



**Riverside County**  
**Waste Management Department**

*Hans W. Kernkamp, General Manager-Chief Engineer*

**SUBMITTAL TO THE SOLID WASTE MANAGEMENT ADVISORY  
COUNCIL/LOCAL TASK FORCE (LTF)  
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**

**FROM:** Waste Management Department

**SUBMITTAL DATE:** September 18, 2014

**SUBJECT:** Adoption of Recommendations for Compost Best Management Practices and/or Conditions of Approval (BMPs/COA) from the Compost Subcommittee.

**RECOMMENDED MOTION:** That the Riverside County LTF:

1. Adopt the subcommittee's recommendation directing the County to utilize the attached Compost BMPs/COA for new facilities within the County unincorporated area.

**BACKGROUND:** On February 20, 2014, the LTF formed a subcommittee to review and make recommendations on Compost Best Management Practices that the County was considering applying to new facilities through the County's land application process. The group has met monthly since March of 2014 and recently recommended that the final BMPs/COA be forwarded to the LTF for approval. A summary of the subcommittee's work to date is attached, along with complete copies of their meeting minutes and the BMPs/COA.

Hans Kernkamp  
General Manager-Chief Engineer

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**MINUTES OF THE SOLID WASTE MANAGEMENT ADVISORY COUNCIL**

On the motion of Marty Rosen, seconded by Ella Zanowic, and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

**Ayes:** B. Magee, J. Reyes, R. Moran, M. Gardner, J. Ehrenkranz, E. Zanowic, F. Riddle, B. Scott, S. Housman, C. Cunningham, D. West, M. Rosen

**Nays:** None

**Absent:** M. Arciniega, R. Keenan, E. Campos, R. Schmidt, T. Freeman, K. Barows, A. Villa

Frances Zamora  
Executive Assistant

## **Summary of Subcommittee Work to Date**

### **March 2014 Meeting**

Due to lack of quorum, no action was taken, but members and attendees had a healthy discussion on the status of both compost and land application concerns within the county and state. The county's draft BMPs were reviewed by staff. Those present agreed that the BMPs should have less specificity related to regulatory citations (only refer to Titles, not Sections) and be consistent with current regulations. It was also agreed that staff should develop a formula for financial assurance that would take into account facility capacity and/or throughput for consideration at the next meeting.

### **April 2014 Meeting**

Dan Noble was selected as subcommittee chairman and it was agreed to table the land application discussion until the BMPs could be finalized. An overview of the regulatory tiered processing of compost and green waste chip and grind facilities applications was provided by the LEA, Planning and Code Enforcement, who were in attendance. Revised BMPs were provided to the subcommittee members and discussed. Staff was requested to have an internal meeting with County Code/Planning/LEA to discuss implementation coordination and consistency. A priority of action items was discussed and agreed to. Meeting frequency was agreed to be monthly, on the second Monday of the month.

### **May 2014 Meeting**

Staff was scheduling the internal county department meeting between LEA, Code and Planning. A review of the tiered regulatory processing of compost and chip and grind facilities was provided by the LEA. Revised BMPs were discussed and it was suggested that they become Conditions of Approval (COA) as well to make them more enforceable. The financial assurance formula was presented by staff and discussed by the group.

### **June 2014 Meeting**

Staff reported on a May 27, 2014 meeting with LEA, Code and Planning. A process for sending letters to the applicant was established that clearly directs them to pursue all local approvals. A follow-up meeting with LEA, Code, and Planning will take place prior to the next subcommittee meeting. Review of the BMPs/COA and financial assurance formula continued and the chairman offered to reach out to industry groups to make sure their concerns are addressed.

### **July 2014 Meeting**

Staff reported that a meeting was held on July 9, 2014 with the LEA, Code, and Planning in which template letters had been discussed. Staff committed to provide the draft template letters to the subcommittee at the next meeting. The group discussed active green waste facilities with EA Notifications in the county and that most facilities already have active/open enforcement cases. A comment letter on the BMPs/COA from an industry working group was provided and reviewed with the group by the chairman. Staff indicated that the county would review and provide a formal response.

### **August 2014 Meeting**

The county's formal response letter was reviewed, along with changes in response to the industry group letter and the BMPs/COA recommended for approval and forwarding to the LTF. The subcommittee agreed to take up the discussion of land application next meeting.

Subcommittee Recommended BMPs/COA

<b>Riverside County Best Management Practices</b>	
Applicability	The County BMPs shall be applied to all composting and chip and grind operations undergoing the entitlement process for a Conditional Use Permit (CUP), Plot Plan, or other land-use entitlements.
Feedstock (F)	<ol style="list-style-type: none"> <li>1. Acceptable feedstock materials include: <ul style="list-style-type: none"> <li>• Greenwaste as defined in Title 14 CCR</li> <li>• Agricultural materials as defined in Title 14 CCR</li> <li>• Food Material that meets the definitions in Title 14 CCR</li> <li>• Manure as defined in Title 14 CCR</li> <li>• Paper products</li> <li>• Restaurant grease and oils</li> <li>• Digestate (if permissible under Title 14 CCR)</li> </ul> </li> </ol>
Additives (Ad)	<p>If applicable:</p> <ol style="list-style-type: none"> <li>1. Mix additives with feedstock or active compost to create favorable composting conditions.</li> <li>2. The amount of additives added shall be consistent with applicable regulatory requirements or prevailing industry standards</li> <li>3. Additives do not include septage, biosolid, or compost feedstock.</li> <li>4. Additives shall undergo random load-checking for physical contaminants and refuse.</li> </ol>
Amendments (Am)	<p>If applicable:</p> <ol style="list-style-type: none"> <li>1. Add amendments to cured or stabilized compost to provide attributes for the products.</li> <li>2. The amount of amendments added shall be consistent with applicable regulatory requirements or prevailing industry standards.</li> <li>3. Amendments do not include septage, biosolids, or compost feedstock.</li> <li>4. Amendments shall undergo random load-checking for physical contaminants and refuse.</li> </ol>
Feedstock Preparation (FP)	<ol style="list-style-type: none"> <li>1. Feedstock load-checking operations shall be conducted in accordance with the standards set forth in Title 14 CCR.</li> <li>2. Removal of physical contaminants and refuse (overs/trash) shall be removed from the facility in accordance with Title 14 CCR, or within seven (7) days of screening, whichever date is sooner.</li> <li>3. Greenwaste shall be processed/ground within the timeframes provided in Title 14 CCR.</li> <li>4. Foodwaste and manure shall be covered with ground greenwaste, or unscreened or screened compost within 3 hours of receipt and incorporated into an active pile within 48 hours of receipt to minimize odor generation and attraction to vectors.</li> <li>5. Incorporate wet or odiferous feedstock loads directly into actively composting windrows or aerated static piles, where practical.</li> <li>6. Mix odiferous feedstock materials with appropriate amount of bulking agent, high carbon amendments, or finished compost and then moisture conditioned to reduce odor releases.</li> <li>7. Manure shall not exceed 20% by volume.</li> <li>8. Restaurant grease and oils shall not exceed 5% by volume.</li> <li>9. Application of restaurant grease and oils shall comply with the following standards: <ol style="list-style-type: none"> <li>a. Apply to processed feedstock or an active windrow/pile at the time of receipt.</li> <li>b. Mix with processed feedstock prior to or during pile formation.</li> <li>c. Once grease trap liquids have been applied to a windrow, the windrow will be</li> </ol> </li> </ol>

	<p>turned immediately to incorporate the liquid into the windrow feedstock.</p> <ol style="list-style-type: none"> <li>d. At no time shall grease trap liquids will be stored onsite in tanks or ponds.</li> <li>e. Grease trap liquids will not be applied in a manner that results in ponding around the windrow/pile.</li> <li>f. No direct application to an active windrow that still has a compost cover for emissions control, as required by SCAQMD Rule 1133.3.</li> <li>g. Directly apply to an active windrow that no longer requires a compost cover, or to an active static pile that is aerated under negative pressure and uses an emissions control device, as required by SCAQMD Rule 1133.3.</li> </ol> <ol style="list-style-type: none"> <li>10. Grinding of odiferous feedstock materials should be accompanied with the application of misting water or other odor control measures approved by the DEH/LEA.</li> <li>11. Feedstock composition must be adjusted to achieve a high carbon to nitrogen ratio (30:1), proper moisture contents, and good porosity, all of which are conducive to aerobic decomposition and odor minimization.</li> <li>12. Reduce material mixing activities in unfavorable weather conditions (stagnant air or windy) to minimize odor generation.</li> </ol>
Active Composting (AC)	<ol style="list-style-type: none"> <li>1. Static pile composting method is prohibited for facilities that will contain more than 5,000 cubic yards of material (including feedstock, additives, amendments, chipped/ground material, and compost) at any one time.</li> <li>2. Active composting shall be by means of either the windrow method, aerated static pile, extended aerated static pile, or an alternative technology approved by the LEA/DEH.</li> <li>3. Where feasible, the active composting pad location and windrow/pile configuration and orientation should be such that wind-driven off-site exposures of receptors to composting odors can be minimized.</li> <li>4. Daily monitoring of windrow moisture content and temperature shall be conducted to ensure continuous aerobic composting and detect overheating so as to avoid spontaneous combustion.</li> <li>5. All windrows and piles aerated with positive or negative pressures shall be covered with a layer of finished compost, or other covering methods as approved by LEA/DEH, immediately after windrow and/or pile formation.</li> <li>6. Moisture conditioning of active windrows and piles during the rainy season should be coordinated with weather forecasts. The composter should use his best judgment on the degree of watering to be carried out when rainfall is forecasted. As a good practice, no moisture conditioning should be carried out during rainfall or when there is a 60% or greater chance of rainfall in the next day or two.</li> <li>7. When heavy or extended rainfalls are forecasted, the composter should take the appropriate measures to protect active windrows and piles from saturation with water, including but are not limited to: cover windrows and piles with tarps; add dry feedstock or compost on top of windrows and piles; and increase positive drainage on side slopes of windrows and piles by making the slopes steeper or covering them with tarps.</li> <li>8. The active composting pad shall be graded and maintained to prevent ponding and transmit any free liquid laterally to containment structures on-site. The composting pad and containment structures shall be designed and constructed in compliance with all applicable water quality control regulations.</li> <li>9. All windrows shall be turned regularly to ensure continuous aerobic composting, or according to applicable regulatory requirements pertaining to achieving pathogen reduction and odor minimization standards.</li> <li>10. Avoid windrow turning in unfavorable weather conditions.</li> </ol>

	<p>11. Where applicable, construct smaller windrows to increase the surface to volume ratio, thus aeration efficiency.</p>
Compost Curing (CC)	<ol style="list-style-type: none"> <li>1. Curing of compost shall be conducted away from the active composting area to avoid cross-contamination and facilitate separate odor monitoring.</li> <li>2. Curing compost that have temperature exceeding 122°F, or are seeping leachate, and/or emitting odors on a consistent basis shall be re-composted in the active composting area.</li> <li>3. Long-term storage of finished compost shall be limited to no greater than one year to avoid it becoming a fire hazard.</li> <li>4. Screen compost to facilitate aeration and expedite the curing process.</li> <li>5. Avoid screening of compost in unfavorable weather conditions, or apply misting water or other odor reducing measures, as approved by the LEA/DEH during screening to lessen odor emissions.</li> </ol>
OIMP Implementation (OI)	<ol style="list-style-type: none"> <li>1. The facility shall have a designated full-time staff in charging of implementation of the facility's Odor Impact Minimization Plan (OIMP) and handling of odor complaints and investigations. This person shall also be responsible for regular reviewing and updating of the OIMP in pace with changes in composting operation or procedures.</li> <li>2. The composting staff shall be well acquainted with and adequately trained to implement the OIMP.</li> <li>3. If the facility receives an infraction (Area of Concern and/or Notice of Violation) during monthly inspections from the LEA/DEH involving odors, in addition to addressing the LEA/DEH, the operator shall submit a Report to the County's Planning and Waste Management Departments, documenting the source of the odor and both propose and implement mitigation measures which may include installation of wind barriers, such as contiguous tall vegetation, misting systems, or other odor reducing measures, to the County's satisfaction.</li> <li>4. If after 15 days of implementing mitigation measures, as stated in the Report submitted to the County Planning and Waste Management Department's, the odor issues have not been resolved, as verified by the LEA, the operator shall immediately remove the odiferous material offsite for disposal in accordance with all applicable local, State, and Federal laws, ordinances, and regulations.</li> </ol>
Facility Maintenance (FM)	<ol style="list-style-type: none"> <li>1. On-site dust control shall use domestic water, non-potable reclaimed water, or dust suppressants, as identified in SCAQMD Rule 403.</li> <li>2. Site drainage design shall prevent run-on onto the active composting area, feedstock storage area, compost curing area, and finished compost storage area.</li> <li>3. Surface run-off from all compostable materials processing, treatment, and storage areas shall be contained on-site, in compliance with applicable water quality control regulations.</li> <li>4. All wastewater conveyance and containment facilities shall be periodically inspected to ensure performance and assess their capacity to attract vectors and generate odors and to effectively collect and contain wastewater.</li> <li>5. Use compost filter berms to filter stormwater entering the containment structure. The compost filters can be reintroduced back to the composting process.</li> <li>6. Re-circulate retained wastewater into the composting process.</li> </ol>

Characteristics	Tier 1	Tier 2
Total Facility Capacity at Any One Time	<25,000 cy (all allowable materials received, processed, and stored: feedstock, amendments, active and curing composting, and finished products )	≥25,000 cy (all allowable materials received, processed, and stored: feedstock, amendments, active and curing composting, and finished products )
Allowable Feedstock <sup>1</sup>	Agricultural material, green material, paper material, vegetative food material, or a combination of these feedstock, including anaerobic digestate derived from the acceptable feedstock.	Tier 1 feedstock plus biosolids, or food materials, or manure, or grease waste, or a combination of these feedstock.
<b>Bond Amount Calculation Methodology</b>		
Base Bond Amount (BBA)	\$250,000 or Apply Formula	APPLY FORMULA
Cleanup Activities Covered	Material Loading + Transportation + Disposal + Testing + Administration (assuming 7.5%)	
Material Loading Cost <sup>2</sup>	\$8 per ton	
Transportation Cost <sup>2</sup>	0.0041 cent per ton per vehicle-mile-traveled (VMT), assuming 22 tons/truck load	
Total Disposal VMT (TVMT)	Total onsite Storage Capacity (TSC) ÷ 22 tons/load x roundtrip VMT to landfill	
Disposal in Riverside County	At current fees: Unprocessed Greenwaste (GW) @ Greenwaste Rate (GR) (e.g., \$45.80 in 2014) Active compost, biosolid, and grease waste @ Hard-to-Handle Rate (H2H) (e.g., \$47.73/ton in 2014) Finished compost and ground clean greenwaste @ Beneficial Refuse Rate (BR) (e.g., \$10/ton in 2014)	
Administration Fee (AF)	7.5% of the sum of material loading and transportation costs	
Material Testing (MT)	\$5,000	\$10,000
Maximum Total On-site Storage Capacity (ton or cy) <sup>3</sup>	Feedstock Receiving Area: Maximum Greenwaste (GW) capacity Active Composting Area: Maximum Active Compost (AC) capacity Curing & Product Storage Areas: Maximum Finished Compost (FC) capacity TSC = GW + AC + FC	
Conversion Factors	GW: 0.5 ton/cy AC: 0.65 ton/cy FC: 0.4 ton/cy	
Formula	{[(TSC x \$8/ton) + (TSC x TVMT x 0.0041 cent/ton/mile x 1 dollar/100 cent)] x (1 + 7.5%)} + (GW x GR + AC x H2H + FC x BR) + MT;	or BBA, whichever is greater.
Annual Bond Adjustment	Due to the long CUP life of composting facilities, the bond value need be adjusted according to the CPI during its annual update. Adjustable values include: BBA, material loading cost (\$8/ton), transportation cost (0.0041 cent), MT, and AF. In addition, disposal fee needs be updated, as warranted.	

<sup>1</sup> A composting facility is a Tier 2 facility regardless of its total facility capacity, as long as it composts food materials, or manure, or grease waste.

<sup>2</sup> Material loading and transportation unit costs are derived from the RCWMD unit costs for CalBioMass cleanup.

<sup>3</sup> Materials are assumed to be stored in windrows (trapezoids) 12' wide at the base and 8' tall with 8-foot aisles space between windrows