DEEP GRADATIONAL CLAY LOAM

(Elson soil – clayey variant)

General Description: *Dark coloured sandy clay loam to light clay grading to a grey or brown mottled sandy clay to clay, continuing below 100 cm.*

Landform: Lower slopes, drainage depressions and valley flats between rolling low hills.

Substrate: Fine grained alluvium.

Vegetation: Euc. leucoxylon, Euc. odorata woodland

Type Site:

Site No.:	EL136	50,000 mapsheet:	6028-1 (Lincoln)
Hundred:	Wanilla	Easting:	570550
Section:	39	Northing:	6177650
Sampling date:	1982	Annual rainfall:	505 mm average

Valley flat between undulating low hills. Firm to hard setting surface with no gravel.

Soil Description:

Depth (cm)	*Description*
0-20	Black fine sandy clay loam with granular structure. Clear to:
20-40	Black fine sandy clay loam with granular structure. Clear to:
40-60	Dark grey sandy clay with granular structure. Gradual to:
60-90	Olive brown mottled sandy clay with crumb structure and gleying. Gradual to:
90-125	Olive brown mottled sandy clay with crumb structure and gleying. Gradual to:
125-200	Olive brown mottled medium clay with subangular blocky structure and gleying.

Classification: Melanic-Mottled, Eutrophic, Grey Dermosol; thick, non- gravelly, clay loamy / clayey, deep

Summary of Properties

Drainage: Imperfectly to poorly drained. Fine texture and low lying position in the landscape restrict through flow of water, so the soil may remain wet for several weeks to months following heavy or prolonged rainfall.

Fertility: Inherent fertility is high low due to high clay content of the surface layers. At the sampling site, there are no apparent deficiencies of the elements tested. Organic carbon levels are satisfactory.

pH: Neutral throughout.

Rooting depth: Not recorded. Estimate 125 cm in pit.

Barriers to root growth:

Physical: The clayey layer at 125 cm appears to be the only significant barrier.

Chemical: Moderate salinity at the surface affects germination. This may be caused by impeded surface drainage at the site.

Waterholding capacity: Approximately 200 mm in the rootzone.

Seedling emergence: Fair due to hard setting, sealing surface.

Workability: Fair. Wetness restricts the period over which the soil can be effectively cultivated.

Erosion Potential:

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	Sand %	Silt %	Clay %	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-20	70	12	18	6.9	-	1.3	1.63	16.0	1.84	23	1.32	8.0	9.4	0.40	22	14.0	6.8	4.8	0.53	21.8
20-40	68	7	25	7.4	-	1.8	1.26	13.1	0.88	5	1.38	3.4	2.8	0.20	23	16.0	7.8	4.6	0.51	20.0
40-60	73	3	24	7.6	-	1.5	0.64	5.70	0.18	2	0.58	3.8	0.4	0.20	20	7.5	7.8	4.0	0.68	20.0
60-90	67	6	27	6.8	-	2.0	0.54	4.24	0.21	1	0.54	15	0.9	0.22	27	9.5	11.0	4.5	0.67	16.7
90-125	62	9	29	6.9	-	1.8	0.55	4.05	-	-	-	-	-	-	23	7.8	9.2	3.5	0.62	15.2
125-	52	12	36	7.0	-	1.8	0.53	3.39	-	-	-	-	-	-	27	8.8	10.0	4.3	0.63	15.9

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