

ATTACHMENTS A TO E

Attachment A. Overview Data

Map ID	Easting, m WGS84	Northing, m WGS84	ASC	BSAL	Slope %	Aspect	Landscape position	Landscape element	Depth to rock >90% cm	Depth to mottles >10% cm*	Depth to Lime cm	TAW (0-100 cm) mm	Surface rock %	Surface condition	Surface Cover %	Land use	Other comments
1	305849	6396283	Red Chromosol CD AH	No	15	S	midslope	straight	55	40	>140	82	0	Soft	80	forest	-
2	305912	6396125	Red Sodosol DP AH	No	7	E	midslope	straight	>140	>140	>140	128	0	Firm	60	forest	-
3	306205	6396468	Yellow Sodosol DP AH	No	8	S	midslope	straight	120	80	60	154	0	Soft	100	native pasture	-
4	305431	6395357	Stratic Rudosol AR	No	4	NW	plain	convex	>140	>140	>140	115	0	Soft	100	native pasture	-
5	305768	6395673	Stratic Rudosol AR	No	2	SE	plain	straight	>140	>140	>140	75	0	Soft	100	native pasture	-
6	306207	6396204	Red Kandosol HB AH	No	12	SE	lower slope	straight	90	45	>140	189	0	Soft	100	native pasture	-
7	305631	6395262	Red Sodosol DSP AH	No	14	NW	midslope	straight	15	>140	>140	31	0	Soft	90	forest	-
8	305906	6395236	Brown-Orthic Tenosol AR CZ	No	6	NE	midslope	straight	90	>140	>140	39	0	Soft	60	forest	A1 water repellent
9	306120	6395517	Brown Sodosol FO AH	No	4	NE	lower slope	straight	>140	32	>140	95	0	Soft	100	native pasture	-
10	306184	6395735	Stratic Rudosol AR	No	1	N	plain	straight	>140	>140	>140	113	0	Soft	100	native pasture	-

* 'Depth to mottles >10%' is equivalent, at this site, to 'Depth to waterlogged layer' because there were no layers with '>20% Mn'.

Attachment B. Layer Data

Map ID	Horizon	Lower depth cm	Boundary Distinctness	Texture	Ph water	Moist soil colour (Munsell)	Colour from Munsell sheet	Mottles	Mn	SOILpak compaction score	Coarse fragments %	Dispersion 10 minutes	Moisture	Lime %	Lime Type	Root score
1	A11	10	Abrupt	FSCL	5.5	7.5YR3/3	Dark brown	–	–	1.8	–	0	S	–	–	4
1	A12	20	Abrupt	FSCL	5.5	7.5YR4/3	Brown	–	–	1.4	5	1	S	–	–	3
1	B21	40	Abrupt	MC	6.0	5YR4/6	Yellowish red	–	–	0.8	–	1	S	–	–	3
1	B22	55	Abrupt	LMC	7.0	7.5YR4/6	Strong brown	grey 20%	–	1	–	0	M	–	–	2
1	BC	90+	–	–	–	–	–	–	–	–	–	–	–	–	–	1
2	A11	5	Abrupt	SCL	5.0	7.5YR3/3	Dark brown	–	–	1.2	–	0	S	–	–	3
2	A12	20	Sharp	SCL	5.5	7.5YR4/3	Brown	–	–	1.3	–	1	S	–	–	2
2	B21	60	Clear	MC	7.5	5YR4/4	Reddish brown	–	–	1	10	0	S/M	–	–	1
2	B22	130+	–	LMC	8.0	5YR4/3	Reddish brown	–	–	0.8	10	2	S/M	–	–	1(100)
3	A1	10	Sharp	FSCL	5.5	10YR4/2	Dark greyish brown	–	–	1.8	20	2	M	–	–	3
3	B1	35	Abrupt	MHC	6.5	10YR4/2	Dark greyish brown	–	–	1.3	–	3	M	–	–	2
3	B21	60	Clear	MHC	8.0	10YR6/4	Light yellowish brown	–	–	1.4	–	0	M	–	–	2
3	B22	80	Clear	HC	9.5	10YR6/4	Light yellowish brown	–	–	0.8	–	0	M	10	D	1
3	B23	120	Sharp	HC	9.5	10YR6/4	Light yellowish brown	grey 20%	–	1.1	–	0	M	20	P/D	0
3	C	125+	–	hard conglomerate	–	–	–	–	–	–	–	–	–	–	–	–
4	A1	25	Sharp	CS	5.5	5YR3/2	Dark reddish brown	–	–	1.8	–	0	M	–	–	4
4	2A	55	Sharp	LS (coarse)	5.5	5YR3/3	Dark reddish brown	–	–	1.5	70	0	M	–	–	3
4	3A	80	Clear	LC	6.0	5YR3/3	Dark reddish brown	–	–	1.6	–	1	M	–	–	3
4	3B	140+	–	LC	6.0	7.5YR4/4	Brown	–	–	1.4	–	1	S/M	–	–	1

Map ID	Horizon	Lower depth cm	Boundary Distinctness	Texture	Ph water	Moist soil colour (Munsell)	Colour from Munsell sheet	Mottles	Mn	SOILpak compaction score	Coarse fragments %	Dispersion 10 minutes	Moisture	Lime %	Lime Type	Root score
5	A11	15	Clear	LS	5.5	5YR3/2	Dark reddish brown	–	–	1.5	–	0	M	–	–	4
5	A12	35	Clear	LS	6.0	5YR3/3	Dark reddish brown	–	–	1.5	–	0	M	–	–	3
5	A3	115	Sharp	LS	6.0	5YR4/3	Reddish brown	–	–	1.5	–	1	M	–	–	4
5	2A	140+	–	S (coarse)	–	–	–	–	–	–	90	–	–	–	–	2
6	A11	15	Abrupt	LC	5.5	7.5YR3/3	Dark brown	–	–	1.7	–	2	M	–	–	3
6	A12	30	Sharp	LC	5.5	7.5YR4/3	Brown	–	–	1.5	–	1	M	–	–	3
6	B21	45	Clear	MHC	6.0	5YR4/6	Yellowish red	–	–	1	–	3	M	–	–	2
6	B22	90	Sharp	HC	7.0	10YR5/4	Yellowish brown	grey 15%	–	1.2	–	0	M	–	–	1
6	C	140+	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	A1	15	Abrupt	CS	5.0	7.5YR3/2	Dark brown	–	–	1.5	70	0	S	–	–	3
7	A3	50	Sharp	CS	–	–	–	–	–	0.3	95	–	–	–	–	1
7	B2	100+	–	SLC	5.0	7.5YR4/6	Strong brown	–	–	0.7	40	3	M	–	–	1
8	A1	20	Abrupt	LS	5.5	7.5YR4/4	Brown	–	–	–	5	0	S	–	–	3
8	A3	60	Abrupt	LS	5.5	10YR5/3	Brown	–	–	–	70	2	S	–	–	2
8	B1	90	Sharp	LS	6.0	7.5YR6/4	Light brown	–	–	–	30	2	S	–	–	1
8	C	95+	–	hard fine conglomerate	–	–	–	–	–	–	–	–	–	–	–	–
9	A1	13	Sharp	SCL	5.5	7.5YR3/3	Dark brown	–	–	1.7	–	3	M	–	–	2
9	B21	32	Sharp	HC	6.0	10YR5/6	Yellowish brown	grey 5%	–	0.7	–	3	M	–	–	1
9	B22	60	Sharp	HC	6.5	10YR5/6	Yellowish brown	grey 20%	–	1	–	2	M	–	–	1
9	BC	130+	–	–	–	–	–	–	–	–	20-90	–	–	–	–	1(80)

Map ID	Horizon	Lower depth cm	Boundary Distinctness	Texture	Ph water	Moist soil colour (Munsell)	Colour from Munsell sheet	Mottles	Mn	SOILpak compaction score	Coarse fragments %	Dispersion 10 minutes	Moisture	Lime %	Lime Type	Root score
10	A1	15	Sharp	SLC	5.5	7.5YR3/2	Dark brown	–	–	1.8	–	0	M	–	–	3
10	A3	50	Sharp	LC	6.0	7.5YR3/2	Dark brown	–	–	1.6	–	0	M	–	–	3
10	2A	60	Sharp	S	6.0	7.5YR3/3	Dark brown	–	–	1.5	15	1	M	–	–	4
10	3A	73	Sharp	CS	6.0	7.5YR3/2	Dark brown	–	–	1.5	10	1	M	–	–	3
10	4A	100	Sharp	LS	6.0	7.5YR3/3	Dark brown	–	–	1.5	80	0	M	–	–	4
10	5A	140+	–	CS	6.0	7.5YR3/2	Dark brown	–	–	1.5	–	0	M	–	–	2

Attachment C. Soil Structure Details

Map ID	Lower depth, cm	Grade	Type	Size	Fabric	Consistence	SOILpak score
1	10	S	SB	5	E	1	1.8
1	20	S	PO	8	E	3	1.4
1	40	S	LE/PO	15	RP	4	0.8
1	55	S	LE/PO	12	RP	4	1.0
1	90+	–	–	–	–	–	–
2	5	W	B	10	E	2	1.2
2	20	M	LE/PO	8	E	2	1.3
2	60	M	LE/B	8	RP	3	1.0
2	130+	M	PO/B	10	RP	4	0.8
3	10	S	SB	5	E	1	1.8
3	35	S	PO	10	RP	3	1.3
3	60	M	PO	8	RP	3	1.4
3	80	S	LE/PO	15	RP	5	0.8
3	120	M	LE/PO	10	RP	4	1.1
3	125+	–	–	–	–	–	–
4	25	S	SB	3	E	1	1.8
4	55	apedal	–	–	–	–	1.5
4	80	M	PO	7	RP	2	1.6
4	140+	M	O	10	RP	2	1.4
5	15	apedal	–	–	–	–	1.5
5	35	apedal	–	–	–	–	1.5
5	115	apedal	–	–	–	–	1.5
5	140+	–	–	–	–	–	–
6	15	M	PO	5	RP	2	1.7
6	30	M	PO	10	RP	2	1.5
6	45	W	B	15	RP	3	1.0
6	90	W	B	12	RP	3	1.2
6	140+	–	–	–	–	–	–
7	15	apedal	–	–	–	–	1.5
7	50	apedal	–	–	–	–	0.3
7	100+	W	LE	10	RP	4	0.7
8	20	apedal	–	–	–	–	1.5
8	60	apedal	–	–	–	–	1.5
8	90	apedal	–	–	–	–	1.5
8	95+	–	–	–	–	–	–

Map ID	Lower depth, cm	Grade	Type	Size	Fabric	Consistence	SOILpak score
9	13	S	SB	7	E	2	1.7
9	32	W	LE/B	15	RP	3	0.7
9	60	W	LE	12	RP	2	1.0
9	130+	–	–	–	–	–	–
10	15	S	SB	5	E	1	1.8
10	50	S	SB	7	RP	2	1.6
10	60	apedal	–	–	–	–	1.5
10	73	apedal	–	–	–	–	1.5
10	100	apedal	–	–	–	–	1.5
10	140+	apedal	–	–	–	–	1.5

Attachment D. Laboratory Data

Map ID	Depth, cm	pH water	pH CaCl ₂	EC 1:5 dS/m	ECe dS/m	Chloride mg/kg	Exchangeable cations, meq/100g					CEC	ESP	ESI	Ca/Mg	ASWAT score	NO3-N mg/kg	Colwell-P mg/kg	PBI	SO4-S mg/kg	DTPA-Zn mg/kg	DTPA-Cu mg/kg	Boron mg/kg	Org. C %
							Ca	Mg	K	Na	Al													
1	0-5	6.1	5.0	0.05	0.69	5	7.4	3.0	0.6	0.2	0.0	11.2	2.1	0.02	2.5	6	0.9	8	67	4	6.2	0.6	0.5	3.4
1	5-15	6.3	5.1	0.04	0.55	5	6.5	3.1	0.4	0.3	0.0	10.3	2.6	0.02	2.1	6	0.3	5	60	3	1.0	0.9	0.5	1.7
1	15-30	6.9	5.7	0.06	0.45	15	10.0	8.5	0.7	0.6	0.0	19.8	3.0	0.02	1.2	12	0.3	3	100	4	0.2	1.2	0.8	0.6
1	30-60	7.6	6.5	0.07	0.6	31	9.1	7.9	0.6	0.7	0.0	18.3	3.8	0.02	1.2	5	0.3	3	110	7	0.3	0.9	1.1	0.4
1	60-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	0-5	5.9	4.5	0.02	0.19	5	2.6	1.9	0.8	0.1	0.2	5.7	2.5	0.01	1.4	6	0.3	7	60	2	4.3	0.2	0.4	2.6
2	5-15	5.7	4.2	0.03	0.29	11	1.6	1.8	0.5	0.3	0.8	5.0	5.6	0.01	0.9	10	0.6	3	91	3	2.0	0.3	0.2	1.4
2	15-30	6.4	5.0	0.11	0.83	62	1.7	6.1	0.5	1.4	0.2	9.9	14.2	0.01	0.3	14	0.3	3	62	3	0.5	0.4	0.5	0.6
2	30-60	7.3	6.4	0.36	2.7	320	2.2	9.2	0.6	3.5	0.0	15.5	22.6	0.02	0.2	14	0.3	3	76	17	0.8	0.5	1.3	0.5
2	60-100	8.9	8.1	0.74	6.36	600	2.4	10.0	0.8	6.2	0.0	19.4	31.9	0.02	0.2	13	0.3	33	62	90	0.5	0.5	1.5	0.4
3	0-5	6.2	5.0	0.06	0.52	17	4.6	3.2	1.3	0.2	0.0	9.3	2.5	0.02	1.4	6	2.5	7	84	6	6.4	0.8	0.5	2.7
3	5-15	6.4	5.2	0.05	0.43	5	5.7	3.7	1.1	0.2	0.0	10.7	1.5	0.03	1.5	11	1.2	3	84	4	3.0	1.4	0.6	2.3
3	15-30	6.9	5.6	0.05	0.34	5	7.2	8.8	1.1	0.8	0.0	17.9	4.5	0.01	0.8	14	0.3	3	110	2	0.4	1.2	1.0	1.5
3	30-60	9.1	8.3	0.54	3.62	400	10.0	15.0	0.6	3.9	0.0	29.5	13.2	0.04	0.7	12	0.3	3	170	17	0.2	1.0	2.0	0.8
3	60-100	9.5	8.7	0.76	4.41	570	10.0	14.0	0.6	6.0	0.0	30.6	19.6	0.04	0.7	12	0.3	3	140	50	0.3	0.8	1.5	0.3
4	0-5	6.6	6.0	0.07	1.59	11	5.7	1.4	0.7	0.1	0.0	7.8	0.9	0.08	4.1	5	5.2	7	37	4	6.2	0.4	0.3	1.6
4	5-15	6.7	5.9	0.04	0.91	5	5.6	1.1	0.7	0.0	0.0	7.4	0.5	0.07	5.1	6	2.6	3	38	2	1.4	0.4	0.2	1.2
4	15-30	7.3	6.1	0.03	0.68	5	5.5	0.9	0.8	0.0	0.0	7.2	0.4	0.07	5.9	13	1.2	3	31	1	0.4	0.3	0.2	0.8
4	30-60	7.5	6.4	0.03	0.68	5	3.9	0.9	0.6	0.0	0.0	5.4	0.6	0.05	4.3	10	1.3	3	36	1	0.2	0.3	0.2	0.5
4	60-100	7.6	6.5	0.03	0.26	5	5.2	2.1	0.7	0.1	0.0	8.1	0.7	0.04	2.5	13	0.3	3	57	1	1.1	0.5	0.3	0.5

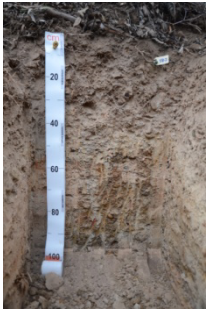
Map ID	Depth, cm	pH water	pH CaCl ₂	EC 1:5 dS/m	ECe dS/m	Chloride mg/kg	Exchangeable cations, meq/100g					CEC	ESP	ESI	Ca/Mg	ASWAT score	NO3-N mg/kg	Colwell-P mg/kg	PBI	SO4-S mg/kg	DTPA-Zn mg/kg	DTPA-Cu mg/kg	Boron mg/kg	Org. C %
							Ca	Mg	K	Na	Al													
5	0-5	6.5	5.3	0.03	0.68	5	4.1	1.0	0.6	0.0	0.0	5.7	0.2	0.17	4.3	5	5.5	8	36	2	2.5	0.3	0.3	1.0
5	5-15	6.8	5.5	0.03	0.68	5	4.0	1.0	0.8	0.0	0.0	5.8	0.2	0.17	4.0	10	5.7	5	32	2	2.0	0.3	0.2	1.1
5	15-30	7.2	5.6	0.02	0.45	5	3.5	0.6	0.8	0.0	0.0	5.0	0.8	0.03	5.5	10	2.3	3	30	1	0.7	0.3	0.2	0.5
5	30-60	7.6	6.0	0.01	0.23	5	2.2	0.3	0.5	0.0	0.0	3.1	0.3	0.03	6.9	12	0.7	3	25	1	0.1	0.2	0.1	0.2
5	60-100	7.5	6.2	0.02	0.45	5	2.0	0.3	0.4	0.0	0.0	2.7	1.1	0.02	6.3	12	0.9	3	29	2	0.2	0.2	0.1	0.2
6	0-5	6.3	5.3	0.07	0.6	15	7.9	5.1	1.4	0.1	0.0	14.5	0.8	0.08	1.5	4	3.4	6	86	7	8.0	1.9	0.6	3.2
6	5-15	6.3	5.3	0.05	0.43	16	7.2	5.0	1.1	0.1	0.0	13.4	1.0	0.05	1.4	11	0.3	3	100	4	3.2	2.1	0.4	2.3
6	15-30	6.5	5.3	0.03	0.26	11	6.0	4.0	0.6	0.2	0.0	10.8	1.9	0.02	1.5	13	0.3	3	68	2	1.8	1.1	0.4	1.5
6	30-60	7.5	6.2	0.09	0.6	46	7.2	10.0	0.5	1.9	0.0	19.6	9.7	0.01	0.7	15	0.3	3	110	2	0.2	1.0	0.8	0.6
6	60-100	9.2	8.3	0.59	3.42	520	20.0	12.0	0.4	4.4	0.0	36.8	12.0	0.05	1.7	0	0.3	3	120	12	0.1	0.6	1.5	0.4
7	0-5	6.4	5.8	0.12	2.72	35	9.8	3.8	0.8	0.3	0.0	14.7	2.0	0.06	2.6	5	4.0	6	40	9	1.9	0.2	0.8	4.1
7	5-15	6.1	4.8	0.04	0.91	18	1.8	1.3	0.6	0.2	0.2	4.0	4.2	0.01	1.4	8	1.1	3	21	4	0.5	0.1	0.4	1.0
7	15-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	30-60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	60-100	5.8	4.9	0.29	2.49	290	0.3	7.7	0.5	2.0	0.1	10.6	18.9	0.02	0.0	14	0.3	3	31	24	0.4	0.2	0.2	0.1
8	0-5	5.9	4.5	0.01	0.23	5	1.9	0.5	0.3	0.0	0.3	3.1	1.0	0.01	3.6	6	0.0	5	25	2	0.5	0.1	0.1	1.3
8	5-15	5.7	4.2	0.01	0.23	5	0.5	0.3	0.2	0.1	0.7	1.9	2.7	0.00	1.6	11	0.3	3	40	2	0.2	0.0	0.1	0.5
8	15-30	6.3	4.6	0.01	0.23	5	0.8	0.6	0.2	0.1	0.2	1.8	5.0	0.00	1.5	13	0.3	3	15	2	0.1	0.0	0.1	0.2
8	30-60	6.0	4.7	0.04	0.91	44	0.3	1.1	0.2	0.2	0.1	1.8	9.2	0.00	0.2	13	0.3	3	12	2	0.1	0.0	0.1	0.2
8	60-100	7.4	6.0	0.02	0.45	5	0.1	1.5	0.1	0.2	0.0	1.8	8.3	0.00	0.0	13	0.3	3	3	1	0.0	0.1	0.1	0.1

Map ID	Depth, cm	pH water	pH CaCl ₂	EC 1:5 dS/m	ECe dS/m	Chloride mg/kg	Exchangeable cations, meq/100g					CEC	ESP	ESI	Ca/Mg	ASWAT score	NO3-N mg/kg	Colwell-P mg/kg	PBI	SO4-S mg/kg	DTPA-Zn mg/kg	DTPA-Cu mg/kg	Boron mg/kg	Org. C %
							Ca	Mg	K	Na	Al													
9	0-5	5.9	4.5	0.03	0.29	5	2.2	0.9	0.9	0.1	0.2	4.2	1.4	0.02	2.5	11	2.6	8	45	2	2.8	0.2	0.2	1.5
9	5-15	6.3	4.7	0.03	0.29	10	2.0	0.8	0.6	0.2	0.1	3.8	6.1	0.00	2.4	13	1.3	3	38	3	0.7	0.1	0.3	0.8
9	15-30	6.7	5.5	0.18	1.04	78	3.5	7.5	0.5	2.4	0.0	13.9	17.3	0.01	0.5	15	0.3	3	39	7	0.1	0.3	0.6	0.4
9	30-60	7.1	6.1	0.42	2.44	420	2.5	8.0	0.4	4.7	0.0	15.6	30.2	0.01	0.3	14	0.3	3	52	25	0.1	0.3	1.2	0.3
9	60-100	8.3	7.5	0.87	5.05	1000	2.1	8.6	0.5	7.4	0.0	18.6	39.7	0.02	0.2	11	0.3	3	49	82	0.6	0.4	1.2	0.2
10	0-5	6.3	5.1	0.05	0.69	5	5.9	1.6	1.0	0.0	0.0	8.5	0.5	0.11	3.7	5	6.2	8	38	4	5.6	0.4	0.4	1.9
10	5-15	6.2	4.9	0.03	0.41	5	6.2	1.2	0.7	0.0	0.0	8.1	0.4	0.08	5.2	10	3.2	6	38	2	3.7	0.5	0.3	1.4
10	15-30	6.8	5.5	0.02	0.17	5	7.8	1.7	0.6	0.1	0.0	10.2	0.5	0.04	4.6	12	0.7	5	31	2	1.3	1.7	0.3	1.0
10	30-60	7.2	5.8	0.01	0.23	5	2.8	1.0	0.2	0.0	0.0	4.0	1.0	0.01	2.8	13	0.3	3	23	1	0.1	0.2	0.2	0.3
10	60-100	7.3	5.8	0.01	0.23	5	3.1	1.5	0.1	0.1	0.0	4.8	1.0	0.01	2.1	10	0.7	8	23	2	0.3	0.3	0.1	0.4

Note: At pit 7, there was insufficient soil present in the 15-30 cm and 30-60 cm zones of the soil profile for sample collection.

Attachment E. Photographs of Soil Profiles and Associated Landscapes

Site	Soil Profile	Associated Landscape
1		
2		
3		
4		
5		

Site	Soil Profile	Associated Landscape
6		
7		
8		
9		
10		