Site Evaluation/Permitting of a Yard Waste Composting Facility for First Regional Compost Authority, Northampton County

Environmental Resources Associates

706 MONROE STREET
STROUDSBURG, PENNSYLVANIA 18360

CONSULTANTS IN ENVIRONMENTAL RESOURCE MANAGEMENT

ERA

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Appendices

1.0 Background

The First Regional Compost Authority (Authority) was formed by five Northampton County municipalities (member municipalities): Allen, East Allen, Bushkill, Lehigh and Moore Townships to develop and operate a leaf and yard waste compost facility to service the municipalities and potentially others within the region. Allen Township has acted as lead agency for the development of this project.

The Authority's leaf and yard waste planned compost facility is to be located on an approximately five-acre parcel in East Allen Township, Northampton County. Materials accepted for composting will be leaves, yard waste and grass clippings as per PADEP "Guidelines for Yard Waste Composting Facilities". Tree and brush trimmings will also be processed into wood chips.

The leaf/yard waste and grass clippings will be composted aerobically using open-air windrow technology and mechanized equipment to promote accelerate and enhance decomposition. Mechanical grinders will process tree trimmings and yard waste into wood chips.

The municipalities will collect leaves during the fall of the year and will deliver them to satellite drop-off sites. A satellite drop-off site will be located in each municipality with the exception of East Allen Township, which will deliver their materials directly to the compost facility. The municipalities will also deliver tree trimmings, resulting from storm events and tree maintenance, to the drop-off sites. When sufficient quantities of materials are collected they will be transported to the compost facility. Alternatively the municipalities may opt to collect leaves curbside using a leaf vacuum collector and deliver them directly to the compost facility

Residents will be permitted to deliver leaf and yard waste, grass clippings and tree trimmings to the satellite drop-off sites. An area adjacent to the compost facility will be developed to serve as East Allen Township's residential drop-off site. The drop-off site will be manned and open to the public two days during the work-week (9:00 AM to 4:00 PM) and Saturdays (9:00 AM to 1:00 pm).

The compost and mulch produced, at the compost facility, will be distributed to the public and used by the municipalities for landscaping of municipal properties.

Materials accepted for composting will be leaves, yard waste (and eventually grass clippings) as per PADEP "Guidelines for Leaf and Yard Waste Composting Facilities". Tree and brush trimmings will also be processed into wood chips.

2.0 Overview

The Authority requested technical assistance to site, design and permit a leaf and yard waste compost facility. Environmental Resources Associates (ERA) was selected to

provide consulting assistance to the Authority.

The member municipalities have a combined population of 32,916 persons according to the 2000 census.

The Authority plans to develop a five-acre leaf and yard waste compost site. Compost produced at the facility will be used by the municipality and made available to their residents, free of charge.

3.0 Facility Sizing

The five member municipalities; Allen, East Allen, Bushkill, Lehigh and Moore Townships have not actively collected leaf or yard waste, therefore the volume of these materials is unknown.

Listed in Table 1 are estimates of the volume of materials that are generated by the member municipalities. The estimates were developed (under the Technical Assistance Program) by the firm of R. W. Beck as part of a feasibility study they recently conducted on behalf of the member municipalities (*Assessment of the Feasibility of Establishing a Regional Compost Facility in Northampton County).*

Table 1
Estimated Leaf/Yard Waste Generation
(Cubic Yards)

Township	Leaves	Yard Waste	Total
Allen	158	631	789
Bushkill	419	1,676	1,471
East Allen	294	1,177	2,095
Lehigh	584	2,335	2,918
Moore	520	2,082	2,602
Total	**1,975**	**7.901**	**9,875 (1)**

Note:

(1). It is highly unlikely that the estimated 9,875-cubic yards of leaf and yard waste generated annually by the member municipalities will be collected, particularly in the initial years of the program. The amount of *material collected will most likely depend on, the effectiveness of the Authority's public education efforts, enforcement of municipal burning ordinances and level of convince for participants****.***

The PADEP "Guidelines for Yard Waste Composting Facilities" permit the composting of 3,000-cubic yards of leaf and yard waste per acre. The Authority's planned five-acre site could potentially process/compost approximately 12,000-cubic yards of acceptable organics on four-acres, to be dedicated to processing of materials.

4.0 Site Evaluation

A preliminary inspection and desktop evaluation of data was conducted on the Authority proposed compost site. These efforts indicated that the candidate site could potentially be permitted and developed as a leaf and yard waste compost facility. A subsequent detailed evaluation confirmed the site's eligibility. The candidate site was evaluated based on environmental, social and economic considerations and the limitations and requirements specified in the PADEP "Guidelines for Yard Waste Composting Facilities" (Guidelines).

Factors, which required careful consideration when evaluating a potential compost facility site, include:

- **Location**

Location of a municipal yard waste composting facility is one of the prime considerations in the site selection process. Ideally, the sites should be centrally located. A central location minimizes travel distance for leaf collection vehicles and residents. The site should be easily accessible. The most convenient composting site location for many municipalities is in close proximity to the municipal office or maintenance building. Benefits of these locations often include enhanced security and cost savings for equipment and labor. Location must, however, be weighed against many other factors.

- **Site Characteristics**

Slope and Topography - A gentle slope, two to four percent, is preferred to prevent water from ponding on the site. Ponding water can result in anaerobic conditions and generate malodor or act as a breeding ground for mosquitoes. A gentle slope will also assist in the control of surface water run-off.

Soils Characteristics - Soil characteristics must be carefully evaluated. Soil types, percolation rates and depth to groundwater must be researched. A site's soils must be well drained to prevent ponding and assist in storm water run-off. A site's soils should have a structure that can support heavy vehicle use and have a depth to ground water of more than 3.3-feet, to prevent any potential for contamination of ground water.

- **Proximity to Water Supply**

Water is essential to the compost process; a nearby water source is required to maintain proper moisture levels in windrows. In addition, water is important for safety (in the event of fire) and for seasonal dust suppression. The water source can be a well, hydrant, lake, river, stream or a tanker truck.

- **Proximity to Residential Development and Sensitive Receptors**

Sites located in close proximity to residential properties or sensitive receptors (schools, hospital, nursing homes, etc.) should be avoided to the extent possible. Noise from machinery, odor potential and visibility of the operation may be perceived as nuisances.

In that the candidate compost site was in the proximity of a United States Veterans Medical Center (Center), a meeting was held at the site with a representative of the Center. Conceptual plans and facility operations were reviewed at the meeting. The Authority received the Center's concurrence and support for development of the compost site.

Existing mature trees and hedgerows bordering the site will be maintained and enhanced by additional plantings, to act as a visual and noise buffer.

- **Environmental Impacts**

Timber removal, grubbing of brush and excavation work may be required to prepare a compost site. These activities must be carefully evaluated, considering the potential adverse affects on the existing natural habitat and indigenous fauna and flora.

- **PADEP Guidelines Sitting Restrictions (Exclusionary Criteria)**

"Yard Waste composting operations, including storage, composting, and curing, shall not occur in the following areas or the following distances, unless the operator takes special precautions and receives written authorization from the Department":

a. In a 100-year flood plan.
b. In or within 300-feet of an exceptional value wetland.
c. In or within 100-feet of a wetland other than an exceptional value wetland.
d. Within 100-feet of a sinkhole or area draining into a sinkhole.
e. Within 300-feet measured horizontally from an occupied dwelling unless the owner has provided a written waiver consenting to the facility being closer than 300-feet.
f. Within 50-feet of a property line, unless the operator. demonstrates that only curing of compost is occurring within that distance
g. Within 300-feet of a water source.
h. Within 3.3-feet of a regional groundwater water table.
i. Within 100-feet of a perennial stream.

5.0 Registration/Permitting of a Compost Facility

ERA developed the conceptual design for the facility, completed all forms and narratives required under PADEP Guidelines and Regulations. ERA met with Authority

representatives and PADEP, conducted a site walkover, and reviewed the compost facility permit application prior to submission. ERA submitted the compost facility permit application to PADEP Northeast Regional Office in August of 2005. The application is currently under review by PADEP. A copy of the application is included in Attachment A.

6.0 Project Development/Costs

ERA recommends that First Regional Compost Authority prepare an Act 101, Section 902 Grant Application to request financial assistance for site development, equipment and public education costs not covered by a previous Section 902 Grant Award.

ATTACHMENT A

FIRST REGIONAL COMPOST AUTHORITY

APPLICATION FOR OPERATION OF A YARD WASTE COMPOST FACILITY

FIRST REGIONAL COMPOST AUTHORITY

APPLICATION FOR OPERATION OF A YARD WASTE

COMPOST FACILITY

UNDER 25 PA CODE SECTION 271.103(h)

PREPARED BY

ENVIRONMENTAL RESOURCES ASSOCIATES

706 MONROE STREET
STROUDSBURG, PENNSYLVANIA 18360

CONSULTANTS IN ENVIRONMENTAL RESOURCE MANAGEMENT

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SECTION 1

YARD WASTE COMPOSTING FACILITY

APPLICATION

YARD WASTE COMPOSTING FACILITY
APPLICATION FORM

Please familiarize yourself with the Pennsylvania Department of Environmental Protection GUIDELINES FOR YARD WASTE COMPOSTING FACILITIES prior to filling out this form.

1. **Operator (Name and Mailing Address)**
First Regional Compost Authority
4714 Indian Trail Road
Northampton PA, 18076

Telephone Number (610) - 262-7012

2. **Facility:** First Regional Compost Authority
Contact: Ilene Marie Eckhart
Contact Telephone Number: (610) - 262-7012
Property Owner: East Allen Township

Street Address: Weaversville Road
Northampton, PA

State: Pennsylvania **Zip Code:** 18076
City-Township-Township of: First Regional Compost Authority
County:

Sponsoring Municipality: First Regional Compost Authority,

Attach a United States Geological Survey 7.5 miles topographic map identifying the yard waste composting facility site boundaries outlined on it. (See Attachment C)

Provide proof the operator has the legal right to enter the land and perform the approved activities. (See Attachment)

3. **Method:** Windrow (open air)
Total Acres: Five-acre (compost processing)
Maximum quantity of yard waste and composted materials to be on the site at any one time: 12,000-cubic yards
Yard waste in cubic yards: 12,000-cubic yards
Finished compost in cubic yards: 6,000-cubic yards

4. **Prepare and include in this application a general site plan for the facility, which illustrates the location of the following items:** (see Attachment A)

access roads in relation to the nearest public and private roads,

wells, and property lines

tipping area

gate location

surface water controls, erosion and sedimentation control

processing area including location, orientation and size of the windrows

curing and storage area

north arrow

scale of drawing

NARRATIVE SUPPLEMENT

5. Please address the following items: (attach additional sheets if necessary)

- **Provide a complete list of source(s) of yard waste to be received.**

  - The First Regional Compost Authority will accept residential leaf, yard waste (and potentially grass clippings) collected curbside by its member municipalities i.e.: Allen, East Allen, Bushkill, Lehigh and Moore Townships.

  - Leaf and yard waste (and potentially grass clippings) generated from the First Regional Compost Authority's member municipalities; at drop-off sites and resulting from park maintenance projects, storm debris from trees, etc.

  - Leaf and yard waste collected by the member municipalities during spring clean-up days.

- **Describe how the yard waste will be collected and received at the facility.**

  Residents will be permitted to deliver leaf and yard waste to satellite drop-off sites located in each member municipalities. The compost facility will be serving as East Allen Township's residential drop-off site. The East Allen Township drop-off site will be manned and open to the public two days during the work-week (9:00 AM to 4:00 PM) and Saturday (9:00 AM to 1:00 PM).

  An Act 101 Section 902 Grant Application has been submitted to assist in the purchase of vacuum truck systems to be used by member municipalities to collect bulk leaf waste curbside. If the grant is awarded the member municipalities will be afforded the opportunity to provide curbside collection services for leaves and collection trucks will deliver leaves directly to the compost facility. Alternatively bulk leaf waste will be collected by the member municipalities (at their drop-off sites) and delivered to the compost facility.

  Yard waste generated from municipal projects and spring clean-up days will be delivered to the site, in bulk, via municipal trucks.

  East Allen residents will also deliver leaf yard waste to a drop-off site at the compost facility.

  Any off-specification material identified during an inspection will be culled by compost facility personnel, placed in on site containers and properly disposed of by a contracted hauler, J.P. Mascaro, at Grand Central Landfill.

- **Describe the method of inspecting incoming yard waste and for removing unacceptable material.**

  All loads of incoming leaf/yard waste delivered by municipal collection vehicles and/or any material delivered by residents will be visually inspected by facility personnel during off-loading and windrow formation to ensure quality control. Any off-specification material identified during an inspection will be culled by Authority personnel, placed in an onsite dumpster/container for subsequent disposal by the contracted waste hauler. Bagged material delivered will be opened and the contents inspected. Unacceptable material (if any) will be removed and placed in an on-site container, for subsequent disposal by the Authority's waste hauler.

- **Describe the windrow construction methods including equipment to be used.**

  Municipal collection trucks delivering materials to the compost facility will unload in the approximate location where a windrow is to be formed. Leaf waste delivered will be inspected for contaminants; unacceptable material (if any) will be removed and placed in an on-site container, for subsequent disposal by the Authority's waste hauler.

  A front-end loader, with a one cubic yard bucket will form windrows in semi-circular shapes. A slight indentation will be made at the top of the windrow to allow for rainfall retention thus reducing the potential need of adding water to maintain optimum conditions for active composting.

  Although not planned for initial operations of the compost facility, grass clippings may, at a later date, be included in the Authority's program. If grass clippings are included as a compost feedstock, they will be incorporated into windrows within 24-hours of receipt. Grass clippings will be mixed with leaf-waste at a ratio of three-part leaf waste to one-part grass clippings.

- **Describe the windrow size:**

  Initial windrow dimensions will be 16' wide x 6' high x varying lengths.

- **Describe the source of supplemental water, which will be used to maintain optimal 40 to 60% moisture content of compost piles or windrows.**

  The Authority is requesting that the City of Easton re-activate the existing water hydrants on the project site (previously used for agricultural purposes) to provide a supplemental water source for maintaining optimal moisture conditions and as a first line for fire suppression (if required). Alternatively, a 500-gallon (trailer mounted) water tank will be used to supply supplemental water to the windrows, if required.

- **Indicate the frequency of windrow turning:**

  Turning of windrows will occur routinely, at a minimum of once per week for the first month and twice per month thereafter. Based on monitoring results the windrows may be turned more frequently to maintain optimum environmental conditions for the compost process.

- **Indicate the temperature range to be maintained:**

  A range of 90 to 140-degrees Fahrenheit will be maintained during active composting. Long stemmed thermometers will be used to monitor temperature.

- **Indicate the method of windrow turning:**

  A front-end loader will be used to form windrows. The loader's bucket will lift the organic material and allow it to cascade back into the windrow several times. This type of windrow formation provides for optimum mixing and loose deposition of material, enhancing porosity and increasing airflow.

  Following initial formation of the windrow, a windrow turner will turn windrows, to aerate the organic material, reduce particle size and clumping and accelerate the composting process.

- **Describe the method for determining turning frequency.**

  Turning of windrows will occur routinely, at a minimum of once per week for the first month and twice per month thereafter.

  Turning frequency will also be based on weekly monitoring of windrow conditions to insure that the proper environment for microbial activity/accelerated decomposition is maintained.

  The key indicator for establishing turning frequency will be internal windrow temperature. Windrows will be monitored on a weekly basis initially (for the first four weeks) and thereafter at a minimum of one time per month. A long stem thermometer will be used to monitor temperature at regular intervals along the windrows.

  Windrows will be turned to maintain temperatures in an active (thermophilic) range (90 to 140-degrees Fahrenheit). The thermophilic temperature range should be reached within two weeks to a month after initial windrow formation. Once the inner core of the windrow exceeds 140-degrees, the windrow will be turned. If the temperature of the windrow drops below 90-degrees, the windrow will likewise be turned to add oxygen and increase microbial activity. Once the temperature drops below 90-degrees and turning the windrow does not result in an increase in temperature, the compost will be moved to a curing area or

allowed to cure in place for 30 to 90-days.

Windrow moisture content will also be monitored as noted above. Squeezing a handful of the composting material is a generally accepted method of determining moisture content; if a few drops of water are shed, the moisture level is sufficient. Should appreciably more water be shed, when the material is squeezed, the windrow's moisture content is too high and turning is required to aerate it and prevent anaerobic conditions from establishing. A moisture meter will also be used to monitor and record moisture content.

- **Describe the approximate duration of the composting cycle: (in days)**

  Describe the composting process: 120 to 180-days (Note Previous Section)

  Describe the curing period for compost: 30 to 90-days (Note Previous Section)

  Indicate the time required for storage and distribution: 0 to 90-days

  Indicate the total time required for composting operation: 100 to 300-days (Depending on how aggressively the material is processed.)

- **Describe the marketing and distribution plan for the finished compost product.**

  The Authority's member municipalities will use compost for landscaping and soil enhancement purposes on municipal properties. Compost will be made available to residents of the member municipalities. The Authority/member municipalities will place an advertisement in local newspaper(s) advertising the availability of the compost, at specific sites on specific dates and times.

- **Describe the residue disposal plan and identify the disposal or processing site(s) to be used.**

  Any waste or residue collected at the compost site will be placed in an onsite dumpster type container(s). Waste containers will be collected by The Authority's contracted waste hauler, J.P. Mascaro, Inc., and disposed of at Grand Central Landfill.

- **Describe the plan for emergency response (fire police, etc.).**

  Personnel working at the site will also have a two-way radio and cellular phone. Both the police and fire departments will be briefed as to the compost sites, layout and standard operating procedures and receive a copy of the facility's "*Contingency Plan for Emergency Procedures"*.

- **Outline the public information and education program (attach samples of literature if available).**

  The Authority in cooperation with its member municipalities will develop a public education/outreach campaign to gain support and participation in the program. The campaign will include announcements at public meetings, public service announcements, display advertisements placed in local newspapers, articles in municipal newsletters and websites and distribution of an informational brochure. The brochure will provide program details, and encourage participation. The Authority will also publicize the distribution/availability of compost to its residents in a similar manner.

- **Describe the Composting Process.**

  The Authority will use open-air aerated windrows to compost leaf and yard waste. Compostables will initially be formed, using a front-end loader, into parabolic shaped windrows of approximately 6' high X 16' wide X various lengths (not to exceed 300-feet).

  To minimize handling of materials incoming loads will be off-loaded where the windrows are to be formed. Authority personnel will inspect material during off-loading and windrow formation. Material, which is unacceptable, will be removed and properly disposed of. The windrows will be constructed parallel to slope with a front-end loader. The windrows will be arranged on the "composting pad" allowing a space of at least 8-feet but not more than 10-feet between them.

  Windrows will be constructed on gravel improved surfaces to promote aeration and accommodate heavy equipment use. A clearance of 8-feet to 10-feet around the windrows will be maintained for ease of access of equipment.

  Once windrows are initially formed, by a front-end loader, a windrow turner will be used to turn and aerate the piles. Loads of wet leaves will be turned as soon as practical to prevent anaerobic conditioning from forming.

  The windrow turner will not only aerate the pile but it will also chop the leaves into smaller pieces thus increasing the surface area available to microbes and accelerating the composting process. A reduction in pile size will also occur as a result of initial turnings.

  Windrows will be constructed in sections, as leaves are delivered. Following initial construction of the windrows they will be monitored and turned weekly (for the first four weeks) to insure active composting is maintained. During the four week period the windrows will reduce dramatically in size, approximately fifty-percent. This dramatic reduction is a result of turning and an initial burst of microbial activity. When the windrows have reduced, two windrows will be combined to form one, and will have similar dimensions to the initial parent

windrows.

Temperature, being the prime indicator of microbial activity, will be monitored at prescribed intervals along the windrow using long stem digital thermometers. The windrow or section of windrow will be turned if the temperature varies from the thermophilic range (90° to 140° F).

The total composting time is dependent on a number of variables primarily temperature, moisture, and oxygen content. The time period for turning the windrows will be adjusted as required, based on monitoring results. Monitoring will be done twice monthly to insure proper moisture and temperature ranges are maintained. Monitoring results will be recorded on Monitoring Log Sheets.

As previously noted, during the initial construction process, windrows will be built in sections. Monitoring records will be maintained on each section. Eventually, through turning and mixing, the windrow will be homogenized and uniformly biodegrade.

A moisture content of approximately 50% will be maintained during composting. The moisture content will be checked periodically using a moisture meter and the "squeeze test". A handful of material from within the windrow will be squeezed; if a few drops of water are generated the windrow can be assumed to contain the proper range of moisture which is 40% to 60%. A moisture meter will also be used to determine the windrow's moisture content.

Deviance from range of moisture, 40% to 60%, will require turning of the windrow. Turning is done to aerate and dry pile to prevent anaerobic conditions. The windrow will be turned as necessary (based on regular monitoring) to assist moisture loss and if available dry material will be added.

If the material is too dry, water will be added gradually during the turning process until the desired moisture level is met.

Composting and curing will be judged complete when pile temperatures decrease to near ambient and remains there for 3 to 4-weeks. Finished compost will be stored in place or combined with other finished windrows until distribution.

Records of incoming organic materials as well as finished products (compost and mulch) will be maintained by the Authority.

The Authority will:

- Prepare post and maintain signage to identify the compost facility and inform the public of the nature of its compost facility's operations, and operating times, consistent with the requirements of the "*Guidelines for Yard Waste Composting Facilities*".

- Work cooperatively with the Northampton County Conservation District in the development and installation of any needed surface water and/or erosion and sedimentation control measures (see Appendix A).

ATTACHMENT A

SITE LAYOUT

(BASE MAP)

NOTE: The base map indicates the general locations for chipping/grinding of yard waste and tree trimming, screening and curing of compost. These areas will be used for composting if/when required. The Authority may offer composting services to additional municipalities in the future.

ATTACHMENT B

SITING RESTRICTIONS

SITING RESTRICTIONS FOR YARD WASTE COMPOSTING OPERATIONS

The First Regional Compost Authority's compost facility will be located on Weaversville Road (SR-3017) in Northampton County, Pennsylvania (see Attachment C). The compost facility will not store or cure compost or compost leaf and yard waste in the following areas:

a. In a 100-year flood plain.

The facility is not located within a 100-year flood plain (see Attachment G).

b. In or within 300 feet of an exceptional value wetland.

The "National Wetlands Inventory Map" does not identify any exceptional wetland within 300-feet from the compost site boundaries.

Note: The site has been previously been used for agricultural purposes (Allentown State Farm).

c. In or within 100 feet of a wetland other than an exceptional value wetland.

No wetlands exist within 100-feet of the site boundaries.

d. Within 100 feet of a sinkhole or area draining into a sinkhole.

No karsts geologic features are located on the proposed site (based on review of Northampton County Soil Survey) and there is no drainage into a sinkhole within 100-feet of the compost site boundaries.

e. Within 300 feet measured horizontally from an occupied dwelling unless the owner has provided a written waiver consenting to the facility being closer than 300 feet.

The compost facility boundaries are in excess of 300-feet measured horizontally from any/all occupied dwellings.

f. Within 50 feet of a property line, unless the operator demonstrates that only curing of compost is occurring within that distance.

Processing will not occur within 50-feet of any property line.

g. Within 300 feet of a water source.

No well or other water source exists within 300-feet of the site.

h. Within 3.3 feet of a regional groundwater water table.

The compost facility is located on soils, which have a distance greater than 3.3-feet between the surface and the regional groundwater table.

i. Within 100 feet of a perennial stream.

No perennial streams are located within 100-feet of the site.

ATTACHMENT C
TOPOGRAPHIC MAP

ATTACHMENT D

NUISANCE CONTROL PLAN

NUISANCE CONTROL PLAN

The compost facility will be contained by seven-foot high chain link fencing. As a security measure access gates will be locked when the compost facility is not in operation.

All facility operations will be monitored on a daily basis, any situation that is noted which might attract, and harbor or cause breeding of vectors or vermin will be addressed as quickly as possible on a case-by-case basis.

A primary concern for composting operations is odor control. Malodors can be generated by the composting process. These malodors are generally attributable to the establishment of anaerobic conditions within the windrows caused by excessive temperatures or excessive water. Monitoring and quick response to these conditions will minimize the potential occurrence of any odor causing conditions.

Improving drainage at the compost site (placement of a gravel base on working surfaces and pads) will help eliminate the potential of standing water. Additionally, the windrows will run parallel to the slope allowing for proper drainage and prevent ponding. Any ponding of water observed on site will be subjected to immediate corrective actions. These actions may include: adding fill material, re-grading the area or modifying drainage patterns.

Through scheduled monitoring of the windrows, the regular turning of windrows, the heat generated by the compost process and the elimination of standing water, breeding of vermin and insects is inhibited.

Noise from operating equipment should not present a problem given the relatively rural location of the site and the limited work effort required to manage the relatively small volume of organic materials. Existing trees and vegetation along with additional plantings will act as a noise and visual barrier.

Dust generated by access roads or by processing machinery will be suppressed by use of a water trailer (if required).

The Authority will operate the compost facility in an efficient and professional manner. The safety and well-being of its employees, the public and the environment are of the utmost concern. The operations will be monitored daily and any safety hazards or public complaints will be dealt with expeditiously and their resolution recorded.

Any litter generated by site activities or deliveries will be policed by facility personnel and properly disposed of in on-site containers.

ATTACHMENT E

SOILS MAP

ATTACHMENT F

PROOF OF OWNERSHIP

ATTACHMENT G
FIRM MAP

SECTION 2

FIRST REGIONAL COMPOST AUTHORITY

CONTINGENCY PLAN FOR

EMERGENCY PROCEDURE

First Regional Compost Authority

COMPOST FACILITY

PREPAREDNESS PREVENTION

AND

CONTINGENCY PLAN

A. DESCRIPTION OF FACILITY/OPERATION

A. 1 General Description of Activity

The Authority was formed by five municipalities: Allen, East Allen, Bushkill, Lehigh and Moore Townships (member municipalities) to develop and operate a leaf and yard waste compost facility to service the member municipalities and potentially others within the region.

The facility is to be located on an approximately five-acre parcel on the west side of Weaversville Road, south of East Bullsheard Road and Nor-Bath Boulevard (Route 329) and east of Willowbrook Road in East Allen Township (Northampton County tax parcel M5, Block 2, Lot 3 and GIS Pin # 5060-18-0272-0817).

The leaf and yard waste facility will occupy approximately five-acres. Materials accepted for composting will be leaves and yard waste as per PADEP "Guidelines for Yard Waste Composting Facilities". Tree and brush trimmings will also be processed into wood chips. The leaf and yard waste facility will be limited to accepting and processing a maximum of 12,000 cubic yards of organic materials.

The leaf and yard waste will be composted aerobically using open-air windrow technology and specialized equipment to promote, accelerate and enhance decomposition. Mechanical grinders will process tree trimmings and yard waste into wood chips.

A satellite drop-off site will be located in each member municipality; East Allen Township's drop-off site will be located at the compost facility. The member municipalities' residents will deliver leaf and yard waste to the satellite drop-off sites on designated days during specified hours. Member municipalities may also opt to collect leaves curbside (during the fall and spring) using leaf vacuum collectors and deliver them directly to the compost facility. The member municipalities will also deliver tree trimmings, resulting from tree maintenance and storm events and Christmas trees to the drop-off sites or directly to the compost facility.

The project will not require additional zoning approval. The project is designed to process leaf and yard waste collected from the First Regional Compost Authority's member municipalities.

The leaf waste (and potentially grass clippings) will be composted aerobically using open-air windrow technology and mechanized equipment to accelerate and enhance decomposition. Mechanical grinders will process tree trimmings and yard waste into wood chips.

All collection vehicles delivering loads of leaves and yard waste will be visually

inspected by compost facility employees prior to and during off-loading to ensure quality control. Any material not meeting specifications will be culled and properly disposed of by the compost facility personnel.

If any residents deliver plastic bags to the compost facility their contents will immediately be emptied and inspected. The plastic bags will be returned to the resident, as will any unacceptable material.

Leaves (and potentially grass clippings) will be formed into new windrows or incorporated into existing windrows by a front-end loader. Grass clippings will be mixed with leaf waste on a three-to-one ratio (three parts leaf waste to one part of grass clippings). Formation of windrows will be accomplished initially using a front-end loader equipped with a one cubic yard bucket. Turning the windrows will be accomplished by a mechanized windrow turner.

Windrows will be regularly monitored to ensure the physical requirements of the compost process are met. Temperature is the prime indicator of the composting process. Temperature is monitored, using long stem thermometers, to maintain the thermophilic or active range (optimal temperature range 90 to 140-degrees Fahrenheit). If the internal temperature of a windrow falls below or rises above this thermophilic range, it will be turned. Once a windrow reaches a stabilized state, (temperature does not increase when the windrow is turned) it will be placed in a curing pile or allowed to cure in place.

Yard waste is composed primarily of tree, brush and shrubbery trimmings. These materials will be processed into mulch using a grinder. The mulch will be formed into windrow type formations and stored on site, pending use by the Authority, its member municipalities or distribution to the residents.

Mulch will be produced by grinding tree and shrubbery trimmings using a mechanical grinder. Mulch piles will be monitored for temperature to prevent spontaneous combustion.

The member municipalities will use the compost and mulch produced at the compost facility for landscaping of municipal properties, and the remainder distributed to the public.

A2. Description of Existing Emergency Response Plan

The facility is new and therefore has no existing emergency plan.

A3. Material and Waste Inventory

Due to the simplicity of the composting process, and the thorough inspection of incoming materials, receipt of ancillary and/or unacceptable waste materials will be minimal. There is no current plan to store or maintain fuel or chemicals at the

compost facility site. Only the fuel, motor oil and fluids contained in processing machinery will be on the site.

A4. Pollution Incident History

This is a new facility and therefore has no previous history of any pollution incidents.

A5. Implementation Schedule

Operations personnel will be trained to follow procedures set forth in this PPC Plan and best composting practices.

B. DESCRIPTION OF HOW PLAN IS IMPLEMENTED BY ORGANIZATION

B1. Organizational Structure for Implementation of the PPC Plan

In the event that an emergency occurs at the facility site, it will be the responsibility of any on-site staff to immediately notify the facility operator, who will be a designated second level or Secondary Emergency Coordinator (SEC). It is the responsibility of the SEC to immediately notify the first level or Primary Emergency Coordinator (PEC) of the emergency and to implement all measures of the PPC Plan. During the absence of the PEC, it is the responsibility of the (SEC) to both coordinate emergency activities and to assure submission of the written Incident Report to the DEP as required under this Plan.

The PPC Committee will consist of, Ms Ilene Eckhart (Allen Township) will serve, as the PEC and, Ms. Debbie Seiple, (East Allen Township) as SEC. It will be the duty and responsibility of the PPC Committee to meet annually (at a minimum) to: review and identify materials and wastes handled, identify potential hazards (if any), establish and review material and waste handling/storage procedures, accident reporting procedures; and visual inspection programs. The PPC Committee will also review any past incidents and the counter-measures utilized to assess effectiveness. In addition, the PPC Committee will be responsible for coordinating and establishing training and educational programs for personnel; periodic review, evaluation and improvement of the PPC Plan. The Committee will review any new regulations, equipment, or process changes and incorporate any needed changes into the PPC Plan. If the PPC Plan is updated, copies will be provided to the DEP and made available to emergency response agencies/contacts.

B2. List of Emergency Coordinators

Primary: Ms. Ilene Eckhart

Home Address: 1596 A Upper Smith Gap Road
Saylorsburg, PA 18353

Home Telephone: (610) -381 -2926

Business Address: Allen Township
4714 Indian Trail Road
Northampton, PA 18067-9492

Business Telephone: (610) -262 -7012

Secondary: Ms. Debbie Seiple

Home Address: 7739 Airport Road
Bath, PA 18041

Home Telephone: (610) -837-6946

Business Address: East Allen Township
5344 Nor Bath Blvd.
Northampton, PA 18067

Business Telephone: (610) – 262 - 7961

B3. Duties and Responsibilities of the Primary Emergency Coordinator

Among other duties and responsibilities of the PEC is routine inspection of the site to ensure that neat and orderly operation is maintained and to assure that walkways, areas between windrows, storage areas, operations areas, and roadways remain accessible and free of extraneous items which might otherwise clutter and hinder operational safety and efficiency. During an actual or imminent emergency, the PEC will ensure adequate space is provided for unobstructed movement of emergency personnel and equipment to all portions of the site. The PEC also will ensure that all agencies listed in Section E will be offered a copy of the PPC Plan.

Although the materials processed and produced at the facility will be not considered of a nature that would pose severe environmental consequences, even if mismanaged, it is recognized that it is the responsibility of the PEC to minimize any deleterious effect to personnel and the environment caused by an incident at the site. True emergency scenarios can realistically be limited to those

involving fire. During an emergency, operations at the site would be discontinued. All delivery/shipment of materials would be halted. Access would remain open to allow for movement of emergency response personnel and equipment. A 500-gallon water trailer will be used as a first response in the event of a fire at the compost operation, pending arrival of the fire company. In an imminent or actual emergency, the PEC must immediately:

1. Notify all on-site personnel,

2. Identify the character, exact source, amount and a real extent of the fire,

3. Concurrently assess the actual and potential hazards to the public health and safety, public welfare and the environment that have resulted or may result from the fire. This assessment will consider both direct and indirect effects of the fire.

The PEC must assess possible hazards to human health or the environment that may result from a fire. The assessment will consider both direct and indirect effects.

If the PEC determines that the facility has a situation, which would threaten human health or the environment, he will immediately notify the applicable local authorities, indicating if evacuation of local areas is advisable. Additionally, he will immediately notify the Department by telephone at (570)-826-2511 and the National Response Center at 800-424-8802 and report the following:

1. Name of the person reporting the incident;
2. Name and address of the operation;
3. Telephone number where the person reporting the incident can be reached;
4. Date, time and location of the incident;
5. A brief description of the incident, nature of the materials or wastes involved, extent of any injuries and possible hazards to human health or the environment;
6. The estimated quantity of the materials or wastes involved;
7. The extent of contamination of land, water, or air, if known;
8. Existence of dangers to public health and safety, public welfare, and the environment;
9. Nature of injuries, if any; and
10. Parts of the PPC Plan being implemented to alleviate the emergency.

During an emergency, the Primary and/or Secondary Emergency Coordinator will take all reasonable measures necessary to ensure that fire does not occur, re-occur or spread. These measures shall include, where applicable, stopping all

operations and isolating the problem area.

If the facility ceases operation in response to a fire, the SEC (operator) will ensure that adequate monitoring is conducted for excessive temperatures wherever appropriate.

After an emergency, the SEC shall:

a. Clean up of affected areas,

b, Treat, store, or dispose of recovered materials, in a manner approved by the Department (testing of the affected area may be prevent processing or storage of compost materials in the area affected by the emergency until the area has been cleaned up and the Department has inspected and approved the cleanup.

Within 15 days after the incident, the PEC will submit a written report on the incident to the Department. The report will include the following:

1. Name, address, and telephone number of the individual filing the report;

2. Name, address, and telephone number of the facility;

3. Date, time, and location of the incident;

4. A brief description of the circumstances causing the incident;

5. A description and estimate of the quantity, by weight or volume, of materials or wastes involved;

6. An assessment of any contamination of land, water or air that has occurred due to the incident;

7. Estimated quantity and disposition of recovered materials or wastes and

8. Actions that will be taken to prevent a similar future occurrence.

B4. Chain of Command

Primary: Ms. Ilene Eckhart

Home Address: 1596 A Upper Smith Gap Road
Saylorsburg, PA 18353

Home Telephone: (610) -381 -2926

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4714 Indian Trail Road
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Business Telephone: (610) – 262 - 796

C. SPILL LEAK PREVENTION AND RESPONSE

C1. Pre-Release Planning

The First Regional Compost Authority compost facility has been designed to minimize the potential for risk to the environment, the public and operational personnel. All operational personnel will be properly trained in their duties and responsibilities prior to functioning without direct supervision.

The compost operation requires a very limited number of materials, which have potential to cause significant harm to personnel or the environment if spilled. Only fuel (diesel) motor oil and other fluids used in operating machinery will be on site.

In the event of a spill or leak of fuel or machinery fluids, clean-up efforts will be initiated immediately. Clean-up will consist of using a front end loader to collect the majority of solids, shovels and buckets will be used to collect the remnants

and any minimal amounts of moisture will be collected with absorbent material (readily available at the Authority Maintenance Building).

C2. Material Compatibility

The composting process does not involve the use of materials that are corrosive or reactive.

C3. Inspection and Monitoring Program

All composting windrows will be monitored on a regular basis (once a week for the first month, then twice a month thereafter). The inspection will include checking temperature at fifty-foot linear intervals. Long stem (four-foot) digital thermometers will be used to monitor windrow temperatures Windrows will be turned when temperatures drop below 90 or exceed 140-degrees Fahrenheit.

Water content is also monitored, using moisture meters and adjusted as necessary to maintain a moisture level of approximately 50%. Windrows will be inspected for any unacceptable material which will be manually removed and properly disposed of. The time, date, results of, and name of person conducting these inspections will be recorded in written documentation (monitoring logs).

Windrows composed of wood chips (mulch) will be monitored for temperature on a bi-weekly basis. Compost and mulch windrows will be visually inspected daily.

Emergency equipment consists of ten-pound A/B/C fire extinguishers (eight) at the maintenance building, and one five-pound A/B/C extinguisher located on (all) mobile processing equipment. Routine inspection/maintenance of all fire extinguishers is conducted annually.

C4. Preventative Maintenance

Preventative maintenance is conducted on all operating equipment, both as presented through the manufacturers' recommendations and as revealed to be necessary through a routine inspection program. Repairs will be instituted as soon as operationally practical when a component failure or impending failure is detected. All preventive maintenance will be recorded and filed for each individual piece of equipment.

C5. Housekeeping Program

A conscious effort will continually be made to assure walkways, pathways, operational areas, maneuvering areas and roadways remain accessible and free of any items which might otherwise clutter and hinder operational safety and efficiency. Site personnel will routinely gather and properly dispose of any litter found on the site. The site will be monitored for proper drainage; if any ponding

is evident, corrective measures will be taken. Any spillage, diesel fuel, motor oil, etc., will be immediately absorbed, the absorbent material will be placed in buckets and disposed of properly. All mechanical equipment used at the compost site will regularly be washed down. Any spillage of material will be dealt with in accordance with measures as prescribed within this Plan.

C6. Security

Security for the composting site will be effectively provided through traffic restricting gates. Entrance and exit gates will be locked whenever the facility is not operating. The site will also be completely fenced with chain link fencing. Signs at the entrance gate and surrounding the site will provide trespass notice to all unauthorized personnel. Anyone visiting the site must do so during operating hours.

C7. External Factors

- A power outage will have little effect on operations, as mechanical equipment will be operating from diesel fuel.
- The site is located above the 100-year flood plain; therefore, flooding of the operation is not anticipated.
- Snowstorms should have minimal effect since the windrows will not require turning nearly as often as in other seasons. The Authority will conduct normal plowing of snow, to maintain site access.

C8. Employee Training Program

Employees will be trained by the emergency coordinators to understand their particular responsibilities with respect to preventive maintenance and safety. All employees will be made aware of the location of emergency equipment (telephones, fire extinguishers, etc.) and emergency procedures. On-going training will include periodic safety/emergency response meetings. Such meetings will be held on an annual basis, at a minimum. All new operations personnel will receive initial training by the established operations staff. The Emergency Coordinators will regularly review the Authority operational, safety and maintenance procedures to ensure requirements will be met.

D. COUNTERMEASURE

D1. Countermeasures to be undertaken by the operations

D2. Countermeasures to be undertaken by Contractors

(Note: Section D1 and D2 were determined not required due to the nature of the operation.)

D3. Internal and External Communications or Alarm Systems

Due to the open-air nature of the operation, an internal communications system is not practical or necessary. External communication will be by two-way radios or cell.

D4. Evacuation Plan for Installation Personnel

Due to the nature of the operation, site evacuation is extremely unlikely. However, should such a situation arise, it will be the responsibility of the on-site emergency coordinator to advise all unnecessary personnel to leave the site. An elaborate alarm system is considered unwarranted. Evacuation of the area will proceed via the site access roadways.

D5. Emergency Equipment

In an attempt to maintain a ready posture for any emergency, which might occur at the site, the following emergency equipment will be maintained on site or at the maintenance building. The equipment will be readily available and maintained to be operational at all times:

Description (Location),	**Intended Use,**	**Capabilities**
Portable Fire Extinguishers (1), (2)	Small Fires,	5 lb.# and 8# Type A/B/C
First Aid Kit (2)	Cuts/Burns,	
Eye Wash (2)	Eye Irritants	
Location Index: **(1).** Carried on Equipment, **(2).** Maintenance Shed		

E. EMERGENCY SPILL CONTROL NETWORK

E1. Arrangements with Local Emergency Response Agencies and

A First Regional Compost Authority representative will contact the local police department, fire department and hospital. The contacted entity will: be advised of the facility, given a description of the operations, to include identification of materials managed, and identification of possible types of injury to be encountered.

Additionally, the contacted agencies will be offered a follow-up meeting and/or site visit to better familiarize them with the site and its operations and offered a copy of the PPC Plan.

Due to the nature of the operations, special provisions beyond those noted herein will be not considered necessary.

E2. List of Agencies to be Notified

Dept. of Environmental Resources	(570)-826 -2511
National Response Center	1-800-424-7362
County EMS Center	911 or (610)-330-2200
PA State Police	911 or (610)-861-2020
East Allen Township Fire Co.	911 or (610)-262-6700
Lehigh Valley Hospital	911 or (610)-884-2251

ATTACHMENT C

TOPOGRAPHIC MAP