

APPENDIX 10C

ODOR IMPACT MINIMIZATION PLAN

West Contra Costa Sanitary Landfill

WCCSL COMPOST FACILITY

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Prepared by West Contra Costa Sanitary Landfill

Environmental Management and Engineering Division

April 2003

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Introduction

This West Contra Costa Sanitary Landfill (WCCSL) Odor Impact Minimization Plan (OIMP) has been developed to provide guidance to on-site personnel in the handling, storage, and removal of compostable materials, in accordance with 14 CCR 17863.4. This OIMP will be revised as necessary to reflect enforcement agency notifications of needed revisions. The revisions will be made within 30 days of the LEA notice. In addition, this OIMP will be reviewed annually to determine if any revisions are necessary.

The chipping and grinding of source separated green materials is conducted as part of the diversion efforts at the WCCSL Compost Facility. In short, green materials are received from the public and commercial sectors and stored in designated areas until processed (i.e., chipped and ground) by WCCSL personnel or a contractor. The feedstock is processed within 14 days of receipt and the finished products removed from the site within 7 days of processing (if they do not go to the compost process). Since the chipped and ground material is stored on-site longer than 7 days (as regulated in 14 CCR 17852(k)(1)(B)), this activity is not regulated as a green material composting operation.

Chipped and ground material is marketed as biomass fuel, compost feedstock, and mulch as well as for use as a soil amendment and erosion control. An average of 90% is used on-site as ADC and/or for erosion control per (up to 40,000 cy/year).

1. Odor Monitoring Protocol

1.A. Proximity of Odor Receptors

The closest receptors will be personnel who will be on-site daily monitoring the status of the

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operation/facility.

The closest off-site residential units are approximately one mile from the site. An adjacent wetland/wildlife viewing public access trail is currently being installed. The surrounding land uses may also be other odor sources, because the compost facility is adjacent to West Contra Costa Waste Water Treatment Facility, a refinery and exposed sulfur-containing bay mud in the adjacent tidelands and low tide-impacted wetlands.

1.B. Method for Assessing Odor Impacts

Each day the operator will evaluate on-site odors and evaluate operations for potential release of objectionable odors. Best Management Practices and good housekeeping measures will be implemented to minimize the release of objectionable odors (e.g., clearing spilled materials between piles, eliminating areas where water could pond and design drainage as prescribed in the annual winterization plan, load checking, and maintaining reasonably sized stockpiles of feedstock of chipped and ground material).

If objectionable on-site odors are detected, the operator will implement the following protocol:

1. Investigate and determine the likely source of the odor.
2. Determine if on-site management practice could remedy the problem and immediately take steps to remedy the situation. Possible sources and likely management actions are shown in Table 1.
3. Determine whether or not the odor is traveling beyond the site by patrolling the site perimeter and noting existing wind patterns by viewing the wind direction ribbons stationed around the site.
4. Determine whether or not the odor is significant enough to warrant contacting the adjacent neighbors an/or the LEA.

2. Meteorological Conditions (Including Seasonal Variations)

2.A. *Wind Velocity*

Historical wind data indicates prevailing wind direction to be from the west averaging about 10 mph. The most common seasonal variation is the winter rains and hot dry summers with cool morning fog. During January and February the wind direction switches to blowing from the north.

3. Complaint Response Protocol

In the event that a complaint is received, an operator's representative will:

1. Go to the location of the complaint to verify that the site is indeed responsible for the odor.
2. Investigate the nature of the source of the odor complaint and implement operational changes to minimize odors.
3. If warranted, meet with the LEA and complainant (if known and choosing to participate) within a reasonable time frame to discuss the nature of the source of the odor and operational changes proposed and/or implemented.
4. Document the complaint(s) in the Operations/Special Occurrence Log, including the nature of the complaint and actions taken to minimize odors in the future.

4. Design Considerations for Minimizing Odors

In order to minimize the development of conditions that could lead to odor problems, the compostable material handling areas of the site were designed based on the nature and quantity of materials to be received and stored, climatologic factors, adjacent land use, grading, and drainage controls.

4.A. Method and Degree of Aeration

Windrow Management is implemented with at least 5 turnings during, which the temperature is maintained greater than 132 degrees F. If the temperature of the ground green waste pile reaches 170 degrees F, then the pile is cut down and spread out at shallower depths, is transported to the landfill working face to be buried or used as ADC. (See Attachment)

4.B. Moisture Content of Materials

Most of the material received consists of woody materials with a small percentage of materials that have high moisture content, such as grass clippings.

4.C. Feedstock Characteristics

The feedstock consists of green material, yard trimmings, and wood waste, as they are defined in 14 CCR 17852, in addition to certain segregated food wastes.

4.D. Airborne Emission Production

In order to reduce airborne emissions, water is used during the chipping and grinding and screening processes. The chipping and grinding equipment can be fitted with misters to reduce airborne emissions if odor or dust is problematic. If airborne emissions become an issue during the loading process, water can be applied with portable water trucks.

4.E. Process Water Distribution

Other than rainfall, no water is currently added to the feedstock or chipped and ground material. Mistert on the chipping and grinding equipment, with most of it being absorbed during the chipping, grinding and screening processes, can apply water.

4.F. Pad and Site Drainage and Permeability

Since the compostible material handling, storage and processing is completed on the closed landfill, a three foot thick working pad was constructed which has been graded to minimize ponding and convey runoff to the designed drainage structures. Stormwater sampling is conducted in accordance with the landfill's waste discharge requirements/monitoring and reporting program.

4.G. Equipment Reliability

All equipment is maintained per the manufacturers recommendations. Adequate equipment is available on site.

4.H. Personnel Training

Personnel in this area have been trained in subjects pertinent to the site operation and maintenance, such as this OIMP, load checking procedures and heavy equipment operations (front loader/excavator and grinder). The contractor maintains their personnel's training records.

4.I. Weather Event Impacts

The only weather event impact is heavy rainfall which could impede processing activities. However, there is ample storage space available in the event operations have to temporarily cease due to adverse weather conditions.

4.J. Utility Service Interruptions

The equipment (e.g. tub grinder and screener) is powered by diesel engines and supplied from a 500-gallon fuel storage tank on the equipment service truck that is stationed on-site. An electric grinder is also utilized for compost material.

The electricity is produced on-site by the MSW landfill-gas-fired power plant. In case of plant upset or outage, PG&E will provide backup power service.

5. Operating Procedures for Minimizing Odor

The primary sources of odors from this activity may occur during the grinding, windrow formation, screening process and when loading product that is being shipped to market. If stockpiled for an extended period of time, the ground green material may result in an anaerobic condition and create objectionable odors. As a result, the staff or contractor works diligently to remove the mulch products from the site within 7 days of processing and other chipped and ground material within 30 days of processing. The operator plans to manage all compostable material handling areas on the site in a manner that minimizes the development of conditions that could lead to objectionable odors. All materials that are causing odors will be moved to the landfill working face to be buried or used for alternative daily cover depending on the severity of the odor.

5.A. Aeration

See 4.A. above.

5.B. Moisture Management

Other than rainfall, no moisture is added to the feedstock or chipped and ground material. Compost windrows are watered daily during the summer months by a water truck to maintain proper decomposition rates and temperature conditions.

5.C. Feedstock Quality

The feedstock consists of green material, yard trimmings, and wood waste, as they are defined in 14 CCR 17852 and some segregated food waste material. All incoming feedstock is checked for physical contaminants. A spotter is on-site during operating hours 8:00-3:30 M-F, 9:00-4:00 Sat.-Sun.

5.D. Drainage Controls

Material storage and processing is completed on a three-foot thick pad that has been graded to minimize ponding and convey runoff to the designed drainage structures (Area B). Storm water sampling is conducted in accordance with the landfill's waste discharge requirements/monitoring and reporting program. The receiving water storage lagoon in the Area B portion of the WCCSL is sampled twice a year.

5.E. Pad Maintenance

Site personnel routinely inspect the pad for any evidence of ponding or drainage problems. Any standing water that is discovered will be absorbed with chipped material and the depression will be filled with soil.

5.F. Wastewater Pond Controls

All storm water/waste water is conveyed to the designated drainage channel and sampled in accordance with the landfill's waste discharge requirements/monitoring and reporting program. The receiving water storage lagoon in the Area B has a storage capacity of 111 million gallons. It can hold the equivalent of five 100-year return frequency storms.

5.G. Storage Practices

1. Storage Time

a. Feedstock

Feedstock will be processed within 7 days of receipt (indicate the average storage time/frequency of contractor to process material). Since most of the feedstock received is a woody material, longer storage times have not posed any odor problems.

b. Processed Material

Material that is not planned to be used on-site is removed from the site within 30 days of processing. Material planned to be used on-site as ADC or erosion control will be used within 60 days of processing.

2. Pile Geometry

a. Feedstock

Feedstock material does not provide a source of odors due to the porous nature of mainly bulky landscaping material. The pile depth is limited to less than 20 feet.

- b. The ground green material would be a concern if the height of the pile were to be more than 20 feet for extended periods of time. When the dimensions of the pile reach this height, it is managed by conducting daily temperature readings and the pile is immediately cut down to shallower depths when the temperature reaches 170 degrees F.
- c. The compost windrows are constructed to be approximately 9 feet by 9 feet by approximately 300 feet long. During the composting process the pile height decreases.

5.H. Contingency Plans

1. Equipment

In the event of equipment breakdown, back up equipment will be obtained from the contractor's equipment fleet or rented from a local company. In addition,

landfill equipment and operators are available in the event of an emergency.

2. Water

The WCCSL personnel maintain a 2,000-gallon water truck mainly for composting and the landfill has an additional 4,000-gallon water truck for use. Reclaimed water is obtained from the adjacent West County Wastewater District treatment plant.

3. Power

Equipment is diesel powered, with one of the grinders being electrically operated.

4. Personnel

Additional personnel are available from a contractor as warranted. In addition, landfill personnel can provide assistance in the event of an emergency.

5.I. Biofiltration

Biofiltration equipment is not utilized at this site.

5.J. Tarping

Tarping of the feedstock or chipped and ground material is not warranted.

Table 1

Sources of Odor and Possible Management Techniques

Source of Odor	Possible Cause	Management Approach
Feedstock Receiving	Material sitting too long prior to processing	Expedite material processing
Aisles	Storm water allowed to pond	Absorb ponded water with wood chips/other absorbent, fill pothole, improve grading and/or drainage control
	Uncomposted Material in aisles	Clean aisles of spilled material
Stockpiles/Windrows	Ammonia odor (high nitrogen level)	Add additional wood chips (or other carbon source), recombine pile
	Sulfur Odor (anaerobic conditions)	Increase turning frequency, check temperatures, add bulking agent
	Varying odors in pile	Turn windrows to achieve even mixing
	Odors generated after turning	Increase turning frequency, increase pile porosity, add odor-absorbing amendment (like sawdust); emergency action: cover windrow with a layer of compost
	Long retention time	Remove chipped and ground material more frequently
Curing Piles	High temperatures in windrow	Decrease pile size, increase windrow time prior to moving to curing
Retention Basin	Standing water overloaded with nutrients or sediment	Install filter berm before pond, clean out sediment in pond, enlarge pond size