9	0	0.2	0	3.4
B21	45+	6.8	N/R	0.09	N/R	3.3	3.3	0.3	2.6	N/R	9.6

Site MM5102 Horizon	Sample depth cm	FC (-10kPa) %	PWP (-1500kPa) %	KS %	FS %	Z %	C %	Org C %	Bulk density t m <sup>-3</sup>
A1	0–20	22.3	13.7	25	40	13	17	2.2	1.21
A2	20–45	N/R	N/R	27	45	4	21	0.6	N/R
B21	45+	37.5	26.6	11	16	4	67	0.6	1.27

### Management considerations

This soil exhibits hardsetting topsoils with strong texture contrast between the surface soil and the subsoil that may impact upon subsoil permeability. Conspicuously bleached A2 horizons containing many fine segregations are key features of this profile. Sodic and mottled subsoils are other prominent features of this soil type.

The application of gypsum would be suitable for soil structure and improved permeability, while increasing organic matter and maintaining vegetative cover is important to help improve the soil structure. Penetration by deep-rooted crops is also useful as is minimum tillage practices which avoids bringing the sodic material to the surface.

<sup>1</sup> Source: Maher JM, Martin JJ 1987 Soils and landforms of south-western Victoria. Department of Agriculture and Rural Affairs. Research Report No. 40.

<sup>2</sup> Source: Government of Victoria, State Chemistry Laboratory.