


Woods End Laboratories, Inc.
 290 Belgrade Road, P.O. Box 297
 Mount Vernon, ME 04352/USA
 207-293-2457 fax: 207-293-2488 www.woodsend.org

Account: 2191
 · Brian Pugh
 · City of Fayetteville SWRD Compost Div.
 · 1560 Happy Hollow Road
 · Fayetteville AR 72701

Code: Project:
 Date Received : 2011-04-12
 Date Reported : 2011-04-13
 Lab ID Number : 8021.0
 Quality Control : 

COMPOSITION ANALYSIS

Sample Identification: Compost: Yard waste

| VARIABLE MEASURED | Unit | dry basis | as is basis | Notations † |
|--|---------------------|-----------|-------------|--------------------------|
| Bulk Density | lbs·ft ³ | - | 42 | 1129 lbs/yd ³ |
| Total Solids (dry matter) | % | 100.0 | 42.9 | 858 lbs/ton |
| Moisture Content | % | 0.0 | 57.1 | 137 gals/ton |
| Water Holding Capacity (<i>calc</i>) | % | 149 | 60 | 144 gals/ton |
| Inert and Oversize Matter | % | ~ | 25.5 | 509.0 lbs/ton |
| pH (sat. paste in H ₂ O) | -logH ⁺ | ~ | 8.36 | High |
| Free Carbonates (CO ₃) .. lime potential | | ~ | 3 | Med High |
| Total Organic Matter | % | 45.2 | 19.4 | 388 lbs/ton |
| Water Soluble Organic Carbon | ppm | 5732 | 2459 | High |
| Conductivity (salinity) | dS ·m ⁻¹ | ~ | 1.6 | Low |
| Carbon:Nitrogen (C:N) Ratio | w:w | 15.1 | 15.1 | Med Low |
| Seedling Response Assay, Biological Stability | | | | |
| Cress Emergence | % of total | ~ | 100 | No Inhibition |
| Cress Biomass | % of Control | ~ | 147 | Excellent |
| Auxinic Effects | Symptom Rank | ~ | 1.0 | Slight |
| Germinable Weeds | #/liter | ~ | 0 | weed-free |
| Solvita CO ₂ | (Range 1-8) | ~ | 7.13 | Low |
| Solvita Ammonia (NH ₃) ... | (Range 1-5) | ~ | 5.00 | low or none |
| Solvita CO ₂ Concentration | (%) | ~ | 0.67 | V Low |

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†For explanation of data, see Woods End Laboratories, Inc. [Interpretation Sheet](http://www.woodsend.org) at www.woodsend.org

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MINERALS ANALYSIS

Sample Identification: Compost: Yard waste

| VARIABLE MEASURED | Unit | dry basis | as is basis | pounds/ton <i>as is</i> |
|--|------|-----------|-------------|-------------------------|
| Mineral Nutrients | | | | |
| Total Nitrogen | % | 1.617 | 0.694 | 13.9 |
| Inorganic Soluble Nitrogen | ppm | 174 | 74 | 0.1 |
| Total Soluble Nitrogen | ppm | 906 | 389 | ML |
| Phosphorus (P) (acid-soluble) | % | 0.067 | 0.029 | 0.6 |
| Extractable & Total Cations | | | | |
| Ammonium (NH ₄ -N) extracted ... | ppm | 28 | 12 | 0.0 |
| Potassium (K) | % | 0.517 | 0.222 | 4.4 |
| Sodium (Na) | % | 0.024 | 0.010 | 0.2 |
| Calcium (Ca) extractable | ppm | 47820 | 20515 | 41.0 |
| Magnesium (Mg) extractable | ppm | 2010 | 862 | 1.7 |
| Extractable Anions | | | | |
| Nitrate (NO ₃ -N) | ppm | 145 | 62 | 0.1 |
| Nitrite (NO ₂ -N) | ppm | <2 | < 0.9 | nd |
| Chloride (Cl) | ppm | 905 | 388 | 0.8 |
| Sulfate (SO ₄ -S) | ppm | 113 | 48 | 0.1 |

Notes: ppm = mg/kg < = less than MLD (minimum level of detection); nd = none detected
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METALS and NON-METALS ANALYSIS

Sample Identification: Compost: Yard waste

| VARIABLE MEASURED | Unit | dry basis | as is basis† | lbs/ton Rating‡as is |
|----------------------|---------------------|-----------|--------------|----------------------|
| Copper (Cu) | mg·kg ⁻¹ | 18.2 | 7.8 | <0.1 Very Low |
| Manganese (Mn) | mg·kg ⁻¹ | 491.4 | 210.8 | 0.4 High |
| Iron (Fe) | mg·kg ⁻¹ | 488.5 | 209.6 | 0.4 Low |
| Zinc (Zn) | mg·kg ⁻¹ | 64.2 | 27.5 | 0.06 Low |

BACTERIOLOGIC ANALYSIS.....

| | | | | |
|---------------------------------|-----------|-----|---|--|
| Fecal coliform EPA503 | MPN per g | 4.6 | - | |
| <i>E. coli</i> mod.EPA503 | MPN per g | 4.6 | - | |

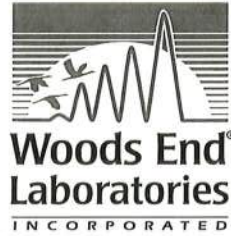
Notes: mg·kg⁻¹ = ppm (parts per million); MPN = most probable number

< signifies less than MLD (minimum level of detection) for the particular factor tested

† "as is" = wet basis ‡ Rating of Metals Based on international soil standard and is not a Sludge Rule EPA503 process

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Herbicide Content BioAssay



PO Box 297 -
Mt Vernon MAINE 04352
207-293-2 457 fx 293-2488

Customer:

Brian Pugh
City of Fayetteville SWRD
1560 Happy Hollow Road
Fayetteville, AR 72701

Date entered: April 29, 2011

| Sample Description | Lab ID | % Sample in Medium ^a | Observed Effect on Red Clover ^b | | | Rating as Clopyralid Equivalents in Medium As Diluted and Tested ▶ | | |
|---------------------|--------|---------------------------------|--|----|----|--|------|----|
| | | | PS | CA | WB | PS | CA | WB |
| Compost: Yard Waste | 8021.0 | 50 | sl | sl | | 3-10 | 3-10 | NA |
| | | | | | | na | NA | NA |
| | | | | | | na | na | na |
| | | | | | | na | na | na |
| | | | | | | na | na | na |
| | | | | | | na | na | na |
| | | | | | | na | na | na |

| Observed Effect Key: | KEY | Description | Notation |
|--|-----------|---|---|
| Initials denote visual symptom | n = 0 | none = no symptoms observed | Estimated level of herbicide effect as though it is auxinic clopyralid at ppb level of the diluted medium |
| | sl = 1 | Slight = slight leaf curl, first observed level | |
| ^a - % sample in medium based on diluting to proper conductivity | sm = 1.5 | Slight-Mod - less than a moderate effect | |
| | m = 2.0 | Moderate leaf curl - very noticeable | |
| | msv = 2.5 | Mod-Severe - less than a severe effect | |
| | sv = 3.0 | Severe = pronounced leaf curl and distortion | |
| | ex = 4 | Extreme - close to total inhibition | |

▶ Disclaimer re Clopyralid Equivalents

Estimated Concentration in Source Material (before dilution in medium)
(ppb - based on known minimum level of detection)**

** level of estimated clopyralid is based on calibration assays with this auxinic herbicide. The herbicide has not been directly analysed. Any other auxinic herbicide may have caused a similar effect but at other concentration.

| Lab ID | Effects | PS | CA | WB | MEAN | Stdev † |
|------------|---------|----|----|----|------|---------|
| Lab 8021.0 | | 14 | 14 | NA | 14.0 | 0.0 |
| | | | NA | NA | | nd |
| | | | | | | nd |
| | | | | | | nd |
| | | | | | | nd |
| | | | | | | nd |

If MLD note shows "<" it means the lowest value is beneath detectability



Standard Deviation is plus/minus value for range of possibility

COMPOST-MATRIX® SCORE CARD

Date Entered: 29-Apr-11



Enter Sample Description: **Compost: Yard Waste** 8021.0

Other ID # 2191

DATA ENTRY SHEET

Fill in Yellow

| TMECC Parameter | Expected Range | TEST Entry | TMECC Parameter | Expected Range | TEST Entry |
|----------------------------------|----------------|------------|---------------------------|--------------------|------------|
| Total Moisture, as is | 10 - 95% | 57.1 | Phosphorus, % dry | 0.2 - 4.0 | 0.067 |
| DENSITY, #/cu yd | 800 -- 1600 | 1129 | Potassium, % dry | 0.4 - 6.0 | 0.517 |
| Inerts, > 1/4", dry basis | >1 | 25.5 | Calcium, % dry | 0.2 - 8.0 | 4.782 |
| Est Water Capacity, as is | SEE REPORT -> | 60 | Magnesium, % dry | 0.1 - 2.0 | 0.201 |
| Moisture, % of WHC | 20 - 90 | 95 | Sodium, % dry | 0.1 - 2.0 | 0.024 |
| Organic Matter % dry | 10 -- 80 | 45.2 | <i>Trace Elements</i> | | |
| Total-Nitrogen, % dry | 0.2 - 3.0 | 1.617 | Copper, ppm dry | 30 - 600 | 18.2 |
| C:N ratio | 6 - 200 | 15.1 | Manganese, ppm dry | 50 - 400 | 491.4 |
| CARBONATE reaction | 1 -- 3 | 3 | Iron, ppm dry | 1,000 - 12,000 | 488.5 |
| pH, as is, sat. paste | 4.0 - 9.0 | 8.36 | Zinc, ppm dry | 20 - 500 | 64.2 |
| EC, as is, sat. paste | 1 - 30 | 1.6 | <i>Other :</i> | | |
| SOLVITA -- CO2 | 1 -- 8 | 7 | Herbicide BioAssay | < 40ppb Equivalent | 14 |
| SOLVITA - -- NH3 | 1 -- 5 | 5 | Fecal Coliform MPN | <1000 | 4.6 |
| AMMONIUM ppm, dry | 0 - 9,000 ppm | 28 | E. coli | <100 | 4.6 |
| NITRATE, ppm, dry | 0 - 4,000 ppm | 145 | | | |
| Plant Performance | 10 - 120 % | 147 | | | |

MULTI-ARRAY ANALYSIS - COMPOST MATRIX RANKING PROTOCOL Woods End Laboratory

[Best fit of the compost test data to specific use categories, and rate-application analysis]

| Woods End Research Laboratory | | Solvita Process® Test Ranking | | 29-Apr-11 | | SCORE CARD | |
|-------------------------------|------------------|-------------------------------|------------|--------------------|----------------------------|------------|-----------------|
| Sample is: | | Compost: Yard Waste 8021.0 | | | | Vers. 7.6 | |
| Grand Rankings by Category: | Use Groups: | SCORE: Level | RANK Order | GROWERS CHOICE | Round Score for Worst Case | RANK Order | Alternate Pass? |
| 1 | Nutrient Compost | 66.7% | None | n/a | 70.0% | 3 | no |
| 2 | Garden Compost | 78.6% | 1 | Best Choice | 80.0% | 1 | yes |
| 3 | Topsoil Compost | 75.0% | 2 | 2nd Choice | 80.0% | 1 | yes |
| 4 | Seed Starter | 68.8% | None | n/a | 70.0% | 3 | no |
| 5 | Container Mix | 71.9% | None | n/a | 70.0% | 3 | no |
| 6 | Mulch Compost | 67.2% | None | n/a | 70.0% | 3 | no |

Choose top two categories for best use computations and rate guidelines

APPLICATION RATE COMPUTATION

| | | | | | | N | P2O5 | K2O |
|---|-------------------------|---------|----------|-----------------|----------------|-------|----------------|------|
| Nutrient Managing | Sample Lab No. | Postive | N-Factor | Compost | Values Found : | 1.62 | 0.15 | 0.62 |
| Max Allowed Rates** | 8021.0 | Score? | | applied as : | | | | |
| | | | | | | Max-N | Rate / a / Lbs | |
| Appl Rate Guideline for spreading composts | Nutrlent Compost | no | 0.12 | TON / ACRE = | n/a | 150 | n/a | n/a |
| | | | | lbs / 100 sq ft | n/a | | | |
| | Garden Compost | yes | 0.12 | TON / ACRE = | 39 | 125 | 51 | 207 |
| | | | | lbs / 100 sq ft | 179 | | | |
| | Topsoil Compost | yes | 0.12 | TON / ACRE = | 24 | 100 | 32 | 128 |
| | | | | lbs / 100 sq ft | 110 | | | |
| Bacteria Condition: | (OTHER) n/a | | | | | | | |
| Okay | | | | | | | | |
| | <i>N Release Factor</i> | Units | N-Fac | | | | | |
| | Solvita Stability is | 7 | 0.12 | | | | | |

CO2-Respiration is

Notes:

Max rate in Lbs / acre Based on accepted nitrogen rates for a) Corn, b) vegetables and c) hay
 All rates corrected for expected soil release without consideration of previous N-fertilizer
N-release factor corrected for Solvita maturity assuming more N release for more active materials
N-Tie Up Warning ()** Compost may be too carbonaceous to release nitrogen in this season
P* Excess Warning. IF phosphorus appl rates are > 250 lb/a total P205 consider reducing compost rate by:



Correction Tables Used in Nutrient Plan

| | If Soil OM% is : N- compensation is in lb/acre | |
|------------------------------------|--|-----|
| | 1 | 20 |
| | 2 | 40 |
| Woods End assumes this value ----> | 3 | 60 |
| | 4 | 80 |
| | 6 | 120 |
| | 8 | 160 |

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