# Plant Discovery Trail


Garden Locations

Trail

RUTGERS
New Jersey Agricultural Experiment Station

**Soil Testing Laboratory**
**Rutgers, The State University**
**ASB II**
**57 US Highway 1 South**
**New Brunswick, NJ 08901-8554**

# Soil Test Report
Lab #: 2012-16553

**Name:** Ocean County Soil Conservation District
**Address:** 714 Lacey Road
Forked River, NJ 08731
**Phone:** (609)971-7002
**Fax:** (609)971-3391
**Email:**

**Date Received:** 2012-03-15
**Date Reported:** 2012-03-26
**Serial #:** AN-8292
**Sample ID:** Garden #1 - Jake's

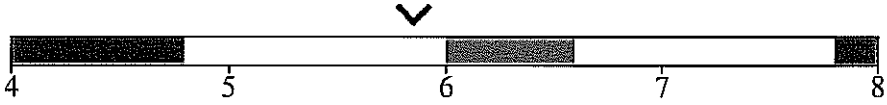
**Crop or Plant**
Est. Turfgrass, cool season

**Referred To:** Rutgers Cooperative Ext. of Ocean County
(732)349-1246

## Soil Tests and Interpretations

Loamy Sand

**pH:** 5.85 Moderately acidic; below optimum for many plants but tolerated by acid-loving species.

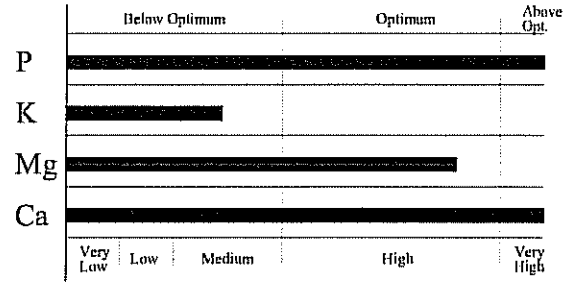



**Lime Requirement Index:** 7.80

The Lime Requirement Index (LRI) is a measure of the buffering capacity of the soil, its resistance to pH change, and is used to determine the appropriate amount of limestone, when necessary. LRI value near 8.0 indicates low buffering capacity of soil and a lower rate of limestone amendment compared to soil with high buffering capacity (LRI near 7.0).

## Macronutrients (pounds per acre)

| | | |
|---|---|---|
| **Phosphorous:** | 276 | (Above Optimum) |
| **Potassium:** | 109 | (Below Optimum) |
| **Magnesium:** | 266 | (Optimum) |
| **Calcium:** | 2481 | (Above Optimum) |




by Mehlich 3 extraction

## Micronutrients (parts per million)

| Zinc(Zn) | Copper(Cu) | Manganese(Mn) | Boron(B) | Iron(Fe) |
|---|---|---|---|---|
| 13.55 (Adequate) | 4.88 (Adequate) | 6.30 (Adequate) | 0.92 (Adequate) | 385.50 (High) |

## Special Tests Results

Soil Textural Class: Loamy Sand

Soluble Salts- Electrical conductivity= 0.08 mmho/cm
(Low)

Organic matter by dichromate oxidation- Organic Matter= 4.2% Organic Carbon= 2.5%

Very High for Loamy Sand

## pH, Calcium, and Magnesium Recommendations

The soil pH is below the optimum range of 6.00 to 6.60 for the growth of most Turfgrass, cool season.

To optimize the soil condition, it should be treated with 15 pounds per 1000 square feet using calcitic limestone. This may be applied in a single operation in either the spring or fall for this established planting. Do not apply more than the recommended amount until the soil is tested again.

## Fertilizer Recommendations

LATE AUGUST or EARLY SEPTEMBER (avoid very hot, very dry weather) is the best time to fertilize cool-season grasses. Otherwise, early Spring fertilization will suffice. Do not apply when grass is not growing (dormant). For sandy soils, split the application into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss. N.J. law prohibits application of fertilizer containing nitrogen or phosphorus after November 15 (December 1 for professional certified applicators) and before March 1.

Target ratio for fertilizer product is: 1-0-2 ,which represents the fertilizer's relative amounts of nitrogen (N), phosphorus as $P_2O_5$, and potassium as $K_2O$.

***How do I find the proper fertilizer product?***

For help finding appropriate fertilizers and rates, consult the Rutgers Soil Testing Laboratory website: rci.rutgers.edu/~soilslab/FertProducts/. The website lists commercially available products according to their nutrient analyses to assist you with product selection and calculation of amount required.

Select a fertilizer that has a nutrient grade (also known as guaranteed minimum analysis) the same as or a multiple of the values recommended, or select a close match to that ratio. When no single fertilizer product matches or approximates the recommended N:$P_2O_5$:$K_2O$ nutrient ratio, it will be necessary to use two or more fertilizers to reach the correct balance of nutrients. The proper amount of fertilizer to apply in a single application depends on the actual fertilizer grade of the fertilizer product selected, the total area (square feet) to be treated, and the total number of fertilizer applications to be made throughout the year.

The estimated yearly nitrogen (N) need of this crop/planting is 1 pound per 1000 square feet.

DO THIS: Uniformly apply fertilizer(s) with N:P:K ratio indicated above on the Turfgrass to achieve 0.75 pound Nitrogen per 1000 square feet (consult website for help with this).A gentle rain or light watering after application will help rinse fertilizer into the root zone, but do not apply fertilizer prior to expected heavy rainfall to avoid loss of fertilizer and pollution of stormwater.

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WHAT ABOUT NEXT YEAR? If fertilizing only once per year, early fall (September) is preferred timing for turfgrass fertilization. Do not apply when grass is not growing (dormant). For sandy soils, it is also suggested the

fertilizer application be split into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss.

The fertilizer prescription above is intended to bring soil nutrients to optimal or near-optimal conditions, and subsequent management recommendations are intended to maintain soil nutrients levels near optimum. The best nutrient ratio for maintenance fertilization of the turf beyond 2 years is best determined by another soil test.

DO THIS: return grass clippings to the Turfgrass when mowing to recycle nutrients. Use fertilizer with N:P:K ratio of: 1:0:0 (nitrogen only) or 4:0:1 or 2:0:1 or 1:0:1 (representing increasing amounts of potassium; supplemental potassium may be necessary for sandy, low organic matter soils) to achieve 0.75 pound Nitrogen per 1000 square feet.

## Micronutrient Statements

Zinc does not appear to be a limiting factor. For information about zinc in soil for plant nutrition, see FS721.

Copper does not appear to be a limiting factor. As with most other micronutrients, copper availability is related to soil pH. Do not over-lime. For more information about soil copper, see FS720.

Manganese does not appear to be a limiting factor. Maintain soil pH in the optimum range, as directed in "Recommendations". See FS973 for more information about manganese in soil and plant nutrition.

Boron would not be a limiting factor for most plants. Plant types differ in their requirement for boron, however; certain fruit, vegetables, and field crops have greater need for boron (up to 0.75 ppm). For more information, see FS873.

Plant availability to iron is highly dependent on soil pH. Although soil iron appears plentiful, high soil pH could limit its availability. On the other hand, plant damage due to iron toxicity, though not common, could occur at low soil pH (acidic soil). Maintain soil pH in the optimum range as described in Recommendations. See FS971 for more information.

**Comments:**

**Find Rutgers Cooperative Extension Fact Sheets at www.njaes.rutgers.edu/pubs**

Soil 2010
NAPT
Participating Laboratory

RUTGERS
New Jersey Agricultural Experiment Station

**Soil Testing Laboratory**
**Rutgers, The State University**
**ASB II**
**57 US Highway 1 South**
**New Brunswick, NJ 08901-8554**

# Soil Test Report
Lab #: 2012- 16549

**Name:** Ocean County Soil Conservation District
**Address:** 714 Lacey Road
Forked River, NJ 08731

**Phone:** (609)971-7002
**Fax:** (609)971-3391
**Email:**

**Date Received:** 2012-03-15
**Date Reported:** 2012-03-29
**Serial #:** AN-7274
**Sample ID:** Garden Area #2 - Jakes

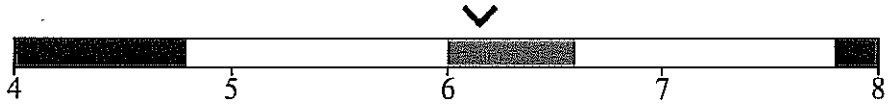
**Crop or Plant**
Est. Turfgrass, cool season

**Referred To:** Rutgers Cooperative Ext. of Ocean County
(732)349-1246

## Soil Tests and Interpretations

Loamy Sand

**pH:** 6.15 Slightly acidic; optimum pH range of many plants except acid-loving species.

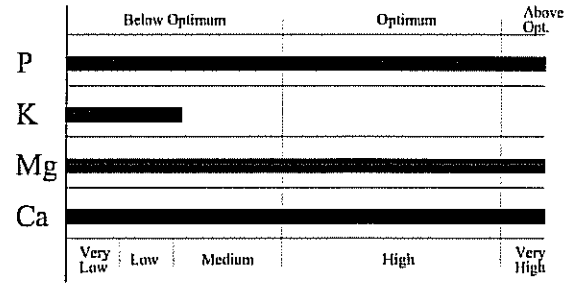



**Lime Requirement Index:** 7.85

The Lime Requirement Index (LRI) is a measure of the buffering capacity of the soil, its resistance to pH change, and is used to determine the appropriate amount of limestone, when necessary. LRI value near 8.0 indicates low buffering capacity of soil and a lower rate of limestone amendment compared to soil with high buffering capacity (LRI near 7.0).

## Macronutrients (pounds per acre)

| | | |
|---|---|---|
| **Phosphorous:** | 209 | (Above Optimum) |
| **Potassium:** | 84 | (Below Optimum) |
| **Magnesium:** | 403 | (Above Optimum) |
| **Calcium:** | 3184 | (Above Optimum) |




by Mehlich 3 extraction

## Micronutrients (parts per million)

| Zinc(Zn) | Copper(Cu) | Manganese(Mn) | Boron(B) | Iron(Fe) |
|---|---|---|---|---|
| 12.40 (Adequate) | 2.11 (Adequate) | 9.92 (Adequate) | 1.18 (Adequate) | 347.80 (High) |

## Special Tests Results

Soil Textural Class: Loamy Sand

Soluble Salts- Electrical conductivity= 0.17 mmho/cm
(Satisfactory)

Organic matter by dichromate oxidation- Organic Matter= 6.1% Organic Carbon= 3.5%

Very High for Loamy Sand

## pH, Calcium, and Magnesium Recommendations

The soil pH is in the optimum range of 6.00 to 6.60 for the growth of most Turfgrass, cool season. Do not apply any limestone.

## Fertilizer Recommendations

LATE AUGUST or EARLY SEPTEMBER (avoid very hot, very dry weather) is the best time to fertilize cool-season grasses. Otherwise, early Spring fertilization will suffice. Do not apply when grass is not growing (dormant). For sandy soils, split the application into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss. N.J. law prohibits application of fertilizer containing nitrogen or phosphorus after November 15 (December 1 for professional certified applicators) and before March 1.

Target ratio for fertilizer product is: 1-0-2 ,which represents the fertilizer's relative amounts of nitrogen (N), phosphorus as $P_2O_5$, and potassium as $K_2O$.

***How do I find the proper fertilizer product?***

For help finding appropriate fertilizers and rates, consult the Rutgers Soil Testing Laboratory website: rci.rutgers.edu/~soilslab/FertProducts/. The website lists commercially available products according to their nutrient analyses to assist you with product selection and calculation of amount required.

Select a fertilizer that has a nutrient grade (also known as guaranteed minimum analysis) the same as or a multiple of the values recommended, or select a close match to that ratio. When no single fertilizer product matches or approximates the recommended N:$P_2O_5$:$K_2O$ nutrient ratio, it will be necessary to use two or more fertilizers to reach the correct balance of nutrients. The proper amount of fertilizer to apply in a single application depends on the actual fertilizer grade of the fertilizer product selected, the total area (square feet) to be treated, and the total number of fertilizer applications to be made throughout the year.

The estimated yearly nitrogen (N) need of this crop/planting is 1 pound per 1000 square feet.

DO THIS: Uniformly apply fertilizer(s) with N:P:K ratio indicated above on the Turfgrass to achieve 0.75 pound Nitrogen per 1000 square feet (consult website for help with this).A gentle rain or light watering after application will help rinse fertilizer into the root zone, but do not apply fertilizer prior to expected heavy rainfall to avoid loss of fertilizer and pollution of stormwater.

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WHAT ABOUT NEXT YEAR? If fertilizing only once per year, early fall (September) is preferred timing for turfgrass fertilization. Do not apply when grass is not growing (dormant). For sandy soils, it is also suggested the fertilizer application be split into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss.

The fertilizer prescription above is intended to bring soil nutrients to optimal or near-optimal conditions, and

subsequent management recommendations are intended to maintain soil nutrients levels near optimum. The best nutrient ratio for maintenance fertilization of the turf beyond 2 years is best determined by another soil test.

DO THIS: return grass clippings to the Turfgrass when mowing to recycle nutrients. Use fertilizer with N:P:K ratio of: 1:0:0 (nitrogen only) or 4:0:1 or 2:0:1 or 1:0:1 (representing increasing amounts of potassium; supplemental potassium may be necessary for sandy, low organic matter soils) to achieve 0.75 pound Nitrogen per 1000 square feet.

## Micronutrient Statements

Zinc does not appear to be a limiting factor. For information about zinc in soil for plant nutrition, see FS721.

Copper does not appear to be a limiting factor. As with most other micronutrients, copper availability is related to soil pH. Do not over-lime. For more information about soil copper, see FS720.

Manganese does not appear to be a limiting factor. Maintain soil pH in the optimum range, as directed in "Recommendations". See FS973 for more information about manganese in soil and plant nutrition.

Boron would not be a limiting factor for most plants. Plant types differ in their requirement for boron, however; certain fruit, vegetables, and field crops have greater need for boron (up to 0.75 ppm). For more information, see FS873.

Plant availability to iron is highly dependent on soil pH. Although soil iron appears plentiful, high soil pH could limit its availability. On the other hand, plant damage due to iron toxicity, though not common, could occur at low soil pH (acidic soil). Maintain soil pH in the optimum range as described in Recommendations. See FS971 for more information.

**Comments:**

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Soil 2010
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RUTGERS
New Jersey Agricultural Experiment Station

**Soil Testing Laboratory**
**Rutgers, The State University**
**ASB II**
**57 US Highway 1 South**
**New Brunswick, NJ 08901-8554**

# Soil Test Report
Lab #: 2012-16550

**Name:** Ocean County Soil Conservation District
**Address:** 714 Lacey Road
Forked River, NJ 08731

**Phone:** (609)971-7002
**Fax:** (609)971-3391
**Email:**

**Date Received:** 2012-03-15
**Date Reported:** 2012-03-29
**Serial #:** AN-7275
**Sample ID:** Garden Area #3 - Jake's

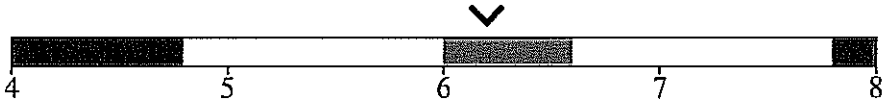
**Crop or Plant**
Est. Turfgrass, cool season

**Referred To:** Rutgers Cooperative Ext. of Ocean County
(732)349-1246

## Soil Tests and Interpretations

Loamy Sand

**pH:** 6.20 Slightly acidic; optimum pH range of many plants except acid-loving species.

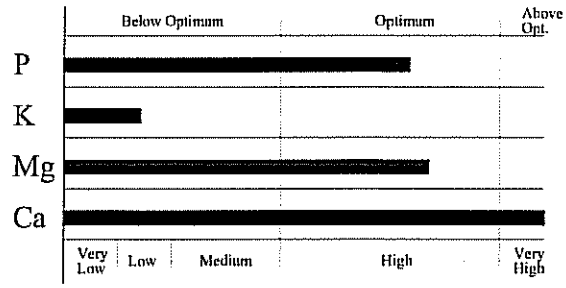



**Lime Requirement Index:** 7.90

The Lime Requirement Index (LRI) is a measure of the buffering capacity of the soil, its resistance to pH change, and is used to determine the appropriate amount of limestone, when necessary. LRI value near 8.0 indicates low buffering capacity of soil and a lower rate of limestone amendment compared to soil with high buffering capacity (LRI near 7.0).

## Macronutrients (pounds per acre)

| | | |
|---|---|---|
| **Phosphorous:** | 110 | (Optimum) |
| **Potassium:** | 56 | (Below Optimum) |
| **Magnesium:** | 247 | (Optimum) |
| **Calcium:** | 2072 | (Above Optimum) |




by Mehlich 3 extraction

## Micronutrients (parts per million)

| Zinc(Zn) | Copper(Cu) | Manganese(Mn) | Boron(B) | Iron(Fe) |
|---|---|---|---|---|
| 8.36 (Adequate) | 2.08 (Adequate) | 5.72 (Adequate) | 1.02 (Adequate) | 342.30 (High) |

## Special Tests Results

Soil Textural Class: Loamy Sand

Soluble Salts- Electrical conductivity= 0.06 mmho/cm (Low)

Organic matter by dichromate oxidation- Organic Matter= 3.5% Organic Carbon= 2.0%

Very High for Loamy Sand

## pH, Calcium, and Magnesium Recommendations

The soil pH is in the optimum range of 6.00 to 6.60 for the growth of most Turfgrass, cool season. Do not apply any limestone.

## Fertilizer Recommendations

LATE AUGUST or EARLY SEPTEMBER (avoid very hot, very dry weather) is the best time to fertilize cool-season grasses. Otherwise, early Spring fertilization will suffice. Do not apply when grass is not growing (dormant). For sandy soils, split the application into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss. N.J. law prohibits application of fertilizer containing nitrogen or phosphorus after November 15 (December 1 for professional certified applicators) and before March 1.

Target ratio for fertilizer product is: 1-1-3 ,which represents the fertilizer's relative amounts of nitrogen (N), phosphorus as $P_2O_5$, and potassium as $K_2O$.

***How do I find the proper fertilizer product?***

For help finding appropriate fertilizers and rates, consult the Rutgers Soil Testing Laboratory website: rci.rutgers.edu/~soilslab/FertProducts/. The website lists commercially available products according to their nutrient analyses to assist you with product selection and calculation of amount required.

Select a fertilizer that has a nutrient grade (also known as guaranteed minimum analysis) the same as or a multiple of the values recommended, or select a close match to that ratio. When no single fertilizer product matches or approximates the recommended N:$P_2O_5$:$K_2O$ nutrient ratio, it will be necessary to use two or more fertilizers to reach the correct balance of nutrients. The proper amount of fertilizer to apply in a single application depends on the actual fertilizer grade of the fertilizer product selected, the total area (square feet) to be treated, and the total number of fertilizer applications to be made throughout the year.

The estimated yearly nitrogen (N) need of this crop/planting is 1 pound per 1000 square feet.

DO THIS: Uniformly apply fertilizer(s) with N:P:K ratio indicated above on the Turfgrass to achieve 0.75 pound Nitrogen per 1000 square feet (consult website for help with this). A gentle rain or light watering after application will help rinse fertilizer into the root zone, but do not apply fertilizer prior to expected heavy rainfall to avoid loss of fertilizer and pollution of stormwater.

---

WHAT ABOUT NEXT YEAR? If fertilizing only once per year, early fall (September) is preferred timing for turfgrass fertilization. Do not apply when grass is not growing (dormant). For sandy soils, it is also suggested the fertilizer application be split into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss.

The fertilizer prescription above is intended to bring soil nutrients to optimal or near-optimal conditions, and

subsequent management recommendations are intended to maintain soil nutrients levels near optimum. The best nutrient ratio for maintenance fertilization of the turf beyond 2 years is best determined by another soil test.

DO THIS: return grass clippings to the Turfgrass when mowing to recycle nutrients. Use fertilizer with N:P:K ratio of: 1:0:0 (nitrogen only) or 4:0:1 or 2:0:1 or 1:0:1 (representing increasing amounts of potassium; supplemental potassium may be necessary for sandy, low organic matter soils) to achieve 0.75 pound Nitrogen per 1000 square feet.

## Micronutrient Statements

Zinc does not appear to be a limiting factor. For information about zinc in soil for plant nutrition, see FS721.

Copper does not appear to be a limiting factor. As with most other micronutrients, copper availability is related to soil pH. Do not over-lime. For more information about soil copper, see FS720.

Manganese does not appear to be a limiting factor. Maintain soil pH in the optimum range, as directed in "Recommendations". See FS973 for more information about manganese in soil and plant nutrition.

Boron would not be a limiting factor for most plants. Plant types differ in their requirement for boron, however; certain fruit, vegetables, and field crops have greater need for boron (up to 0.75 ppm). For more information, see FS873.

Plant availability to iron is highly dependent on soil pH. Although soil iron appears plentiful, high soil pH could limit its availability. On the other hand, plant damage due to iron toxicity, though not common, could occur at low soil pH (acidic soil). Maintain soil pH in the optimum range as described in Recommendations. See FS971 for more information.

**Comments:**

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**Rutgers, The State University**
**ASB II**
**57 US Highway 1 South**
**New Brunswick, NJ 08901-8554**

# Soil Test Report

Lab #: 2012- 16551

**Name:** Ocean County Soil Conservation District

**Address:** 714 Lacey Road
Forked River, NJ 08731

**Phone:** (609)971-7002
**Fax:** (609)971-3391
**Email:**

**Date Received:** 2012-03-15
**Date Reported:** 2012-03-26
**Serial #:** AN-7276
**Sample ID:** Garden Area #4 - Jake's

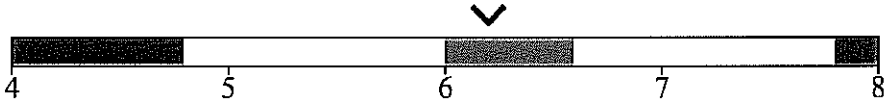
**Crop or Plant**
Est. Turfgrass, cool season

**Referred To:** Rutgers Cooperative Ext. of Ocean County
(732)349-1246

## Soil Tests and Interpretations

Loamy Sand

**pH:** 6.20 Slightly acidic; optimum pH range of many plants except acid-loving species.

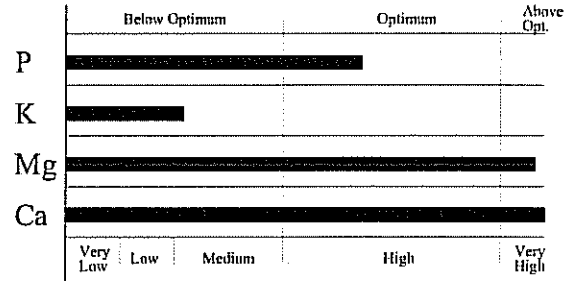



**Lime Requirement Index:** 7.85

The Lime Requirement Index (LRI) is a measure of the buffering capacity of the soil, its resistance to pH change, and is used to determine the appropriate amount of limestone, when necessary. LRI value near 8.0 indicates low buffering capacity of soil and a lower rate of limestone amendment compared to soil with high buffering capacity (LRI near 7.0).

## Macronutrients (pounds per acre)

| | | |
|---|---|---|
| **Phosphorous:** | 95 | (Optimum) |
| **Potassium:** | 85 | (Below Optimum) |
| **Magnesium:** | 319 | (Above Optimum) |
| **Calcium:** | 2652 | (Above Optimum) |




by Mehlich 3 extraction

## Micronutrients (parts per million)

| Zinc(Zn) | Copper(Cu) | Manganese(Mn) | Boron(B) | Iron(Fe) |
|---|---|---|---|---|
| 10.22 (Adequate) | 1.45 (Adequate) | 8.18 (Adequate) | 1.41 (Adequate) | 270.80 (High) |

## Special Tests Results

Soil Textural Class: Loamy Sand

Soluble Salts- Electrical conductivity= 0.08 mmho/cm (Low)

Organic matter by dichromate oxidation- Organic Matter= 4.7% Organic Carbon= 2.8%

Very High for Loamy Sand

## pH, Calcium, and Magnesium Recommendations

The soil pH is in the optimum range of 6.00 to 6.60 for the growth of most Turfgrass, cool season. Do not apply any limestone.

## Fertilizer Recommendations

LATE AUGUST or EARLY SEPTEMBER (avoid very hot, very dry weather) is the best time to fertilize cool-season grasses. Otherwise, early Spring fertilization will suffice. Do not apply when grass is not growing (dormant). For sandy soils, split the application into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss. N.J. law prohibits application of fertilizer containing nitrogen or phosphorus after November 15 (December 1 for professional certified applicators) and before March 1.

Target ratio for fertilizer product is: 1-1-2 ,which represents the fertilizer's relative amounts of nitrogen (N), phosphorus as $P_2O_5$, and potassium as $K_2O$.

***How do I find the proper fertilizer product?***

For help finding appropriate fertilizers and rates, consult the Rutgers Soil Testing Laboratory website: rci.rutgers.edu/~soilslab/FertProducts/. The website lists commercially available products according to their nutrient analyses to assist you with product selection and calculation of amount required.

Select a fertilizer that has a nutrient grade (also known as guaranteed minimum analysis) the same as or a multiple of the values recommended, or select a close match to that ratio. When no single fertilizer product matches or approximates the recommended N:$P_2O_5$:$K_2O$ nutrient ratio, it will be necessary to use two or more fertilizers to reach the correct balance of nutrients. The proper amount of fertilizer to apply in a single application depends on the actual fertilizer grade of the fertilizer product selected, the total area (square feet) to be treated, and the total number of fertilizer applications to be made throughout the year.

The estimated yearly nitrogen (N) need of this crop/planting is 1 pound per 1000 square feet.

DO THIS: Uniformly apply fertilizer(s) with N:P:K ratio indicated above on the Turfgrass to achieve 0.75 pound Nitrogen per 1000 square feet (consult website for help with this). A gentle rain or light watering after application will help rinse fertilizer into the root zone, but do not apply fertilizer prior to expected heavy rainfall to avoid loss of fertilizer and pollution of stormwater.

---

WHAT ABOUT NEXT YEAR? If fertilizing only once per year, early fall (September) is preferred timing for turfgrass fertilization. Do not apply when grass is not growing (dormant). For sandy soils, it is also suggested the fertilizer application be split into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss.

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subsequent management recommendations are intended to maintain soil nutrients levels near optimum. The best nutrient ratio for maintenance fertilization of the turf beyond 2 years is best determined by another soil test.

DO THIS: return grass clippings to the Turfgrass when mowing to recycle nutrients. Use fertilizer with N:P:K ratio of: 1:0:0 (nitrogen only) or 4:0:1 or 2:0:1 or 1:0:1 (representing increasing amounts of potassium; supplemental potassium may be necessary for sandy, low organic matter soils) to achieve 0.75 pound Nitrogen per 1000 square feet.

## Micronutrient Statements

Zinc does not appear to be a limiting factor. For information about zinc in soil for plant nutrition, see FS721.

Copper does not appear to be a limiting factor. As with most other micronutrients, copper availability is related to soil pH. Do not over-lime. For more information about soil copper, see FS720.

Manganese does not appear to be a limiting factor. Maintain soil pH in the optimum range, as directed in "Recommendations". See FS973 for more information about manganese in soil and plant nutrition.

Boron would not be a limiting factor for most plants. Plant types differ in their requirement for boron, however; certain fruit, vegetables, and field crops have greater need for boron (up to 0.75 ppm). For more information, see FS873.

Plant availability to iron is highly dependent on soil pH. Although soil iron appears plentiful, high soil pH could limit its availability. On the other hand, plant damage due to iron toxicity, though not common, could occur at low soil pH (acidic soil). Maintain soil pH in the optimum range as described in Recommendations. See FS971 for more information.

**Comments:**

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**57 US Highway 1 South**
**New Brunswick, NJ 08901-8554**

# Soil Test Report
Lab #: 2012-16552

**Name:** Ocean County Soil Conservation District
**Address:** 714 Lacey Road
Forked River, NJ 08731
**Phone:** (609)971-7002
**Fax:** (609)971-3391
**Email:**

**Date Received:** 2012-03-15
**Date Reported:** 2012-03-26
**Serial #:** AN-7277
**Sample ID:** Garden Area #5 - Jake's

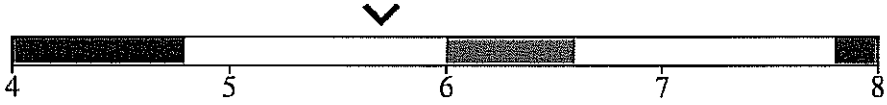
**Crop or Plant**
Est. Turfgrass, cool season

**Referred To:** Rutgers Cooperative Ext. of Ocean County
(732)349-1246

## Soil Tests and Interpretations

Loamy Sand

**pH:** 5.70 Moderately acidic; below optimum for many plants but tolerated by acid-loving species.

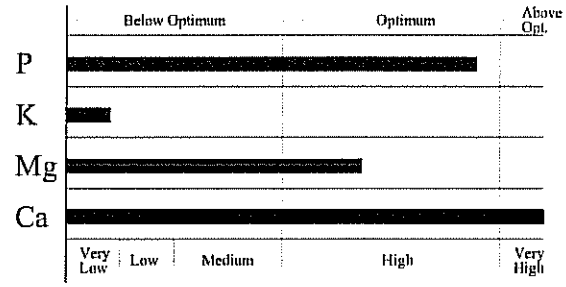



**Lime Requirement Index:** 7.80

The Lime Requirement Index (LRI) is a measure of the buffering capacity of the soil, its resistance to pH change, and is used to determine the appropriate amount of limestone, when necessary. LRI value near 8.0 indicates low buffering capacity of soil and a lower rate of limestone amendment compared to soil with high buffering capacity (LRI near 7.0).

## Macronutrients (pounds per acre)

| | | |
|---|---|---|
| **Phosphorous:** | 130 | (Optimum) |
| **Potassium:** | 31 | (Below Optimum) |
| **Magnesium:** | 199 | (Optimum) |
| **Calcium:** | 2435 | (Above Optimum) |




by Mehlich 3 extraction

## Micronutrients (parts per million)

| Zinc(Zn) | Copper(Cu) | Manganese(Mn) | Boron(B) | Iron(Fe) |
|---|---|---|---|---|
| 11.70 (Adequate) | 1.91 (Adequate) | 7.21 (Adequate) | 1.28 (Adequate) | 271.40 (High) |

## Special Tests Results

Soil Textural Class: Loamy Sand

Soluble Salts- Electrical conductivity= 0.07 mmho/cm
(Low)

Organic matter by dichromate oxidation- Organic Matter= 4.4% Organic Carbon= 2.6%

Very High for Loamy Sand

## pH, Calcium, and Magnesium Recommendations

The soil pH is below the optimum range of 6.00 to 6.60 for the growth of most Turfgrass, cool season.

To optimize the soil condition, it should be treated with 20 pounds per 1000 square feet using calcitic limestone. This may be applied in a single operation in either the spring or fall for this established planting. Do not apply more than the recommended amount until the soil is tested again.

## Fertilizer Recommendations

LATE AUGUST or EARLY SEPTEMBER (avoid very hot, very dry weather) is the best time to fertilize cool-season grasses. Otherwise, early Spring fertilization will suffice. Do not apply when grass is not growing (dormant). For sandy soils, split the application into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss. N.J. law prohibits application of fertilizer containing nitrogen or phosphorus after November 15 (December 1 for professional certified applicators) and before March 1.

Target ratio for fertilizer product is: 1-1-4 ,which represents the fertilizer's relative amounts of nitrogen (N), phosphorus as $P_2O_5$, and potassium as $K_2O$.

***How do I find the proper fertilizer product?***

For help finding appropriate fertilizers and rates, consult the Rutgers Soil Testing Laboratory website: rci.rutgers.edu/~soilslab/FertProducts/. The website lists commercially available products according to their nutrient analyses to assist you with product selection and calculation of amount required.

Select a fertilizer that has a nutrient grade (also known as guaranteed minimum analysis) the same as or a multiple of the values recommended, or select a close match to that ratio. When no single fertilizer product matches or approximates the recommended N:$P_2O_5$:$K_2O$ nutrient ratio, it will be necessary to use two or more fertilizers to reach the correct balance of nutrients. The proper amount of fertilizer to apply in a single application depends on the actual fertilizer grade of the fertilizer product selected, the total area (square feet) to be treated, and the total number of fertilizer applications to be made throughout the year.

The estimated yearly nitrogen (N) need of this crop/planting is 1 pound per 1000 square feet.

DO THIS: Uniformly apply fertilizer(s) with N:P:K ratio indicated above on the Turfgrass to achieve 0.75 pound Nitrogen per 1000 square feet (consult website for help with this). A gentle rain or light watering after application will help rinse fertilizer into the root zone, but do not apply fertilizer prior to expected heavy rainfall to avoid loss of fertilizer and pollution of stormwater.

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WHAT ABOUT NEXT YEAR? If fertilizing only once per year, early fall (September) is preferred timing for turfgrass fertilization. Do not apply when grass is not growing (dormant). For sandy soils, it is also suggested the

fertilizer application be split into two doses spaced 3 to 5 weeks apart to minimize potential for leaching loss.

The fertilizer prescription above is intended to bring soil nutrients to optimal or near-optimal conditions, and subsequent management recommendations are intended to maintain soil nutrients levels near optimum. The best nutrient ratio for maintenance fertilization of the turf beyond 2 years is best determined by another soil test.

DO THIS: return grass clippings to the Turfgrass when mowing to recycle nutrients. Use fertilizer with N:P:K ratio of: 1:0:0 (nitrogen only) or 4:0:1 or 2:0:1 or 1:0:1 (representing increasing amounts of potassium; supplemental potassium may be necessary for sandy, low organic matter soils) to achieve 0.75 pound Nitrogen per 1000 square feet.

## Micronutrient Statements

Zinc does not appear to be a limiting factor. For information about zinc in soil for plant nutrition, see FS721.

Copper does not appear to be a limiting factor. As with most other micronutrients, copper availability is related to soil pH. Do not over-lime. For more information about soil copper, see FS720.

Manganese does not appear to be a limiting factor. Maintain soil pH in the optimum range, as directed in "Recommendations". See FS973 for more information about manganese in soil and plant nutrition.

Boron would not be a limiting factor for most plants. Plant types differ in their requirement for boron, however; certain fruit, vegetables, and field crops have greater need for boron (up to 0.75 ppm). For more information, see FS873.

Plant availability to iron is highly dependent on soil pH. Although soil iron appears plentiful, high soil pH could limit its availability. On the other hand, plant damage due to iron toxicity, though not common, could occur at low soil pH (acidic soil). Maintain soil pH in the optimum range as described in Recommendations. See FS971 for more information.

**Comments:**

**Find Rutgers Cooperative Extension Fact Sheets at www.njaes.rutgers.edu/pubs**

Soil 2010
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