

IRONSTONE GRAVELLY SANDY LOAM OVER RED CLAY (Ness soil)

General Description: *Thin ironstone gravelly loamy sand to loam over a red to brown clay*

Landform: Gently undulating rises.

Substrate: Unconsolidated clayey
Tertiary sediments.

Vegetation: Eucalyptus camaldulensis /
Callistemon rugulosus
woodland.

Type Site:	Site No.:	EL030	1:50,000 mapsheet:	5929-1 (Kiana)
	Hundred:	Kiana	Easting:	537700
	Section:	200	Northing:	6224950
	Sampling date:	03/03/1992	Annual rainfall:	450 mm average

Flat between undulating rises. Firm surface with less than 2% ironstone (60-200 mm).

Soil Description:

Depth (cm)	Description
0-6	Dark brown friable heavy sandy loam with moderate subangular blocky structure. Abrupt to:
6-10	Orange friable clay loam with weak subangular blocky structure and 20-50% ironstone gravel. Abrupt to:
10-53	Red hard light medium clay with strong angular blocky structure and 10-20% ferruginous concretions. Clear to:
53-80	Yellowish brown very hard medium clay with 20-50% ferruginous concretions. Gradual to:
80-145	Yellowish brown very hard medium clay with 10-20% ferruginous concretions.



Classification: Ferric-Sodic, Eutrophic, Red Chromosol; medium, non-gravelly, loamy / clayey, deep



Summary of Properties

- Drainage:** Well drained. The soil is never wet for more than a few days.
- Fertility:** Inherent fertility is moderate, as indicated by the exchangeable cation data. Phosphorus levels are high, although ironstone reduces availability. Organic carbon levels are satisfactory.
- pH:** Acidic at the surface, neutral with depth.
- Rooting depth:** 80 cm in pit, but few roots below 53 cm.
- Barriers to root growth:**
- Physical:** The subsoil clay is hard, but root growth should not be significantly affected.
 - Chemical:** There are no chemical limitations.
- Waterholding capacity:** Approximately 60 mm in the rootzone.
- Seedling emergence:** Satisfactory.
- Workability:** Firm surface is easily worked, but in places ironstone gravel may be sufficient to excessively abrade implements. Hard setting conditions may develop, reducing time frame for effective working.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ 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	
0-6	6.0	4.9	0	0.3	1.6	2.6	64	314	-	1.4	1.07	79.8	3.48	1.79	9.4	2.65	0.85	0.19	0.75	2.0
6-10	6.2	5.2	0	0.2	1.1	0.5	14	227	-	1.1	0.23	25.2	1.01	0.43	7.0	2.03	0.76	0.14	0.52	2.0
10-53	6.8	6.1	0	0.1	0.4	0.5	5	236	-	2.7	0.04	2.4	0.07	0.07	14.8	5.02	3.24	0.36	0.72	2.4
53-80	7.0	6.3	0	0.1	0.4	0.1	<4	257	-	4.1	0.02	1.3	0.04	0.06	13.9	4.30	4.30	0.76	0.76	5.5
80-145	7.3	6.4	0	0.1	0.6	0.6	<4	254	-	4.4	0.03	1.4	0.13	0.04	13.1	4.06	3.78	0.86	0.63	6.6

Note: CEC (cation exchange 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](#)

