Scotland England Green Link 2 - English Onshore Scheme

Environmental Statement: Volume 3 - Appendices

Appendix 12A - ALC Survey Data - Converter Station

Soil Survey Record and Agricultural Land Classification

Legend for non-self-explanatory terms:

Horizons - number of different horizons identified within the profile
Type - type of sample, auger core or soil profile pit dug using a spade
Depth - depth to the bottom of the (horizon number) horizon in cm
Texture - C - clay, ZC - silty clay, SC - sandy clay, CL - clay loam, SCL - sandy clay loam, ZCL - silty clay loam, SL - sandy loam, LS - loamy sand, S - sand;
CL and ZCL textures are subdivided into medium (M) and heavy (H) classes according to clay content, as follows: M medium (less than 27 % clay), H heavy (27-35 % clay); F, M and C refer to fine, medium and coarse, respectively, and are subdivisions of S, LS, SL, and SZL textures; O - organic, P - peat or peaty, HP - humified (highly decomposed peat), FP - fibrous peat, SFP - semi-fibrous peat; MZ - marine light silts
Matrix (main) colour - dominant colour of the soil; **Hue** - Munsell colour hue; **Value** - Munsell colour value; **Chroma** - Munsell colour chroma
Mottling - spots and blotches of different colour than the dominant matrix colour
Ped faces - surfaces of the primary soil fragments into which the soil naturally breaks up upon excavating
FeMn - ferri-manganifeours concertions
Biopores - 'yes' if >0.5 % biopores greater than 0.5 mm diameter present (by area)
Stones > 2 cm up to % - maximum percentage of 2 - 6 cm diameter stones
Stones > 6 cm up to % - maximum percentage of > 6 cm diameter stones
Type - H - All hard rocks or stones (those which cannot be scratched with a finger nail); SS - Soft, medium or coarse grained sandstones; SIM - Soft 'weathered' igneous or metamorphic rocks or stones; SL - Soft oolitic or dolomitic limestones; SFS - Soft fine-grained sandstones; SAZ - Soft, argillaceous or silty rocks or stones; CH - Chalk or chalk stones; GRH - Gravel[1] with non-porous (hard) stones; GRS - Gravel[1] with porous stones (mainly soft stone types listed);1 - Gravel with at least 70% rounded stones by volume
Structure type - SG - single grain; GR - granular; SAB - subangular blocky; AB - angular blocky; PR - prismatic; PL - platy; MAS - massive
Dev - Development, how well the structure is developed; W - weak; M - moderate; S - strong
Consistence - Soil consistence (strength); L - loose; VFR - very friable; FR - friable; FIR - firm; VFIR - very firm; EXFIR - extremely firm; EXHD - extremely hard
Gley - depth to gleying
SPL - depth to slowly permeable layer
Wetness Class - classification of the soil according to the depth and duration of waterlogging in the soil profile, the higher the class, the longer and at the shallower depth the soil is wet

Overall ALC - this part of the table combines results of the classification for each of the limitations

Soil profile descriptions

Survey point	Type	Grad-ient	Soil distur-bed or resto-red	Horizon	Depth	Texture	Matrix (main) colour			Peat-specific properties					Mottling			
							Hue	Value	Chroma	Von Post	Water content (B)	Fine fibre content (F)	Coarse fibre content (R)	Wood remains (W)	Abundan-ce up to %	Hue	Value	Chroma
15	Core	0	no	1	21	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	52	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														
14	Core	0	no	1	20	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	35	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														
13	Core	0	no	1	20	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	50	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	2
				4														
				5														
12	Core	0	no	1	31	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	60	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														
7	Core	0	no	1	30	SCL	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	65	SCL	10YR	5	8	n/a	n/a	n/a	n/a	n/a	20	10YR	2	5
				3	100	MCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														
8	Core	0	no	1	28	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	52	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														
9	Core	0	no	1	23	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	44	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	2
				4														
				5														
10	Core	0	no	1	18	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	47	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	2
				4														
				5														
11	Core	0	no	1	18	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				2	32	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	40	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	100	10YR	5	2
				4														
				5														
6	Core	0	no	1	20	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	38	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														
5	Core	0	no	1	32	SCL	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	48	SCL	10YR	5	8	n/a	n/a	n/a	n/a	n/a	20	10YR	2	5
				3	100	MCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														
4	Core	0	no	1	35	MSL	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	70	SCL	10YR	5	8	n/a	n/a	n/a	n/a	n/a	20	10YR	2	5
				3	100	MCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														
3	Core	0	no	1	23	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	38	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														
1	Core	0	no	1	28	C	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	52	C	10YR	2	5	n/a	n/a	n/a	n/a	n/a	20	10YR	5	8
				3	100	C	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														
2	Core	0	no	1	36	SCL	10YR	4	1	n/a	n/a	n/a	n/a	n/a	2	10YR	5	8
				2	54	SCL	10YR	5	8	n/a	n/a	n/a	n/a	n/a	20	10YR	2	5
				3	100	MCL	10YR	5	2	n/a	n/a	n/a	n/a	n/a	40	10YR	5	2
				4														
				5														

Soil profile descriptions continued

Survey point	Ped faces				FeMn up to %	Biopo-res	Stones and rocks			Structure			Consis-tence	Calca-reous	Gley-ing	SPL	Notes
	Colour different to matrix	Hue	Value	Chroma			> 2 cm up to %	> 6 cm up to %	Type	Type	Deve-lop-ment	Ped size					
15	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	M	C	VFIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
14	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	M	C	VFIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
13	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PL	M	C	VFIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
12	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	M	C	FIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
7	no	n/a	n/a	n/a	0	yes	0	0	n/a	AB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	SAB	W	F	VFIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	Sandier upper subsoil layer
8	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	M	C	VFIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
9	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	M	C	VFIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
10	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	M	C	VFIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
11	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	YES	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	M	C	VFIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
6	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	M	C	VFIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
5	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	SAB	M	M	VFIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
4	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	2	NO	0	0	n/a	GR	W	F	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
3	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	M	C	VFIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
1	no	n/a	n/a	n/a	0	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	M	C	VFIR	0	NO	YES	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-
2	no	n/a	n/a	n/a	2	yes	0	0	n/a	SAB	M	M	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	GR	W	F	FIR	0	NO	NO	
	NO	n/a	n/a	n/a	0	NO	0	0	n/a	PR	S	C	EXFIR	0	NO	YES	-

ALC for areas represented by individual survey points													
Survey point	**Wetness class**	**Climate**	**Gradient**	**Summer flood risk**	**Winter flood risk**	**Topsoil texture**	**Soil Depth**	**Topsoil stoniness**	**Wetness**	**Droughti-ness**	**Other (see "Limited by" column)**	**ALC Grade**	**Limited by**
15	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
14	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
13	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
12	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
7	2	1	1	1	1	1	1	1	2	2	1	**2**	Wetness Droughti-ness
8	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
9	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
10	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
11	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
6	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
5	2	1	1	1	1	1	1	1	2	2	1	**2**	Wetness Droughti-ness
4	2	1	1	1	1	1	1	1	1	2	1	**2**	Droughti-ness
3	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
1	3	1	1	1	1	1	1	1	3b	3a	1	**3b**	Wetness
2	2	1	1	1	1	1	1	1	2	2	1	**2**	Wetness Droughti-ness

ANALYTICAL REPORT

Report Number	**75602-21**	**H448**	**WARDELL ARMSTRONG LLP**
Date Received	**09-NOV-2021**		**CITY QUADRANT**
Date Reported	**16-NOV-2021**		**11 WATERLOO SQUARE**
Project	**NT15316NTEM**		**NEWCASTLE UPON TYNE**
Reference	**KIERON HARPER**		**NE1 4DP**
Order Number	**NT14401**		

Laboratory Reference		**SOIL534704**	**SOIL534705**	**SOIL534706**							
Sample Reference		**4**	**15**	**7 UPPER SUBSOIL**							
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**							
Sand 2.00-0.063mm	% w/w	80	23	67							
Silt 0.063-0.002mm	% w/w	8	27	11							
Clay <0.002mm	% w/w	12	50	22							
Textural Class **		SL	C	SCL							

Notes

Analysis Notes

The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
The results are presented on a dry matter basis unless otherwise stipulated.

** Please see the attached document for the definition of textural classes.

Reported by

Myles Nicholson

Natural Resource Management, a trading division of Cawood Scientific Ltd.
Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS
Tel: 01344 886338
Fax: 01344 890972
email: enquiries@nrm.uk.com

ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

Class	Code
Sand	S
Loamy sand	LS
Sandy loam	SL
Sandy Silt loam	SZL
Silt loam	ZL
Sandy clay loam	SCL
Clay loam	CL
Silt clay loam	ZCL
Clay	C
Silty clay	ZC
Sandy clay	SC

For the *sand, loamy sand, sandy loam* and *sandy silt loam* classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

- vf Very Fine (more than 2/3's of sand less than 0.106 mm)
- f Fine (more than 2/3's of sand less than 0.212 mm)
- c Coarse (more than 1/3 of sand greater than 0.6 mm)
- m Medium (less than 2/3's fine sand and less than 1/3 coarse sand).

The subdivisions of *clay loam* and *silty clay loam classes* according to clay content are indicated as follows:

- M medium (less than 27% clay)
- H heavy (27-35% clay)

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

Droughtiness Calculations

Abbreviations:

TAv – Total amount of soil water available to plants, considered to be the volumetric soil water content between 0.05 and 15 bar suction or, in case of sands and loamy sands, 0.10 and 15 bar suction. These suctions approximate to the conditions of field capacity and wilting point (when the plants can extract no more moisture from the soil).

EAv – Easily available water, held in the soil between 0.05 and 2.0 bar suction, used for calculating cereal available water below 50 cm depth where root systems are less well developed, and the plant's ability to extract water is diminished.

Values of TAv and EAv are estimated for each horizon based on soil texture and structural condition according to the ALC guidelines (MAFF, 1988).

AP – crop adjusted available water capacity, a measure of the quantity of water held in the soil profile which can be taken up by a specific crop.

MD – the moisture deficit term used in the ALC droughtiness assessment is a crop-related meteorological variable which represents the balance between rainfall and potential evapotranspiration calculated over a critical portion of the growing season.

MB – moisture balance: MB=AP-MD, MB for wheat and potatoes determines limitation by droughtiness

Data inputs										Droughtiness calculations																										
						Av. water (soil)		Av. water (stones)		AP wheat													AP potatoes														Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
15	1	21	C	0	GOOD	17				TAv	0	21	21	17	100	0	0	357	108	-2	0	21	21	17	100	0	0	357	99	-4	3a
										EAv	0	21	0	0	100	0	0	0													
	2	31	C	0	POOR	13	7			TAv	21	52	29	13	100	0	0	377			21	52	31	13	100	0	0	403			
										EAv	21	52	2	7	100	0	0	14													
	3	48	C	0	POOR	13	7			TAv	52	100	0	13	100	0	0	0			52	100	18	13	100	0	0	234			
										EAv	52	100	48	7	100	0	0	336													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
14	1	20	C	0	GOOD	17				TAv	0	20	20	17	100	0	0	340	108	-3	0	20	20	17	100	0	0	340	99	-4	3a
										EAv	0	20	0	0	100	0	0	0													
	2	15	C	0	POOR	13	7			TAv	20	35	15	13	100	0	0	195			20	35	15	13	100	0	0	195			
										EAv	20	35	0	7	100	0	0	0													
	3	65	C	0	POOR	13	7			TAv	35	100	15	13	100	0	0	195			35	100	35	13	100	0	0	455			
										EAv	35	100	50	7	100	0	0	350													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
13	1	20	C	0	GOOD	17				TAv	0	20	20	17	100	0	0	340	108	-3	0	20	20	17	100	0	0	340	99	-4	3a
										EAv	0	20	0	0	100	0	0	0													
	2	30	C	0	POOR	13	7			TAv	20	50	30	13	100	0	0	390			20	50	30	13	100	0	0	390			
										EAv	20	50	0	7	100	0	0	0													
	3	50	C	0	POOR	13	7			TAv	50	100	0	13	100	0	0	0			50	100	20	13	100	0	0	260			
										EAv	50	100	50	7	100	0	0	350													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
12	1	31	C	0	GOOD	17				TAv	0	31	31	17	100	0	0	527	112	2	0	31	31	17	100	0	0	527	103	0	3a
										EAv	0	31	0	0	100	0	0	0													
	2	29	C	0	POOR	13	7			TAv	31	60	19	13	100	0	0	247			31	60	29	13	100	0	0	377			
										EAv	31	60	10	7	100	0	0	70													
	3	40	C	0	POOR	13	7			TAv	60	100	0	13	100	0	0	0			60	100	10	13	100	0	0	130			
										EAv	60	100	40	7	100	0	0	280													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
7	1	30	SCL	0	GOOD	17				TAv	0	30	30	17	100	0	0	510	121	10	0	30	30	17	100	0	0	510	110	6	2
										EAv	0	30	0	0	100	0	0	0													
	2	35	SCL	0	MODERATE	15	10			TAv	30	65	20	15	100	0	0	300			30	65	35	15	100	0	0	525			
										EAv	30	65	15	10	100	0	0	150													
	3	35	MCL	0	POOR	12	7			TAv	65	100	0	12	100	0	0	0			65	100	5	12	100	0	0	60			
										EAv	65	100	35	7	100	0	0	245													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
8	1	28	C	0	GOOD	17				TAv	0	28	28	17	100	0	0	476	111	1	0	28	28	17	100	0	0	476	102	-1	3a
										EAv	0	28	0	0	100	0	0	0													
	2	24	C	0	POOR	13	7			TAv	28	52	22	13	100	0	0	286			28	52	24	13	100	0	0	312			
										EAv	28	52	2	7	100	0	0	14													
	3	48	C	0	POOR	13	7			TAv	52	100	0	13	100	0	0	0			52	100	18	13	100	0	0	234			
										EAv	52	100	48	7	100	0	0	336													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
9	1	23	C	0	GOOD	17				TAv	0	23	23	17	100	0	0	391	109	-1	0	23	23	17	100	0	0	391	100	-3	3a
										EAv	0	23	0	0	100	0	0	0													
	2	21	C	0	POOR	13	7			TAv	23	44	21	13	100	0	0	273			23	44	21	13	100	0	0	273			
										EAv	23	44	0	7	100	0	0	0													
	3	56	C	0	POOR	13	7			TAv	44	100	6	13	100	0	0	78			44	100	26	13	100	0	0	338			
										EAv	44	100	50	7	100	0	0	350													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																										
						Av. water (soil)		Av. water (stones)		AP wheat													AP potatoes														Limited to ALC grade
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	
10	1	18	C	0	GOOD	17				TAv	0	18	18	17	100	0	0	306			0	18	18	17	100	0	0	306			
										EAv	0	18	0	0	100	0	0	0													
	2	29	C	0	POOR	13	7			TAv	18	47	29	13	100	0	0	377			18	47	29	13	100	0	0	377			
										EAv	18	47	0	7	100	0	0	0													
	3	53	C	0	POOR	13	7			TAv	47	100	3	13	100	0	0	39			47	100	23	13	100	0	0	299			
										EAv	47	100	50	7	100	0	0	350	107	-3									98	-5	3a
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
11	1	18	C	0	GOOD	17				TAv	0	18	18	17	100	0	0	306			0	18	18	17	100	0	0	306			
										EAv	0	18	0	0	100	0	0	0													
	2	14	C	0	POOR	13	7			TAv	18	32	14	13	100	0	0	182			18	32	14	13	100	0	0	182			
										EAv	18	32	0	7	100	0	0	0													
	3	68	C	0	POOR	13	7			TAv	32	100	18	13	100	0	0	234			32	100	38	13	100	0	0	494			
										EAv	32	100	50	7	100	0	0	350	107	-3									98	-5	3a
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
6	1	20	C	0	GOOD	17				TAv	0	20	20	17	100	0	0	340			0	20	20	17	100	0	0	340			
										EAv	0	20	0	0	100	0	0	0													
	2	18	C	0	POOR	13	7			TAv	20	38	18	13	100	0	0	234			20	38	18	13	100	0	0	234			
										EAv	20	38	0	7	100	0	0	0													
	3	62	C	0	POOR	13	7			TAv	38	100	12	13	100	0	0	156			38	100	32	13	100	0	0	416			
										EAv	38	100	50	7	100	0	0	350	108	-3									99	-4	3a
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
5	1	32	SCL	0	GOOD	17				TAv	0	32	32	17	100	0	0	544			0	32	32	17	100	0	0	544			
										EAv	0	32	0	0	100	0	0	0													
	2	16	SCL	0	GOOD	19	14			TAv	32	48	16	19	100	0	0	304			32	48	16	19	100	0	0	304			
										EAv	32	48	0	14	100	0	0	0													
	3	52	MCL	0	POOR	12	7			TAv	48	100	2	12	100	0	0	24			48	100	22	12	100	0	0	264			
										EAv	48	100	50	7	100	0	0	350	122	12									111	8	2
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
4	1	35	MSL	0	GOOD	17				TAv	0	35	35	17	100	0	0	595			0	35	35	17	100	0	0	595			
										EAv	0	35	0	0	100	0	0	0													
	2	35	SCL	0	GOOD	19	14			TAv	35	70	15	19	100	0	0	285			35	70	35	19	100	0	0	665			
										EAv	35	70	20	14	100	0	0	280													
	3	30	MCL	0	POOR	12	7			TAv	70	100	0	12	100	0	0	0			70	100	0	12	100	0	0	0			
										EAv	70	100	30	7	100	0	0	210	137	26									126	23	2
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
3	1	23	C	0	GOOD	17				TAv	0	23	23	17	100	0	0	391			0	23	23	17	100	0	0	391			
										EAv	0	23	0	0	100	0	0	0													
	2	15	C	0	POOR	13	7			TAv	23	38	15	13	100	0	0	195			23	38	15	13	100	0	0	195			
										EAv	23	38	0	7	100	0	0	0													
	3	62	C	0	POOR	13	7			TAv	38	100	12	13	100	0	0	156			38	100	32	13	100	0	0	416			
										EAv	38	100	50	7	100	0	0	350	109	-1									100	-3	3a
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
1	1	28	C	0	GOOD	17				TAv	0	28	28	17	100	0	0	476			0	28	28	17	100	0	0	476			
										EAv	0	28	0	0	100	0	0	0													
	2	24	C	0	POOR	13	7			TAv	28	52	22	13	100	0	0	286			28	52	24	13	100	0	0	312			
										EAv	28	52	2	7	100	0	0	14													
	3	48	C	0	POOR	13	7			TAv	52	100	0	13	100	0	0	0			52	100	18	13	100	0	0	234			
										EAv	52	100	48	7	100	0	0	336	111	1									102	-1	3a
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													

Data inputs										Droughtiness calculations																						
						Av. water (soil)		Av. water (stones)		AP wheat												AP potatoes											
Survey Point	Horizon	Horizon thickness	Texture	Stones %	Structural condition	TAv %	EAv %	TAv %	EAv %	TAv/EAv	Start depth	End depth	Horiz. thickn.	TAv/EAv soil	% non stone	TAv/EAv stones	Stones %	AP wheat		AP(wheat) -MD(wheat)	Start depth	End depth	Horiz. thickn.	TAv top/sub soil	non-stone %	TAv stones	Stone %	AP potatoes		AP(potato) -MD(potato)	Limited to ALC grade
2	1	36	SCL	0	GOOD	17				TAv	0	36	36	17	100	0	0	612			0	36	36	17	100	0	0	612			
										EAv	0	36	0	0	100	0	0	0													
	2	18	SCL	0	GOOD	19	14			TAv	36	54	14	19	100	0	0	266			36	54	18	19	100	0	0	342			
										EAv	36	54	4	14	100	0	0	56													
	3	46	MCL	0	POOR	12	7			TAv	54	100	0	12	100	0	0	0	126	15	54	100	16	12	100	0	0	192	115	11	2
										EAv	54	100	46	7	100	0	0	322													
	4									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													
	5									TAv	100	100	0	0	100	0	0	0			100	100	0	0	100	0	0	0			
										EAv	100	100	0	0	100	0	0	0													