



Patrick Stephenson Ltd
Agricultural Consultants

AGRICULTURAL LAND CLASSIFICATION REPORT

Land south of Longsight Road, Langho

Proposed Development

February 2025

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1.0 Executive Summary

The area surveyed was approximately 20 ha. Of this, none of the land is 'best and most versatile' land, dominated by the lower grade 3b. Although there were areas of borderline grade 4 and 3a the dominant soil grade and subsequent farming flexibility is grade 3b. The North Region Natural England 1:250,000 map would also confirm that all the land in the area would be classified as Grade 3. Cropping in the vicinity which is dominated by grassland would confirm that the predominant land grade in the area is 3b. Any development is likely to take a proportion of this land type. It is concluded that the area required for the project, is not important on a local, regional, or national basis.

2.0 Introduction

Patrick Stephenson Limited was approached by Hallam Land Management Limited, to undertake a detailed Agricultural Land Classification Survey of the agricultural land for a block of land located between Longsight Road and Railway Station, Langho. The surveyed area covers approximately 20 hectares (ha) and is located at Grid Reference SD 7034 2242.

2.1 Method

The method used to create this report was primary research, in the form of a detailed on-site Agricultural Land Classification (ALC) survey following the guidelines and criteria as stated in the documents listed below:

- "The Revised Guidelines and Criteria for Grading the Quality of Agricultural Land" DEFRA 1988.
- "Specifications for Topsoil" British Standards Institute 2007.
- The guidelines as provided by the British Society of Soil Science Guidance document 1.

Survey work was carried out on 20 ha of arable land, outlined in the plans in Appendix 1. Where possible soils were examined using a hand-held Dutch Auger. Borings were carried out every hectare with additional borings taken to confirm soil boundaries. Two soil pits were dug to confirm soil type on the site, as shown in Appendix 5. Secondary research was carried out via a desktop survey covering the whole area.

2.2 Secondary Research

The desktop survey used the following sources:

- Published Agricultural Land Classification (ALC) Grades for the area Map 96
- Weeland Road viewed on Google Maps (Tele Atlas 2012)
- Natural England MAGIC web site (<http://magic.defra.gov.uk/website/magic>)
- Natural England Land Management Technical Support Team
- Natural England – Geology of Lancashire
- The Ordnance Survey OS Explorer Map (OL 41)
- The British Geological Survey Digital Mapping
- Planning Policy Guidance Note 7 (PPG7)
- Planning Policy Statement 7 (PPS7) *Sustainable Development in Rural Areas*.
- The National Planning Policy Framework (NPPF December 2024)
- MAFF's *Guidelines for Agricultural Land Classification of England and Wales* (Revised 1988)
- Metropolitan Weather Office data 5 km Grid
- LANDIS 3KM Grid soil reporter
- LA112 population and human health update January 2020.

The research was conducted to establish if the development of the proposed site would result in the loss of the 'best and most versatile' agricultural land.

3.0 Location

The Application Site is located immediately to the south of Longsight Road (A59), and to the north of the railway line. The Surveyed Site covers approximately 20 hectares (ha) and is centred on SD 7034 2242. Appendix 1 shows the proposed development land location.

3.1 Site Characteristics

The British Geological Survey Digital Mapping shows the parent material to be Palaeozoic Sandstone and Shale. The predominant soil type is 713g BRICKFIELD 3 Slowly permeable seasonally waterlogged fine loamy fine loamy over clayey and clayey soils. The major land use on this association is defined as grassland.

3.2 Climate and Relief

The Met Office Climatological Data for Agricultural Land Classification for the Langho area on the 5 km grid shows:

Average Annual Rainfall	1060 mm
Accumulated temperature January to June C°	1257
Field Capacity Days	245
Average Moisture Deficit Wheat	55
Average Moisture Deficit Potato	33

There are no climatic limitations to the soil grade.

4.0 Land Use

Currently the land is permanent grass.

5.0 Land Quality

The quality of land is assessed using the ALC Scheme, established by Defra, which provides a method for assessing the quality of farmland, so informed choices can be made about its future use within the planning system. It also helps underpin the principles of sustainable development.

5.1 Definitions and Grades

The ALC system classifies land into grades from 1 through to 5, with Grade 3 further subdivided into Grade 3a and 3b, see Table 1. Consistent with national guidance, Grades 1, 2 and 3a represents the 'best and most versatile' land.

The 'best and most versatile' land is considered to be the most flexible, productive and efficient in response to inputs and which can best deliver future crops for food and non-

food uses such as biomass, fibres and pharmaceuticals. Current estimates are that Grade 1 and 2 together form about 21% of all farmland in England; Sub-Grade 3a contains a similar amount.

The ALC system is used by Defra and others to give advice to local planning authorities, developers and the public if development is proposed on agricultural land or other 'Greenfield' sites that could grow crops. The General Development (Procedure) Order refers to the 'best and most versatile' land policy in requiring statutory consultations with Defra.

The ALC grading system is also used by commercial consultants to advise clients on land use and planning issues.

The classification is based on the long-term physical limitations of land for agricultural use. Factors affecting the Grade are climate, site and soil characteristics.

Climate: temperature and rainfall; aspects, exposure and frost risk.

Site: gradient, micro relief and flood risk.

Soil: texture, structure, depth and stoniness; chemical properties which cannot be corrected.

The combination of climate and soil factors determines soil wetness and droughtiness. Wetness and droughtiness influence the choice of crops grown and the level and consistency of yields, as well as use of land for grazing livestock. The Classification is also concerned with the inherent potential of land under a range of farming systems. The current agricultural use, or intensity of use, does not affect the ALC Grade.

5.2 Versatility and Yield

The physical limitations of land have four main effects on the way land is farmed.

These are:

- the range of crops which can be grown.
- the level of yield.
- the consistency of yield.
- the cost of obtaining the crop.

The ALC system gives a high Grade to land which allows more flexibility in the range of crops that can be grown (its 'versatility') and which require lower inputs. These higher Grades (1,

2,3a) also take into account the ability to produce consistently high yields from a narrower range of crops.

Table 1- Definitions of Land Classification Grades

Grade	Definition
Grade 1 – Excellent Quality Agricultural Land	Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.
Grade 2 – Very Good Quality Agricultural Land	Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the Grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
Grade 3 – Good to Moderate Quality Agricultural Land	Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

Sub-Grade 3a – Good Quality Agricultural Land	Land capable of consistently producing moderate to high yields from a narrow range of arable crops, especially cereals, or moderate yields from a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
Sub-Grade 3b – Moderate Quality Agricultural Land	Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields from a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
Grade 4 – Poor Quality Agricultural Land	Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops, the yields of which are variable. The Grade includes very droughty arable land.
Grade 5 – Very Poor-Quality Agricultural Land	Land with very severe limitations, which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.
Woodland (Forestry Research definition)	Woodland is defined in UK forestry statistics as land under stands of trees with a canopy cover of at least 20% (25% in Northern Ireland), or having the potential to achieve this. The definition relates to land use, rather than land cover, so integral open space and felled areas that are awaiting restocking are included as woodland.

6.0 Published Survey Information

There has not been a detailed published survey carried out on the Application Site. The large-scale ALC Ministry of Agriculture Fisheries and Food shows the area to be Grade 3. The only detailed classification work carried out was on the M65 when all the affected area was Grade 3b.

6.1 Survey Results

The field survey work was carried out in accordance with the method described in the “Revised Guidelines and Criteria for Grading the Quality of Agricultural Land” (DEFRA 1988).

The following soil grades were found within the survey area. A description of the sample point profiles is shown in Appendix 3. Appendix 4 shows a map showing the respective grades and details of auger boring points. Table 2 provides a summary of the ALC grades found on the site.

Table 2 - Summary of ALC Grades

Grade/Subgrade	Approximate Area Ha	Area %
3b	18.8	94
Non-Agricultural	1.2	6
Total	20.0	100

The detailed hand-held auger survey showed that the topsoil's varied in depth across the site from 250mm to 300mm. The majority were either sandy loam to sandy silty loam or sandy clay loam. There were a few small to medium stones in the topsoil.

Grade 3b

The Site is dominated with this grade and was typified with sandy silty loams predominate. The limiting factor for this soil is wetness and soil depth.

Grade 4

Small areas where the subsoil wetness is a significant issue and water logging is a factor.

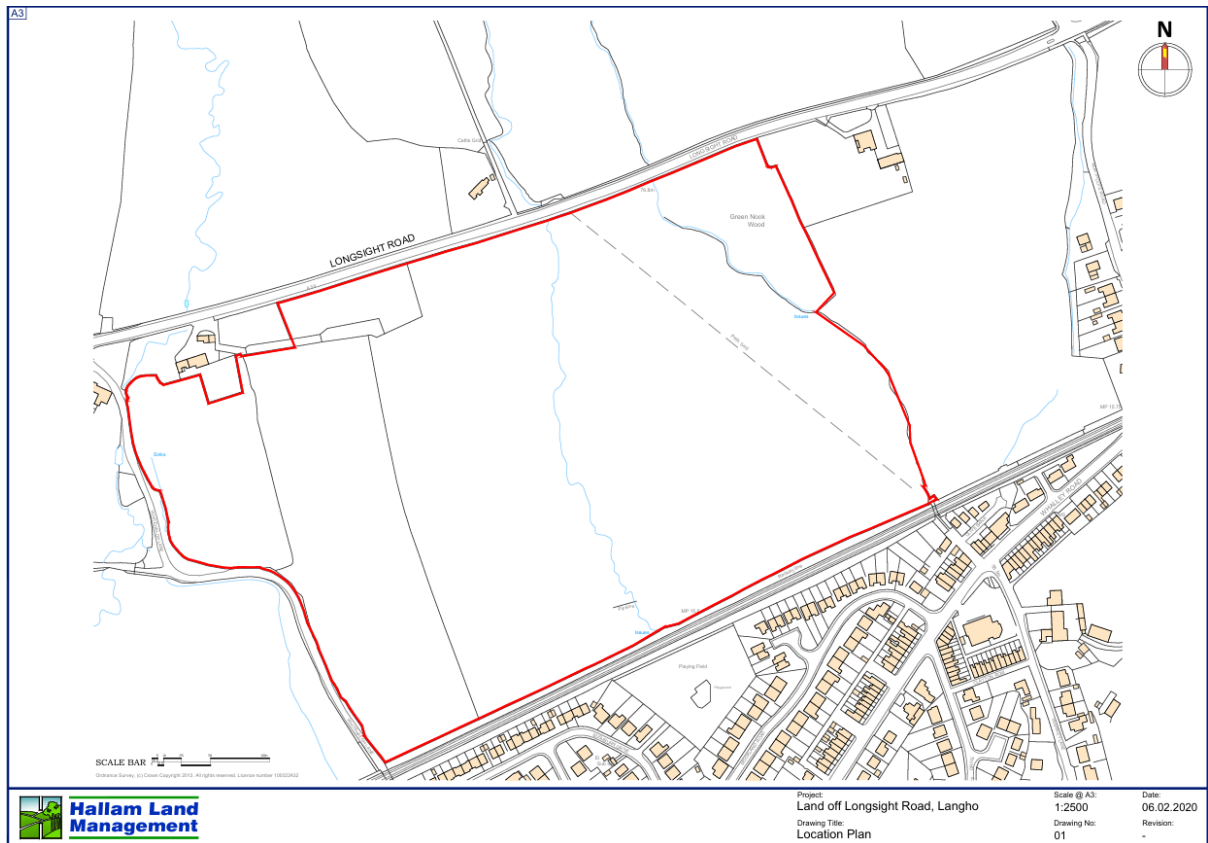
Non-Agricultural

Green Nook Wood in the northeast corner of the site.

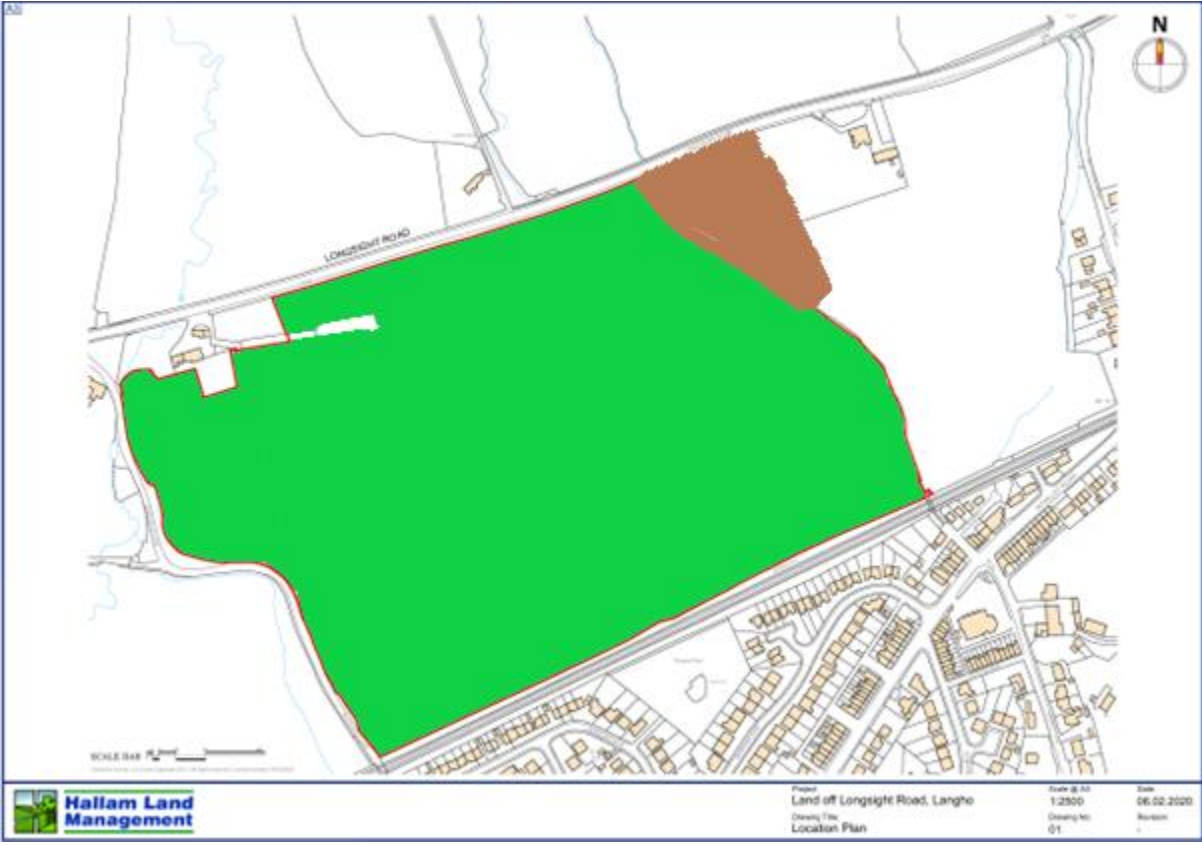
7.0 Conclusion

The area surveyed was approximately 20 ha. Of this, none would be classed as the 'best and most versatile' land. Detailed ALC work carried out in the vicinity. It is concluded that the land required for the project, is not important on a local, regional, or national basis.



Appendix 1 – Development Site Location



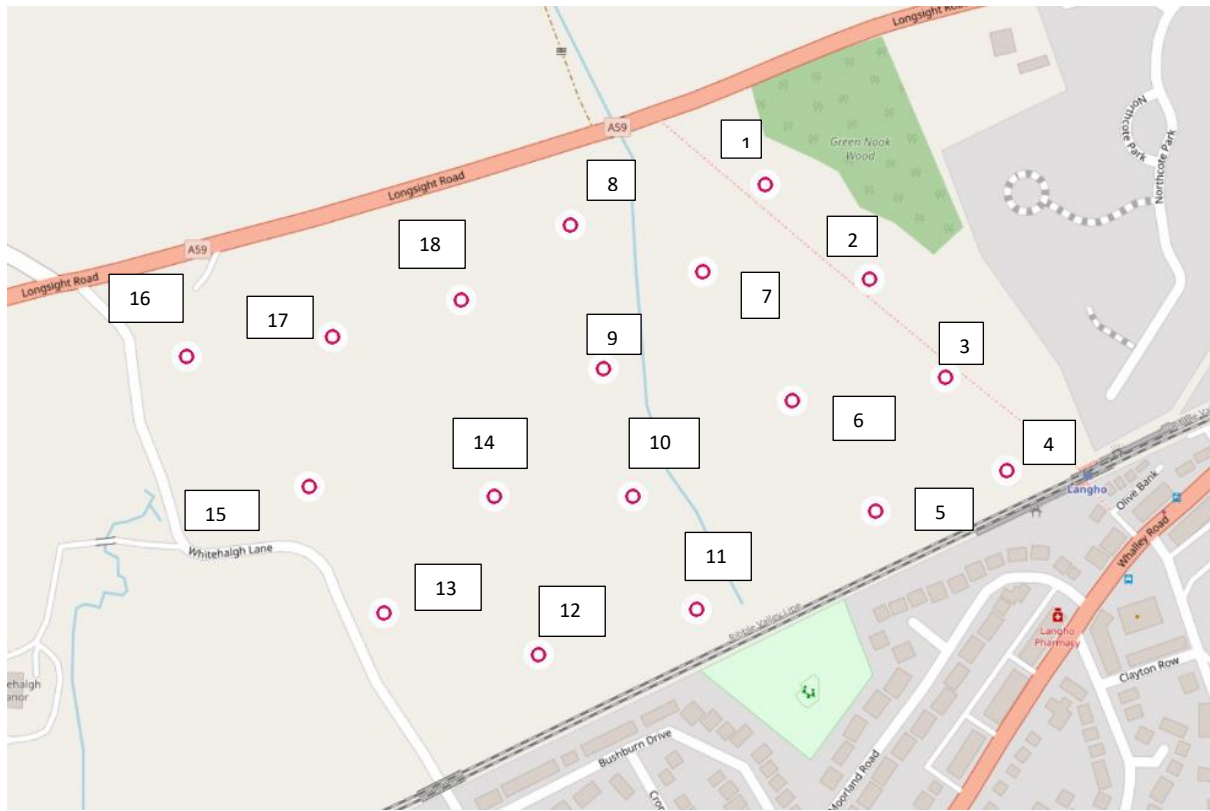
Appendix 2 - Detailed ALC map



Key

	3b
	Non Agricultural

Appendix 3 - Sample Points



Appendix 4- Sample Point Descriptions

SOIL PROFILE SURVEY RESULTS

Soil Type Key:

C- CLAY

S- SAND

L- LOAM

SCL- SANDY CLAY LOAM

Z- SILTY

O- ORGANIC

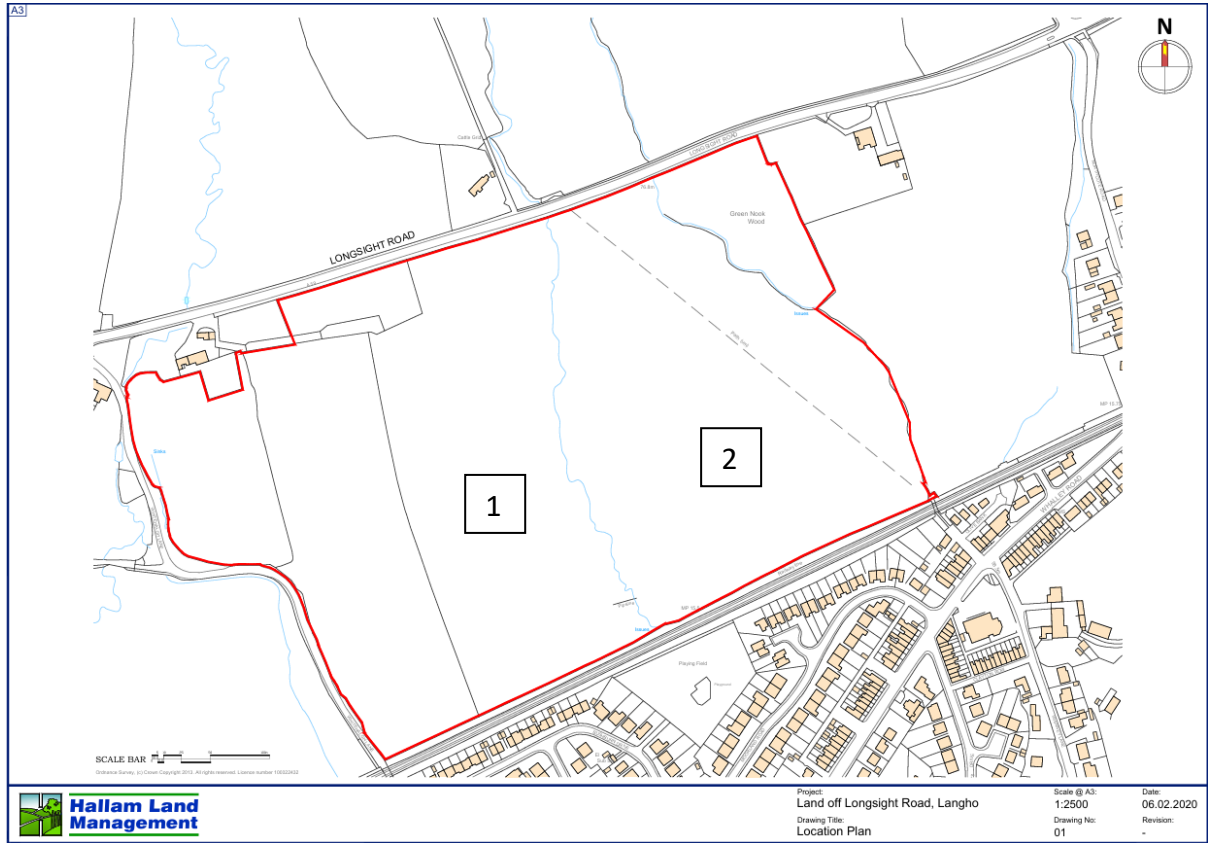
Hole	Grid ref	Texture	Depth mm	Stones	Wetness Class
1 87M	N53 48 404	SZL	0-250	Dark brown soil	IV
	W002 27 080	Coarse SCL	250-500	Small and medium stones Gleyed orange Mottled	
		CL	500-800	Dark gley coal bits	
2 94M	N53 48 363	SZL	0-250	Dark brown soil	IV
	W002 27 080	Coarse SCL	250-500	Small and medium stones Gleyed orange Mottled	
			500+	Stone gravel	
3 95M	N53 48 330	SZL	0-250	Dark brown soil	IV
	W002 27 016	Coarse SCL	250-500	Small and medium stones Boundary not distinct Mottled	
			500+	Stone gravel	
4 97M	N53 48 291	SZL	0-250	Dark brown soil	IV
	W002 26 992	CL	250-750	Small and medium stones Mottled coal iron oxide	
			750+	Waterlogged very dark gleyed	

5 99M	N53 48 274 W002 27 080	SZL CL	0-250 250-500 500+	Dark brown soil Small and medium stones Mottled coal iron oxide Gravel and shale	IV
6 88M	N53 48 319 W002 27 128	SL CL	0-250 250+ gravel stone shale	Dark brown soil Small and medium stones Mottled coal iron oxide Gravel and shale	IV
7 82M	N53 48 377 W002 27 202	SL Coarse SCL CL	0-250 250-750 750+	Dark brown soil Small and medium stones Mottled Coal Gleyed dark gray	IV
8 82M	N53 48 378 W002 27 278	SZL CL Coarse gravel SCL	0-250 250-600 600+	Dark brown soil Small and medium stones Mottled coal iron oxide Gravel and shale	IV
9 85M	N53 48 327 W002 27 260	SZL Coarse SCL	0-250 250-750	Dark brown soil Small and medium stones Mottled coal iron oxide Gravel and shale	IV
10 93M	N53 48 276 W002 27 236	SL CL	0-250 250-750 750+	Dark brown soil Small and medium stones Mottled coal iron oxide. All dark grey gleying	IV

11 98M	N53 48 232 W002 27 226	SL CL	0-250 250-750	Dark brown soil Small stones Mottled coal iron oxide very disturbed sub soil gleying from 600	IV
12 99M	N53 48 215 W002 27 307	SZL/SCL Coarse SCL Gravel shale	0-250 250-500 500+	Dark brown soil Small and medium stones Mottled coal iron oxide Gravel and shale	IV
13 94M	N53 48 227 W002 27 382	SZL Coarse SCL CL	0-250 250-600 600+	Dark brown soil Small and medium stones Mottled coal iron oxide Gravel and shale mixed till Gleyed	IV
14 88M	N53 48 270 W002 27 355	SZL Coarse SCL CL	0-300 300-600 600+	Dark brown soil Small and medium stones Mottled coal iron oxide Gleyed throughout	IV
15 84M	N53 48 276 W002 27 469	SZL Coarse SCL CL	0-250 250-500 500-700	Dark brown soil Small and medium stones Mottled coal iron oxide Till like Gleyed water at depth	IV

16 82M	N53 48 309 W002 27 510	SZL Coarse SCL CL	0-250 250-500 500-700	Dark brown soil Small and medium stones Mottled coal iron oxide Till like Gleyed water at depth	IV
17 81M	N53 48 326 W002 27 436	SZL Coarse SCL CL	0-250 250-500 500-700	Dark brown soil Small and medium stones Mottled coal iron oxide Till like Gleyed water at depth	IV
18 78M	N53 48 362 W002 27 348	SZL Coarse SCL CL	0-250 250-500 500-700	Dark brown soil Small and medium stones Mottled coal iron oxide Till like Gleyed water at depth	IV

Appendix 5
Soil Pit Location



Appendix 6

Soil Pit Details

Pit	Texture	Depth cm	Colour	Munsell	Comments	AP WW	AP Pots	Wetness	Grade
1 Top	Sandy Loam	0-25	Dark Brown	Value 3 Chroma 2	Small stones	55	33	IV	4
1 Sub	Sandy clay loam to clay loam	25-75	Grey	Value 6 Chroma 2	Coarse sandy loam to clay loam Greyish brown ocherous, mottles moderate to medium sub angular blocky Wet compact				
2 Top	Sandy Silty Loam	0-25	Grey to Dark Brown	Value 5 Chroma 4	Small stones Granular	55	33	III	3b
2 Sub	Sandy Loam Clay Loam	25-50 50-700	Light Brown to orange	Value 7 Chroma 8	Mottling Greyish brown ocherous, mottles moderate to medium sub angular blocky Water at 700 Gley				

Appendix 7 Soil Pit Description

1 82m elevation

Permanent Grass

Topsoil



0-25 cm medium sandy silty loam dark brown with some small stones. Plant roots throughout fresh smell. Good pore distribution and mottling at depth. Fine to medium granular peds. Distinct boundary to subsoil. Reasonable structure.

Subsoil



25-75 cm orange with distinct mottling to grey with few stones. Very weak sub angular structure increasing clay content. Iron deposits at depth with some dark brown organic flecks and coal. Greyish brown ocherous, mottles moderate to medium sub angular blocky Water from 70 cm.

2 78m Elevation

Topsoil



0-25 cm medium sandy silty loam dark brown with some small stones. Dark to medium brown colour plant roots throughout fresh smell. Good pore distribution and mottling at depth. Fine to medium granular peds. Indistinct boundary to subsoil with good structure.

Subsoil



25-50 Mottling throughout coarse granular peds little air space mixed till with some gleying iron and coal deposits lower in profile

50-70 Clay loam gleying throughout dense packed sub angular blocky peds very coarse structure.

Appendix 8

Laboratory Results

Pit 1 Top



Analysis Results (SOIL)

Customer	P STEPHENSON ARABLE ADVISOR 74 MIDDLETON RD PICKERING YO18 8NH	Distributor	MR P STEPHENSON SWAINSEA HOUSE 74 MIDDLETON ROAD PICKERING NORTH YORKSHIRE YO18 8NH
Sample Ref	LANGHO PIT 1 TOP	Date Received	07/11/2024 (Date Issued: 04/12/2024)
Sample No	G168243/01	Area	14
Crop	GRAZED GRASS (CATTLE)		

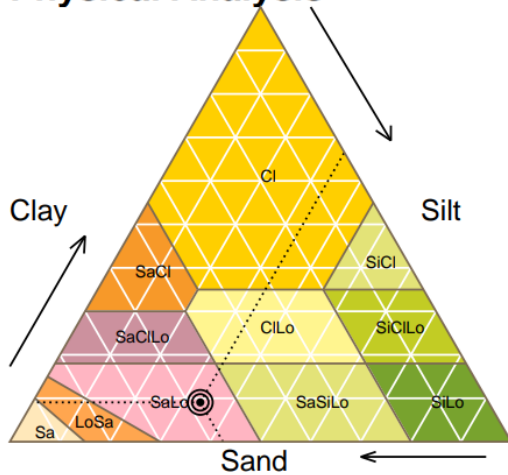
Analysis	Result	Guideline	Interpretation	Comments
pH	5.1	6.0	Low	Low. An acidic environment will reduce soil nutrient availability and the efficiency of any applied fertilisers or organic materials. A sub-optimum pH will also impact on soil microbial populations and rates of activity. Refer to lime requirement.
Lime Req. (t/ha)	6.0			
Phosphorus (ppm)	3	16	Very Low	(Index 0) 80 kg/ha P2O5 (64 units/acre).
Potassium (ppm)	53	121	Very Low	(Index 0) 60 kg/ha K2O (48 units/acre). Avoid applications in spring if there is a history of Hypomagnesaemia.
Magnesium (ppm)	77	51	Normal	(Index 2) PRIORITY FOR LIVESTOCK HEALTH. Apply 25 kg/ha MgO (20 units/acre) every three to four years. Further applications may be required if there is a history of hypomagnesaemia.
Calcium (ppm)	1044	2000	Low	Below optimum level. If pH low, and Mg adequate, consider using calcium liming material.
Sulphur (ppm)	3	10	Very Low	Consider treatment for optimum grass growth.
Boron (ppm)	0.79	0.50	Normal	Adequate level.
Copper (ppm)	7.3	8.0	Slightly Low	PRIORITY FOR LIVESTOCK HEALTH.
Iron (ppm)	1747	50	Normal	Adequate level.
Manganese (ppm)	101	5	High	Possibility of interference with the availability of Fe.
Molybdenum (ppm)	0.01	<0.5	Slightly Low	No problems anticipated.
Sodium (ppm)	26	90	Very Low	PRIORITY FOR LIVESTOCK HEALTH.
Zinc (ppm)	10.0	7.0	Normal	Adequate level.
C.E.C. (meq/100g)	10.8	15.0	Slightly Low	Cation Exchange Capacity indicates a slightly low nutrient holding ability - soil applied nutrients could be readily leached. Where possible foliar applied nutrients should be recommended.
Organic Matter (LOI) (%)	5.9	3.0	Normal	Good. Soils with medium to high levels of organic matter would generally be expected to have a good potential fertility and good structure, moisture retention and water infiltration. Ensure appropriate soil management practices are used to maintain organic matter levels.

Analysis Results (SOIL)

Customer P STEPHENSON
Sample Ref LANGHO PIT 1 TOP
Sample No G168243/01
Crop GRAZED GRASS (CATTLE)

Distributor MR P STEPHENSON
Date Received 07/11/2024 (Date Issued: 04/12/2024)
Area 14

Physical Analysis



Analysis	Result (%)
Sand	57.49
Silt	33.45
Clay	9.06
Soil Type	SaLo Sandy Loam

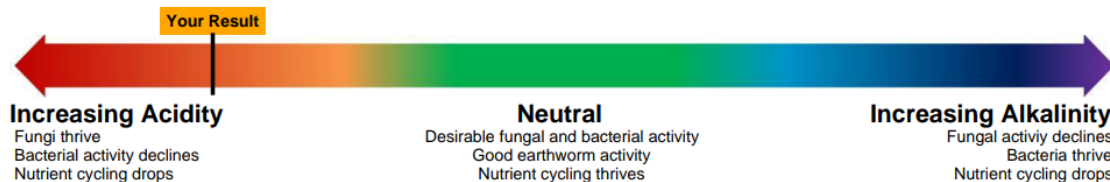
Property	Assessment
Available Water	Low to Medium
Drainage Rate	Rapid
Inherent Fertility	Low to Medium
Potential C.E.C.	Low to Medium
Leaching Risk	High to Moderate
Warming Rate	Rapid

Biological Analysis



Analysis	Result	Ideal
Solvita Burst CO ₂ -C (ppm)	N/A	>70
Organic Carbon (%)	N/A	
Total Nitrogen (%)	N/A	
C:N Ratio	N/A	10-12
Calculated Parameters	Result	
Microbial Biomass (mg/kg)	N/A	
Solvita Potentially Mineralizable Nitrogen (kg N/ha)	N/A	
Soil Assessment Score	N/A/100	

pH impact on soil biology



Pit 1

Sub

Analysis Results (SOIL)

Customer	P STEPHENSON ARABLE ADVISOR 74 MIDDLETON RD PICKERING YO18 8NH	Distributor	MR P STEPHENSON SWAINSEA HOUSE 74 MIDDLETON ROAD PICKERING NORTH YORKSHIRE YO18 8NH
Sample Ref	LANGHO PIT 1 SUB	Date Received	07/11/2024 (Date Issued: 04/12/2024)
Sample No	G168243/02	Area	14
Crop	GRAZED GRASS (CATTLE)		

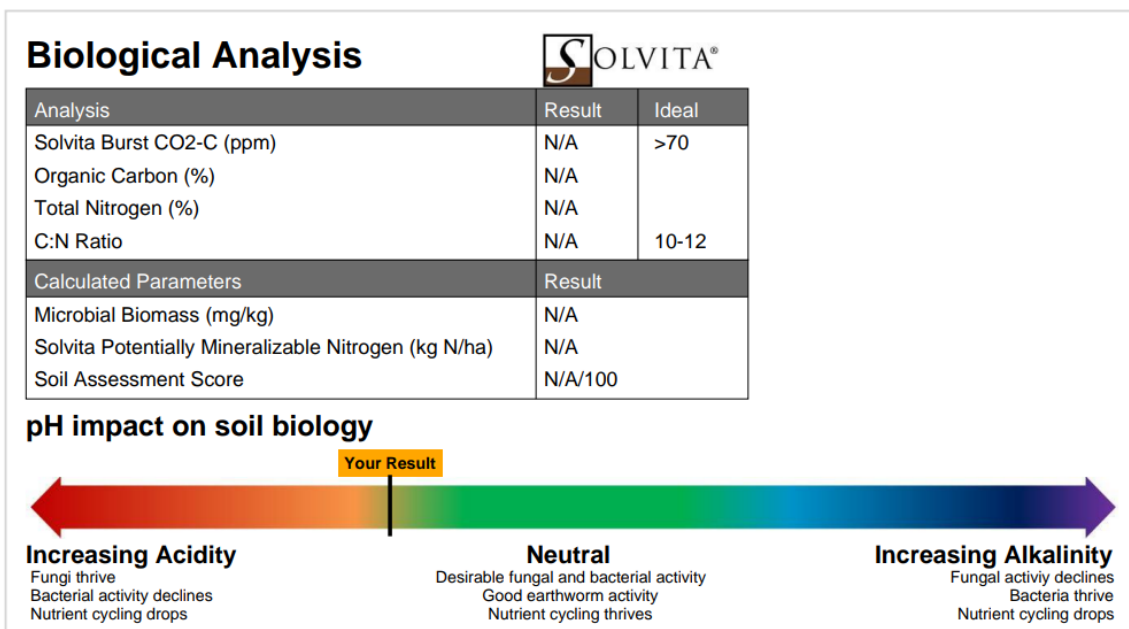
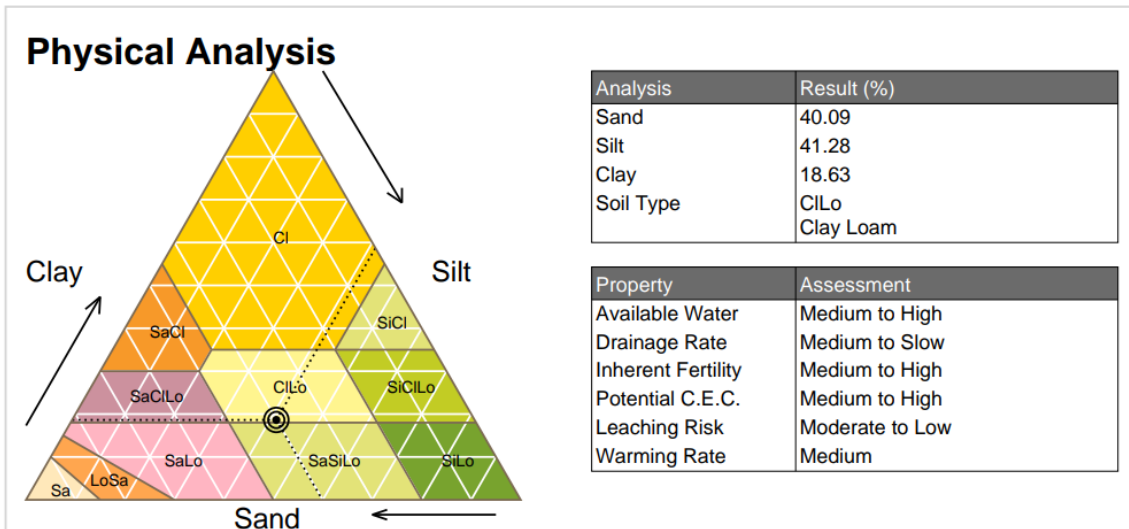
Analysis	Result	Guideline	Interpretation	Comments
pH	6.0	6.0	Normal	Adequate level. Maintain pH to ensure optimum nutrient availability and ideal conditions for an active soil biology.
Phosphorus (ppm)	< 2	16	Very Low	(Index 0) 80 kg/ha P2O5 (64 units/acre).
Potassium (ppm)	32	121	Very Low	(Index 0) 60 kg/ha K2O (48 units/acre). Avoid applications in spring if there is a history of Hypomagnesaemia.
Magnesium (ppm)	77	51	Normal	(Index 2) PRIORITY FOR LIVESTOCK HEALTH. Apply 25 kg/ha MgO (20 units/acre) every three to four years. Further applications may be required if there is a history of hypomagnesaemia.
Calcium (ppm)	1810	2000	Slightly Low	Below optimum level. If pH low, and Mg adequate, consider using calcium liming material.
Sulphur (ppm)	2	10	Very Low	Consider treatment for optimum grass growth.
Boron (ppm)	0.81	0.50	Normal	Adequate level.
Copper (ppm)	4.1	8.0	Low	PRIORITY FOR LIVESTOCK HEALTH.
Iron (ppm)	464	50	Normal	Adequate level.
Manganese (ppm)	297	20	High	Possibility of interference with the availability of Fe.
Molybdenum (ppm)	0.03	<0.5	Normal	No problems anticipated.
Sodium (ppm)	23	90	Very Low	PRIORITY FOR LIVESTOCK HEALTH.
Zinc (ppm)	3.1	7.0	Very Low	PRIORITY FOR LIVESTOCK HEALTH.
C.E.C. (meq/100g)	12.2	15.0	Slightly Low	Cation Exchange Capacity indicates a slightly low nutrient holding ability - soil applied nutrients could be readily leached. Where possible foliar applied nutrients should be recommended.
Organic Matter (LOI) (%)	3.3	3.0	Normal	Good. Soils with medium to high levels of organic matter would generally be expected to have a good potential fertility and good structure, moisture retention and water infiltration. Ensure appropriate soil management practices are used to maintain organic matter levels.
Organic Carbon (LOI) (%)	1.9	1.7	Normal	Normal (See Organic Matter comment). Organic carbon is the measurable component of organic matter. Organic carbon and organic matter can be broken into distinct 'pools'. These pools include labile/active (particulate, almost entirely decomposed, readily available microbe foodsource), humus carbon (decomposing carbon) and recalcitrant organic carbon (resistant to decomposition). Each of these pools are involved in different soil processes (see: Active Carbon).

Pit 1

Sub

Analysis Results (SOIL)

Customer P STEPHENSON	Distributor MR P STEPHENSON
Sample Ref LANGHO PIT 1 SUB	Date Received 07/11/2024 (Date Issued: 04/12/2024)
Sample No G168243/02	Area 14
Crop GRAZED GRASS (CATTLE)	



Pit 2

Top

Analysis Results (SOIL)

Customer	P STEPHENSON ARABLE ADVISOR 74 MIDDLETON RD PICKERING YO18 8NH	Distributor	MR P STEPHENSON SWAINSEA HOUSE 74 MIDDLETON ROAD PICKERING NORTH YORKSHIRE YO18 8NH
Sample Ref	LANGHO PIT 2 TOP	Date Received	07/11/2024 (Date Issued: 04/12/2024)
Sample No	G168243/03	Area	14
Crop	GRAZED GRASS (CATTLE)		

Analysis	Result	Guideline	Interpretation	Comments
pH	5.4	6.0	Low	Low. An acidic environment will reduce soil nutrient availability and the efficiency of any applied fertilisers or organic materials. A sub-optimum pH will also impact on soil microbial populations and rates of activity. Refer to lime requirement.
Lime Req. (t/ha)	4.0			
Phosphorus (ppm)	4	16	Very Low	(Index 0) 80 kg/ha P2O5 (64 units/acre).
Potassium (ppm)	77	121	Low	(Index 1) 30 kg/ha K2O (24 units/acre). Avoid applications in spring if there is a history of Hypomagnesaemia.
Magnesium (ppm)	141	51	High	(Index 3) Adequate level.
Calcium (ppm)	1311	2000	Low	Below optimum level. If pH low, and Mg adequate, consider using calcium liming material.
Sulphur (ppm)	2	10	Very Low	Consider treatment for optimum grass growth.
Boron (ppm)	0.60	0.50	Normal	Adequate level.
Copper (ppm)	5.3	8.0	Low	PRIORITY FOR LIVESTOCK HEALTH.
Iron (ppm)	992	50	Normal	Adequate level.
Manganese (ppm)	113	5	High	Possibility of interference with the availability of Fe.
Molybdenum (ppm)	0.03	<0.5	Normal	No problems anticipated.
Sodium (ppm)	24	90	Very Low	PRIORITY FOR LIVESTOCK HEALTH.
Zinc (ppm)	6.6	7.0	Slightly Low	PRIORITY FOR LIVESTOCK HEALTH.
C.E.C. (meq/100g)	12.7	15.0	Slightly Low	Cation Exchange Capacity indicates a slightly low nutrient holding ability - soil applied nutrients could be readily leached. Where possible foliar applied nutrients should be recommended.
Organic Matter (LOI) (%)	5.2	3.0	Normal	Good. Soils with medium to high levels of organic matter would generally be expected to have a good potential fertility and good structure, moisture retention and water infiltration. Ensure appropriate soil management practices are used to maintain organic matter levels.
Organic Carbon (LOI) (%)	3.0	1.7	Normal	Normal (See Organic Matter comment). Organic carbon is the measurable component of organic matter. Organic carbon and organic matter can be broken into distinct 'pools'. These pools include labile/active (particulate, almost entirely decomposed, readily available microbe foodsource), humus carbon (decomposing carbon) and recalcitrant organic carbon (resistant to decomposition). Each of these pools are involved in different soil processes (see: Active Carbon).

Pit 2

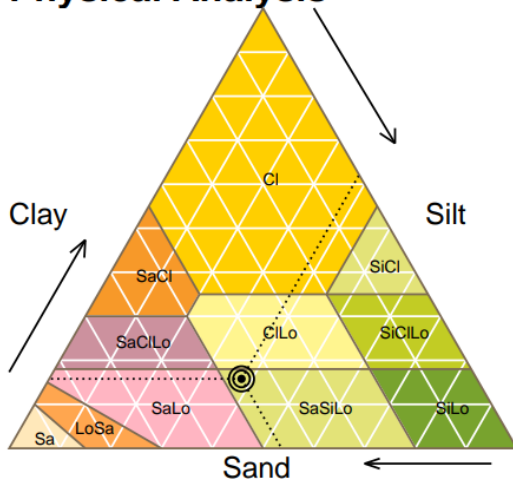
Top

Analysis Results (SOIL)

Customer P STEPHENSON
Sample Ref LANGHO PIT 2 TOP
Sample No G168243/03
Crop GRAZED GRASS (CATTLE)

Distributor MR P STEPHENSON
Date Received 07/11/2024 (Date Issued: 04/12/2024)
Area 14

Physical Analysis



Analysis	Result (%)
Sand	46.34
Silt	37.87
Clay	15.79
Soil Type	SaSiLo Sandy Silt Loam

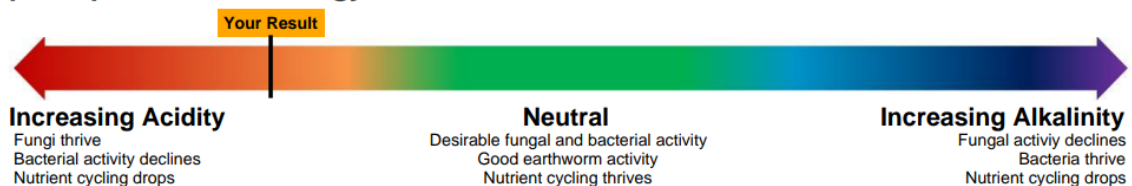
Property	Assessment
Available Water	Low to Medium
Drainage Rate	Rapid
Inherent Fertility	Low to Medium
Potential C.E.C.	Low to Medium
Leaching Risk	High to Moderate
Warming Rate	Rapid

Biological Analysis



Analysis	Result	Ideal
Solvita Burst CO2-C (ppm)	N/A	>70
Organic Carbon (%)	N/A	
Total Nitrogen (%)	N/A	
C:N Ratio	N/A	10-12
Calculated Parameters		Result
Microbial Biomass (mg/kg)	N/A	
Solvita Potentially Mineralizable Nitrogen (kg N/ha)	N/A	
Soil Assessment Score	N/A/100	

pH impact on soil biology



Pit 2

Sub

Analysis Results (SOIL)

Customer	P STEPHENSON ARABLE ADVISOR 74 MIDDLETON RD PICKERING YO18 8NH	Distributor	MR P STEPHENSON SWAINSEA HOUSE 74 MIDDLETON ROAD PICKERING NORTH YORKSHIRE YO18 8NH
Sample Ref	LANGHO PIT 2 SUB	Date Received	07/11/2024 (Date Issued: 04/12/2024)
Sample No	G168243/04	Area	14
Crop	GRAZED GRASS (CATTLE)		

Analysis	Result	Guideline	Interpretation	Comments
pH	5.9	6.0	Slightly Low	Slightly low. An acidic environment will reduce soil nutrient availability and the efficiency of any applied fertilisers or organic materials. A sub optimum pH will also impact on soil microbial populations and rates of activity. Refer to lime requirement.
Lime Req. (t/ha)	2.0			
Phosphorus (ppm)	< 2	16	Very Low	(Index 0) 80 kg/ha P2O5 (64 units/acre).
Potassium (ppm)	52	121	Very Low	(Index 0) 60 kg/ha K2O (48 units/acre). Avoid applications in spring if there is a history of Hypomagnesaemia.
Magnesium (ppm)	170	51	High	(Index 3) Adequate level.
Calcium (ppm)	2153	2000	Normal	Adequate level.
Sulphur (ppm)	1	10	Very Low	Consider treatment for optimum grass growth.
Boron (ppm)	0.51	0.50	Normal	Adequate level.
Copper (ppm)	3.3	8.0	Very Low	PRIORITY FOR LIVESTOCK HEALTH.
Iron (ppm)	358	50	Normal	Adequate level.
Manganese (ppm)	156	15	High	Possibility of interference with the availability of Fe.
Molybdenum (ppm)	0.03	<0.5	Normal	No problems anticipated.
Sodium (ppm)	34	90	Very Low	PRIORITY FOR LIVESTOCK HEALTH.
Zinc (ppm)	2.1	7.0	Very Low	PRIORITY FOR LIVESTOCK HEALTH.
C.E.C. (meq/100g)	15.9	15.0	Normal	Cation Exchange Capacity indicates a soil with a good nutrient holding ability.
Organic Matter (LOI) (%)	2.5	3.0	Slightly Low	Slightly low. Soils with medium to high levels of organic matter would generally be expected to have a good potential fertility and good structure, moisture retention and water infiltration. Investigate soil conditions to establish if soil management practices can improve levels of organic matter.
Organic Carbon (LOI) (%)	1.4	1.7	Slightly Low	Slightly Low (See Organic Matter comment). Organic carbon is the measurable component of organic matter. Organic carbon and organic matter can be broken into distinct 'pools'. These pools include labile/active (particulate, almost entirely decomposed, readily available microbe foodsource), humus carbon (decomposing carbon) and recalcitrant organic carbon (resistant to decomposition). Each of these pools are involved in different soil processes (see: Active Carbon).

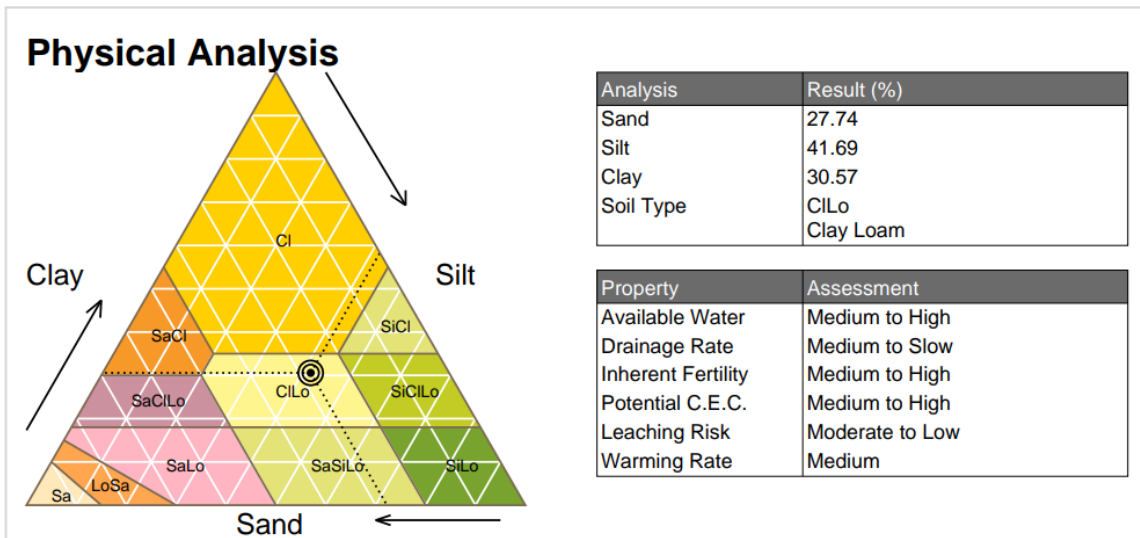
Pit 2

Sub

Analysis Results (SOIL)

Customer P STEPHENSON
Sample Ref LANGHO PIT 2 SUB
Sample No G168243/04
Crop GRAZED GRASS (CATTLE)

Distributor MR P STEPHENSON
Date Received 07/11/2024 (Date Issued: 04/12/2024)
Area 14



Biological Analysis



Analysis	Result	Ideal
Solvita Burst CO2-C (ppm)	N/A	>70
Organic Carbon (%)	N/A	
Total Nitrogen (%)	N/A	
C:N Ratio	N/A	10-12
Calculated Parameters		Result
Microbial Biomass (mg/kg)	N/A	
Solvita Potentially Mineralizable Nitrogen (kg N/ha)	N/A	
Soil Assessment Score	N/A/100	

pH impact on soil biology

