

Soil & Land Usage Report

December 11, 1998. Meaford, Ont.

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December 11, 1998.

After taking and studying the soil samples from your 50 acre farm I am able to give you some idea as to what might be best suited for this type of property.

Historical use of the property has been difficult to pinpoint. It likely has been several decades since it has been plowed and worked for conventional crops. Given that it has been in "roughland pasture" since most people can remember, already tells us that the property does have some limitations as to what would be practical and more importantly profitable to grow.

The property represents a variety of soil types (Vincent Clay Loam, Dunedin Clay & Kemble Silty Clay), drainage conditions, topograhpy, and bedrock type and degree of stoniness limits what may be grown. Because of these variables, it has not been a property in demand by larger scale cash crop and livestock farmers.

This does not mean that the farm is a barren wasteland. Based on the soil analysis these soils are capable of growing anything that our climate will permit. However certain portions will out perform others. Stone bedrock, marshy areas, shallow topsoil, heavy clay, and ravines that are not safe to work will be the reasons for the cropping limitations. Time and money can accomplish alot but neither will change soil type or do much to the landscape.

The most obvious choice would be to maintain it as a grazing farm. Most of it could be plowed, reseeded, and with some fertility give a better yielding pasture. Fencing could be upgraded to incorpoate electric wire and with suitable watering facilities enable a rotational grazing system to be established.

Reforestation is another option. By planting coniferous trees, and with some work you could potentially realize some marketable products such as Christmas trees, fence posts, hydro poles and even some lumber.

The area labeled as sample B could be used to establish a small acreage of apple trees. However, as you plant closer to the sideroad, tree growth will be slower because of heavier clay soils.

Areas A and C would be suitable only for grazing or reforestation. Area D is closer to the sideroad and has a heavy clay content; grazing or tree planting best suits this area as well as the Northern portion of area E, and the area sampled as F. Sample G is the wet area. Because it is lighter soil, it could



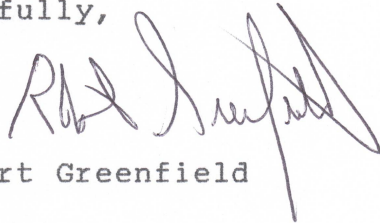
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likely be drained and then be used to produce fruit trees. Although H is the nicest field to work with; the heavy clay soil is going to limit crop selection, particularly in dry years.

Cash cropping, even if done on a shared basis will not be practical for this property. Commodity prices fluctuate wildly and there are too many physical obstacles to allow economical use of large equipment. Some areas could support fruit production, but this type of farming is very labour intensive.

In summary, the most obvious usage is going to be either a continuation of the farm in grass which could be pastured ( some hay production would be practical as well) or to plant out the property in trees. I hope that you will find these suggestions helpful and useful as you plan for the future.

Respectfully,

A handwritten signature in dark ink, appearing to read 'P. Robert Greenfield', written in a cursive style.

P. Robert Greenfield



N

Side road

N

Ravine  
+  
wash out

Sample  
A

100 paces

93 paces

B

gate

D

Ravine

old fence line

E

Wash out

Wash out

F

stone pile

Pond  
Valley with  
trees

H

stone  
area

tree

Tree

runoff course

stone pile

run off course

marshy area  
stone pile

G

marshy  
spring

Back  
Outcrop

G R O W E R S  
FERTILIZER SOLUTIONS  
MILAN, OHIO

Funtions Deficiency Symptions of  
Nutrients Needed By Plants:

NITROGEN - Gives green color and makes leaves and stems. It builds protein in the plant and combines with carbohydrates (sugar) to form plant cells. Nitrogen must be balanced by sugars made from sunshine, water, and gas in the leaves. Too much nitrogen can reduce yields of grain. Black soils are high in nitrogen. Need: indicated by general yellowing of foliage and burning off of lower leaves.

PHOSPHORUS - Absolutely necessary for the complete functioning of plants. Encourages development of seeds. Hastens maturity. Helps in the development of timey roots of crops such as winter wheat, lessens the chance of winter killing. Reduces the tendency for grains to lodge. Increases plumpness of kernels and improves the tone, vigor, and yield of crops. Need: indicated by stunted dark green color with purpling of stems.

POTASSIUM - Proper balance of potassium with the other elements aids in producing vigorour, healthy growth. Increases resistance of crops to diseases. Needed for the production of chlorophyll, the green coloring matter in leaves, and for the manufacture of starch. Need: indicated by marginal yellowing of older leaves. Firing.

CALCIUM - Plays a manifold role in plant metabolism. Structural component of plant cell walls. Effects the permeability of the cytoplasmic membranes of plant cells. Soils must be saturated up to 87% to promote big yields. Need: indicated by general yellowing of foliage and dieing of growing tips.

MAGNESIUM - Is the mineral consitituent of the green color in the leaf. Increases the absorption of phosphorus. May be related to oil formation and synthesis of nucleo-proteins. Need: indicated by yellowing of old leaves between the veins, Yellow streaking on corn and the others grass leaves.

SULPHUR - Consitituent of the emino acid, cystine, one of the compounds from which plant proteins are made. Required in the synthesis of essential oils. Very important for legumes. Need: indicated by weakened and grayish green color of plant.

IRON - Essential in the synthesis of chlorophyll. Acts as a catalyst of oxygen-carrier on oxidation - reduction processes occuring in living cells. Need: indicated by yellowing of young growing leaves.

MANGANESE - Regulates the role of iron in the mynthesis of chlorophyll. Needed for the activation of oxidases, important enzyme of plants, and for the reduction of nitrates. Need: indicated by yellow green spotting of young leaves.

BORON - Enables the plant to absorb or utilize calcium and possibly all other mineral nutrients. Need: indicated by lack of seed setting. Similar to calcium.

COPPER - Acts as an oxidizing agent and possibly play a role in the synthesis of chloropyll. Difficult to pick out in field. Usually occurs on muck soils.

ZINC - Appears to be necessary for normal chlorophyll production and growth of plants. Need: indicated by symptoms similar to sulphur.

Note: Insuffient lime in the soil may cause any of the above symptoms to show. Poor drainage, lack of air, may cause many of above symptoms plus stunting and premature maturity of ripening. Low yields may be associated with any of the above symptoms.









Midwest  
Laboratories, Inc.

REPORT NUMBER

8-294-0866

REPORT DATE

10/21/98

ACCOUNT NO.

13056

13611 "B" Street • Omaha, Nebraska 68144-3693 • (402) 334-7770 • FAX (402) 334-9121

GROWER

BOB GRAHAM  
RR 4  
MEAFORD ONT

TO:

TLC ANIMAL HUSBANDRY INC  
BOX 837  
HARRISTON ONT  
CANADA ON NOG-120

COPY TO:

## SOIL ANALYSIS REPORT

(SEE EXPLANATION ON BACK)

INFO SHEET # 205285

LAB NUMBER		SAMPLE IDENTIFICATION	ORGANIC MATTER WALKLEY BLACK		PHOSPHORUS				POTASSIUM		MAGNESIUM		CALCIUM		SODIUM		pH		CATION EXCHANGE CAPACITY C.E.C. meq/100g	PERCENT BASE SATURATION (COMPUTED)																	
			PERCENT	RATE	P <sub>1</sub> (WEAK BRAY)	P <sub>2</sub> (STRONG BRAY)	RATE	ppm	RATE	ppm	K	RATE	ppm	Mg	RATE	ppm	Ca	RATE		ppm	Na	RATE	SOIL pH 1:1	BUFFER INDEX	% K	% Mg	% Ca	% H	% Na								
41213	#A	5.3VH	9L	14L	9L	146M	255VH	2529VH										7.9	15.1	2.5	14.0	83.5	0.0														
41214	#B	5.3VH	5VL	21M	8L	149H	343VH	2268H										7.8	14.6	2.6	19.6	77.8	0.0														
41215	#C	6.1VH	8L	20M	10L	247VH	418VH	2107H										7.6	14.7	4.3	23.8	71.9	0.0														
41216	#D	5.4VH	4VL	31M	8L	138H	281VH	1793H										7.4	11.7	3.0	20.1	76.9	0.0														
DTPA EXTRACTION																																					
NITRATE - N (FIA)				SULFUR S ICAP		ZINC Zn	MANGANESE Mn	IRON Fe	COPPER Cu	BORON B WATER SOLUBLE	EXCESS LIME RATE	SOLUBLE SALTS 1:1																									
ppm		lbs/A		ppm		lbs/A		ppm		RATE		ppm		RATE		ppm		RATE		mmhos/cm		RATE															

COMMENTS:

This report applies only to the sample(s) tested. Samples are retained a maximum of thirty days after testing.

Ken Behlman/John Menghini  
AL Rev 8.0 DH 539 2  
(519)327-8060

REV 196





13611 "B" Street • Omaha, Nebraska 68144-3693 • (402) 334-7770 • FAX (402) 334-9121

REPORT NUMBER: 8-294-0866

DEALER #: 13056

TITLE: WATER SOLUBLE

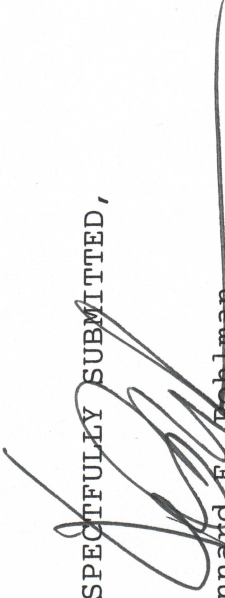
DATE: 10/21/98

TLC ANIMAL HUSBANDRY INC  
BOX 837  
HARRISTON ONT  
CANADA, ON N0G-1Z0

GROWER: BOB GRAHAM  
RR 4  
MEAFORD ONT

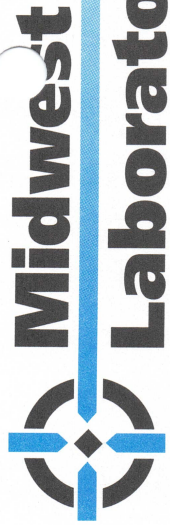
LAB NUMBER	SAMPLE ID	Ranges			
		P ppm	K ppm	Ca ppm	Mg ppm
41213	#A	7-12 ↑	30-40 ↓	125-200 ↑	20-25 ↓
41214	#B	3	114	211	4-10 ↓
41215	#C	3	101	204	12-15 ↑
41216	#D	3	108	105	S ppm
		3	95	121	Na ppm

RESPECTFULLY SUBMITTED,

  
Kennard E. Pohlman  
Managing Director

The above analytical results apply only to the sample(s) submitted.

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REPORT NUMBER: 8-294-0866

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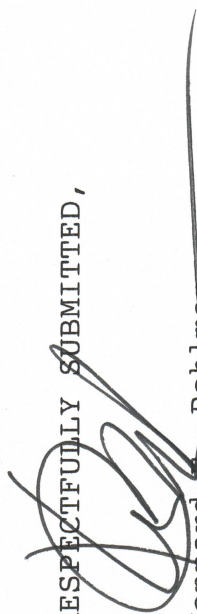
DATE: 10/21/98

TLC ANIMAL HUSBANDRY INC  
BOX 837  
HARRISTON ONT  
CANADA, ON N0G-1Z0

GROWER: BOB GRAHAM  
RR 4  
MEAFORD ONT

LAB NUMBER	SAMPLE ID	P ppm	K ppm	Ca ppm	Mg ppm	Na ppm	S ppm
41213	#A	3	114	211	71	10	10
41214	#B	3	101	204	62	10	12
41215	#C	3	108	105	54	8	10
41216	#D	3	95	121	71	8	12

RESPECTFULLY SUBMITTED,

  
Kenneth E. Pohlman  
Managing Director

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ACCOUNT NO.

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13056

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TO:

TLC ANIMAL HUSBANDRY INC  
BOX 837  
HARRISTON ONT  
CANADA ON N0G-1Z0

COPY TO:

\*\*\*  
90001

## SOIL ANALYSIS REPORT

(SEE EXPLANATION ON BACK)

INFO SHEET # 205284

LAB NUMBER	SAMPLE IDENTIFICATION	ORGANIC MATTER		PHOSPHORUS				POTASSIUM		MAGNESIUM		CALCIUM		SODIUM		pH		CATION EXCHANGE CAPACITY C.E.C. meq/100g	PERCENT BASE SATURATION (COMPUTED)				
		WALKLEY BLACK PERCENT RATE	P <sub>1</sub> (WEAK BRAY) RATE ppm	P <sub>2</sub> (STRONG BRAY) RATE ppm	BICARBONATE P RATE ppm	K RATE ppm	Mg RATE ppm	Ca RATE ppm	Na RATE ppm	SOIL pH 1:1	BUFFER INDEX	% K	% Mg	% Ca	% H	% Na							
41217	E	5.6VH	8L	24M	10L	147H	390VH	2151H	7.5	14.4	2.6	22.6	74.8	0.0									
41218	F	5.2VH	5VL	21M	10L	146H	236VH	2048H	7.6	12.6	3.0	15.6	81.4	0.0									
41219	G	4.7VH	6VL	36M	11M	140H	308VH	1786H	7.9	11.9	3.0	21.6	75.3	0.0									
41220	H	5.5VH	4VL	33M	7L	141H	340VH	1994H	7.6	13.2	2.7	21.5	75.7	0.0									
DIPA EXTRACTION																							
NITRATE - N (FIA)						SULFUR S ICAP		ZINC Zn	MANGA- NESE Mn	IRON Fe	COPPER Cu	BORON B WATER SOLUBLE	EXCESS LIME RATE	SOLUBLE SALTS 1:1									
ppm	lbs/A	IN	lbs/A	ppm	Total lbs/A	IN	lbs/A	ppm	RATE	ppm	RATE	ppm	RATE	mmhos/ cm	RATE								
								19H	1.0L	20H	3.2VH	0.8M											
								13M	0.9L	18H	1.1M	0.6L											
								14M	0.9L	18H	2.6VH	1.1M											
								11L	1.1M	28VH	2.9VH	1.3H											





# Midwest Laboratories, Inc.

13611 "B" Street • Omaha, Nebraska 68144-3693 • (402) 334-7770 • FAX (402) 334-9121

REPORT NUMBER: 8-294-0867

DEALER #: 13056

TITLE: WATER SOLUBLE

DATE: 10/21/98

TLC ANIMAL HUSBANDRY INC  
BOX 837  
HARRISTON ONT  
CANADA, ON N0G-1Z0

GROWER: BOB GRAHAM  
RR 4  
MEAFORD ONT

LAB NUMBER	SAMPLE ID	P ppm	K ppm	Ca ppm	Mg ppm	Na ppm	S ppm
41217	E	2	83	166	70	10	17
41218	F	2	106	150	76	12	12
41219	G	3	97	122	65	18	12
41220	H	2	101	92	57	15	10

RESPECTFULLY SUBMITTED,

  
Kennard E. Pohlman  
Managing Director

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REPORT NUMBER: 8-294-0867

DEALER #: 13056

TITLE: WATER SOLUBLE


DATE: 10/21/98

TLC ANIMAL HUSBANDRY INC  
BOX 837  
HARRISTON ONT  
CANADA, ON N0G-1Z0

GROWER: BOB GRAHAM  
RR 4  
MEAFORD ONT

LAB NUMBER	SAMPLE ID	P ppm	K ppm	Ca ppm	Mg ppm	Na ppm	S ppm
41217	E	2	83	166	70	10	17
41218	F	2	106	150	76	12	12
41219	G	3	97	122	65	18	12
41220	H	2	101	92	57	15	10

RESPECTFULLY SUBMITTED,

  
Kennard E. Pohlman  
Managing Director

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