

LAND EAST OF KNIGHTON LANE, POOLESoil ResourcesTopsoil

'Topsoil' is defined as the organic rich surface horizons. Across the whole site there is a single topsoil type, sandy loams, however there is a variation in the depths of this soil.

The sandy loams in the central part of the site (map unit T2) typically are found to a depth of 30 cm whereas the sandy loams over the rest of the site are more variable in depth. The variation falls within an acceptable tolerance level for a working depth of 50 cm.

The total topsoil resource on the site is 1553 m³.

Table 1 Topsoil resources

Map Unit	Average Depth	Area	Volume
T1 ^x	50	24.7 ha	1235 m ³
T2 ^{xx}	30	10.6 ha	318 m ³
			<u>1553 m³</u>

x Sandy loam

xx Sandy loam

Subsoil

'Subsoil' is defined as the less organic rich lower horizons. Over the whole site there exists subsoil to at least a depth of 120 cm all of which must be returned in restoration. The gravel content even at this depth never exceeded 60% in pits examined and is still technically considered a soil.

Four subsoil units have been identified over the site. Subsoil Unit 1, in the northern part is a sandy loam soil to depth. Subsoil Unit 2 is a sandy clay to depth, Subsoil Unit 3 is a sandy clay loam from 30 cm to depth. Subsoil Unit 4 has an upper subsoil of SCL from 30 cm to 50 cm with sandy clay from 50 cm to depth. Each of these soil types should be handled separately on account of their different workabilities.

The total subsoil resource is 2683 m³.

Table 2 Subsoil Resources

Map Unit	Depth	Soil	Area	Volume
S1	50-120 cm	SL	16.85 ha	1179.5 m ³
S2	50-120 cm	SC	7.85 ha	549.5 m ³
S3	30-120 cm	SCL	6.55 ha	589.5 m ³
S4 ₁	30- 50 cm	SCL	4.05 ha	81 m ³
S4 ₂	50-120 cm	SC	4.05 ha	283.5 m ³
				<u>2683</u> m ³

Resource Planning Group
 South Western Region
 Bristol
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SITE NAME 1	PROFILE NUMBER 1	SLOPE AND ASPECT 0°	LAND USE Grass	Av Rainfall :- 830	PARENT MATERIAL Bagshot Beds
	DATE 19/6/90	GRID REFERENCE SZ05059745		ATO :- 1544	

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	25	10YR33	SL	< 5%	None					Common		-	Gradual Smooth
2	40	10YR42	SCL	5%	None					Common		-	Gradual Smooth
3	75		SL	25%	None					Few		-	Clear Smooth
4	80+	7.5YR56	Gritty SL	50%	None					None		-	
Pit dug to 80 cm													

Depth to Slowly Permeable Horizon :- None	Available Water Wheat :- 128	Final ALC Grade :- 2
	Potatoes :-	
Wetness Class :- 1	Moisture Deficit Wheat :- 112	
	Potatoes :-	
Wetness Grade :- 1	Moisture Balance Wheat :- 16	Main Limiting Factor(s) :- Topsoil stone content (Grade 2 is the most appropriate considering the level of accuracy of the sieve method)
	Potatoes :-	
RPG0023/WJC	Droughtiness Grade :- 2	Remarks :- Structures difficult to assess because of high stone content

SITE NAME Knighton Lane Poole	PROFILE NUMBER 2	SLOPE AND ASPECT 1°	LAND USE Grassland	Av Rainfall :- 830	PARENT MATERIAL Valley Gravel
	DATE 19/6/90	GRID REFERENCE SZ05159735		ATO :- 1544	

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	27 cm	10YR4/2	SL	Few (<5%) (sieving)	-	Wk Med Sbk	> .5	Good	Fr	Many		-	C1 Sm
2	76 cm	10YR4/3	MSCL	Few (< 5%) (sieving)	-	Wk Fine Sbk	> .5	Good	Fr	Common		-	C1 Sm
3	110 cm	10YR3/3	MSCL	Common (10% visual)	-	Wk Fine Sbk	> .5	Good	Fr	Few		-	C1 Sm
4	110 +	10YR4/4	MSCL	> 60% (visual)	-	Wk Fine Sbk	> .5	Good	V Fr	Few		-	-

Depth to Slowly Permeable Horizon :- -	Available Water Wheat :- 171 Potatoes :-	Final ALC Grade :- 2
Wetness Class :- I	Moisture Deficit Wheat :- 112 Potatoes :-	Main Limiting Factor(s) :- Topsoil stone content
Wetness Grade :- 1	Moisture Balance Wheat :- 59 Potatoes :-	Remarks :- Grade 2 is the most appropriate considering the level of accuracy of the sieve method
RPG0023/WJC	Droughtiness Grade :- 1	

SITE NAME Knighton Lane Poole	PROFILE NUMBER 3	SLOPE AND ASPECT 1°	LAND USE Grass	Av Rainfall :- 830	PARENT MATERIAL Valley Gravel
	DATE 19/6/90	GRID REFERENCE SZ05359735		ATO :- 1544	

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	29	10YR33	SL	5% Sieve	None								
2	60	10YR43	SCL	<5% eye	None	Wdc Sab	> .5%	Moderate	Friable	Common	-	-	
3	105	7.5YR46	SL	<1% eye	None	Wdcab	> .5% Common worm channels	Moderate	V Friable	Common	-	-	
4	105+	7.5YR58	SCL	>50% eye	None								
Pit dug to 120 cm													

Depth to Slowly Permeable Horizon :- None	Available Water Wheat :- 144	Final ALC Grade :- 2
	Potatoes :-	
Wetness Class :- I	Moisture Deficit Wheat :- 112	Main Limiting Factor(s) :- Topsoil stone content
	Potatoes :-	
Wetness Grade :- 1	Moisture Balance Wheat :- 32	
	Potatoes :-	
RPG0023/WJC	Droughtiness Grade :- 1	Remarks :- Grade 2 is most appropriate considering the level of accuracy of the sieve method

SITE NAME Knighton Lane, Poole	PROFILE NUMBER 4	SLOPE AND ASPECT 3°	LAND USE Arable (Potatoes and Maize)	Av Rainfall :- 830 ATO :- 1544 FC Days :- 171 Climatic grade:- 1	PARENT MATERIAL Plateau Gravel
	DATE 20/6/90	GRID REFERENCE SZ04759715			

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	28 cm	10YR4/2	SL	6% > 2 cm 3% < 2 cm sieving	-	Wk Fine Sab	> .5	Good	Fr	Common	-	-	C1 Sm
2	52 cm	10YR4/6	SCL	8% > 2 cm 4% < 2 cm sieving	-	Wk Med Sab	> .5	Good	Fr	Few	-	-	C1 Sm
3	94 cm	10YR6/6	SC	5% > 2 cm 3% < 2 cm visual	cdom	Wk Fine Sab	> .5	Good	Fr	V Few	-	-	C1 Sm
4	120+ cm	2.5YR6/0	C	< 5%	cdom	Not determined	< .5	Poor	V Firm	None	-	-	-

Depth to Slowly Permeable Horizon :- 100 cm	Available Water Wheat :- 164 Potatoes :-	Final ALC Grade :- 2
Wetness Class :- I	Moisture Deficit Wheat :- 112 Potatoes :- 117	Main Limiting Factor(s) :- Topsoil stoniness
Wetness Grade :- 1	Moisture Balance Wheat :- 52 Potatoes :-	Remarks :-
RPG0023/WJC	Droughtiness Grade :- 1	

SITE NAME Knighton Lane, Poole	PROFILE NUMBER 5	SLOPE AND ASPECT 0°	LAND USE Grass	Av Rainfall :- 830	PARENT MATERIAL Plateau Gravel
	DATE 20/6/90	GRID REFERENCE SZ04959715		ATO :- 1544	

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	31	10YR33	SL	5% sieve	None	Wm sab	> .5%	Good	Friable	Many	-	-	Clear Smooth
2	74	10YR44	MSCL	< 5% sieve	None	Mm sab	> .5%	Good	Friable	Common	-	-	Clear Smooth
3	74+	10YR56	SC	25%>2cm sieve 20%<2cm visual	None	Structure difficult to assess because of high stone content				Few	-	-	
Pit dug to 100 cm													

Depth to Slowly Permeable Horizon :- None	Available Water Wheat :- 146	Final ALC Grade :- 2
	Potatoes :-	
Wetness Class :- I	Moisture Deficit Wheat :- 112	Main Limiting Factor(s) :- Topsoil stone content
	Potatoes :-	
Wetness Grade :- 1	Moisture Balance Wheat :- 34	
	Potatoes :-	
RPG0023/WJC	Droughtiness Grade :- 1	Remarks :- Grade 2 is most appropriate considering the level of accuracy of the sieve method

SITE NAME Knighton Lane, Poole	PROFILE NUMBER 6	SLOPE AND ASPECT 0°	LAND USE Grass	Av Rainfall :- 830	PARENT MATERIAL Plateau Gravel
	DATE 20/6/90	GRID REFERENCE SZ05159715		ATO :- 1544	

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	30	10YR33	SL	5% sieve	None		> .5%			Many			
2	55	10YR44	SCL	< 5% sieve	None	W Sabm-c	> .5%			Many			
3	80	10YR44	SCL	15% sieve	None		> .5%			Common			
4	95	7.5YR46	MSL	5% sieve	None		Many worm channels			Few			
5	95+	7.5YR34	LMS	15% > 2 cm	None		Many worm channels			-			
Pit dug to 120 cm													

Depth to Slowly Permeable Horizon :- None	Available Water Wheat :- 163	Final ALC Grade :- 2
	Potatoes :-	
Wetness Class :- I	Moisture Deficit Wheat :- 112	Main Limiting Factor(s) :- Topsoil stone content
	Potatoes :-	
Wetness Grade :- 1	Moisture Balance Wheat :- 51	
	Potatoes :-	
RPG0023/WJC	Droughtiness Grade :- 1	Remarks :- Grade 2 is most appropriate considering the level of accuracy of the sieve method

SITE NAME Knighton Lane Poole	PROFILE NUMBER 7	SLOPE AND ASPECT Flat	LAND USE Grass ley	Av Rainfall :- 830	PARENT MATERIAL Plateau Gravel
	DATE 20/6/90	GRID REFERENCE SZ05259695		ATO :- 1544	

Horizon Number	Lowest Av Depth	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots Abundance Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and Form
1	29 cm	10YR4/3	SL	Few (< 5%) visual	-	Wk Fine Sab	> .5	Good	Fr	Many	-	-	Sm Gradual
2	52 cm	10YR4/4	LMS	Few (< 5%) visual	-	Wk Fine Sab	> .5	Good	Fr	Common	-	-	Sm Clear
3	81 cm	10YR4/6	SL	30% > 2 cm sieving 35% < 2 cm visual	-	Uncertain due to stone content	> .5	Moderate	Fr	Few	-	-	Sm Gradual
4	81+ cm	10YR4/6	SL	40% > 2 cm 35% < 2 cm visual	-	Uncertain due to stone content	> .5	Moderate	-	Few	-	-	-

Depth to Slowly Permeable Horizon :- -	Available Water Wheat :- 138 Potatoes :-	Final ALC Grade :- 2
Wetness Class :- I	Moisture Deficit Wheat :- 112 Potatoes :- 117	Main Limiting Factor(s) :- Topsoil stone content
Wetness Grade :- 1	Moisture Balance Wheat :- 26 Potatoes :-	Remarks :- Grade 2 is the most appropriate considering the level of accuracy of the sieve method
RPG0023/WJC	Droughtiness Grade :- 2/1	