KEN Kennion Land System

Area: 330.1 km^2

Landscape: Complex of calcarenite ranges and corridor plains on Reedy Creek and West Avenue Ranges between Furner and Kingston. The ranges are low, narrow ridges often with exposed calcarenite, but also with deep sands. Flats are stony, sandy and swampy.

Annual rainfall: 585 – 750 mm average

Geology: Flats with lacustrine deposits of the Pleistocene Padthaway Formation and dune ranges with calcreted aeolianite of the Pleistocene Bridgewater Formation barrier shoreline deposits.

Main soils:
B3 (19%) Shallow sandy loam on calcrete (Petrocalcic Red Tenosol-Kandosol-Rudosol)
H3 (15%) Bleached siliceous sand (sandy Bleached Tenosol)
B7 (10%) Shallow sand over clay on calcrete (sandy Petrocalcic Sodosol-Chromosol)
B8 (10%) Shallow sand on calcrete (sandy Petrocalcic Rudosol-Tenosol)

Minor soils:
G3 (9%) Thick sand over clay (sandy Brown-Red Chromosol-Sodosol)
RR (9%) Bare calcrete
B6 (8%) Shallow loam over red-brown clay on calcrete (Petrocalcic Red Chromosol-Kandosol)
I1 (5%) Highly leached sand (Aeric Podosol)

Summary: The dune ranges dominate the land system. They have both shallow soils on calcarenite and deep water repellent, infertile sands. Swales and flats in dune corridors are prone to waterlogging. Some salinity occurs in swales and corridor plains in the northern parts.

Soil Landscape Unit summary: Kennion Land System (KEN)

SLU	% of area	Component	Main soils	Prop#	Notes
MAB	0.2	Rise	B3RR	D	**MAB** Gently undulating calcreted former beach ridges with stony, very shallow red and brown loam, occasionally over red clay, on calcrete. >50% bare calcrete. **MAC** as above, undulating slopes. **MAD** as above, rolling rises and low hills, bare rock is dominant. Main soils: Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**.
MAC	0.1	Rise	B3RR	D	
MAD	0.7	Rise	RRB3	D	
M-B	0.8	Rise	B4	D	**M-B** Gently undulating calcreted former beach ridge rises with reddish loam, mostly grading to red clay loam or clay, on calcreted calcarenite; 10-30% with red texture contrast soil on calcrete or very deep where solution hollows in the calcrete have been in-filled with soil material. **M-C** Undulating rises, with shallow sandy loam, mostly over poorly structured brown or red clay on calcrete. <50% bare calcrete. **M-D** Rolling rises with very shallow sandy loam over calcreted calcarenite or bare calcrete; 10-30% sandy loam over red clay on calcrete, or thin calcareous sand. 10-20% swales with loam over red clay on calcrete. **M-U** Rises as for **M-B**; 10-20% swales with, often wet, shallow
M-C	1.3	Rise	RRB3	D	
M-D	0.1	Rise	B3RR	V	
		Swale	B6	L	
M-U	0.3	Rise	B4	V	
		Swale	N3B7	L	

					loam over, poorly structured brown, or less commonly red, clay. 10-30% very shallow loam on calcrete. Main soils: ***Rises:*** Shallow sandy loam on calcrete - **B3**, Shallow red loam on limestone - **B4** and Rock or exposed calcrete – **RR**. ***Swales:*** Shallow sandy loam over red-brown clay on calcrete - **B6**, Wet clay loam - **N3** and Sand over friable brown clay on calcrete - **B7**.
MCB	0.6	Dune range	B6B3 H3	D	Gently undulating dune range rises with; shallow sand over red clay, or on calcreted calcarenite; often water repellent, deep siliceous bleached sand; 10-30% shallow sand over poorly structured clay on calcrete. Main soils: Shallow sandy loam over red-brown clay on calcrete - **B6**, Shallow sandy loam on calcrete - **B3** and Bleached siliceous sand - **H3**.
MDGK	0.6	Plain	B4B5	D	Gently undulating plain with mostly reddish clay loam over clay on calcrete on slightly elevated, better drained parts; and dark grey clay loam over dark clay on calcrete on less well drained areas, which are subdominant. <10% karstic swamps, mostly water filled; or with peat or wet dark clay loam soils. Main soils: ***Plains:*** Shallow sandy loam on calcrete - **B3**, Shallow red loam on limestone - **B4** and Shallow dark clay loam on limestone - **B5**. ***Swamps:*** Peaty soil – **N1**, Wet saline clay loam - **N2c** and Wet clay loam - **N3**.
		Karst swamp	WW N1N3	M	
MEB	3.8	Stony rise	B3	V	**MEB** Gently sloping calcarenite rises with shallow sand over calcrete soils. 10-20% dunes with water repellent, deep siliceous sands. **MEC** Undulating stony rises with very shallow soils as above. 10-20% dunes as above, also with shallow bleached siliceous sand on calcrete. Main soils: ***Stony rises:*** Shallow sandy loam on calcrete - **B3** and Shallow sandy loam over red-brown clay on calcrete - **B6**. ***Dunes:*** Highly leached sand - **I1** Bleached siliceous sand - **H3** and Shallow sand on calcrete - **B8**.
		Dune	I1H3	L	
MEC	9.3	Stony rise	B3	V	
		Dune	I1H3 B8	L	
MGE	0.0	Depression	B7B5	D	Depression with shallow sandy loam over poorly structured brown clay on calcrete; or shallow dark clay loam over dark clay on calcrete. 10-30% bare calcrete. Main soils: Sand over friable brown clay on calcrete - **B7** and Shallow dark clay loam on limestone - **B5**.
MHAA	7.4	Plain	H3G3	D	**MHAA** Plains and low dunes with mostly deep, bleached siliceous sand, often over yellow-brown clay. Calcrete substrate at depth. Low dune core topography. **MHB** Gently sloping calcarenite ridge with deep bleached siliceous sands on dunes, often over brown sandy clay. Co-dominant are shallow stony rises with shallow siliceous sand on calcrete or bare rock, occasionally sandy loam on red clay on calcrete. **MHC** Undulating slopes on calcarenite range as for MHB but with 10-30% of rise areas have rock outcrop or shallow sand on calcrete or deep siliceous sand on coffee rock or brown sandy clay. Main soils: ***Plains:*** Bleached siliceous sand - **H3** and Thick sand over clay - **G3**. ***Dunes:*** Bleached siliceous sand - **H3**. ***Stony ranges:*** Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**. ***Dune ranges:*** Bleached siliceous sand - **H3**, Highly leached sand - **I1** and Sand over friable brown clay on calcrete - **B7**.
MHB	12.5	Dune	H3	E	
		Stony range	B3RR	E	
MHC	5.8	Dune range	H3I1 B7	D	

MHK	1.6	Dune	H3	E	**MHK** Undulating dune range with soils as for MHB, but also <10% swales with shallow bleached sand, mostly over brown clay, on calcrete; or occasionally, deep sand. Main soils: ***Dunes:*** Bleached siliceous sand - **H3**. ***Stony ranges:*** Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**. ***Swales:*** Thick sand over clay - **G3**, Sand over friable brown clay on calcrete - **B7** and Shallow sand on calcrete - **B8**.
		Stony range	B3RR	E	
		Swale	G3B7 B8	M	
MiYA	6.8	Plain	B8B7	D	Plains with bleached siliceous sand, often over poorly structured yellow-brown clay, on calcrete. Main soils: Shallow sand on calcrete - **B8** and Sand over friable brown clay on calcrete - **B7**.
MJA	1.1	Plain	B3B8	D	Plains with often bleached, siliceous sand on calcrete. Main soils: Shallow sandy loam on calcrete - **B3** and Shallow sand on calcrete - **B8**.
MKB	1.9	Stony range	RRB3 B6	D	**MKB** Gently undulating stony range rises with bare calcrete; or shallow sandy loam often over thin red clay on calcrete. **MKC** Undulating stony range rises with soils as above. Main soils: Rock or exposed calcrete – **RR**, Shallow sandy loam on calcrete - **B3**, and Shallow sandy loam over red-brown clay on calcrete - **B6**.
MKC	0.1	Stony range	RRB3 B6	D	
MLB	2.5	Stony range	RRB3 B6	V	**MLB** Gently undulating stony range rises with bare calcrete; or shallow sandy loam often over thin red clay on calcrete. 20-30% water repellent, deep bleached siliceous sand. **MLC** Undulating range rises and low hills with soils as for MLB. Main soils: ***Stony ranges:*** Rock or exposed calcrete – **RR**, Shallow sandy loam on calcrete - **B3**, and Shallow sandy loam over red-brown clay on calcrete - **B6**. ***Sandy ranges:*** Bleached siliceous sand - **H3** and Highly leached sand - **I1**.
		Sandy range	H3I1	C	
MLC	0.1	Stony range	RRB3 B6	V	
		Sandy range	H3I1	C	
MNAA	9.1	Plain	G3B7 B8	V	Plains with low dune core topography; deep sand over brown clay; or shallow bleached sand, often over poorly structured brown clay, on calcreted calcarenite. 10-20% stony rises with shallow, often bleached, sand on calcrete; or bare calcrete Main soils: ***Plains:*** Thick sand over clay - **G3**, Sand over friable brown clay on calcrete - **B7** and Shallow sand on calcrete - **B8**. ***Stony rises:*** Shallow sandy loam on calcrete - **B3**, Shallow sand on calcrete - **B8** and Rock or exposed calcrete – **RR**.
		Stony rise	B8B3 RR	L	
MRB	2.6	Rise	B6B4 B3	D	Gently undulating, calcreted low dune core ridges, with shallow sandy loam to clay loam mostly over red clay on calcrete, but also shallow sandy loam on calcrete. Main soils: Shallow sandy loam over red-brown clay on calcrete - **B6**, Shallow sandy loam on calcrete - **B3** and Shallow red loam on limestone - **B4**.
MSB	4.4	Dune range	B8H3 I2	D	**MSB** Gently undulating dune range rises with shallow siliceous sand on calcrete or deep bleached, water repellent acid sands. 10-30% of the area has shallow sandy loam over red clay on calcrete soils. **MSC** Undulating rises with shallow bleached sand over calcrete; or deep, acid, water repellent, siliceous, bleached sand. 10-30% shallow siliceous, over red clay, on calcrete. **MSE** Swale with shallow bleached sand, often over poorly structured brown clay, on calcrete. Main soils: ***Dune ranges:*** Shallow sand on calcrete - **B8**, Bleached siliceous sand - **H3** and Wet highly leached sand - **I2**. ***Swales:*** Shallow sand on calcrete - **B8** and Sand over friable brown clay on calcrete - **B7**.
MSC	0.4	Dune range	B8H3 I2	D	
MSE	0.5	Swale	B8B7	D	

MwB	1.9	Undulating plain	B6B4	D	**MwB** Undulating plains with shallow sandy loam to clay loam over red clay on calcrete; 10-30% very shallow sandy loam on calcrete or bare calcrete. **MwL** Undulating plains as above; 10-20% swales with shallow dark sandy loam; often over dark clay loam; or shallow poorly structured brown clay; on calcrete or directly on calcrete. Main soils: ***Undulating plains:*** Shallow sandy loam over red-brown clay on calcrete - **B6** and Shallow red loam on limestone - **B4**. ***Swales:*** Shallow dark clay loam on limestone - **B5**, Shallow sandy loam on calcrete - **B3** and Sand over friable brown clay on calcrete - **B7**.
MwL	0.3	Undulating plain	B6B4	V	
		Swale	B5B3 B7	L	
MWB	0.3	Rise	B7	D	**MWB** Gently undulating rises with shallow sand over poorly structured brown clay, on calcrete. 10-30% shallow sand, often over red clay, on calcrete, or deep siliceous sand. **MWK** Plains with shallow, often bleached, siliceous sand over calcrete. 10-20% stony rises with very shallow sand on calcrete, or bare calcrete. 10-20% swamps with often wet, shallow dark loam, often over dark clay, on calcrete. Main soils: ***Rises:*** Sand over friable brown clay on calcrete - **B7**. ***Plains:*** Shallow sand on calcrete - **B8** and Shallow sandy loam on calcrete - **B3**. ***Stony rises:*** Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**. ***Swamps:*** Shallow dark clay loam on limestone - **B5**, Shallow sandy loam on calcrete - **B3** and Wet clay loam - **N3**.
MWK	1.6	Plain	B8B3	V	
		Stony rise	B3RR	L	
		Swamp	B5B3 N3	L	
MXG	0.4	Gently undulating plain	B3B7	D	**MXG** Gently undulating plain with shallow sandy loam, often over poorly structured brown clay, on calcrete; 10-30% bare calcrete. <10% swales with shallow dark grey loam, often over dark grey, or poorly structured brown, clay on calcrete. **MXL** Gently sloping rises with bare calcrete or very shallow sand over calcrete. 20-30% swamps with wet, dark clay loam or peat soils. **MXT** Poorly drained plains with bare calcrete rock or very shallow sandy loam on calcrete. 10-20% swamps with shallow wet loams or peats. Main soils: ***Plains:*** Shallow sandy loam on calcrete - **B3** and Sand over friable brown clay on calcrete - **B7** and Rock or exposed calcrete – **RR**. ***Swales:*** Shallow dark clay loam on limestone - **B5**, Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**. ***Swamps:*** Wet clay loam - **N3** and Peaty soil – **N1**.
		Swale	B5B3 B7	M	
MXL	4.7	Rise	RRB3	V	
		Swamp	N3N1	C	
MXT	0.2	Plain	RRB3	V	
		Swamp	N3N1	L	
NDG	0.2	Depression	G3B7	D	Depression with deep sand over brown clay, often on calcrete. Main soils: Thick sand over clay - **G3** and Sand over friable brown clay on calcrete - **B7**.
NjI	3.9	Stony plain	B7	V	Stony plains with shallow loam over poorly structured yellow-brown clay on calcrete. 10-20% swamps with mostly wet dark loam; 10-30% dark loam over calcareous dark clay or calcrete. Main soils: ***Stony plains:*** Sand over friable brown clay on calcrete - **B7**. ***Swamps:*** Wet clay loam - **N3**.
		Swamp	N3	L	
NkP	0.3	Plain	G3	V	Plains with deep sand over yellow-brown clay. 20-30% sandy rises with deep, strongly water repellent, acid, bleached siliceous sand; 10-30% less well drained sands with coffee rock or clay subsoils. Main soils: ***Plains:*** Thick sand over clay - **G3**. ***Sandy rises:*** Highly leached sand - **I1** and Bleached siliceous sand - **H3**.
		Sandy rise	I1H3	C	

NpG	0.3	Depression	E1E3	D	Depression with deep black or grey cracking clay soils; 10-30% wet soils. <10% swamps with mostly wet soils as above. ***Depressions:*** Brown or grey cracking clay – **E3** and Black cracking clay - **E1**. ***Swamps:*** Wet clay loam - **N3**, Brown or grey cracking clay – **E3** and Black cracking clay - **E1**.
		Swamp	N3E1 E3	M	
NSF	0.1	Plain	G3G5 C5	V	Plains with deep acid sand over, often strongly acid brown clay soils; 10-30% deep clay loam over dark grey-brown clay soils. 10-20% swamps with mostly wet, loam over yellow-grey clay. Main soils: ***Plains:*** Thick sand over clay - **G3**, Sand over acidic clay - **G5** and Gradational dark clay loam – **C5**. ***Swamps:*** Wet clay loam - **N3** and Thick sand over clay - **G3**.
		Swamp	N3G3	L	
NYB	0.6	Stony plain	B2B5	D	**NYB** Stony plains 10-30% bare calcrete. **NYI** Stony plains with moderately shallow calcareous dark cracking clay on calcrete. 20-30% swamps with mostly wet, dark clay loam over dark clay; 10-30% poorly structured subsoils or deep cracking clay. Main soils: ***Stony plains:*** Shallow calcareous loam on calcrete - **B2** and Shallow dark clay loam on limestone - **B5**. ***Swamps:*** Wet clay loam - **N3** and Deep friable gradational clay loam - **M2**.
NYI	0.6	Stony plain	B5	V	
		Swamp	N3M2	C	
OFG	1.6	Low dune	I1	V	Low dunes with deep, strongly water repellent, bleached acid sand; 10-30% bleached sand, over yellow-brown clay, or over poorly structured brown clay on calcrete. Main soils: ***Dunes:*** Highly leached sand - **I1**. ***Swales:*** Thick sand over clay - **G3**.
		Swale	G3	L	
OHB	0.3	Dune	I1H3	D	**OHB** High dunes with deep, strongly water repellent, acid, bleached, siliceous sands; 10-30% shallow sand over red clay on calcrete. <10% stony rises with very shallow sand over calcreted calcarenite with shallow sand over calcarenite rises; 10-30% shallow sand over red clay on calcrete or bare calcrete. **OHD** Low dunes with soils as above; <10% stony rises as above. Main soils: ***Dunes:*** Highly leached sand - **I1** and Bleached siliceous sand - **H3**. ***Stony rises:*** Shallow sandy loam on calcrete - **B3**.
		Stony rise	B3	M	
OHD	0.1	Dune	I1H3	D	
		Stony rise	B3	M	
OKG	0.3	Dune	G3B7 H3	V	**OKG** Low dunes and sandy rises with deep bleached sand, over brown clay; often on calcrete. 10-20% stony rises with very shallow sand on calcrete, or bare calcrete. 10-20% swamps with mostly wet, sand over brown or grey clay; 10-30% peat. **OKK** Swales with often wet, deep sand over brown clay. Main soils: ***Dunes:*** Thick sand over clay - **G3**, Sand over friable brown clay on calcrete - **B7** and Bleached siliceous sand - **H3**. ***Stony rises:*** Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**. ***Swamps:*** Wet clay loam - **N3** and Thick sand over clay - **G3**. ***Swales:*** Thick sand over clay - **G3** and Wet clay loam - **N3**.
		Stony rise	B3RR	L	
		Swamp	N3G3	L	
OKK	0.0	Swale	G3N3	D	
PBa	1.4	Plain/sand rise	G3H3 I2	D	Sand plains with deep well to mod. Drained bleached siliceous sand, mostly over brown clay. <10% stony rises with shallow sand over calcreted calcarenite, or bare calcrete; 10-30% shallow sandy loam over red clay on calcrete. Main soils: ***Plains and sandy rises:*** Thick sand over clay - **G3**, Bleached siliceous sand - **H3** and Wet highly leached sand - **I2**. ***Stony rises:*** Shallow sandy loam on calcrete - **B3** and Rock or exposed calcrete – **RR**.
		Stony rise	B3RR	M	

PNA	2.1	Plain/sand rise	H3I2 G3	D	Sand plains and rises with mostly deep bleached, neutral sands; often over yellow-brown clay. <10% swampy plains with dark cracking clay soils. Main soils: ***Plains and sandy rises:*** Bleached siliceous sand - **H3**, Wet highly leached sand - **I2** and Thick sand over clay - **G3**. ***Swampy plains:*** Gradational dark clay loam – **C5** and Brown or grey cracking clay – **E3**.
		Swampy plain	C5E3	M	
XRC	0.2	Swamp	N3	D	Swamps with wet dark, cracking clay soils with minor peats. Main soils: Wet clay loam - **N3**.
XtC	0.1	Swamp	N1	D	**XtC** Peat swamps. **Xtf** Swamps with shallow, often wet, clay loam grading to clay on calcrete. Minor peat soils. 20-30% rises with shallow calcareous loam or siliceous sand over calcrete. Main soils: ***Swamps:*** Peaty soil – **N1**, Shallow dark clay loam on limestone - **B5** and Wet clay loam - **N3**. ***Rises:*** Shallow calcareous loam on calcrete - **B2** and Shallow sandy loam on calcrete - **B3**.
Xtf	0.0	Swamp	B5N3	V	
		Rise	B2B3	C	
XuC	0.6	Swamp	N3	D	**XuC** Swamps with mostly non-peaty, wet sandy soils. 10-30% peat. **Xud** Non-peaty swamps with 20-30% sandy rises with deep sand over brown clay, or deep sand on coffee rock. **Xuf** Swamps as for **XuC** above, with stony rises and/or very shallow over calcrete. Main soils: ***Swamps:*** Wet clay loam - **N3**. ***Sandy rises:*** Thick sand over clay - **G3** and Wet highly leached sand - **I2**. ***Stony rises:*** Shallow calcareous loam on calcrete - **B2**, Shallow sandy loam on calcrete - **B3** and Shallow dark clay loam on limestone - **B5**.
Xud	0.6	Swamp	N3	V	
		Sandy rise	G3I2	L	
Xuf	1.5	Swamp	N3	V	
		Stony rise	B2B3 B5	C	
ZD-	0.0	Salt lake	N2	D	Salt lake with highly saline clay loam over clay, bare salt encrusted surface common; 10-30% water filled. Main soils: Wet saline clay loam - **N2c**.
ZE-	1.0	Salt lake	N2	V	Salt lakes as for **ZD-**. 10-20% lake margins with slightly less saline dark clay loam on clay. <10% lunettes with deep calcareous clay loam grading to grey clay on marl, or shallow calcareous clay loam on calcrete. Main soils: ***Salt lakes:*** Wet saline clay loam - **N2c**. ***Lake margins:*** Wet saline clay loam - **N2c** ***Lunettes:*** Gradational calcareous clay - **A6** and Shallow calcareous loam on calcrete - **B2**.
		Lake margin	N2	L	
		Lunette	A6B2	M	

PROPORTION codes assigned to Soil Landscape Unit (SLU) components:

D	Dominant in extent (>90% of SLU)	C	Common in extent (20–30% of SLU)
V	Very extensive in extent (60–90% of SLU)	L	Limited in extent (10–20% of SLU)
E	Extensive in extent (30–60% of SLU)	M	Minor in extent (<10% of SLU)

Detailed soil profile descriptions:

A6 Gradational calcareous clay loam (Pedal Hypercalcic-Lithocalcic Calcarosol) on clayey subsoil)
Calcareous loams to clay loams grading into brown-red clay. Often rubbly.

B2 Shallow calcareous sandy loam on calcrete (Petrocalcic Calcarosol)
Up to 40 cm calcareous loamy sand to sandy loam with variable calcrete rubble overlying calcreted calcarenite - rises.

B3 Shallow sandy loam on calcrete (Petrocalcic Rudosol)
Medium thickness non-calcareous sandy loam, often having a slight clay increase with depth, over calcreted calcarenite shallower than 50 cm - rises.

B4 Red sandy loam over calcrete (Petrocalcic, Red Dermosol)
Medium thickness red sandy loam grading to friable red clay loam over calcreted calcarenite within 50 cm - rises.

B5 Shallow dark clay loam on limestone (Petrocalcic, Black Dermosol)
Black clay loam to light clay over calcreted limestone at shallow depth, grading to highly calcareous clay - flats.

B6 Shallow sandy loam over red-brown clay on calcrete (Petrocalcic, Red Kandosol)
Medium thickness sandy loam with slight ironstone gravel overlying a weakly structured reddish brown sandy clay on calcarenite within 50 cm - rises.

B7 Shallow sand over sandy clay on calcrete (Petrocalcic, Brown Chromosol)
Medium thickness sand overlying brown friable sandy clay to clay on limestone or calcreted sandy clay within 50 cm - flats.

B8 Shallow sand on calcrete (Petrocalcic, Bleached-Leptic Tenosol)
Thick bleached sand over calcreted calcarenite within 50 cm - rises.

C5 Gradational dark clay loam (Calcic-Hypercalcic Brown-Grey-Black Dermosol-Calcarosol)
Dark clay loam over abundant 'soft lime'. >10% carbonate is the cut off between this and M2 soils.

E1 Black cracking clay (Black Vertosol)

E3 Brown or grey cracking clay (Brown-Grey Vertosol)

G3 Thick sand over clay (Hypercalcic, Brown Sodosol/ Chromosol)
Thick bleached sand with an organically darkened surface abruptly overlying a massive to coarsely structured brown to reddish yellow sandy clay to clay, calcareous with depth - rises.

G5 Sand over acidic clay (Sandy Brown Kurosol)
Sandy texture contrast soil with a friable brown strongly acidic clayey to clay loamy subsoil. Very acidic soil; incipient Bh horizons; moderate depth topsoils. Some with ironstone.

H3 Deep bleached sand (Basic, Arenic, Bleached-Orthic Tenosol)
Grey sand over a very thick bleached sand grading to yellow sand continuing below 100 cm.

I1 Highly leached sand (Fragic, Pipey, Aeric Podosol)
Grey sand with a very thick bleached A2 layer, over dark brown and yellow massive soft to semi-hard clayey sand (coffee rock), grading to softer yellow and brown sand to sandy clay loam from about 80 cm.

I2 Wet highly leached sand (Fragic, Humic, Aquic Podosol)
Grey sand with a thick bleached A2 horizon, overlying a thin to thick layer of coffee rock, grading to pale brown sand sharply overlying a grey, brown and yellow mottled sandy clay loam to light clay.

M2 Deep friable gradational clay loam (Red-Brown-Grey- Black Dermosol)
Deep well structured red clay loamy soil.

N1 Peat (Organosol)
Peaty soil

N2c Wet saline clay loam (Dermosolic, Salic Hydrosol)
Medium thickness dark grey to black clay loam to clay grading to well-structured dark grey clay with minor carbonates and a watertable within 100 cm.

N3 Seasonally waterlogged, non to marginally saline equivalents of soils listed above, viz.:
N3c Wet **G3**
N3d Wet **B5**
N3e Wet **B7**

RR Bare rock

WW Water

Further information: DEWNR Soil and Land Program