



April 21, 2014

Minnesota Composting Council
Ginny Black, Chair
11410 49th Place North
Plymouth, MN 55442

The Honorable Barbara L. Neilson
Office of Administrative Hearings
600 North Robert Street
P. O. Box 64620
St. Paul, MN 55164

Dear Honorable Judge Neilson:

The Minnesota Composting Council (MNCC) respectfully submits the following comments.

History is always important, because it explains how we came to be where we are today. In this particular case the solid waste (SW) rules, of which the composting rule is a part of, were written in the early to mid-1980's and adopted in late 1988. Some parts of the rule have been updated, including the compost rule which was update in 1996. However, overall the solid waste rule is nearly 30 years old with the compost rule section being 18 years old. This is important because the scientific data available at the time the SW rules were written was very limited and even in the mid-1990's that data was limited.

The limited data available in the 1980's, left the Agency with very little hard data from which to base the SW rule, but a lot of evidence regarding what was actually happening in Minnesota. Prior to the adoption of the SW rule, it was common practice for the state's MMSW, trash to everyone else, to be placed in low areas that typically were wet areas, causing damage to the state's surface and ground water resources. The writers of the SW rule acknowledged this as a bad practice and required a 1×10^{-7} liner requirement with leachate collections systems for MMSW landfills and a 5 foot depth to ground water for demolition landfills. These requirements were based on very little, if any, scientific evidence, but rather on observed evidence and staff's best professional judgment.

It is interesting to note that MMSW landfills have no depth to ground water requirement and demolition landfills have no liner requirement and both of these facilities have contaminated ground water. It was assumed that the 1×10^{-7} liner with leachate collection systems would protect ground water resources.

Similarly, it was assumed that the 5 foot depth to ground water requirement for Demolition landfills would also protect ground water requirements.

One factor contributing to this failure is the fact that both types of landfills are depressions which not only hold SW, but also any precipitation (rain or snow melt) that falls on the facility and creates the hydrolic head that the NWRA falsely stated happened at compost facilities. As documented in Professor Halbach letter of April 3, 2014, where he states:

“Composting is a primarily a dehydrating environment because moisture is carried away in the hot process gases. Water loss is greater from this heating process and gas exchange than the amount of water produced from organic decomposition (Haug 1993). With proper management there is no “permanent hydraulic head” under compost piles as there is under sanitary landfills. In fact most compost systems required added water to function properly as then can lose up to 50% of their water in 24 hours at 65.6 degrees C with atmospheric air exchange sufficient to balance oxygen needs of the microbes (Haug 1993). Water is lost in this process from the compost pile into the air.”

A hydrolic head under a windrow at a compost facility is unlikely to occur because the compost process uses large quantities of water, preventing the accumulation of water under the windrow. In addition, as required by the proposed rule, the compost pads hard packed drivable surface is highly impermeable and required to have a slope of 2-6 percent. Both of these factors will cause prevent infiltration of contact water into the sub soils/ground water and cause the contact water to be channeled to on-site storm water treatment facilities.

The phrase “we’ve come a long way baby” is a very appropriate summation of where we are today compared to the 1980’s when the SW rule was originally written. As Ginny Black testified in the March 24th hearing, when one of the original writers of the SW rule was asked about the origins of the Demolition landfill’s 5 foot depth to ground water, they said that we were filling low areas and wetlands with SW and that was obviously not a good idea, so we picked a number and 5 feet. Unlike the 1980’s, the State has data from many disciplines, septic system, effluent from municipal waste water treatment facilities, storm water, landfill leachate and limited data from the Arboretum compost site that could have been used to assess the risk of composting food and yard waste, or source-separated organics materials (SSOM).

The MPCA asserts that the comparison of the data from septic systems and storm water run-off are not valid because they do not have contact with MMSW or SSOM. Further the MPCA states that a more valid comparison of the data from the Arboretum is with landfill leachate because SSOM is a subset of the SW category of MMSW. While the MNCC acknowledges that SSOM is a subset of MMSW, it must be acknowledged that MMSW delivered to a landfill contains household and commercial materials that are hazardous, such as batteries, household cleaners, expired drugs, to name just a few. Contrary to that, all of those materials are unacceptable materials at all compost facilities, including SSOM compost facilities and the generator is trained to separate those materials from their organic materials.

The MNCC believes that all of the various sources of data listed above have significant differences but similarities as well that can add to the overall discussion and evaluation of risk to the environment. For example, storm water has a variety of materials, both suspended and dissolved, that need to be treated prior to discharge into the waters of the state. These would include phosphorus and nitrogen, fine from the wearing of brake pads on vehicles, oil, antifreeze, break fluids, fertilizer, herbicides and pesticides from runoff from yards, yard waste and many other contaminants. Septic systems have high biological

oxygen demand from the nutrient (phosphorus and nitrogen) in the waste materials and a variety of drugs in the waste materials ranging from aspirin to antibiotics, to chemo therapy drugs. Even effluent from municipal waste water treatment facilities contains the same drug as septic systems, as well as PFC.

Tests from the Arboretum show that contact water has very low levels of many of the components given in the examples above. Yet, it is clear, that the MPCA has chosen not to use the data it has at its disposal to conduct a serious evaluation of the risk, but has relied on a very select and limited set of data from G3PII from which to base the compost rule. This seems to be borne out by the fact that, if a broader evaluation was done, it was never presented to the stakeholders so they could understand the evaluation and comment on the comparisons. In addition, that kind of comparison is not referenced in the Statement of Need and Reasonableness, further suggesting that a serious evaluation of this data was never done.

The select set of data was used by the Agency to make significant changes to the compost rule and the raw data was published on its website so that other could use the data. Yet, the Agency's April 14, 2014, letter on pages 4-5 acknowledge there were serious flaws in the design of the research project and states on page 5 "...the perceived value of completing the proposed rule exceeded the perceived value of waiting for the finalized data". In essence, the data did not forward the quality of data that would cause the Agency to delay the rule, but for some reason that poor quality data was good enough to make significant and serious changes to the rule.

A number of the commenters based their objection to the rule on flawed data from Phase II of the current Carver/Arboretum Study. The Carver County letters of April 14th and 21st give details regarding the flaws of that data and the MNCC refers you to those comments. Any comments based on that flaw data are equally flawed and cannot be relied on to make decisions regarding the content of the proposed compost rule.

Other testimony revolved around an e-mail from the hydrologist assigned to the Compost Rule project summarizing a meeting of the Technical staff on the Carver/Arboretum data. While it is difficult to tell the full extent of that conversation at that meeting, it appears that only solid waste technical staff were present at the meeting and technical staff from other disciplines such as the storm water or municipal waste water staff were not present. In addition, the information presented to the technical staff was limited to the results of Phase II of the current grant.

From the e-mail, it does not appear that the data from the first two grants and Phase I of the current grant were presented. Based on many meeting with the hydrologist writing the e-mail, it is very likely the data from the earlier grants was not presented because of the bias that hydrologist has with the use of the type of lysimeters used for collecting the sub-soil water samples. The following information outlines the objections the hydrologist had to the use of the suction lysimeters used in Grant 3 Phase I, and Professor Halbach rebuttal to those perceived limitations:

1. Sufficient sample volumes were difficult to obtain due to sampler limitations:

This is not true. Sample volume were very small because there was very low amounts of water in the soil under the active compost piles. The suction lysimeters were tested before and after use and they collected water as designed. No water under the hot active compost piles suggests that soils under compost piles are at a lower risk of infiltration as compared to similar soils without compost piles on top of them.

2. Total volume of contact water generated cannot be determined;

The total volume of water applied by the rainfall simulator was very carefully measured. The water was never marked with tracers to achieve this task and this task was never a goal of this study.

3. Samplers may add or subtract chemical constituents by leaching or absorption;

This was never a concern in this study stage. If water was present in the soils in volumes enough to collect and measure then issues of absorption could have been addressed. There was never enough water present in the soils to collect soil water in this study.

These same objections were given to negate the use of the data collected in Grants 1 and 2.

The MNCC believes this is absolutely inappropriate as lysimeters of this type, used in the collection of data at the Arboretum site, are commonly used in research. Researchers around the country consider the use of these types of lysimeters a valid way to collect subsurface water samples. In addition, the hydrologist assigned first assigned to the Compost rule process reviewed the data from two grants and had no objection to the use of the lysimeters. In fact, he stated that he did not believe the metals were an issue.

In addition, the MNCC believes that the data presented at that meeting was further misrepresented, as it does not appear that the technical staff was told that they were discussing at "raw" data that had not undergone the proper QA/QC before it was presented to them. It also appears that they were not told that the lab reports contain qualifications regarding the test results of PFC that, in the lab's view, negating those results.

Further, there were several "outlier" readings in the test results for the metals Nickel and Cadmium that needed to be reviewed for potential issues. In normal research projects outliers are generally noted and reviewed to determine if they are valid. At the time that the data was discussed by the Agency's Technical Team that review had not been done. Again, so far as we can tell from the e-mail, the MPCA technical staff attending that meeting were not given these details about the data.

Given the selected data presented to the Technical team and the errors in that data it is not surprising that their recommendation was to have an impermeable pad at a compost facility. While the hydrologist may not have been "making his recommendation in isolation", he definitely knowingly provided the Technical Team selected data that would lead them to a flawed recommendation.

The National Waste and Recycling Association's objection to the proposed compost rule seems to focus on two major points. They are:

1. That the contact water from an SSOM compost facility is as strong or stronger than leachate from a landfill; and as a result
2. An impermeable pad is needed to prevent the contact water from seeping into the sub-soils and eventually the ground water.

The primary support for these two points is the "raw" data from the Carver/Arboretum project. For reasons stated in the Carver letters and the MPCA's April 14th letter the MNCC believes the data from that project is flawed and therefore the arguments put forward based on that data are flawed.

The MNCC has developed specific comments regarding the NWRA's April 14th comments and they can be found in Attachment 1.

The National Waste & Recycling Association (NW&SA) comments dated April 14, 2014 state, in regard to Mr. Robert Kaiser's testimony at the March 24, 2014 hearing, "...that Mr. Kaiser did not purport to have any experience with landfill leachate and therefore his testimony although valid for groundwater comparisons is not relevant to a comparison of the strength of SSOM leachate to MSW leachate..." We acknowledge NW&SA support for the validity of the groundwater comparisons by Mr. Kaiser however, we wish to state for the record that Mr. Kaiser never compared compost contact water to MSW leachate and furthermore Mr. Kaiser believes that such a comparison is inappropriate due to the significant differences between compost sites and landfills. These differences include the different types of materials handled at compost sites and landfills, differences in design, operational differences, etc. Landfills are intended for perpetual disposal of wastes underground whereas compost sites are intended for treatment and reuse of SSOM which resides at the compost site for a short period of time.

Mr. Kaiser holds a chemical engineering degree from the University of Minnesota and has over 41 years of experience in the environmental field with government, industry, and consulting. He is eminently qualified to render opinions on the environmental impacts of compost contact water. In addition, American Engineering Testing's statement, submitted by the Minnesota Composting Council on April 14, 2014, was prepared and signed by Mr. Kaiser, Ms. Gail Cederberg Ph.D., Mr. Robert Wahlstrom PE, PG, and Mr. Jake Dalbec PG. Together, these four individuals have combined experience of over 108 years in the environmental field. Resumes of the four AET staff were attached to the Minnesota Composting Council's April 14, 2014 comments.

The MNCC has developed specific comments related to the MPCA's April 14th letter. Those comments can be found in Attachment 2. In addition to these comments, the MNCC reiterates its support for the comments it submitted on April 14, 2014, as well as the comments submitted by Carver County, the Solid Waste Coordinating Board and Mr. Denn.

Finally, the MNCC believes that the environmental protections proposed by the MNCC, 5 feet to the water table, 9 soil types and, at minimum, 1 foot of hard packed gravel pad meeting MNDOT specifications as described in the SONAR is protective of the environment. Further, it has never been disputed that surface water treatment systems would meet all of the NPDES, non-degradation and Total Maximum Daily Load standard for the area they are site in.

Sincerely,

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Attachments: 2

CC: Minnesota Composting Council's Board of Directors