

Turf and Ornamental Soil Analysis Report

Spectrum Analytic

1087 Jamison Road NW
Washington Court House, OH 43160-8748

www.spectrumanalytic.com

**ANDROPOGON ASSOCIATES
10 SHURS LANE
PHILADELPHIA, PA 19127**

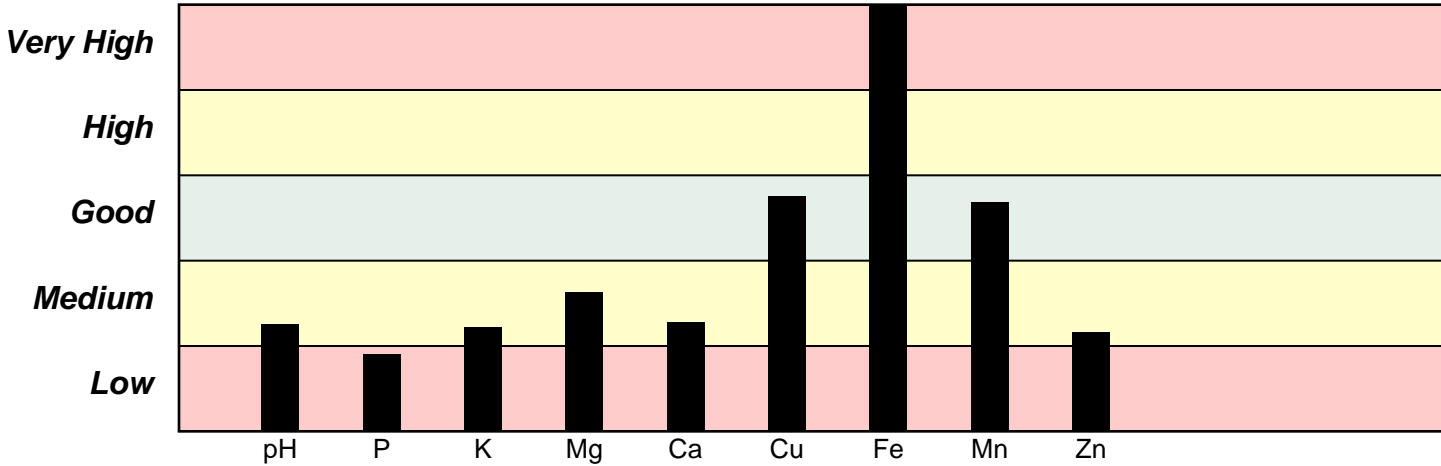
Prepared For

SUNY PURCHASE
GREEN INFRASTRUCTURE
735 ANDERSON HILL ROAD
PURCHASE, NY 10577

Sample Information

Sample	A	Sampled	12-11-2017
Lab Number	C02139	Tested	12-14-2017

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	5.4	6.0-6.8	Copper	m3-ppm 2.0	Varies
Buffer pH	6.7		Iron	m3-ppm 238	9-40
Organic Matter %	2.2		Manganese	m3-ppm 17	Varies
CEC	6.4		Zinc	m3-ppm 2.1	3.9-10.9
K Saturation %	2.6	2.0-4.0	Clay	% 3	
Mg Saturation %	12.8	10-20	Sand	% 69	
Ca Saturation %	28.6	50-70	Silt	% 29	
K/Mg Ratio	0.7		Texture	Sandy Loam	
Ca/Mg Ratio	4.4				
Phosphorus m3-ppm	25	50-80			
Potassium m3-ppm	78	130-220			
Magnesium m3-ppm	112	140-280			
Calcium m3-ppm	490	800-1300			



Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)										
Yr	Crop	CaCO ₃	N	P ₂ O ₅	K ₂ O	Mg	S	B	Cu	Fe	Mn	Zn
18	Fescue, Turf Blend, Seeding	43D	1.0	3.5	3.2	0.2			0.0	0.0	0.0	0.1
19	Rain Garden		1.0	0.6	2.9	0.2			0.0	0.0	0.0	0.1

Lime expressed in 100% pure CaCO₃. Adjust accordingly. D=Dolomitic. C=Calcitic.

Rain Garden: Plant species adapted to rain gardens can have greatly different soil pH requirements. Due to this potential problem, this soil pH evaluation and lime recommendation may not be optimum for all plants in the garden.

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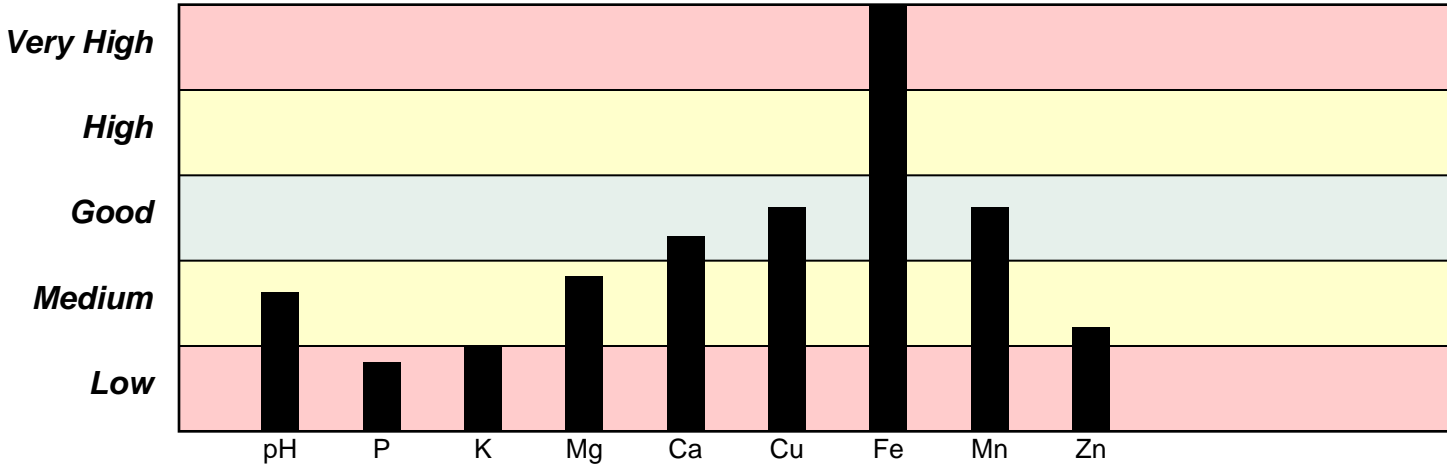
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Sample Information

Sample	B	Sampled	12-11-2017
Lab Number	C02140	Tested	12-14-2017

Analysis		Result	Optimal	Analysis		Result	Optimal
Soil pH		5.7	6.0-6.8	Copper	m3-ppm	2.1	Varies
Buffer pH		7.0		Iron	m3-ppm	221	9-40
Organic Matter	%	1.7		Manganese	m3-ppm	26	Varies
CEC		3.5		Zinc	m3-ppm	2.2	3.9-10.9
K Saturation	%	3.7	2.0-4.0	Clay	%	3	
Mg Saturation	%	25.0	10-20	Sand	%	71	
Ca Saturation	%	71.3	50-70	Silt	%	27	
K/Mg Ratio		0.5		Texture		Sandy Loam	
Ca/Mg Ratio		5.6					
Phosphorus	m3-ppm	26	60-90				
Potassium	m3-ppm	60	120-210				
Magnesium	m3-ppm	119	130-270				
Calcium	m3-ppm	663	500-1000				

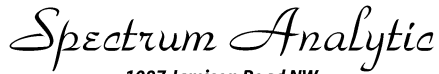


Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)											
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn	
18	Fescue, Turf Blend, Seeding	14D	1.0	3.6	3.5	0.2			0.0	0.0	0.0	0.1	
19	Ornamental/Shrub (Acid)		2.8	2.7	2.4	0.5			0.0	0.0	0.0	0.1	

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

Ornamental/Shrub (Acid): Reduce N by 50% for flowering and dwarf plants. Reduce N by 25% for small trees & shrubs. Avoid late summer applications. Monitor and adjust nutrients with annual leaf analysis.

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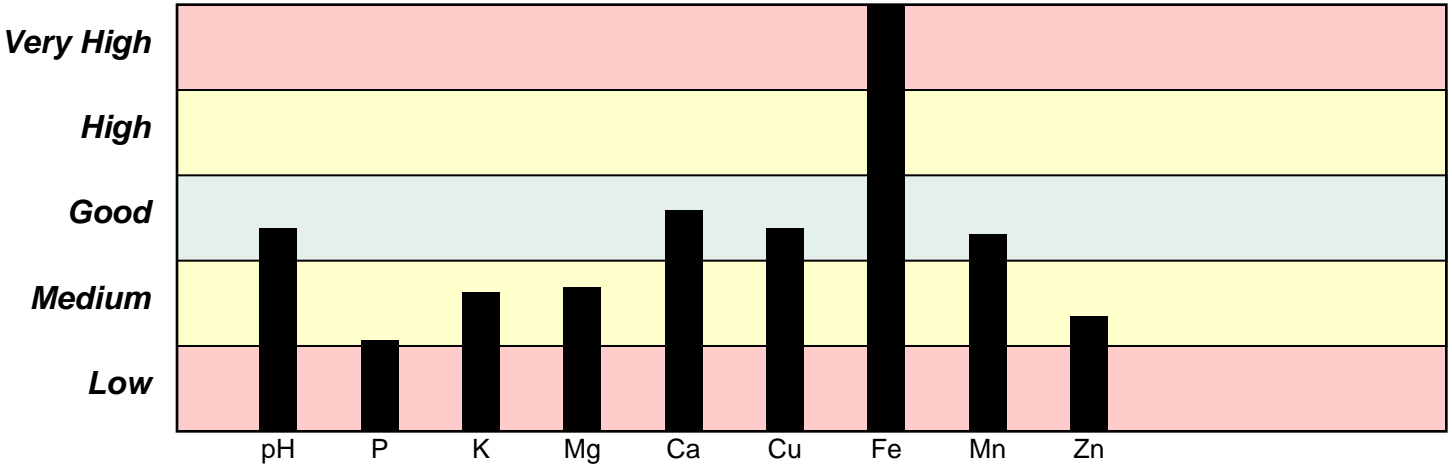
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Sample Information
Sample C Sampled 12-11-2017
Lab Number C02141 Tested 12-14-2017

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	6.3	6.0-6.8	Copper	m3-ppm 2.2	Varies
Buffer pH	7.0		Iron	m3-ppm 236	9-40
Organic Matter %	2.8		Manganese	m3-ppm 24	Varies
CEC	4.1		Zinc	m3-ppm 2.5	3.9-10.9
K Saturation %	5.1	2.0-4.0	Clay %	5	
Mg Saturation %	19.8	10-20	Sand %	73	
Ca Saturation %	75.1	50-70	Silt %	23	
K/Mg Ratio	0.9		Texture	Sandy Loam	
Ca/Mg Ratio	7.4				
Phosphorus m3-ppm	33	60-90			
Potassium m3-ppm	98	120-210			
Magnesium m3-ppm	111	130-270			
Calcium m3-ppm	823	500-1000			



Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)											
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn	
18	Fescue, Turf Blend, Seeding	5D	1.0	3.4	2.8	0.2			0.0	0.0	0.0	0.1	
19	Ornamental/shrub (non-acid loving)		2.8	2.2	1.9	0.2			0.0	0.0	0.0	0.1	

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

Ornamental/shrub (non-acid loving): Reduce N by 50% for flowering and dwarf plants. Reduce N by 25% for small trees & shrubs. Avoid late summer applications. Monitor and adjust nutrients with annual leaf analysis.

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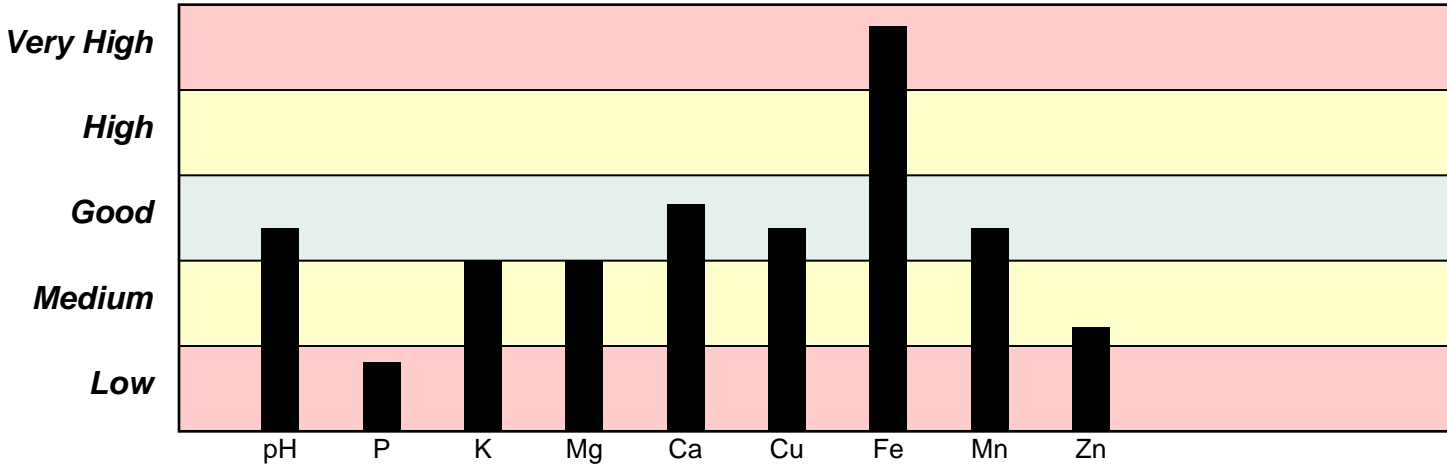
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Sample Information
Sample D
Lab Number C02142
Sampled 12-11-2017
Tested 12-14-2017

Analysis		Result	Optimal	Analysis		Result	Optimal
Soil pH		6.3	6.0-6.8	Copper	m3-ppm	1.9	Varies
Buffer pH		7.0		Iron	m3-ppm	176	9-40
Organic Matter	%	2.1		Manganese	m3-ppm	34	Varies
CEC		4.5		Zinc	m3-ppm	2.2	3.9-10.9
K Saturation	%	5.6	2.0-4.0	Clay	%	5	
Mg Saturation	%	21.8	10-20	Sand	%	73	
Ca Saturation	%	72.6	50-70	Silt	%	23	
K/Mg Ratio		0.9		Texture		Sandy Loam	
Ca/Mg Ratio		6.5					
Phosphorus	m3-ppm	25	60-90				
Potassium	m3-ppm	119	120-210				
Magnesium	m3-ppm	135	130-270				
Calcium	m3-ppm	879	500-1000				



Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)											
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn	
18	Fescue, Turf Blend, Seeding	5	1.0	3.6	2.5	0.3			0.0	0.0	0.0	0.1	
19	Rain Garden		1.0	0.6	2.4	0.3			0.0	0.0	0.0	0.1	

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

Rain Garden: Plant species adapted to rain gardens can have greatly different soil pH requirements. Due to this potential problem, this soil pH evaluation and lime recommendation may not be optimum for all plants in the garden.

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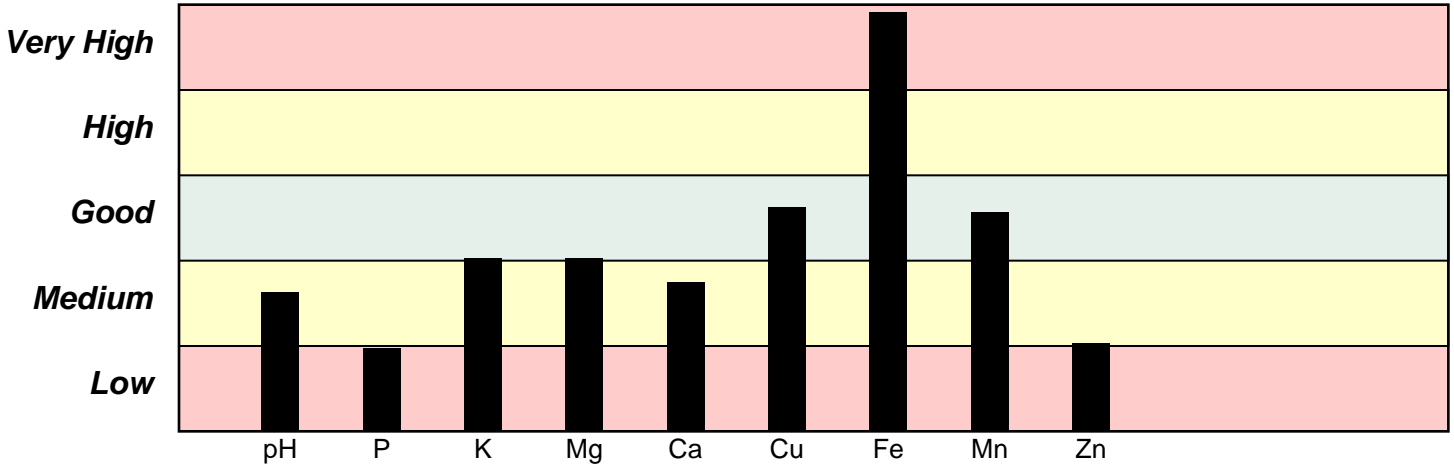
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SUNY PURCHASE GREEN INFRASTRUCTURE 735 ANDERSON HILL ROAD PURCHASE, NY 10577

Sample Information			
Sample	E	Sampled	12-11-2017
Lab Number	C02143	Tested	12-14-2017

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	5.7	6.0-6.8	Copper	m3-ppm 1.5	Varies
Buffer pH	6.8		Iron	m3-ppm 191	9-40
Organic Matter	% 2.7		Manganese	m3-ppm 23	Varies
CEC	6.0		Zinc	m3-ppm 1.8	3.9-10.9
K Saturation	% 4.6	2.0-4.0	Clay	% 5	
Mg Saturation	% 17.2	10-20	Sand	% 75	
Ca Saturation	% 38.5	50-70	Silt	% 21	
K/Mg Ratio	0.9		Texture	Loamy Sand	
Ca/Mg Ratio	4.4				
Phosphorus	m3-ppm 27	60-80			
Potassium	m3-ppm 128	120-210			
Magnesium	m3-ppm 142	140-270			
Calcium	m3-ppm 621	700-1200			

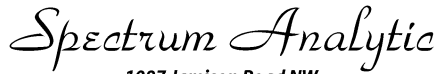


Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)											
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn	
18	Fescue, Turf Blend, Seeding	28	1.0	3.5	2.4	0.3			0.0	0.0	0.0	0.1	
19	Ornamental/shrub (non-acid loving)		2.8	2.3	1.4	0.3			0.0	0.0	0.0	0.1	

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

Ornamental/shrub (non-acid loving): Reduce N by 50% for flowering and dwarf plants. Reduce N by 25% for small trees & shrubs. Avoid late summer applications. Monitor and adjust nutrients with annual leaf analysis.

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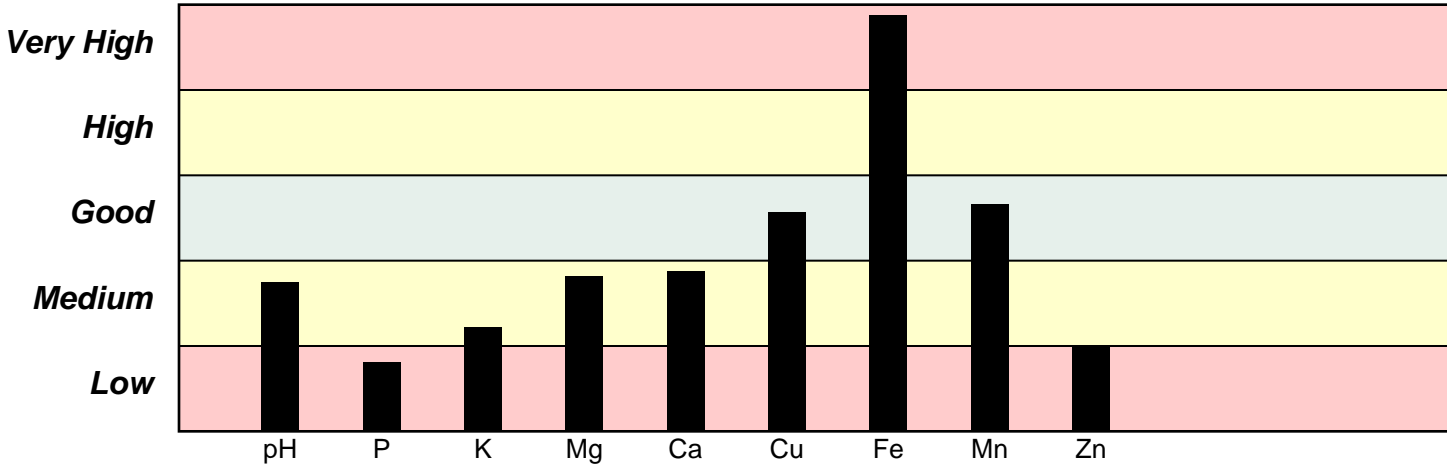
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Sample Information
 Sample F Sampled 12-11-2017
 Lab Number C02144 Tested 12-14-2017

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	5.8	6.0-6.8	Copper	m3-ppm 1.4	Varies
Buffer pH	6.8		Iron	m3-ppm 190	9-40
Organic Matter	% 2.2		Manganese	m3-ppm 41	Varies
CEC	5.8		Zinc	m3-ppm 1.7	3.9-10.9
K Saturation	% 2.8	2.0-4.0	Clay	% 5	
Mg Saturation	% 15.3	10-20	Sand	% 75	
Ca Saturation	% 40.7	50-70	Silt	% 21	
K/Mg Ratio	0.6		Texture	Loamy Sand	
Ca/Mg Ratio	5.2				
Phosphorus	m3-ppm 23	60-80			
Potassium	m3-ppm 77	120-210			
Magnesium	m3-ppm 122	140-270			
Calcium	m3-ppm 633	700-1200			



<i>Recommendations</i>		<i>Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)</i>											
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn	
18	Fescue, Turf Blend, Seeding	26D	1.0	3.6	3.2	0.2			0.0	0.0	0.0	0.1	
19	Ornamental/Shrub (Acid)		2.8	2.7	2.2	0.5			0.0	0.0	0.0	0.1	

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

Ornamental/Shrub (Acid): Reduce N by 50% for flowering and dwarf plants. Reduce N by 25% for small trees & shrubs. Avoid late summer applications. Monitor and adjust nutrients with annual leaf analysis.
Ornamental/Shrub (Acid): Apply 1.5 lbs/1000 sqft Calcium from gypsum and/or fertilizer sources.