

FORM 14 OPERATION PLAN

Prepared 12/2001; Rev 07/2003, 06/2005, 09/2005, 11/2007, 04/2010, 11/2010, 07/2011, 09/2011, 12/2011, 03/2012, 07/2012, 04/2014, 02/2020, 11/2020

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Date Prepared/Revised <i>Prepared 12/2001</i> <i>Rev 07/03, 06/05, 09/05,</i> <i>11/07, 04/10, 11/20, 07/11,</i> <i>09/11, 12/11, 03/12, 07/12,</i> <i>04/14, 02/20, 11/20</i>
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FORM 14
OPERATION PLAN - PHASE II

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 14, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets should match the "date prepared/revised" on this page.

General References: Chapters 273 and 277

SECTION A. SITE IDENTIFIER

Applicant/permittee: *Westmoreland Sanitary Landfill, LLC*

Site Name: *Sanitary Landfill*

Facility ID (as issued by DEP): *100277*

SECTION B. TYPE OF FACILITY

Municipal Waste Landfill Construction/Demolition Waste Landfill

SECTION C. GENERAL OPERATING DESCRIPTION

Based on the required maps and grids for a facility of this type, describe the:

- Proposed landfill method and procedures that are to be established and followed for the life of the proposed site. Include daily procedures, inspection and monitoring of incoming waste, and daily closing procedures.
- Sequence of landfilling activity, including the proposed filling schedule.
- Type of landfill activity to be conducted at the proposed site.
- Proposed engineering techniques.

Refer to Attachment 14-1, Section C for the general operating description.

SECTION D. SPECIFIC FEATURES

Describe the method and schedule for construction, operation, modification, use, maintenance and removal of the following unless their retention is proposed for postclosure land use:

- Dams, embankments, ditches and other impoundments that are to be located on the proposed site, and adjacent total property owned by the applicant.
- Borrow pits, soil storage and handling areas and structures that are to be located on the proposed site, total property or adequate properties off-site,
- Scales and weigh stations, if required for municipal waste landfills.
- Water and air pollution control facilities that are in any way related to the proposed facility.
- Erosion control facilities to minimize the discharge of sediment from the proposed permitted site, total property, or associated properties off-site.
- Equipment storage, maintenance, and other buildings.
- Access roads that are to be located on the proposed permitted site, total property or associated properties off-site.

Refer to Attachment 14-1, Section D for a narrative describing specific features.

SECTION E. PERSONNEL TRAINING

Describe training procedures to be conducted for the handling and disposal of special handling waste.

Refer to Attachment 14-1, Section E.

SECTION F. CONSTRUCTION SCHEDULE

Describe the construction schedule in relation to the grid coordinate system for signs and markers, For a municipal waste landfill, also describe the sequence of operation relating to the grid coordinate system. Explain where uniform permanent physical markers will be placed, how these physical markers will be maintained and of what materials the markers will be constructed. Further, explain how the proposed disposal area perimeter will be distinguished from the perimeter of the total property. What will be written on the required sign, what will it be constructed of, and where will it be located?

Refer to Attachment 14-1, Section F.

SECTION G. SITE PREPARATION

Describe the site preparation plan/schedule for disposal of solid waste at the proposed facility. Include the following:

1. Identify the maximum and average daily weight or volume of waste to be accepted at the proposed site, and a detailed justification of these volumes.

Refer to Attachment 14-1, Section G.

2. For a municipal waste landfill, describe the method of compliance relating to measurement of waste. If 30,000 or more cubic yards of solid waste is expected to be accepted in a calendar year by this proposed facility for disposal, it must be weighed. The operator of this scale must be a licensed public weighmaster. Explain how the scale will be inspected and maintained to assure accuracy. If the proposed facility is not required to have a scale, explain how the waste will be accurately measured when it is received at the proposed facility.

Refer to Attachment 14-1, Section G.

3. For a demolition/construction waste landfill, describe the method of compliance relating to measurement of waste. Explain how this waste type will be accurately measured by weight or volume prior to unloading.

Refer to Attachment 14-1, Section G.

SECTION H. WATER QUALITY PROTECTION

Describe a plan that is consistent with basic limitations relating to operating requirements.

1. Has written approval been given by this Department for background groundwater monitoring? Yes No
If yes, what date 06/19/2001
If not, explain.
2. Has background groundwater monitoring begun? Yes No
If no, what is the expected date _____
If yes, when June 1999
3. How will the operator prevent unapproved special handling wastes and/or residual wastes from being accepted and disposed of at the site? How will the operator handle and dispose of approved special handling waste(s), and what specific measures will be taken to prevent exposure to landfill personnel, haulers and others? Explain.

Refer to Attachment 14-1, Section H.

4. How will the operator prevent hazardous and explosive wastes, and liquids from being accepted and disposed of at the site?

Refer to Attachment 14-1, Section H.

5. Is leachate recirculation planned? Yes No

If yes, explain.

What is ultimate disposition of leachate?

Leachate Evaporator (Primary), Leachate Hauling for Offsite Disposal (Interim / Emergency)

SECTION I. OPERATING HOURS

Provide the proposed operating hours of the facility. *Refer to Attachment 14-1, Section I.*

SECTION J. ACCESS PLAN

Describe the Access Road Plan, including designs, cross sections and specifications. Indicate design load limits, and identify maximum anticipated loading to be encountered.

1. Explain how the access roads and parking and maneuvering areas will be designed, constructed and maintained to prevent erosion and sediment to streams or runoff.

2. Will streams or waterways be crossed? Yes No

If yes, explain how the requirements of Chapter 105 will be met.

Has an application been filed for a Chapter 105 permit? Yes No

3. Describe the drainage system for temporary and permanent roads and parking and maneuvering areas to be located at the proposed facility.

Refer to Attachment 14-1, Section J.

4. Describe the materials to be used on permanent or temporary roads and parking and maneuvering areas at the proposed facility:

paved asphalt

gravel

cinders

other equivalent material - explain:

Will the grade of any access road be greater than 12% Yes No

If yes, explain.

5. Describe the locations, widths and methods of maintenance for all access roads to be located on the proposed permitted facility, and on the entire property.

Refer to Attachment 14-1, Section J.

SECTION K. ACCESS CONTROL PLAN

Describe the Access Control Plan, including:

1. Use and locations of fencing and barriers to control access. Include heights, dimensions and construction materials. Fences are required around impoundments, leachate collection and treatment systems and gas processing facilities, if these facilities have not been included within the site fence.

2. Site security provisions.

3. Describe the facility sign that will be placed at the junction of each access road and public road.

Refer to Attachment 14-1, Section K.

SECTION L. NUISANCE MINIMIZATION AND CONTROL PLAN

Describe the Nuisance Control Plan, and include details regarding the methods by which the operator will perform regular, frequent and comprehensive inspections to evaluate the effectiveness of the plan for Vectors, Odors, Noise, Dust, Litter, and Other Public Nuisances. The plan needs to include the following items:

1. An inventory and map of areas at the facility that has the potential to cause nuisances

- Dominate wind direction
- Hauling, truck staging, and radiation staging areas
- Leachate and gas management components
- Disposal areas, intermediate covered areas, anchor trenches, and trash relocation activities
- Landfill cell construction, fill and capping sequences
- Landfill siting and position to nearby residences

2. Description of nuisance related monitoring or response activities
 - Organization flow chart with each person's duties and responsibilities with regard to this plan
 - Notification list for the facility and respective agencies
 - A description of how the facility will be operated to eliminate off-site nuisances
 - a. Monitoring frequency and locations
 - b. Inspections for odorous loads
 - c. Monitoring and inspections of the landfill's gas/odors controls
 - d. Dust suppression
 - A description of internal and external communication and alarms
3. Describe the facilities meteorological monitoring program
 - Meteorological weather station location
 - Data to be collected
 - Activities limited by the weather and the facilities threshold
4. Detailed plan for preventative maintenance and nuisance controls
 - Description and location of portable/temporary odor controls
 - Preventative nuisance measures used during the facilities construction
 - Description of the nuisance suppression program and the location of any fixed odor controls
 - Procedures for handling nuisance prone waste
 - Dust minimization plan
 - Employee and contractor training
 - Inspection frequency for odor management equipment
 - Emergency equipment
5. Provide specific countermeasures that will be undertaken by the facility in the event of a nuisance for:
 - Dust suppression from hauling, waste placement, or processing activities
 - Odors
 - Vectors
 - Landfill gas detection
 - Litter
 - Litter during windy conditions
6. Provide any additional information as requested by the Department, Host Municipality, or Host County.

Refer to Attachment 14-1, Section L.

SECTION M. LITTER CONTROL PLAN

Describe the Litter Control Plan, and explain how the operator will prevent litter from blowing or becoming deposited off-site, including:

1. The types, locations and maintenance procedures for litter fences to be used at the proposed facility.
2. The frequency of litter pick up and disposal.

Refer to Attachment 14-1, Section M.

SECTION N. SALVAGING

Explain if salvaging will occur on-site during hours of operation and non-operation. If yes, describe the methods of control over salvaging, and how salvaging will occur without interfering in the operation of the landfill. Further, describe the methods for on site movement and storage of salvaged materials, as well as off-site storage and transportation of salvaged materials.

Refer to Attachment 14-1, Section N.

SECTION O. AIR QUALITY CONTROL

Describe the methods to control dust, and minimize and control air pollution at the proposed facility from exceeding any ambient air quality standards.

Refer to Attachment 14-1, Section O.

SECTION P. WASTE PLACEMENT

1. Initial procedures for placement of waste on the liner system.
2. An explanation of the location(s) of unloading area(s) at the proposed facility, and methods by which loaded collection vehicles will be directed to unload promptly at these areas. Waste cannot be unloaded where continuous or intermittent contact would occur with the groundwater table.
3. Procedures for and the degree of compaction of solid waste. Describe the number and thickness of lifts, and explain how solid waste will be spread and compacted in layers.

Refer to Attachment 14-1, Section P for narrative describing the waste placement plan.

4. Describe how the working face will be managed, and:
 - (i) compacted and covered on a daily basis for municipal waste landfills, and;

Refer to Attachment 14-1, Section P.

- (ii) kept to a size which can easily be compacted for Construction/Demolition waste landfills;

Refer to Attachment 14-1, Section P.

- (lii) how water that contacts the working face will be contained, and not combined, with surface water runoff.

Refer to Attachment 14-1, Section P.

SECTION Q. DAILY COVER

For a municipal waste landfill, describe the frequency of placement, composition, design requirements, storage duration and location(s), maintenance(including revegetation and erosion/sedimentation controls),and thickness of approved daily cover to be placed on exposed solid waste at the proposed site. Include a quality assurance plan.

Refer to Attachment 14-1, Section Q.

SECTION R. INTERMEDIATE COVER

Describe the frequency of placement, composition, design requirements, storage duration and location(s), maintenance, and thickness of approved intermediate cover to be placed on partial or completed lifts at the proposed site. Explain how slopes, not to exceed 50%, will be maintained, covered, compacted, and revegetated to control erosion and sedimentation. Include a quality assurance plan and identify procedures to establish intermediate elevations.

Refer to Attachment 14-1, Section R.

SECTION S. FINAL COVER SCHEDULE

Describe the time period that approved final cover will be placed on the proposed site, the methods by which final cover will be placed, and composition and design requirements, including:

1. A cap (comprised of a uniform and compacted one (1) foot layer of clay or synthetic type material, if approved).

Refer to Attachment 14-1, Section S.

2. A drainage layer to prevent erosion and transmit flow of surface water.

Refer to Attachment 14-1, Section S.

3. A uniform and compacted layer of soil at least two (2) feet in thickness.

Refer to Attachment 14-1, Section S.

SECTION T. FINAL COVER CHARACTERIZATION

Describe the characteristics of final cover, including:

1. physical properties of final cover,
Refer to Attachment 14-1, Section T.
2. capability of controlling fires,
Refer to Attachment 14-1, Section T.
3. load bearing capacity,
Refer to Attachment 14-1, Section T.
4. capability of supporting vegetation,
Refer to Attachment 14-1, Section T.
5. prevention of nuisances,
Refer to Attachment 14-1, Section T.
6. Include a quality assurance plan, and identify procedures to establish final elevation.
Refer to Attachment 14-1, Section T.

SECTION U. FINAL CONFIGURATION

Describe the grade of the final slopes of the proposed facility, detailing design, installation, maintenance, slope stability, erosion control, compaction, seeding, revegetation, percolation rates, and surface runoff.

What will the maximum grade of the final surface be? 33%

What will the average grade of the final surface be? 29% (excluding top)

Are terraces to be used on the final surface? Yes No

If yes, describe design, construction, grades and maintenance of the terraces.

Refer to Attachment 14-1, Section U.

Describe the drainage ditches that will be constructed in each horizontal terrace to convey flow of surface water.

Refer to Attachment 14-1, Section U.

**FORM 14
OPERATION PLAN**

**ATTACHMENT 14-1
NARRATIVE RESPONSES**

SECTION B – TYPE OF FACILITY

Sanitary Landfill is an existing municipal waste landfill located in Rostraver Township, Westmoreland County, Pennsylvania. This facility is currently operating under PADEP Solid Waste Disposal Permit No. 100277. The existing facility is permitted to accept municipal, residual, special handling, and construction & demolition (C&D) waste.

SECTION C – GENERAL OPERATING DESCRIPTION

Based on the required maps and grids for a facility of this type, describe the:

- 1. Proposed landfill method and procedures that are to be established and followed for the life of the proposed site. Include daily procedures, inspection and monitoring of incoming waste, and daily closing procedures.**

This facility will be operated using the traditional “area fill” method of disposal. The facility will be operated in accordance with the approved maximum and average daily waste receipts. Refer to Form R – Waste Acceptance Plan for procedures related to inspection and monitoring of incoming waste. Daily closing procedures include the complete covering of all exposed waste materials with soil or alternative daily cover material; other daily closing procedures may include equipment maintenance or other site support/construction activities.

- 2. Sequence of landfilling activity, including the proposed filling schedule.**

This facility is constructed on a phased basis such that the pace of liner construction provides sufficient airspace for anticipated disposal operations. This phased construction allows the filling of small unit areas and as areas reach final permitted grades, the final cover system is installed.

Each cell construction will involve the construction of additional disposal area, perimeter berms, and both temporary and permanent erosion and sedimentation controls. Along with the phased construction of disposal areas, waste placement will progress in the previously constructed areas; as waste placement and construction considerations allow, portions of the landfill will be capped and gas extraction system components will be installed.

The sequence of landfilling activity and construction phasing is presented on the approved permit drawings for the facility. Closure of the landfill disposal area will be performed as areas reach final grade elevations and shall be in accordance with the approved bond determination for maximum open landfill disposal area.

- 3. Type of landfill activity to be conducted at the proposed site.**

Municipal, non-hazardous residual, special handling, and construction/ demolition waste will be accepted for disposal at this facility.

4. Proposed engineering techniques.

The design of this facility has been completed under the supervision of a registered professional engineer experienced in landfill design, construction, operation and closure.

- Liner system includes a primary composite liner [Geosynthetic Clay Liner (GCL) overlain by a 60-mil nominal HDPE geomembrane] and secondary geomembrane liner (60-mil nominal HDPE). The liner includes a leachate detection layer between the two liner systems which has been designed and configured to promote drainage to the sump locations. The liner system is overlain by a leachate collection/protective cover material with perforated piping which collects and transmits leachate to the sump locations.
- The leachate management system includes a series of leachate collection pipes and sumps within the landfill to collect liquids. Leachate is removed at each sump location and conveyed to on-site leachate storage tanks which provide a minimum 30-day storage volume. From the onsite leachate storage tanks, leachate is currently transmitted to the leachate loadout area where it is trucked offsite for disposal. A Minor Permit Modification is currently pending to propose the use of an onsite leachate evaporator to manage all leachate generated at the landfill. Following beginning installation of the leachate evaporator, it is anticipated that leachate trucking will only occur during emergency scenarios as outlined in the pending proposed Form 25.
- The gas extraction system includes headers/laterals and vertical extraction wells. The gas extraction system piping is connected to a blower system which generates a vacuum on the well field to remove gas from the landfill mass. A landfill beneficial use project including a high-BTU gas plant is in operation at this facility. An existing enclosed ground flare is utilized for back up in the event the gas plant is down for maintenance or malfunction.
- The final cover system for the landfill includes (from top to bottom) a 2 feet thick (minimum) layer of final cover soil, a geocomposite drainage layer and a 40-mil nominal geomembrane. The geocomposite drainage layer transports water infiltrated through the final cover soil to the stormwater management system.

SECTION D – SPECIFIC FEATURES

Describe the method and schedule for construction, operation, modification, use, maintenance and removal of the following unless their retention is proposed for postclosure land use:

- 1. Dams, embankments, ditches and other impoundments that are to be located on the proposed site, and adjacent total property owned by the applicant.**

A permanent perimeter berm and temporary and permanent interior berms will be constructed to mark the disposal boundary and contain waste during disposal operations. Surface water diversion ditches and collection channels will be constructed to divert and/or collect stormwater runoff for controlled release from the site.

To achieve the overall permitted erosion and sedimentation control features for this facility, temporary and permanent erosion & sedimentation controls shall be installed as the landfill, soil borrow areas or other earth disturbance areas are developed. Based on the general grading of the area and limits of the existing erosion & sedimentation controls, each construction phase may include the use of hay bales, silt fences, diversion ditches, collection channels, temporary/permanent terraces, sediment traps and sedimentation ponds. Sedimentation ponds for this facility have been designed and previously permitted for a 25-year, 24-hour storm event, and satisfy the requirements of Chapter 102. Each pond will be periodically inspected to determine if any maintenance is necessary. Should repairs be necessary, they will be completed in a timely manner.

No dams are permitted/proposed for this site. Permanent channels and required culverts may remain in service during the post-closure period. Once adequate revegetation is established in upgradient areas, the sediment ponds may be decommissioned.

2. Borrow pits, soil storage and handling areas and structures that are to be located on the proposed site, total property or adequate properties off-site.

Portions of the property are to be disturbed for soil borrow operations and landfill development. As discussed earlier, future landfill disposal areas are developed on a phased basis and utilized as soil borrow areas for the construction and operation of the facility. This may also include the use of stockpile areas for the storage of excess or future materials. All earth disturbance within the facility limit for the landfill area is addressed with the design of the permitted erosion & sediment controls for this facility. Additional off-site borrow areas may also be pursued for construction or operational soils needs. Any off-site borrow areas shall be permitted to satisfy local regulations prior to use. Any soil and rock materials that may be obtained and hauled to the site from off-site sources not owned by this facility or its subsidiaries will be used on site and are not be transferred back off-site in the future.

As discussed above, as additional areas are disturbed as part of borrow or landfill development operations, additional permanent and temporary erosion & sedimentation controls will be installed as needed. This may include the installation of appropriate erosion & sedimentation controls for the control of runoff situations not anticipated with the permitted design for the facility. Following the establishment of permanent vegetation on soil borrow or other outside grading areas, the temporary controls may be removed.

Removal of Excess Soil and Rock Materials

Over the remaining life of the landfill disposal area, the facility will have an overall surplus of soil and rock materials from the development of the landfill disposal area which require to be permanently stockpiled on-site. The facility does not have a designated area within the facility permit boundary adequate for the permanent storage of excess soil and rock materials which are not to be utilized as structural fill, subbase, daily cover, intermediate cover and final cover in the remaining development and operation of the landfill disposal area. The facility intends to be a wholesale supplier to outside entities (i.e., contractors, developers, municipalities, residents, etc.) of excess soil and rock materials obtained from the excavation of on-site landfill disposal cells in order to minimize the volume of soil and rock materials which require to be permanently stockpiled on-site. Remaining on-site soil volumes will be determined by the facility on a regular basis through aerial and/or field surveys to ensure that a positive soil balance is maintained for the remaining construction, operation and closure soils required at this facility.

3. Scales and weigh stations, if required for municipal waste landfills.

All incoming waste will be weighed at the scale house and the data will be recorded. The scales and all certified weighmasters will comply with §273.214 of the Municipal Waste Regulations. The PADEP will be contacted and with approval, over-size permitted loads which will not fit on the site's truck scales will be hand scanned for radiation monitoring and an off-site weight generated from a certified scale may be utilized from which a manual entry landfill disposal ticket will be generated. In addition, the weighmasters will be licensed in accordance with the Commonwealth of Pennsylvania Act 64. Scales will be checked once per year, minimum, for accuracy and maintained and inspected thereafter as required. Inspections and accuracy checks will be conducted by qualified personnel. Necessary maintenance and repairs for the scales will be conducted in accordance with manufacturer recommendations. After the site is closed, the scales may be removed from the site.

As required by §273.311(b)(11) of the Municipal Waste Regulations, the facility shall document and record information for all vehicles accepted at the facility with a gross vehicle weight over that specified in §273.311(b)(11). This information shall be maintained in a log book at the facility.

4. Water and air pollution control facilities that are in any way related to the proposed facility.

The leachate is currently removed from the sumps and transmitted to on-site storage tanks for temporary holding and then trucked offsite to an appropriately permitted treatment facility. A Minor Permit Modification is currently pending with the PADEP that proposes an onsite leachate evaporator as the primary disposal method with offsite trucking to be utilized as emergency backup.

This facility operates an active gas extraction system, which includes a blower, enclosed ground flare and an existing on-site gas processing plant for the upgrading of the gas and injection into a natural gas distribution system in the area. Design and operational details for these systems are presented in Form K. These systems will remain in service throughout the post-closure period, until landfill gas generation subsides such that extraction is not necessary. The decommissioning of the gas extraction system is discussed in Form K.

5. Erosion control facilities to minimize the discharge of sediment from the proposed permitted site, total property, or associated properties off-site.

As discussed elsewhere in this narrative, as presented on the drawings for this facility and as identified in Form I, this facility includes channels and sedimentation ponds for the collection and treatment of sediment laden runoff prior to entering natural drainage ways around the perimeter of the facility. Also as discussed elsewhere in this narrative, temporary and permanent erosion & sedimentation controls are installed on a phased basis as additional areas are disturbed.

Stormwater runoff upgradient of disturbed areas shall be diverted around the disturbed area as feasible by use of a series of diversion ditches. Stormwater runoff from disturbed areas shall be collected in channels and directed to on-site sedimentation ponds to remove sediment prior to discharge off-site. Sedimentation ponds have been designed and previously permitted for a 25-year, 24-hour storm event, and will continue to meet the requirements of Chapter 102.

Stormwater runoff from inactive portions of the landfill filled to capacity with waste and covered with intermediate soil cover shall be collected using terraces (benches) and downchute channels. Stormwater runoff from intermediate cover slopes can then be directed outside of the landfill area to the stormwater system only when the intermediate cover soil has been vegetated or otherwise stabilized from erosion.

Site personnel will conduct regular inspections of erosion and sedimentation control structures, and after every unusual storm event, to ensure that they are free from obstructions and are functioning according to design. Should repairs be necessary, they will be completed as soon as possible. Channels and culverts will remain in service throughout the operation and after closure to convey collected stormwater. Once permanent vegetation is established throughout upgradient areas, sediment basins may be regraded and removed.

6. Equipment storage, maintenance, and other buildings.

This facility utilizes temporary and permanent structures/buildings for the operation and support of the landfill. During the operation of this facility, these structures shall include at minimum a landfill office and scale house. Additional structures/buildings for storage of materials or maintenance may be utilized as needed. Structures/buildings for the operation of the landfill may be relocated, replaced or eliminated as needed throughout the operation of the facility to match the operational requirements. Following final closure of the facility, structures/buildings may be removed or disposed within the landfill.

7. Access roads that are to be located on the proposed permitted site, total property, or associated properties off-site.

Unpaved and paved access roads located on site are utilized for travel by waste vehicles, maintenance vehicles and construction vehicles. Access roads in the vicinity of the landfill will be constructed, relocated and removed as the phased development of the landfill progresses. Access roads for waste vehicles will provide for two-way traffic or one-way traffic with occasional pull-overs for vehicle passing. Temporary access roads will be constructed onto the waste from the perimeter berm as needed.

SECTION E – PERSONNEL TRAINING

Describe training procedures to be conducted for the handling and disposal of special handling waste.

Operator Training

Note: This section presents a brief summary of the employee training related to the disposal of special handling wastes; Form R – Waste Acceptance Plan shall be utilized for specific training requirements for waste handling procedures.

The site manager or his designated representative will be responsible for ensuring that:

- Facility records on waste handling and testing and inspection are maintained;
- Facility inspections are properly performed;
- Incident reports are properly prepared and submitted;
- Contingency plans are implemented;
- Employee records are properly maintained; and
- Air, water, waste, methane, and leachate handling and treatment systems are maintained.

Training programs will primarily be in the form of on-the-job training provided by the site supervisor and other experienced employees. However, training activities may also include off-site professional seminars, certification and training programs, etc. Training will be

conducted during construction and throughout waste placement operations. The primary purpose of personnel training is to teach employees to perform their duties in a way that assures the facility is in compliance with all applicable regulations. The employee training program will include appropriate training as needed for different job functions, such as:

General Health and Safety Considerations;

- Security;
- Emergency Procedures;
- Fire;
- Personnel accidents;
- Emergency equipment;
- Emergency communications;
- Accidental spills; and
- PPC, SPCC and other plans contained in the permit.

General Waste Handling and Disposal Procedures

- Routine operating procedures;
- Potential hazards associated with placing waste; and
- Liner integrity.

Training will be provided to each employee throughout his or her employment on-site. Employees operating the scales will be registered scale masters, which will ensure that they have obtained appropriate training. Training records will be maintained on-site. These records will indicate the type of training and date(s) received by each employee.

SECTION F – CONSTRUCTION SCHEDULE

Describe the construction schedule in relation to the grid coordinate system for signs and markers. For a municipal waste landfill, also describe the sequence of operation relating to the grid coordinate system. Explain where uniform permanent physical markers will be placed, how these physical markers will be maintained and of what materials the markers will be constructed. Further, explain how the proposed disposal area perimeter will be distinguished from the perimeter of the total property. What will be written on the required sign, what will it be constructed of, and where will it be located?

Site construction, development and operation will continue to utilize the site survey coordinate system. The existing coordinate system is established on-site by several on-site survey monuments. The phased landfill development plan will proceed as identified on the plan drawings for the facility.

Monuments may be installed as-needed during the construction and development of the facility. The disposal area footprint will be marked in the field by PVC pipe markers, metal signs or other markers. Other landfill support items such as sideslope riser vaults and pipe cleanouts are also utilized for the delineation of the footprint area.

A facility sign will be located at the entrance to the landfill and will remain in place throughout the life of the facility. The subject sign will be easily identifiable, and will show the name, address, telephone number, permit number and public operating hours for the acceptance of waste for disposal.

SECTION G – SITE PREPARATION

Describe the site preparation plan/schedule for disposal of solid waste at the proposed facility. Include the following:

- 1. Identify the maximum and average daily weight or volume of waste to be accepted at the proposed site, and a detailed justification of these volumes.**

The facility will be operated in accordance with the maximum and average daily waste receipts specified in Form 1. These maximum and average daily waste receipt limitations were previously approved for this facility as part of the North and South Expansion Major Permit Modification.

- 2. For a municipal waste landfill, describe the method of compliance relating to measurement of waste. If 30,000 or more cubic yards of solid waste is expected to be accepted in a calendar year by this proposed facility for disposal, it must be weighed. The operator of this scale must be a licensed public weighmaster. Explain how the scale will be inspected and maintained to assure accuracy. If the proposed facility is not required to have a scale, explain how the waste will be accurately measured when it is received at the proposed facility.**

A truck scale will be utilized at the facility to measure incoming waste throughout the operation of this facility. All incoming waste will be weighed at the scale house and recorded. The scales and all certified weighmasters will comply with §273.214 of the Municipal Waste Regulations. In addition, the weighmasters will be licensed in accordance with the Commonwealth of Pennsylvania Act 64. Scales will be checked once per year, minimum, for accuracy and maintained and inspected thereafter as required. Inspections and accuracy checks will be conducted by qualified personnel. Necessary scale maintenance and repairs will be conducted in accordance with manufacturer recommendations. After the site is closed, the scales may be removed from the site.

As required by §273.311(b)(11) of the Municipal Waste Regulations, the facility shall document and record information for all vehicles accepted at the facility with a gross vehicle weight over that specified in §273.311(b)(11). This information shall be maintained in a log book at the facility.

- 3. For a demolition/construction waste landfill, describe the method of compliance relating to measurement of waste. Explain how this waste type will be accurately measured by weight of volume prior to unloading.**

This is a municipal waste landfill facility which also accepts construction/demolition waste. Procedures for measuring and managing these wastes will mirror those followed for other wastes accepted on-site.

SECTION H – WATER QUALITY PROTECTION

Describe a plan that is consistent with basic limitations relating to operating requirements.

1. Has written approval been given by this Department for background groundwater monitoring?

This is an existing landfill facility which has been performing groundwater monitoring for an extended period of time. This groundwater monitoring will continue throughout the operation, closure and post-closure period for the landfill in accordance with the approved Groundwater Monitoring Plan for this facility.

2. Has background groundwater monitoring begun?

Background groundwater monitoring began at this site in approximately 1999.

3. How will the operator prevent unapproved special handling wastes and/or residual wastes from being accepted and disposed of at the site? How will the operator handle and dispose of approved special handling waste(s), and what specific measures will be taken to prevent exposure to landfill personnel, haulers and others?

The Form R for this facility includes an extensive program for the identification, tracking and inspection of special wastes accepted by this facility. This narrative provides a summary of some of the Form R monitoring procedures. Where this narrative and the Form R conflict, the Form R specifications shall be utilized.

Upon arriving on-site, incoming loads may be visually inspected by on-site personnel. As a vehicle is unloaded, equipment operators will visually observe the material as it is unloaded to ensure that no unpermitted wastes are being disposed.

Should unpermitted wastes be encountered, the operator of the associated hauling vehicle will be instructed to discontinue unloading operations. Following this, the operations personnel shall immediately contact the site supervisor for further instructions. Additional actions may include allowing the completion of disposal, re-loading the suspect vehicle with all dumped materials or other remedies. Records of this event shall be completed as required by Form R.

4. How will the operator prevent hazardous and explosive wastes, and liquids from being accepted and disposed of at the site?

Inspection procedures identical to those described in Item H(3) above will be employed to prevent hazardous and explosive wastes from being accepted and disposed of on-site. Liquid wastes may be accepted at this facility and solidified prior to disposal, consistent with the Form P – Solidification Plan. Records of the suspect hauler transporting materials rejected will be retained on-site for future reference.

5. Is leachate recirculation planned?

At this time, leachate recirculation is not planned for this facility.

SECTION I – OPERATING HOURS

Provide the proposed operating hours of the facility.

The following operating hours will apply to this facility:

Third-Party and Public Haulers
(Waste Transportation Vehicles Not Owned by Noble Environmental)

Activity	Hours
Waste Acceptance ⁽¹⁾	6 am – 5 pm M-F, 6 am – 1 pm Sat
Waste Disposal ⁽²⁾	6 am – 530 pm M-F, 6 am – 130 pm Sat

- (1) Waste Acceptance – all wastes will be scanned for radiation, weighed and disposed of on the day of acceptance within the disposal hours.
- (2) Waste Disposal – this includes the actual disposal of wastes in the active disposal area. Waste disposal includes the disposal of wastes immediately following acceptance.

Intercompany Haulers
(Waste Transportation Vehicles Owned by Noble Environmental)

Activity	Hours
Waste Acceptance ⁽¹⁾	24 hours per day, 7 days per week ⁽¹⁾
Normal Waste Disposal ⁽²⁾	6 am – 7 pm M-F, 6 am – 3 pm Sat ⁽²⁾
Staged Waste Disposal (Scaled Previously) ⁽³⁾	5 am – 7 pm M-F, 5 am – 3 pm Sat ⁽³⁾
Staged Waste Disposal (Not Scaled Previously) ⁽⁴⁾	6 am – 7 pm M-F, 6 am – 3 pm Sat ⁽⁴⁾
Staging of Waste Containers / Vehicles	24 hours per day, 7 days per week ⁽⁵⁾
Maintenance/Emergency Activities	24 hours per day, 7 days per week
Construction	24 hours per day, 7 days per week

- (1) Waste Acceptance – this includes wastes being brought into the facility through the entrance. Wastes brought in during normal waste disposal hours will be scanned for radiation, weighed and disposed of on the day of acceptance. Wastes accepted outside of normal disposal hours will be staged and disposed of on the following working day.
- (2) Normal Waste Disposal – this includes disposal of waste which is accepted during the normal waste disposal hours. The wastes will be weighed, scanned for radiation and immediately disposed of.
- (3) Staged Waste Disposal (Scaled Previously) – this includes the removal of a previously weighed waste container or vehicle from the staging area for disposal. The waste would have been accepted on a previous working day outside of normal waste disposal hours and would have already been scanned for radiation, weighed and placed into the staging area. These containers will proceed directly to the active disposal area on the next working day for disposal.
- (4) Staged Waste Disposal (Not Scaled Previously) – this includes the removal of a waste container or vehicle from the staging area for disposal that has not previously been weighed. The waste would have been accepted on a previous working day outside of normal waste disposal hours and would have been placed into storage without being weighed. These containers will be removed from the storage area, hauled to the entrance to be weighed in, scanned for radiation and then immediately disposed of.
- (5) The staging of waste containers / vehicles is discussed in Section K of this narrative. A gate or other restrictive device will be used to keep waste hauling vehicles from accessing the disposal area outside of Normal and Staged Waste Disposal hours. A physical barrier and signage will be present to separate the scaled and not scaled containers. The staging area will be inspected daily by landfill personnel.

The hours shown above are presented as the maximum hours for the facility. The hours may be adjusted (reduced) as needed to meet operational needs.

SECTION J – ACCESS PLAN

Describe the Access Road Plan, including designs, cross-sections and specifications. Indicate design load limits, and identify maximum anticipated loading to be encountered.

- 1. Explain how the access roads and parking and maneuvering areas will be designed, constructed and maintained to prevent erosion and sediment to streams or runoff.**

Facility access roads and parking areas will be maintained to be sufficiently sized to support incoming waste loads and vehicle staging within the property. Access roads, parking areas and maneuvering areas may be constructed of compacted earthen/aggregate material or paved. Roads shall be graded to promote runoff away from parking and roadway areas.

- 2. Will streams or waterways be crossed?**

Neither facility access roads nor parking areas will cross local streams or waterways.

- 3. Describe the drainage system for temporary and permanent roads and parking and maneuvering areas to be located at the proposed facility.**

Facility access roads are and will continue to be sloped to promote stormwater runoff to adjacent areas. Parking and maneuvering areas will be sloped to promote surface runoff to drainage ditches or culverts.

- 4. Describe the materials to be used on permanent or temporary roads and parking and maneuvering areas at the proposed facility.**

Facility access roads and parking areas will support incoming waste loads and be graded to facilitate drainage of water. Access roads, parking areas and maneuvering areas may be constructed of compacted earthen/aggregate material or paved. The existing on-site access roads shall be utilized for the main landfill traffic. As discussed elsewhere in this narrative, temporary and permanent roadways will be constructed as needed.

Will the grade of any access road be greater than 12%?

Permanent access roads will not exceed an average grade of 12%.

- 5. Describe the locations, widths and methods of maintenance for all access roads to be located on the proposed permitted facility, and on the entire property.**

Permanent access roads are shown on the permit drawings for this facility. Access roads, and parking and vehicle maneuvering areas will be inspected by facility personnel for damage. Repairs will be completed as needed. Roadway maintenance will include brooming, watering and other activities to ensure that roadways are free of mud and dirt accumulation.

SECTION K – ACCESS CONTROL PLAN

Describe the Access Control Plan, including:

- 1. Use and locations of fencing and barriers to control access. Include heights, dimensions and construction materials. Fences are required around impoundments, leachate collection and treatment systems and gas processing facilities, if these facilities have not been included within the site fence.**

Access control for this facility includes natural barriers, gates across roadways, and fencing around sedimentation ponds (where natural features do not include natural barriers), gas management areas and sensitive support facilities. Natural barriers contributing to access control at the site include steep topography and wooded areas surrounding portions of the property.

In addition to natural barriers, gates on access roads also control access to the facility by vehicles. Support facilities including the leachate storage area, gas management compound, and sedimentation ponds shall be enclosed by fencing or access limited by other means.

- 2. Site security provisions.**

Site security provisions include the natural barriers, gates and fencing identified in Item K(1). Public hours of landfill operation are displayed on a sign at the entrance to the landfill. During times when the landfill is not receiving waste, gates which access the active landfill disposal area will be closed and locked to restrict vehicular access.

ROLL OFF BOX STAGING AREA

A staging area for waste hauling vehicles / containers will be established at this facility in the area delineated on Figure 1, included with this narrative. Signage will be installed to identify the staging area. Alternative or revised locations may be proposed to the PADEP in writing in the future and will only be utilized once written letter or e-mail approval is granted. The shape or location of the staging area may vary from that shown on Figure 1 to best fit operations. Gate(s) or other methods will be installed to restrict vehicular access to the active disposal area during times when the landfill is not receiving waste.

This staging area may be operated on a 24-hour basis where the hauling drivers can place a properly tarped loaded box on the ground and retrieve an empty box to continue work activities. The full staged containers shall be marked or separated from the empty containers to allow identification of the full staged boxes. Full staged boxes shall adhere to the applicable PADEP waste storage regulations. Prior to disposal, all waste containers shall have been weighed and passed through the fixed portal radiation detectors. All waste disposal will occur within the hours presented in Section I.

TRUCK/VEHICLE STAGING

Full trucks arriving outside of waste acceptance hours will be staged in the designation staging area. This vehicle staging area is presented and described on Figure 1, included with this narrative.

The truck/vehicle staging area may be operated on a 24-hour basis. During staging, trucks shall be parked in the designated staging area so as not to impede normal traffic flow along the landfill entrance road or roads located within the landfill. Parking along the side of the landfill entrance road or roadways within the facility will be allowed. While staged, all loads shall be properly tarped and secured within the vehicle/trailer. During the next working period where waste disposal is taking place, all staged vehicles and/or trailers shall be disposed at the landfill.

WASTE LOAD / CONTAINER THAWING

Vehicles and containers which contain frozen materials may require additional handling methods such as applying heat or utilizing an excavator or other piece of equipment to remove the waste materials. Once the material is thawed or prepared for disposal through other techniques, the container will be taken to the active disposal area and processed similar to any other newly arriving waste.

3. Describe the facility sign that will be placed at the junction of each access road and public road.

The sign currently located at the facility access road connection with the public road will be maintained. This sign will include the facility name, the facility solid waste permit number, and public operating hours. Additional information will also be presented on this sign as deemed necessary by the facility. The information may be changed on this sign by the facility as needed when such things as the public operating hours change. Signs may be used within the landfill facility at roadway intersections or other locations deemed necessary by the facility as needed throughout the landfill.

SECTION L – NUISANCE MINIMIZATION AND CONTROL PLAN

Describe the Nuisance Control Plan, and include details regarding the methods by which the operator will perform regular, frequent and comprehensive inspections to evaluate the effectiveness of the plan for Vectors, Odors, Noise, Dust, Litter, and Other Public Nuisances. The plan needs to include the following items:

- 1. An inventory and map of areas at the facility that has the potential to cause nuisances.**
 - Dominant wind direction**

The dominant wind direction is westerly as taken from “Climatic Wind Data for the United States” for the period of 1930 to 1996 as prepared by NOAA.

- **Hauling, truck staging, and radiation staging areas**

Refer to Figure 1 included here for the truck staging area and Form X for the radiation staging area.

- **Leachate and gas management components**

Refer to the applicable permit, Form 25 and Form K for detailed information for the leachate management and gas management components. The leachate management system includes a network of piping with cleanouts, manholes, pump stations, leachate storage and processing tanks a leachate evaporator and leachate truck loadout operations for offsite disposal. The gas management system includes gas extraction wells, gas collection piping, a high-btu gas plant, blowers and flares and a gas condensate management system.

- **Disposal areas, intermediate covered areas, anchor trenches, and trash relocation activities**

The current landfill disposal areas and intermediate covered areas are presented on the drawings submitted with the most recent Annual Operation Report for this facility. The location of the liner system permanent anchor trenches are at the permitted limit of waste placement. Waste relocation activities are not planned at this facility.

- **Landfill cell construction, fill and capping sequences**

Refer to Section C, Item 2 of this narrative.

- **Landfill siting and position to nearby residences**

The location of the landfill disposal area meets all siting criteria required under Form D.

2. **Description of nuisance related monitoring or response activities**

- **Organization flow chart with each person’s duties and responsibilities with regard to this plan**

Refer to the Contingency Plan for Emergency Procedures, included with Form L. Generally, the site personnel responsibilities with respect to nuisance related monitoring and response activities are summarized below:

General Manager – The General Manager is responsible for the overall operation of the landfill. The General Manager or designee shall confirm that nuisance

monitoring is being performed in accordance with this plan. If nuisances are identified as part of the monitoring or from complaints, the General Manager or designee shall confirm that proper personnel and efforts are being applied to correct the nuisance concern. The General Manager may not perform the actual monitoring or implement the corrective actions, the General Manager responsibilities are limited to the oversight to ensure that this plan is carried out as identified here.

Landfill Operations Manager – The Landfill Operations Manager or designee will perform the nuisance monitoring activities. If nuisances are identified as part of a regular monitoring event, the Landfill Operations Manager will implement changes with the assistance of other landfill staff to minimize the nuisance in a timely manner. The Landfill Operations Manager will identify and report any significant nuisance monitoring findings to the General Manager.

- **Notification list for the facility and respective agencies**

Refer to the Contingency Plan for Emergency Procedures, included with the Form L. The Landfill Operations Manager will be familiar with the site and permitting agencies where current contact information will be maintained by them for rapid notification when required.

- **A description of how the facility will be operated to eliminate off-site nuisances**

The “elimination” of off-site nuisances, is infeasible, and is in excess of the landfill operating requirements established by PADEP regulations. Per PA Code 25 §273.136 and §273.218, (titled “Nuisance Minimization and Control Plan” and “Nuisance Minimization and Control”, respectively) operators of landfills within the State of Pennsylvania are required to “minimize and control” potential offsite nuisances. To that regard, the Sanitary Landfill will implement the following strategies to minimize the occurrence of offsite nuisances.

a. Monitoring frequency and locations

Sanitary Landfill personnel or outside consultants hired by Sanitary Landfill perform monitoring of the landfill gas management system well field, perimeter monitoring probes and will conduct surface scans of the waste disposal areas. The perimeter LFG monitoring probes, surface scans and LFG extraction wells are monitored in accordance with the requirements and frequency identified in the Form K and the Title V permit for the facility. The integrity of the daily and intermediate cover are observed and documented as part of the surface scans.

As part of normal daily operations, the Landfill Operations Manager or designee shall perform daily on-site nuisance observations. These on-site observations shall be performed during the working day as the staff travels the on-site roadways as part of normal operational activities. This will

include travel on the landfill perimeter road a minimum of once per day. If on-site nuisances are detected they will be investigated and, if it is determined that the detected nuisance may have the potential to result in an off-site nuisance, an off-site nuisance survey shall be performed. The off-site nuisance survey shall be performed in those off-site areas most likely to be affected by the nuisance based on the weather, operation and other conditions. A more detailed description of nuisance odor mitigation techniques is presented in the Nuisance Odor Control Plan presented in Attachment 14-5.

b. Inspections for odorous loads

It can be expected that the majority of incoming waste loads will possess some level of odor upon acceptance. If an incoming load at the working face is determined to possess particularly strong odors, the load will be given special attention by spreading at the working face and mixing with other waste materials being disposed at that time. Loads identified to potentially generate odor nuisances will be identified upon receipt at the landfill, based on past experience. If a load arrives which is suspected to generate odor or other nuisances, the landfill operational staff will be contacted via radio or phone by the scale house or Landfill Operations Manager so that the load can be immediately handled upon arrival at the active disposal area.

If certain waste types or waste generators are identified as having a high likelihood of generating a nuisance for the landfill, the landfill unilaterally may elect to not receive this material. This evaluation will be based on the landfill operational experience if a relationship is identified between waste types or waste generators and potential nuisances.

c. Monitoring and inspections of the landfill's gas/odors controls

Refer to Form K for information on the landfill gas management system and the Nuisance Odor Control Plan included as Attachment 14-5.

d. Dust suppression

Refer to Section L, Item 5 of this narrative.

- A description of internal and external communications and alarms

Refer to the site's Form L / Contingency Plan for Emergency Procedures.

3. Describe the facilities meteorological monitoring program

Refer to the permitted Form 54 for Background Meteorological Monitoring for a description of the facility's meteorological monitoring program, including:

- Meteorological weather station location
- Data to be collected
- Activities limited by the weather and the facilities threshold

In the event that the meteorological equipment is malfunctioning, Sanitary Landfill will utilize the closest publicly available weather data to obtain the information required as part of Form 54 until the equipment is operating correctly.

4. Detailed plan for preventative maintenance and nuisance controls

- Description and location of portable/temporary odor controls

Sanitary Landfill has an active landfill gas management system that is adjusted with control valves placed within the well field piping as well as control valves at each well head. Adjustments to the landfill gas management system are performed as part of the well head monitoring; additional adjustments to the well field may be performed if appropriate to minimize non-transient odors should they be detected.

Other possible temporary odor controls that may be implemented consist of promptly disposing of waste loads that are identified as strongly malodorous and covering with daily cover and/or other waste. See the description below for the use of soil daily cover to control potential odor nuisances.

If an odor neutralizing misting or other control device system is deemed necessary, an appropriate system will be placed into operation. Effectiveness of the system will be evaluated during daily landfill monitoring activities as discussed previously.

- Preventative nuisance measures used during the facilities construction

A water truck and power broom may be used to control dust generated during landfill and construction activities.

- Description of the nuisance suppression program and the location of any fixed odor controls

The landfill facility operates an active landfill gas management system. Form K presents a description of the landfill gas management system components.

Additional measures include the application of daily cover. The site is permitted for the use of several alternative daily cover materials. However, if on-site odor nuisances are observed which may have the potential to result in off-site nuisances, the application of soil daily cover may provide an effective means to cover the waste and minimize odor nuisances. This shall include the placement of on-site

soils excavated from borrow areas. The daily cover for odor minimization shall include a soil or soil/rock mixture where once placed by the landfill operational equipment.

- **Procedures for handling nuisance prone waste**

When incoming loads of nuisance prone waste such as sewage sludge arrive at the facility scale house, the nuisance loads may be disposed in the active landfill area at a staggered rate. This may diminish the possible odors that may emanate from the nuisance load as it is disposed in the active landfill area. Once the load is disposed in the active landfill area, the material shall be promptly covered with soils and/or other waste. Any nuisance loads that wait for disposal shall remain covered to minimize the migration of odors.

Loads which potentially generate odor nuisances will be identified upon receipt at the landfill based on past experience. If a load arrives which is suspected to generate odor or other nuisances, the landfill operational staff will be contacted via radio or phone by the scale house or Landfill Operations Manager so that the load can be immediately handled upon arrival at the active disposal area.

If certain waste types or waste generators are identified as having a high likelihood of generating a nuisance for the landfill, the landfill may unilaterally elect to not accept this material. This evaluation will be based on the landfill operational experience if a relationship is identified between waste types or waste generators and potential nuisances.

- **Dust minimization plan**

Road watering and sweeping shall be performed as needed during construction and daily operations when vehicle travel may generate off-site visible dust emissions.

- **Employee and contractor training**

Refer to the Contingency Plan for Emergency Procedures included with Form L.

- **Inspection frequency for odor management equipment**

Components of the active LFG system are inspected in accordance with the requirements identified in Form K and the Title V permit for the facility.

- **Emergency equipment**

Refer to the Contingency Plan for Emergency Procedures included with Form L.

5. Provide specific countermeasures that will be undertaken by the facility in the event of a nuisance for:

All nuisance situations identified below and any others will be evaluated by facility management (identified in Section L.2 of Form 14). The initiation of mitigation activities to an observed nuisance will be determined on a case-by-case basis and will be initiated by the facility management identified in Section L.2.

- **Dust suppression from hauling, waste placement, or processing activities**

Fugitive dust will be suppressed by the use of the following practices:

- a. The paved portion of the main access road will be cleaned by watering or sweeping, as needed.
- b. Unpaved portions of the access roads will be watered when necessary and weather permitting.
- c. Upon leaving the disposal area, the wheels of the vehicles which were used to transport wastes will be cleaned, if necessary, to prevent earthen material from being carried out onto roadways. The wheel wash will be utilized as needed.
- d. Earth or other material deposited by trucking or other means on the paved roadways, including public highways, shall be removed from the paved roadways.
- e. Speed limit signs shall be posted for access roads and active disposal roads. Speed limits will not exceed 15-mph for access roads and 10-mph for active disposal roads.
- f. All trucks entering the landfill shall be covered.
- g. Open burning of rubbish will not be permitted.

The items identified above are regular landfill operational and maintenance items which are to be implemented to minimize dust nuisances. If dust nuisances are observed during on-site nuisance observations or dust complaints are received, the facility shall review the items identified above to confirm that they have been adequately implemented. Additionally, a review shall be performed to assess the sources of the dust nuisances. The identification of the dust nuisance sources shall be utilized to outline enhanced or additional standard operating practices to minimize the source or provide more rigorous operational procedures to minimize and control the nuisance.

- **Odors**

Information is presented below concerning the identification of odor nuisances at the site, assessment of odor sources and corrective actions to be taken to minimize odors. It is assumed that the primary sources of odor will either be (a) during waste acceptance activities or (b) landfill gas related. A discussion of potential odors from waste acceptance is contained below, while a discussion of landfill gas related concerns is captured under the heading “Landfill Gas Detection”.

a. Odors from Waste Acceptance

The facility is permitted by PADEP to accept sewage sludge which may produce detectable odors during transport to the landfill. Transport-related odors are not the facility's responsibility. However, once at the landfill, steps will be taken to inspect incoming sludge to determine if prompt disposal is necessary to minimize sludge-related odors. Should the incoming sludge pose a significant potential for strong and persistent odors outside the permit boundaries, the sludge shall be promptly disposed in the active landfill area and covered with soil and/or other waste shortly after disposal.

Loads which may potentially generate odor nuisances will be identified upon receipt at the landfill based on past experience. If a load arrives which is suspected to generate odor or other nuisances, the landfill operational staff will be contacted via radio or phone by the scale house or Landfill Operations Manager so that the load can be immediately handled upon arrival at the active disposal area.

If certain waste types or waste generators are identified as having a high likelihood of generating a nuisance for the landfill, the landfill may unilaterally elect to not accept this material. This evaluation will be based on the landfill operational experience if a relationship is identified between waste types or waste generators and potential nuisances.

b. Nuisance Odor Observation Follow-up

In response to identification of potential on-site nuisance odors at the facility which have the potential to include in off-site nuisances, the Landfill Operations Manager or designee may:

- Evaluate potential on-site sources for the cause of the nuisance odor:

LFG Management System

- Extraction wells / horizontal collector points
- Conveyance piping
- Condensate sumps
- LFG Flare and associated components
- Valves

Leachate Management System

- Sumps
- Manholes
- Piping

Cover System

- Active Face
- Daily cover
- Intermediate Cover
- Final Cover

Other

- Evaluate the size of the working face against the incoming tonnage rate (i.e., is it appropriate for the amount of waste being accepted?).
- Evaluate the condition of daily and intermediate cover. Inspect for ruts, gaps, inadequate thickness, appropriate materials, application of greater thickness material, and the use of alternate daily cover material.
- If an odor complaint was received, compare present odor complaint to any past complaints. Identify any correlation between the current complaint and any past complaints (e.g., do the complaints come at a specific time of day or when a specific operation is taking place on the site?).

Refer to Form 54 for the approved Meteorological Monitoring Plan.

- **Vectors**

Daily cover, or an approved Alternative Daily Cover (ADC) shall be applied to the waste to minimize the attraction of insects and rodents to the landfill. The landfill will also be graded to eliminate standing water to minimize the attraction and breeding ground for certain insects. Due to daily cover practices, vectors have not been a significant or consistent problem at the facility.

Upon observation of vectors at the facility:

- a. The Landfill Operations Manager or designee shall assess the source which is attracting the vectors. This may include waste materials which the vectors are eating, the warmth of portions of the gas system in cold months or other items which may attract vectors.

- b. Upon identification of the vector attraction, the landfill operations staff or an outside vector control company shall be contacted to seal/minimize the vector attraction where the vectors will no longer be attracted to that area.
- c. Damages to the soil cover, gas system components, leachate components or other items shall be repaired as part of this process.
- d. Following the identification of the vector attraction and elimination of that interest, the landfill operations staff shall to the greatest extent possible minimize that attraction in the future to minimize the presence of vectors.

- **Landfill gas detection**

Generally, monitoring for landfill gas related odors will be conducted as described by the approved Form K for this facility, odor surveys and/or as mandated by NSPS requirements or other PADEP requirements. Corrective actions will likewise be implemented per the direction of these documents.

The site has perimeter monitoring probes and conducts surface emission monitoring. Refer to Form K for more details about the surface emission monitoring plan.

To facilitate the collection of landfill gas, vertical extraction wells are drilled into the waste mass at such times that are practical throughout the life of the site. These wells will be spaced as needed throughout the waste mass. Landfill gas extraction wells shall be installed as required by the NSPS regulations considering the age of waste placement and as needed to further collect landfill gas and minimize LFG odors. Additionally, horizontal gas collectors may be installed to collect and manage gas on an interim or permanent basis. Installation of the landfill gas management system shall be staged based on the pace of development of the landfill disposal area.

Surface scans of the landfill are performed in accordance with the NSPS regulations. This requires the performance of surface scans at a set geometric pattern within certain portions of the landfill area. Areas of the landfill where surface scans are above the required trigger level are to be re-monitored and corrected as required by the NSPS requirements.

The implementation of the surface scans and corrective actions will minimize nuisances resulting from fugitive emissions or landfill odors which may result in nuisances.

- **Litter and Litter during windy conditions**

Portable fences are placed downwind of the prevailing wind directions along the edge of the landfill disposal area. With each successive phase, the fence is moved

to the edge of the next phase of construction/waste placement. The fencing shall be cleaned as needed by site personnel who then dispose of the litter in the active disposal area. Fugitive litter that escapes the fencing is picked-up as conditions allow.

Landfill operational practices identified above shall minimize litter nuisances. If the operational procedures are not adequate and litter is found to be getting outside of the landfill facility area, the steps below shall be performed:

- a. Blown litter shall be collected and removed as soon as possible.
- b. Access roads shall be observed for the presence of litter and cleaned as needed.
- c. The location of the litter fences (temporary and permanent) shall be reviewed to determine if they shall be re-configured or if additional fencing is needed.
- d. As part of the active disposal operations review, it should be confirmed that waste vehicles are not de-tarpping or opening waste discharge areas of the truck and exposing them to wind earlier than needed.

- **Noise**

Noise caused by trucks and construction equipment shall be suppressed by maintaining the proper functioning machinery. Mufflers shall continue to be routinely checked and replaced whenever necessary. The geography of the disposal area also helps to soften noise, as considerable distance exists between the site and occupied dwellings or businesses. Trees are utilized where ever possible to obstruct the view of the site from public areas. This, too will aid in dampening noise from the facility.

If landfill operations and construction results in off-site noise nuisance, site personnel will review the size, type and operation of the site equipment to determine if equipment repairs or modifications are needed to minimize any nuisances.

6. Provide any additional information as requested by the Department, Host Municipality, or Host County.

At this time, there is no additional information requested by the Department, Host Municipality, or Host County.

SECTION M – LITTER CONTROL PLAN

Describe the Litter Control Plan, and explain how the operator will prevent litter from blowing or becoming deposited off-site, including:

1. The types, locations and maintenance procedures for litter fences to be used at the proposed facility.

Blowing refuse may be controlled on-site by portable litter control fencing placed downwind of the working face to catch airborne trash. Fencing will consist of wood and/or wire snow fence or plastic mesh. The facility shall repair the fence, as necessary.

2. The frequency of litter pick-up and disposal.

Litter escaping the working face will be picked from fencing, tree breaks, buildings, and the surrounding area as-needed (approximately on a weekly basis) and disposed of on-site. The frequency for gathering blown litter will be increased should the need arise.

SECTION N – SALVAGING

Explain if salvaging will occur on-site during hours of operation and non-operation. If yes, describe the methods of control over salvaging, and how salvaging will occur without interfering in the operation of the landfill. Further, describe the methods for on-site movement and storage of salvaged materials, as well as off-site storage and transportation of salvaged materials.

Salvaging of materials will not be allowed or conducted unless salvaging is controlled by the operator prevent interference with prompt and sanitary operations and is conducted in accordance with 25 PA Code Chapter 273.

SECTION O - AIR QUALITY CONTROL

Describe the methods to control dust, and minimize and control air pollution at the proposed facility from exceeding any ambient air quality standards.

Fugitive dust will be suppressed by routine watering of paved and unpaved access roads, roadway shoulders, and parking lots. Paved and unpaved access roads will be graded so

that water runs off and does not pool. Additionally, trucks entering the facility will be covered, and a 15 mile per hour speed limit will be enforced on unpaved access roads. This facility includes perimeter buffers to minimize dust impacts to the surrounding areas.

SECTION P – WASTE PLACEMENT

1. Initial procedures for placement of waste on the liner system.

Upon completing construction and gaining PADEP approval for each new disposal area, an approximate initial lift of select refuse shall be placed approximately eight feet thick as a single lift. The select refuse will consist of items that do not have the potential to penetrate the protective cover, or clog or puncture the leachate collection zone or liner system. Select refuse in this lift will not include construction/demolition waste, treatment plant sludge, or large, bulky items. Refuse placement in the initial lift will be conducted under visual inspection by on-site spotters and/or attendants.

2. An explanation for the location(s) of unloading area(s) at the proposed facility, and methods by which loaded collection vehicles will be directed to unload promptly at these areas. Waste cannot be unloaded where continuous or intermittent contact would occur with the groundwater table.

Facility personnel will designate the area(s) to be used for waste disposal. Traffic will proceed to the working face along the site access road(s). Once situated properly at the working face, waste haulers will be instructed to unload their vehicles. Unloaded vehicles will be directed back to the access road(s) and will exit the site following any necessary empty weight recording.

RESIDENTIAL/CUSTOMER DROP OFF AREA

In addition to the active disposal area located within the landfill limits, a residential/customer drop-off area may be maintained within the facility limits. The drop off area shall include the placement of a roll off box that will eliminate the need for residential or other small load drop off to enter the main disposal area of the landfill. Based on the load quantity and vehicle type, the landfill scale operator will decide if the customer is to be directed to the main landfill disposal area or utilize the customer drop off box. The roll off box positioned for customer drop off shall be periodically emptied by landfill personnel or others. Since each customer disposing within the roll off box positioned at the customer drop off area was weighed and ticketed, the roll off box from this area does not need to be weighed prior to or following disposal within the main landfill disposal area. The current location of the residential / customer drop off area is shown on Figure 1 included here. This location may be changed as needed to suit operations so as the location remains within the facility limits.

3. Procedures for and the degree of compaction of solid waste. Describe the number and thickness of lifts, and explain how solid waste will be spread and compacted in layers.

Following the initial eight foot lift of select refuse, subsequent lifts will be placed and compacted to a thickness where effective compaction can be achieved with the equipment utilized at this site, based on site experience, equipment manufacturer information or other source. Compaction will be achieved using a minimum of two passes with the bulldozer/compactor or as otherwise determined by the landfill personnel.

4. Describe how the working face will be managed, and:

(i) compacted and covered on a daily basis for municipal waste landfills, and;

Following the initial eight foot lift of select refuse, subsequent lifts will be placed and compacted to a thickness of approximately two feet. The working face will be maintained as small as possible at all times and sideslopes will not exceed a slope of 50%. Daily cover soil or an approved alternative will be placed over the waste at the end of each working day. The top of each lift will be graded to shed surface water runoff from the landfill operations area.

(ii) kept to a size which can easily be compacted for Construction/Demolition waste landfills;

This item is not applicable; the facility is a municipal waste landfill.

(iii) how water that contacts the working face will be contained, and not combined, with surface water runoff.

Disposal operations will be configured to promote surface runoff for all water not in contact with the working face. For each new disposal cell, waste placement will quickly bring the subject cell to surrounding grade. Intermediate cover will be utilized as described in Section S below, and will be stabilized. Stormwater from areas with stabilized intermediate cover soil will be directed to perimeter ditches by gravity. Stabilization of intermediate cover slopes may include the establishment of vegetation, tracking and application of mulch or other stabilization methods to reduce erosion of the slope and the discharge of sediment laden water. Any leachate seep(s) identified on slopes where surface water is being directed to perimeter ditches shall be immediately repaired. Until such time that the seep(s) are repaired, the runoff shall be separated from the surface ditches/channels or directed into the leachate collection system to allow for treatment of liquid as leachate.

Water that contacts the working face will be absorbed by the waste or contained within the perimeter berm. Such water will drain through the leachate collection system.

SECTION Q – DAILY COVER

For a municipal waste landfill, describe the frequency of placement, composition, design requirements, storage duration and location(s), maintenance (including revegetation and erosion/sedimentation controls), and thickness of approved daily cover to be placed on exposed solid waste at the proposed site. Include a quality assurance plan.

Exposed solid waste shall be covered at the end of each working day, at the end of every 24 hours, or at the completion of each lift, whichever interval is less. No daily cover slope shall exceed 50% in slope. Daily cover material will be capable of preventing vectors, odors, blowing litter, other nuisances and controlling fires. It will also be capable of allowing loaded vehicles to successfully maneuver over it after placement and will cover the solid waste without significant change in its properties. Daily cover shall also be consistent with the Form R for this facility. A five-day supply of daily cover soil shall be available on-site at all times (including borrow areas). Table A-3 in Appendix A of the CQA/QC Plan presented with Form 24 includes a summary of daily cover soil testing including visual monitoring of material quality and placement criteria.

For cases where daily cover or intermediate cover is placed on slopes above a newly lined area that does not include waste disposal, care shall be taken to minimize the rolling of large soil cover pieces/rocks down the slope to the lined area. This protection to the newly lined area shall be achieved through the use of soil cover with particle sizes less than 6-inches (maximum) or through the installation of a bench or slope catchment area that would act as a barrier to large diameter material reaching the newly lined area.

- A temporary bench may be placed on the interim slope above the toe of that slope to control runoff and act as a barrier to large diameter soil materials reaching the newly lined area. This bench shall be graded into the waste slope or constructed as a “tack-on” bench using soil after the slope is graded and filled.
- A catchment area may also be utilized to protect lined areas below an interim slope. The catchment area may include a set back at the base of the waste slope with a grade sloping towards the slope or some other offset area that would serve to collect large diameter materials and protect a newly lined area below the slope.

Soil material with a maximum particle size of 6-inches shall be used below the bottom bench or catchment area. Soil cover material with larger diameter particles which satisfy the cover performance requirements may be used above the bench area since protection to the lined area is provided by the bench or catchment area.

Alternative daily cover materials may be used at the facility including geosynthetic tarps and soil like materials. The facility currently has the approval to utilize several geosynthetic tarps (Fabrene – RTGPN9N9, Pactec – FRU, Integra 12FR and Cormier WP1440FR) foundry sand and RECMIX slag. Additional alternative daily cover materials may be used in the future with prior approval from the Department.

SECTION R – INTERMEDIATE COVER

Describe the frequency of placement, composition, design requirements, storage duration and location(s), maintenance, and thickness of approved intermediate cover to be placed on partial or completed lifts at the proposed site. Explain how slopes, not to exceed 50%, will be maintained, covered, compacted, and revegetated to control erosion and sedimentation. Include a quality assurance plan and identify procedures to establish intermediate elevations.

Intermediate cover shall be placed within 7-days of waste disposal within an area that has reached final grade or where the facility does not intend to place additional waste for a 6-month period. No intermediate cover slope shall exceed 50% in slope. A discussion is included above in Section Q – Daily Cover for the protection of newly lined areas below a slope area. These same methods including material selection with maximum particle size less than 6-inches or the establishment of bench / catchment areas shall be implemented for intermediate cover slopes.

Intermediate cover material shall be capable of preventing vectors, odors, blowing litter, other nuisances and controlling fires. It shall also be capable of allowing loaded vehicles to successfully maneuver over it after placement and will cover the solid waste without significant change in its properties. Intermediate cover shall also control infiltration of precipitation, control erosion & sedimentation and allow germination/propagation of vegetative cover. Intermediate cover areas shall be seeded in accordance with the Form H – Revegetation Plan as feasible with consideration to landfill construction, landfill operation, growing seasons and likelihood of germination. A five-day supply of intermediate cover soil shall be available on-site (including borrow areas). Table A-3 in Appendix A of the CQA/QC Plan presented with Form 24 includes a summary of daily cover soil testing including visual monitoring of material quality and placement criteria.

During waste placement operations, this facility has slopes and bench locations field survey staked on a periodic basis to assist in the control of waste placement operations. This facility is mapped with aerial photography typically once per calendar year at which time the interim and exterior grades of the facility are checked against the permitted design. Additionally, as required by the PADEP Annual Operations Report Form, drawings are prepared and submitted to the department that include a comparison of actual waste filling grades and the maximum permitted grades for the facility, to allow a direct comparison and verification.

SECTION S – FINAL COVER SCHEDULE

Describe the time period that approved final cover will be placed on the proposed site, the methods by which final cover will be placed, and composition and design requirements, including:

As portions of the landfill reach final grade, the cap system, including gas extraction and surface water controls and revegetation shall be installed. The lag time between reaching final grade and installing the cap system shall be dictated by the acreage required for efficient construction of the cap with consideration given to the open landfill area such that the open area does not exceed that specified in the bonding estimate for the facility.

1. A cap (comprised of a uniform and compacted one (1) foot layer of clay or synthetic type material, if approved).

Twelve inches of intermediate cover soil shall be uniformly graded, smooth drum compacted and proof-rolled. Where necessary, the surface will be prepared to meet the specifications of the geomembrane manufacturer.

The geomembrane will be rolled over the prepared surface, and membrane boots will be fabricated around gas extraction wells. Seaming and anchoring procedures will be performed in accordance with the CQA/QC Plan included in Form 24.

2. A drainage layer to prevent erosion and transmit flow of surface water.

Double-sided drainage composite, consisting of a geonet with geotextile heat-bonded to both sides, will be rolled into place over the geosynthetic membrane.

3. A uniform and compacted layer of soil at least two (2) feet in thickness.

Twenty-four inches of final cover soil will be placed over the geosynthetic drainage layer. The properties of the final cover soil are discussed below.

SECTION T - FINAL COVER CHARACTERIZATION

Describe the characteristics of final cover, including:

1. physical properties of final cover.

Detailed specifications for final cover soil are presented in the CQA/QC Plan for this facility.

2. capability of controlling fires.

Final cover material shall be capable of controlling fires.

3. load-bearing capacity.

Final cover material will be capable of allowing loaded vehicles to successfully maneuver on the final graded surface. Traffic on the cap will, however, be limited to the more stable roadbed surfaces of terraces and access roads as much as possible.

4. capability of supporting vegetation.

The final cover soil shall be capable of supporting vegetation. Sufficient soil analyses will be conducted prior to capping to determine the need, if any, for soil conditioners/fertilizers. Revegetation procedures will follow those described in Form H.

5. prevention of nuisances.

Final cover material shall completely contain the refuse mass and will be capable of controlling vectors, odors, blowing litter, and other nuisances.

6. Include a quality assurance plan, and identify procedures to establish final elevation.

During waste placement operations, this facility has slopes and bench locations field survey staked on a periodic basis to assist in the control of waste placement operations. This facility is mapped with aerial photography typically once per calendar year at which time the interim and exterior grades of the facility are checked against the permitted design. Additionally, as required by the PADEP Annual Operations Report Form, drawings are prepared and submitted to the department that include a comparison of actual waste filling grades and the maximum permitted grades for the facility, to allow a direct comparison and verification.

SECTION U – FINAL CONFIGURATION

Describe the grade of the final slopes of the proposed facility, detailing design, installation, maintenance, slope stability, erosion control, compaction, seeding, revegetation, percolation rates, and surface runoff.

- What will the maximum grade of the final surface be?

Final grades shall not be less than 3% and will not exceed 33%.

- What will the average grade of the final surface be?

Terraces (benches) will be integrated with the final cover configuration to collect and direct surface water runoff. These benches will be 30-ft wide with a maximum vertical spacing of 50-ft with a 3H:1V slope between benches.

- Are terraces to be used on the final surface? If yes, describe design, construction, grades and maintenance of the terraces.

Stormwater runoff from closed portions of the landfill filled to capacity will be collected using terraces (benches) and downchute channels. This water can then be directed outside of the landfill area and controlled as stormwater. Terraces/benches and other erosion and sedimentation control structures shall be periodically inspected by facility personnel for

damages. Should damage be observed, facility personnel will complete the necessary repairs in a timely manner.

- **Describe the drainage ditches that will be constructed in each horizontal terrace to convey flow of surface water.**

Form I includes a detailed calculation which confirms that the final cover benches are sufficiently sized to accept the worst case stormwater runoff for the final cover bench configuration. This calculation includes an estimate of the velocity and flowrate carried by the final cover benches to demonstrate that they will adequately act as channels.

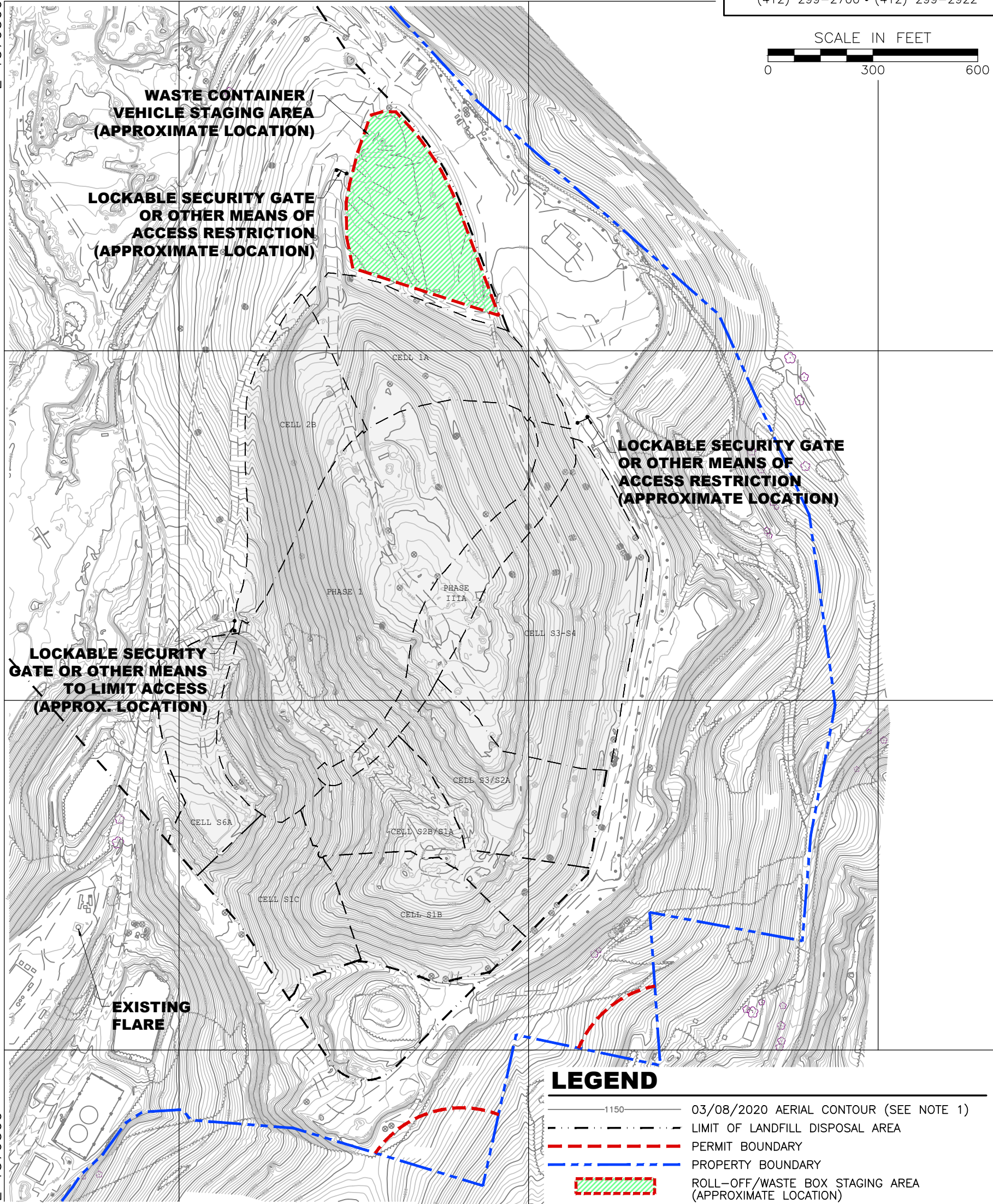
N 306000

E 1379500

SCALE IN FEET



E 1382350



LEGEND

- 1150 03/08/2020 AERIAL CONTOUR (SEE NOTE 1)
- LIMIT OF LANDFILL DISPOSAL AREA
- PERMIT BOUNDARY
- PROPERTY BOUNDARY
- ROLL-OFF/WASTE BOX STAGING AREA (APPROXIMATE LOCATION)

WASTE CONTAINER / VEHICLE STAGING AREA

STAGING AREA(S) FOR WASTE CONTAINERS / VEHICLES MAY BE ESTABLISHED AT THE SITE IN THE AREAS SHOWN. THESE STAGING AREAS MAY BE OPERATED ON A 24 HOUR BASIS WHERE THE HAULING DRIVERS CAN PLACE A PROPERLY TARPED/SEALED CONTAINER WITH WASTE ON THE GROUND AND MAY RETRIEVE AN EMPTY CONTAINER TO CONTINUE WORK ACTIVITIES. THE STAGING AREA SHALL BE LOCATED WITHIN THE OVERALL AREA SHOWN, EXACT LOCATIONS MAY CHANGE BASED ON OPERATIONAL REQUIREMENTS. THE STAGED CONTAINERS WITH WASTE SHALL BE MARKED OR SEPARATED FROM THE EMPTY CONTAINERS TO ALLOW FOR EASY IDENTIFICATION. STAGED CONTAINERS WITH WASTE SHALL ADHERE TO THE APPLICABLE PADEP WASTE STORAGE REGULATIONS. LOADS STAGED IN THIS AREA SHALL BE PRE-APPROVED FOR DISPOSAL AT THE SITE, LOADS AWAITING TESTING OR OTHER APPROVALS PRIOR TO APPROVAL MAY NOT BE STAGED IN THESE AREA(S).

TRUCK STAGING AREA

FULL TRUCKS ARRIVING OUTSIDE OF NORMAL DISPOSAL HOURS CAN STAGE NEAR/ON THE LANDFILL PROPERTY OR IN THE WASTE CONTAINER / VEHICLE AREA UNTIL WASTE DISPOSAL IS ALLOWED. DURING STAGING, TRUCKS SHALL BE PARKED IN AREAS SO AS NOT TO IMPEDE NORMAL TRAFFIC FLOW. EXACT STORAGE LOCATIONS MAY CHANGE BASED ON OPERATIONAL REQUIREMENTS. WITHIN THESE STAGING AREAS, TRAILERS MAY BE SEPARATED FROM TRUCK DRIVE UNITS. WHILE STAGED, ALL LOADS SHALL BE PROPERLY TARPED/SEALED AND SECURED WITHIN THE VEHICLE/TRAILER.

NOTES

1. EXISTING TOPOGRAPHY TAKEN FROM AERIAL MAPPING PERFORMED BY SOUTHERN RESOURCES MAPPING, PHOTOGRAPHY DATED MARCH 8, 2020.

N 302500

E 1382350

REV 3 - 11/2020 - UPDATED AERIAL, REVISED STORAGE LOCATIONS AND LANGUAGE.
REV 2 - 02/2020 - REVISED FULL-BOX STAGING LOCATION AND UPDATED AERIAL.
REV 1 - 03/2012 - REVISED TITLE BLOCK INFORMATION FOR CCS.

DES	GDG	10/27/11	PROJECT: SANITARY LANDFILL ROSTRAVER TWP., WESTMORELAND COUNTY, PA.
CHECK	ALZ	10/27/11	
APPROVED	DWM	10/27/11	SHEET TITLE: ROLL-OFF/WASTE BOX STAGING AREA PLAN
SCALE	1" = 300'		
ISSUED	12/2011		



FIGURE:

14-1.1

**FORM 14
OPERATION PLAN**

**ATTACHMENT 14-2
SAMPLE OPERATIONS FORMS**

These forms are presented as an example of forms which may be utilized by the site. Other forms which contain similar information may also be utilized by the site.

**WESTMORELAND SANITARY LANDFILL
DAILY ACTIVITY REPORT**

PADEP Permit # 100277

Date _____

By _____

Leachate Hauled Trucking per Form 25 Yes No
 Daily Activity Evaporator Running Yes No If yes, estimated gallons

 Loads daily cover to Cell

 Loads intermediate cover to Cell

Daily Cover Tarp Deployed Yes No

	Sweep		Wash		Road Maintenance	
Paved Roadway Maintenance	yes	no	yes	no	yes	no
Unpaved Roadways	yes	no	yes	no	yes	no

Truck Wash ON OFF
 Weather Conditions Rain Snow Sleet Sun Cloudy
 Temperature _____ Cloud Cover % _____
 Solidification Today Yes No
 Are boxes currently in storage Yes No
 Boxes checked for Integrity Yes No
 Leachate Storage / Process Tanks Checked Yes No
 Leachate System Checked Yes No
 Odor Survey Completed Yes No
 Litter Fence Inspected Yes No
 Leachate Flows Recorded Yes No
 Scales Operating Properly Yes No
 Leachate Storage per Form 25 Yes No

_____ Daily cover meets the requirements of Section 273.232

_____ Intermediate cover meets the requirements of Section 273.233

Comments _____

Contractors on Site _____

WESTMORELAND SANITARY LANDFILL WEEKLY INSPECTION REPORT

Date _____	Inspected By _____	
Facilities	Inspected	Comments
A. Office	_____	_____
B. Scales	_____	_____
C. Shop	_____	_____
D. Access Road	_____	_____
E. Truck Wash	_____	_____
E&S Controls		
A. Channels	_____	_____
B. Culverts	_____	_____
C. Sediment Ponds / Traps	_____	_____
Leachate Storage and Collec		
A. Leachate Tank Integrity	_____	_____
B. General Appearance	_____	_____
C. Manholes	_____	_____
D. Piping / Cleanouts	_____	_____
Security / Fire Equipment		
A. Fence	_____	_____
B. Gate	_____	_____
C. Fire Suppressant Equipment	_____	_____
Operational Equipment		
A. In accordance with 273.215	_____	_____
General Conditions		
A. Vegetation (stressed)	_____	_____
B. Litter	_____	_____
C. Truck Loadout Area	_____	_____
D. Safety Signs	_____	_____
E. Erosion	_____	_____
F. Leachate Seeps	_____	_____
Meteorological Equipment		
A. Inspected and Working Properly	_____	_____

**FORM 14
OPERATION PLAN**

**ATTACHMENT 14-3
STAGING OF SHALE DRILLING WASTES**

The Staging of Shale Drilling Wastes was previously included as part of Form 14 as Exhibit 14-1.9 and was approved by the PADEP on October 26, 2012. No changes have been made to the approved Staging of Shale Drilling Wastes which is now presented in Form 14 as Attachment 14-3.

A. INTRODUCTION

This submittal requests approval for the staging of Shale Drilling Wastes in containers within the active lined disposal area while awaiting PADEP approval to dispose of the Shale Drilling Waste materials. This plan also includes a description by which Shale Drilling Wastes are handled at the site on a general basis, if staging is not required. The Shale Drilling industry is moving to a closed loop system, whereby the materials are placed directly into containers during the drilling process. The ability to stage containers prior to the receipt of analytical lab testing and subsequent approval of the material for disposal will allow for proper handling and storage of these residuals prior to approved disposal methods.

B. PROCEDURE FOR STAGING OF SHALE DRILLING WASTES

It is proposed that Shale Drilling Wastes may be staged within the lined disposal area prior to PADEP's receipt or approval of the analytical testing. A proposed outline of the waste receipt, staging and handling procedures is presented here.

- Waste containers with Shale Drilling Wastes shall be accepted at the site during permitted hours of operation. A certified scale house attendant will process each load. The scale house attendant shall maintain a log of all deliveries. The following records will be maintained on site prior to PADEP waste approval: individual load manifest, radiation pass or fail, and a unique container identification number and gross vehicle weight. Scalehouse personnel shall generate a magnetic or adhesive "NOT APPROVED FOR DISPOSAL" label which shall include the date of receipt of the load and the container identification number. Each label shall be affixed to the unapproved drilling waste containers so that it is clearly visible while in the staging area.
- Gross vehicle weights prior to staging and disposal will be recorded but all containers will be reweighed prior to disposal. The container identification number shall be utilized to track the load. Weights recorded at the time of receipt of the container for staging will be record but not utilized as the disposal weight. All loads will be reweighed following PADEP approval of the material for disposal and a waste disposal ticket will be completed. If a unique identification number is not located on the waste container, scalehouse personnel shall assign an identification number which will be added to the container.
- Several types of containers maybe present within the staging area at one time. All containers shall be equipped with lids or tarps. All tarps and lids will be designed to prevent water infiltration during staging. All containers will require a sealed tail gate and designed to be water tight.

- The loaded container shall be staged within non-closed portions of the lined landfill disposal area. Staging within the landfill area may include container placement at the edge of the active disposal area or within in-active portions of the landfill.
- The loaded containers shall remain staged until the analytical lab testing is completed and the material is approved for disposal by Westmoreland Waste and the PADEP. If the chemical analysis of the waste stream equals or exceeds a constituent(s) permit limit, then the waste stream shall be subject to further chemical analysis of at least four (4) samples. A determination shall be made for the analytical results assuming a normal distribution and performing a 90% one-tailed confidence interval of the mean for the regulated constituent(s).
- If the material is not approved for disposal, the container shall be loaded onto a truck following verification of the identification number for the container. The staged container shall be removed from the staged container list and the PADEP shall be notified when the container is removed from the site.
- Upon PADEP approval for disposal of the drilling waste, the containers will be visually inspected for free liquids, if possible. During the staging period, liquids may separate from the solids. If required, the load may be re-mixed within the container to re-incorporate free liquid, solidification agents may not be added during the mixing in the staging area, the liquid will be drained from the container into a solidification vessel, or the entire load will be transferred to a solidification vessel for proper processing. Section C of this narrative shall be followed to determine the handling / processing methods to be utilized for drilling waste materials.
- Following approval of the Shale Drilling Wastes for disposal, the load shall be removed from the staging area (processed for solidification, if needed) and re-processed through the landfill entrance area with radiation monitoring, recording of a gross weight and the creation of a landfill scale ticket. After this, the manual ticket previously created shall be discarded and the container shall be removed from the staged container list maintained at the scalehouse. Staged loads shall be removed from the staging area within five working days from approval for disposal.

C. PROCEDURE FOR EVALUATION OF SHALE DRILLING WASTES

Sanitary Landfill takes extra care in the on-site evaluation, processing and disposal of Shale Drilling Wastes. The procedures outlined here are utilized for waste loads accepted at the site for immediate disposal along with loads which are removed from the on-site staging area, following approval for disposal as outlined above in Section B. Using the processing / evaluation steps outlined here, Shale Drilling Wastes are either hauled to direct disposal at the active area or processed via the solidification plan in the solidification pit. The material is directed to these locations based upon consistency as described below

Sanitary Landfill has devised a three tier system to classify the shale drilling wastes to determine the appropriate handling methods. The following classification designations describe the various solid/semi-solid and liquid phases. The classifications provide a frame of reference as to how the material appears during off loading at the facility. The tier system provides a reference as to the “effort required to process” the materials classified in each tier.

- Tier I. Shale Drilling Wastes which pass the paint filter test, have no visible liquid phase and will mound upon itself when dumped from container. This material has typically been processed at the drilling location via a combination of a “closed loop” system with shakers and centrifuges or with mechanical mixing of the shale drilling wastes and a solidification additive such as saw dust, lime, cement, ash, etc. Tier I wastes may directly disposed at the active area with no additional processing. Alternatively, Tier I wastes may be taken to the solidification basin for optional bulking with other wastes or solidification agents.
- Tier II. Shale Drilling Wastes that may or may not passes the paint filter test. These loads contain materials which have visible liquid on the top level of load in transport vessel, this liquid may have separated during transportation of the load. These loads require mechanical mixing of the liquids and solids. As discussed above in Section B of this narrative, if this is observed in a staged load, this mixing may be performed in the hauling container in the staging area. This mixing may also be performed within the container prior at the active disposal area, prior to discharge of the load.

If the load is observed to include more free liquid then can be re-incorporated into the waste during mixing, it shall be considered a Tier III material, discussed below.

As an example to provide a frame of reference; these loads usually off load in two phases, the initial discharge is a significant flow of liquid material upon slightly opening the door of the container, the second phase is these loads contain some solids that have settled to the bottom of the container while the container was staged and during transport. During the placement of these wastes, any observed liquids quickly re-incorporate into the waste as the material is placed.

- Tier III. Shale Drilling Wastes which do not pass the paint filter, has predominate visible liquid phase or lava like consistency; would not mound when dumped. These loads often arrive in tankers, sealed ‘vac’ boxes and in sealed clam-shell boxes. As a frame of reference; these loads contain a high percentage of liquid material where if the box is sitting level and if the door would be opened, in excess of 60% of the load self discharges.
- Sanitary landfill personnel attempt to determine the consistency of the material upon arrival at the facility. The type of truck utilized to deliver the waste will often provide a gauge as the amount of liquid which may be present in the waste load. For example, materials to the site in an open top box or conventional highway type truck will not include much if any free liquids. Typically material delivered is in the following type vehicle:

Dump Trailer – Dry Material Tier I

Tri-Axle Truck – Dry Material Tier I

Open Top Roll Off – Dry Material Tier I

Closed Top Clam Shell Boxes – Usually Semi Wet, Tier II to very Wet Tier III, but also can be Dry Tier I

‘Vac’ trucks – Tier III Wet Material but can be Tier II Semi Wet

**FORM 14
OPERATION PLAN**

**ATTACHMENT 14-4
NUISANCE ODOR MITIGATION PLAN**

The Nuisance Odor Mitigation Plan was previously included under Form 14 as Exhibit 14-1.10 and was approved by the PADEP on October 1, 2014. Minor changes have been made to update the plan based on requirements that have since expired as per the March 2014 COA. The updated Plan is now presented in Form 14 as Attachment 14-4.

1.0 INTRODUCTION

This Odor Mitigation Plan has been prepared based on current best practices, new technologies and the previously submitted Odor Mitigation Plan.

1.1 Background Information

The **Westmoreland Sanitary Landfill**, LLC - Sanitary Landfill (Sanitary Landfill) is located near the town of Belle Vernon, in Rostraver Township, Westmoreland County, Pennsylvania. The Landfill is owned and operated by **Westmoreland Sanitary Landfill**, LLC. Landfill operations are regulated by the Pennsylvania Department of Environmental Protection (PADEP) under permits issued by the PADEP Bureau of Waste Management (Solid Waste Permit No. 100277), Bureau of Air Quality (prior Plan Approval No. PA-65-00767A and pending Title V Permit No. TV-65-00767).

The general land developments and potential sensitive uses around the Sanitary Landfill are as follow:

Immediately Adjacent to Site:

- Open space immediately surrounds the landfill in all four directions, ranging in distance from the site property boundary as follows:
 - approximately 550⁺ feet to the west and east,
 - approximately 1,400⁺ feet to the south, and
 - approximately 250 feet to the north-northeast with the Vance DeiCas Highway immediately beyond.

Potential Sensitive Uses Beyond the Adjacent Open Space:

- Residential development to the north, south, east, and west;
- Commercial / Industrial development to the east, south, and west; and
- Agricultural uses to the east.

2.0 PLAN OVERVIEW AND ORGANIZATION

This Plan has been prepared to identify measures and best management practices (BMPs) to address potential nuisance odor emissions from Sanitary Landfill. Specifically, the Plan describes management procedures for operating activities, cover practices, environmental site control equipment and control technologies (i.e. LFG flares, leachate pumps, etc.) that may be used to minimize odors; monitoring procedures for the timely identification of potential odor-producing sources; and corrective actions to be taken in response to odors identified both on and off-site. Further, this Plan establishes personnel responsibilities and

procedures for monitoring, data collection / recordkeeping, reporting, and handling of complaints.

3.0 GCCS UPGRADES / IMPROVEMENTS

Upgrades and expansion of the GCCS will be phased over the life of the facility. Upgrades may include the addition of the following components:

- LFG conveyance piping;
- LFG extraction wells (Horizontal and Vertical);
- Dewatering pumps; and
- Flare and blower equipment.

LFG Conveyance Piping - The existing LFG conveyance piping network consists of a combination of 12-inch, 10-inch, 8-inch diameter and other piping within the landfill waste boundary; and a 4-inch diameter header pipe outside the waste boundary for servicing soil vapor wells.

LFG Extraction Wells / Extraction Points - Vertical LFG extraction wells will continue to be installed as filling progresses. The frequency of wells will be increased from approximately one per acre to approximately one per $\frac{3}{4}$ acre for future gas well installations. In general, Sanitary Landfill will extend LFG extraction to waste disposal areas within two (2) years of waste placement, regardless of whether or not the waste has reached final grade (currently, the permit and regulations allow up to 5 years for well installation in areas not at final grade). Shallow wells (with deeper wells installed later), temporary horizontal collectors in active areas, connections to leachate collection piping, and/or a combination of these methods will be utilized to achieve this goal.

High BTU Gas Processing Plant – A High BTU Landfill Gas (LFG) Processing Plant was approved to be installed onsite at the facility November 5, 2018. LFG previously collected from existing wells and transported to an existing enclosed ground flare will be diverted to the processing facility by an electronic control valve and pipeline upstream of the existing blower. The existing enclosed ground flare will remain operational to control gas that is not directed to the plant and also for use during plant shutdowns or outages. A newly installed thermal oxidizer (enclosed flare) will control portions of gas removed during processing and an existing candle stick flare will be used as back-up. Final processed gas will be injected into an existing commercial pipeline owned and operated by People’s Natural Gas.

New Flare / Blower Equipment - The current flare and blower station consists of a 5,500 scfm enclosed flare and blower rated for 3,367 scfm at a 61.6 inch water column vacuum (current equipment installation, third quarter of 2013). This equipment is adequate for the site’s current and near term LFG recovery efforts; however, as the site continues to develop

and install new wells site-wide, additional LFG flare / blower equipment capacity will be added if warranted based on changing conditions or if results of future LFG generation modeling performed indicate flows are likely to exceed capacity within the succeeding 12 month period. LFG generation rates are assessed annually as part of the site's emission statements and reporting.

Dewatering Pumps and Appurtenances - Additional dewatering pumps and appurtenances (air supply and force main) may be added to LFG extraction wells as liquid levels dictate. To ensure adequate air supply and condensate force main capacity exist during the future phases of well installations and landfill build-out, a larger network of air supply and condensate force main will be planned to service future pumps.

GCCS Expansions / Future Plans - LFG system construction is typically phased throughout the course of a landfill's development to ensure adequate LFG system capacity exists to control emissions and migration as LFG generation increases with site development. Below is a description of an approach that the site is taking on a periodic basis to assess and implement LFG system improvements.

- Review of landfill sequencing and operations to insure compatibility with GCCS expansions / improvements;
- Decommissioning and/or replacement of wells in less critical areas;
- Identification of piping improvements that may include portions of permanent header that will serve the landfill through the closure period;
- Assessment of long-term dewatering needs and capacity of compressed air station(s);
- Identification of the location and capacity of future LFG control devices and LFG mover equipment.

4.0 ODOR / EMISSIONS ASSESSMENTS AND MONITORING

Sanitary Landfill performs odor monitoring and assessments of the site and surrounding areas to identify potential sources of nuisance odors.

4.1 General Odor Assessment

4.1.1 Operational Assessments

Sanitary Landfill routinely assesses / evaluates operational factors that may influence the potential for landfill odors on a daily basis. Sanitary landfill personnel are equipped with safety gas monitors. As part of their daily routine, Sanitary Landfill personnel assess odors and offsetting mitigating measures each day with respect to operations, including:

- Daily and intermediate landfill cover;

- New waste streams with odor characteristics different from current waste streams;
- Size of the working face operations;
- Leachate generation, precipitation, and the effects of waste types on odor generation;
- Damage to the LFG extraction wells and timely repairs.

4.1.2 Construction Notifications

As part of its 72-hour construction notification submittals, Sanitary Landfill will include an identification of construction activities that have the potential to create off-site odors, including:

- New LFG extraction wells;
- Excavated horizontal gas collectors; and
- Excavation of waste for installation of gas headers or laterals.

4.1.3 Construction Practices

Sanitary Landfill will implement construction practices and best management practices and measures to limit potential nuisance odors resulting from landfill construction activities. Practices to be employed during construction may include:

- Gas wells will be constructed the same day that drilling activity is completed to the extent reasonably practicable. If construction of a well is not completed by the end of the day, it shall be covered as described in the fourth bulleted item below.
- Gas line-trenching activities which involve excavation into waste materials will be started and completed in the same day to the extent reasonably practicable. In the event the work cannot be completed, the extent of open area will be minimized at the end of the work day as necessary to limit the potential for nuisance odors resulting from the landfill.
- Cell tie-in activities which involve waste removal shall not be performed late in a working day if the covering of the exposed waste before the end of the working day would be unlikely.
- Upon unforeseen scheduling, weather conditions or equipment breakdowns which render compliance with the activity limitations identified above, waste materials exposed by such activities shall be covered with a suitable tarp, soil daily cover or other materials which would minimize the potential emission of nuisance odors.

4.2 Site Plan Drawings

Sanitary Landfill maintains up-to-date site plan drawings and aerial photographs of the site and immediate surrounding area (as part of construction certification reports, annual operations reports or other reporting). The site plan drawings are updated to show current waste disposal / placement areas, site boundaries, and areas immediately surrounding the facility that may potentially be impacted by odors generated by the facility.

4.3 Odor / Emissions Monitoring Program

4.3.1 Onsite Odor Monitoring

Sanitary Landfill will perform onsite monitoring daily between the hours of 6am & 8am and 3pm & 7pm Monday – Friday and between the hours of 7am & 9am and 11am & 2pm Saturday or when the facility is accepting waste for disposal as well as during activity under section 4.1.3. Onsite monitoring will be performed from a vehicle with windows down, slowly traversing onsite roadways. If odors are detected they will be investigated and, if it is determined that the detected odors have the potential to be a nuisance offsite odor, a survey will be performed in accordance with section 4.3.2.

Odor surveys will be performed on an as-needed basis or in accordance with any complaint handling procedures implemented by Sanitary Landfill. Odor surveys shall be documented in accordance with Section 7.1 of this plan.

4.3.2 Offsite Odor Surveys

The Offsite Odor survey required under section 4.3.1 will be conducted on one of the following roads depending on wind direction and/or the source of complaint;

Lenity School Road;
Deicas Highway;
Patton Road;
Tyrol Boulevard; and
other public roads as required.

An odor investigation required under section 5.0 will be conducted on the road as near the source of the complaint as possible.

The offsite odor survey and the odor investigation will record the following data: location of the monitoring point including route based on Sanitary Landfill's odor survey form key (Landfill Perimeter, Pricedale, Lenity-Patton-Maria-Clair Manor or

Nazareth Drive-Rostraver Apartments), date/time of monitoring, observed odor (yes/no), strength of odor if present, name of person performing the survey, and current observed weather conditions (to include wind direction, wind speed, existence of precipitation, temperature and visual cloud cover). A copy of the odor surveys will be forwarded to the PADEP in accordance with section 7.2

4.3.3 Surface Emissions Monitoring (SEM)

Sanitary Landfill will perform **quarterly** surface scans in accordance with 40 C.F.R. Part 60, Subpart WWW **and the facilities Title V permit .**

A methane concentration of 500 ppm or more above background levels identified as part of a scan will be handled in accordance the procedures contained in NSPS regulation 40 CFR 60.755(c).

4.3.4 Perimeter monitoring probes will continue to be monitored quarterly as required by regulation.

5.0 COMPLAINT HANDLING PROCEDURES

Sanitary Landfill has developed procedures for receiving and responding to odor complaints received from State or local agencies or directly from area residents. The odor complaint response procedure includes collection of relevant data corresponding to each complaint. Sanitary Landfill currently maintains a “800” number answering service which receives complaint calls from the public where the answering service operator asks a series of questions to collect pertinent information.

During operating hours, Sanitary Landfill will perform an off-site odor investigation in accordance with section 4.3.2 within three hours (3) following receipt of a properly reported odor complaint notification from the PADEP, local government entity or the “800” number answering service maintained by Sanitary. A report shall be prepared summarizing the findings of the investigation and forwarded to the PADEP as part of the monthly report identified in section 7.2 of this plan. The investigation shall include completion of an odor survey log, at or near the location of the complaint, and when warranted a description of measures implemented to evaluate the effectiveness of practices in reducing the potential for off-site odor creation, and to promptly address and correct any problems or deficiencies discovered in the course of inspections conducted. Within approximately two days of the receipt of a properly reported odor complaint, Sanitary Landfill will provide an initial verbal summary of the initial investigation findings to the PADEP field inspector for the site.

6.0 SITE RESPONSE / CORRECTIVE ACTIONS

In response to identification of potential odor emission sources at the Landfill, the site manager or designated alternate shall:

- Evaluate any odor monitoring performed as it pertains to the complaint or series of complaints;
- Compare present odor complaint(s) to any past odor complaints. Identify any correlation between the current complaint and any past complaints (e.g., do the complaints come at a specific time of day or when a specific operation is taking place on the site or when or a specific waste type could be a contributing cause);
- Evaluate potential on-site sources for the cause of the odor complaint:
 - LFG Management System
 - Overall system operation and efficiency
 - Extraction wells / points
 - Conveyance piping
 - Condensate sumps
 - LFG Flare and associated components (including blower)
 - Valves
 - Leachate Management System
 - Sumps
 - Manholes
 - Piping
 - Piping Cleanouts
 - Cover System
 - Active Face
 - Daily cover
 - Soil Intermediate Cover
 - Geosynthetic Intermediate Cover (as discussed in Section 8.4)
 - Final Cover
 - Other
- Evaluate potential off-site sources for the cause of the odor complaint;
- Evaluate the size of the working face against the incoming tonnage rate (i.e., is it appropriate for the amount of waste being accepted?);
- Evaluate operational BMPs employed to cover/minimize/neutralize nuisance odors from waste streams likely to present nuisance odors. BMPs may include the timely cover of the waste materials and minimizing disturbing waste;
- Evaluate the condition of cover. Inspect for ruts, gaps, inadequate thickness, appropriate materials, application of greater thickness material, and the use of alternate daily cover material;
- Identify any necessary corrective measures and evaluate feasibility;

- Implement corrective measures deemed necessary within 30 days or as soon as reasonably practicable. Sanitary Landfill shall provide notice to the PADEP for measures anticipated to require implementation longer than 30 days;
- Corrective measures requiring approval but not previously approved at the site shall be proposed to the PADEP prior to implementation.

7.0 RECORDKEEPING AND REPORTING

7.1 Record Storage

Sanitary Landfill shall maintain completed Odor Survey Reports, Odor Complaint Forms, investigation reports and any other documentation required by this Plan for at least a 12-month period from the collection of the information. Information more than 12 months old may be transferred to an off-site storage facility, but it must be retained for at least three years total. These logs shall include descriptions and explanations of the actions taken, the rationale for any deviations from the Plan, and whether the steps taken were deemed effective in addressing the odor issue.

7.2 Reporting

Completed odor surveys and complaint response logs shall be maintained at the site and will be made available to the PADEP for their review.

8.0 LANDFILL PRACTICES AND TECHNOLOGY

Sanitary Landfill utilizes the following best air pollution control practices / programs for the collection and control of LFG and odors. These include the following:

- GCCS Monitoring and Maintenance;
- Cover Integrity Inspection;
- Leachate Management System Monitoring and Maintenance;
- Waste Acceptance Procedures;
- Temporary Odor Control Measures; and
- Odor Management Plan Meetings.

8.1 GCCS Monitoring and Maintenance

Important elements of the Sanitary Landfill GCCS include the following:

- LFG extraction wells installed into the waste mass to collect the LFG in an efficient manner;
- LFG conveyance piping installed and connected to the GCCS as soon as practically possible to capture the LFG;
- Repair of damaged LFG extraction wells. Where wells are damaged beyond repair or operating conditions exist where repairs are not possible, the wells are usually re-drilled within an approximate radius of 50 feet or capped and adjacent well vacuums are increased appropriately;
- Connection of leachate collection system structures to the GCCS to maximize LFG collection and control facility odors;
- Use of other available collection points such as cap vents and other pipe penetrations for connection to the GCCS. This further reduces odorous emissions by maximizing the collection of LFG;
- Use of a blower system to apply vacuum to the LFG extraction well field. The blower system has been designed to convey LFG to the flare for treatment and destruction;
- Use of downhole pumps in LFG extraction wells to maximize collection efficiency of LFG collectors;
- **Use of the High BTU gas plant; or**
- Use of a flare rated for a 98% destruction efficiency of the LFG collected by the GCCS, which includes odorous compounds; and
- Temporary horizontal collectors to collect landfill LFG within the active areas of the landfill.

8.1.1 Individual LFG Collector Data

All LFG extraction wells and collection points with wellheads are monitored on a monthly basis, except that all newly installed wells and collectors are monitored on a weekly or bi-weekly (once every two weeks) basis until steady LFG quality and flow results are obtained. Wells are monitored for the following parameters:

- Initial & Adjusted Static Pressure;
- Initial & Adjusted Landfill LFG Temperature;
- Oxygen;
- Methane;
- Initial & Adjusted Flow;
- Carbon Dioxide;
- Balance Gas;
- System Pressure

8.1.2 Gas Plant and Flare Data

The gas plant will be monitored to ensure compliance with the operational standards identified in § 60.756. The gas plant will include monitoring and recording devices that will be observed by gas plant personnel. The gas plant will be equipped with a gas flow rate measuring device that monitors and records the incoming gas flow rate to the plant. The gas plant operations will be monitored each working day (via on-site paper charts or electronic recorded information) to confirm that the system is operating within the required parameters. Should a deviation from the required operational standards be observed, appropriate adjustments and / or repairs will be performed to return the system to within the required operating parameters

During times when the flare is operational, the following parameters are manually measured and recorded at the blower / flare station at least once per week: LFG flow, LFG composition (methane, carbon dioxide, oxygen and balance LFG), and vacuum applied to the well field. Flow and temperature are measured and recorded every eight (8) minutes using an automated data recorder.

8.1.3 Low Flow Extraction Wells and Collectors

The following actions will be taken for any vertical LFG extraction wells with a current LFG flow rate of less than 5 scfm (excludes soil vapor wells, leachate risers, horizontal collectors, and wells in older areas with low LFG production rates):

- The extraction well will first be inspected to determine if the well casing has been compromised;
- If determined that the well casing is not compromised, damaged, or defective, and it is determined that the presence of liquids within the well is at levels with the potential to compromise the gas collection efficiency of the well, then a pump will be installed in the well to remove the liquids and increase available well screen length. A test pump may be performed to determine if a well requires continuous pumping;
- If the liquid removal results in a significant increase in landfill LFG flow, pumping will be continued. If the well continues to generate significant liquids, liquid levels in the surrounding wells will be measured. If necessary, pumping of surrounding wells will be performed. Additionally, Sanitary Landfill will investigate the source of liquids in the well and take appropriate action. This will include, but not be limited to, investigation, and potentially modification of leachate management practices;
- If, after sixty (60) days of liquid removal, there is only a minimal change in LFG flow, the collector or well may be abandoned, provided it is replaced by a new collector or well, if such well is needed in order to achieve compliance with NSPS; and

- Extraction well and collector flow measurements, liquid levels, and a description of all actions taken will be recorded on a Well Inspection Log.

8.1.4 Data Collection and Evaluation

A Landtec GEM™ 2000 (or similar equipment) will be used to measure and collect both the individual LFG collector data and flare data described above. The data obtained from individual collectors and the flare is analyzed on a monthly basis to verify compliance with 40 CFR 60, Subpart WWW requirements relating to oxygen, temperature, and pressure. This information is summarized in a monthly report.

In addition, as part of this Plan, Sanitary Landfill will periodically perform an evaluation of the wells / extraction points. This evaluation will include the inspection and sounding of wells, and identification of wells with any of the following characteristics to identify potential issues with wells:

- Wells or collectors with greater than 10 inches (w.c.) decrease in system pressure;
- Wells or collectors with greater than 131° F in LFG temperature;
- Wells or collectors with less than 5 scfm flow;
- Wells or collectors with greater than 55% methane;
- Wells with greater than 7 inches of differential pressure;
- Vertical wells that exhibit the following:
 - The presence of liquids within the well at levels with the potential to compromise the gas collection efficiency of the well, or
 - LFG flows are less than 5 scfm;shall be evaluated in accordance with the procedures in Section 8.1.3 above;
- Vertical underperforming wells that are not submerged, that exhibit the following characteristics, and which may be damaged or pinched:
 - Low flow readings of less than 5 scfm;
 - Low to ambient LFG temperatures (typical LFG temperatures in flowing wells range from 60 to 80 degrees Fahrenheit);
 - Methane concentrations greater than 55% at or near system vacuum; and/or
 - LFG quality similar to normal air composition.

It should be noted that certain wells (for example soil wells and wells in older areas that are necessary to control LFG migration) may exhibit characteristics that differ from the target operating parameters. The results of the analyses will be included in the monthly reports associated with the month in which the analysis falls. Applicable conclusions and recommendations will be noted.

8.1.5 Extraction Well Abandonment / Replacement

Interior LFG extraction wells will generally be abandoned if either of the following conditions are present:

- Extraction wells are watered in and cannot be rehabilitated through pumping; or
- Extraction wells are found to have clogged slots or collapsed casings that cannot be repaired;

Abandoned extraction wells may be replaced with new extraction wells to the extent necessary to maintain effective LFG control.

8.1.6 GCCS Maintenance Records

Sanitary Landfill will document and record all maintenance activities performed on the extraction wells and collectors, **gas plant**, the flare / blower system, LFG collector header piping, sumps, and any other GCCS components. The maintenance performed will be summarized in the monthly reports.

8.1.7 Moisture Control

In addition to the stormwater and surface water management requirements contained in its landfill permits and the applicable regulations, Sanitary Landfill takes measures to prevent enhanced generation of odorous compounds as a result of excessive moisture migration into the waste boundary. Such measures include, but are not limited to: ensuring that all slopes are designed to drain stormwater runoff and eliminate ponding; that no standing water is allowed anywhere in or on a disposal unit; and that final cover is designed and constructed to a grade that minimizes erosion and is capable of supporting vegetation.

8.2 Landfill Cover Integrity Inspections and Maintenance

Sanitary Landfill applies daily and intermediate cover in accordance with the facility permit and applicable regulatory requirements. Sanitary Landfill routinely monitors the condition of the cover within the daily active disposal area limits by visual observation to assess its performance in minimizing odors and providing good capture efficiency of the GCCS. Daily cover generally consists of 6 inches of compacted soil or alternative daily cover (ADC) material; and intermediate cover consists of 12 inches (minimum) of soil. Sanitary Landfill uses soils excavated on-site for daily and intermediate cover soil. In some instances, Sanitary Landfill applies thicker layers of cover to target potential problem areas as an added measure to control / mitigate odors.

Third party inspections of the landfill cover integrity are conducted as part of NSPS requirements. Repairs or adjustments to the cover thickness are made accordingly to

prevent fugitive emissions and odors. Inspections are performed for the purpose of detecting and responding to conditions that may result in creation of an odor nuisance. Such conditions include, but are not limited to, excessive erosion and cracking, vegetative stress, discoloration, leachate seeps, odors, and unusual snow melt.

Cover repairs are made as soon as practicable after the date that such conditions are discovered. If weather conditions create an unsafe work environment, this shall be noted in the records, and work shall be completed as soon as weather conditions allow. Re-vegetation (if necessary) will be conducted during spring and fall planting seasons. Sanitary Landfill will maintain a record of the inspections and corrective actions taken in accordance with this Plan.

8.3 Leachate Management System Monitoring and Maintenance

Sanitary Landfill has installed an effective leachate management system that removes liquids from the landfill but also provides odor control through the following actions:

- By removing liquid from the landfill, liquid build-up is prevented and the potential for leachate seeps is reduced which can be an odor source, is minimized;
- By effectively managing the LFG condensate generation, the collection efficiency of the GCCS is maximized (and fugitive LFG / odor emissions are minimized);
- By connecting the leachate risers to the GCCS, gas capture is increased and gas build-up in the leachate collection system is reduced / eliminated; and
- By implementing an operation and maintenance (O&M) program to identify and repair any leaks in the leachate management system (e.g., piping, manholes, storage tanks, etc.), potential odor sources are reduced / eliminated;
- Sanitary Landfill shall keep access doors, inspection ports or other items which have lids / caps sealed at all times except for required inspections, repairs or other maintenance.

8.4 Geosynthetic Interim Covers

In areas where intermediate cover has been placed and surface scans identify emissions which need to be controlled and an increased frequency of well installations is not possible an interim Geosynthetic Interim Cover (GIC) will be placed. If an area of GIC is to be installed at the site, Sanitary Landfill will provide notification to the PADEP as part of the monthly reporting discussed in Section 7.2, via e-mail or other written notification.

- If GIC is to be installed, Sanitary Landfill will submit a notification to the PADEP which will be followed by the submission of calculations. Approvals

of the GIC installation will be provided by the PADEP based on a letter submission of the drawings and calculations.

8.5 Odor Management Review

The GCCS, landfill cover integrity, and leachate management systems are periodically monitored and evaluated. Every month, the observations of these systems will be reviewed by landfill staff and may be discussed during odor management meetings with facility management and operations personnel (also with engineering / technical personnel if necessary). The purpose of the odor management review is to ensure coordination between site operations and best available odor management practices so that waste is managed in a safe, environmentally sound manner.

9.0 ANNUAL CONSTRUCTION PROJECTION

Sanitary Landfill will perform an annual review of the sites Odor Mitigation Plan and construction requirements for the upcoming year including:

- Intermediate cover, (Soil and Geosynthetics);
- LFG extraction wells (Horizontal and Vertical);
- Flare or conveyance system upgrades;
- Closure construction (Final Cover and Geosynthetics);

This projection shall include a plan description of the quantity and phasing of the above items for the upcoming year.

The projection may be based on the following parameters:

- Extending LFG extraction to waste disposal areas within two (2) years of waste placement, regardless of whether or not the waste has reached final grade.
- Leachate collection cleanout piping identified to have landfill gas present within them shall be connected to the landfill gas management system.
- Vertical gas extraction wells shall be installed in areas where the waste thickness exceeds 75-ft and adequate well coverage is not provided by other existing wells. As with the final gas well spacing, an average spacing of one well per $\frac{3}{4}$ -acres shall be utilized for an overall well spacing.
- Horizontal gas collector trenches may be installed as part of waste filling operations or within areas previously filled to provide interim gas control.

- The gas management phase development drawing will be presented as a planning tool; actual extraction well locations and piping installations may vary from that presented on the phase development drawing based on actual waste acceptance rates, waste grades and other operational considerations.

This evaluation, including the written evaluation and the gas development phase drawing, will be submitted to the PADEP on an annual basis as part of the Annual Operations report.

10.0 SUMMARY AND CONCLUSIONS

Sanitary Landfill is committed to the minimization of off-site odors from this facility. Adoption of effective odor monitoring, complaint handling, and response practices; and use of effective and up-to-date landfill practices and technology identified in this plan will assist with the future minimization of potential nuisance odors from the site.

Long term actions to be periodically carried out by the site shall include improvement of the conveyance piping with use of a looped header system; prompt installation of new wells / extraction points (generally within two (2) years of waste placement); timely installation of new flare / blower equipment; continued expansion of the liquids management system associated with the GCCS (air and force main, pumps, and compressor system); development of future GCCS development plans; and assessment / reassessment of LFG generation rates according to actual waste types and disposal rates.

Further practices identified in this Plan include odor / emissions monitoring, complaint handling, and odor response practices, as well as recordkeeping and reporting procedures relative to the items contained in this Plan. These practices, combined with the corrective actions listed above and adoption of best air pollution control practices / programs relative to control of LFG and odors will help to minimize and prevent off-site odors from this facility.

NUISANCE ODOR MITIGATION PLAN

SAMPLE FORMS

These forms are presented as an example of forms which may be utilized by the site. Other forms which contain similar information may also be utilized by the site.

ODOR SURVEY LOG

Survey Conducted by:	Date:	(1) Time:
Type of Survey: General Survey (1) or Response Odor Survey		
Weather Conditions:		
Temperature:	Precipitation:	
Wind Speed:	Wind Direction:	

ON-SITE MONITORING INFORMATION			
On-Site Survey Location / Route (2)	Odor Detected [Y/N] (3)	Potential Off-site [Y/N] (4)	Comment

ON-SITE ODOR ASSESSMENT (Complete if on-site odor detected above)	
Assessment Item (Identify Items Reviewed)	Summary of Findings (Identify Improvements/Repairs, if Performed)

OFF-SITE SURVEY INFORMATION		
Off-Site Survey Location / Route (5)	Odor Detected [Y/N]	Comment

- (1) On-Site odor monitoring to occur twice daily between the hours of [Monday-Friday: 6-am & 8-am and 3-pm & 7-pm] – or- [Saturday: 7-am & 9-am and 11-am & 2-pm]. On-Site odor assessment shall also be performed if an off-site odor complaint.
- (2) Odor Surveys shall be performed from a slow moving vehicle with open window(s).
- (3) The On-Site odor assessment portion of the form shall be completed if an on-site odor is detected.
- (4) An Off-Site odor survey shall be performed if it is estimated that the detected on-site odor would have a potential to result in an off-site nuisance odor or if an off-site odor complaint is received.
- (5) Route abbreviations include: LFP – Landfill Perimeter, LMCM – Lenity-Patton-Maria-Clair Manor, PD – Pricedale and NDRA – Nazareth Drive Rostraver Apartments.

ODOR COMPLAINT LOG

Complaint Received by:	Date:	Time:
Compliant Filed: Resident Via 800 number, From PADEP, From Local Government, Other		
Reported Odor by:		
Reported Odor Location:		
Phone Number:		
Reported Odor Date:	Reported Odor Time:	

Reported Odor Description:
Reported Odor Intensity:
Reported Weather:
Reported Wind Speed: None, Mild, Strong, Other
Reported Wind Direction:

(2) Investigated by:	Date:	Time:
Corrective Actions: _____		

Discussions with Complainant: _____		

- (1) A print-out of the e-mail summary provided by the 800 answering service may be attached to this en-lieu of completing the reported complaint background information.
- (2) An Off-Site odor survey form shall be completed to document the investigation of the odor.
- (3) A summary of this form, resulting off-site odor survey form and other applicable information shall reported verbally or via e-mail within approximately two days of receipt of the complaint.