



Beverly Eaves Perdue, Governor

Dee Freeman, Secretary  
North Carolina Department of Environment and Natural Resources

Coleen H. Sullins, Director  
Division of Water Quality

January 26, 2009

Mr. Frank Franciosi, Chairman  
North Carolina Composting Council  
2004 Riviera Court  
Raleigh, North Carolina 27604

Subject: Monitoring Proposal for Composting Facilities

Dear Mr. Franciosi:

Several staff members at DWQ have reviewed your *Proposal to Monitor Runoff from Commercial Composting Facilities in North Carolina*, and we're excited to begin this work with you. Thanks for taking the initiative to better characterize the discharges coming from composting facilities.

DWQ staff members have provided comments, suggestions, and requests for clarification on the proposal, and we've summarized those below, following the organization of the proposal itself.

**1. Section 1 – Proposed Uses of Carolinas Composting Council's Monitoring Results**

- a. First paragraph: DWQ shares the hope that the monitoring results will add to our understanding of the industry, and the water pollution potential from composting sites in general. Whether the proposed monitoring data set will be robust enough to support extrapolation to all or most other composting sites, and whether broad programmatic conclusions and actions by DWQ will be considered, can only be determined once the data set is in hand and interpreted. We are open to programmatic modifications suggested by the interpreted data that would allow us to remain faithful to our understanding of the rule and law that identify as wastewaters those flows discharged from the active, exposed areas of composting sites.
- b. Second paragraph: No comments.
- c. Third paragraph: No comments.
- d. Fourth paragraph: We share the expectation that the resulting data set will provide a clearer picture of pollution potential in composting site discharges. We are particularly interested in the results on volumes of "the runoff and leachate", as per this paragraph in the proposal, and look to this data as helping to resolve the question of how much of small-event rainfall is actually discharged from a composting site. In this paragraph, it appears to us that you are proposing to quantify site discharges immediately around rain events, as well as site discharges not immediately around rain events (if any occur). Staff suggests alternative terminology to "runoff and leachate". Perhaps something along the lines of "rain-event discharges and inter-event discharges" or some similar terminology that does not imply a wastewater/stormwater distinction. Staff question: What do you propose as the identifying break point between rain-event discharges and inter-event discharges ("runoff and leachate")?

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- e. Fourth paragraph: Again, as to determining the appropriate permit type, DWQ is open to data interpretation that supports programmatic modifications that will allow us to remain faithful to our understanding of the applicable rule and law.
- f. Fourth paragraph: As to the monitoring data helping DWQ to determine the appropriate treatment methods, we concur with this potential use of the study results, but with a clarification. The monitoring data may help DWQ understand better *in general* what pollutants, and flow volumes might be roughly expected from a site; and *in general*, what classes of treatment technology we might expect to see in a submittal. But in a wastewater treatment permit scenario, DWQ usually imposes permit effluent limitations, and looks to the consulting engineer to select the *specific* treatment system elements and sizing to achieve the performance objective identified by the permit limits.
- g. We suggest that you consider whether these other potential uses of the monitoring results would increase the value of the study:
  - i. Can you include monitoring that would subsequently allow the description of how site discharges respond to rainfall events? For example, what's the volume of rainfall vs. volume of discharges immediately attributable to that rainfall? Can you gather data to support a generalization as to some significant initial abstraction that establishes a threshold rain amount that results in no discharge from small rain events?
  - ii. Can you acquire records that would allow the correlation of type and amount of feedstocks with the levels of pollutants in the discharges?
  - iii. Can you acquire moisture control logs to correlate operational moisture control with the volume and occurrence of discharges from subsequent events?
  - iv. Can you acquire site information that might allow the correlation of site conditions with discharge volume or discharge pollutant levels? For example, site slope, site soils, site % coverage, site % vegetated, average age of material on site, or other site or operating characteristics.
- h. Will the study final report include an available literature review for comparison?

## 2. Section 2 – Parameters for Analysis

- a. It's unclear to us how many data points you anticipate. Just to clarify, are you proposing to sample every discharge from each of three study areas over the course of one year? Do you have a guess as to how many data points that will produce?
- b. DWQ anticipates that there may be measurements and analytical results subsequently determined to be invalid for numerous potential reasons. Where results are disqualified and not included in the subsequent data interpretation, we still want to see those results along with a notation that they are not included in the data interpretation. Essentially, please just report all the data you collect.
- c. Just to clarify, DWQ expects that you will characterize discharges immediately associated with rain events, and to no less a degree that you will characterize inter-event discharges to the extent that they may occur. Do we understand your proposal correctly?
- d. Please add COD to the list of analytical parameters in addition to BOD5. Our interest here is to make the study parameters parallel to the parameters to

be included in any subsequent DWQ permit. Our beginning expectation is that we will use COD, rather than BOD5 in any subsequent permit. COD has a couple of minor benefits to the eventual permittees in your industry in that it has a longer hold time, and it is a little cheaper than BOD5. We recognize this is an increase in cost for the study. To reduce this extra cost, we would be receptive to collecting both parameters for the early portion of the study, establishing a correlation between them on the basis of the collected data, and then dropping back to measuring just one for the remainder of the study.

- e. Please add fecal coliform to the list of analytical parameters. There is much discussion nationally now on various bacteriological pollution indicators, including the disputed advisability of *E. coli* in preference to others. However, North Carolina surface water quality standards for Class C waters are still written in terms of fecal coliform, and any subsequent DWQ permit at a compost facility is likely to be written in terms of fecal coliform. Let's have the study match the presumed parameters in any subsequent DWQ permit. It's our opinion that you may find *E. coli* information valuable, too.

### 3. Section 3 – Monitoring System Goals

- a. First paragraph: No comments.
- b. Second paragraph:
  - i. Composite samples are acceptable.
  - ii. Please analyze a companion first-flush grab sample for comparison with the composite sample. Again, any subsequent DWQ permit will likely be based on a grab sample, and it seems prudent to have the study data match the eventual DWQ permit as closely as possible. And again, we recognize that this increases the cost of the study. In order to reduce the increased cost, we would be receptive to collecting enough data early in the study to establish a correlation between a composite and a grab, and then to drop one or the other, thereby avoiding some of the extra costs. (Our suspicion is that there won't be much difference between a first-flush grab and a composite.)
  - iii. We're confused about the conditional phrase, "If flow rate cannot be measured at a selected site". Similarly, we're confused about your reference to estimating discharge volumes based on rainfall and watershed characteristics. We understand that measuring flow rate at each site, as opposed to estimating it, is a primary objective of the study. We expect that after the measurements are accumulated and interpreted, an estimating methodology might be one result of this study. Are you proposing this estimation of runoff as just a failure-mode backup method to pace the automated sampler, rather than one of the study outputs? Please clarify this point for us.
  - iv. You note that all analyses will be performed by a state-certified laboratory. Can you present to us a little more developed Quality Assurance Project Plan (QAPP)? A QAPP is just the written identification of the methods used to collect samples, analyze samples, and qualify the resulting data. The level of rigor here does not need to be extreme, but we'd like to review a written plan that lays out the elements assuring that you are collecting valid data. One of the potential outcomes from the study is that DWQ will structure some part of our permitting program for composting sites in response to the study data. It's important to us that if we take such an action, it is based on solid analytical results.

- v. We note that this paragraph in Section 3 speaks specifically about collecting one sample per site, per storm event. But it does not clearly speak to sampling any inter-event discharges, if they occur sometime after the storm event. Section 1 of the proposal refers to "the runoff and leachate volumes generated", which we read as distinguishing between flows immediately associated with a rain event, and flows not immediately resulting, but perhaps lagging the rain event some substantial period. As indicated by our earlier comments, we have inferred that you will be measuring *and sampling* those other flows too, to the extent that they occur. Please clarify if it is your intent to characterize the inter-event flows that may occur.

**4. Section 4 - Selected Monitoring Sites**

- a. DWQ would like to visit each site (Apex, Sanford, and Elizabeth City) prior to the start of the monitoring program, but after the equipment installation. Who should we arrange that with?
- b. The primary flow element is proposed as a weir/orifice device for Sanford's Type 3 facility. Please clarify for us the physical configuration of this device, and what circumstances or site conditions would make this element different from the others, which are identified as just a weir.
- c. You note that the Apex site "is not shown" on DWM lists. What is their status with DWM? (As an alternative Type 1, one DWQ staff member familiar with Raleigh's Yard Waste Center observed that they might be a good one for this study in that their layout seemed conducive to collecting runoff from the operating area.)

Please contact Ken Pickle with any comments or questions as we work out the proposed monitoring plan. Ken's contact information is [ken.pickle@ncmail.net](mailto:ken.pickle@ncmail.net) and (919) 807-6376.

Sincerely,

***Original Signed By Paul Rawls***

Paul Rawls  
DWQ Surface Water Protection Section

cc  
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