LOAM OVER RED CLAY ON WEATHERING ROCK

General Description: *Hard setting loam abruptly overlying a strongly structured red clay, grading to weathering rock mantled by secondary carbonates*

Landform: Undulating to rolling rises and low hills.

Substrate: Metamorphosed sandstone (more commonly siltstone), mantled by carbonate.

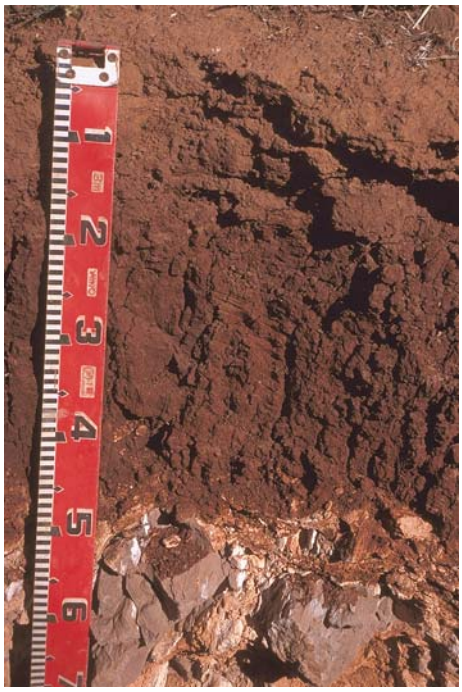
Vegetation:

Type Site: Site No.: CM914

1:50,000 sheet:	6630-2 (Apoinga)	Hundred:	Stanley
Annual rainfall:	475 mm	Sampling date:	21/03/00
Landform:	Midslope of undulating rise, 8% slope		
Surface:	Hard setting with 2-10% sandstone and quartzite stones (20-60 mm)		

Soil Description:

Depth (cm)	*Description*
0-13	Reddish brown hard massive loam. Abrupt to:
13-45	Dark reddish brown very hard medium clay with strong coarse prismatic (breaking to medium angular blocky) structure. Clear to:
45-150	Yellowish red hard massive very highly calcareous light clay - fine clayey carbonate in weathering basement rock (metamorphosed sandstone).



Classification: Sodic, Calcic, Red Chromosol; medium, gravelly, loamy / clayey, deep

Summary of Properties

Drainage: Well drained. The soil is unlikely to remain wet for more than a day or so following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately high. The surface soil has more than 20% clay with adequate organic carbon levels, so nutrient retention capacity and availability are favourable.

pH: Acidic at the surface, alkaline with depth.

Rooting depth: 45 cm in pit.

Barriers to root growth:

Physical: There are no significant physical barriers.

Chemical: High carbonate content in a clayey matrix generally restricts root growth.

Water holding capacity: Approximately 60 mm in the root zone.

Seedling emergence: Fair. Hard setting, sealing surface affects emergence percentage.

Workability: Fair. Surface tends to shatter if worked too dry, and puddle if worked too wet.

Erosion Potential

Water: Moderate.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	Ext Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
0-13	6.0	5.4	-	0.10	-	1.29	78	466	20.5	1.1	-	-	-	-	9.3	7.2	0.95	0.11	1.0	1.2	0.68
13-45	7.5	6.8	-	0.13	-	1.09	6	484	37.7	2.2	-	-	-	-	30.3	19.3	7.91	1.73	1.35	5.7	-
45-150	9.2	8.1	-	0.28	-	0.22	2	293	80.5	2.0	-	-	-	-	23.7	13.5	6.53	3.0	0.74	12.6	-

Note: Sum of cations (an estimate of cation exchange capacity or CEC) 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 estimated CEC.