**COMPOST ANALYSIS REPORT**

*Compost Test 3A*

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Results (As is basis)</th>
<th>Results (Dry weight basis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>Soluble Salts (1:5 w:w)</td>
<td>4.82 mmhos/cm</td>
<td></td>
</tr>
<tr>
<td>Solids</td>
<td>73.6 %</td>
<td></td>
</tr>
<tr>
<td>Moisture</td>
<td>26.4 %</td>
<td></td>
</tr>
<tr>
<td>Organic Matter</td>
<td>28.3 %</td>
<td>38.4 %</td>
</tr>
<tr>
<td>Total Nitrogen (N)</td>
<td>1.2 %</td>
<td>1.6 %</td>
</tr>
<tr>
<td>Organic Nitrogen</td>
<td>1.1 %</td>
<td>1.5 %</td>
</tr>
<tr>
<td>Ammonium N (NH₄-N) or 0.0884 %</td>
<td>883.6 mg/kg or 0.1201 %</td>
<td>1257.0 mg/kg or 0.1201 %</td>
</tr>
<tr>
<td>Carbon (C)</td>
<td>15.3 %</td>
<td>20.8 %</td>
</tr>
<tr>
<td>Carbon:Nitrogen (C:N) Ratio</td>
<td>13.10</td>
<td>13.10</td>
</tr>
<tr>
<td>Phosphorus (as P₂O₅)²</td>
<td>0.48 %</td>
<td>0.65 %</td>
</tr>
<tr>
<td>Potassium (as K₂O)²</td>
<td>0.52 %</td>
<td>0.71 %</td>
</tr>
<tr>
<td>Calcium (Ca)</td>
<td>5.63 %</td>
<td>7.65 %</td>
</tr>
<tr>
<td>Magnesium (Mg)</td>
<td>0.32 %</td>
<td>0.43 %</td>
</tr>
<tr>
<td>Particle size (&lt; 9.5 mm)</td>
<td>100.00 %</td>
<td></td>
</tr>
</tbody>
</table>

1See comments on back of report.

2To convert phosphorus (as P₂O₅) into elemental phosphorus (P), divide by 2.29. To convert potassium (as K₂O) into elemental potassium (K), divide by 1.20.

Sample shipped overnight not on ice. Sample collected 9/10/2018 8:15 AM
% Solids, % Moisture

The ideal moisture content for composting will depend on the water holding capacity of the materials being composted. In general, high organic matter materials have a higher water holding capacity and a higher ideal moisture content. A typical starting compost mix will have an ideal % solids content of 35-55 % (65-45 % moisture). Finished compost should have a % solids content of 50-60 % (50-40 % moisture).

% Organic Matter

There is no ideal organic matter level for feedstocks or finished compost. Organic matter content will decrease during composting. The organic matter content (dry weight basis) of typical feedstocks and starting mixes will be greater than 60 % while that of finished compost will be in the range of 30-70 %. An organic matter content (dry weight basis) of 50-60 % is desirable for most compost uses.

Total Carbon

Total carbon (C) is a direct measurement of all organic and inorganic carbon in the compost sample. Unless the sample has a high pH (> 8.3) or is known to contain carbonates, essentially all carbon will be in the organic form. Compost organic matter typically contains around 54 % organic carbon by weight. The carbon content of individual feedstocks may vary from this ratio.

Carbon: Nitrogen Ratio

This is the ratio of total carbon (C) to total nitrogen (N) in the compost sample provided. C:N ratio may be used as an indicator of compost stability and N availability. Compost C:N ratio typically decreases during composting if the starting C:N ratio is > 25, but may increase if the starting C:N ratio is low (< 15) and N is lost during the composting process. Composts with high C:N ratios (> 30) will likely immobilize or tie-up N if applied to soil, while those with low C:N ratios (< 20) will mineralize or break-down organic N to inorganic (plant-available) N.

Phosphorus, Potassium

Phosphorus (P) and potassium (K) are plant macronutrients. Values reported are for total amounts given in the oxide forms (P₂O₅ and K₂O). These results provide an indication of the nutrient value of the compost sample. However, plant availability of total phosphorus and potassium in compost has not yet been established.

Nitrogen, Phosphorus, Potassium Balance

When compost is applied on the basis of nitrogen (N), most composts will have an excess of phosphorus (P) and potassium (K) relative to crop demand. These mineral elements and salts can accumulate to above optimum levels with repeated application. Growers using compost should regularly soil test to monitor P, K and salt accumulation and should consider using other nutrient sources or nitrogen fixing legumes in their crop rotation especially when P and K levels are above optimum.
## COMPOST ANALYSIS REPORT

**EPA 503 Pollutants**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Results (As is Basis)</th>
<th>Results (Dry Weight Basis)</th>
<th>EPA SW 846 Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic (As)</td>
<td>3.5 mg/kg</td>
<td>4.7 mg/kg</td>
<td>3050B + 6010</td>
</tr>
<tr>
<td>Cadmium (Cd)</td>
<td>&lt; 0.4 mg/kg</td>
<td>&lt; 0.5 mg/kg</td>
<td>3050B + 6010</td>
</tr>
<tr>
<td>Copper (Cu)</td>
<td>30.0 mg/kg</td>
<td>40.8 mg/kg</td>
<td>3050B + 6010</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>35.0 mg/kg</td>
<td>47.5 mg/kg</td>
<td>3050B + 6010</td>
</tr>
<tr>
<td>Mercury (Hg)</td>
<td>0.051 mg/kg</td>
<td>0.069 mg/kg</td>
<td>7473</td>
</tr>
<tr>
<td>Molybdenum (Mo)</td>
<td>&lt; 1.1 mg/kg</td>
<td>&lt; 1.5 mg/kg</td>
<td>3050B + 6010</td>
</tr>
<tr>
<td>Nickel (Ni)</td>
<td>7.8 mg/kg</td>
<td>10.6 mg/kg</td>
<td>3050B + 6010</td>
</tr>
<tr>
<td>Selenium (Se)</td>
<td>&lt; 1.9 mg/kg</td>
<td>&lt; 2.6 mg/kg</td>
<td>3050B + 6010</td>
</tr>
<tr>
<td>Zinc (Zn)</td>
<td>69.0 mg/kg</td>
<td>93.8 mg/kg</td>
<td>3050B + 6010</td>
</tr>
</tbody>
</table>
COMPOST BIOASSAY
Seedling Emergence and Relative Growth

TEST PARAMETERS

| Test Dates: | 09/14/2018 to 09/21/2018 |
| Seed Type: | Cucumber-Marketmore 76 Variety |
| Media Type: | Miracle Gro Moisture Control |
| Vermiculite: | NK Professional Grade |

TEST RESULTS

| Emergence: (% of control) | 93.33 |
| Seedling Vigor: (%) | 100.00 |

COMMENTS
The bioassay test provides a screen for the presence of phytotoxins in compost based on seedling emergence and seedling vigor relative to a control. It provides an assessment of compost maturity although should not be used as a stand-alone indicator. The U.S. Compost Council Test Methods for the Examination of Composting and Compost provides the following Maturity Indicator Ratings based on this test.

<table>
<thead>
<tr>
<th>Test Parameter</th>
<th>Very Mature</th>
<th>Mature</th>
<th>Immature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergence %</td>
<td>&gt; 90</td>
<td>80-90</td>
<td>&lt; 80</td>
</tr>
<tr>
<td>Seedling Vigor %</td>
<td>&gt; 95</td>
<td>80-95</td>
<td>&lt; 80</td>
</tr>
</tbody>
</table>

1Test Methods for the Examination of Composting and Composts (revised July 15, 2015)
## Analysis Report For:

Melinda France  
Ulster County Resource Recovery Agency  
PO Box 6219; 999 Flatbush Road  
Kingston NY 12402

## Copy To:

### RESPIROMETRY

**Carbon Dioxide (CO₂) Evolution Rate**

<table>
<thead>
<tr>
<th>LAB ID</th>
<th>SAMPLE ID</th>
<th>REPORT DATE</th>
<th>SAMPLE TYPE</th>
<th>FEEDSTOCKS</th>
<th>COMPOSTING METHOD</th>
<th>COUNTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>C10888</td>
<td>Finished Compost Pile</td>
<td>09/24/2018</td>
<td>Finished Compost</td>
<td></td>
<td>Static Pile-Forced aeration</td>
<td></td>
</tr>
</tbody>
</table>

### TEST RESULTS

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>mg CO₂-C/g solids/day</td>
<td>2.2</td>
</tr>
<tr>
<td>mg CO₂-C/g organic matter/day</td>
<td>5.8</td>
</tr>
</tbody>
</table>
**INTERPRETATION**

Respirometry (CO$_2$ evolution) provides a measurement of the relative microbial activity in a compost and can therefore be used as an estimate of compost stability. The interpretive index below assumes optimal conditions for microbial activity are present including temperature, moisture and nutrients, and that toxic components that would inhibit microbial respiration are absent.

<table>
<thead>
<tr>
<th>Result$^1$</th>
<th>Stability Rating$^2$</th>
<th>General Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1</td>
<td>Very stable</td>
<td>Well cured compost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No continued decomposition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No odors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No potential for volatile fatty acid phytotoxicity</td>
</tr>
<tr>
<td>1-2</td>
<td>Stable</td>
<td>Moderately well cured compost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Odor production not likely</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited potential for volatile fatty acid phytotoxicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimal to no impact on soil carbon and nitrogen dynamics</td>
</tr>
<tr>
<td>2-5</td>
<td>Moderately unstable, curing compost</td>
<td>Curing compost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Odor production not likely</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited potential for volatile fatty acid phytotoxicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minor impact on soil carbon &amp; nitrogen dynamics</td>
</tr>
<tr>
<td>6-9</td>
<td>Unstable, raw compost</td>
<td>Active, uncured compost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimal odor production</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate to high potential for volatile fatty acid phytotoxicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate potential for negative impact on soil carbon &amp; nitrogen dynamics</td>
</tr>
<tr>
<td>10-11</td>
<td>Raw compost, raw organic products</td>
<td>Highly active, uncured compost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Odor production likely</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High potential for volatile fatty acid phytotoxicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High potential for negative impact on soil carbon &amp; soil nitrogen dynamics</td>
</tr>
<tr>
<td>&gt;11</td>
<td>Raw feedstock, unstabilized material</td>
<td>Raw, extremely unstable material</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Odor production expected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Probable volatile fatty acid phytotoxicity with most materials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative impact on soil carbon &amp; soil nitrogen dynamics expected</td>
</tr>
</tbody>
</table>

$^1$Units in mg CO$_2$-C/g organic matter/day

$^2$Test Methods for the Examination of Composting and Composts (revised July 15, 2015)
# Compost Technical Data Sheet

<table>
<thead>
<tr>
<th>Compost Parameters</th>
<th>Reported as (units of measure)</th>
<th>Test Results</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plant Nutrients:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrogen</td>
<td>%, weight basis</td>
<td>1.17</td>
<td>1.59</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>P₂O₅</td>
<td>0.48</td>
<td>0.65</td>
</tr>
<tr>
<td>Potassium</td>
<td>K₂O</td>
<td>0.52</td>
<td>0.71</td>
</tr>
<tr>
<td>Calcium</td>
<td>Ca</td>
<td>5.63</td>
<td>7.65</td>
</tr>
<tr>
<td>Magnesium</td>
<td>Mg</td>
<td>0.32</td>
<td>0.43</td>
</tr>
<tr>
<td>Moisture Content</td>
<td>%, wet weight basis</td>
<td>26.41</td>
<td></td>
</tr>
<tr>
<td>Organic Matter Content</td>
<td>%, dry weight basis</td>
<td>38.39</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>unitless</td>
<td>7.70</td>
<td></td>
</tr>
<tr>
<td>Soluble Salts</td>
<td>dS/m (mmhos/cm)</td>
<td>4.82</td>
<td></td>
</tr>
<tr>
<td><strong>Particle Size</strong></td>
<td>&lt; 9.5 mm</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>Stability Indicator (respirometry)</td>
<td>mg CO₂-C/G TS/day, AND</td>
<td>2.22</td>
<td></td>
</tr>
<tr>
<td>CO₂ Evolution</td>
<td>mg CO₂-C/G OM/day</td>
<td>5.76</td>
<td></td>
</tr>
<tr>
<td>Maturity Indicator (bioassay)</td>
<td>% of control</td>
<td>93.33</td>
<td></td>
</tr>
<tr>
<td>Percent Emergence, AND</td>
<td>%</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>Percent Seedling Vigor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select Pathogens</td>
<td>PASS/FAIL: per US EPA Class A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standard, 40 CFR § 503.32(a)</td>
<td>Pathogen test not performed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trace Metals</td>
<td>PASS/FAIL: per US EPA Class A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standard, 40 CFR § 503.13, Tables 1 and 3</td>
<td>Pathogen test not performed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Participants in the US Composting Council's Seal of Testing Assurance Program have shown the commitment to test their compost products on a prescribed basis and provide this data, along with compost end use instructions, as a means to better serve the needs of their compost customers.

Sample shipped overnight not on ice. Sample collected 9/10/2018 8:15 AM
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<td></td>
</tr>
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</tr>
<tr>
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<td>38.39</td>
</tr>
<tr>
<td>pH</td>
<td>unitless</td>
<td>7.70</td>
</tr>
<tr>
<td>Soluble Salts</td>
<td>dS/m (mmhos/cm)</td>
<td>4.82</td>
</tr>
<tr>
<td>Particle Size</td>
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<td>100.00</td>
</tr>
<tr>
<td>Stability Indicator (respirometry)</td>
<td>mg CO₂-C/G TS/day, AND</td>
<td>2.22</td>
</tr>
<tr>
<td>CO₂ Evolution</td>
<td>mg CO₂-C/G OM/day</td>
<td>5.76</td>
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<td>% of control</td>
<td>93.33</td>
</tr>
<tr>
<td>Percent Emergence, AND</td>
<td>%</td>
<td>100.00</td>
</tr>
<tr>
<td>Percent Seedling Vigor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select Pathogens</td>
<td>PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.32(a)</td>
<td>Pathogen test not performed</td>
</tr>
<tr>
<td>Trace Metals</td>
<td>PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3</td>
<td>PASS: As, Cd, Cu, Pb, Hg, Mo, Ni, Se, and Zn are less than limits specified by US EPA Class A Standard 40 CFR § 503.13, Tables 1 and 3</td>
</tr>
</tbody>
</table>

Participants in the US Composting Council's Seal of Testing Assurance Program have shown the commitment to test their compost products on a prescribed basis and provide this data, along with compost end use instructions, as a means to better serve the needs of their compost customers.