LIGHT SANDY LOAM OVER RED CLAY ON SANDY ALLUVIUM

General Description: Thick massive light sandy loam to loamy sand over a moderately well

structured red clay, calcareous with depth, grading to coarse textured

alluvium

Landform: Alluvial plains of the

Bremer River.

Substrate: Layered sandy to clayey

alluvium.

Vegetation:



Type Site: Site No.: CH161B 1:50,000 mapsheet: 6727-3 (Alexandrina)

Hundred: Strathalbyn Easting: 319840 Northing: Section: 6092380 71

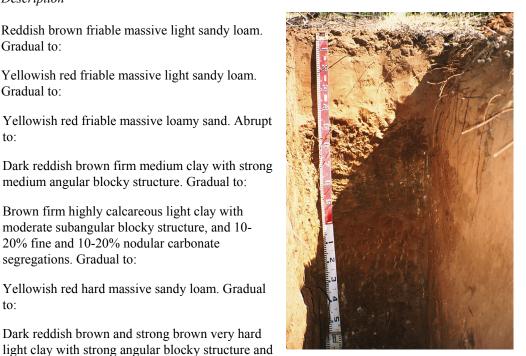
Sampling date: 28/11/06 Annual rainfall: 405 mm average

Alluvial plain, 0% slope. Firm surface with no stones.

Soil Description:

Depth (cm)	Description
0-15	Reddish brown friable massive light sandy loam. Gradual to:
15-30	Yellowish red friable massive light sandy loam. Gradual to:
30-45	Yellowish red friable massive loamy sand. Abrupt to:
45-70	Dark reddish brown firm medium clay with strong medium angular blocky structure. Gradual to:
70-90	Brown firm highly calcareous light clay with moderate subangular blocky structure, and 10-20% fine and 10-20% nodular carbonate segregations. Gradual to:
90-125	Yellowish red hard massive sandy loam. Gradual to:
125-150	Dark reddish brown and strong brown very hard

10-20% nodular carbonate segregations.



Classification: Calcic, Subnatric, Red Sodosol; thick, non-gravelly, loamy / clayey, moderate





Soil Characterisation Site data sheet

Summary of Properties

Drainage: Moderately well drained. The clayey subsoil may perch water for up to a week

following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately low to low, as indicated by the exchangeable cation

> data. Low clay and organic matter contents of topsoil restrict the level of nutrient retention. Phosphorus and zinc levels are marginal at the sampling site, but other

tested elements are in adequate supply.

pH: Neutral to slightly alkaline at the surface, alkaline with depth.

Rooting depth: 150 cm in sampling pit, but few roots below 125 cm.

Barriers to root growth:

Physical: The clayey subsoil restricts root density to some extent, but does not prevent root

> growth. Elevated sodicity levels in the topsoil and probably upper subsoil are due to the effects of irrigation water. Maintenance of electrolyte concentration is needed to

prevent dispersion in these materials.

Chemical: There are no severe restrictions, however the combination of elevated pH, sodicity,

salinity and boron concentration limits root vigour.

Waterholding capacity: (Estimates for potential rootzone of grape vines)

Total available: 150 mm Readily available: 70 mm

Seedling emergence: Satisfactory.

Workability: The soft sandy surface is easily worked.

Erosion Potential:

Water Low

Wind: Moderately low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaC1 ₂	CO ₃	EC 1:5	ECe dS/m	Org.C	Avail. P mg/kg	K	mg/kg		Boron mg/kg		Trace Elements mg/kg (EDTA)				Sum cations	Exchangeable Cations cmol(+)/kg				Est. ESP
				dS/m									Cu	Fe	Mn	Zn	cmol (+)/kg	Ca	Mg	Na	K	
0-15	7.9	7.2	0	0.196		0.70	21	189	150	18.7	1.1	427	4.15	88	83.7	2.67	6.5	3.63	1.78	0.74	0.37	11.3
15-30	8.4	7.6	0	0.109		0.23	9	129	58	7.9	0.7	411	1.36	37	57.8	0.52	4.7	2.55	1.32	0.59	0.25	12.5
30-45	8.5	7.6	0	0.119		0.15	5	158	70	11.0	1.2	430	1.94	21	42.1	0.43	5.7	2.84	1.74	0.81	0.29	14.3
45-70	8.7	7.7	0	0.273		0.63	2	248	132	21.9	4.0	651	4.76	33	99.2	0.25	20.9	9.98	7.71	2.62	0.63	12.5
70-90	9.1	8.0	5.7	0.371		0.33	2	267	217	46.0	3.7	767	2.60	15	9.59	0.29	21.4	12.1	6.09	2.60	0.63	12.1
90-125	9.0	8.5	0.9	0.229		0.15	2	173	103	29.5	1.8	514	1.52	23	51.6	0.29	13.9	7.48	4.10	1.88	0.41	13.6
125-150	9.1	8.2	1.9	0.365		0.23	2	250	164	64.8	3.3	642	1.68	25	47.4	0.96	17.4	9.04	5.37	2.35	0.61	13.5

Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), a Note:

measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC, in this case estimated by the sum of cations.

Further information: DEWNR Soil and Land Program



