

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality

Subject: Land Protection and Revitalization Guidance Memo No. LPR-SW-2013-02
Landfill Mining Applicability & Application Requirements

To: Regional Land Protection Program Managers, Regional Solid Waste Permit Writers, Kathryn Perszyk, Geoff Christie, and Leslie Beckwith

From: Justin Williams 
Director, Office Waste Permitting & Compliance

Date: September 27, 2013

Copies: Regional Directors, Jeffery Steers, and James Golden

Summary:

This guidance along with DEQ Form LF MINE and Submission Instruction No. 27 have been developed to address requirements for Landfill Mining applications as indicated in the Solid Waste Management Regulations (VSWMR, 9 VAC 20-81), effective August 3, 2011.

Electronic Copy:

An electronic copy of this guidance is available on the Virginia Regulatory Town Hall website at: <http://townhall.virginia.gov/L/GDocs.cfm?boardid=119>

Contact Information:

Please contact the solid waste permit coordinator, Kathryn Perszyk, at (703) 583-3856 or kathryn.perszyk@deq.virginia.gov with any questions regarding the application of this guidance.

Disclaimer:

This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate any particular method nor does it prohibit any alternative method for the analysis of data, unless specifically required by the VSWMR. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.



Landfill Mining Applicability & Application Requirements

I. Introduction

Landfill mining is governed by 9 Virginia Administrative Code (VAC) 20-81-385. Section 9 VAC 20-81-600 also requires that landfill mining is processed as a major modification to a facility's permit. The purpose of this guidance document is to provide permittees information on the application that should be submitted and to provide solid waste permit writers guidance to assist with reviewing and processing landfill mining requests.

II. Background

Landfill mining can be a beneficial means to recover solid waste previously disposed of in a solid waste disposal facility. The requirements applicable to landfill mining are outlined in 9 VAC 20-81-385 and include a requirement for facilities to develop an operational plan. 9 VAC 20-81-600 also requires facilities to receive a major modification to their permit to engage in landfill mining.

III. Authority

Section 10.1-1408.1 of the Code of Virginia specifies that sanitary landfills or other facilities for the disposal, treatment, or storage of nonhazardous solid waste shall not operate without a permit from the Director. This Section also identifies key components of the permit application that shall be submitted for review when applying for a new or modified permit.

Section 10.1-1409 B. of the Code indicates that a permit may be amended or conditions attached to a permit when there is a significant change in the manner and scope of operation which may require new or additional permit conditions or safeguards to protect the public health and environment. The permit modification application required by the Code is addressed in Part V of the VSWMR [9 VAC 20-81-450 through 9 VAC 20-81-600]. An application providing the information outlined in this guidance and attached and referenced submission instruction will contain the basic information the DEQ will use to evaluate the proposed landfill mining activities at the facility. Based on the evaluation of the submitted permit application, the Department will determine if the application is administratively complete, technically adequate, and in full regulatory compliance with applicable sections of the VSWMR.

The permit application for a proposed landfill mining facility shall contain a Notice of Intent (NOI), siting assessment in accordance with 9 VAC 20-81-395, Landfill Mining Operating Plan in accordance with 9 VAC 20-81-385, additional plans as required by 9 VAC 20-81-460 and 9 VAC 20-81-470 or 9 VAC 20-81-480, and applicable permit fee outlined in 9 VAC 20-90-120. The following discussion is provided to aid the applicant in preparing a complete application for the Department's review.

IV. Definitions

The definitions in § 10.1-1400 of the Code of Virginia and § 9 VAC 20-81-10 of the VSWMR apply to the implementation of these procedures and are not included in the list below.

"Active landfill" means a landfill unit that has not been closed in accordance with the requirements of 9 VAC 20-81-160.

"Clean closure" means all solid wastes have been removed from a permitted solid waste management facility and any releases at or from the disposal unit(s) have been remediated so that further regulatory control under the VSWMR is not necessary to protect human health and the environment. To meet "clean closure," the facility owner/operator must remove all wastes from the disposal unit(s) and remove or decontaminate all waste residues, liner and leachate collection system components, contaminated soils, and structures and equipment contaminated with solid waste and solid waste leachate.

"Closed landfill" means a landfill unit that has been properly secured in accordance with the requirements of 9 VAC 20-81-160 or in accordance with regulations or permits in effect prior to December 21, 1988.

"Existing landfill" means a discrete area of land used for the disposal of solid waste. An "existing landfill" can consist of one or more of the following landfill units (1) a landfill closed prior to December 21, 1988; (2) a closed landfill released from postclosure care requirements; (3) a closed landfill conducting postclosure care in accordance with the requirements of 9 VAC 20-81-170; or (4) a sanitary, CDD, or industrial landfill currently operating in accordance with the requirements of 9 VAC 20-81-140.

"Landfill mining" means the process of excavating solid waste from an existing landfill. (9 VAC 20-81-10) "Landfill mining" does not include excavation of waste to facilitate installation of landfill gas, leachate management, or other utility systems provided waste excavated is managed and cover installed in accordance with 9VAC20-81-140 or 9VAC20-81-160, as applicable.

"Landfill mining unit boundary" or "LFMUB" means the vertical plane located at the edge of the landfill mining activity. The LFMUB must encompass all excavation, waste storage and salvaging operations and be positioned within or coincident to the waste management boundary.

"Lined landfill" means a landfill underlain by a constructed liner system meeting the minimum requirements of 9 VAC 20-81-130.J.

V. Guidance Document

The intent of this guidance is to provide solid waste permit writers and solid waste landfill owner/operators and their consultants a list of documents and information to use when preparing, reviewing, and processing landfill mining requests. The following provides a summary of the landfill mining requirements, landfill mining application contents, and processing guidelines.

V.A Applicability

Landfill mining provides an opportunity to excavate solid wastes for recycling or beneficial use, while reclaiming landfill airspace to refill in a more efficient manner, to alter grades to facilitate an expansion (e.g. piggyback, mechanically stabilized earthen berm design, etc.), or to remove the landfill for purposes of property redevelopment. Owner/operators can propose to mine both existing active landfills or closed landfills. Requirements for landfill mining are governed by 9 VAC 20-81-385 and 9 VAC 20-81-395, as applicable.

1. Mining a closed landfill

Mining a closed landfill, one that is currently undergoing postclosure care or one that has been released from postclosure care, will involve removing the existing landfill cap to be able to reclaim wastes and/or airspace. Re-opening the landfill will require the owner/operator to perform all site monitoring activities and meet all operating standards for active landfills in accordance with Part III of the VSWMR (9 VAC 20-81-100 *et seq.*) If the closed landfill still has an active solid waste permit, a major permit modification application will be required pursuant to 9 VAC 20-81-600. If the landfill's permit was previously revoked, an application for a new permit for a miscellaneous unit will be required pursuant to 9 VAC 20-81-395.

Mining of a pre-88 landfill will subject the site to the same monitoring, operating standards, and permit requirements stated above, to include the establishment and maintenance of monitoring networks for landfill gas and groundwater if none currently exist or were abandoned or removed at closure. This is because the act of landfill mining is considered a form of solid waste management which is subject to the applicable requirements under the VSWMR. If the mining operation is to remove the landfill and clean close the facility (see Section V.B.4.a.) or if no waste is placed back into the landfill during the mining, the pre-88 landfill site may not be required to establish a groundwater monitoring network.

2. Mining an active landfill

Mining an active landfill often happens alongside active landfilling, providing an opportunity to mine a specific area while disposing of unrecoverable wastes at the landfill's active working face. While the mining activity presents challenges similar to operating a landfill, there are additional considerations to be made, which are to be addressed in the landfill mining major permit modification request.

This guidance is not applicable to activities associated with remediation waste management units (RWMUs). Applicability criteria and management requirements for RWMUs are outlined in 9 VAC 20-81-380.

V.B. Landfill Mining Application Contents

The following items should be submitted as part of a new permit or permit modification request to perform landfill mining. Active landfills holding a Solid Waste Permit may already have some of these items addressed. If so, the application for landfill mining can reference existing permit documents in lieu of repeating the information.

1. Notice of Intent

Applicants for new permits or permit modifications shall include a notice of intent with their application. The notice of intent shall be in letter form and state (1) the desired permit or permit modification, (2) the precise location of the proposed facility, (3) the intended use of the facility and (4) shall be accompanied by area and site location maps in accordance with 9 VAC 20-81-450.B.1. and certification from the State Corporation Commission in accordance with 9 VAC 20-81-450.B.10. Accompanying new permit applications, a disclosure statement (DEQ Form DISC-01 and 02 for all key personnel) and local government certification (DEQ Form SW-11-1) shall also be provided with the notice of intent in accordance with 9 VAC 20-81-450.B.2. and B.3. For major permit modifications, in accordance with 9 VAC 20-81-600.F.3.b., the notice of intent letter shall also describe the exact change(s) to be made to the permit conditions and supporting documents referenced by the permit and contain an explanation of why the modification is needed.

If the application for landfill mining is submitted in conjunction with a request for landfill expansion or an increase in capacity, additional items as specified under 9 VAC 20-81-450.B. are also required, and typically submitted as part of the Part A permit or permit modification application. See Guidance Memo 01-2009: Scenarios under which a Part A Amendment is or is not Required for additional information.

2. Siting Assessment

Landfill mining brings forward a unique set of operating challenges; though similar to operating a landfill, nuisances and hazards can be less predictable, especially when opening a landfill that has been previously closed. As is often the case, the landfill was not previously sited taking into account adjacent land use and property setbacks established by federal regulation (RCRA Subtitle D, 40 CFR 258), DEQ statute and regulation, and/or local requirements. Proposals for landfill mining must take into account the current siting requirements relative to the hydrologic and geologic characteristics of the landfill unit to be mined and surrounding area, historical weather patterns that may impact the mining operation, surrounding area land use, potential health risks, and potential damage to animals, vegetation, and structures when determining whether the proposed activity is suitable. The siting evaluation must address the following items as indicated in 9 VAC 20-81-395.C.1.

Hydrologic and Geologic Characteristics

Submit a report cataloging and describing the aquifers, geologic features, or any similar characteristic of the site and surrounding area that might affect the operation of the facility or be affected by that operation. Section IV.F. of Submission Instruction No. 1 provides details of the hydrologic and geologic features that should be considered in the report.

Historical Weather Patterns

Provide a summary of the atmospheric and meteorological characteristics and patterns of precipitation at the facility and surrounding area. Analysis of weather patterns can

identify parts of the year best suited for landfill mining activities, as periods of excessive rain and/or snow may cause operating problems.

Surrounding Area Land Use

Provide a summary of the surrounding area land use, to address current local zoning and property use. The proximity of offsite receptors to the proposed landfill mining unit boundary (LFMUB) should be addressed on DEQ Form LFMINE (Attachment 2). This form provides boxes for the facility representative to indicate the closest distance to each of the receptors listed. These distances are then compared to the regulatory siting standards of 9 VAC 20-81-120 to ensure the location chosen for the LFMUB meets current standards. This section should supplement the information provided on the DEQ Form, but not repeat the information.

Potential Health Risks

Potential Health Risks to Operational Staff

Identify potential health risks to operational staff and operational controls to protect staff. Risks may include, but not limited to, working around heavy equipment and waste processing operations; exposure to dust, odors, and noise; exposure to landfill constituents, such as landfill gas (methane and hydrogen sulfide) at the excavation area and leachate; fires due to subsurface oxidation; etc.

Potential Health Risks to Surrounding Population

Identify potential health risks, level of risk which can be based on proximity, and operation controls to protect the surrounding population. Risks may include any nuisances or hazards that has the potential to leave the facility boundary, which may include, but is not limited to, exposure to dust, odor, and noise; releases of landfill constituents, such as landfill gas (methane and hydrogen sulfide), leachate, and surface water; fires due to subsurface oxidation; etc.

Potential Damage to domestic animals, wildlife, crops, vegetation, and physical structures

For each of the receptors listed (domestic animals, wildlife, crops, vegetation, and physical structures), indicate the potential damage that could occur from the landfill mining operation and releases of landfill constituents (landfill gas, leachate, etc.). Indicate measures that are in place or will be implemented to protect each receptor from the landfill mining operation and any releases.

Attachments

In accordance with 9 VAC 20-81-395.B., appropriate requirements of Part V (9 VAC 20-81-400 et seq.) shall be addressed in the landfill mining / miscellaneous unit permit application. For new miscellaneous units, a Part A application is not required; however, the siting assessment discussed herein should include the following attachments, which are typically included in the application for a new landfill:

- a. A key map meeting the requirements of 9 VAC 20-81-460.B.;
- b. A near vicinity map meeting the requirements of 9 VAC 20-81-460.C.;
- c. Documentation of legal control in accordance with 9 VAC 20-81-460.D.; and

- d. An adequacy report prepared by the Virginia Department of Transportation (VDOT) or other responsible agency (only applicable to sanitary landfills).

For existing landfills requesting a major permit modification, these items are likely already in the facility's Part A or Part B permit. The listed attachments are only needed if they are not already part of the facility's permit or if changes to the existing documents are necessary as part of the requested permit modification (i.e. an increase in truck traffic due to the mining activity would necessitate a VDOT adequacy determination), or if these attachments do not already exist.

3. Landfill Mining Operating Plan, Design Plans, Site Monitoring Plan(s)

In accordance with 9 VAC 20-81-385.B., a landfill mining facility must have an operating plan that describes operating details pertaining to the landfill mining activity. Submission Instruction No. 27 (Attachment 1) has been prepared to address the outlined submittal requirements and additional documents that need to be submitted as part of the permit or permit modification application for landfill mining. The submission instruction indicates the application should include an operating plan, design plans, and site monitoring plan(s), some of which may already exist in the permit for active landfills. Depending on site-specific factors, additional information may need to be submitted for review.

4. Closure and Postclosure Care Plans

Depending on the goal of landfill mining, there are a few options for closure. Each option identified below describes information needed in addition to the submittal described in Submission Instruction No. 6 to address closure and postclosure care of the landfill mining operation.

a. Clean Closure

If the intent of landfill mining is to remove all wastes from the existing landfill so that the property can be redeveloped with minimal or no restriction, then in addition to the removal of solid wastes previously disposed, liner and leachate collection system components and/or contaminated soils shall be excavated. Once this action has occurred, the facility shall sample underlying soils to ensure all wastes and contamination have been removed. Once the waste removal is complete and certified, site monitoring activities (landfill gas and groundwater monitoring) shall continue until termination can be granted as outlined in Guidance Memo 01-2007: Postclosure Care Termination (see Section V.C.4. for additional details). Closure and Postclosure Care Plans outlining these procedures should be provided.

b. Cease landfill mining once airspace is reclaimed

Excavation of an existing unlined landfill with the intent to refill with new wastes will require the excavated area to be lined in accordance with the requirements of 9 VAC 20-81-130 prior to refilling with new wastes. If the facility continues to accept new wastes for disposal while also mining existing waste, a separate working face shall be established for incoming waste. Closure and Postclosure Care Plans outlining the time frames associated with closure and postclosure activities should be provided.

The planned liner system must be addressed separately in the facility's permit, whether submitted with the landfill mining application or separate modification application. The design plans and accompanying design documents are addressed in Submission Instruction No. 2. Once the liner is constructed, the Department must inspect the newly constructed liner and issue a Certificate-to-Operate, which will authorize the facility to accept waste in the constructed area.

Unlined landfills that are excavated for purposes of recovering previously disposed wastes can be performed without requiring installation of a liner system so long as the only wastes returned to the landfill, if applicable, are wastes previously excavated that are deemed unrecoverable and non-hazardous during the salvaging process. Once the landfill mining activity ceases and previously excavated wastes are returned, the landfill shall be closed and postclosure care conducted in accordance with a Closure and Postclosure Care Plan meeting the requirements of 9 VAC 20-81-160 and 9 VAC 20-81-170, respectfully.

Landfill mining of a lined landfill to reclaim airspace in certain areas where inefficient compaction occurred or to recover materials does not require installation of a new liner system once the maximum excavation depth is reached. If the excavation reaches down to the liner system, it is recommended that the facility evaluate the liner system prior to refilling to ensure the liner system is intact. Refilling of excavated areas shall occur in accordance with the landfill's current Operations Manual meeting the requirements of 9 VAC 20-81-140 and 9 VAC 20-81-485. Once the landfill reaches final permitted grades, it should be closed in accordance with an approved Closure Plan and 9 VAC 20-81-160 and the owner/operator shall conduct postclosure care in accordance with an approved Postclosure Care Plan and 9 VAC 20-81-170.

c. Cease landfill mining once desired grades are achieved

Landfill mining may also be performed to adjust final grades of a landfill area to facilitate a piggybacked landfill expansion, mechanically stabilized earth (MSE) berm capacity increase, or future development project. In these cases, once the landfill is brought to the appropriate grades to facilitate the expansion, the area shall be closed in accordance with an approved Closure Plan and 9 VAC 20-81-160. An approved Postclosure Care Plan addressing postclosure care activities for the entire solid waste management facility should also be in the permit.

Prior to constructing the liner for the piggyback expansion or MSE berm capacity increase, the landfill expansion must first be addressed in the landfill's Part A approval and the piggyback liner design and/or MSE berm design shall be addressed in the Part B Permit. Guidance Memo 01-2009 can assist in determining whether a Part A permit modification is necessary for the proposed expansion, and Submission Instruction No. 1 and Submission Instruction No. 2 can assist with preparing the necessary Part B permit application documents.

5. Cost Estimate & Financial Assurance Mechanism

In accordance with 9 VAC 20-70, solid waste management facilities are required to maintain financial assurance for the costs associated with closure, postclosure care, and corrective action of the facility. A cost estimate for closure, postclosure care, and corrective action, if applicable, shall be provided with the permit application to account for costs associated with the proposed landfill mining activity. The cost estimate should also cover stockpiles of materials generated in accordance with Guidance Memo 04-2011: Financial Assurance for Stockpiles of Materials for Beneficial Use or Other Uses. Cost estimates and the associated financial assurance mechanism(s) should already be in place for existing landfills that have not been released from postclosure care and may require revision to account for the landfill mining activity. The cost estimate should be provided on DEQ Form CE SWDF.

Once the cost estimate is deemed administratively complete and technically adequate as part of the permit application review process, the facility owner/operator shall establish a financial assurance mechanism and submit the new or amended financial assurance mechanism to the Office of Financial Responsibility and Data Management. For facilities maintaining a trust fund for purposes of compliance with 9 VAC 20-70, the number of years remaining in the pay-in-period shall not be increased to account for a change in the remaining years of landfill life based on added airspace gained by landfill mining.

6. Permit Fee

In accordance with 9 VAC 20-90-50, applicants shall be assessed a fee for new permits and permit modifications. In accordance with Table 3.1-1 of 9 VAC 20-90-120 there is no fee associated with issuing a new permit for a miscellaneous unit.

For a major permit modification, the permit modification fee will vary depending on the extent of the permit application review and permit Modules to be issued. At a minimum, requests for landfill mining will require payment of fees specified under Table 3.1-2 of 9 VAC 20-90-120 for issuance of Permit Modules I and II. Permit applications including revisions to one or more site monitoring plans, closure and postclosure plans, etc. shall also be assessed a fee for those additional Modules that require changes and/or plans to be reviewed. Applications seeking a facility expansion or increase in capacity may also be assessed fees associated with the Part A permit or permit modification and public participation, if applicable.

7. Pilot Study-Variance Petition

If a facility wants to conduct a pilot study to determine economic feasibility and likelihood of recovery of useable materials in conducting landfill mining activity, the facility owner/operator can submit a variance petition, as described below to the requirement for requesting a major permit modification for landfill mining in Table 5.2 of 9 VAC 20-81-600.F. This variance petition should outline the scope of the feasibility project, location of test pits, operations during the testing, duration of testing (which should be short term and no longer than necessary to assess the feasibility), management of waste removed, and repair of cap/cover system.

Variance petitions that accompany a permit application shall be prepared in accordance with the requirements outlined under Part VII of the VSWMR (9 VAC 20-81-700 through 760) and submitted with the permit request. The variance fee specified under Table 3.1-3 of 9 VAC 20-90-120, to include the base fee and any other applicable fees based on the variance type, shall also be submitted.

V.C. Administrative Procedures

1. Staff Review of the Application

The facility should submit the permit application to the appropriate DEQ Regional Office Land Protection Program Manager. DEQ staff should acknowledge receipt of the package and review the package for administrative completeness and/or technical adequacy within 90 days of receipt (completeness review on a new permit application is due within 30 days of receipt). If additional information is required, a Completeness Review and/or Technical Review letter should be sent to the facility requesting additional information to be submitted within 30 days. Once the package is deemed complete and technically adequate, DEQ staff should prepare a draft permit, which may include site-specific conditions regarding the landfill mining activity, and prepare for public participation.

2. Public Participation

New permits and major permit modifications require public notification of the draft permit availability with a minimum 30-day public comment period. If the major permit modification includes a request for an expansion or increase in capacity the public participation also includes a public hearing and extends the public comment period to 45 days.

The Department will prepare the public notification package and the facility will be responsible for placing the prepared public notice in a local newspaper, while staff will ensure the notice is posted on the DEQ website. If a public hearing is required or requested during the public comment period, the hearing shall be held in the locality of the facility. Public hearings are typically held Tuesday, Wednesday, or Thursday evenings at 7pm in the board of supervisors meeting room at the County Courthouse, other administrative building, or public library.

3. Permit

At the end of the public comment period, the Department will review all comments received and determine whether changes to the draft permit are warranted. A final decision on the draft permit will be made within 90 days of the close of the public comment period.

4. Clean Closure, if applicable

Once the landfill mining activity has removed all solid wastes previously disposed including all liner and leachate collection system components and/or any contaminated soils, the facility shall notify the Department and provide certification similar to providing certification of landfill closure in accordance with 9 VAC 20-81-160.D.4., except that this

certification will certify that all wastes have been removed and removal has been confirmed by testing. A report summarizing waste removal, testing procedures, and results should also be provided. Following this certification, postclosure monitoring of the former landfill site shall continue as if the landfill remained. Once landfill gas and groundwater monitoring show there is no longer an environmental impact caused by the former landfill site, the owner/operator can request termination of site monitoring from the Department by submitting a Termination of Postclosure Care Activity (TPCA) Evaluation. Contents of the TPCA Evaluation are outlined in Submission Instruction No. 20.

Once the evaluation is reviewed, the Department will determine whether the facility has met the requirements of clean closure. If it is determined that the facility meets the clean closure definition, the facility will no longer be subject to the VSWMR, and in accordance with 9 VAC 20-81-570.A.10., the facility's permit will be revoked.

V. Collaboration Process

No project team was formed to develop this guidance; however, DEQ Central Office and Regional staff were given opportunity to comment during development. Additionally, comments from interested parties were solicited and considered in the final version.

VI. Attachments

- 1. Submission Instruction No. 27: Landfill Mining Operating Plans for Solid Waste Disposal Facilities**
- 2. DEQ Form LFMINE**

Attachment 1

**SOLID WASTE PERMITTING
SUBMISSION INSTRUCTION NO. 27**

LANDFILL MINING OPERATING PLANS FOR SOLID WASTE DISPOSAL FACILITIES

Developed by:

**Virginia Department of Environmental Quality
Office of Waste Permitting and Compliance
629 East Main Street
Richmond, Virginia 23219**

V. 09/2013

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I. OPERATING PLAN

The Operating Plan shall address the requirements of 9 VAC 20-81-385.B. and include supplemental discussions and design calculations to facilitate department review of the proposed landfill mining activity. The sections below have been written to facilitate preparation of an Operating Plan that addresses these requirements.

In accordance with 9 VAC 20-81-485.A., landfills shall have an operations manual that contains (1) an operations plan outlining daily landfill operation instructions; (2) an inspection plan that provides a schedule for inspecting all major aspects of facility operations; (3) a health and safety plan that addresses the requirements of 29 CFR 1910; (4) an unauthorized waste control plan; (5) an emergency contingency plan; and (6) a landscaping plan. Solid waste disposal facilities are required to maintain these plans in the facility's operating record, update them as necessary, and certify annually that the plans address current operations and regulatory requirements

The landfill operations manual, which is separate from the landfill mining operating plan discussed below, is to be maintained in the facility's operating record and updated to account for changes in facility operations and/or the VSWMR. The facility shall develop a plan or review its current inspection plan and update the plan to account for self-inspections that should be performed to ensure the landfill mining operation is in compliance with all requirements of Part III of the VSWMR (9 VAC 20-81-100 *et seq.*). At a minimum, the self-inspection program shall address inspections of the facility features identified in 9 VAC 20-81-140.A.16.

Format The format used for the Operating Plan should encourage clear analysis and presentation of the proposed landfill mining operation. The Operating Plan should start with a title page and table of contents followed by the following sections and discussions, which may already exist in the active landfill's Operations Manual, but should be repeated here. The title page should identify the facility name and permit number, the permit applicant, document date, and document preparer information. In addition, the header or footer of each page should include the facility name, permit number, document title, revision date, and page number.

A. Introduction

Provide a brief history outlining the landfill's development timeline, landfill's capacity, and types of wastes accepted.

Provide a description of the scope of the proposed landfill mining activity, to include anticipated materials to be recovered, expected quantities, and proposed final use of the recovered air space.

B. Schedule of Activities

Provide an estimate for the duration of mining activities and benchmarks for certain phases of the mining activities to be completed. Indicate when mining will occur, i.e. what months of the year or if mining will take place year round. Indicate hours of operation for the mining activity.

C. Operations

1. *General*

a. Personnel

Provide a list of estimated staffing needs to be used during the landfill mining operations. The list should indicate the staff's title and general responsibilities.

b. Equipment

Provide a list of estimated equipment needs to carry out this plan. The list should identify the type, number, and function of each piece of equipment.

2. *Procedures that will be employed to initiate mining activities*

Describe procedures to be followed prior to initiating mining activities. These procedures should include, but are not limited to, installation of erosion and sediment control features; creation and/or maintenance of access roads and material and equipment storage areas; acquisition and staging of appropriate equipment; facility monitoring and self-inspections; and any other applicable procedures.

3. *Phased description of opened areas*

Using the Design Plans (see Section II) as a reference, provide a phased description of how landfill mining will proceed. Indicate how specified equipment will be used, anticipated mining sequencing, and locations and phasing of waste management activities to be performed in conjunction with waste excavation.

4. *Procedures to meet landfill operational performance standards*

a. Types of Wastes

Indicate the types of wastes to be managed during the landfill mining activity. Indicate how wastes will be staged and procedures for handling unauthorized waste discovered during excavation, referencing the facility's Control Plan for Unauthorized Waste developed in accordance with 9 VAC 20-81-100.E.

b. Fire Control

Provide a description of fire protection equipment available at the site, indicating the equipment's location, physical description, and capabilities. Indicate the procedures that will be followed by facility personnel in response to observed subsurface fire indicators (such as substantial settlement over a short period of time, smoke, carbon monoxide emissions, or high landfill temperatures) and equipment fires in the excavation area. This section should also outline the facility's evacuation procedure including signals, personnel assembly areas, etc., and at what point emergency response personnel will be summoned.

- c. **Monitoring for Gaseous Emissions**
Indicate any monitoring to be performed and monitoring frequencies for methane, hydrogen sulfide, or other site-specific emissions to be conducted at the excavation area. During landfill mining activities, the facility shall maintain its perimeter landfill gas monitoring system and perform monitoring in accordance with a separate Landfill Gas Management Plan (see Section III.B.).
- d. **Stormwater Control**
Indicate run-on and run-off control systems to be installed, maintained, and modified during the course of the landfill mining activity in order to prevent stormwater flow to the active excavation area and facilitate run-off without causing pollutant discharge in accordance with 9 VAC 20-81-130.H. If a separate stormwater plan has been developed pursuant to a Virginia Pollutant Discharge Elimination System (VPDES) permit, provide a reference to the current plan.

Indicate procedures for dealing with perched leachate conditions encountered during landfill mining activities to prevent pollutant discharge.

- e. **Dust, Odor, and Vector Control**
Describe procedures to be employed to manage dust, odor, and vector control. If a separate Odor Management Plan has been developed, be sure to reference the plan.
- f. **Litter Control**
Describe procedures to be employed to contain litter and blowing paper to landfill mining and waste processing areas. Indicate routines for litter collection to meet the performance standard of 9 VAC 20-81-140.A.9.
- g. **Noise Control**
Indicate noise control procedures. In accordance with 9 VAC 20-81-130.E., noise attenuation shall be less than 80 dBA at the facility boundary.
- h. **Excavation and Cover**
i. **Excavation**
This section should address the depth of daily excavation in contrast to addressing height of lifts placed for compaction of incoming waste. Excavation should be performed in a manner that does not create steep slopes (in excess of final permitted grades or 33%). Steeper slopes may be allowed if slope stability calculations demonstrate a steeper slope will be stable. The calculations shall take into consideration the type and age of waste and its shear strength and related properties; expected leachate levels; potential rainfall impacts; and any impacts due to equipment loading. Slopes shall not exceed those allowed under OSHA's regulations regarding excavations (29 CFR 1926 Subpart P).

- ii. **Daily, Progressive, and Periodic Cover**
Indicate situations that would require daily cover and materials to be used. Landfill mining of sanitary landfills requires placement of daily cover or alternate daily cover in accordance with 9 VAC 20-81-140.B.1.c. However, there may be situations that require placement of daily cover at mining operations located at CDD and Industrial Landfills, i.e. to control odors, which should be specified here.

Placement of weekly progressive cover (9 VAC 20-81-140.C.1.b.) and periodic cover (9 VAC 20-81-140.D.1.c.) is required for landfill mining at CDD Landfills and Industrial Landfills, respectively. Indicate situations that would require progressive and periodic cover and materials to be used.

- iii. **Intermediate Cover**
If mining activities are to be suspended for 30 days or more as indicated in the schedule of activities provided in Section I.B., intermediate cover shall be provided and vegetation established as necessary. Indicate situations and procedures for applying intermediate cover.
- iv. **Final Cover**
When landfill mining activities have reached anticipated final elevations, the landfill must be closed with a final cap in accordance with 9 VAC 20-81-160. Indicate when final cover is to be installed and reference a separate Closure Plan which provides details on the closure cap to be installed. Liner and leachate collection system designs for future landfill expansions should be addressed in a Design Report (see Submission Instruction No. 2) separate from this plan.

This section is not applicable if the goal of landfill mining is to remove the landfill and obtain clean closure status from the Department.

5. *Prevention of releases to Groundwater and Subsurface Environment*

This section shall address the requirements of 9 VAC 20-81-395.C.2. and address the prevention of releases that may have adverse effects on human health or the environment due to migration of waste constituents in the groundwater or subsurface environment. The discussion should address the potential for releases and impacts considering the following:

- The potential for waste constituents to migrate through soil, liners, or other containing structures;
- The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater;
- The quantity and direction of groundwater flow;
- The proximity to and withdrawal rates of current and potential groundwater uses; and

- The potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food-chain crops and other vegetation.

Measures currently in place or to be implemented to prevent releases of waste constituents to groundwater and the subsurface environment should be discussed here.

6. *Prevention of releases to Surface Water, Wetlands, or Soil Surface*

This section shall address the requirements of 9 VAC 20-81-395.C.3. and address the prevention of releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, wetlands, or the soil surface. The discussion should address the potential for releases and impacts considering the following:

- The effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration;
- The quantity, quality, and direction of groundwater flow;
- The proximity of the unit to surface waters;
- The current and potential uses of nearby surface waters and any water quality standards established for those surface waters; and
- The existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils.

Measures currently in place or to be implemented to prevent releases of waste constituents to surface water, wetlands, or surface soils should be discussed here.

7. *Prevention of releases to Air*

This section shall address the requirements of 9 VAC 20-81-395.C.4. and address the prevention of releases that may have adverse effects on human health or the environment due to migration of waste constituents in the air. The discussion should address the potential for releases and impacts considering the following:

- The potential for the emission and dispersal of gases; aerosols, and particles;
- The effectiveness and reliability of systems and structures to reduce or prevent emissions of waste constituents to the air;
- The operating characteristics of the unit; and
- The existing quality of the air, including other sources of contamination and their cumulative impact on the air.

Measures currently in place or to be implemented to prevent releases of waste constituents to the air should be discussed here.

D. Management of Excavated Materials

Provide a thorough discussion of how materials will be handled once excavated. If multiple waste handling areas will be used, provide a flow chart indicating how excavated material will be managed. Describe any on-site sorting procedures, equipment to be used, location of sorting and stockpile areas, etc.

1. *Disposition of recovered materials*

Indicate the disposition of sorted recoverable materials (i.e. sent off site for recycling, further processing, etc.) and provide estimated volumes of each type of recoverable material. If mechanical screeners are to be used to sort excavated wastes, indicate the disposition of each size fraction and anticipated material makeup.

2. *Soils Management Plan*

If the facility anticipates beneficially reusing soils (which may contain residual waste material) recovered from the landfill mining activities, a soils management plan addressing soil sampling, storage and handling of excavated soil, and beneficial use(s) should be included. The plan needs to indicate where soils will be stockpiled, to include untested soils, sampled acceptable soils, and soils exhibiting levels of contamination above set limits, and measures to ensure that only appropriate soils are stockpiled in the designated areas. The plan should also indicate measures that will be taken to control stormwater run off and erosion of stockpiles to ensure that no migration of any potentially hazardous material off the property occurs.

Beneficial use of soils in landfill applications such as alternate daily or intermediate cover may be allowed after a demonstration period. Soil reuse shall be on internal slopes only where run-off can be collected as leachate.

3. *Disposition of unusable materials*

Identify the materials to be excavated that are considered unusable and indicate how these materials will be handled. Indicate waste determination procedures (to include material testing and/or generator knowledge) to be used to ensure unusable materials are non-hazardous. Based on the determination, indicate final disposition of unusable materials, which may include, being returned to the active mining area for disposal, disposal in a separate disposal unit, or sent off-site for further processing and/or disposal. If unusable materials are to be returned to the active mining area, indicate location and timeframes associated with material storage prior to disposal in the landfill.

If unauthorized wastes are encountered, provide details of how they will be managed. If a separate Unauthorized Waste Control Plan is available, reference the existing plan.

II. DESIGN PLANS

Submit the following design plans on 11" x 17" paper. A full-size set of Design Plans should also be provided in rolls and/or in pockets for review. The Design Plans shall be prepared and certified by a professional engineer registered to practice in the Commonwealth. [9 VAC 20-81-470.A.1.]

A. Title Sheet

The Title Sheet shall state the project title, preparer of the plans, the person/organization for whom the plans were prepared, a table of contents, and a location map showing the location of the site and area to be served. [9 VAC 20-81-470.A.1.a.]

B. Existing Site Conditions Plan Sheet

Show conditions existing at the site prior to initiating landfill mining activities. Be sure to identify the proposed landfill mining unit boundary. As defined in guidance memo LPR-SW-2013-02, the "Landfill mining unit boundary" or "LFMUB" means the vertical plane located at the edge of the landfill mining activity. The LFMUB must encompass all excavation, waste storage and salvaging operations and be positioned within or coincident to the waste management boundary. [9VAC20-81-470.A.1.b.]

C. Phasing Plan Sheets

Provide a series of plan sheets showing the progression of landfill mining through time; a separate plan shall be provided for each major phase or new area where substantial landfill mining will be performed. At least one phasing plan sheet shall be provided to correspond with the midpoint of the landfill mining operation. [9 VAC 20-81-470.A.1.f. and A.2.]

D. Final Site Topography Plan Sheet

Show final site topography indicating the appearance of the site and final contours of the site at the end of landfill mining, including any detail drawings necessary to prepare the site for long-term care. [9 VAC 20-81-470.A.1.e.]

E. Site Monitoring Plan

Provide a site monitoring plan showing current and proposed locations of the following:

- Devices for the monitoring of leachate production and detection;
- Groundwater quality monitoring wells;
- Landfill gas probes and vents;
- Odor monitoring stations, if applicable; and
- Stormwater outfalls.

[9 VAC 20-81-470.A.1.g.]

III. SITE MONITORING PLAN(S)

If landfill mining is to occur at an active landfill or landfill currently undergoing postclosure care, then the facility's permit should already contain approved site monitoring plans for the management of leachate, landfill gas, and groundwater. If necessary, these plans should be modified to incorporate the details provided below specific to landfill mining.

If landfill mining is to occur at a pre-88 landfill or closed landfill released from postclosure care requirements, site monitoring plan(s) should be developed to address the following requirements as outlined in Part III (9 VAC 20-81-100 *et seq.*) of the VSWMR.

A. Leachate Management

Landfill mining activities, especially activities at closed landfills, will subject opened landfill areas to additional precipitation. Landfills originally designed with liners and leachate collection systems should have functioning leachate collection and detection systems (if applicable) in order to handle the precipitation that collects. It is especially important that landfills without liners and leachate collection systems implement operational measures to reduce the volume of precipitation that collects within the excavation area. This section of the site monitoring plan should supplement operating procedures to ensure run-on/run-off control and address the applicable sections of Submission Instruction No. 7 for leachate management plans.

In addition, operators excavating wastes from landfills units have the potential to encounter perched leachate conditions and create leachate seeps. Any leachate encountered shall be managed to prevent discharge of pollutants to surface waters, waters of the United States, and wetlands. The operating plan (Section I.C.6.) shall address procedures for managing perched leachate in addition to leachate seeps as required by 9 VAC 20-81-210.F.

B. Landfill Gas Management

If organic waste materials were previously placed in the landfill, landfill mining activities can result in releases of landfill gas either at the active mining area or cause subsurface movement. This section of the site monitoring plan should address the applicable items identified in Submission Instruction No. 13 for landfill gas management plans. In addition to monitoring landfill gas at the facility boundary, procedures to be followed to monitor levels of landfill gas at the active mining area should also be provided for purposes of worker safety.

C. Odor Management

In accordance with 9 VAC 20-81-200.D. odor management plans shall be developed in response to an odor nuisance or hazard created under normal operating conditions and upon notification from the department. Except in the case of certain industrial landfills and possible CDD landfills, landfill mining activities are likely to release odorous compounds that may cause a nuisance or hazard. For this reason, applications for landfill mining should preemptively include an odor management plan outlining procedures to be followed in response to identified odor nuisances or

hazards. Submission Instruction No. 13 has a section devoted to odor management plans and can be used to develop a plan specific to the proposed landfill mining activities.

D. Groundwater Monitoring

All landfills shall have a Groundwater Monitoring Plan in accordance with 9 VAC 20-81-250. In some cases, Corrective Action Plans may also be required in accordance with 9 VAC 20-81-260. If the facility is not currently subject to groundwater monitoring requirements (either because the landfill was closed prior to December 21, 1988, or because the landfill was released from postclosure care requirements), then the landfill mining application should include a Groundwater Monitoring Plan to address monitoring for impacts resulting from the landfill mining activity. Submission Instruction Nos. 5, 11, and 12 are provided to assist with development of a Groundwater Monitoring Plan (select appropriate submission instruction based on type of landfill – new landfill, existing CDD or industrial landfill, or existing sanitary landfill, respectively).

If the facility already has an approved Groundwater Monitoring Plan and Corrective Action Plan, if applicable, then it is likely that the current plan(s) are sufficient. Facilities should review current plans and make any changes deemed necessary to account for the proposed landfill mining activity.

E. Storm Water Discharge Monitoring

Landfills that have point-source stormwater discharge(s) are typically covered under a Virginia Pollutant and Discharge Elimination System (VPDES) Permit, which requires the facility to maintain a Stormwater Pollution Prevention Plan (SWPPP) in addition to setting monitoring, limits, and reporting requirements applicable to stormwater discharges. The facility should work with the Regional VPDES permit writer and/or compliance inspector to determine if modifications to the VPDES permit and/or SWPPP are necessary as part of the solid waste permit modification.

Attachment 2



Solid Waste Management Facility Landfill Mining Application Form

New Permit Permit Modification

I. FACILITY INFORMATION

A. Facility Location										Permit No. SWP			
Facility Name:													
Address:													
City:			State:				Zip:						
Latitude:		Deg		Min		Sec North							
Longitude:		Deg		Min		Sec West							
B. Facility Contact Information													
Contact Person:						Title:							
Contact Phone:						E-mail:							
Owner						Operator:							
Address:						Address:							
City:			State:		Zip:		City:			State:		Zip:	

II. LANDFILL INFORMATION

A. Facility Type and Capacity											
Facility Type to be Mined:		<input type="checkbox"/> Sanitary Landfill			<input type="checkbox"/> CDD Landfill						
		<input type="checkbox"/> Industrial Landfill			<input type="checkbox"/> Landfill closed prior to Dec. 21, 1988						
Total Property Acreage:		acres			Facility Boundary:		acres				
WMB Acreage:		acres			Elevations:		Current Elevation:		ft AMSL		
LFMUB Acreage:		acres					Excavation Grade:		ft AMSL		
Total Capacity:		cubic yards			Proposed Capacity to Mine:			cubic yards			
B. Siting Assessment											
Answer the following questions by entering "yes", "no", or a numeric response, as applicable.											
1. Is the landfill mining unit boundary (LFMUB) located in a 100 year flood plain?											
2. Is the LFMUB located in a geologically stable area?											
3. The following distances are the shortest measured distances from the LFMUB or leachate storage area and must be reported in feet											
a. Distance to any residence, school, daycare center, hospital, nursing home or recreational park area in existence at the time of application											
i. Residence											
ii. School											
iii. Daycare center											
iv. Hospital											
v. Nursing home											
vi. Recreational park area											
b. Distance from any perennial stream or river											
c. Distance from the Facility Boundary											

d. Distance from any well, spring or other ground water source of drinking water in existence at the time of application	
e. Distance from the nearest edge of the right-of-way of any interstate or primary highway	
f. Distance from the nearest edge of right-of-way of any other highway or city street	
4. Is the landfill located in a park or recreational area, wildlife management area or area designated by the federal or state agency as the critical habitat of any endangered species?	
5. Groundwater monitoring	
a. Does the facility have the ability to conduct groundwater monitoring in accordance with 9 VAC 20-81-250?	
b. Does the facility have the ability to characterize the rate and direction of ground water flow within the uppermost aquifer?	
c. Does the facility have the ability to characterize and define any releases from the landfill so as to determine what corrective actions are necessary?	
d. Does the facility have the ability to perform corrective action as necessary?	
<p>Stamp Professional Geologist or Professional Engineer in space provided, meaning to the best of my knowledge, information and belief, the answers to question #5 are, in my professional opinion, in compliance with applicable laws, codes, and ordinances.</p>	
6. Is the LFMUB located in a tidal or nontidal wetland? (Yes or No)	
a. If the answer to #6 is "yes" list the total number of nontidal wetland acres to be impacted:	
7. Additional restrictions for sanitary LFMUBs:	
a. Distance to existing surface or ground water public water supply intake or reservoir that are downgradient of the LFMUB (in miles):	
b. Distance to existing surface or ground water public water supply intake or reservoir that are upgradient of the LFMUB (in miles):	
c. Is the LFMUB located in an area vulnerable to flooding caused by dam failures?	
d. Is the LFMUB located over a sinkhole or within 100 feet of a solution cavern associated with karst topography?	
e. Is the LFMUB located over a fault that has had displacement in Holocene time?	
f. Distance from a fault that has had displacement in Holocene time (in feet):	
g. Is the LFMUB located within a seismic impact zone?	
h. Distance from any airport runway end used by turbojet or piston-type aircraft:	

III. LANDFILL MINING APPLICATION ATTACHMENTS

The following items shall be provided as an attachment to this form, and will constitute the facility's Permit or Permit Modification Application. Please indicate whether each item is 'provided' or 'not applicable' to the proposed facility or facility modification.		
	Provided	N/A
A. Notice of Intent	<input type="checkbox"/>	<input type="checkbox"/>
1. Area and Site Location Maps	<input type="checkbox"/>	<input type="checkbox"/>
2. Disclosure Statement	<input type="checkbox"/>	<input type="checkbox"/>
3. Local Government Certification	<input type="checkbox"/>	<input type="checkbox"/>
4. State Corporation Commission Certification	<input type="checkbox"/>	<input type="checkbox"/>
B. Siting Assessment	<input type="checkbox"/>	<input type="checkbox"/>
1. Key Map	<input type="checkbox"/>	<input type="checkbox"/>
2. Near Vicinity Map	<input type="checkbox"/>	<input type="checkbox"/>
3. Documentation of legal control	<input type="checkbox"/>	<input type="checkbox"/>
4. VDOT Adequacy Report	<input type="checkbox"/>	<input type="checkbox"/>
C. Operating Plan	<input type="checkbox"/>	<input type="checkbox"/>
D. Design Plans	<input type="checkbox"/>	<input type="checkbox"/>
E. Site Monitoring Plan(s)	<input type="checkbox"/>	<input type="checkbox"/>
1. Leachate Management	<input type="checkbox"/>	<input type="checkbox"/>
2. Landfill Gas Management	<input type="checkbox"/>	<input type="checkbox"/>
3. Odor Management	<input type="checkbox"/>	<input type="checkbox"/>
4. Groundwater Monitoring	<input type="checkbox"/>	<input type="checkbox"/>
5. Stormwater Discharge Monitoring	<input type="checkbox"/>	<input type="checkbox"/>
F. Closure Plan	<input type="checkbox"/>	<input type="checkbox"/>
G. Cost Estimate & Financial Assurance Mechanism	<input type="checkbox"/>	<input type="checkbox"/>
H. Permit Fee specified under 9 VAC 20-90	<input type="checkbox"/>	<input type="checkbox"/>
I. Variance Petition in accordance with 9 VAC 20-81-760 If provided, please indicate the regulatory citation for variance: _____	<input type="checkbox"/>	<input type="checkbox"/>

IV. RESPONSIBLE OFFICIAL SIGNATURE

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete.	
Name:	Title:
Signature:	Date:

Instructions for Completing DEQ Form LFMINE

DEQ Form LFMINE is required for all applicants seeking a permit or permit modification to perform landfill mining of an existing solid waste disposal unit(s). These instructions are designed to assist solid waste management facilities with the completion of this form. The descriptions below are listed in the order as they appear on DEQ Form LFMINE.

New Permit vs. Permit Modification:

Check only one box. Check 'New Permit' box if this application is proposing to mine a facility whose permit was previously terminated or revoked. Check 'Permit Modification' box if this application is for a major permit modification, as defined under 9 VAC 20-81-600.F.3.

I. FACILITY INFORMATION

A. Facility Location

Permit No. SWP: If the application is for a new permit, leave this box blank. DEQ will assign a number to the facility. If the application is for a Permit Modification, please indicate the SWP number assigned to the facility.

Facility Name: Enter the name of the facility as it should appear or as it currently appears on the existing SWP.

Address, City, State, and Zip: Provide the street address of the facility's physical location (may be Rural Route/Box No. if 911 address is not available).

Latitude/Longitude: Provide coordinates in degrees-minutes-seconds indicating the facility's location.

B. Facility Contact

Contact Name, Title, Phone Number, and Email: Provide contact information for the person responsible for preparing the permit application. This person should be associated with the facility named. DEQ will consider the person listed as the main contact for correspondence relating to the permit application.

Owner Name, Address, and Phone: Provide name, address, and phone number of the legal owner of facility. Owner listed shall match SCC documentation provided with the NOI, if applicable.

Operator Name, Address, and Phone: Provide name, address, and phone number of the operator of facility, if different from the owner. Operator listed shall match SCC documentation provided with the NOI, if applicable.

II. LANDFILL INFORMATION

A. Facility Type and Capacity

Facility Type to be Mined: Check the appropriate box(es) for the type(s) of solid waste disposal unit(s) to be mined.

Total Property Acreage: Provide the total property acreage owned by the Owner listed where the facility is located.

Facility Boundary: Provide the total acreage designated as the facility boundary. The facility boundary shall encompass the waste management boundary and all ancillary activities including, but not limited to scales, groundwater monitoring wells, gas monitoring probes, and maintenance facilities. The acreage provided should match the acreage provided in the Part A Permit, if applicable.

Waste Management Boundary (WMB) Acreage: Provide the total acreage designated as the waste management unit boundary. This value should match the waste management boundary acreage as defined in the facility's Part A Permit, if applicable. Otherwise, the acreage provided should equal the acreage defined in accordance with 9 VAC 20-81-35 for existing facilities permitted prior to March 15, 1993.

Landfill Mining Unit Boundary (LFMUB) Acreage: Provide the total acreage designated as the landfill mining unit boundary. As defined in guidance memo LPR-SW-2013-02, the "Landfill mining unit boundary" or "LFMUB" means

the vertical plane located at the edge of the landfill mining activity. The LFMUB must encompass all excavation, waste storage and salvaging operations and be positioned within or coincident to the waste management boundary.

Elevations:

Current Elevation: Indicate the maximum elevation of waste in place. This value may differ from the permitted landfill maximum elevation defined in the facility's Part A Permit, if applicable, or the elevation established pursuant to 9 VAC 20-81-35.

Excavation Grade: Indicate the anticipated maximum elevation of the landfill once wastes have been excavated in accordance with the proposed plan. If the excavation will remove the landfill, this value should indicate the original lowest elevation of the base grades as defined in the facility's Part A Permit, if applicable, or based historical knowledge of the site.

Total Capacity: Indicate the total capacity of waste in place. This value may differ from the permitted landfill capacity, as landfill mining may be proposed prior to the landfill reaching its permitted capacity.

Proposed Capacity to Mine: Indicated the proposed capacity of the existing waste in place to be mined.

B. Siting Assessment

Answer questions 1 through 7.h. as appropriate. Keep in mind that all landfill mining activities to include excavated waste processing and storage shall occur within the proposed LFMUB (which shall be within or coincident to the permitted waste management boundary). Answers to questions in this section shall consider the distances between the landfill mining unit boundary and the receptor identified.

III. LANDFILL MINING APPLICATION ATTACHMENTS

This list acts as a checklist for the landfill mining permit application. Please indicate whether the attachment is provided with the application. There are instances where some of the application attachments are not applicable to a proposed facility. In these instances, please mark 'N/A.' Details on each of the attachments can be found in Guidance Memo LPR-SW-2013-02, DEQ Submission Instruction No. 27, and 9 VAC 20-81-385.

If a Variance Petition is included with the application, indicate the regulatory citation for each variance requested.

IV. RESPONSIBLE OFFICIAL SIGNATURE

This form must be signed by a responsible official. A responsible official is defined in the Virginia Solid Waste Management Regulations (9 VAC 20-81-10) as:

- “1. For a business entity, such as a corporation, association, limited liability company, or cooperative: a duly authorized representative of such business entity if the representative is responsible for the overall operation of one or more operating facilities applying for or subject to a permit. The authority to sign documents must be assigned or delegated to such representative in accordance with procedures of the business entity;
2. For a partnership or sole proprietorship: a general partner or the proprietor, respectively; or
3. For a municipality, state, federal, or other public agency: a duly authorized representative of the locality if the representative is responsible for the overall operation of one or more operating facilities applying for or subject to a permit. The authority to sign documents must be assigned or delegated to such representative in accordance with procedures of the locality.”