

FALL 2018

KEY

FFA LAND JUDGING PLACARD - MINNESOTA

Pit Number 1 Gray Card

Lime Area 1 Flooding NONE

pH 6.1 SMP Buffer Index N/A Assumed Field Size 180 Acres

P Test 8 lb./acres available phosphorus

Subsoil Phosphorus Level Low

K Test 80 lb./acres exchangeable potassium

Subsoil Potassium Level Low Manure Applied NONE Tons/Acre

Corn Yield Goal 220 bu./acres

Crop to be planted SOYBEANS

Past Crop CORN

Original Surface Soil Depth 16 inches

Slope Length 85 feet

Depth to permanent water table > 60 inches

\* LAST HORIZON CONTAINS TO 60"

Grey

FALL 2018

1

Minnesota FFA Soils Scorecard

Name KEY

School

Number

9/17

<b>Part 1: Surface Soil -</b> <b>A. Thickness in Inches</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 2 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36> Allow 1 inch either way on thickness										<b>Part 3 Parent Material - Continued</b> <b>B. Texture</b> <input checked="" type="checkbox"/> Coarse <input type="checkbox"/> Moderately Coarse <input type="checkbox"/> Medium <input type="checkbox"/> Fine <input type="checkbox"/> Very Fine <i>Med. Sand</i>									
<b>B. Color</b> 4 <input checked="" type="checkbox"/> Dark <input type="checkbox"/> Medium <input type="checkbox"/> Light										<b>C. Gravel</b> 2 <input type="checkbox"/> None to Few <input checked="" type="checkbox"/> Gravelly <input type="checkbox"/> Very Gravelly <input type="checkbox"/> Extremely Gravelly <i>&gt;35% mark ~45%</i>									
<b>C. Texture</b> 5 <input type="checkbox"/> Coarse <input type="checkbox"/> Moderately Coarse <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Fine <input type="checkbox"/> Very Fine <i>loam</i>										<b>Part 4 Topography</b> <b>A. Steepness of Slope</b> 3 <input checked="" type="checkbox"/> Nearly level - 2% or less <input type="checkbox"/> Gently sloping - 3 - 6 % <input type="checkbox"/> Moderately sloping - 7-12% <input type="checkbox"/> Strongly sloping - 13 to 18 % <input type="checkbox"/> Steep - Greater than 18 %									
<b>D. Gravel and Rock</b> 2 <input checked="" type="checkbox"/> None to Few <input type="checkbox"/> Gravelly <input type="checkbox"/> Very Gravelly <input type="checkbox"/> Extremely Gravelly										<b>B. Landscape Position</b> 3 <input checked="" type="checkbox"/> Upland <input type="checkbox"/> Terrace - Footslope <input type="checkbox"/> Bottom land - Flood Plains <input type="checkbox"/> Depressional Area - No Outlet									
<b>Part 2: Subsurface Soil</b> <b>A. Thickness in Inches</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 2 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36> Allow 1 inch either way on thickness										<b>Part 5 - Land Capability Classification</b> 6 <input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Class IV <input type="checkbox"/> Class V <input type="checkbox"/> Class VI <input type="checkbox"/> Class VII <input type="checkbox"/> Class VIII Land suitable for for Cultivated Crops Land suitable for Permanent Vegetation <i>Score 6 points for correct answer - 3 points for 1 class off except for class 5. Allow 3 points between Class IV and VI.</i>									
<b>B. Color</b> 4 <input checked="" type="checkbox"/> Bright <input type="checkbox"/> Mottled <input type="checkbox"/> Dull										<b>Part 6 Interpretation of Soil Features</b> <b>A. Type of Material that Lim its Depth</b> 2 <input type="checkbox"/> None- No limiting materials <input type="checkbox"/> Bedrock - Soft or hard <input type="checkbox"/> Hardpan - Cemented <input checked="" type="checkbox"/> Very gravelly sand or high water table									
<b>C. Texture</b> 5 <input type="checkbox"/> Coarse <input type="checkbox"/> Moderately Coarse <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Fine <input type="checkbox"/> Very Fine <i>fine sandy loam</i>										<b>B. Parent Material</b> 2 <input type="checkbox"/> Bedrock - Soft or herd <input checked="" type="checkbox"/> Alluvium /Outwash/Lacustrine <input checked="" type="checkbox"/> Till/Loess/Aeolian Sand <input type="checkbox"/> Organic materials - Peat or muck <i>Over Both</i>									
<b>D. Gravel and Rock</b> 2 <input checked="" type="checkbox"/> None to Few <input type="checkbox"/> Gravelly <input type="checkbox"/> Very Gravelly <input type="checkbox"/> Extremely Gravelly										<b>C. Depth Favorable for Roots &amp; Water Penetration</b> 2 <input type="checkbox"/> Very Deep - 60 inches or more <input type="checkbox"/> Deep - 40 through 59 inches <input checked="" type="checkbox"/> Moderately Deep - 20 through 39 inches <input type="checkbox"/> Shallow - less than 20 inches									
<b>Part 3: Underlying Material</b> <b>A. Thickness in Inches</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 2 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36> Allow 1 inch either way on thickness										<b>D. Air and Water Movement (Subsoil Permeability)</b> 2 <input checked="" type="checkbox"/> Very Rapid <input type="checkbox"/> Rapid <input type="checkbox"/> Moderate <input type="checkbox"/> Slow									

Pit 1

**E. Total Available Water capacity**

**1. Available water in horizon per inch of soil**

1	<input checked="" type="checkbox"/> 0.05	a. Surface Horizon	Calculation Area $.2 \times 14" = 2.8$
	<input checked="" type="checkbox"/> 0.15		
	<input checked="" type="checkbox"/> 0.20		
1	<input checked="" type="checkbox"/> 0.05	b. Subsoil	$.15 \times 16" = 2.4$
	<input checked="" type="checkbox"/> 0.15		
	<input checked="" type="checkbox"/> 0.20		
1	<input checked="" type="checkbox"/> 0.05	c. Underlying Material	$0.05 \times 30" = 1.5$ <del>0.15</del> <del>0.20</del>
	<input checked="" type="checkbox"/> 0.15		
	<input checked="" type="checkbox"/> 0.20		

**2. Available Water Capacity per Horizon**

a. Surface Horizon									
1	0-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	8.1+
b. Subsoil									
1	0-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	8.1+
c. Underlying Material									
1	0-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	8.1+

**3. Total available water capacity in five feet of soil**

Very low - Less than 3 inches  
 Low - 3.1 to 6.0 inches  
 Moderate - 6.1 to 9.0 inches  
 High - over 9.0 inches

**4. Internal Drainage**

Well Drained  
 Moderately well drained  
 Somewhat poorly drained  
 Poorly or very poorly drained

**Part 7 Accelerated Erosion**

**A. Amount of Erosion**

2  No erosion evident (less than 2 inches)  
 Deposition (2 inches or greater)  
 Erosion present (2 inches or greater)

**B. Kind of Erosion**

2  None  
 Active gully  
 Wind erosion  
 Sheet or rill

**Part 8 - Need for Erosion Control**

**A. Water Erosion**

3  None to slight  
 Crop cover, sod cover, and conservation tillage  
 Contour, strip crop and conservation tillage  
 Grass waterways and gully control  
 Woodland or permanent pasture  
 Wildlife or recreation

**B. Wind Erosion**

3  None to slight  
 Mulch tillage, cover crop

**Part 9 Drainage Required**

5  None required  
 Surface and/or tile

**Part 10 - Fertilizer and Lime Recommendations**

2	0	Nitrogen pounds per acre
2	60	Phosphorous pounds per acre
2	80	Potassium pounds per acre
2	3.0	Lime tons per acres

**Part 11 - Land use Limitation (Points are for each section)**

Use	3 Pts Each			1 Point Each					Underlying Material (Shrink Swell Potential)
	Limitation	% Slope	Surface Soil Texture	Flooding	Internal Drainage Class	Permeability Class	Depth to Bedrock (Inches)		
9 Dwellings (lawns), foundations, basements	Slight	<input checked="" type="checkbox"/> 0 to 5.0	<input checked="" type="checkbox"/> medium, moderate, coarse	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> well drained, mod. well drained		<input checked="" type="checkbox"/> more than 60	<input checked="" type="checkbox"/> coarse, mod. coarse, medium	
	Moderate	<input type="checkbox"/> 5.1 to 12.0	<input type="checkbox"/> coarse, fine, very fine				<input type="checkbox"/> 40 to 60	<input type="checkbox"/> fine texture	
	Severe	<input type="checkbox"/> More than 12.0		<input type="checkbox"/> Any flooding	<input type="checkbox"/> somewhat poorly to poorly drained		<input type="checkbox"/> less than 40	<input type="checkbox"/> very fine texture	
8 Septic tank absorption fields	Slight	<input checked="" type="checkbox"/> 0 to 5.0		<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> well to mod well drained	<input checked="" type="checkbox"/> very rapid to rapid	<input checked="" type="checkbox"/> more than 60		
	Moderate	<input type="checkbox"/> 5.1 to 12.0				<input type="checkbox"/> Moderate	<input type="checkbox"/> 40 to 60		
	Severe	<input type="checkbox"/> More than 12.0		<input type="checkbox"/> Any flooding	<input type="checkbox"/> somewhat poorly to poorly drained	<input type="checkbox"/> slow to very slow	<input type="checkbox"/> less than 40		
8 Farm lagoons and holding basins	Slight	<input checked="" type="checkbox"/> 0 - 2.0		<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> well to mod well drained	<input type="checkbox"/> Slow	<input checked="" type="checkbox"/> more than 60		
	Moderate	<input type="checkbox"/> 2.1 - 6.0			<input type="checkbox"/> somewhat poorly drained	<input type="checkbox"/> Moderate	<input type="checkbox"/> 40 to 60		
	Severe	<input type="checkbox"/> More than 6.0		<input type="checkbox"/> Any Flooding	<input type="checkbox"/> poorly drained	<input checked="" type="checkbox"/> Rapid to very rapid	<input type="checkbox"/> less than 40		

FFA LAND JUDGING PLACARD - MINNESOTA

KEY

Pit Number 2 Green Carb

Lime Area 1 Flooding None

pH 5.6 SMP Buffer Index 5.8 Assumed Field Size 80 Acres

P Test 24 lb./acres available phosphorus

Subsoil Phosphorus Level Low

K Test 150 lb./acres exchangeable potassium

Subsoil Potassium Level Low Manure Applied 0 Tons/Acre

Corn Yield Goal N/A bu./acres

Crop to be planted MANAGED WOOD LOT

Past Crop \_\_\_\_\_

Original Surface Soil Depth 8 inches

Slope Length 100 feet

Depth to permanent water table 36" \* LAST HORIZON CONTINUES

To 60"

Green

FALL 2018

### Minnesota FFA Soils Scorecard

2

Name KEY

School

Number

817

<b>Part 1: Surface Soil -</b> <b>A. Thickness in Inches</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>										<b>Part 3 Parent Material - Continued</b> <b>B. Texture</b> Coarse Moderately Coarse Medium 5 <input checked="" type="checkbox"/> Fine <i>sandy clay loam</i> Very Fine									
Allow 1 inch either way on thickness										<b>C. Gravel</b> 2 <input checked="" type="checkbox"/> None to Few <input type="checkbox"/> Gravelly <input type="checkbox"/> Very Gravelly <input type="checkbox"/> Extremely Gravelly									
<b>B. Color</b> 4 <input checked="" type="checkbox"/> Dark <input type="checkbox"/> Medium <input type="checkbox"/> Light										<b>Part 4 Topography</b> <b>A. Steepness of Slope</b> 3 <input checked="" type="checkbox"/> Nearly level - 2% or less <input type="checkbox"/> Gently sloping - 3 - 6 % <input type="checkbox"/> Moderately sloping - 7-12% <input type="checkbox"/> Strongly sloping - 13 to 18 % <input type="checkbox"/> Steep - Greater than 18 %									
<b>C. Texture</b> 5 <input checked="" type="checkbox"/> Coarse <input type="checkbox"/> Moderately Coarse <input type="checkbox"/> Medium <i>loam</i> <input type="checkbox"/> Fine <input type="checkbox"/> Very Fine										<b>B. Landscape Position</b> 3 <input checked="" type="checkbox"/> Upland <input type="checkbox"/> Terrace - Footslope <input type="checkbox"/> Bottom land - Flood Plains <input type="checkbox"/> Depressional Area - No Outlet									
<b>D. Gravel and Rock</b> 2 <input checked="" type="checkbox"/> None to Few <input type="checkbox"/> Gravelly <input type="checkbox"/> Very Gravelly <input type="checkbox"/> Extremely Gravelly										<b>Part 5 - Land Capability Classification</b> 6 <input checked="" type="checkbox"/> Class I } Land suitable for for <input type="checkbox"/> Class II } Cultivated <input type="checkbox"/> Class III } Crops <input type="checkbox"/> Class IV } <input type="checkbox"/> Class V } Land suitable for Permanent <input type="checkbox"/> Class VI } Vegetation <input type="checkbox"/> Class VII } <input type="checkbox"/> Class VIII }									
<b>Part 2: Subsurface Soil</b> <b>A. Thickness in Inches</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>										Score 5 points for correct answer - 3 points for 1 class off except for class 6. Allow 3 points between Class IV and V.									
Allow 1 inch either way on thickness										<b>Part 6 Interpretation of Soil Features</b> <b>A. Type of Material that Lim its Depth</b> 2 <input type="checkbox"/> None- No limiting materials <input type="checkbox"/> Bedrock - Soft or hard <input checked="" type="checkbox"/> Hardpan - Cemented <input type="checkbox"/> Very gravelly sand or high water table									
<b>B. Color</b> 4 <input checked="" type="checkbox"/> Bright <input type="checkbox"/> Mottled <input type="checkbox"/> Dull										<b>B. Parent Material</b> 2 <input checked="" type="checkbox"/> Bedrock - Soft or hard <input type="checkbox"/> Alluvium /Outwash/Lacustrine <input type="checkbox"/> Till/Loess/Aeolian Sand <input type="checkbox"/> Organic materials - Peat or muck									
<b>C. Texture</b> 5 <input checked="" type="checkbox"/> Coarse <input type="checkbox"/> Moderately Coarse <i>sandy loam</i> <input type="checkbox"/> Medium <input type="checkbox"/> Fine <input type="checkbox"/> Very Fine										<b>C. Depth Favorable for Roots &amp; Water Penetration</b> 2 <input checked="" type="checkbox"/> Very Deep - 50 inches or more <input type="checkbox"/> Deep - 40 through 59 inches <input type="checkbox"/> Moderately Deep - 20 through 39 inches <input type="checkbox"/> Shallow - less than 20 inches									
<b>D. Gravel and Rock</b> 2 <input checked="" type="checkbox"/> None to Few <input type="checkbox"/> Gravelly <input type="checkbox"/> Very Gravelly <input type="checkbox"/> Extremely Gravelly										<b>D. Air and Water Movement (Subsoil Permeability)</b> 2 <input checked="" type="checkbox"/> Very Rapid <input type="checkbox"/> Rapid <input type="checkbox"/> Moderate <input type="checkbox"/> Slow									
<b>Part 3: Underlying Material</b> <b>A. Thickness in Inches</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>										Allow 1 inch either way on thickness									

Pit 2

<b>E Total Available Water capacity</b> <b>1. Available water in horizon per inch of soil</b>		<b>Calculation Area</b> $.2 \times 8'' = 1.6$ $.15 \times 16'' = 2.4$ $.2 \times 12'' = 2.4$							
1	<input type="checkbox"/> 0.05 <input checked="" type="checkbox"/> 0.15 <input type="checkbox"/> 0.20 <b>a. Surface Horizon</b>								
1	<input type="checkbox"/> 0.05 <input checked="" type="checkbox"/> 0.15 <input type="checkbox"/> 0.20 <b>b. Subsoil</b>								
1	<input type="checkbox"/> 0.05 <input checked="" type="checkbox"/> 0.15 <input type="checkbox"/> 0.20 <b>C. Underlying Material</b>								
<b>2. Available Water Capacity per Horizon</b>									
<b>a. Surface Horizon</b>									
1	0-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	8.1
<b>b. Subsoil</b>									
1	0-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	8.1
<b>c. Underlying Material</b>									
1	0-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	8.1
<b>3. Total available water capacity in five feet of soil</b> Very low - Less than 3 inches Low - 3.1 to 6.0 inches Moderate - 6.1 to 9.0 inches High - over 9.0 inches									
4									
<b>4. Internal Drainage</b> <input type="checkbox"/> Well Drained <input checked="" type="checkbox"/> Moderately well drained <input type="checkbox"/> Somewhat poorly drained <input type="checkbox"/> Poorly or very poorly drained									
4									

<b>Part 7 Accelerated Erosion</b> <b>A. Amount of Erosion</b>	
2	<input checked="" type="checkbox"/> No erosion evident (less than 2 inches) <input type="checkbox"/> Deposition (2 inches or greater) <input type="checkbox"/> Erosion present (2 inches or greater)
<b>B. Kind of Erosion</b>	
2	<input checked="" type="checkbox"/> None <input type="checkbox"/> Active gully <input type="checkbox"/> Wind erosion <input type="checkbox"/> Sheet or rill
<b>Part 8 - Need for Erosion Control</b>	
<b>A. Water Erosion</b>	
3	<input type="checkbox"/> None to slight <input checked="" type="checkbox"/> Crop cover, sod cover, and conservation tillage <input checked="" type="checkbox"/> Contour, strip crop and conservation tillage <input type="checkbox"/> Grass waterways and gully control <input type="checkbox"/> Woodland or permanent pasture <input type="checkbox"/> Wildlife or recreation
<b>B. Wind Erosion</b>	
3	<input checked="" type="checkbox"/> None to slight <input type="checkbox"/> Mulch tillage, cover crop
<b>Part 9 Drainage Required</b>	
5	<input checked="" type="checkbox"/> None required <input type="checkbox"/> Surface and/or tile
<b>Part 10 - Fertilizer and Lime Recommendations</b>	
2	30 Nitrogen pounds per acre
2	30 Phosphorous pounds per acre
2	80 Potassium pounds per acre
2	0 Lime tons per acres

Part 11 - Land use Limitation (Points are for each section)								
Use	Limitation	3 Pts Each			1 Point Each			
		% Slope	Surface Soil Texture	Flooding	Internal Drainage Class	Permeability Class	Depth to Bedrock (Inches)	Underlying Material (Shrink Swell Potential)
9 Dwellings (lawns), foundations, basements	Slight	<input checked="" type="checkbox"/> 0 to 5.0	<input checked="" type="checkbox"/> medium, moderate, coarse	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> well drained, med. well drained		<input checked="" type="checkbox"/> more than 60	<input type="checkbox"/> coarse, mod. coarse, medium
	Moderate	<input type="checkbox"/> 5.1 to 12.0	<input type="checkbox"/> coarse, fine, very fine				<input type="checkbox"/> 40 to 60	<input checked="" type="checkbox"/> fine texture
	Severe	<input type="checkbox"/> More than 12.0		<input type="checkbox"/> Any flooding	<input type="checkbox"/> somewhat poorly to poorly drained		<input type="checkbox"/> less than 40	<input type="checkbox"/> very fine texture
8 Septic tank absorption fields	Slight	<input checked="" type="checkbox"/> 0 to 5.0		<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> well to med well drained	<input checked="" type="checkbox"/> very rapid to rapid	<input checked="" type="checkbox"/> more than 60	
	Moderate	<input type="checkbox"/> 5.1 to 12.0				<input type="checkbox"/> Moderate	<input type="checkbox"/> 40 to 60	
	Severe	<input type="checkbox"/> More than 12.0		<input type="checkbox"/> Any flooding	<input type="checkbox"/> somewhat poorly to poorly drained	<input type="checkbox"/> slow to very slow	<input type="checkbox"/> less than 40	
6 Farm lagoons and holding basins	Slight	<input checked="" type="checkbox"/> 0 - 2.0		<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> well to med well drained	<input type="checkbox"/> Slow	<input checked="" type="checkbox"/> more than 60	
	Moderate	<input type="checkbox"/> 2.1 - 5.0			<input type="checkbox"/> somewhat poorly drained	<input type="checkbox"/> Moderate	<input type="checkbox"/> 40 to 60	
	Severe	<input type="checkbox"/> More than 5.0		<input type="checkbox"/> Any Flooding	<input type="checkbox"/> poorly drained	<input checked="" type="checkbox"/> Rapid to very rapid	<input type="checkbox"/> less than 40	

KEY FFA LAND JUDGING PLACARD - MINNESOTA

Pit Number 3 Yellow Card

Lime Area 1 Flooding None

pH 5.8 SMP Buffer Index 6.4 Assumed Field Size 440 Acres

P Test 38 lb./acres available phosphorus

Subsoil Phosphorus Level Medium

K Test 280 lb./acres exchangeable potassium

Subsoil Potassium Level High Manure Applied 3 Tons/Acre

Corn Yield Goal 240 bu./acres

Crop to be planted CORN

Past Crop Alfalfa (Good)

Original Surface Soil Depth 15 inches

Slope Length 125 feet

Depth to permanent water table > 60" \* Last Horizon continues to 60"



Yellow

FALL 2018

### Minnesota FFA Soils Scorecard

Name **KEY**

School

Number

**2**

9/17

<b>Part 1: Surface Soil -</b> <b>A. Thickness in inches</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 2 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36> <i>Allow 1 inch either way on thickness</i>										<b>Part 3 Parent Material - Continued</b> <b>B. Texture</b> Coarse Moderately Coarse 5 Medium <i>Loam</i> Fine Very Fine									
<b>B. Color</b> 4 Dark Medium Light										<b>C. Gravel</b> 2 None to Few Gravelly Very Gravelly Extremely Gravelly									
<b>C. Texture</b> Coarse Moderately Coarse 5 Medium <i>silt loam</i> Fine Very Fine										<b>Part 4 Topography</b> <b>A. Steepness of Slope</b> 3 Nearly level - 2% or less Gently sloping - 3 - 6 % Moderately sloping - 7-12% Strongly sloping - 13 to 18 % Steep - Greater than 18 %									
<b>D. Gravel and Rock</b> 2 None to Few Gravelly Very Gravelly Extremely Gravelly										<b>B. Landscape Position</b> 3 Upland Terrace - Footslope Bottom land - Flood Plains Depressional Area - No Outlet									
<b>Part 2: Subsurface Soil</b> <b>A. Thickness in inches</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 2 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36> <i>Allow 1 inch either way on thickness</i>										<b>Part 5 - Land Capability Classification</b> 6 Class I } Land suitable for for Class II } Cultivated Class III } Crops Class IV } Class V } Land suitable for Permanent Class VI } Vegetation Class VII } Class VIII } <i>Score 8 points for correct answer - 3 points for 1 class off except for class 5. Allow 3 points between Class IV and VI.</i>									
<b>B. Color</b> 4 Bright Mottled Dull										<b>Part 6 Interpretation of Soil Features</b> <b>A. Type of Material that Lim its Depth</b> 2 None- No limiting materials Bedrock - Soft or hard Hardpan - Cemented Very gravelly sand or high water table									
<b>C. Texture</b> Coarse Moderately Coarse 5 Medium <i>silty clay loam</i> Fine Very Fine										<b>B. Parent Material</b> 2 Bedrock - Soft or hard Alluvium /Outwash/Lacustrine Till/Loess/Aeolian Sand <i>Both loess/hill</i> Organic materials - Peat or muck									
<b>D. Gravel and Rock</b> 2 None to Few Gravelly Very Gravelly Extremely Gravelly										<b>C. Depth Favorable for Roots &amp; Water Penetration</b> 2 Very Deep - 60 inches or more Deep - 40 through 59 inches Moderately Deep - 20 through 39 inches Shallow - less than 20 inches									
<b>Part 3: Underlying Material</b> <b>A. Thickness in inches</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 2 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36> <i>Allow 1 inch either way on thickness</i>										<b>D. Air and Water Movement (Subsoil Permeability)</b> 2 Very Rapid Rapid Moderate Slow									



<b>E. Total Available Water capacity</b> <b>1. Available water in horizon per inch of soil</b>		<b>Part 7 Accelerated Erosion</b> <b>A. Amount of Erosion</b>								
1	<input type="checkbox"/> 0.05 <input checked="" type="checkbox"/> 0.15 <input type="checkbox"/> 0.20	<b>a. Surface Horizon</b> Calculation Area $.2 \times 12 = 2.4$	<input type="checkbox"/> No erosion evident (less than 2 inches) <input checked="" type="checkbox"/> Deposition (2 inches or greater) <input type="checkbox"/> Erosion present (2 inches or greater)							
1	<input type="checkbox"/> 0.05 <input checked="" type="checkbox"/> 0.15 <input type="checkbox"/> 0.20	<b>b. Subsoil</b> $.2 \times 16 = 3.2$	<b>B. Kind of Erosion</b> <input type="checkbox"/> None <input type="checkbox"/> Active gully <input checked="" type="checkbox"/> Wind erosion <input type="checkbox"/> Sheet or rill							
1	<input type="checkbox"/> 0.05 <input checked="" type="checkbox"/> 0.15 <input type="checkbox"/> 0.20	<b>C. Underlying Material</b> $.2 \times 32 = 6.4$ $\underline{12.0}$	<b>Part 8 - Need for Erosion Control</b> <b>A. Water Erosion</b> <input type="checkbox"/> None to slight <input checked="" type="checkbox"/> Crop cover, sod cover, and conservation tillage <input type="checkbox"/> Contour, strip crop and conservation tillage <input type="checkbox"/> Grass waterways and gully control <input type="checkbox"/> Woodland or permanent pasture <input type="checkbox"/> Wildlife or recreation							
<b>2. Available Water Capacity per Horizon</b> <b>a. Surface Horizon</b>		<b>B. Wind Erosion</b> <input type="checkbox"/> None to slight <input checked="" type="checkbox"/> Mulch tillage, cover crop								
1	0-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	8.1+	<b>Part 9 Drainage Required</b> <input checked="" type="checkbox"/> None required <input type="checkbox"/> Surface and/or tile
<b>b. Subsoil</b>		<b>Part 10 - Fertilizer and Lime Recommendations</b>								
1	0-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	8.1+	<input type="checkbox"/> None required <input checked="" type="checkbox"/> Surface and/or tile
<b>c. Underlying Material</b>		<input type="checkbox"/> Nitrogen pounds per acre <input checked="" type="checkbox"/> 50								
1	0-1.0	1.1-2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	8.1+	<input type="checkbox"/> Phosphorous pounds per acre <input checked="" type="checkbox"/> 20
<b>3. Total available water capacity in five feet of soil</b> Very low - Less than 3 inches Low - 3.1 to 6.0 inches <input checked="" type="checkbox"/> Moderate - 6.1 to 9.0 inches <input type="checkbox"/> High - over 9.0 inches		<input type="checkbox"/> Potassium pounds per acre <input checked="" type="checkbox"/> 0								
<b>4. Internal Drainage</b> <input checked="" type="checkbox"/> Well Drained <input type="checkbox"/> Moderately well drained <input type="checkbox"/> Somewhat poorly drained <input type="checkbox"/> Poorly or very poorly drained		<input type="checkbox"/> Lime tons per acres <input checked="" type="checkbox"/> 7.0								

E.ther

35-15 = 20

Part 11 - Land use Limitation (Points are for each section)									
Use	3 Pts Each			1 Point Each					
	Limitation	% Slope	Surface Soil Texture	Flooding	Internal Drainage Class	Permeability Class	Depth to Bedrock (Inches)	Underlying Material (Shrink Swell Potential)	
9 Dwellings (lawns), foundations, basements	Slight	<input checked="" type="checkbox"/> 0 to 5.0	<input checked="" type="checkbox"/> medium, moderate, coarse	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> well drained, med. well drained		<input checked="" type="checkbox"/> more than 60	<input checked="" type="checkbox"/> coarse, med. coarse, medium	
	Moderate	<input type="checkbox"/> 5.1 to 12.0	<input type="checkbox"/> coarse, fine, very fine				<input type="checkbox"/> 40 to 60	<input type="checkbox"/> fine texture	
	Severe	<input type="checkbox"/> More than 12.0		<input type="checkbox"/> Any flooding	<input type="checkbox"/> somewhat poorly to poorly drained		<input type="checkbox"/> less than 40	<input type="checkbox"/> very fine texture	
8 Septic tank absorption fields	Slight	<input checked="" type="checkbox"/> 0 to 5.0		<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> well to med well drained	<input type="checkbox"/> very rapid to rapid	<input checked="" type="checkbox"/> more than 60		
	Moderate	<input type="checkbox"/> 5.1 to 12.0				<input checked="" type="checkbox"/> Moderate	<input type="checkbox"/> 40 to 60		
	Severe	<input type="checkbox"/> More than 12.0		<input type="checkbox"/> Any flooding	<input type="checkbox"/> somewhat poorly to poorly drained	<input type="checkbox"/> slow to very slow	<input type="checkbox"/> less than 40		
8 Farm lagoons and holding basins	Slight	<input type="checkbox"/> 0 - 2.0		<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> well to med well drained	<input type="checkbox"/> Slow	<input checked="" type="checkbox"/> more than 60		
	Moderate	<input checked="" type="checkbox"/> 2.1 - 6.0			<input type="checkbox"/> somewhat poorly drained	<input checked="" type="checkbox"/> Moderate	<input type="checkbox"/> 40 to 60		
	Severe	<input type="checkbox"/> More than 6.0		<input type="checkbox"/> Any Flooding	<input type="checkbox"/> poorly drained	<input type="checkbox"/> Rapid to very rapid	<input type="checkbox"/> less than 40		

**2018 U of MN Fall Soils Invitational**

**Minnesota Soils Scorecard Questions for Pits 1 - 3 Scantron # 105481**

**Use your soils scorecard to fill out the answers on your scantron**

**Bubble in the front side of the sheet for Pit 1 (# 1-45) and Pit 2 (#51-95) and**

**Bubble in the back side of the sheet for Pit 3 (# 1-45)**

**Pits 1 & 3 Questions**

**Part 1: Surface soil**

**1. Surface Soil: Thickness in inches (2 pts)**

- A. 5 - 8
- B. 10 - 12
- C. 14 - 16
- D. 18 - 21
- E. 23 - 25

**2. Surface Soil Color (4 pts)**

- A. Dark
- B. Medium
- C. Light

**3. Surface: Soil Texture (5 pts)**

- A. Coarse
- B. Moderately Coarse
- C. Medium
- D. Fine
- E. Very Fine

**4. Surface: Gravel and Rock (2 pts)**

- A. None to Few
- B. Gravelly
- C. Very Gravelly
- D. Extremely Gravelly

**Part 2: Subsurface Soil**

**5. Subsurface Soil: Thickness in inches (2 pts)**

- A. 9 - 11
- B. 12 - 14
- C. 15 - 17
- D. 18 - 20
- E. 21 - 24

**6. Subsurface: Soil Color (4 pts)**

- A. Bright
- B. Mottled
- C. Dull

**7. Subsurface: Texture (5 pts)**

- A. Coarse
- B. Moderately course
- C. Medium
- D. Fine
- E. Very Fine

**8. Subsurface: Gravel and Rock (2 pts)**

- A. None to Few
- B. Gravelly
- C. Very Gravelly
- D. Extremely Gravelly

**Part 3: Underlying Material**

**9. Parent Material: Thickness in inches (2pts)**

- A. 20 - 22
- B. 24 - 26
- C. 28 - 30
- D. 32 - 34
- E. 35 - 36+

**10. Underlying Material: Texture (5 pts)**

- A. Coarse
- B. Moderately course
- C. Medium
- D. Fine
- E. Very Fine

**11. Underlying Material: Gravel (2 pts)**

- A. None to Few
- B. Gravelly
- C. Very Gravelly
- D. Extremely Gravelly

**Part 4: Topography**

**12. Steepness of slope (3 pts)**

- A. Nearly level - 2% or less
- B. Gently sloping - 3 - 6 %
- C. Moderately sloping - 7 - 12 %
- D. Strongly sloping - 13 - 18 %
- E. Steep - Greater than 18 %

**13. Landscape position (3 pts)**

- A. Upland
- B. Terrace – Footslope
- C. Bottom land – Flood Plains
- D. Depressional Area – No outlet

**Part 5: Land Classification**

**14. Land Capability Classification (6 pts)**

- A. Class I or II
- B. Class III
- C. Class IV
- D. Class V
- E. Class VI, VII, or VIII

**Part 6: Interpretation of Soils Features**

**15. Type of Material that Limits Depth (2 pts)**

- A. None- No limiting materials
- B. Bedrock – Soft or hard
- C. Hardpan – Cemented
- D. Very gravelly sand or high water table

**16. Parent Material (2 pts)**

- A. Bedrock – Soft or hard
- B. Alluvium/ Outwash/ Lacustrine
- C. Till/ Loess/ Aeolian Sand
- D. Organic Materials – Peat or Muck

**17. Depth favorable for roots & water (2 pts)**

- A. Very deep- 60 inches or more
- B. Deep- 40 – 59 inches
- C. Moderately Deep- 20 – 39 inches
- D. Shallow- less than 20 inches

**18. Air and water movement (2 pts)**

- A. Very Rapid
- B. Rapid
- C. Moderate
- D. Slow

**E. Total Available Water Capacity**

**Available water in horizon/ inch of soil**

**19. a. Surface Horizon (1 pt)**

- A. 0.05
- B. 0.15
- C. 0.20

**20. b. Subsoil Horizon (1 pt)**

- A. 0.05
- B. 0.15
- C. 0.20

**21. c. Underlying material Horizon (1 pt)**

- A. 0.05
- B. 0.15
- C. 0.20

**Available Water Capacity per Horizon**

**22. a. Surface Horizon (1 pt)**

- A. 0.0- 2.0
- B. 2.1 – 4.0
- C. 4.1 – 6.0
- D. 6.1 – 8.0
- E. over 8.0

**23. b. Subsoil Horizon (1 pt)**

- A. 0.0- 2.0
- B. 2.1 – 4.0
- C. 4.1 – 6.0
- D. 6.1 – 8.0
- E. over 8.0

**24. c. Underlying material (1 pt)**

- A. 0.0- 2.0
- B. 2.1 – 4.0
- C. 4.1 – 6.0
- D. 6.1 – 8.0
- E. over 8.0

**25. 3. Total available water capacity  
(5 ft. of soil) (4 pts.)**

- A. Very low – less than 3 inches
- B. Low – 3.1 to 6 inches
- C. Moderate – 6.1 to 9 inches
- D. High – Over 9 inches

**26. 4. Internal drainage (4 pts.)**

- A. Well drained
- B. Moderately well drained
- C. Somewhat poorly drained
- D. Poorly or very poorly drained

**Part 7 – Accelerated erosion**

**27. Amount of erosion (2 pt.)**

- A. No erosion evident (less than 2 inches)
- B. Deposition (2 inches or greater)
- C. Erosion present (2 inches or greater)

**28. Kind of erosion (2 pts.)**

- A. None
- B. Active gully
- C. Wind erosion
- D. Sheet or rill

**Part 8 – Need for erosion control**

**29. Water erosion (3 pts.)**

- A. None to slight
- B. Crop cover, sod cover and conservation tillage
- C. Contour, strip crop and conservation tillage
- D. Grass waterways and gully control
- E. Woodland/perm. pasture, wildlife or recreation

**30. Wind erosion (3 pts.)**

- A. None to slight
- B. Mulch tillage, cover crop

**Part 9**

**31. Drainage required (5 pts.)**

- A. None required
- B. Surface and/or tile

**Part 10 – Fertilizer and lime recommendations**

**32. Nitrogen pounds per acre (2 pts)**

- A. Over 161
- B. 121- 160
- C. 81- 120
- D. 41- 80
- E. 0- 40

**33. Phosphorous pounds per acre (2 pts.)**

- A. Over 81
- B. 61- 80
- C. 41- 60.
- D. 21- 40
- E. 0- 20

**34. Potassium pounds per acre (2 pts.)**

- A. Over 181
- B. 136- 180
- C. 96- 135
- D. 46- 90
- E. 0- 45

**35. Lime tons per acre (2 pts.)**

- A. 8.5 or more
- B. 6.5- 8.0
- C. 4.5- 6.0
- D. 2.5- 4.5
- E. 0.0- 2.0

**Part 11 – Land Use limitation**

**36. Dwellings (lawns), foundations, basements (3 pts)**

- A. Slight
- B. Moderate
- C. Severe

**Use limitation**

**37 Septic tank absorption fields (3 pts.)**

- A. Slight
- B. Moderate
- C. Severe

**Use limitation**

**38. Farm lagoons and holding basins (3 pts.)**

- A. Slight
- B. Moderate
- C. Severe

**39. % Slope (3 pts.)**

- A. Zero to 2.0
- B. 2.1 to 6.0
- C. 6.1 to 12.0
- D. More than 12.0

**40. Surface Soil Texture (1 pt.)**

- A. Medium, moderate, coarse
- B. Coarse, fine, very fine

**41. Flooding (3 pts.)**

- A. None
- B. Any flooding

**42. Internal Drainage Class (3 pts.)**

- A. Well drained, moderate well drained
- B. Somewhat poorly drained
- C. Poorly drained

**43. Permeability Class (2 pts)**

- A. Vary rapid to rapid
- B. Moderate
- C. Slow to Very slow

**44. Depth to Bedrock (Inches) (3 pts)**

- A. More than 60
- B. 40 to 60
- C. Less than 20

**45. Underlying Material (Shrink swell) (1pt)**

- A. Coarse, mod. coarse, medium texture
- B. Fine texture
- C. Very fine texture

## Minnesota Soils Scorecard Questions for Pits 1 -3 Scantron # 105481

Use your soils scorecard to fill out the answers on your scantron  
Bubble in the front side of the sheet for Pit 1 (# 1-45) and Pit 2 (#51-95) and  
Bubble in the back side of the sheet for Pit 3 (# 1-45)

### Pit 2 Questions

#### Part 1: Surface soil

51. Surface Soil: Thickness in inches (2 pts)

- A. 4 - 6
- B. 7 - 9
- C. 10 - 12
- D. 13 - 15
- E. 16 - 18

52. Surface Soil Color (4 pts)

- A. Dark
- B. Medium
- C. Light

53. Surface: Soil Texture (5 pts)

- A. Coarse
- B. Moderately Coarse
- C. Medium
- D. Fine
- E. Very Fine

54. Surface: Gravel and Rock (2 pts)

- A. None to Few
- B. Gravelly
- C. Very Gravelly
- D. Extremely Gravelly

#### Part 2: Subsurface Soil

55. Subsurface Soil: Thickness in inches (2 pts)

- A. 7 - 9
- B. 11 - 13
- C. 15 -17
- D. 19 -21
- E. 23 -25

56. Subsurface: Soil Color (4 pts)

- A. Bright
- B. Mottled
- C. Dull

57. Subsurface: Texture (5 pts)

- A. Coarse
- B. Moderately course
- C. Medium
- D. Fine
- E. Very Fine

58. Subsurface: Gravel and Rock (2 pts)

- A. None to Few
- B. Gravelly
- C. Very Gravelly
- D. Extremely Gravelly

#### Part 3: Underlying Material

59. Parent Material: Thickness in inches (2pts)

- A. 22 - 24
- B. 25 - 27
- C. 28 - 30
- D. 31 - 33
- E. 35 - 36+

60. Underlying Material: Texture (5 pts)

- A. Coarse
- B. Moderately course
- C. Medium
- D. Fine
- E. Very Fine

61. Underlying Material: Gravel (2 pts)

- A. None to Few
- B. Gravelly
- C. Very Gravelly
- D. Extremely Gravelly

#### Part 4: Topography

62. Steepness of slope (3 pts)

- A. Nearly level – 2% or less
- B. Gently sloping - 3 – 6 %
- C. Moderately sloping - 7 – 12 %
- D. Strongly sloping - 13 - 18 %
- E. Steep – Greater than 18 %

63. Landscape position (3 pts)

- A. Upland
- B. Terrace – Foothlope
- C. Bottom land – Flood Plains
- D. Depressional Area – No outlet

**Part 5: Land Classification**

64. Land Capability Classification (6 pts)

- A. Class I or II
- B. Class III
- C. Class IV
- D. Class V
- E. Class VI, VII, or VIII

**Part 6: Interpretation of Soils Features**

65. Type of Material that Limits Depth (2 pts)

- A. None- No limiting materials
- B. Bedrock – Soft or hard
- C. Hardpan – Cemented
- D. Very gravelly sand or high water table

66. Parent Material (2 pts)

- A. Bedrock – Soft or hard
- B. Alluvium/ Outwash/ Lacustrine
- C. Till/ Loess/ Aeolian Sand
- D. Organic Materials – Peat or Muck

67. Depth favorable for roots & water (2 pts)

- A. Very deep- 60 inches or more
- B. Deep- 40 – 59 inches
- C. Moderately Deep- 20 – 39 inches
- D. Shallow- less than 20 inches

68. Air and water movement (2 pts)

- A. Very Rapid
- B. Rapid
- C. Moderate
- D. Slow

**E. Total Available Water Capacity**

**Available water in horizon/ inch of soil**

69. a. Surface Horizon (1 pt)

- A. 0.05
- B. 0.15
- C. 0.20

70. b. Subsoil Horizon (1 pt)

- A. 0.05
- B. 0.15
- C. 0.20

71. c. Underlying material Horizon (1 pt)

- A. 0.05
- B. 0.15
- C. 0.20

**Available Water Capacity per Horizon**

72. a. Surface Horizon (1 pt)

- A. 0.0- 2.0
- B. 2.1 – 4.0
- C. 4.1 – 6.0
- D. 6.1 – 8.0
- E. over 8.0

73. b. Subsoil Horizon (1 pt)

- A. 0.0- 2.0
- B. 2.1 – 4.0
- C. 4.1 – 6.0
- D. 6.1 – 8.0
- E. over 8.0

74. c. Underlying material (1 pt)

- A. 0.0- 2.0
- B. 2.1 – 4.0
- C. 4.1 – 6.0
- D. 6.1 – 8.0
- E. over 8.0

75. 3. Total available water capacity

(5 ft. of soil) (4 pts.)

- A. Very low – less than 3 inches
- B. Low – 3.1 to 6 inches
- C. Moderate – 6.1 to 9 inches
- D. High – Over 9 inches

76. 4. Internal drainage (4 pts.)

- A. Well drained
- B. Moderately well drained
- C. Somewhat poorly drained
- D. Poorly or very poorly drained

**Part 7 – Accelerated erosion**

77. Amount of erosion (2 pt.)

- A. No erosion evident (less than 2 inches)
- B. Deposition (2 inches or greater)
- C. Erosion present (2 inches or greater)

78. Kind of erosion (2 pts.)

- A. None
- B. Active gully
- C. Wind erosion
- D. Sheet or rill

**Part 8 – Need for erosion control**

79. Water erosion (3 pts.)

- A. None to slight
- B. Crop cover, sod cover and conservation tillage
- C. Contour, strip crop and conservation tillage
- D. Grass waterways and gully control
- E. Woodland/perm. pasture, wildlife or recreation

80. Wind erosion (3 pts.)

- A. None to slight
- B. Mulch tillage, cover crop

**Part 9**

81. Drainage required (5 pts.)

- A. None required
- B. Surface and/or tile

**Part 10 – Fertilizer and lime recommendations**

82. Nitrogen pounds per acre (2 pts)

- A. Over 161
- B. 121- 160
- C. 81- 120
- D. 41- 80
- E. 0- 40

83. Phosphorous pounds per acre (2 pts.)

- A. Over 81
- B. 61- 80
- C. 41- 60.
- D. 21- 40
- E. 0- 20

84. Potassium pounds per acre (2 pts.)

- A. Over 181
- B. 136- 180
- C. 96- 135
- D. 46- 90
- E. 0- 45

85. Lime tons per acre (2 pts.)

- A. 8.5 or more
- B. 6.5- 8.0
- C. 4.5- 6.0
- D. 2.5- 4.5
- E. 0.0- 2.0

**Part 11 – Land Use limitation**

86. Dwellings (lawns), foundations, basements (3 pts)

- A. Slight
- B. Moderate
- C. Severe

**Use limitation**

87 Septic tank absorption fields (3 pts.)

- A. Slight
- B. Moderate
- C. Severe

**Use limitation**

88. Farm lagoons and holding basins (3 pts.)

- A. Slight
- B. Moderate
- C. Severe

89. % Slope (3 pts.)

- A. Zero to 2.0
- B. 2.1 to 6.0
- C. 6.1 to 12.0
- D. More than 12.0

90. Surface Soil Texture (1 pt.)

- A. Medium, moderate, coarse
- B. Coarse, fine, very fine

91. Flooding (3 pts.)

- A. None
- B. Any flooding

92. Internal Drainage Class (3 pts.)

- A. Well drained, moderate well drained
- B. Somewhat poorly drained
- C. Poorly drained

93. Permeability Class (2 pts)

- A. Vary rapid to rapid
- B. Moderate
- C. Slow to Very slow

94. Depth to Bedrock (Inches) (3 pts)

- A. More than 60
- B. 40 to 60
- C. Less than 40

95. Underlying Material (Shrink swell) (1pt)

- A. Coarse, mod. coarse, medium texture
- B. Fine texture
- C. Very fine texture



Pit 1

Pit 2

Written Exam

1	(A) (B) (C) (D) (E)	21	(A) (B) (C) (D) (E)	41	(A) (B) (C) (D) (E)	81	(A) (B) (C) (D) (E)
2	(A) (B) (C) (D) (E)	22	(A) (B) (C) (D) (E)	42	(A) (B) (C) (D) (E)	82	(A) (B) (C) (D) (E)
3	(A) (B) (C) (D) (E)	23	(A) (B) (C) (D) (E)	43	(A) (B) (C) (D) (E)	83	(A) (B) (C) (D) (E)
4	(A) (B) (C) (D) (E)	24	(A) (B) (C) (D) (E)	44	(A) (B) (C) (D) (E)	84	(A) (B) (C) (D) (E)
5	(A) (B) (C) (D) (E)	25	(A) (B) (C) (D) (E)	45	(A) (B) (C) (D) (E)	85	(A) (B) (C) (D) (E)
6	(A) (B) (C) (D) (E)	26	(A) (B) (C) (D) (E)			86	(A) (B) (C) (D) (E)
7	(A) (B) (C) (D) (E)	27	(A) (B) (C) (D) (E)			87	(A) (B) (C) (D) (E)
8	(A) (B) (C) (D) (E)	28	(A) (B) (C) (D) (E)			88	(A) (B) (C) (D) (E)
9	(A) (B) (C) (D) (E)	29	(A) (B) (C) (D) (E)			89	(A) (B) (C) (D) (E)
10	(A) (B) (C) (D) (E)	30	(A) (B) (C) (D) (E)			90	(A) (B) (C) (D) (E)
11	(A) (B) (C) (D) (E)	31	(A) (B) (C) (D) (E)	51	(A) (B) (C) (D) (E)	91	(A) (B) (C) (D) (E)
12	(A) (B) (C) (D) (E)	32	(A) (B) (C) (D) (E)	52	(A) (B) (C) (D) (E)	92	(A) (B) (C) (D) (E)
13	(A) (B) (C) (D) (E)	33	(A) (B) (C) (D) (E)	53	(A) (B) (C) (D) (E)	93	(A) (B) (C) (D) (E)
14	(A) (B) (C) (D) (E)	34	(A) (B) (C) (D) (E)	54	(A) (B) (C) (D) (E)	94	(A) (B) (C) (D) (E)
15	(A) (B) (C) (D) (E)	35	(A) (B) (C) (D) (E)	55	(A) (B) (C) (D) (E)	95	(A) (B) (C) (D) (E)
16	(A) (B) (C) (D) (E)	36	(A) (B) (C) (D) (E)	56	(A) (B) (C) (D) (E)		
17	(A) (B) (C) (D) (E)	37	(A) (B) (C) (D) (E)	57	(A) (B) (C) (D) (E)		
18	(A) (B) (C) (D) (E)	38	(A) (B) (C) (D) (E)	58	(A) (B) (C) (D) (E)		
19	(A) (B) (C) (D) (E)	39	(A) (B) (C) (D) (E)	59	(A) (B) (C) (D) (E)		
20	(A) (B) (C) (D) (E)	40	(A) (B) (C) (D) (E)	60	(A) (B) (C) (D) (E)		

Pit 3

Written Exam

1	(A) (B) (C) (D) (E)	21	(A) (B) (C) (D) (E)	41	(A) (B) (C) (D) (E)		
2	(A) (B) (C) (D) (E)	22	(A) (B) (C) (D) (E)	42	(A) (B) (C) (D) (E)		
3	(A) (B) (C) (D) (E)	23	(A) (B) (C) (D) (E)	43	(A) (B) (C) (D) (E)		
4	(A) (B) (C) (D) (E)	24	(A) (B) (C) (D) (E)	44	(A) (B) (C) (D) (E)		
5	(A) (B) (C) (D) (E)	25	(A) (B) (C) (D) (E)	45	(A) (B) (C) (D) (E)		
6	(A) (B) (C) (D) (E)	26	(A) (B) (C) (D) (E)				
7	(A) (B) (C) (D) (E)	27	(A) (B) (C) (D) (E)				
8	(A) (B) (C) (D) (E)	28	(A) (B) (C) (D) (E)				
9	(A) (B) (C) (D) (E)	29	(A) (B) (C) (D) (E)				
10	(A) (B) (C) (D) (E)	30	(A) (B) (C) (D) (E)				
11	(A) (B) (C) (D) (E)	31	(A) (B) (C) (D) (E)				
12	(A) (B) (C) (D) (E)	32	(A) (B) (C) (D) (E)				
13	(A) (B) (C) (D) (E)	33	(A) (B) (C) (D) (E)				
14	(A) (B) (C) (D) (E)	34	(A) (B) (C) (D) (E)				
15	(A) (B) (C) (D) (E)	35	(A) (B) (C) (D) (E)				
16	(A) (B) (C) (D) (E)	36	(A) (B) (C) (D) (E)				
17	(A) (B) (C) (D) (E)	37	(A) (B) (C) (D) (E)				
18	(A) (B) (C) (D) (E)	38	(A) (B) (C) (D) (E)				
19	(A) (B) (C) (D) (E)	39	(A) (B) (C) (D) (E)				
20	(A) (B) (C) (D) (E)	40	(A) (B) (C) (D) (E)				

