



ATTN: SCOT SAUNDERS

The Davey Institute Soil Testing Laboratory

Territory: 120905 DRG

Plant Species: various: Cottonwood (*Populus sp.*)
American Elm (*Ulmus americana*) Pecan (*Carya
illinoensis*) Walnut (*Juglans sp.*) Modest Ash
(*Fraxinus sp.*) Eastern Red Cedar (*Cedrus sp.*)

Date: December 17, 2008

Soil Laboratory Number: 758-803-08

Plant Tissue Analysis Number: 699-743-08

Client: City of Austin

The soil and tissue samples were sent to Spectrum Analytic, Inc. for testing.

***Results and Recommendations** (See chart for corresponding tissue analysis numbers)

Lab Nos: 760-08-4, 761-08-5, 763-08-7, 767-08-11, 768-08-12, 772-08-16, 775-08-19, 802-08-57

1. **Soil pH:** Contrary to Spectrum's recommendations, Davey does not recommend lowering the pH with sulfur. This is because the soil has a medium texture and a high level of calcium which will resist a pH change.
2. **Soluble salts:** The soluble salt level will not prevent seed from germinating or adversely affect plant growth.
3. **Texture:** A mechanical analysis of the soil found it is a
4. **P:** Add monoammonium phosphate (12-61-0) to Arbor Green at a rate of 5 lb per 100 gal of mix and apply at a rate of 50 gal per 1000 sq ft. At a 1 year rate this means applying an extra 1.5 lb of actual phosphorus per 1000 sq ft.

Lab Nos: All other samples

1. **Soil pH:** Contrary to Spectrum's recommendations, Davey does not recommend lowering the pH with sulfur. This is because the soil has a medium texture and a high level of calcium which will resist a pH change.
2. **Soluble salts:** The soluble salt level will not prevent seed from germinating or adversely affect plant growth.
3. **P&K:** Fertilize with Arbor Green to maintain optimum levels of soil nutrients.

*Recommendations made by Richard Rathjens, Senior Agronomist Davey Institute

Sincerely,

Debbie Miller
Diagnostician and Research Associate



"Do It Right Or Not At All"
An Employee-Owned Company

Tree ID	Species	DBH	Height	Davey Tissue Lab No.	Davey Soil No (right)
1	Populus deltoides (COTTONWOOD)	48	45-60'	699-08-1	758-08-1
2	Ulmus americana (AMERICAN ELM)	44	45-60'	700-08-2	759-08-2
4	Ulmus americana (AMERICAN ELM)	36	45-60'	701-08-4	760-08-4
5	Ulmus americana (AMERICAN ELM)	27	30-45'	702-08-5	761-08-5
6	Carya illinoensis (PECAN)	29	45-60'	703-08-6	762-08-6
7	Carya illinoensis (PECAN)	48	45-60'	704-08-7	763-08-7
8	Carya illinoensis (PECAN)	27	45-60'	705-08-8	764-08-8
9	Carya illinoensis (PECAN)	32	45-60'	706-08-9	765-08-9
10	Carya illinoensis (PECAN)	32	45-60'	707-08-10	766-08-10
11	Carya illinoensis (PECAN)	36	45-60'	708-08-11	767-08-11
12	Carya illinoensis (PECAN)	27	45-60'	709-08-12	768-08-12
13	Carya illinoensis (PECAN)	32	45-60'	710-09-13	769-08-13
14	Carya illinoensis (PECAN)	36	>60'	711-08-14	770-08-14
15	Carya illinoensis (PECAN)	50	45-60'	712-08-15	771-08-15
16	Carya illinoensis (PECAN)	29	30-45'	No sample	772-08-16
17	Carya illinoensis (PECAN)	23	15-30'	713-08-17	773-08-17
18	Carya illinoensis (PECAN)	36	45-60'	714-08-18	774-08-18
19	Carya illinoensis (PECAN)	35	30-45'	715-08-19	775-08-19
20	Carya illinoensis (PECAN)	46	45-60'	716-08-20	776-08-20
21	Carya illinoensis (PECAN)	42	45-60'	717-08-21	777-08-21
28	Carya illinoensis (PECAN)	26	45-60'	718-08-28	778-08-28
29	Carya illinoensis (PECAN)	32	45-60'	719-08-29	779-08-29
30	Carya illinoensis (PECAN)	44	45-60'	720-08-30	780-08-30
31	Carya illinoensis (PECAN)	30	30-45'	721-08-31	781-08-31
32	Carya illinoensis (PECAN)	35	45-60'	722-08-32	782-08-32
34	Carya illinoensis (PECAN)	45	30-45'	723-08-34	783-08-34
35	Carya illinoensis (PECAN)	31	45-60'	724-08-35	784-08-35
36	Juglans nigra (WALNUT)	31	30-45'	725-08-36	785-08-36
37	Carya illinoensis (PECAN)	38	45-60'	726-08-37	786-08-37
38	Carya illinoensis (PECAN)	33	45-60'	727-08-38	787-08-38
40	Fraxinus velutina (MODESTO ASH)	52	45-60'	728-08-40	788-08-40
41	Carya illinoensis (PECAN)	31	30-45'	729-08-41	789-08-41
43	Carya illinoensis (PECAN)	35	45-60'	730-08-43	790-08-43
46	Populus deltoides (COTTONWOOD)	39	45-60'	731-08-46	791-08-46
47	Populus deltoides (COTTONWOOD)	26	45-60'	732-08-47	792-08-47

48	Carya illinoensis (PECAN)	18	30-45'	733-08-48	793-08-48
49	Carya illinoensis (PECAN)	24	30-45'	734-08-49	794-08-49
50	Carya illinoensis (PECAN)	35	45-60'	735-08-50	795-08-50
51	Juniperus virginiana (EASTERN REDCEDAR)	35	30-45'	736-08-51	796-08-51
52	Carya illinoensis (PECAN)	32	30-45'	737-08-52	797-08-52
53	Ulmus americana (AMERICAN ELM)	36	30-45'	738-08-53	798-08-53
54	Carya illinoensis (PECAN)	36	45-60'	739-08-54	799-08-54
55	Carya illinoensis (PECAN)	38	45-60'	740-08-55	800-08-55
56	Carya illinoensis (PECAN)	33	45-60'	741-08-56	801-08-56
57	Populus deltoides (COTTONWOOD)	41	45-60'	742-08-57	802-08-57
58	Carya illinoensis (PECAN)	42	45-60'	743-08-58	803-08-58

Turf and Ornamental Soil Analysis Report

Spectrum Analytic Inc.

P.O. Box 639 - 1087 Jamison Road
Washington C.H., OH 43160

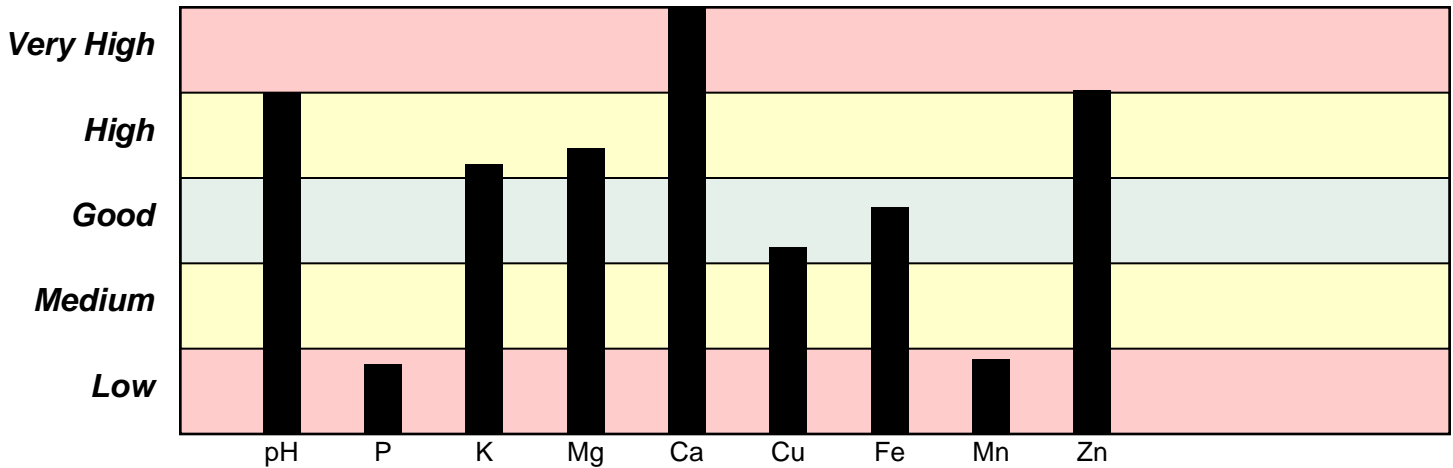
www.spectrumanalytic.com

THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	758-08-1	Sampled	12-02-2008
Lab Number	C04636	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.6	6.0-6.8	Copper	m3-ppm 6.4	Varies
Buffer pH			Iron	m3-ppm 30	9-40
Organic Matter	% 2.7		Manganese	m3-ppm 20	Varies
CEC	19.5		Zinc	m3-ppm 18	4-11
K Saturation	% 3.7	2.0-4.0	Soluble Salts	mmhos/cm 0.30	0.00-1.00
Mg Saturation	% 19.4	10-20	Clay	% 15	
Ca Saturation	% 76.9	50-70	Sand	% 68	
K/Mg Ratio	0.7		Silt	% 17	
Ca/Mg Ratio	129.0		Texture	Sandy Loam	
Phosphorus	m3-ppm 16	40-70			
Potassium	m3-ppm 337	200-310			
Magnesium	m3-ppm 515	270-450			
Calcium	m3-ppm 66452	2600-3600			



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	
09	Cottonwood	0	3.4	1.8	0.7	0.0	12.1		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Cottonwood: Monitor and adjust nutrient program based on annual tissue analysis

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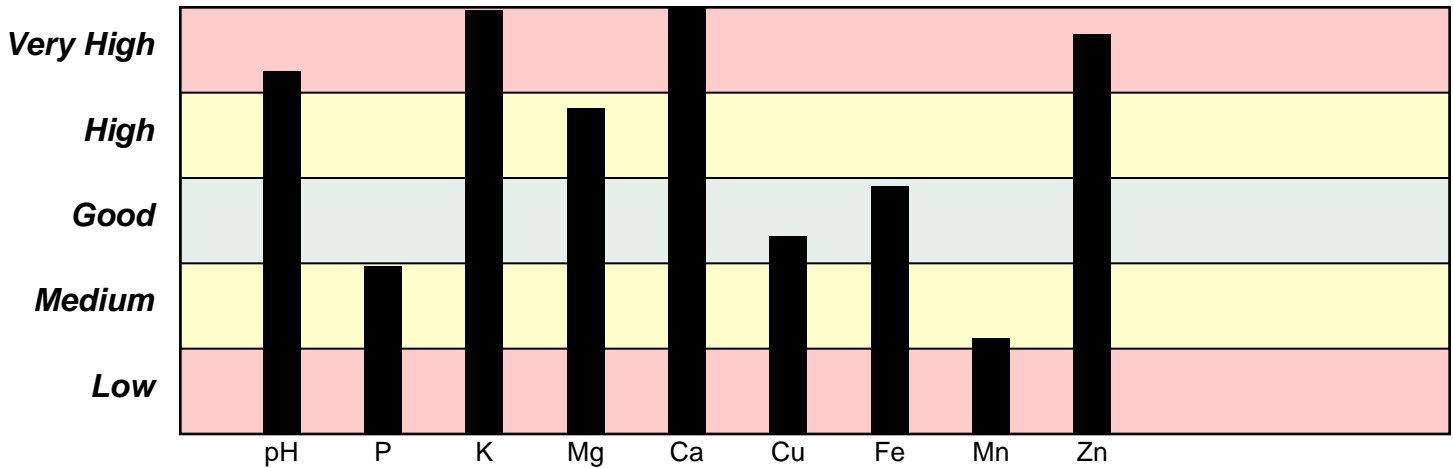
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CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	759-08-2	Sampled	12-02-2008
Lab Number	C04637	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.5	6.5-7.0	Copper	m3-ppm 7.8	Varies
Buffer pH			Iron	m3-ppm 38	9-40
Organic Matter	% 2.9		Manganese	m3-ppm 25	Varies
CEC	20.9		Zinc	m3-ppm 30	4-11
K Saturation	% 6.5	2.0-4.0	Soluble Salts	mmhos/cm 0.37	0.00-2.00
Mg Saturation	% 21.8	10-20	Clay	% 31	
Ca Saturation	% 71.8	50-70	Sand	% 54	
K/Mg Ratio	1.0		Silt	% 14	
Ca/Mg Ratio	107.3		Texture	Sandy Clay	Loam
Phosphorus	m3-ppm 38	40-70			
Potassium	m3-ppm 629	210-320			
Magnesium	m3-ppm 620	280-460			
Calcium	m3-ppm 66509	2800-3900			



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	
09	Elm, Undefined	0	4.0	1.0	0.0	0.0	6.9		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Elm, Undefined: Split N 50% early spring and 50% late summer. Monitor and adjust fertilizer rates based on annual leaf analysis.

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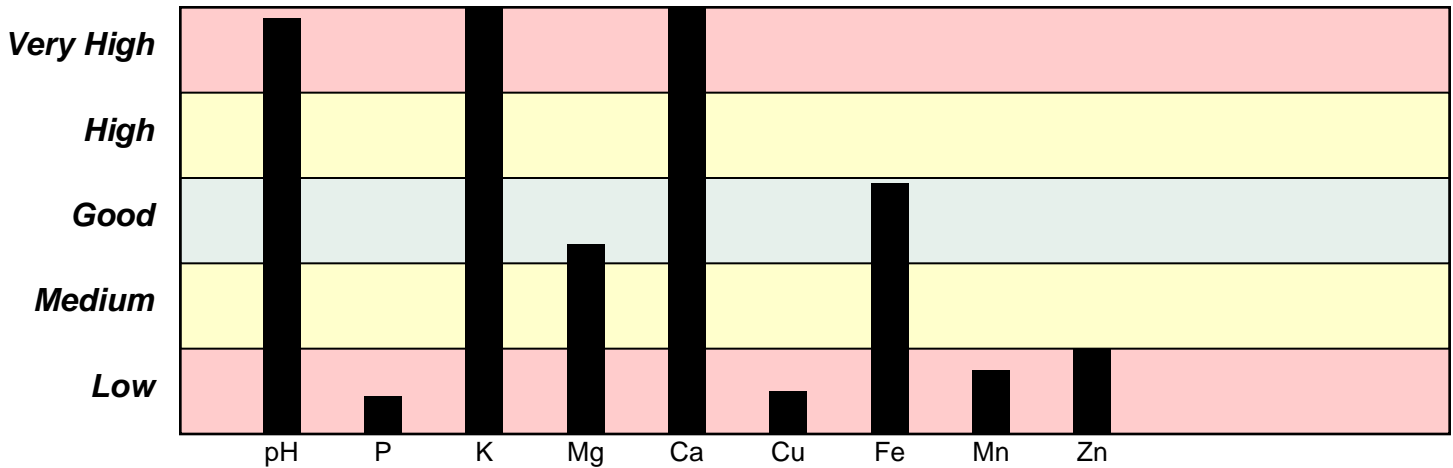
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KENT, OH 44240

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CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	760-08-4	Sampled	12-02-2008
Lab Number	C04638	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.9	6.5-7.0	Copper	m3-ppm 1.1	Varies
Buffer pH			Iron	m3-ppm 39	9-40
Organic Matter	% 0.3		Manganese	m3-ppm 22	Varies
CEC	18.6		Zinc	m3-ppm 2	4-11
K Saturation	% 7.5	2.0-4.0	Soluble Salts	mmhos/cm 0.25	0.00-2.00
Mg Saturation	% 11.9	10-20	Clay	% 19	
Ca Saturation	% 80.5	50-70	Sand	% 52	
K/Mg Ratio	2.1		Silt	% 29	
Ca/Mg Ratio	219.5		Texture	Loam	
Phosphorus	m3-ppm 9	40-70			
Potassium	m3-ppm 650	200-300			
Magnesium	m3-ppm 303	260-440			
Calcium	m3-ppm 66505	2500-3500			



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	
09	Elm, Undefined	0	4.0	2.1	0.0	0.5	12.4		0.0	0.0	0.1	0.2	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Elm, Undefined: Split N 50% early spring and 50% late summer. Monitor and adjust fertilizer rates based on annual leaf analysis.

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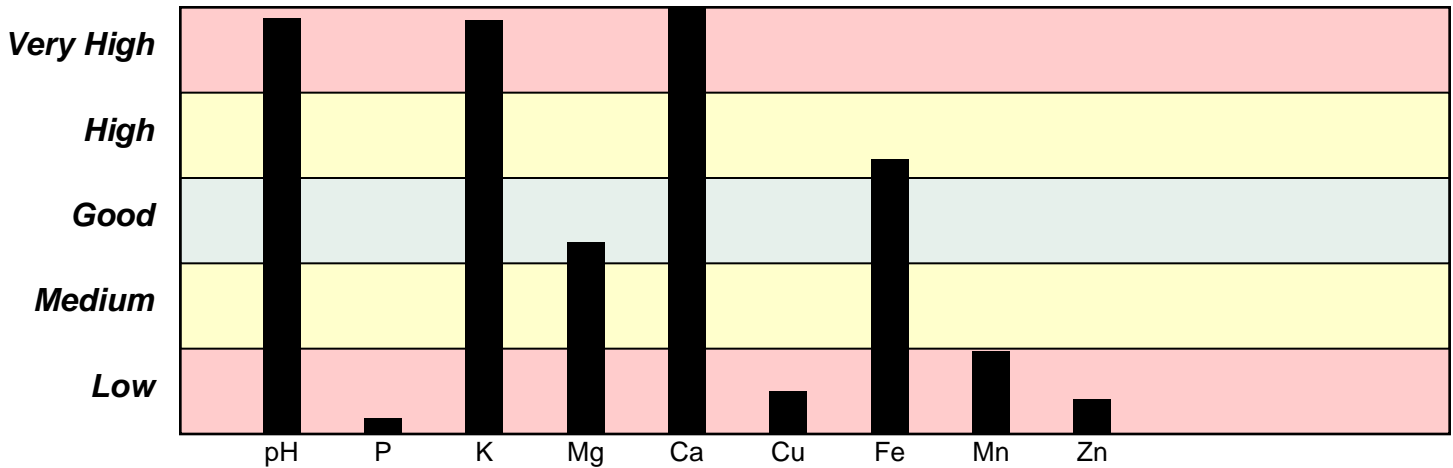
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Sample Information			
Sample	761-08-5	Sampled	12-02-2008
Lab Number	C04639	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.8	6.5-7.0	Copper	m3-ppm 1.3	Varies
Buffer pH			Iron	m3-ppm 55	9-40
Organic Matter	% 0.9		Manganese	m3-ppm 30	Varies
CEC	18.4		Zinc	m3-ppm 1	4-11
K Saturation	% 6.5	2.0-4.0	Soluble Salts	mmhos/cm 0.20	0.00-2.00
Mg Saturation	% 12.1	10-20	Clay	% 17	
Ca Saturation	% 81.4	50-70	Sand	% 50	
K/Mg Ratio	1.8		Silt	% 33	
Ca/Mg Ratio	218.1		Texture	Loam	
Phosphorus	m3-ppm 4	40-70			
Potassium	m3-ppm 555	190-300			
Magnesium	m3-ppm 305	260-430			
Calcium	m3-ppm 66509	2500-3400			



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	
09	Elm, Undefined	0	4.0	2.1	0.0	0.5	10.9		0.0	0.0	0.1	0.3	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Elm, Undefined: Split N 50% early spring and 50% late summer. Monitor and adjust fertilizer rates based on annual leaf analysis.

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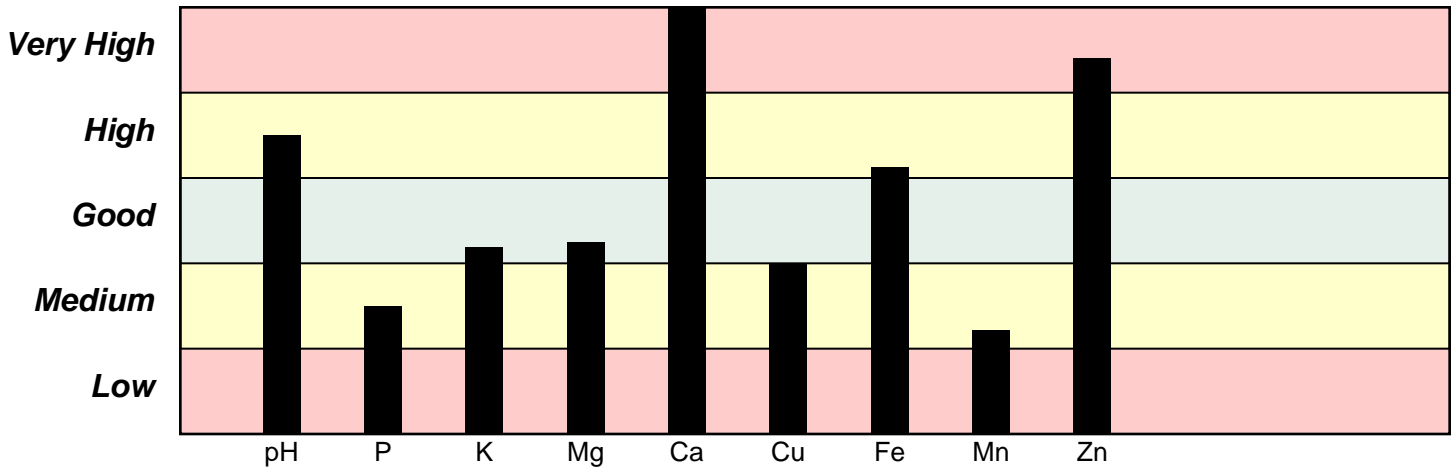
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PO BOX 5193
KENT, OH 44240

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CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	762-08-6	Sampled	12-02-2008
Lab Number	C04640	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.5	6.0-7.0	Copper	m3-ppm 2.7	Varies
Buffer pH			Iron	m3-ppm 48	9-40
Organic Matter	% 1.4		Manganese	m3-ppm 21	Varies
CEC	17.6		Zinc	m3-ppm 25	4-11
K Saturation	% 2.6	2.0-4.0	Soluble Salts	mmhos/cm 0.19	0.00-2.00
Mg Saturation	% 12.4	10-20	Clay	% 15	
Ca Saturation	% 85.0	50-70	Sand	% 70	
K/Mg Ratio	0.7		Silt	% 15	
Ca/Mg Ratio	222.1		Texture	Sandy Loam	
Phosphorus	m3-ppm 31	40-70			
Potassium	m3-ppm 211	190-300			
Magnesium	m3-ppm 298	260-420			
Calcium	m3-ppm 66180	2400-3300			



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
09	Pecans	0	2.3	1.4	0.9	0.2	9.2		0.0	0.0	0.1	0.0

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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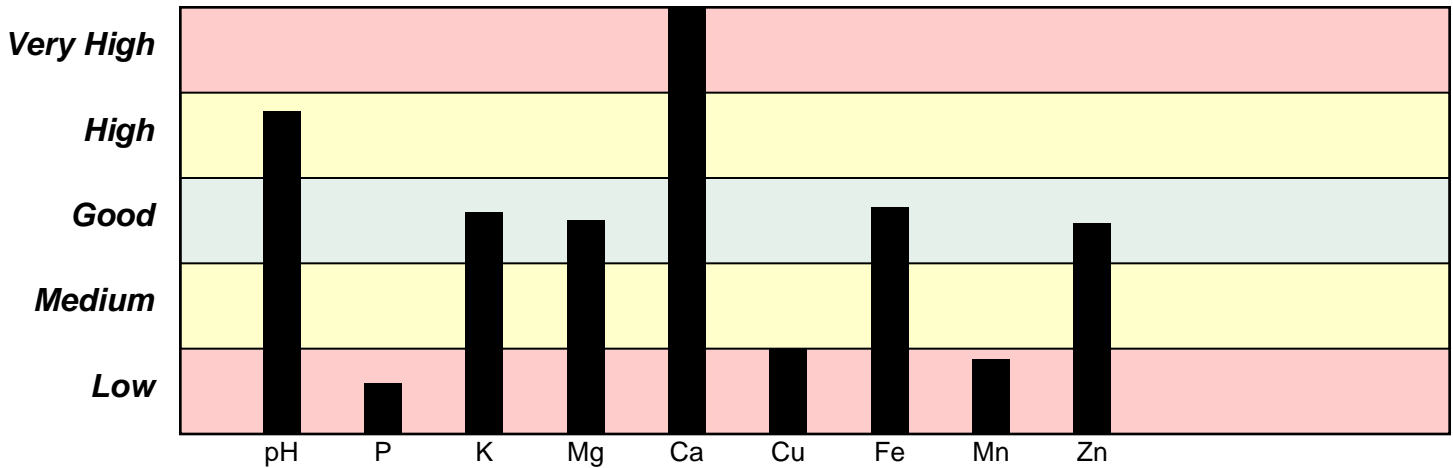
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Sample Information			
Sample	763-08-7	Sampled	12-02-2008
Lab Number	C04642	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.8	6.0-7.0	Copper	m3-ppm 2.1	Varies
Buffer pH			Iron	m3-ppm 30	9-40
Organic Matter	% 1.0		Manganese	m3-ppm 25	Varies
CEC	18.1		Zinc	m3-ppm 7	4-11
K Saturation	% 3.0	2.0-4.0	Soluble Salts	mmhos/cm 0.17	0.00-2.00
Mg Saturation	% 14.1	10-20	Clay	% 27	
Ca Saturation	% 82.9	50-70	Sand	% 52	
K/Mg Ratio	0.7		Silt	% 21	
Ca/Mg Ratio	190.7		Texture	Sandy Clay	Loam
Phosphorus	m3-ppm 12	40-70			
Potassium	m3-ppm 255	190-300			
Magnesium	m3-ppm 347	260-430			
Calcium	m3-ppm 66175	2400-3400			



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	
09	Pecans	0	2.3	2.2	0.6	0.0	13.8		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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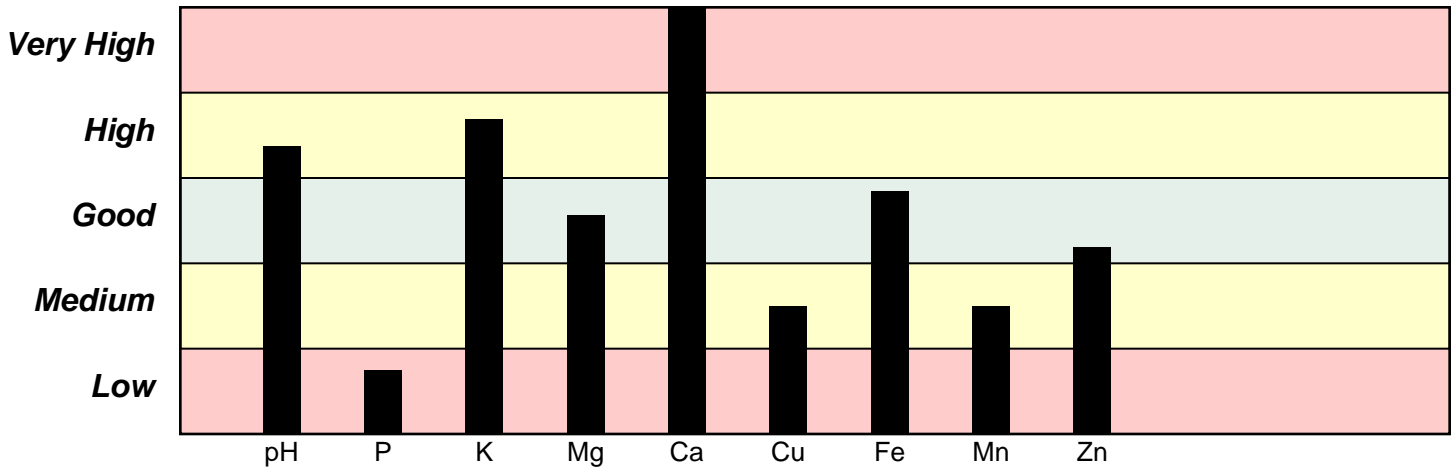
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KENT, OH 44240

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CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	764-08-8	Sampled	12-02-2008
Lab Number	C04643	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.4	6.0-7.0	Copper	m3-ppm 1.2	Varies
Buffer pH			Iron	m3-ppm 35	9-40
Organic Matter	% 1.8		Manganese	m3-ppm 28	Varies
CEC	18.5		Zinc	m3-ppm 5	4-11
K Saturation	% 4.7	2.0-4.0	Soluble Salts	mmhos/cm 0.28	0.00-2.00
Mg Saturation	% 14.2	10-20	Clay	% 23	
Ca Saturation	% 81.1	50-70	Sand	% 50	
K/Mg Ratio	1.1		Silt	% 27	
Ca/Mg Ratio	48.6		Texture	Sandy Clay Loam	
Phosphorus	m3-ppm 15	40-70			
Potassium	m3-ppm 403	200-300			
Magnesium	m3-ppm 358	260-430			
Calcium	m3-ppm 17393	2500-3500			



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	
09	Pecans	0	2.3	2.1	0.0	0.0	7.9		0.0	0.0	0.0	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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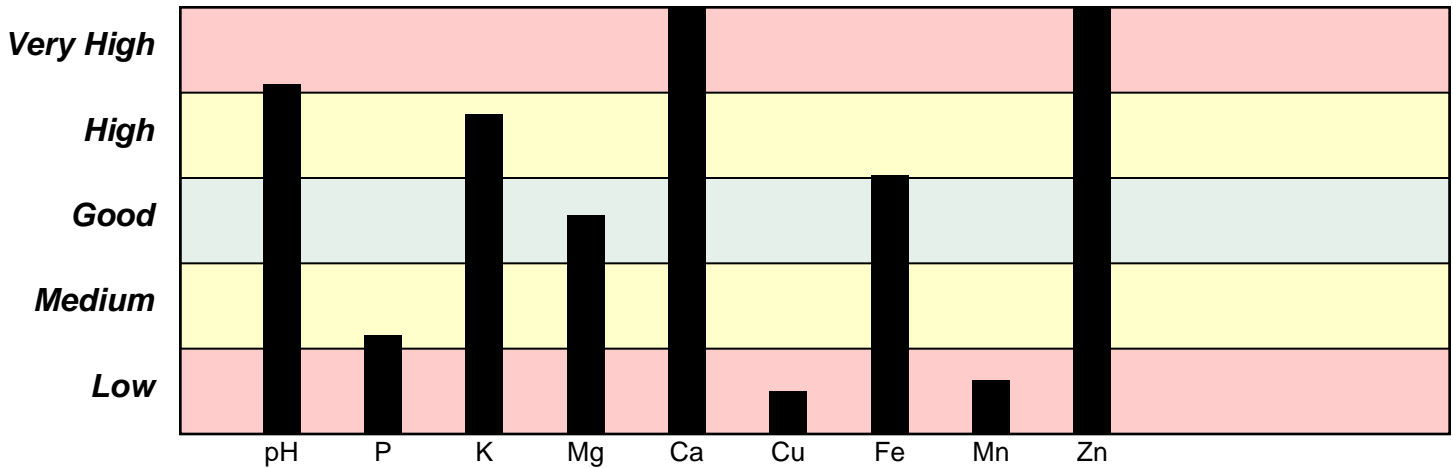
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CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	765-08-9	Sampled	12-02-2008
Lab Number	C04644	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	8.1	6.0-7.0	Copper	m3-ppm 2.2	Varies
Buffer pH			Iron	m3-ppm 43	9-40
Organic Matter	% 0.9		Manganese	m3-ppm 31	Varies
CEC	18.5		Zinc	m3-ppm 84	4-11
K Saturation	% 4.8	2.0-4.0	Soluble Salts	mmhos/cm 0.26	0.00-2.00
Mg Saturation	% 14.2	10-20	Clay	% 25	
Ca Saturation	% 81.0	50-70	Sand	% 44	
K/Mg Ratio	1.1		Silt	% 31	
Ca/Mg Ratio	41.4		Texture	Loam	
Phosphorus	m3-ppm 23	40-70			
Potassium	m3-ppm 412	200-300			
Magnesium	m3-ppm 360	260-430			
Calcium	m3-ppm 14911	2500-3500			



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
09	Pecans	0	2.3	1.7	0.0	0.0	18.8		0.0	0.0	0.1	0.0

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

Turf and Ornamental Soil Analysis Report

Spectrum Analytic Inc.

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Washington C.H., OH 43160

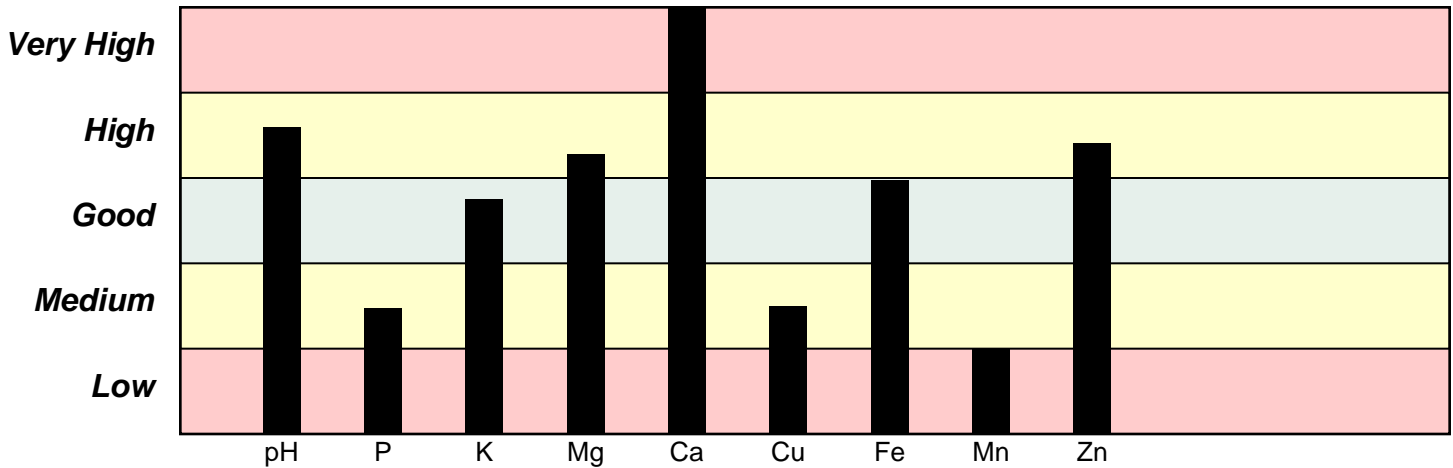
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	766-08-10	Sampled	12-02-2008
Lab Number	C04645	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.6	6.0-7.0	Copper	m3-ppm 2.3	Varies
Buffer pH			Iron	m3-ppm 39	9-40
Organic Matter	% 2.8		Manganese	m3-ppm 27	Varies
CEC	19.3		Zinc	m3-ppm 14	4-11
K Saturation	% 3.2	2.0-4.0	Soluble Salts	mmhos/cm 0.33	0.00-2.00
Mg Saturation	% 18.9	10-20	Clay	% 17	
Ca Saturation	% 77.9	50-70	Sand	% 60	
K/Mg Ratio	0.6		Silt	% 23	
Ca/Mg Ratio	133.1		Texture	Sandy Loam	
Phosphorus	m3-ppm 29	40-70			
Potassium	m3-ppm 283	200-310			
Magnesium	m3-ppm 497	270-440			
Calcium	m3-ppm 66153	2600-3600			



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	
09	Pecans	0	2.3	1.4	0.5	0.0	10.9		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

Turf and Ornamental Soil Analysis Report

Spectrum Analytic Inc.

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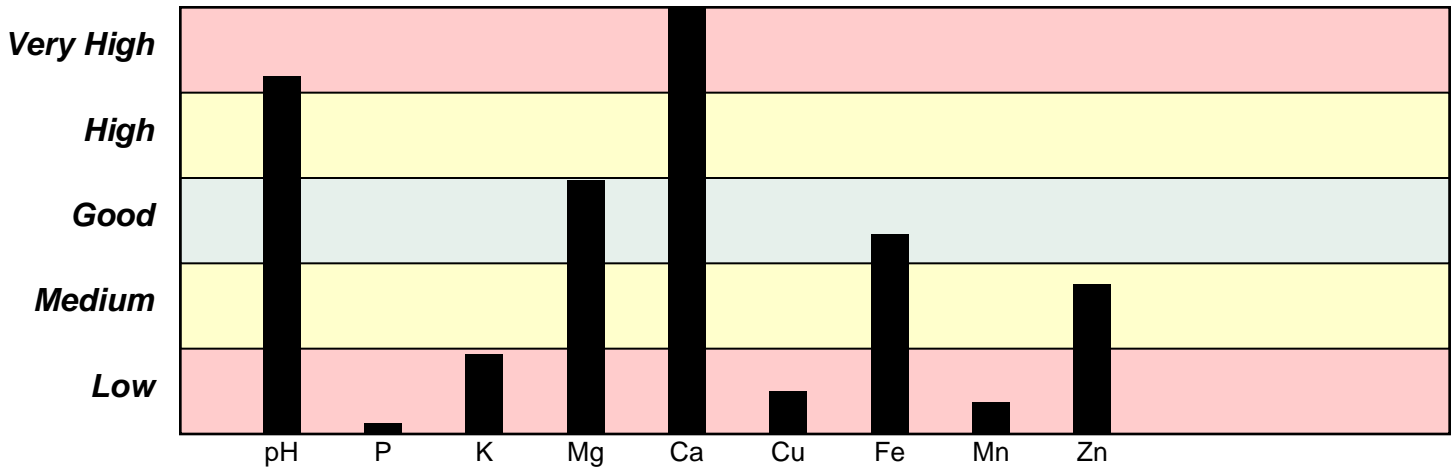
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	767-08-11	Sampled	12-02-2008
Lab Number	C04646	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	8.2	6.0-7.0	Copper	m3-ppm 0.4	Varies
Buffer pH			Iron	m3-ppm 20	9-40
Organic Matter	% 0.8		Manganese	m3-ppm 24	Varies
CEC	18.3		Zinc	m3-ppm 3	4-11
K Saturation	% 1.1	2.0-4.0	Soluble Salts	mmhos/cm 0.14	0.00-2.00
Mg Saturation	% 17.2	10-20	Clay	% 11	
Ca Saturation	% 81.7	50-70	Sand	% 66	
K/Mg Ratio	0.2		Silt	% 23	
Ca/Mg Ratio	153.4		Texture	Sandy Loam	
Phosphorus	m3-ppm 3	40-70			
Potassium	m3-ppm 91	190-300			
Magnesium	m3-ppm 430	260-430			
Calcium	m3-ppm 65975	2400-3400			



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	
09	Pecans	0	2.3	2.3	1.9	0.0	20.4		0.0	0.0	0.1	0.1	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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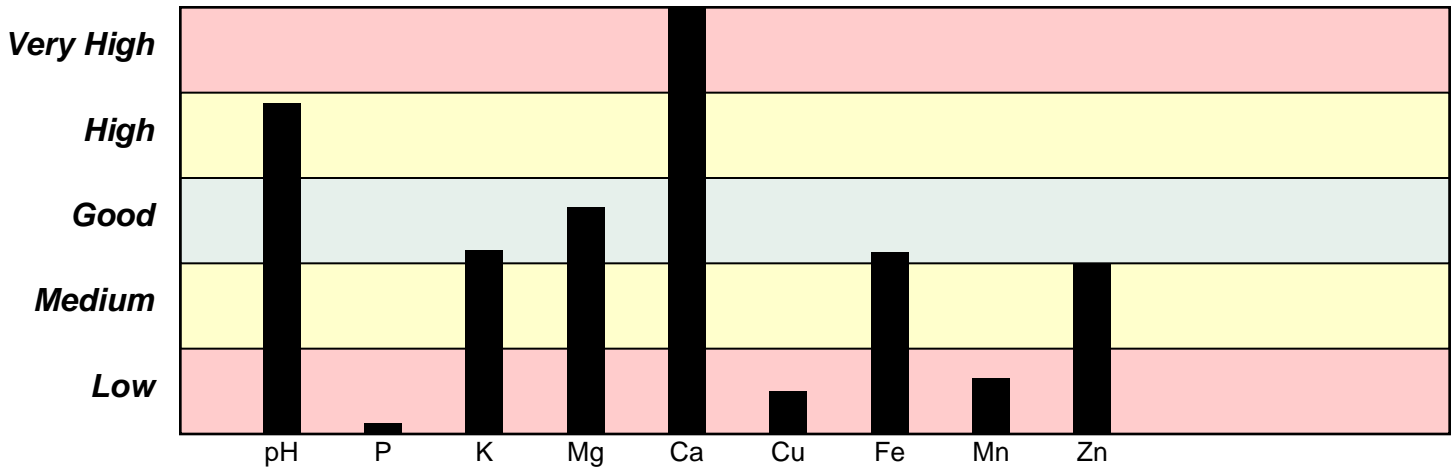
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PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	768-08-12	Sampled	12-02-2008
Lab Number	C04647	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.9	6.0-7.0	Copper	m3-ppm 0.7	Varies
Buffer pH			Iron	m3-ppm 13	9-40
Organic Matter	% 0.7		Manganese	m3-ppm 18	Varies
CEC	18.2		Zinc	m3-ppm 4	4-11
K Saturation	% 2.5	2.0-4.0	Soluble Salts	mmhos/cm 0.22	0.00-2.00
Mg Saturation	% 14.9	10-20	Clay	% 21	
Ca Saturation	% 82.6	50-70	Sand	% 64	
K/Mg Ratio	0.6		Silt	% 15	
Ca/Mg Ratio	178.8		Texture	Sandy Clay	Loam
Phosphorus	m3-ppm 2	40-70			
Potassium	m3-ppm 212	190-300			
Magnesium	m3-ppm 369	260-430			
Calcium	m3-ppm 65984	2400-3400			



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	
09	Pecans	0	2.3	2.3	0.9	0.0	15.4		0.0	0.0	0.1	0.1	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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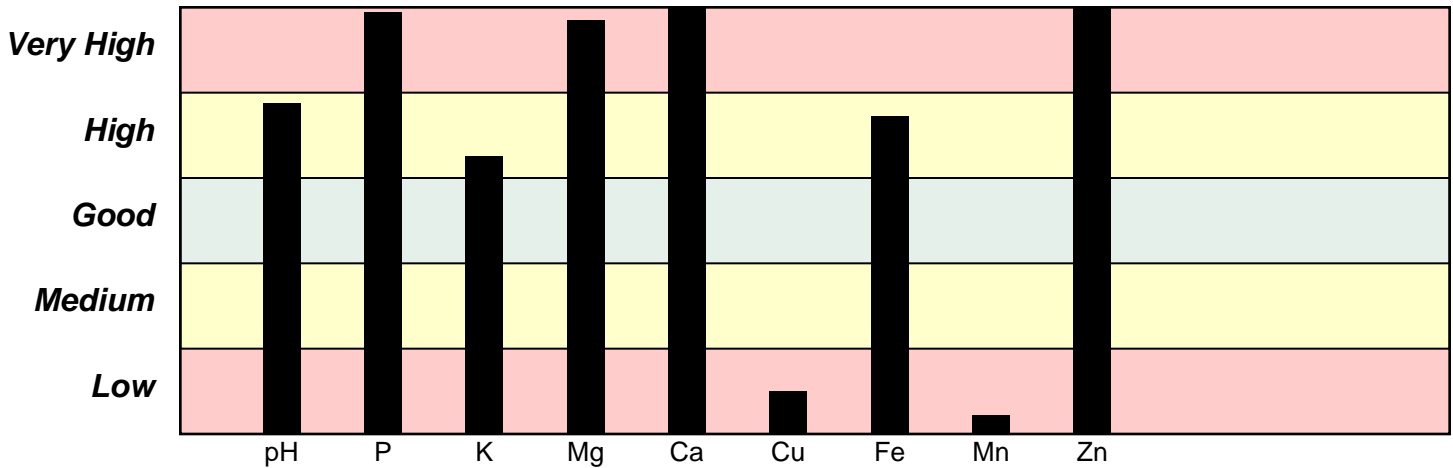
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KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	769-08-13	Sampled	12-02-2008
Lab Number	C04648	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.6	6.0-6.9	Copper	m3-ppm 2.8	Varies
Buffer pH			Iron	m3-ppm 84	9-40
Organic Matter	% 9.4		Manganese	m3-ppm 17	Varies
CEC	21.4		Zinc	m3-ppm 53	4-11
K Saturation	% 3.7	2.0-4.0	Soluble Salts	mmhos/cm 0.36	0.00-2.00
Mg Saturation	% 26.2	10-20	Clay	% 21	
Ca Saturation	% 70.2	50-70	Sand	% 66	
K/Mg Ratio	0.5		Silt	% 13	
Ca/Mg Ratio	13.8		Texture	Sandy Clay Loam	
Phosphorus	m3-ppm 183	40-70			
Potassium	m3-ppm 364	210-320			
Magnesium	m3-ppm 763	280-460			
Calcium	m3-ppm 10524	2900-4000			



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
09	Pecans	0	2.3	0.0	0.0	0.0	11.3		0.1	0.0	0.1	0.0

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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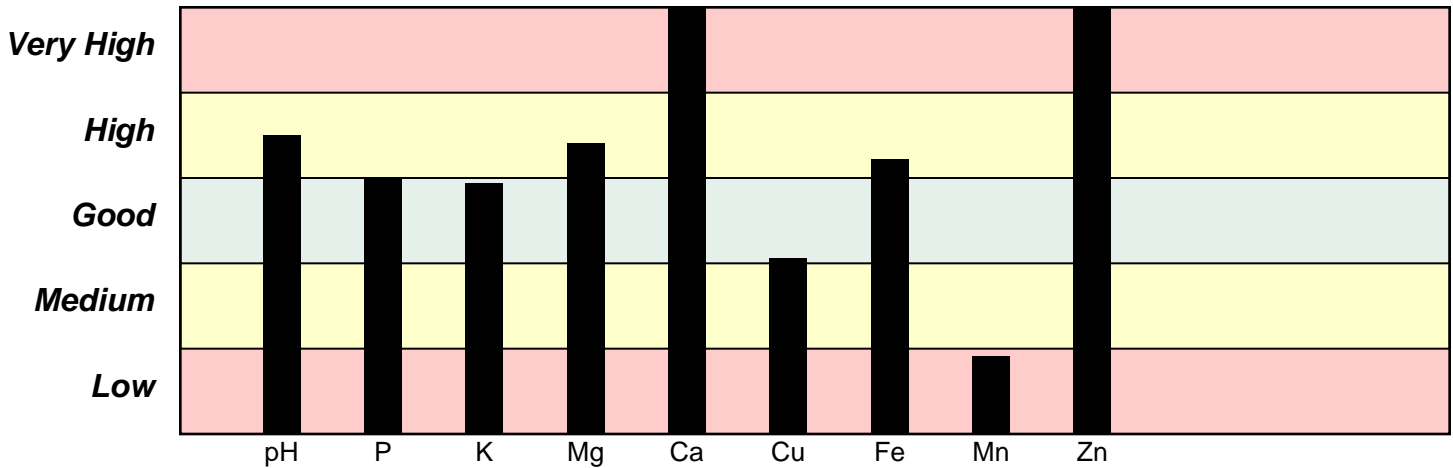
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	770-08-14	Sampled	12-02-2008
Lab Number	C04649	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.5	6.0-7.0	Copper	m3-ppm 4.7	Varies
Buffer pH			Iron	m3-ppm 54	9-40
Organic Matter	% 3.7		Manganese	m3-ppm 20	Varies
CEC	19.5		Zinc	m3-ppm 39	4-11
K Saturation	% 3.4	2.0-4.0	Soluble Salts	mmhos/cm 0.30	0.00-2.00
Mg Saturation	% 19.7	10-20	Clay	% 9	
Ca Saturation	% 76.9	50-70	Sand	% 81	
K/Mg Ratio	0.6		Silt	% 11	
Ca/Mg Ratio	126.1		Texture	Loamy Sand	
Phosphorus	m3-ppm 68	40-70			
Potassium	m3-ppm 305	200-310			
Magnesium	m3-ppm 525	270-450			
Calcium	m3-ppm 66179	2600-3600			



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
09	Pecans	0	2.3	0.2	0.5	0.0	9.5		0.0	0.0	0.1	0.0

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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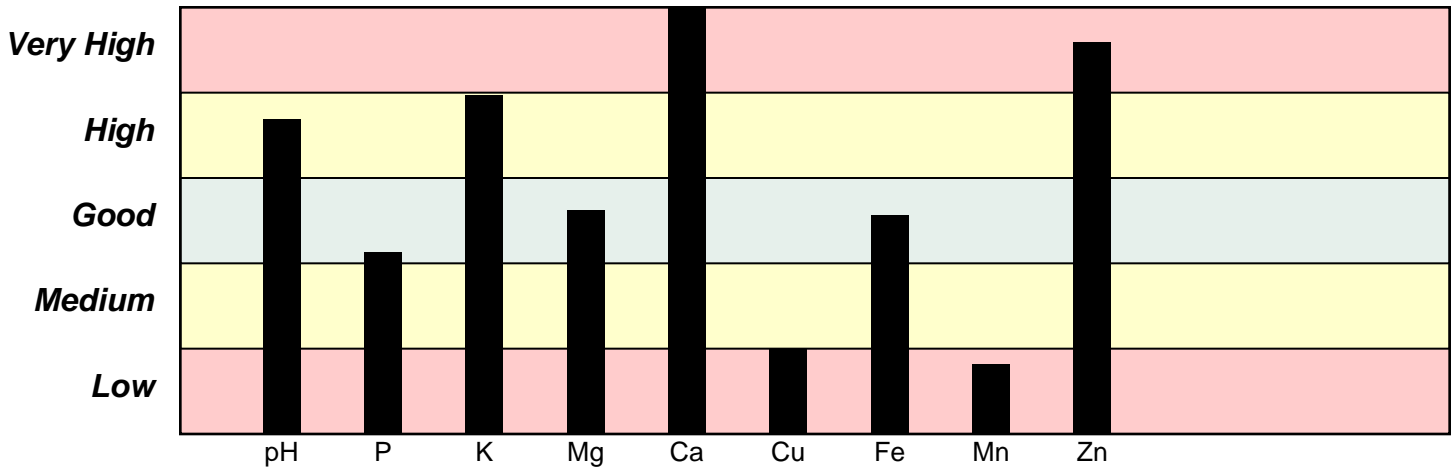
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	771-08-15	Sampled	12-02-2008
Lab Number	C04650	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 2.5	Varies
Buffer pH			Iron	m3-ppm 27	9-40
Organic Matter	% 1.4		Manganese	m3-ppm 17	Varies
CEC	18.7		Zinc	m3-ppm 28	4-11
K Saturation	% 5.1	2.0-4.0	Soluble Salts	mmhos/cm 0.27	0.00-2.00
Mg Saturation	% 14.6	10-20	Clay	% 11	
Ca Saturation	% 80.3	50-70	Sand	% 67	
K/Mg Ratio	1.2		Silt	% 23	
Ca/Mg Ratio	177.3		Texture	Sandy Loam	
Phosphorus	m3-ppm 44	40-70			
Potassium	m3-ppm 441	200-300			
Magnesium	m3-ppm 373	260-440			
Calcium	m3-ppm 66132	2500-3500			



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	
09	Pecans	0	2.3	0.8	0.0	0.0	12.3		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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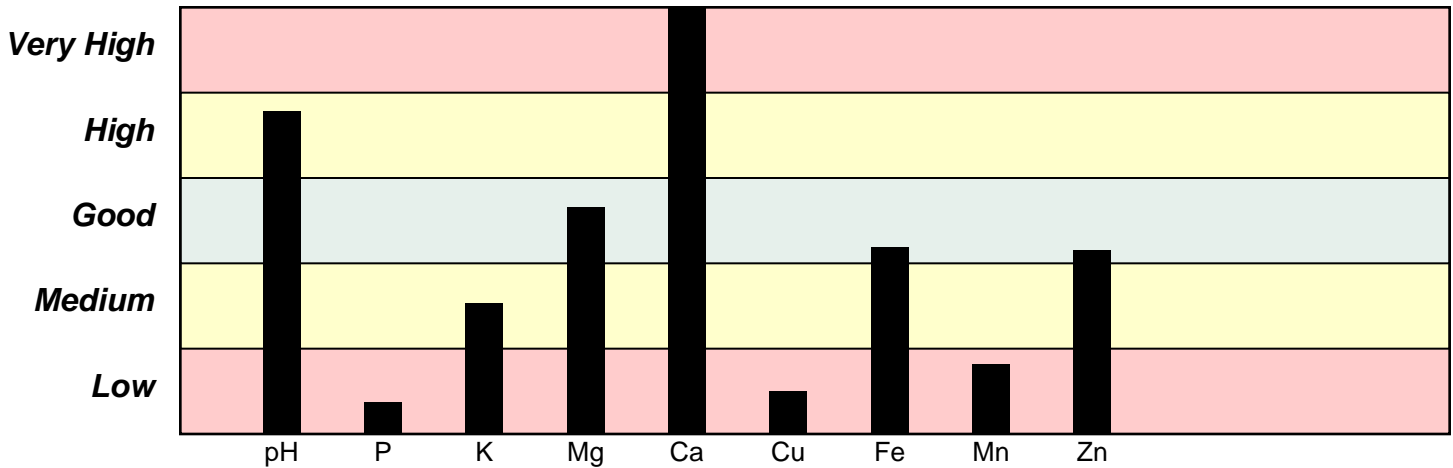
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	772-08-16	Sampled	12-02-2008
Lab Number	C04651	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.8	6.0-7.0	Copper	m3-ppm 1.2	Varies
Buffer pH			Iron	m3-ppm 16	9-40
Organic Matter	% 0.3		Manganese	m3-ppm 18	Varies
CEC	18.0		Zinc	m3-ppm 5	4-11
K Saturation	% 1.8	2.0-4.0	Soluble Salts	mmhos/cm 0.18	0.00-2.00
Mg Saturation	% 15.0	10-20	Clay	% 12	
Ca Saturation	% 83.2	50-70	Sand	% 82	
K/Mg Ratio	0.4		Silt	% 5	
Ca/Mg Ratio	178.3		Texture	Loamy Sand	
Phosphorus	m3-ppm 8	40-70			
Potassium	m3-ppm 147	190-300			
Magnesium	m3-ppm 370	260-430			
Calcium	m3-ppm 65988	2400-3400			



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	
09	Pecans	0	2.3	2.3	1.4	0.0	13.8		0.0	0.0	0.1	0.1	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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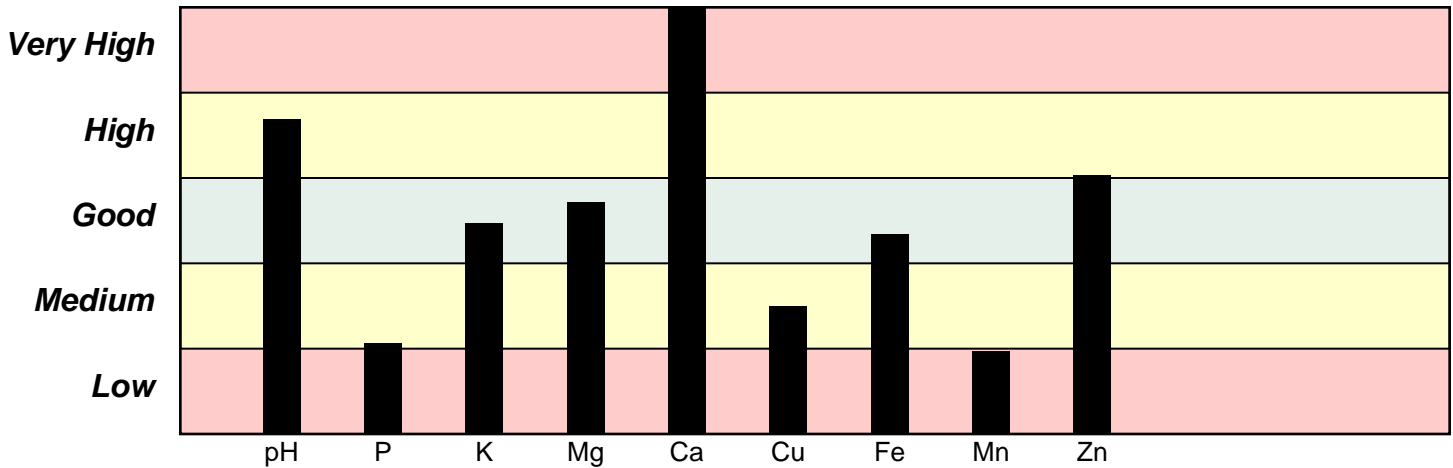
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PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	773-08-17	Sampled	12-02-2008
Lab Number	C04652	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 2.3	Varies
Buffer pH			Iron	m3-ppm 20	9-40
Organic Matter	% 1.7		Manganese	m3-ppm 27	Varies
CEC	18.3		Zinc	m3-ppm 11	4-11
K Saturation	% 2.9	2.0-4.0	Soluble Salts	mmhos/cm 0.24	0.00-2.00
Mg Saturation	% 15.3	10-20	Clay	% 20	
Ca Saturation	% 81.8	50-70	Sand	% 66	
K/Mg Ratio	0.6		Silt	% 14	
Ca/Mg Ratio	173.0		Texture	Sandy Clay	Loam
Phosphorus	m3-ppm 21	40-70			
Potassium	m3-ppm 244	190-300			
Magnesium	m3-ppm 382	260-430			
Calcium	m3-ppm 66071	2400-3400			



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
09	Pecans	0	2.3	1.8	0.7	0.0	12.3		0.0	0.0	0.1	0.0

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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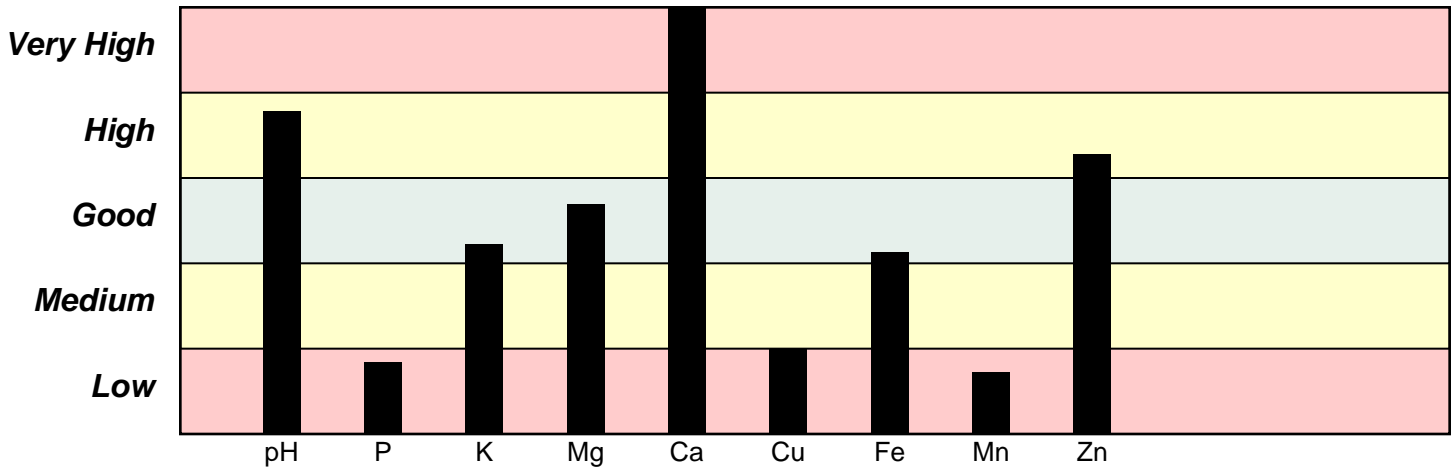
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Prepared For
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Sample Information			
Sample	774-08-18	Sampled	12-02-2008
Lab Number	C04653	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.8	6.0-7.0	Copper	m3-ppm 2.1	Varies
Buffer pH			Iron	m3-ppm 14	9-40
Organic Matter	% 1.2		Manganese	m3-ppm 18	Varies
CEC	18.2		Zinc	m3-ppm 13	4-11
K Saturation	% 2.6	2.0-4.0	Soluble Salts	mmhos/cm 0.20	0.00-2.00
Mg Saturation	% 15.2	10-20	Clay	% 20	
Ca Saturation	% 82.3	50-70	Sand	% 65	
K/Mg Ratio	0.6		Silt	% 14	
Ca/Mg Ratio	175.2		Texture	Sandy Clay	Loam
Phosphorus	m3-ppm 17	40-70			
Potassium	m3-ppm 218	190-300			
Magnesium	m3-ppm 377	260-430			
Calcium	m3-ppm 66059	2400-3400			



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	
09	Pecans	0	2.3	2.0	0.9	0.0	13.8		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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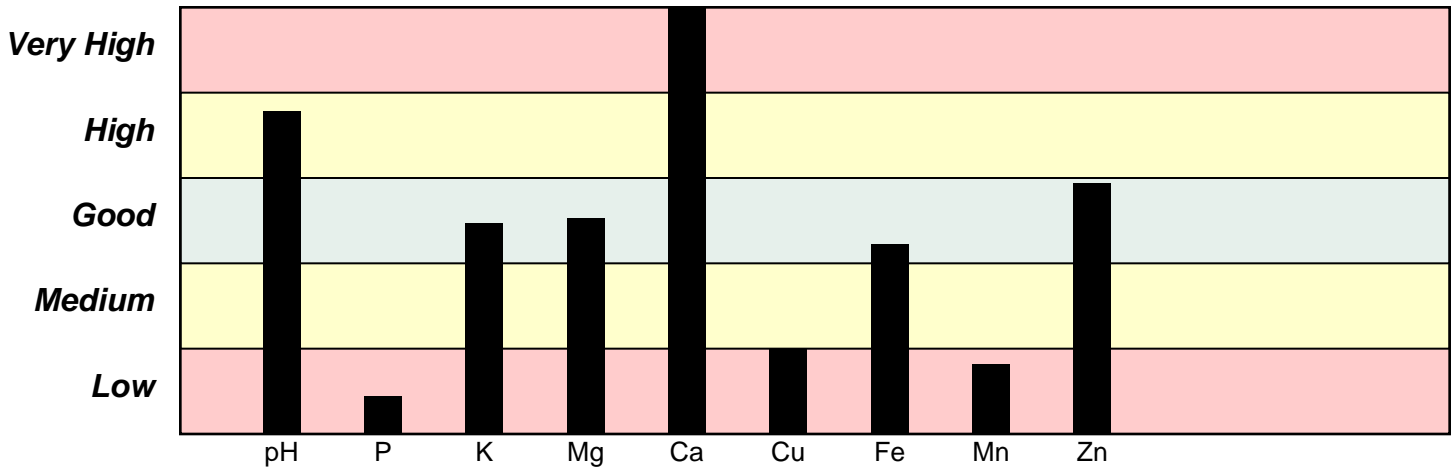
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Prepared For
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Sample Information			
Sample	775-08-19	Sampled	12-02-2008
Lab Number	C04654	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.8	6.0-7.0	Copper	m3-ppm 2.5	Varies
Buffer pH			Iron	m3-ppm 16	9-40
Organic Matter	% 1.0		Manganese	m3-ppm 22	Varies
CEC	18.1		Zinc	m3-ppm 11	4-11
K Saturation	% 2.9	2.0-4.0	Soluble Salts	mmhos/cm 0.25	0.00-2.00
Mg Saturation	% 14.1	10-20	Clay	% 17	
Ca Saturation	% 83.0	50-70	Sand	% 67	
K/Mg Ratio	0.7		Silt	% 17	
Ca/Mg Ratio	189.9		Texture	Sandy Loam	
Phosphorus	m3-ppm 9	40-70			
Potassium	m3-ppm 243	190-300			
Magnesium	m3-ppm 348	260-430			
Calcium	m3-ppm 66076	2400-3400			



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	
09	Pecans	0	2.3	2.3	0.7	0.0	13.8		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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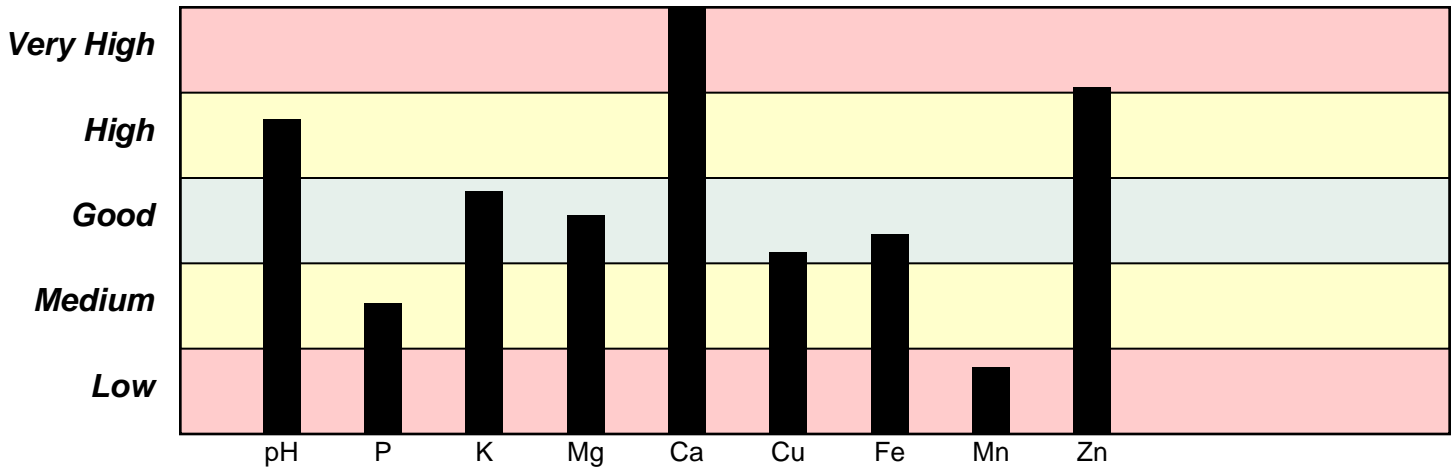
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	776-08-20	Sampled	12-02-2008
Lab Number	C04655	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 6.1	Varies
Buffer pH			Iron	m3-ppm 21	9-40
Organic Matter	% 1.8		Manganese	m3-ppm 16	Varies
CEC	18.2		Zinc	m3-ppm 19	4-11
K Saturation	% 3.4	2.0-4.0	Soluble Salts	mmhos/cm 0.23	0.00-2.00
Mg Saturation	% 14.3	10-20	Clay	% 17	
Ca Saturation	% 82.4	50-70	Sand	% 63	
K/Mg Ratio	0.8		Silt	% 21	
Ca/Mg Ratio	186.7		Texture	Sandy Loam	
Phosphorus	m3-ppm 31	40-70			
Potassium	m3-ppm 286	190-300			
Magnesium	m3-ppm 354	260-430			
Calcium	m3-ppm 66102	2400-3400			



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
09	Pecans	0	2.3	1.3	0.5	0.0	12.2		0.0	0.0	0.1	0.0

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

Turf and Ornamental Soil Analysis Report

Spectrum Analytic Inc.

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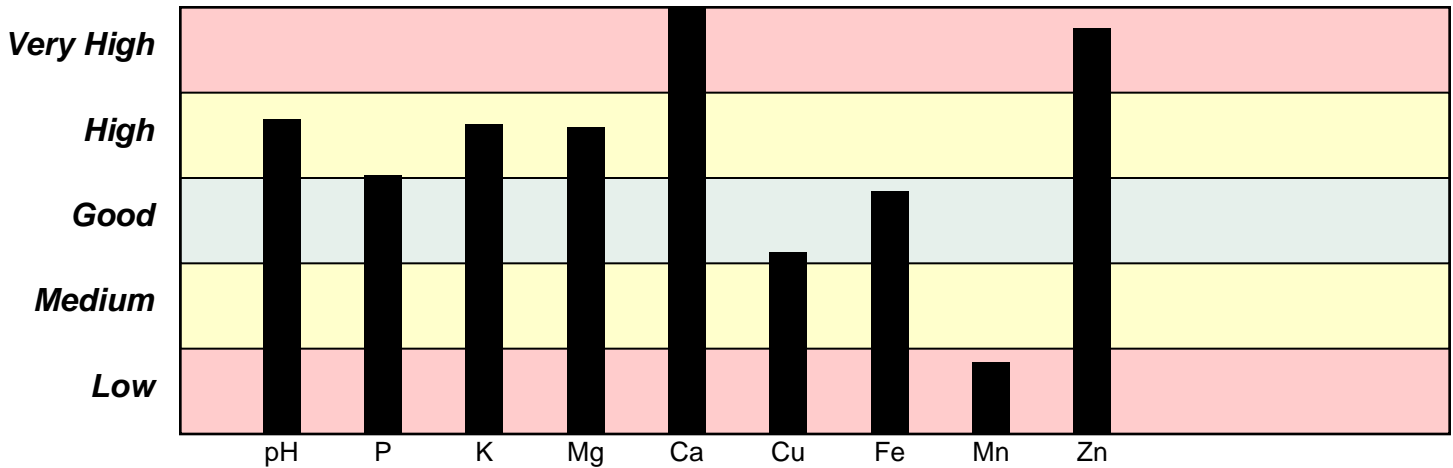
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	777-08-21	Sampled	12-02-2008
Lab Number	C04656	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 6.8	Varies
Buffer pH			Iron	m3-ppm 36	9-40
Organic Matter	% 6.8		Manganese	m3-ppm 45	Varies
CEC	20.1		Zinc	m3-ppm 31	4-11
K Saturation	% 4.4	2.0-4.0	Soluble Salts	mmhos/cm 0.34	0.00-2.00
Mg Saturation	% 20.8	10-20	Clay	% 15	
Ca Saturation	% 74.8	50-70	Sand	% 57	
K/Mg Ratio	0.7		Silt	% 29	
Ca/Mg Ratio	28.2		Texture	Sandy Loam	
Phosphorus	m3-ppm 69	40-70			
Potassium	m3-ppm 409	200-320			
Magnesium	m3-ppm 569	270-450			
Calcium	m3-ppm 16056	2700-3700			



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	
09	Pecans	0	2.3	0.2	0.0	0.0	12.6		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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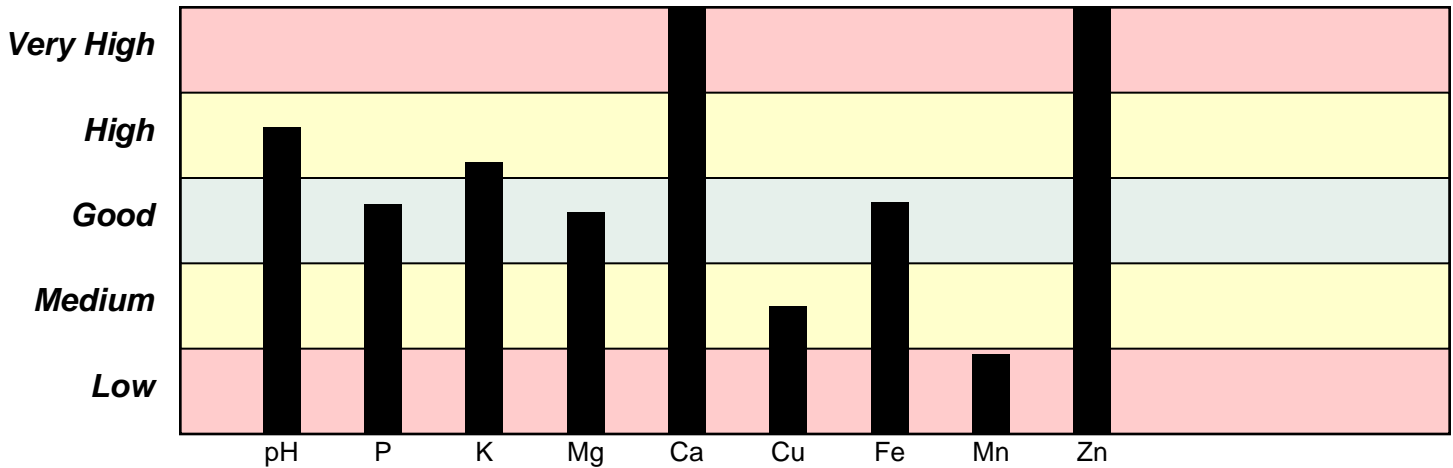
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	778-08-28	Sampled	12-02-2008
Lab Number	C04657	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.6	6.0-7.0	Copper	m3-ppm 3.1	Varies
Buffer pH			Iron	m3-ppm 32	9-40
Organic Matter	% 2.2		Manganese	m3-ppm 21	Varies
CEC	18.4		Zinc	m3-ppm 36	4-11
K Saturation	% 3.8	2.0-4.0	Soluble Salts	mmhos/cm 0.29	0.00-2.00
Mg Saturation	% 14.5	10-20	Clay	% 19	
Ca Saturation	% 81.7	50-70	Sand	% 62	
K/Mg Ratio	0.9		Silt	% 19	
Ca/Mg Ratio	43.7		Texture	Sandy Loam	
Phosphorus	m3-ppm 60	40-70			
Potassium	m3-ppm 328	190-300			
Magnesium	m3-ppm 362	260-430			
Calcium	m3-ppm 15816	2400-3400			



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	
09	Pecans	0	2.3	0.4	0.0	0.0	10.8		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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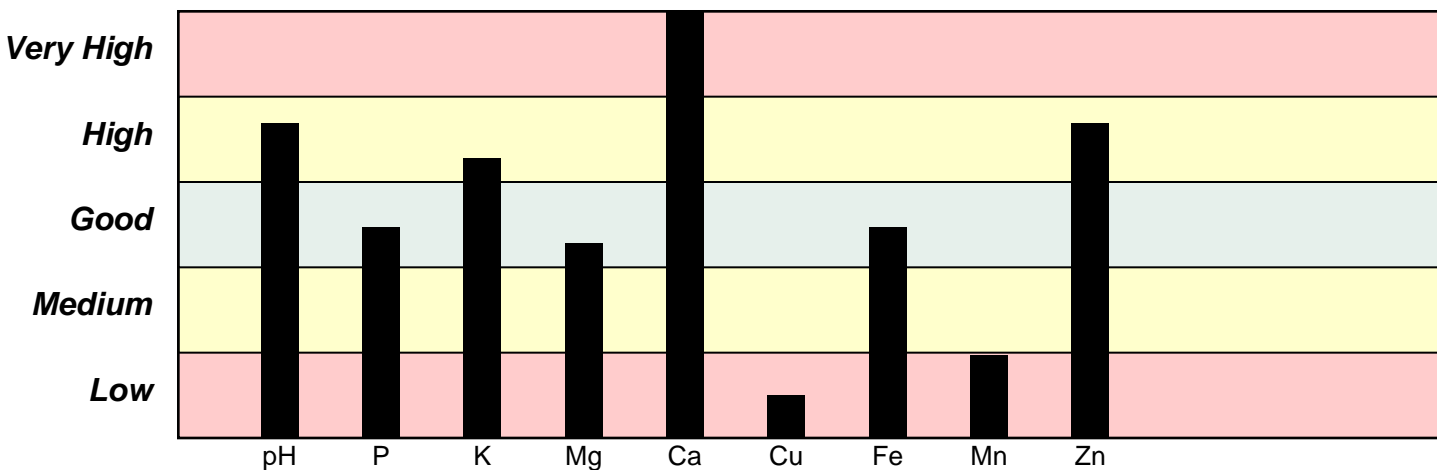
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**THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240**

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	779-08-29	Sampled	12-02-2008
Lab Number	C04658	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 1.9	Varies
Buffer pH			Iron	m3-ppm 24	9-40
Organic Matter	% 1.0		Manganese	m3-ppm 23	Varies
CEC	18.0		Zinc	m3-ppm 16	4-11
K Saturation	% 4.0	2.0-4.0	Soluble Salts	mmhos/cm 0.26	0.00-2.00
Mg Saturation	% 12.5	10-20	Clay	% 23	
Ca Saturation	% 83.4	50-70	Sand	% 56	
K/Mg Ratio	1.1		Silt	% 21	
Ca/Mg Ratio	51.6		Texture	Sandy Clay	Loam
Phosphorus	m3-ppm 54	40-70			
Potassium	m3-ppm 338	190-300			
Magnesium	m3-ppm 307	260-430			
Calcium	m3-ppm 15853	2400-3400			



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	
09	Pecans	0	2.3	0.5	0.0	0.0	12.2		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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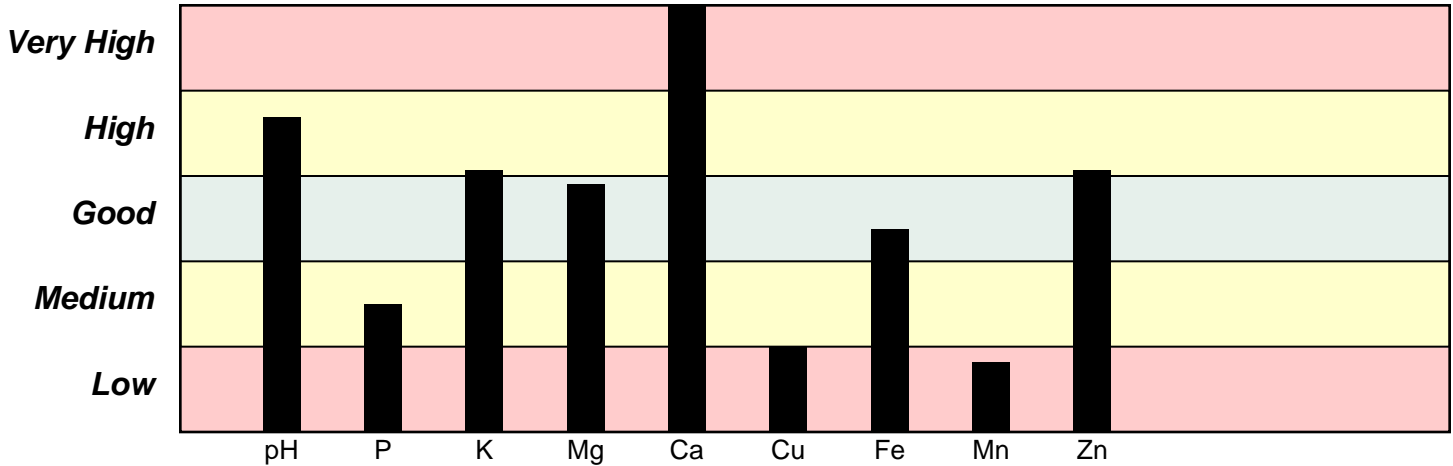
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PO BOX 5193
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	780-08-30	Sampled	12-02-2008
Lab Number	C04659	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 1.7	Varies
Buffer pH			Iron	m3-ppm 21	9-40
Organic Matter	% 1.8		Manganese	m3-ppm 19	Varies
CEC	18.8		Zinc	m3-ppm 12	4-11
K Saturation	% 3.6	2.0-4.0	Soluble Salts	mmhos/cm 0.26	0.00-2.00
Mg Saturation	% 16.6	10-20	Clay	% 21	
Ca Saturation	% 79.8	50-70	Sand	% 60	
K/Mg Ratio	0.7		Silt	% 19	
Ca/Mg Ratio	155.2		Texture	Sandy Clay Loam	
Phosphorus	m3-ppm 30	40-70			
Potassium	m3-ppm 317	200-310			
Magnesium	m3-ppm 426	260-440			
Calcium	m3-ppm 66099	2500-3500			



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	
09	Pecans	0	2.3	1.4	0.5	0.0	12.4		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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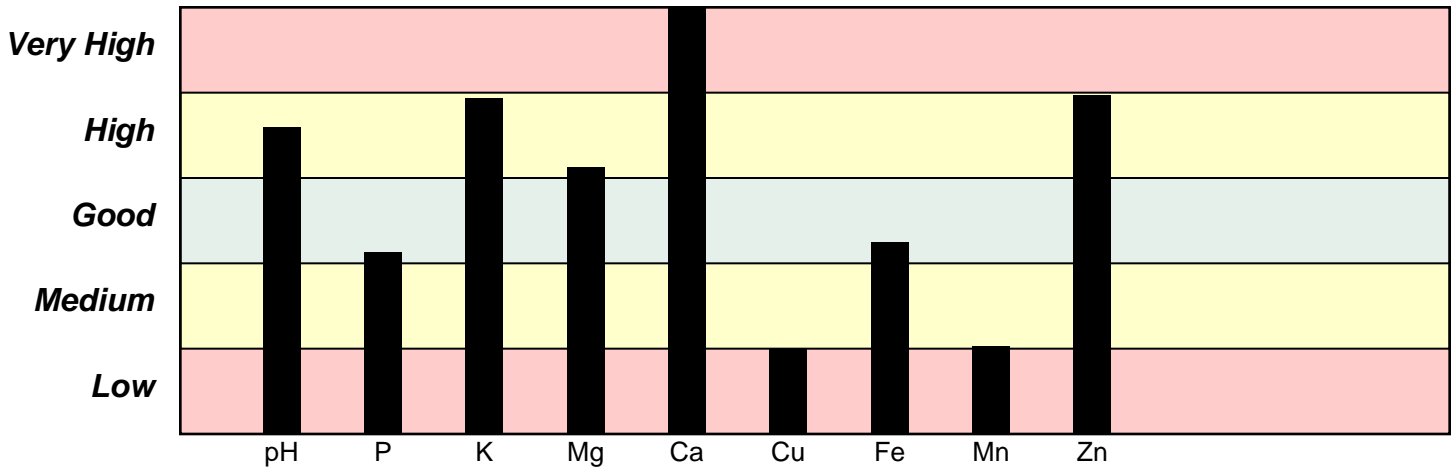
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PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	781-08-31	Sampled	12-02-2008
Lab Number	C04660	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.6	6.0-7.0	Copper	m3-ppm 1.8	Varies
Buffer pH			Iron	m3-ppm 17	9-40
Organic Matter	% 2.3		Manganese	m3-ppm 25	Varies
CEC	19.4		Zinc	m3-ppm 17	4-11
K Saturation	% 5.0	2.0-4.0	Soluble Salts	mmhos/cm 0.36	0.00-2.00
Mg Saturation	% 17.8	10-20	Clay	% 18	
Ca Saturation	% 77.2	50-70	Sand	% 54	
K/Mg Ratio	0.9		Silt	% 28	
Ca/Mg Ratio	36.8		Texture	Sandy Loam	
Phosphorus	m3-ppm 43	40-70			
Potassium	m3-ppm 448	200-310			
Magnesium	m3-ppm 472	270-450			
Calcium	m3-ppm 17380	2600-3600			



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	
09	Pecans	0	2.3	0.8	0.0	0.0	11.0		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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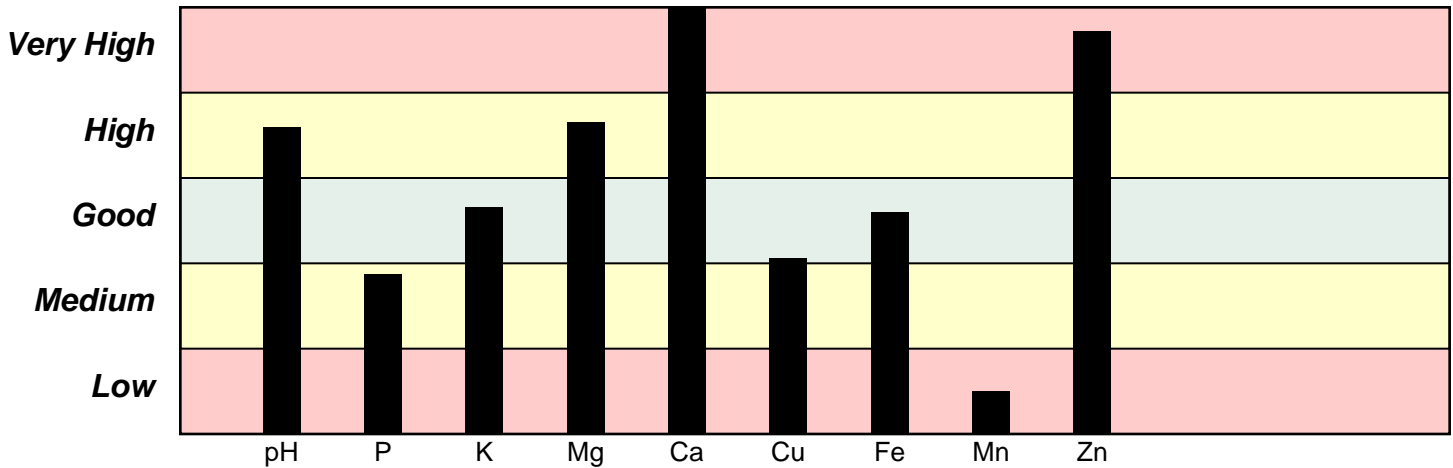
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	782-08-32	Sampled	12-02-2008
Lab Number	C04661	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.6	6.0-7.0	Copper	m3-ppm 4.2	Varies
Buffer pH			Iron	m3-ppm 28	9-40
Organic Matter	% 6.8		Manganese	m3-ppm 19	Varies
CEC	19.8		Zinc	m3-ppm 30	4-11
K Saturation	% 3.0	2.0-4.0	Soluble Salts	mmhos/cm 0.35	0.00-2.00
Mg Saturation	% 21.3	10-20	Clay	% 15	
Ca Saturation	% 75.7	50-70	Sand	% 72	
K/Mg Ratio	0.5		Silt	% 13	
Ca/Mg Ratio	115.1		Texture	Sandy Loam	
Phosphorus	m3-ppm 37	40-70			
Potassium	m3-ppm 275	200-310			
Magnesium	m3-ppm 575	270-450			
Calcium	m3-ppm 66159	2600-3700			



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	
09	Pecans	0	2.3	1.0	0.6	0.0	11.0		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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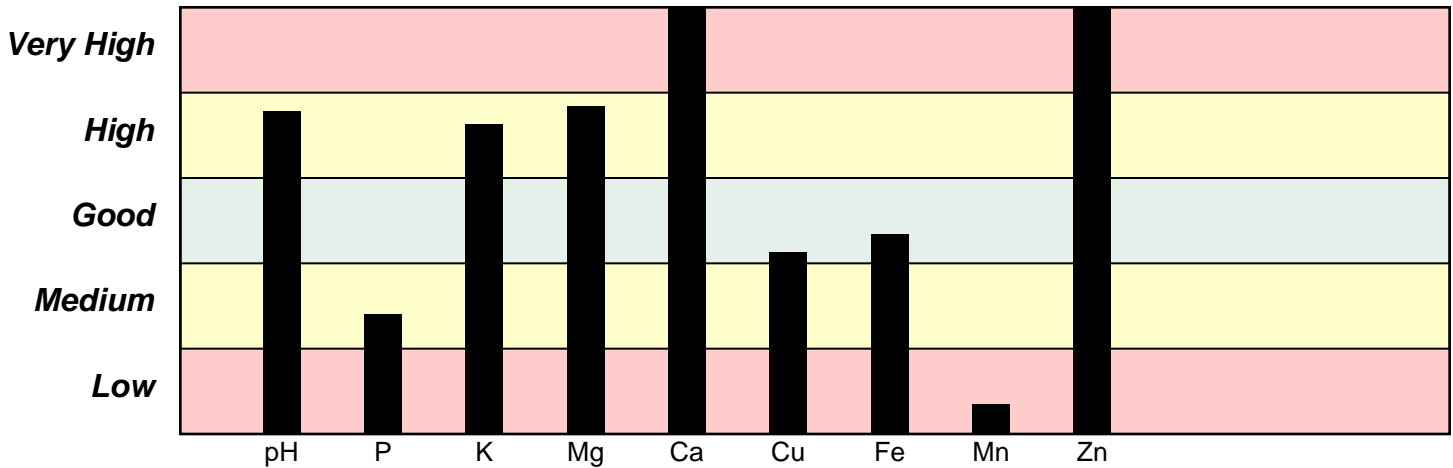
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PO BOX 5193
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	783-08-34	Sampled	12-02-2008
Lab Number	C04662	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.8	6.0-7.0	Copper	m3-ppm 6.8	Varies
Buffer pH			Iron	m3-ppm 20	9-40
Organic Matter	% 5.3		Manganese	m3-ppm 17	Varies
CEC	20.4		Zinc	m3-ppm 44	4-11
K Saturation	% 4.4	2.0-4.0	Soluble Salts	mmhos/cm 0.26	0.00-2.00
Mg Saturation	% 22.3	10-20	Clay	% 16	
Ca Saturation	% 73.4	50-70	Sand	% 64	
K/Mg Ratio	0.7		Silt	% 20	
Ca/Mg Ratio	106.4		Texture	Sandy Loam	
Phosphorus	m3-ppm 27	40-70			
Potassium	m3-ppm 413	200-320			
Magnesium	m3-ppm 621	270-460			
Calcium	m3-ppm 66095	2700-3800			



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	
09	Pecans	0	2.3	1.5	0.0	0.0	14.3		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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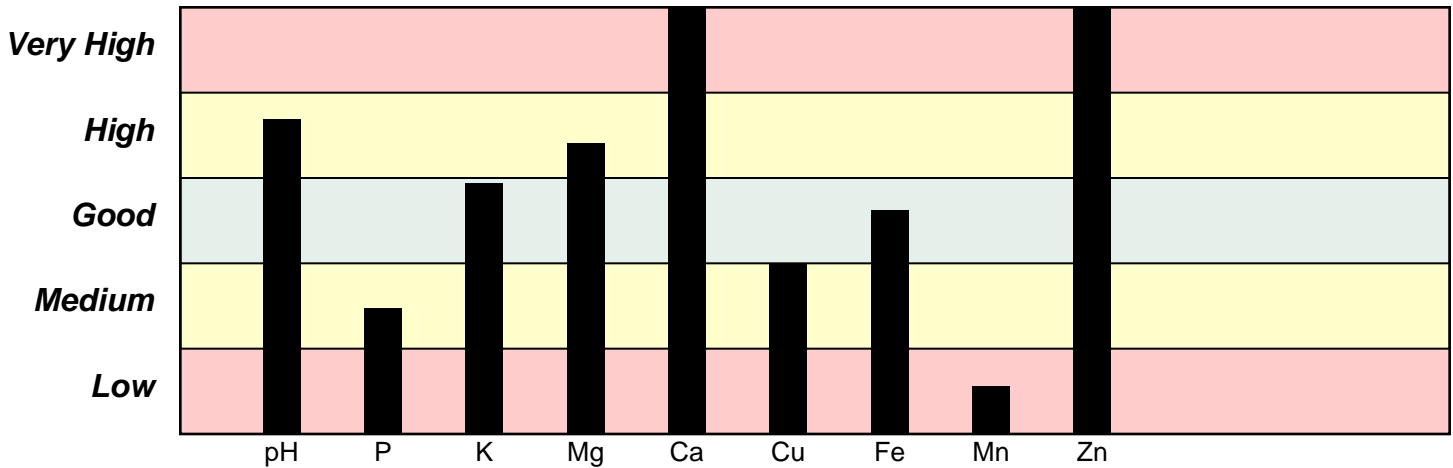
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	784-08-35	Sampled	12-02-2008
Lab Number	C04663	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 4.5	Varies
Buffer pH			Iron	m3-ppm 29	9-40
Organic Matter	% 3.9		Manganese	m3-ppm 16	Varies
CEC	19.5		Zinc	m3-ppm 37	4-11
K Saturation	% 3.4	2.0-4.0	Soluble Salts	mmhos/cm 0.22	0.00-2.00
Mg Saturation	% 19.8	10-20	Clay	% 14	
Ca Saturation	% 76.8	50-70	Sand	% 68	
K/Mg Ratio	0.6		Silt	% 18	
Ca/Mg Ratio	125.8		Texture	Sandy Loam	
Phosphorus	m3-ppm 29	40-70			
Potassium	m3-ppm 308	200-310			
Magnesium	m3-ppm 526	270-450			
Calcium	m3-ppm 66165	2600-3600			



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	
09	Pecans	0	2.3	1.4	0.5	0.0	12.5		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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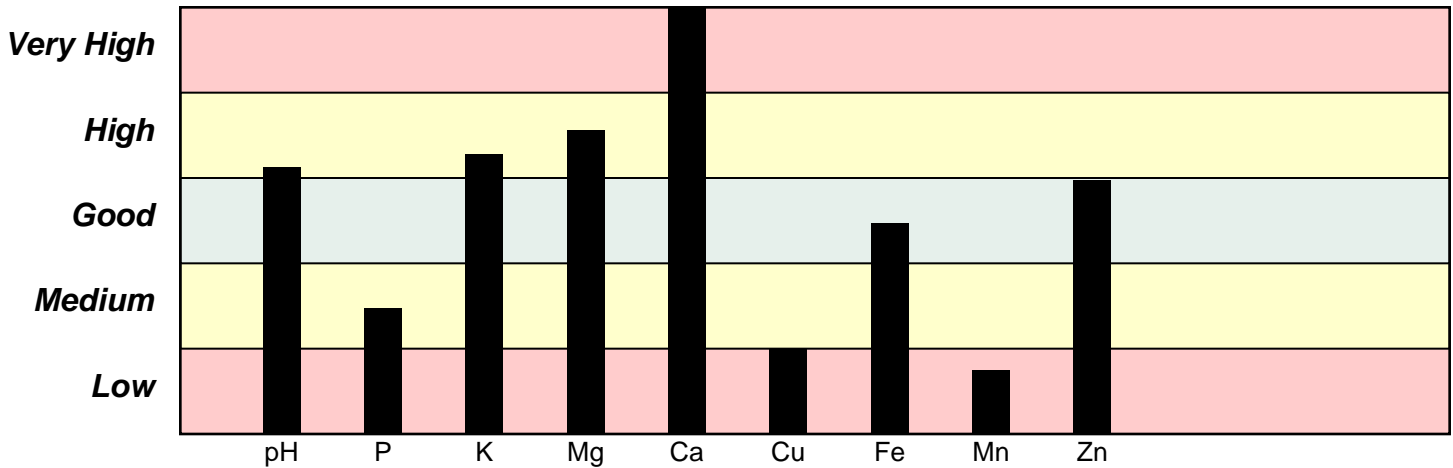
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	785-08-36	Sampled	12-02-2008
Lab Number	C04664	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.5	Copper	m3-ppm 1.9	Varies
Buffer pH			Iron	m3-ppm 24	9-40
Organic Matter	% 2.7		Manganese	m3-ppm 19	Varies
CEC	19.9		Zinc	m3-ppm 11	4-11
K Saturation	% 3.9	2.0-4.0	Soluble Salts	mmhos/cm 0.26	0.00-0.50
Mg Saturation	% 20.7	10-20	Clay	% 24	
Ca Saturation	% 75.4	50-70	Sand	% 52	
K/Mg Ratio	0.6		Silt	% 24	
Ca/Mg Ratio	117.7		Texture	Sandy Clay Loam	
Phosphorus	m3-ppm 29	40-70			
Potassium	m3-ppm 357	200-310			
Magnesium	m3-ppm 562	270-450			
Calcium	m3-ppm 66164	2700-3700			



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	
09	Walnut, Black	0	1.7	1.4	0.5	0.0	10.0		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Walnut, Black: Apply N as follows: Preplant=0, Yr 2=3 oz. N/tree, Yr 3=5 oz. N/tree. Increase by 3 oz. N/tree until a max of 4 lb. N/tree is reached. Monitor and adjust fertilizer rates with annual leaf analysis.

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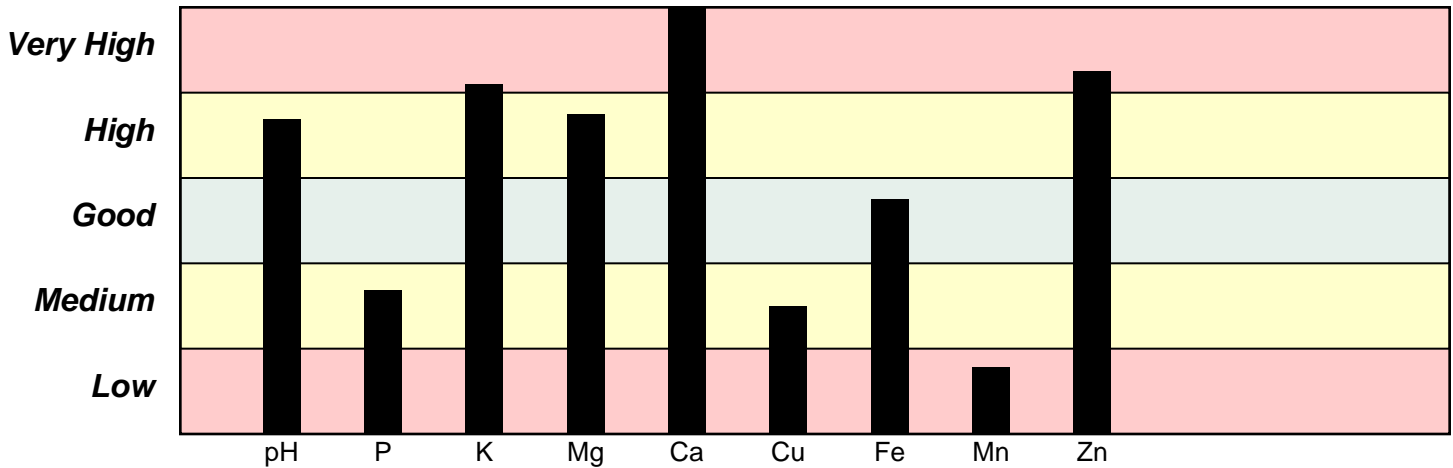
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	786-08-37	Sampled	12-02-2008
Lab Number	C04665	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 3.2	Varies
Buffer pH			Iron	m3-ppm 33	9-40
Organic Matter	% 2.2		Manganese	m3-ppm 19	Varies
CEC	20.4		Zinc	m3-ppm 22	4-11
K Saturation	% 5.0	2.0-4.0	Soluble Salts	mmhos/cm 0.31	0.00-2.00
Mg Saturation	% 21.6	10-20	Clay	% 16	
Ca Saturation	% 73.4	50-70	Sand	% 65	
K/Mg Ratio	0.8		Silt	% 19	
Ca/Mg Ratio	109.9		Texture	Sandy Loam	
Phosphorus	m3-ppm 33	40-70			
Potassium	m3-ppm 478	200-320			
Magnesium	m3-ppm 602	270-460			
Calcium	m3-ppm 66180	2700-3800			



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	
09	Pecans	0	2.3	1.2	0.0	0.0	12.7		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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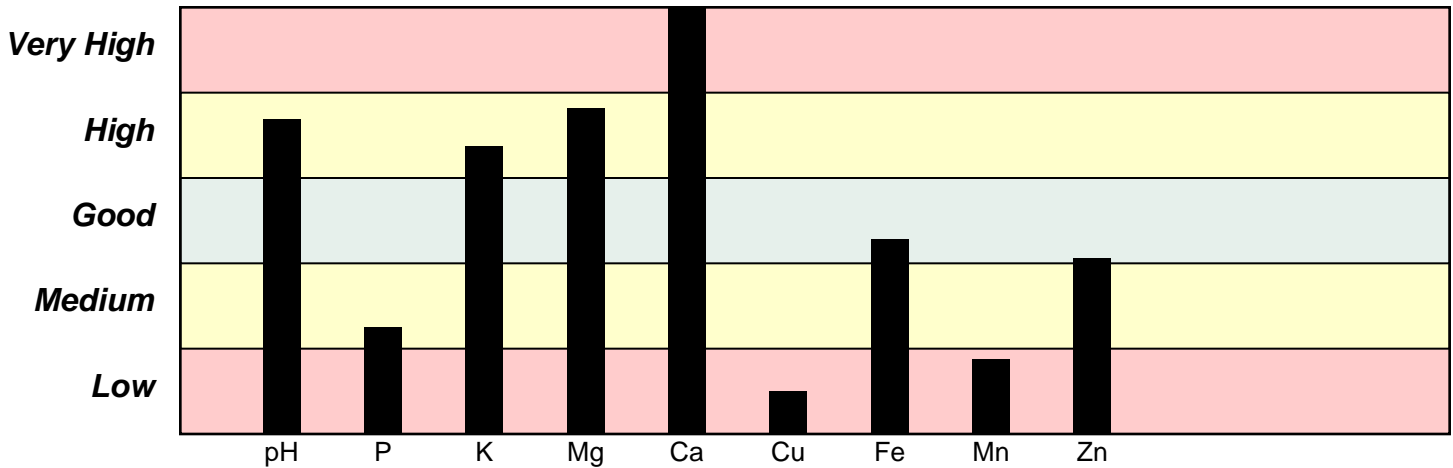
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**THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240**

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	787-08-38	Sampled	12-02-2008
Lab Number	C04666	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 1.0	Varies
Buffer pH			Iron	m3-ppm 19	9-40
Organic Matter	% 2.0		Manganese	m3-ppm 23	Varies
CEC	20.3		Zinc	m3-ppm 5	4-11
K Saturation	% 4.0	2.0-4.0	Soluble Salts	mmhos/cm 0.31	0.00-2.00
Mg Saturation	% 22.1	10-20	Clay	% 15	
Ca Saturation	% 73.9	50-70	Sand	% 61	
K/Mg Ratio	0.6		Silt	% 24	
Ca/Mg Ratio	108.0		Texture	Sandy Loam	
Phosphorus	m3-ppm 24	40-70			
Potassium	m3-ppm 374	200-320			
Magnesium	m3-ppm 612	270-450			
Calcium	m3-ppm 66108	2700-3800			



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	
09	Pecans	0	2.3	1.6	0.0	0.0	12.7		0.0	0.0	0.1	0.1	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

Turf and Ornamental Soil Analysis Report

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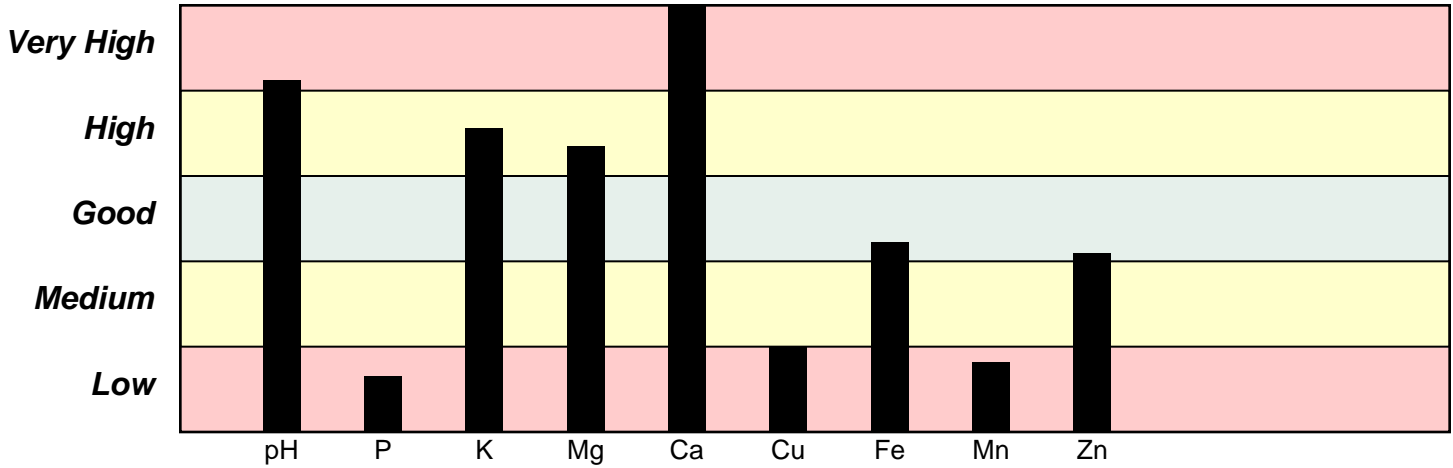
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	788-08-40	Sampled	12-02-2008
Lab Number	C04667	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-6.8	Copper	m3-ppm 1.3	Varies
Buffer pH			Iron	m3-ppm 17	9-40
Organic Matter	% 2.0		Manganese	m3-ppm 20	Varies
CEC	19.6		Zinc	m3-ppm 5	4-11
K Saturation	% 4.3	2.0-4.0	Soluble Salts	mmhos/cm 0.32	0.00-1.00
Mg Saturation	% 19.2	10-20	Clay	% 13	
Ca Saturation	% 76.4	50-70	Sand	% 61	
K/Mg Ratio	0.8		Silt	% 25	
Ca/Mg Ratio	128.5		Texture	Sandy Loam	
Phosphorus	m3-ppm 13	40-70			
Potassium	m3-ppm 396	200-310			
Magnesium	m3-ppm 515	270-450			
Calcium	m3-ppm 66156	2600-3700			



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	
09	Velvet/Modesto Ash	0	3.4	1.9	0.0	0.0	13.7		0.0	0.0	0.1	0.1	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Velvet/Modesto Ash: Monitor and adjust nutrient program based on annual tissue analysis

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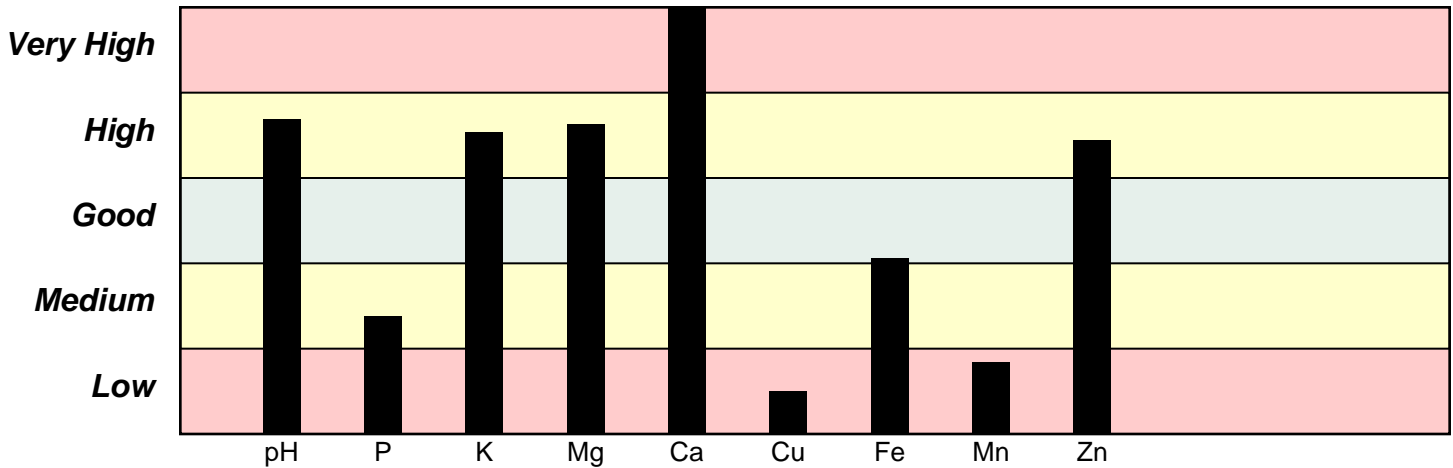
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THE DAVEY TREE EXPERT CO-SOIL LAB
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	789-08-41	Sampled	12-02-2008
Lab Number	C04668	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 1.3	Varies
Buffer pH			Iron	m3-ppm 12	9-40
Organic Matter	% 1.6		Manganese	m3-ppm 20	Varies
CEC	20.1		Zinc	m3-ppm 14	4-11
K Saturation	% 4.3	2.0-4.0	Soluble Salts	mmhos/cm 0.30	0.00-2.00
Mg Saturation	% 20.9	10-20	Clay	% 19	
Ca Saturation	% 74.8	50-70	Sand	% 56	
K/Mg Ratio	0.7		Silt	% 24	
Ca/Mg Ratio	115.6		Texture	Sandy Loam	
Phosphorus	m3-ppm 27	40-70			
Potassium	m3-ppm 398	200-320			
Magnesium	m3-ppm 572	270-450			
Calcium	m3-ppm 66111	2700-3700			



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	
09	Pecans	0	2.3	1.5	0.0	0.0	12.6		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

Turf and Ornamental Soil Analysis Report

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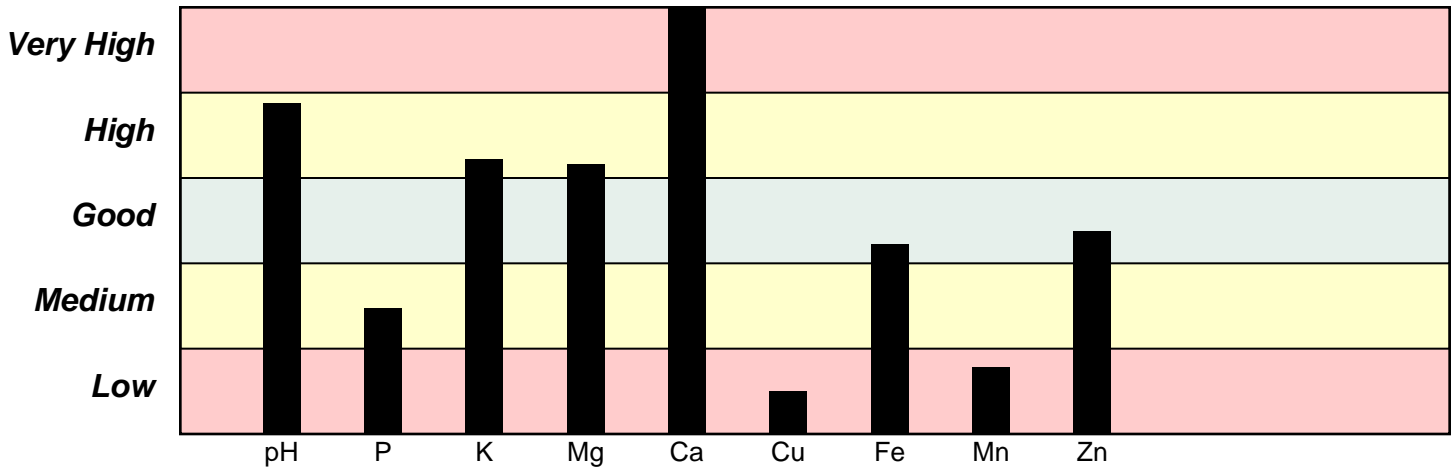
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	790-08-43	Sampled	12-02-2008
Lab Number	C04669	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.9	6.0-7.0	Copper	m3-ppm 1.5	Varies
Buffer pH			Iron	m3-ppm 16	9-40
Organic Matter	% 1.0		Manganese	m3-ppm 26	Varies
CEC	19.2		Zinc	m3-ppm 7	4-11
K Saturation	% 3.8	2.0-4.0	Soluble Salts	mmhos/cm 0.24	0.00-2.00
Mg Saturation	% 18.0	10-20	Clay	% 13	
Ca Saturation	% 78.2	50-70	Sand	% 80	
K/Mg Ratio	0.7		Silt	% 6	
Ca/Mg Ratio	36.7		Texture	Sandy Loam	
Phosphorus	m3-ppm 29	40-70			
Potassium	m3-ppm 342	200-310			
Magnesium	m3-ppm 471	260-440			
Calcium	m3-ppm 17271	2600-3600			



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	
09	Pecans	0	2.3	1.4	0.0	0.0	15.6		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

Turf and Ornamental Soil Analysis Report

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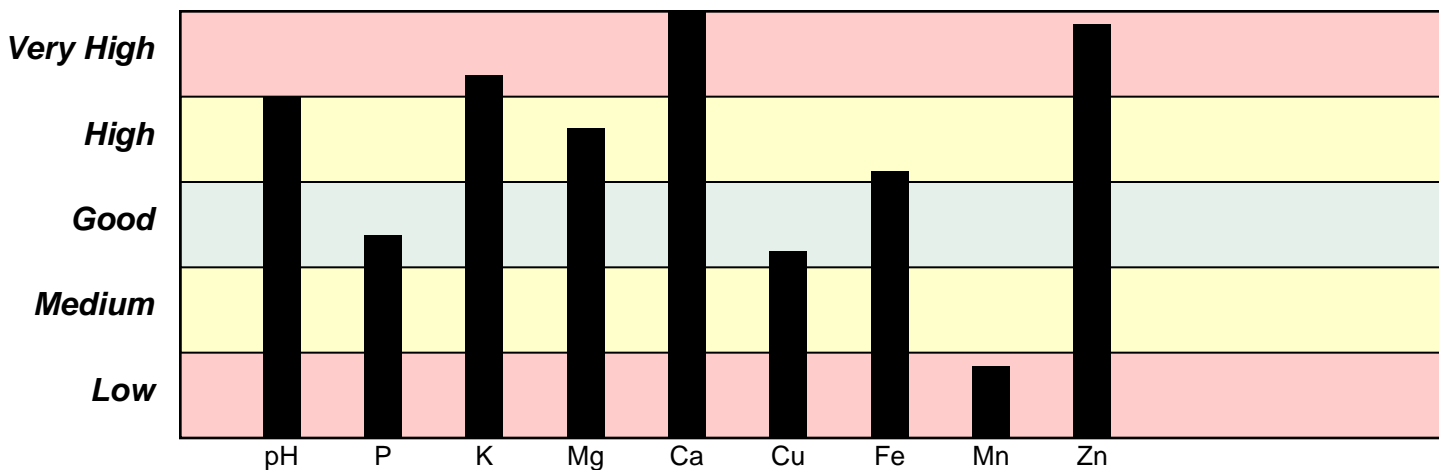
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PO BOX 5193
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	791-08-46	Sampled	12-02-2008
Lab Number	C04670	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.6	6.0-6.8	Copper	7.0	Varies
Buffer pH			Iron	48	9-40
Organic Matter	2.1		Manganese	14	Varies
CEC	20.3		Zinc	32	4-11
K Saturation	5.3	2.0-4.0	Soluble Salts	0.22	0.00-1.00
Mg Saturation	20.7	10-20	Clay	31	
Ca Saturation	74.0	50-70	Sand	46	
K/Mg Ratio	0.9		Silt	22	
Ca/Mg Ratio	25.9		Texture	Sandy Clay Loam	
Phosphorus	49	40-70			
Potassium	497	200-320			
Magnesium	573	270-450			
Calcium	14845	2700-3800			



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	
09	Cottonwood	0	3.4	0.8	0.0	0.0	12.2		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Cottonwood: Monitor and adjust nutrient program based on annual tissue analysis

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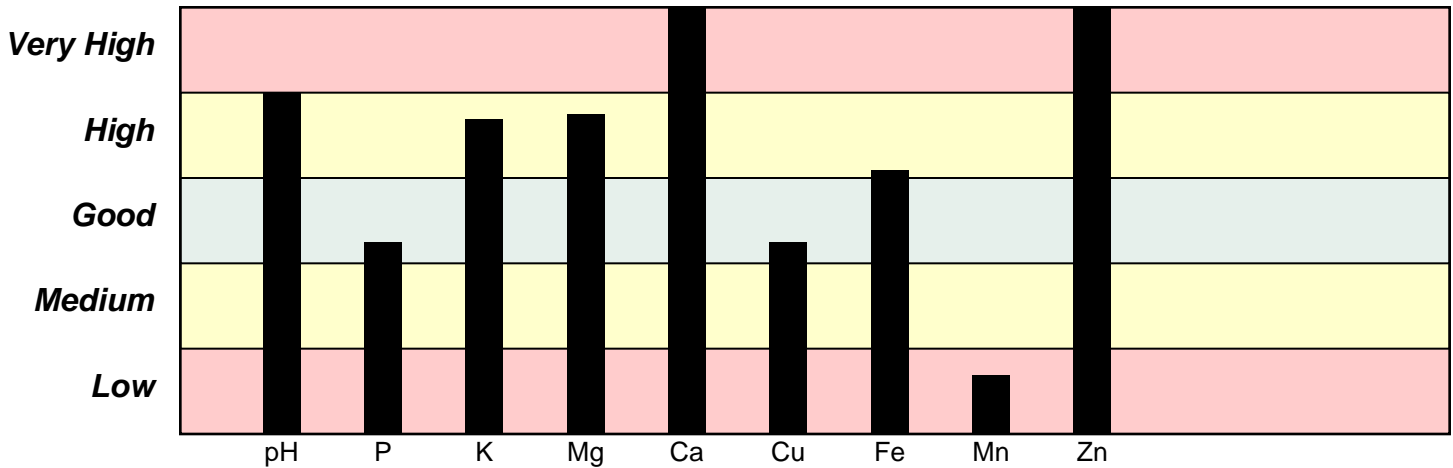
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	792-08-47	Sampled	12-02-2008
Lab Number	C04671	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.6	6.0-6.8	Copper	m3-ppm 8.0	Varies
Buffer pH			Iron	m3-ppm 47	9-40
Organic Matter	% 3.4		Manganese	m3-ppm 12	Varies
CEC	20.3		Zinc	m3-ppm 45	4-11
K Saturation	% 4.5	2.0-4.0	Soluble Salts	mmhos/cm 0.26	0.00-1.00
Mg Saturation	% 21.6	10-20	Clay	% 20	
Ca Saturation	% 73.9	50-70	Sand	% 62	
K/Mg Ratio	0.7		Silt	% 18	
Ca/Mg Ratio	29.1		Texture	Sandy Clay Loam	
Phosphorus	m3-ppm 46	40-70			
Potassium	m3-ppm 421	200-320			
Magnesium	m3-ppm 599	270-450			
Calcium	m3-ppm 17426	2700-3800			



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
09	Cottonwood	0	3.4	0.8	0.0	0.0	12.3		0.0	0.0	0.1	0.0

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Cottonwood: Monitor and adjust nutrient program based on annual tissue analysis

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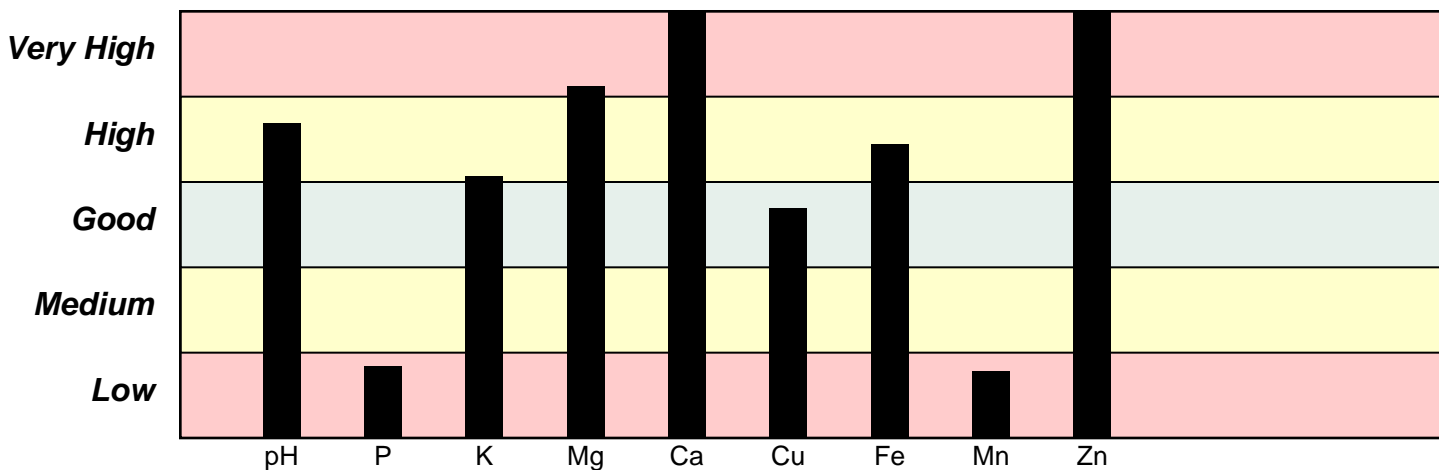
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**THE DAVEY TREE EXPERT CO-SOIL LAB
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	793-08-48	Sampled	12-02-2008
Lab Number	C04672	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 14.9	Varies
Buffer pH			Iron	m3-ppm 67	9-40
Organic Matter	% 2.7		Manganese	m3-ppm 22	Varies
CEC	20.5		Zinc	m3-ppm 40	4-11
K Saturation	% 3.5	2.0-4.0	Soluble Salts	mmhos/cm 0.25	0.00-2.00
Mg Saturation	% 23.5	10-20	Clay	% 26	
Ca Saturation	% 73.0	50-70	Sand	% 44	
K/Mg Ratio	0.5		Silt	% 30	
Ca/Mg Ratio	22.4		Texture	Loam	
Phosphorus	m3-ppm 16	40-70			
Potassium	m3-ppm 331	200-320			
Magnesium	m3-ppm 658	270-460			
Calcium	m3-ppm 14771	2700-3800			



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	
09	Pecans	0	2.3	2.0	0.5	0.0	12.7		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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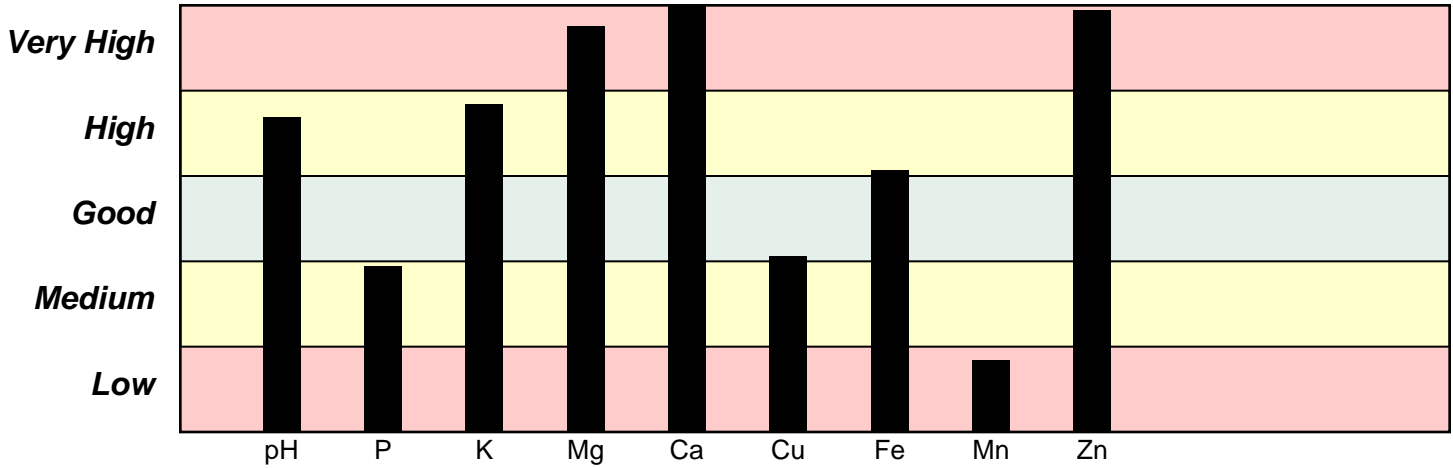
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PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	794-08-49	Sampled	12-02-2008
Lab Number	C04673	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 5.4	Varies
Buffer pH			Iron	m3-ppm 45	9-40
Organic Matter	% 2.1		Manganese	m3-ppm 21	Varies
CEC	21.3		Zinc	m3-ppm 34	4-11
K Saturation	% 4.6	2.0-4.0	Soluble Salts	mmhos/cm 0.32	0.00-2.00
Mg Saturation	% 25.2	10-20	Clay	% 23	
Ca Saturation	% 70.3	50-70	Sand	% 57	
K/Mg Ratio	0.6		Silt	% 19	
Ca/Mg Ratio	20.3		Texture	Sandy Clay	Loam
Phosphorus	m3-ppm 37	40-70			
Potassium	m3-ppm 452	210-320			
Magnesium	m3-ppm 733	280-460			
Calcium	m3-ppm 14881	2800-4000			



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	
09	Pecans	0	2.3	1.0	0.0	0.0	12.9		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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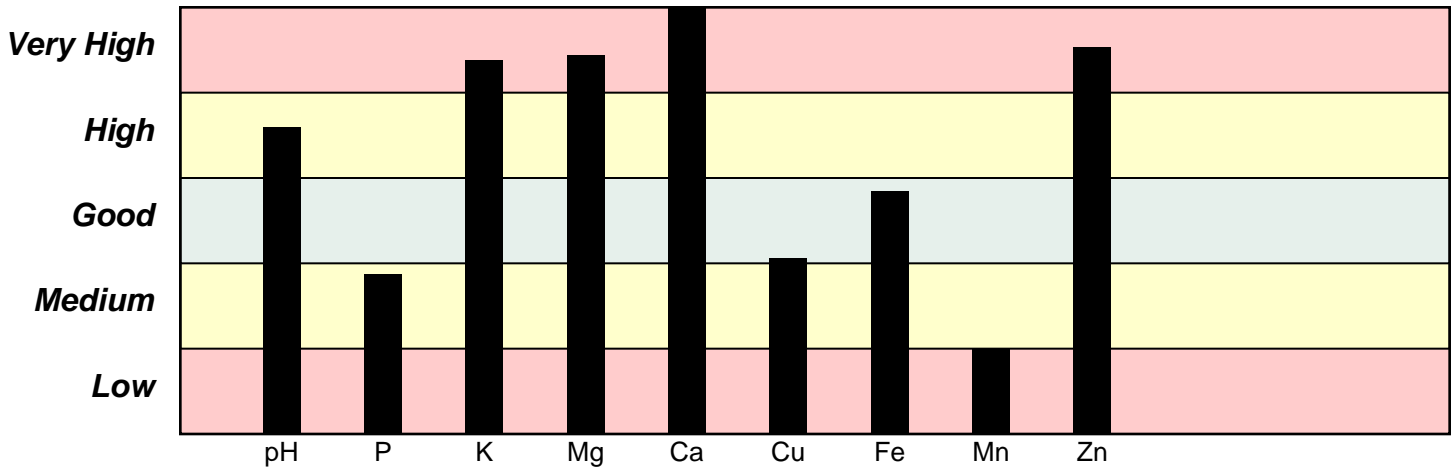
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PO BOX 5193
KENT, OH 44240**

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	795-08-50	Sampled	12-02-2008
Lab Number	C04674	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.6	6.0-7.0	Copper	m3-ppm 4.4	Varies
Buffer pH			Iron	m3-ppm 36	9-40
Organic Matter	% 2.2		Manganese	m3-ppm 23	Varies
CEC	21.3		Zinc	m3-ppm 27	4-11
K Saturation	% 5.3	2.0-4.0	Soluble Salts	mmhos/cm 0.28	0.00-2.00
Mg Saturation	% 24.2	10-20	Clay	% 25	
Ca Saturation	% 70.6	50-70	Sand	% 49	
K/Mg Ratio	0.7		Silt	% 25	
Ca/Mg Ratio	23.1		Texture	Sandy Clay Loam	
Phosphorus	m3-ppm 36	40-70			
Potassium	m3-ppm 520	210-320			
Magnesium	m3-ppm 700	280-460			
Calcium	m3-ppm 16198	2800-4000			



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	
09	Pecans	0	2.3	1.0	0.0	0.0	11.3		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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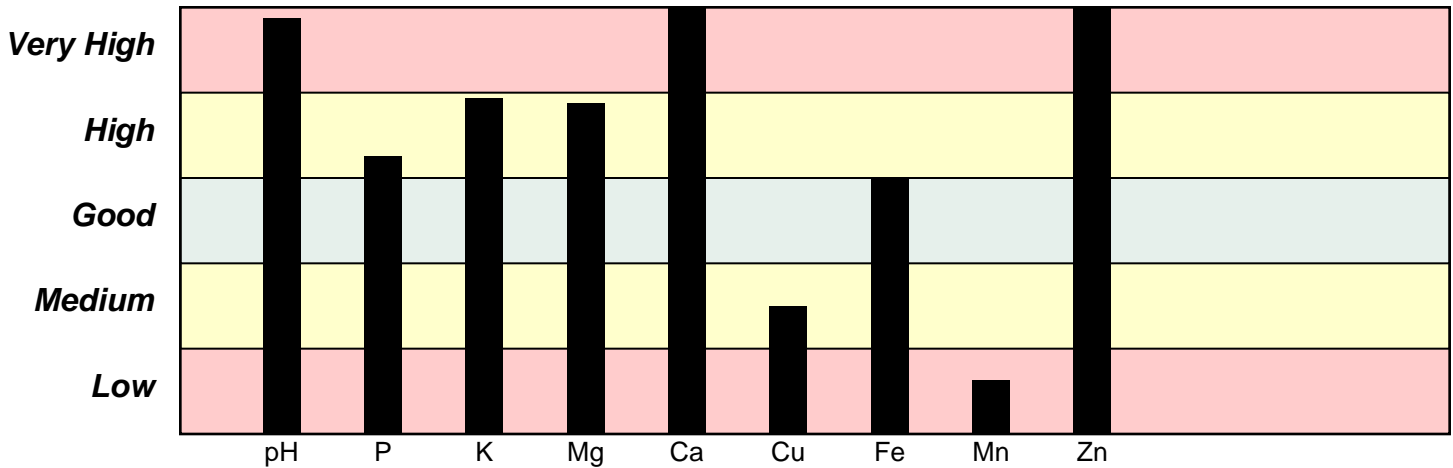
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Prepared For
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Sample Information			
Sample	796-08-51	Sampled	12-02-2008
Lab Number	C04675	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-6.5	Copper	m3-ppm 4.0	Varies
Buffer pH			Iron	m3-ppm 41	9-40
Organic Matter	% 4.3		Manganese	m3-ppm 21	Varies
CEC	20.6		Zinc	m3-ppm 38	4-11
K Saturation	% 4.8	2.0-4.0	Soluble Salts	mmhos/cm 0.35	0.00-2.00
Mg Saturation	% 22.4	10-20	Clay	% 21	
Ca Saturation	% 72.8	50-70	Sand	% 57	
K/Mg Ratio	0.7		Silt	% 21	
Ca/Mg Ratio	105.2		Texture	Sandy Clay	Loam
Phosphorus	m3-ppm 81	40-70			
Potassium	m3-ppm 462	200-320			
Magnesium	m3-ppm 629	270-460			
Calcium	m3-ppm 66187	2700-3800			



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	
09	Ceder, Eastern/Red	0	0.9	0.2	0.0	0.0	15.9		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Ceder, Eastern/Red: For commercial Christmas trees, apply additional 44 lb. N/acre in May of harvest yr. For landscape trees or grass undergrowth, triple the N rate after year 1. Apply any additional Ca as gypsum. Adj. fertilizer rates per annual tissue analysis.

Turf and Ornamental Soil Analysis Report

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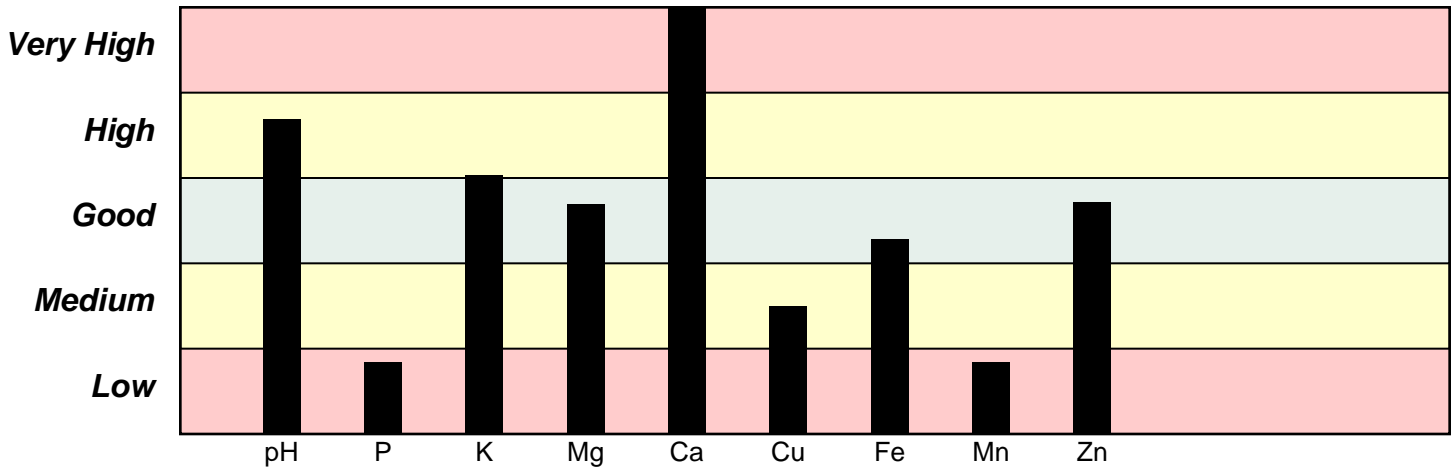
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Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	797-08-52	Sampled	12-02-2008
Lab Number	C04676	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 3.0	Varies
Buffer pH			Iron	m3-ppm 19	9-40
Organic Matter	% 1.4		Manganese	m3-ppm 18	Varies
CEC	18.5		Zinc	m3-ppm 9	4-11
K Saturation	% 3.6	2.0-4.0	Soluble Salts	mmhos/cm 0.28	0.00-2.00
Mg Saturation	% 15.2	10-20	Clay	% 16	
Ca Saturation	% 81.2	50-70	Sand	% 64	
K/Mg Ratio	0.8		Silt	% 20	
Ca/Mg Ratio	173.2		Texture	Sandy Loam	
Phosphorus	m3-ppm 17	40-70			
Potassium	m3-ppm 308	190-300			
Magnesium	m3-ppm 382	260-430			
Calcium	m3-ppm 66154	2500-3400			



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	
09	Pecans	0	2.3	2.0	0.5	0.0	12.3		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

Turf and Ornamental Soil Analysis Report

Spectrum Analytic Inc.

P.O. Box 639 - 1087 Jamison Road
Washington C.H., OH 43160

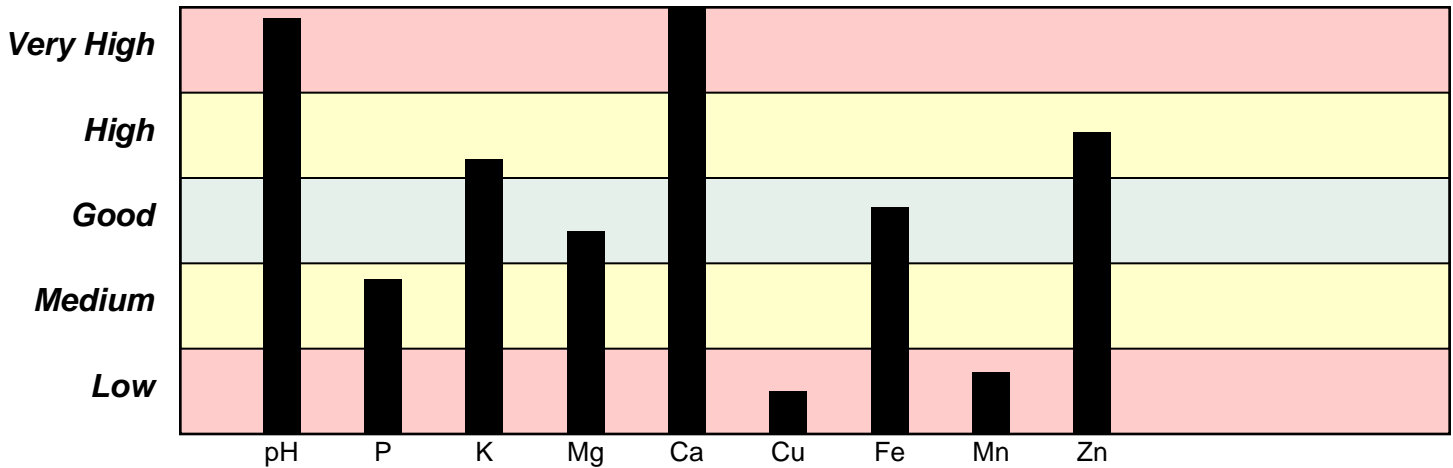
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	798-08-53	Sampled	12-02-2008
Lab Number	C04677	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.8	6.5-7.0	Copper	m3-ppm 1.5	Varies
Buffer pH			Iron	m3-ppm 30	9-40
Organic Matter	% 2.5		Manganese	m3-ppm 24	Varies
CEC	18.1		Zinc	m3-ppm 15	4-11
K Saturation	% 3.9	2.0-4.0	Soluble Salts	mmhos/cm 0.27	0.00-2.00
Mg Saturation	% 13.1	10-20	Clay	% 16	
Ca Saturation	% 83.0	50-70	Sand	% 66	
K/Mg Ratio	1.0		Silt	% 18	
Ca/Mg Ratio	204.9		Texture	Sandy Loam	
Phosphorus	m3-ppm 37	40-70			
Potassium	m3-ppm 330	190-300			
Magnesium	m3-ppm 323	260-430			
Calcium	m3-ppm 66176	2400-3400			



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	
09	Elm, Undefined	0	4.0	1.2	0.6	0.0	10.9		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Elm, Undefined: Split N 50% early spring and 50% late summer. Monitor and adjust fertilizer rates based on annual leaf analysis.

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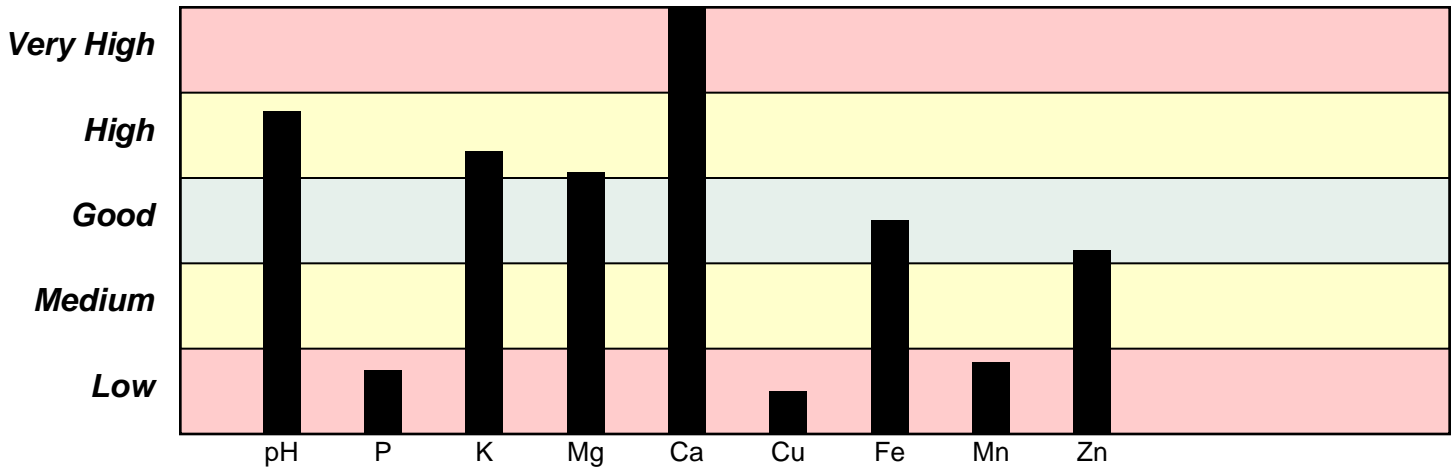
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	799-08-54	Sampled	12-02-2008
Lab Number	C04678	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.8	6.0-7.0	Copper	m3-ppm 1.0	Varies
Buffer pH			Iron	m3-ppm 25	9-40
Organic Matter	% 1.5		Manganese	m3-ppm 25	Varies
CEC	19.1		Zinc	m3-ppm 5	4-11
K Saturation	% 4.0	2.0-4.0	Soluble Salts	mmhos/cm 0.24	0.00-2.00
Mg Saturation	% 17.4	10-20	Clay	% 16	
Ca Saturation	% 78.6	50-70	Sand	% 70	
K/Mg Ratio	0.8		Silt	% 14	
Ca/Mg Ratio	145.8		Texture	Sandy Loam	
Phosphorus	m3-ppm 15	40-70			
Potassium	m3-ppm 354	200-310			
Magnesium	m3-ppm 454	260-440			
Calcium	m3-ppm 66182	2500-3600			



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	
09	Pecans	0	2.3	2.0	0.0	0.0	14.0		0.0	0.0	0.1	0.1	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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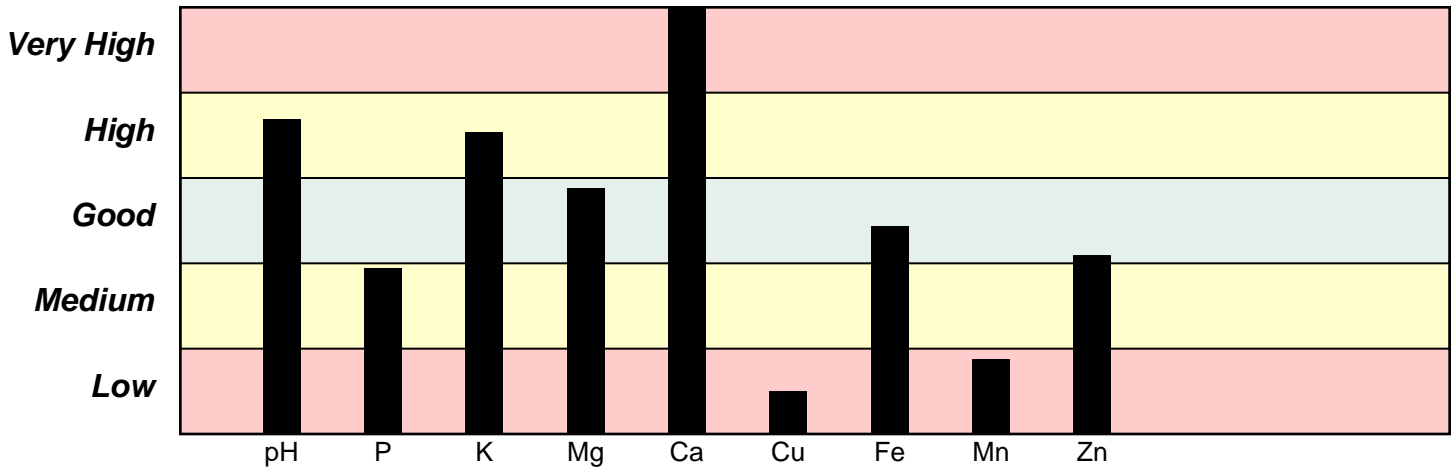
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	800-08-55	Sampled	12-02-2008
Lab Number	C04679	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.7	6.0-7.0	Copper	m3-ppm 1.0	Varies
Buffer pH			Iron	m3-ppm 23	9-40
Organic Matter	% 2.2		Manganese	m3-ppm 24	Varies
CEC	18.9		Zinc	m3-ppm 5	4-11
K Saturation	% 4.4	2.0-4.0	Soluble Salts	mmhos/cm 0.31	0.00-2.00
Mg Saturation	% 16.2	10-20	Clay	% 24	
Ca Saturation	% 79.4	50-70	Sand	% 49	
K/Mg Ratio	0.9		Silt	% 27	
Ca/Mg Ratio	38.8		Texture	Sandy Clay	Loam
Phosphorus	m3-ppm 39	40-70			
Potassium	m3-ppm 384	200-310			
Magnesium	m3-ppm 417	260-440			
Calcium	m3-ppm 16190	2500-3500			



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	
09	Pecans	0	2.3	1.0	0.0	0.0	12.4		0.0	0.0	0.1	0.1	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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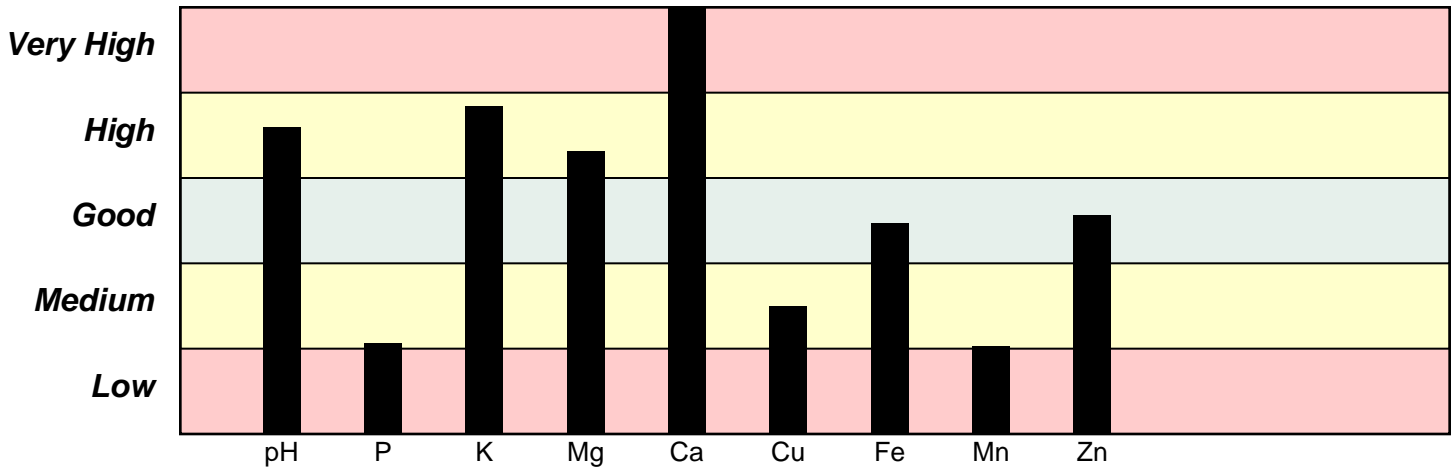
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	801-08-56	Sampled	12-02-2008
Lab Number	C04680	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.6	6.0-7.0	Copper	m3-ppm 2.0	Varies
Buffer pH			Iron	m3-ppm 24	9-40
Organic Matter	% 2.8		Manganese	m3-ppm 28	Varies
CEC	19.7		Zinc	m3-ppm 8	4-11
K Saturation	% 4.8	2.0-4.0	Soluble Salts	mmhos/cm 0.32	0.00-2.00
Mg Saturation	% 18.9	10-20	Clay	% 22	
Ca Saturation	% 76.3	50-70	Sand	% 51	
K/Mg Ratio	0.9		Silt	% 27	
Ca/Mg Ratio	130.5		Texture	Sandy Clay	Loam
Phosphorus	m3-ppm 21	40-70			
Potassium	m3-ppm 437	200-310			
Magnesium	m3-ppm 508	270-450			
Calcium	m3-ppm 66271	2600-3700			



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	
09	Pecans	0	2.3	1.8	0.0	0.0	11.0		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.

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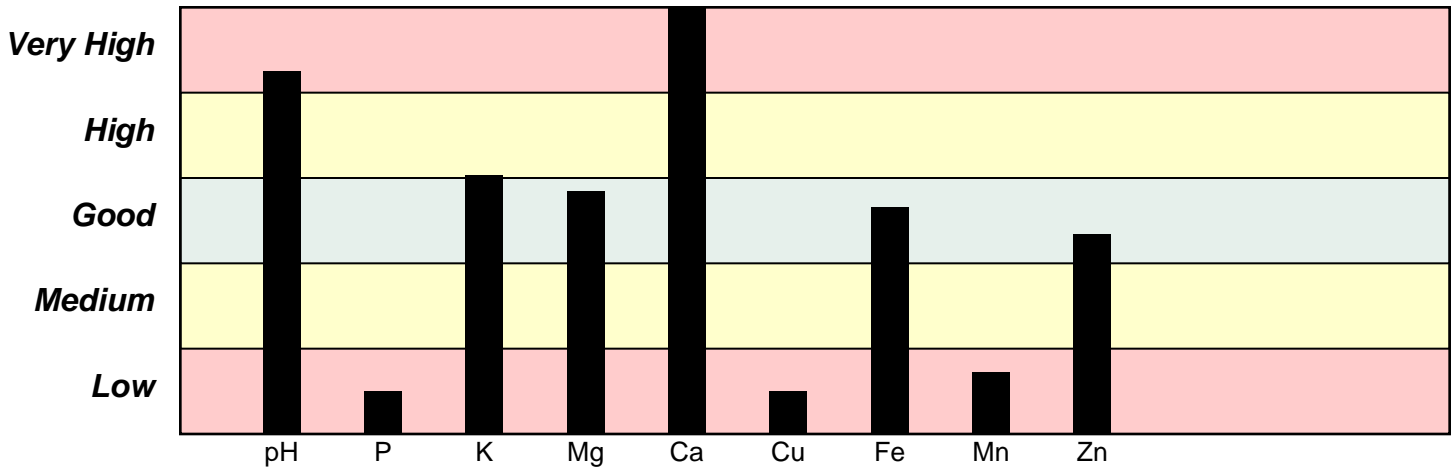
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**THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240**

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	802-08-57	Sampled	12-02-2008
Lab Number	C04682	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.8	6.0-6.8	Copper	m3-ppm 1.3	Varies
Buffer pH			Iron	m3-ppm 29	9-40
Organic Matter	% 2.1		Manganese	m3-ppm 22	Varies
CEC	18.7		Zinc	m3-ppm 6	4-11
K Saturation	% 3.6	2.0-4.0	Soluble Salts	mmhos/cm 0.21	0.00-1.00
Mg Saturation	% 16.1	10-20	Clay	% 12	
Ca Saturation	% 80.3	50-70	Sand	% 69	
K/Mg Ratio	0.8		Silt	% 19	
Ca/Mg Ratio	161.5		Texture	Sandy Loam	
Phosphorus	m3-ppm 10	40-70			
Potassium	m3-ppm 310	200-300			
Magnesium	m3-ppm 410	260-440			
Calcium	m3-ppm 66218	2500-3500			



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	
09	Cottonwood	0	3.4	2.1	1.0	0.0	15.1		0.0	0.0	0.1	0.0	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Cottonwood: Monitor and adjust nutrient program based on annual tissue analysis

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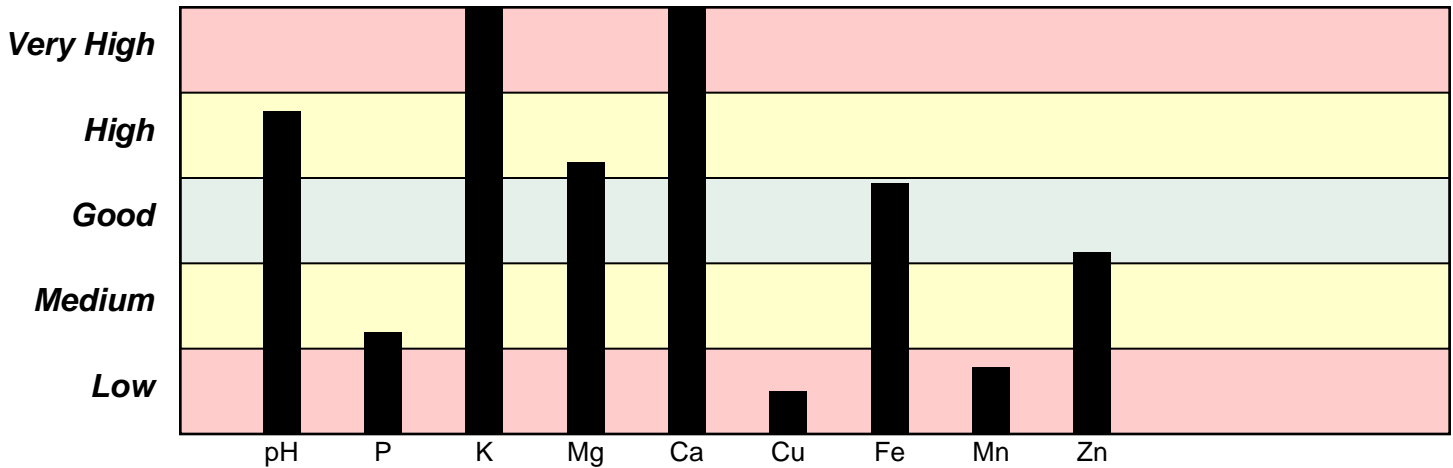
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THE DAVEY TREE EXPERT CO-SOIL LAB
PO BOX 5193
KENT, OH 44240

Prepared For
CITY OF AUSTIN AUSTIN, TX

Sample Information			
Sample	803-08-58	Sampled	12-02-2008
Lab Number	C04683	Tested	12-03-2008

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	7.8	6.0-7.0	Copper	m3-ppm 1.5	Varies
Buffer pH			Iron	m3-ppm 39	9-40
Organic Matter	% 2.0		Manganese	m3-ppm 25	Varies
CEC	19.9		Zinc	m3-ppm 5	4-11
K Saturation	% 6.4	2.0-4.0	Soluble Salts	mmhos/cm 0.26	0.00-2.00
Mg Saturation	% 18.1	10-20	Clay	% 31	
Ca Saturation	% 75.5	50-70	Sand	% 39	
K/Mg Ratio	1.2		Silt	% 31	
Ca/Mg Ratio	31.9		Texture	Clay Loam	
Phosphorus	m3-ppm 23	40-70			
Potassium	m3-ppm 595	200-310			
Magnesium	m3-ppm 490	270-450			
Calcium	m3-ppm 15615	2700-3700			



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	
09	Pecans	0	2.3	1.7	0.0	0.0	14.2		0.0	0.0	0.1	0.1	

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

Sulfur: The S recommendation is the total amount needed to reach the desired soil pH. Do not exceed 5 lb S/1000 sq ft/application or 10 lb S/1000 sq ft/yr on turf. Do not exceed 7 lb S/1000 sq ft/yr on sandy soils. Sample soils annually to monitor pH change.

Pecans: Minimize the use of chloride (Cl) containing fertilizer. Monitor and adjust nutrient program with annual leaf analysis.