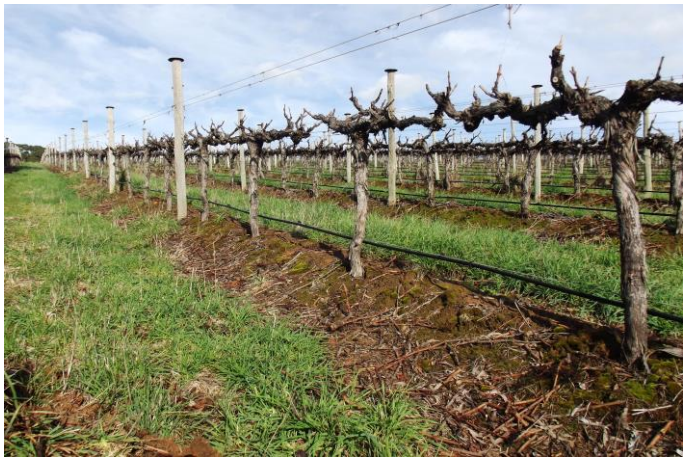
SANDY LOAM OVER BROWN CLAY ON WEATHERED ROCK

General Description: *Medium thickness sandy loam with a paler coloured gravelly subsurface, over a brown strongly blocky clay forming in weathering sandstone basement rock*

Landform: Rolling low hills

Substrate: Weathered sandstone

Vegetation: Cleared Eucalypt forest.
Current land use - viticulture



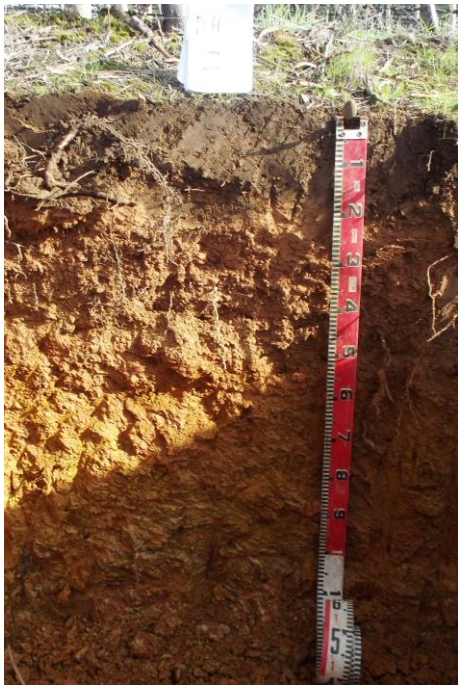
Type Site:

Site No.:	CH174B	1:50,000 mapsheet:	6627-3 (Willunga)
Hundred:	Kuitpo	Easting:	283540
Section:		Northing:	6094740
Sampling date:	08/03/2013	Annual rainfall:	860 mm average

Midslope of low hill, 8% slope. Elevation is 330 m, with NE aspect. Firm surface with 2% quartzite gravel and ironstone to 2 cm.

Soil Description:

Depth (cm)	*Description*
0-15	Dark brown friable unstructured sandy loam with 10% ironstone gravel. Clear to:
15-25	Brown firm unstructured coarse sandy loam with 40-50% sandstone and ironstone gravel. Abrupt to:
25-55	Strong brown firm light medium clay with strong subangular blocky structure and up to 10% weathering rock fragments. Clear to:
55-90	Reddish yellow firm light medium clay with strong angular blocky structure and up to 30% weathering rock fragments. Gradual to:
90-120	Weathering sandstone.



Classification: Haplic, Eutrophic, Brown Chromosol; medium, slightly gravelly, loamy / clayey, deep

Summary of Properties

Drainage: Well drained. No part of the profile is likely to remain wet for more than a few days at a time.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. CEC of 10 cmol(+)/kg in deep subsoil indicates that the soil's clay minerals can satisfactorily retain nutrient elements. Retention capacity in the surface is high due to organic carbon levels. Phosphorus and potassium levels are low for maximum growth. Boron levels are low in surface soil, but satisfactory at depth. Copper, zinc and manganese levels are low in subsoil.

pH: Slightly acidic throughout.

Rooting depth: Good root growth to 55 cm, some roots to 90 cm.

Barriers to root growth:

Physical: There are no apparent physical barriers.

Chemical: There are no apparent chemical barriers, other than slightly elevated salinity at the surface.

Waterholding capacity: Approximately 100 mm (total) in potential rootzone (upper 90 cm), with readily available capacity (RAW) of approximately 45 mm.

Seedling emergence: Good.

Workability: The surface soil is readily worked.

Erosion Potential:

Water: Moderately high due to land slope. Perennial crop with good ground cover minimises hazard.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	Ext. Al mg/kg	EC 1:5 dS/m	Cl mg/kg	Org.C %	NO_3 mg/kg	Avail. P mg/kg	PBI	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
													Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Under Drip	6.5	5.7	-	0.075	31	2.13	3	13	86	163	15.3	0.4	5.9	63	3.74	2.22	7	5.5	1.1	0.14	0.4	2
Between Drip	6.5	5.7	-	0.070	26	2.41	2	16	87	166	20.0	0.6	7.3	62	4.65	2.45	8	6.7	0.75	0.10	0.4	1
Mid Row	5.9	5.1	-	0.047	22	3.51	2	11	112	139	6.8	0.4	3.6	105	5.64	1.24	7	4.5	1.7	0.11	0.3	2
0-15	6.2	5.3	0.71	0.070	37	3.37	< 1	12	92	123	10.7	0.7	15.3	139	14.7	2.71	9	7.0	1.4	0.19	0.3	2
15-25	6.1	5.1	0.87	0.021	-	0.34	< 1	2	76	32	13.8	0.4	0.73	23	0.14	0.19	2	1.2	0.6	0.08	0.1	4
25-55	6.0	5.5	0.23	0.087	-	0.12	1	< 2	479	29	85.3	1.0	0.17	7	0.15	0.03	10	4.0	5.9	0.43	0.1	4
55-90	6.0	5.5	0.33	0.073	-	4.24	< 1	< 2	-	58	88.8	1.0	0.21	5	0.07	0.01	11	3.3	6.6	0.52	0.2	5
90-120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Trace elements in 0-15cm layer analysed using EDTA.

CEC (exchangeable cation capacity) is a 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.

Further information: DEWNR Soil and Land Program