

Site Evaluation/Permitting of a Yard Waste Composting Facility



Environmental Resources Associates

**706 MONROE STREET
STROUDSBURG, PENNSYLVANIA 18360**

CONSULTANTS IN ENVIRONMENTAL RESOURCE MANAGEMENT

ERA



Printed on Recycled Paper

SWANA/PADEP Technical Assistance Program

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1.0 Executive Summary

Sayre Borough (Borough) is an Act 101 mandated municipality located in Bradford County. The Borough has a total area of two (2) square miles, a population of 5,813 persons and 2,529 households (2000 census).

A compliance audit of the Borough's recycling and leaf and yard waste programs was conducted by DEP in 2006. The audit's primary recommendations were that the Borough enhance/improve its public outreach and education program and enforcement efforts in order to enhance and insure participation as required under Act 101.

The Borough has requested technical assistance through the Recycling Technical Assistance Program. Environmental Resources Associates (ERA) was requested by the Borough to provide consulting services to review the Borough's planned efforts to address DEP's concerns and assist the Borough in identifying and addressing other compliance issues (if any).

The primary compliance issue identified was that the Borough operation of its compost site was not consistent with regulatory requirements for operations and record keeping. The compost site is not operating under Title 25 Pa. Code Section 271.103(h) Permit-By-Rule.

Options available to the Borough were to secure the services of a permitted facility to accept the Borough's leaf and yard waste or to site and permit its own facility.

The Borough opted to site, permit, develop and operate a leaf and yard waste compost facility.

Environmental Resources Associates (ERA) performed site inspections and desktop evaluations of data on three Borough proposed compost sites. Based on the evaluations and availability of the sites, the Borough selected a site for subsequent detailed evaluation. The selected 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).

ERA developed the conceptual design for the compost facility, completed all forms and narratives required for submission under PADEP Guidelines and Regulations. The permit application is currently under DEP review.

2.0 Background

Sayre Borough (Borough) is a mandated municipality located in Bradford County. The Borough has a total area of two (2) square miles, a population of 5,813 persons and 2,529 households (2000 census).

A compliance audit of the Borough's recycling and leaf and yard waste programs was conducted by the DEP in 2006. The audit's primary recommendations were that the Borough enhance/improve its public outreach and education program and enforcement efforts in order to enhance and insure participation as required under Act 101.

The Borough has requested technical assistance through the Recycling Technical Assistance Program. Environmental Resources Associates (ERA) was requested by the Borough to provide consulting services to review the Borough's planned efforts to address DEP's concerns and assist the Borough in identifying and addressing other compliance issues (if any).

3.0 Current Situation

Currently the Borough provides curbside collection of source separated recyclable materials (aluminum and tin cans, glass bottles, newspapers, magazines, cardboard, and HDPE and PET plastic bottles) twice each month in each of the three (3) designated collection zones within the Borough. Additionally, the Borough operates a centrally located drop-off leaf and yard waste site and a drop-off recycling site for use by residents and businesses of the Borough as well as neighboring municipalities. The drop-off sites are located adjacent to the Borough's maintenance building and are open every Wednesday 4:00 pm to 7:00 pm and Saturday 8:00 am to 3:00 pm. All recyclable materials are taken to the Northern Tier Solid Waste Authority Processing Center in Burlington, Pennsylvania.

The Borough collects leaf and yard waste curbside once a month (April thru December) in each of the three (3) designated collection zones. Borough public works personnel use dump trucks and compactor trucks for collection. Collected leaf and yard waste is delivered directly to a compost site, also located adjacent to the Borough's maintenance building.

4.0 Observations

Based on meetings with Borough representatives, initial review of recycling and leaf and yard waste program information, and data and observation of the programs ERA offers the following.

- ⇒ A review of the Borough's Recycling Ordinance revealed that it was deficient in several areas and would require extensive and substantial revisions to meet the requirements of Act 101. ERA provided the Borough a sample draft recycling ordinance for consideration. The draft recycling ordinance is currently being reviewed by the Borough.
- ⇒ A review of the Borough's public education and outreach program showed that the Borough's program currently exceeds the requirements of Act 101.
- ⇒ A windshield/drive-by survey was conducted to estimate household setout rates. Two sets of 100 households were included in the survey. The setout

- ⇒ rate for the first set was 64 of 100 households or 64%; set number two was 67%, yielding an average setout rate of 65.5%. The percentage of setouts is not necessarily indicative of a curbside collection program's true participation rate. Some participants (e.g. singles and couples) do not generate sufficient quantities of recyclables to warrant placing them at the curb on an every other week basis. Participation rates can be assumed to be higher than the setout rates.
- ⇒ Based on visitations to the compost site and review of available information the site is not operated consistent with regulatory requirements for operations and record keeping. The compost site is not operating under Title 25 Pa. Code Section 271.103(h) Permit-By-Rule.

5.0 Conclusions

The primary compliance issue identified was that the Borough operation of its compost site was not consistent with regulatory requirements for operations and record keeping. The compost site is not operating under Title 25 Pa. Code Section 271.103(h) Permit-By-Rule.

Options available to the Borough were to secure the services of a permitted facility to accept the Borough's leaf and yard waste or to site and permit its own facility.

The Borough opted to site, permit, develop and operate a leaf and yard waste compost facility.

The Borough opted to site, permit, develop and operate a leaf and yard waste compost facility. To this end, the Borough requested ERA evaluate three prospective sites to determine their potential for permitting and developing a leaf and yard waste composting facility.

6.0 Compost Site Evaluations

A preliminary inspection and desktop evaluation of data was conducted on three Borough proposed compost sites. The desktop evaluation indicated that all of the candidate sites presented challenges relative to meeting the established criteria for developing a leaf and yard waste compost facility. Based on the preliminary evaluations and the availability of the sites, the Borough selected a site for detailed evaluation. The selected 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), as noted below.

The site selected was a .57-acre parcel owned by the Borough. The compost facility site will be co-located with the Borough's maintenance building and the Borough's recycling drop-off depot. The maintenance building is conveniently located to the majority of residents. Residents are familiar with the site as a result of the recycling and leaf and

yard waste drop-off sites. Additional benefits of this location include enhanced security and cost savings for equipment and labor. Site preparation would also be minimal, in that the site had previously been filled and graded to a gentle (two to three percent) slope.

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 plain.
- 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.

Due primarily to the close proximity flood plain and occupied dwellings the compost facility site was limited to .57-acres in size.

ERA developed the conceptual design for the facility, completed all forms and narratives required under PADEP Guidelines and Regulations. ERA reviewed the compost facility permit application with Borough representatives prior to submission. The compost facility permit application was submitted to PADEP in June of 2008. A copy of the application is included in Attachment A.

APPENDIX A

APPLICATION

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SECTION 1

SAYRE BOROUGH

YARD WASTE COMPOSTING FACILITY

APPLICATION

**Commonwealth of Pennsylvania
Department of Environmental Protection
Bureau of Land Recycling and Waste Management**

**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 & Mailing Address)

Sayre Borough, Bradford County, PA
110 West Packer Avenue
Sayre, PA 18840

Telephone Number- **(570) 888-7739**

2. Name of Facility - **Sayre Borough Recycling & Compost Facility**
Contact Person - **David M. Jarrett**
Contact Telephone- **(570) 888-7730**
Property Owner - **Sayre Borough**
Street Address of Facility – **321 South Thomas Avenue**
State - **Pennsylvania** Zip Code – **18840**
City-Boro-Twp - **Sayre Borough**
County - **Bradford County**

Sponsoring Municipality (where applicable) - **Sayre Borough**

Attach a United States Geological Survey 7.5 minute topographic map identifying the yard waste composting facility site boundaries outlined on it. **See Attachment D**

Provide proof the operator has the legal right to enter the land and perform the approved activities: **See Attachment E**

3. The proposed composting method: **Windrows (open air)**
Total acres of the composting facility: **0.57 acres (25,000 square feet)**
The maximum quantity of yard waste and composted materials to be on the site at any one time: **1,700 cubic yards**
Yard waste in cubic yards: **Included in leaf waste estimate**
Finished compost in cubic yards: **1,700 cubic yards**
4. Prepare and include in this application a general site plan* for the facility which illustrates the location of the following items:

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 controls
Processing area including location, orientation, and size of compost piles or windrows
Curing or storage areas

North arrow
Scale of drawing

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 main source of yard waste to be received at the proposed facility is generated from residential properties. Sayre Borough (Borough) also operates a drop-off location that is open to residents, businesses, schools, medical facilities, churches, etc. In addition, residents from neighboring municipalities are also permitted to bring their yard waste and brush to the drop-off location. Commercial landscapers and lawn services are prohibited from drop-off center, however consideration will be given to them after the facility is operational.

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

The Borough collects leaf and yard waste curbside using compactors and dump trucks. The collection vehicles will deliver their loads to the compost facility.

The Borough will also collect leaf and yard waste at its drop off area (1,800 square foot) that is open to the public twice each week throughout the year for a total of 10 hours per week. It is the intent of the Borough to continue to use the drop off area and determine if it is warranted and economically feasible to extend the hours of operation during peak months. Yard waste generated from the drop-off, municipal projects and spring clean-up days will be delivered to the site, in bulk, via municipal trucks.

Describe the method for inspecting incoming yard waste and for removal of unacceptable material. Yard waste collected at the curb is inspected prior to being placed in the compactor.

Borough personnel will not collect any leaf and yard waste that includes unacceptable materials or contaminants. Residents are instructed to remove any unacceptable materials or contaminants from their yard waste prior to placing them at the curb. Yard waste received at the drop-off center is subject to inspection by Borough personnel.

All loads of incoming leaf/yard waste delivered by the Borough's collection vehicles and/or any material delivered by residents will be inspected during off-loading to ensure quality control. Any off-specification material identified during an inspection will be culled by facility personnel and either rejected and sent back with the person attempting to deliver same or placed in an onsite container. Bags delivered will be opened and the contents inspected. Unacceptable material (if any) will be removed, placed in an on-site container for subsequent disposal.

The Borough has also installed security cameras at the property to deter illegal dumping and for use as evidence in prosecuting individuals who would do so. These practices will be continued and additional cameras will be installed.

Describe the windrow construction methods including equipment to be used.

Leaf collection trucks delivering materials to the compost site will unload in the approximate location where a windrow is to be formed. Leaf waste delivered (bulk and bagged) will be inspected for contaminants. A backhoe with a one cubic yard bucket and skidsteer during initial operations 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.

The Borough plans to purchase a front-end loader with a windrow turner attachment to turn the windrows more efficiently.

Equipment proposed for use at the compost facility includes:

- ✓ **One backhoe, with a bucket**
- ✓ **One skid steer, with a bucket**
- ✓ **One front-end loader/ windrow turner**
- ✓ **One 500-gallon trailer mounted water tank**
- ✓ **One Horizontal grinder**

Describe the windrow size:

Initial windrow dimensions will be 10' 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 Borough plans to purchase 500-gallon (trailer mounted) water tank will be used to supply supplemental water to the windrows, if required. INITIALLY (IF REQUIRED A 500-gallon fire truck will be used. The fire truck is located at the fire station approximately 1,000-yards from the compost facility.

Indicate the frequency of windrow turning:

Turning of windrows will occur on a weekly basis initially then once per month. 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 backhoe /loader will be used to form windrows. The backhoe 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.

When acquired, a windrow turner will be used to turn windrows following initial formation, further accelerating the composting process.

Describe the method for determining turning frequency.

Turning frequency will be based on maintaining the optimum environment for microbial activity/accelerated decomposition. All windrows will be monitored on a regular basis once a week for the first month, then once a month (at a minimum) 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 the temperatures drop below 90 or exceed 140-degrees Fahrenheit.

The key indicator for establishing turning frequency will be internal windrow temperature. Windrows will be turned to maintain temperatures in the lower 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. 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.

Describe the approximate duration of the composting cycle:

120 to 180-days (Note Previous Section)

Describe the Composting Process:

Open-air aerated windrow processing technology will be employed for the composting leaf and yard waste. Materials will be formed into parabolic shaped windrows of approximately 6' high X 10' wide X various lengths.

Incoming loads of materials (leaf and yard waste) will be off-loaded where the windrows are to be formed. Facility personnel will inspect material during off-loading and windrow formation. Materials that are unacceptable will be removed and disposed of properly. The windrows will be constructed parallel to slope with a tractor loader. The windrows will be arranged allowing a space of at least 8-feet but not more than 10-feet between them. 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 the backhoe/loader, it is planned that a windrow turner will be used to turn and aerate the piles. The backhoe/loader will be used to turn and aerate the piles until a windrow turner is acquired. Loads of wet leaves will be turned as soon as practical to prevent anaerobic conditioning from forming.

The windrow turner's rotating flail 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, i.e. as leaves are delivered. The individual sections will be monitored to insure active composting is maintained.

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.

During the composting process windrows will be built in sections. Records will be maintained on each section. Eventually, through turning and mixing the windrow will be homogenized and should uniformly degrade.

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 40% to 60%. Deviance from this range 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 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 range 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.

Equipment proposed for use at the compost facility includes:

- ⇒ **One backhoe, with a one (1) cubic yard bucket.**
- ⇒ **One skidsteer**
- ⇒ **One front-end loader/ windrow turner**
- ⇒ **One 500-gallon trailer mounted water tank.**

Sayre Borough will:

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

- ⇒ **Work cooperatively with the Bradford County Conservation District in the development and installation of surface water and erosion and sedimentation control measures which may be required (if any). A meeting with the County Conservation District will be held to seek advice and guidance on developing suitable surface water controls (if any) that meet the requirements of 25 PA Code Chapter 102, Erosion Control. An E&S Plan will be developed (if required) and a copy of the County Conservation District approved plan will be submitted to the Department.**

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:

130 tom 300-days (Depending on how aggressively the material is processed.)

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

After compost product is used at Borough parks and other public green spaces, our marketing plan will be directed at residential properties. Considering the residents are the ones providing the materials and subsidizing program costs via tax dollars, it is only fair that Borough provide residents the first opportunity to purchase compost. The distribution of the product will be by truckload as well as in smaller amounts.

The Borough's long term distribution goal is to purchase bagging equipment so that smaller amounts of product can be efficiently packaged and sold to residents. All compost product will be distributed from the Borough's DPW facility so that it can be effectively and efficiently managed.

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

The Borough will dispose of all composting residuals and/or contaminants in accordance with the Bradford County Solid Waste Management ordinance at the Northern Tier Solid Waste Authority facility in West Burlington Twp, PA (570-297-4177). Weight slips will be filed and subject to audit by the PA-DEP.

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

The Borough is extremely fortunate to have five (5) employees who are trained firemen, including a past fire chief, captain, and lieutenant. The Borough also employs a fire truck driver on a seven day a week twenty-four hour basis. The fire station is less than a three minute drive from the composting site. In addition, the Borough has mutual aid agreements with surrounding municipalities, one of these neighboring municipalities have a fire station located less than one (1) mile from the composting site.

Personnel working at the site will use a 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 Borough will develop a public education/outreach campaign. The campaign will include announcements at public meetings, public service announcements, display advertisements in local newspapers and an informational brochure. The brochure will provide program details and encourage participation.

The Borough has just completed the first phase of a public information and education program for its curb-side and drop-off recycling programs that has been well received by the community. During three separate sessions, the Borough distributed 3,200 brochures promoting and explaining those programs. In addition, the Borough has forged partnerships with its State Representative's office, public library, and local newspaper to assist in promoting the programs. Based on the success to date, the same approach will be taken to promote the composting program. The Borough will also inform/educate the public through public notices/block advertisements and quarterly newsletters. Newsletters are distributed to more than 3,000 households and businesses throughout the Borough. An informational sign (consistent with DEP requirements) will be placed at the compost facility. Please note Figure 1, Public Notice and Figure 2, Draft Compost Facility Sign Layout.

Figure 1

Public Notice

YARD WASTE & BRUSH COLLECTION

The Department of Public Works will begin collecting yard waste and brush in April (weather permitting) and continues each month thru December (weather permitting).

The collection schedule is based on the zoned weekly garbage collection schedule.

Residents are reminded that all yard waste must be bagged, and brush must be cut into four foot (4') pieces and bundled together.

Zone #1 --- First Friday of each month.

Zone #2 --- Second Friday of each month

Zone #3 --- Third Friday of each month.

Yard Waste Drop-Off Center Regulations

The Borough's yard-waste drop-off center is open year round on the days and times that the recycling drop-off center is open. Residents can bring leaves, weeds, grass clippings, brush, and tree limbs to the center. Yard waste must be taken out of its bags, and tree limbs must be stacked as neatly as possible. Illegal dumping at the drop-off center will result in the termination of the program.

HOURS OF OPERATION

Wednesday 4pm – 7pm

Saturday 8am – 3pm

Figure 2

Draft Compost Facility Sign Layout



ATTACHMENT A BASE MAP

ATTACHMENT B

SITING RESTRICTIONS

SITING RESTRICTIONS FOR YARD WASTE COMPOSTING

OPERATIONS

The Sayre Borough compost facility will be located at 110 West Packer Avenue Sayre, PA 18840 in Bradford County, Pennsylvania (see Attachment). 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 site has previously been disturbed, filled and developed. The planned compost facility is to be located in the filled area, above the flood plain. The facility will not store or cure compost or compost leaf and yard waste within the 100-year flood plain.

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.

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

No active composting will take place within 100-feet of the wetland.

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 Bradford 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 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 compost area of the site.

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

As noted above the site has previously been disturbed, filled and developed. The compost facility is located in a filled area which has 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

NUISANCE CONTROL PLAN

NUISANCE CONTROL PLAN

The facility will be gated and the gate locked when the site is not in operation, as a security measure.

All site operations will be monitored on a regular basis. Any situation noted that might attract and harbor or cause breeding of vectors or vermin will be addressed as quickly as possible on a case-by-case basis.

Odor is a primary concern for composting operations. Malodors are usually associated with anaerobic conditions: excessive temperatures, excessive water, etc. Monitoring and quick response to problems will minimize the potential occurrence of any odor causing conditions.

All windrows will be monitored on a regular basis once a week for the first month, then twice a month (every other week) 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 the temperatures drop below 90 or exceed 140-degrees Fahrenheit. Monitoring and quick response to any malodor (turning the windrow and/or adding dry organics) will minimize the potential occurrence of any odor causing conditions.

During inspections of the windrows any unacceptable material noted will be manually removed for proper disposal.

The time, date, results of, and name of person conducting inspections will be recorded in written documentation (inspection/monitoring logs).

Records of windrow monitoring, incoming organic materials as well as outgoing finished products (compost and mulch) will be maintained and a trouble shooting guide will be on site for quick reference (see Attachment F).

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 the elimination of standing water the regular turning of windrows and heat generated by the compost process breeding of vermin and insects is inhibited. Regular monitoring of the compost will also be accomplished.

Noise from operating equipment should not present a problem given the location of the site, the limited work effort required to manage the relatively small volume of organic materials. Existing trees, hedgerows and vegetation 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).

Sayre Borough will operate the compost site in a 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.

Any litter generated by site activities or deliveries will be policed by facility personnel.

ATTACHMENT D

TOPOGRAPHIC MAP

ATTACHMENT E

PROOF OF OWNERSHIP

ATTACHMENT F

OPERATIONS PACKET

OPERATIONS PACKET

✓ **TROUBLE SHOOTING GUIDE**

✓ **MONITORING LOGS**

✓ **FEEDSTOCK & PRODUCT LOGS**

TROUBLE SHOOTING GUIDE

<i>Situation</i>	<i>Probable Cause</i>	<i>Solution</i>
Low temperature in windrow	Moisture content low (cannot squeeze water from material)	Turn windrow add water while turning
	Insufficient air flow	Turn windrow to aerate
	Size of windrow too small	Combine with another windrow or add material
Mosquitoes	Mosquitoes breeding in ponding water	Re-grade/fill depressions
High temperature in windrow	Low oxygen content	Turn windrow to aerate
	Compacted material (1)	Turn windrow to loosen material and to aerate
Odor	Anaerobic condition excess moisture	Turn windrow to aerate
	Too much grass	Add leaves to adjust C:N ratio and turn pile
	Compacted material (1)	Turn windrow to loosen material and to aerate
	Ponding of water	Re-grade/fill depressions

(1) Material received (leaves or grass) which is compacted should be shred or mixed to loosen/separate prior to windrow formation.

SAYRE BOROUGH WINDROW MONITORING LOG

DATE: _____ TIME: _____ AIR TEMP: _____ (°F) (°C)

NAME: _____ WEATHER CONDITIONS: (RAIN, SUNNY, ECT.) _____

WINDROW NUMBER	TEMPERATURE Measurement Points (every 50'ft, 100' ft ect.)	TEMPERATURE (°F) (°C)												
1)														
2)														
3)														
4)														
5)														
6)														
7)														
8)														
9)														
10)														
11)														
12)														
13)														
14)														
15)														
16)														
17)														

✓ Moisture (squeeze test) - Requires Excessive Adequate

✓ Odor - None Faint Strong

Site Observations: (ponding of water, mosquitoes, ect.) and corrective actions: _____



SAYRE BOROUGH
COMPOST FACILITY

FEEDSTOCK AND
PRODUCT LOG

SAYRE BOROUGH- FEEDSTOCK and PRODUCT LOG

Month - _____

Year- 2008

Feed/Pro	Vehicle ____ Type____ Cu. Yd.____				Vehicle ____ Type____ Cu. Yd.____				Vehicle ____ Type____ Cu. Yd.____				Vehicle ____ Type____ Cu. Yd.____				Vehicle ____ Type____ Cu. Yd.____				T O T A L
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	
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Vehicle - (M) Municipal, (R) Resident, (C) Commercial
Type - (P) Pickup, (D) Dump, (T)Trailer, (O) Other
Feedstock - (F)
Product - (P)

Leaves - (1)
Yard Waste - (2)
Woodchips - (3)
Compost - (4)

SECTION 2

SAYRE BOROUGH COMPOST FACILITY

CONTINGENCY PLAN FOR

EMERGENCY PROCEDURE

Sayre Borough
COMPOST FACILITY
PREPAREDNESS
PREVENTION
AND
CONTINGENCY PLAN

A. DESCRIPTION OF FACILITY/OPERATION

A. 1 General Description of Activity

Sayre Borough (Borough) will develop and operate a leaf and yard waste compost facility (facility) to service the municipally and potentially other neighboring municipalities.

The compost facility will be located adjacent to the Borough maintenance building at 110 West Packer Avenue in Sayre Borough, Bradford County, Pennsylvania (see Attachment C). The project will not require additional zoning approval.

The facility will occupy an area of approximately .57-acres of a three (3) acre parcel. Materials accepted for composting will be leaves, yard waste and as per PADEP "Guidelines for Yard Waste Composting Facilities". Tree and brush trimmings will also be ground/processed into wood chips/mulch. The facility will be limited to accepting and processing a maximum of 1,700-cubic yards of organic materials.

Leaf and yard waste will be composted aerobically using open-air windrow technology and specialized equipment to promote, accelerate and enhance decomposition. A chipper and potentially a grinder will process tree trimmings and yard waste into wood chips/mulch.

The Borough will collect leaves curbside (during the fall and spring) using compactor and dump trucks and deliver them directly to the compost facility. The Borough's residents will also deliver leaf and yard waste to a drop-off facility on designated days during specified hours. Neighboring municipalities will (by inter-municipal agreement) deliver leaf waste to the compost facility.

Leaf waste and yard waste will be composted aerobically using open-air windrow technology and mechanized equipment to accelerate and enhance decomposition. Mechanical chippers and potentially 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 or drop-off 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 yard wastes will be formed into new windrows or incorporated into existing windrows. Formation and turning of windrows will be accomplished initially using a backhoe/loader equipped with a one (1) cubic yard bucket. Turning the windrows is eventually planned to 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 will be monitored, using long stem thermometers, to insure that the windrows are maintaining 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 as specified above. The mulch will be formed into windrow type formations and stored on or off site, pending use by the Borough or distribution to the residents. Mulch piles will be monitored for temperature to prevent spontaneous combustion.

The Borough 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, Mr. David Jarrett who will serve, as the PEC and, Mr. Blane Lathrop 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; and, 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:

Home Address: David Jarrett
525 West Lockhart Street
Sayre, PA18840

Home Telephone: (607) 481-0404

Business Address: Sayre Borough
110 West Packer Avenue
Sayre, PA 18840

Business Telephone: (570) 888-7739

Secondary:

Home Address: Mr. Blane Lathrop
124 Robb Street
Sayre, PA 18840

Home Telephone: (607) 481-0405

Business Address: Sayre Borough
321 South Thomas Avenue
Sayre, PA 18840

Business Telephone: (570) 888-5131

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 tank 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) - 327-3636 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 the 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

Home Address: David Jarrett
525 West Lockhart Street
Sayre, PA18840

Home Telephone: (607) 481-0404

Business Address: Sayre Borough
110 West Packer Avenue
Sayre, PA 18840

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C. SPILL LEAK PREVENTION AND RESPONSE

C1. Pre-Release Planning

The Borough 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.

Leaves and yard waste accepted at the site will contain limited amounts of moisture and should not present a problem. 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 Borough 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%.

During inspection of windrows any unacceptable material noted will be manually removed and disposed of properly. 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 weekly basis. Compost and mulch windrows will be visually inspected daily, when the facility is operating.

Emergency equipment consists of ten-pound A/B/C fire extinguishers located 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 compost 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. The property is also monitored by a security camera system which enables the Borough to record a 72 hour timeframe.

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 Borough 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 Borough 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#lb Type A/B/C
First Aid Kit (2)	Cuts/Burns,	
Eye Wash (2)	Eye Irritants	

Location Index: **(1)** Carried on Equipment, **(2)** Maintenance

E. EMERGENCY SPILL CONTROL NETWORK

E1. Arrangements with Local Emergency Response Agencies and

A Borough 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) - 327-3636
National Response Center	(800) - 424 - 7362
County EMS Center	911 or (570) – 882-9911
Police Department	911 or (570) - 888- 2233
Borough Fire Department	911 or (570) - 888- 9612
Hospital	911 or (570) - 888-6666

