Guidance for the Land Application of Domestic Septage

State of Idaho
Department of Environmental Quality

June 2016

Printed on recycled paper, DEQ, April 2015, PID WTR.WWPA.OSWW.0505.100. CA code WTR.WWPA.OSWW.0505.100. Costs associated with this publication are available from the State of Idaho Department of Environmental Quality in accordance with Section 60-202, Idaho Code.

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Executive Summary

The Idaho Department of Environmental Quality (DEQ) recognizes the value in recycling domestic septage at nonpublic contact sites for soil augmentation purposes. While there is agricultural value in this practice, it must be done in accordance with federal regulations (40 CFR Part 503) and Idaho rules ("Rules Governing the Cleaning of Septic Tanks" [IDAPA] 58.01.15) to ensure protection of public health and the environment. To aid individuals who wish to recycle domestic septage for soil augmentation purposes, DEQ has developed the *Guidance for the Land Application of Domestic Septage*. This guidance document will help interested parties assess proposed land application sites and develop a Septage Management Plan for Land Application (SMPLA) of domestic septage. An approved SMPLA will help domestic septage land application facilities operate within the guidelines of federal regulations and state rules and provide assurance to DEQ that these activities are occurring in a manner that protects public health and the environment.

Domestic septage application rates are determined based upon the nitrogen needs of the crops proposed to be grown on a land application site. Crop types are determined by an applicant based on their domestic septage recycling needs and agricultural needs. Applicants must also make selections based on site restrictions related to public access, harvesting restrictions, and grazing restrictions. Site restrictions are related to crop type and domestic septage application methods. These restrictions must be balanced against an applicant or property owner's needs and land uses. Information contained within this guidance will help an applicant develop a SMPLA that best addresses these needs and requirements.

Additionally, each site proposed for land application will have unique management issues that need to be addressed within the SMPLA. Management issues may arise due to, but not limited to, topography, site surface conditions, site subsurface conditions, land uses on and surrounding the proposed site, and climate. This guidance will help an applicant navigate these potential issues for their proposed site and develop proper management practices that will be protective of public health and the environment.

Upon approval of a SMPLA, DEQ will issue a permit, required by IDAPA 58.01.15, to operate the site. The permit must be renewed annually by DEQ through the submission of a permit renewal request. If any deviations, changes, or amendments to the approved SMPLA are planned or proposed, they must be pre-approved by DEQ through the submission of an amended SMPLA. Deviations from, or changes and amendments to, the SMPLA may not be implemented until the applicant has received approval in writing from DEQ.

Proper planning and coordination by an applicant with DEQ will help to expedite SMPLA review. Use of the *Guidance for the Land Application of Domestic Septage* will aid an applicant in these efforts.

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1 Introduction

The Idaho Department of Environmental Quality (DEQ) recognizes the value in recycling domestic septage through land application at nonpublic contact sites for soil augmentation purposes. The land application of domestic septage is regulated under the Code of Federal Regulations (40 CFR Part 503) and the "Rules Governing the Cleaning of Septic Tanks" (The Rules) (IDAPA 58.01.15). The Rules require that septage disposal methods, other than discharge to a public sewer or sewage treatment plant, be approved by DEQ. Disposal includes burying septage under earth and drying. Due to the nature of septage land application as a drying method, DEQ approval of septage land application facilities is required prior to operational startup. The purpose of this guidance is to assist septage pumpers, stakeholders, and regulatory officials in developing and approving septage management plans for land application of domestic septage. However, certain caveats apply, such as the following:

- *This guidance is not a rule* and is not intended to take the place of a thorough understanding of applicable laws, is not a substitute for practical experience, and does not address every situation that may be encountered.
- *This guidance is not intended to ensure compliance with federal regulations or local ordinances*, but it references federal regulations and federally approved practices.
- *Alternatives to this guidance may be accepted on a case-by-case basis*, but any alternatives must have justification submitted to and approved by DEQ prior to implementation.
- *This guidance only provides guidelines for developing a Septage Management Plan for Land Application (SMPLA) of domestic septage at continual-use application sites.* For approval of one-time domestic septage applications, the interested party must contact the local health district for approval.
- *This guidance applies to domestic septage only*. Any mixture of domestic and industrial and/or commercial wastewater or sludge is not covered by this guidance.
- *This guidance does not apply to* discharges into public sewer systems or to sewage treatment plants.

If any errors are noted in these guidelines or additional information is needed, notify DEQ in writing (by regular or electronic mail). The recommendations will be reviewed when this guidance is updated.

1.1 Terminology

The following terms are described to assist the reader in understanding this guidance:

- **Land Application:** For this guidance, land application is spreading domestic septage on land at controlled rates to fertilize crops and improve the condition (tilth) of the soil. Domestic septage can be land applied by spraying, spreading on the soil surface, plowing, disking, or injecting into the soil. Land application of domestic septage is considered beneficial use.
- **Nonpublic Contact Site:** This is a site not frequently visited by the public. A nonpublic contact site includes agricultural land, forests, and reclamation sites.

- **Permit:** All domestic septage land application sites must obtain a permit for the operation of the septage pumping and land application equipment (IDAPA 58.01.15.004). The permit shall be renewed annually on or before March 1. Applications for the permit to operate the land application equipment shall be submitted to DEQ. Applications for the permit to operate any individual domestic septage pumper truck that operates in locations other than the land application site (i.e., at individual homes) shall be submitted to the local health district.
- **Pumper (or hauler):** Pumper (or hauler) means individuals operating septic tank pumping and septic tank waste transporting equipment. Pumpers are required to maintain a current permit issued by the local health district in accordance with IDAPA 58.01.15.004.
- **Responsible Party:** The responsible party is the entity responsible for complying with state and federal requirements for managing septage. Responsible parties may include, but are not limited to, pumpers, the land application site operator, and the land application site owner. Once septage is removed from the generator's source by a pumper, the pumper becomes the responsible party for the septage.
- **Septage:** Septage is a general term for the contents removed from septic tanks, portable toilets, privy vaults, wastewater holding tanks, type III marine sanitation devices, recreational vehicle holding tanks, very small wastewater treatment plants, or semipublic facilities (e.g., schools, motels, mobile home parks, campgrounds, and small commercial endeavors) receiving wastewater strictly from domestic sources. For this guidance, nondomestic (commercial and industrial) wastes are not included in this definition. This does not include drinking water treatment residuals that may be held in a holding tank. ("Wastewater Rules" IDAPA 58.01.16.010.75).
  - **Domestic:** Domestic septage must come from residences or facilities with waste characteristics similar to residential sources (e.g., hotels, schools, campgrounds, and office buildings). It does not include industrial or commercial waste (e.g., grease traps and sand oil separators).
  - **Industrial or Commercial:** Sludge generated from industrial or commercial processes including, but is not limited to, grease traps, sand traps, or car wash sumps. If domestic septage is mixed with any amount of industrial or commercial sludge, it is considered industrial or commercial sludge for the purposes of this guidance.
- **Septage Generator:** The septage generator is the entity that generates septage.
- **Septage Land Application Operator:** All persons land applying septage on property owned, leased, or otherwise contracted for this purpose. This individual is responsible for submitting and complying with the site's SMPLA. This individual may be a pumper/hauler, property owner, or entity owner/employee whose purpose is to dispose of domestic septage through land application at an approved site.
- **Septage Management Plan for Land Application:** The *SMPLA* referred to in this guidance is equivalent to the *method of disposal* as referenced in IDAPA 58.01.15.003 and operation plan as referenced in the current Memorandum of Understanding between DEQ and the health districts. The SMPLA describes the site, location, and methods for disposing of domestic septage to protect human health and the environment when it is applied to the land for beneficial use. The SMPLA is generally submitted as part of the domestic septage land application permit application.

- **Septic Tank Pumping Equipment:** All equipment used to pump or clean septic tanks and/or transport or dispose of human excrement. This includes pumper trucks and any other equipment used to spread or inject domestic septage on the land application site.
- **Sewage:** Water-carried human waste from residences, buildings, industrial establishments or other places, together with such ground water infiltration and surface water as may be present.
- **Sewage Sludge:** A solid, semi-solid, or liquid residue generated during the treatment of sewage. It does not include grit, screenings, or ash generated by the firing of sewage in an incinerator.

1.2 Septage Land Application

DEQ supports properly managed disposal and beneficial use of domestic septage for land application, consistent with state and federal rules as well as local ordinances. The value of recycling domestic septage is in soil augmentation as a source of plant nutrients and/or soil improvement. This guidance is for land application of liquid domestic septage only.

1.3 Authorities and Responsibilities

Land application of domestic septage must meet all regulations, including federal and state laws and local ordinances. Idaho rules governing land disposal of septage are separate from federal rules, so septage generators and disposers (including, but not limited to pumpers, haulers, septage land application operators) must meet all applicable federal, state, and local requirements to ensure full compliance.

1.3.1 State Regulations

The Environmental Protection and Health Act (EPHA), Idaho Code §§39-101 et seq., charges DEQ with protecting human health and the environment. Under the authority granted to DEQ in the EPHA, and in accordance with the Idaho Administrative Procedure Act (Idaho Code §§67-5201 et seq.), DEQ has adopted rules and published this guidance to execute DEQ's mandate to protect human health and the environment. DEQ's rules establish requirements to prevent ground water contamination from land application of domestic septage. The rules include "Water Quality Standards "(IDAPA 58.01.02), "Ground Water Quality Rule" (IDAPA 58.01.11) "Rules Governing the Cleaning of Septic Tanks" (IDAPA 58.01.15), and "Wastewater Rules" (IDAPA 58.01.16).

IDAPA 58.01.15 discusses the drying of septage in a location and method approved by DEQ. DEQ recognizes the value in recycling domestic septage for soil augmentation if done in conformance with IDAPA 58.01.15.003.03.c and d and the applicable federal regulations.

1.3.2 Federal Regulations

As required by the Clean Water Act Amendments of 1987, the United States Environmental Protection Agency (EPA) developed 40 CFR Part 503 regulations to protect public health and the environment from certain pollutants that might be present in septage.

40 CFR Part 503 establishes separate requirements for disposing of sewage sludge and domestic septage (biosolids) when they are applied to land to condition soil. 40 CFR Part 503.9 considers sewage sludge distinct from sewage. 40 CFR Part 503 excludes grease trap pumpings, commercial, and industrial and hazardous waste from domestic septage and includes general provisions regarding pathogen and vector reduction. 40 CFR Part 503 simplifies the requirements for land application of domestic septage to nonpublic contact sites and includes the following (EPA 1993):

- Establishes a simplified method to determine septage land application rates based on nitrogen loading.
- Defines site restrictions depending upon how the septage is stabilized.
- Establishes requirements for vector attraction, recordkeeping, reporting, and certification.
- Prohibits the application of domestic septage to saturated or frozen soil in certain conditions.

In most cases, the requirements of 40 CFR Part 503 are self-implementing. 40 CFR Part 503 must be followed even without the issuance of a federal permit. An explanation of 40 CFR Part 503 can be found in EPA's document, *A Guide to the Federal EPA Rule for Land Application of Domestic Septage to Non-Public Contact Sites*.

EPA is the permitting and enforcement authority for 40 CFR Part 503, however compliance with 40 CFR Part 503 should be part of the SMPLA. Approval of the SMPLA by DEQ only relates to compliance with state law.

1.3.3 Local Ordinances

The application should also consult the local jurisdictions (i.e., cities and counties) within which the septage land application site is proposed to operate. Local authorities may require additional information that is not included within this guidance. The applicant should seek approval from these entities independent of DEQ's approval of the SMPLA.

2 Discussion

Domestic septage is a highly variable organic waste that may contain human pathogens, grease, grit, hair, and other debris (EPA 1993). Proper disposal of domestic septage can be accomplished by discharge to a sewage treatment plant, approved public sewer location, or through land application at nonpublic contact sites as shown in Figure 1. Domestic septage can be of beneficial use to the land through land application practices. Domestic septage contains beneficial nutrients for plants and organic material that can improve soil quality. The controlled land application of domestic septage is required to protect public health and the environment.

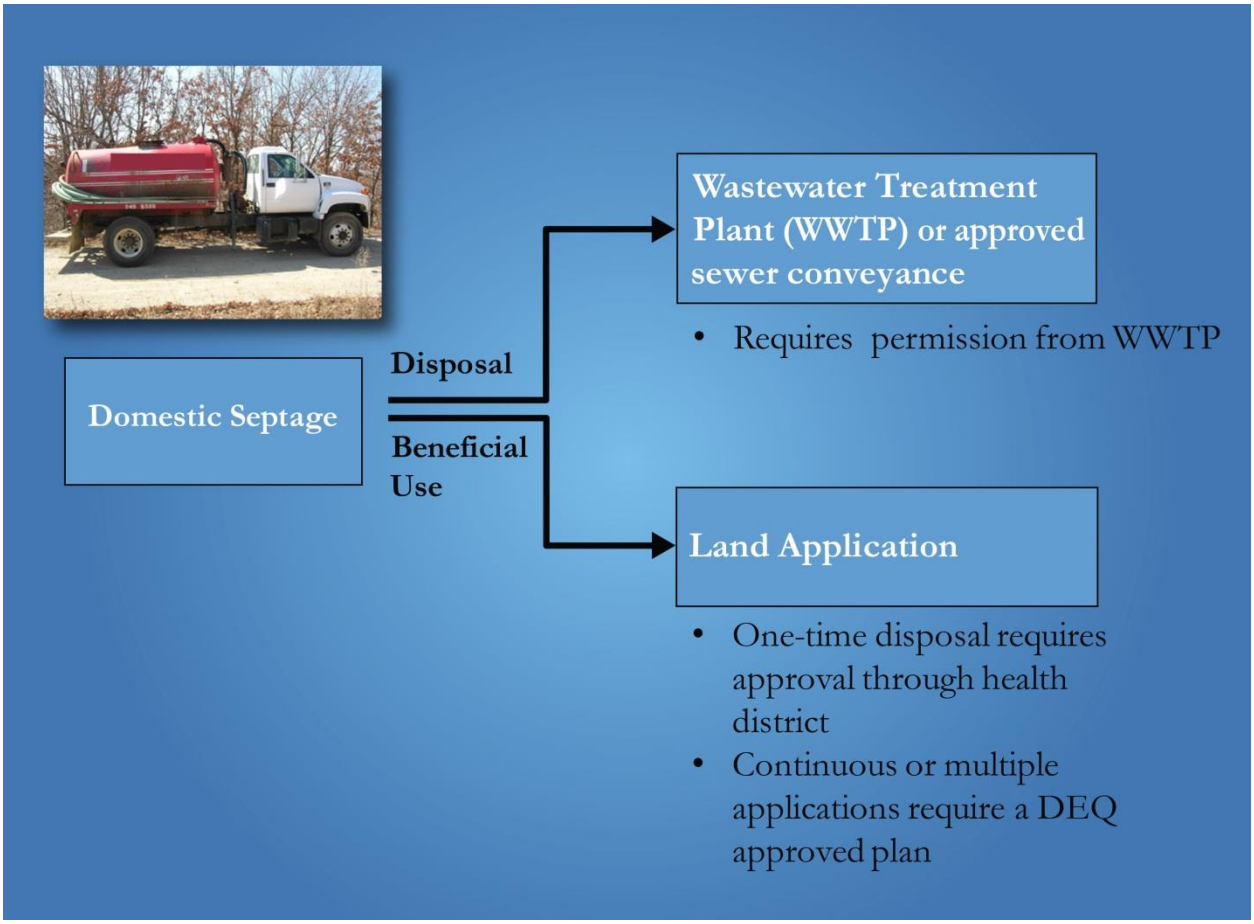

Figure 1. Domestic septage flow chart for disposal and beneficial use.

2.1 Responsible Parties Must Comply with Federal and State Requirements

Domestic septage pumpers, haulers, and site operators are all responsible for domestic septage disposal. Domestic septage used for land application is subject to federal, state, and local regulations and must be treated or managed to meet standards for pathogen and vector attraction reduction (VAR). Application rates are limited based on nitrogen requirements of the crop(s) to be grown on the application area. Following this guidance will assist in complying with state requirements and rules.

It is important for responsible parties to check with federal, state, and local units of government to find out if there are septage land application requirements or ordinances that must be followed. It is the responsible party's obligation to be up to date on all federal and state rules, local ordinances, and guidance related to land application of domestic septage.

Permit Required for Operation of Septic Tank Pumping Equipment within the State of Idaho

Per IDAPA 58.01.15.003 and 58.01.15.004, all persons operating any tank truck or any other device or equipment used or intended to be used for pumping or cleaning septic tanks and/or transporting or disposing of human excrement within Idaho must obtain a permit to operate such equipment. DEQ considers equipment used for spreading or injecting domestic septage in the land application process as pumping equipment.

Individual septage pumper trucks that operate outside of the designated domestic septage land application site must obtain an annual permit to operate from one of the local health districts. All domestic septage land application equipment that operates strictly on the designated septage land application site must obtain a permit to operate from DEQ. To obtain a permit from DEQ to operate the septage land application equipment, the applicant must include a SMPLA as part of the permit application (IDAPA 58.01.15.004.01.e).

Septage pumper trucks that operate outside of the designated domestic septage land application site and use the same truck(s) to spread the domestic septage at the land application site must submit a SMPLA to DEQ as part of the permit application (IDAPA 58.01.15.004.01.e). The permit application for this equipment must be submitted to one of the local health districts. The health districts will not issue the permit to operate the equipment until they receive an approval letter from DEQ for the SMPLA. A new approval letter from DEQ must be obtained every year as a part of the annual permit renewal (IDAPA 58.01.15.004).

2.2 Septage Land Application Site Management

Land application of domestic septage has many advantages; however, domestic septage management requires strategic planning to mitigate potential problems that may develop including, but not limited to, the following:

- Disease transmission through plants and animals
- Accumulation of heavy metals and toxic chemicals in site soils
- Contamination and degradation of surface water and ground water quality due to runoff or leachate migration under or near the application site
- Nuisance conditions, such as odors, vectors, and unsightliness

Therefore, to protect public health and the environment, domestic septage must meet these main requirements before it can be land applied:

1. Pathogen reduction (40 CFR Part 503)
2. Vector attraction reduction (40 CFR Part 503)
3. Agronomic application rate based on crop nitrogen requirements (40 CFR Part 503)
4. Site restrictions (40 CFR Part 503 and IDAPA 58.01.15.003.03.d)

DEQ will evaluate the SMPLA for the above requirements, along with complete and accurate planning. DEQ will also evaluate septage application methods, and the interactions among domestic septage, soils, and crop management. *Due to the complexity of developing a SMPLA for a long-term application site, the applicant to may wish to use professional consultants (e.g., professional geologist, soil scientist, or engineer to assist in preparing the plan).*

2.3 Septage Management Plans for Land Application Are Required

IDAPA 58.01.15.003 requires DEQ approval prior to disposal of septage by any method other than discharging to a public sewer or sewage treatment plant. To obtain a permit (IDAPA 58.01.15.004), DEQ requires a permit application be submitted to the DEQ regional office. To enable DEQ to assess the method of disposal, a domestic septage SMPLA is also required to be approved by DEQ. A SMPLA must be submitted for any site that will have domestic septage applied two or more times per year. DEQ regional offices will review and may approve the SMPLA and inspect domestic septage land application sites when in operation. Local health districts will review and may approve the method and location of one-time disposal of domestic septage.

As Conditions Change, the Plan Will Need to Be Updated

Proposed changes to the DEQ-approved SMPLA will need to be reviewed and approved by DEQ prior to implementation to ensure that human health and the environment will be protected from contamination by the land application of domestic septage. New, alternative, or additional information including land application practices that become available after a plan has been approved, which can be used as part of A SMPLA, will be considered a change to the SMPLA.

2.4 Health and Safety Considerations

Domestic septage contains numerous pathogens that are harmful to human health. In addition, the septage collection, storage, and application processes may contain procedures and equipment that are hazardous to operator safety. DEQ highly recommends that proper precautions are taken and appropriate personal protective equipment (PPE) is used for all persons entering or working at a septage land application site.

Land application of septage may expose workers to similar pathogens as land application of Class B biosolids. The following publication has recommendations for basic hygiene and PPE when working with these materials: *http://www.cdc.gov/niosh/docs/2002-149/pdfs/2002-149.pdf*.

3 Developing a Septage Management Plan for Land Application: Process Overview

To develop a SMPLA, DEQ recommends the following actions:

3.1 Step 1: Consult with DEQ

The responsible party interested in land application of domestic septage should first contact the DEQ regional office to set up a *pre-project consultation*. The objective of the consultation is to ensure that any proposed plan will meet state requirements.

The responsible party should bring the following to the pre-project consultation:

- SMPLA checklist (Appendix A). Using the checklist will help to ensure that the necessary topics are discussed.
- Other information about the planned application that may be available, such as land ownership, site characteristics, domestic septage characteristics, and a description of the intended application.

During the consultation, DEQ, the responsible party, and any other stakeholders (e.g., land owners, consultants, and entity members) will cooperatively develop a list of information to be included in the SMPLA.

3.2 Step 2: Develop the Septage Management Plan for Land Application

Starting from the list of needs developed during the pre-project consultation, the responsible party should prepare a SMPLA that ideally addresses the content requirements of IDAPA 58.01.15 and 40 CFR Part 503, this guidance, and any additional requirements identified during the pre-project consultation.

To ensure DEQ can carefully review the submittal for protection of human health and the environment, Section 4 provides an outline of the type of information DEQ considers important in a SMPLA, but individual site characteristics, along with the scale of operation, number of domestic septage applications, and methods of domestic septage application will impact what is needed.

3.3 Step 3: Submit the Septage Management Plan for Land Application to DEQ

The SMPLA should be site specific and all relevant information should be submitted to DEQ in one document. DEQ regional office staff (or a delegate) will review the submitted SMPLA within a reasonable time frame, which DEQ generally anticipates to be 45 days from submittal. The SMPLA should be completed based upon the checklist developed and agreed upon during the pre-project consultation. Following review, DEQ will issue a letter to amend, approve, approve-with-conditions, or disapprove the SMPLA.

DEQ will issue the permit that authorizes the land application of domestic septage. The permit must be issued to the applicant prior to land application of domestic septage occurring at the proposed site.

Once approved, the SMPLA should be made available to all individuals who use the site and to all responsible parties.

3.4 Step 4: Submit Changes to the Approved Septage Management Plan for Land Application to DEQ

Changes to the approved SMPLA after initial plan approval must be submitted to DEQ for review and approval. Any changes, updates, or resubmittals of the SMPLA should be submitted to DEQ in one document and include all site-specific and relevant information.

DEQ will issue an amended permit that authorizes any implementation of such changes.

4 Elements of a Septage Management Plan for Land Application

A SMPLA should, at a minimum, address the following elements to determine if human health and the environment (particularly ground water) will be protected from contamination by the land application of the domestic septage. The plan should address, but is not limited to, the following areas:

- Site ownership information (IDAPA 58.01.15.004.01.f)
- Site selection criteria (IDAPA 58.01.15.004.01.f)
- Septage characterization (IDAPA 58.01.15.004.01.e)
- Septage application process (IDAPA 58.01.15.004.01.e)

SMPLA approvals are made on a case-by-case basis and with full consideration of site characteristics, scale, and the number of planned domestic septage applications. Septage receiving stations require a separate engineering report be submitted to DEQ.

The following section describes the components of a SMPLA and what information will enable DEQ to better evaluate the plan (Appendix B).

4.1 Site Information

4.1.1 Responsible Parties

The plan must include ownership information as follows:

- Name, address, and phone number of the party responsible for managing the SMPLA after approval.
- Name, address, and phone number of the person who owns the land on which the domestic septage is to be applied and a written and signed landowner agreement that indicates acceptance of domestic septage disposal must be included.
- Name, address, and phone number of the site operator(s) who will land apply the domestic septage.
- Name, address, phone number, and copies of current septic tank pumping permit(s) of any septage pumper(s) disposing domestic septage at the site.

4.1.2 Local Approvals

In addition to approval by DEQ, a domestic septage land application site may require approval from the local planning and zoning authority. Documentation should be included that indicates approval of the domestic septage land application site from the local zoning or building authority.

4.1.3 Site Identification

The plan should include legal descriptions for all sites proposed to be used in the SMPLA for any part of the land application of domestic septage process (i.e., township, range, section, quarters, and address). All sites used for land application of domestic septage must be nonpublic contact sites (i.e., agricultural land, forests, and reclamation sites). If the site is considered a public contact site, the use or disposal of the domestic septage will be regulated in the same manner as municipal biosolids, and the material is not eligible to be land applied in accordance with this guidance.

4.2 Site Selection Criteria

Land application site characteristics determine the potential for effective beneficial reuse of domestic septage. Site characteristics directly influence the potential for the transport of constituents from the site to surface or ground water. Site-specific criteria must be adequately characterized to obtain approval for the land application site. (IDAPA 58.01.15.004.01.f.)

When selecting a site, consider the following:

- Land application of domestic septage should be designed, managed, and operated as a soil augmentation system, not a disposal system. The objective is to use domestic septage as a soil augmentation medium and to prevent negative impacts to ground and surface water and nuisance situations. Sites should be evaluated and treatment systems should be designed for long-term sustainability, so that the site may be returned to other uses with negligible remedial activity if site closure becomes necessary.
- What is the previous use history of the proposed land application site?

It is strongly recommended that county or city officials be consulted during site selection. Realizing the possible public health, environmental, and nuisance impacts a domestic septage land application site can create, public awareness may help determine what may or may not be acceptable.

Site selection should address, but may not be limited to, the following criteria:

- Soil description
- Geological features
- Ground water characteristics
- Surrounding land use
- Topography
- Setbacks
- Climate

A narrative for each criterion should be provided in the plan, as described in the following sections. *Additional site-specific criteria may be identified during the pre-project consultation, and narratives for those criteria should be included.*

4.2.1 Soil Description

Soil is composed of minerals, organic matter, water, and air. Soil health depends on the complex interactions between these components. Water can percolate through soils and transmit applied contaminants. Soil acts as a filtration system or sorption media to attenuate contaminant transport.

Generally, soil plays four major roles in the land application of domestic septage:

1. Soil provides a medium for plant growth. In this capacity, soils provide anchorage for vegetation, supply nutrients and water, and enable the exchange of gases between plant roots and the aboveground atmosphere.
2. Soil provides habitat for a multitude of organisms.
3. Soil degrades and recycles organic materials. Soil has the capacity to assimilate organic waste and convert the nutrients in the waste to forms that may be used by plants and animals.
4. Soil influences the quality of water passing over or through the soil. Contaminated water passing through the soil may be cleansed of its impurities through a variety of soil processes, including microbial digestion and filtration. Conversely, clean water passing through a contaminated soil may become negatively impacted.

Soil pH, soluble salts content, amount of organic matter, carbon-nitrogen ratio, numbers of microorganisms, soil fauna, temperature, and moisture all change with the seasons as well as with more extended periods of time and use. Therefore, soil health and vitality must be viewed from both the short-term and long-term perspective.

The SMPLA will not be considered complete without a site soil assessment. Assessment of the soil properties provides information needed for site evaluation and site management for the beneficial use of domestic septage. Soil test pits for description purposes are required. The test pits should be inspected and reviewed by a soil scientist or an Environmental Health Specialist (EHS) to provide an adequate and suitable soil description.

The SMPLA's narrative should include details of the physical and chemical characteristics of the soil within the entire rooting zone (the upper 5 feet), including soil properties, soil thickness, and other considerations. Test pits must be excavated to a depth capable of demonstrating compliance with soil separation distances as described in Section 4.2.1.2 "Soil Thickness."

For more detailed information and guidance regarding soils, see the DEQ guidance web page at *http://www.deq.idaho.gov/laws-rules-etc/deq-guidance/*. Two documents that may be useful are the soils section of the *Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater* (DEQ 2007) and *Technical Guidance Manual for Individual and Subsurface Sewage Disposal Systems* (DEQ 2013), which are available at the following addresses:

www.deq.idaho.gov/media/516329-guidance_reuse_0907.pdf

www.deq.idaho.gov/media/1148/tgm-entire.pdf

4.2.1.1 Soil Properties

Describe soil properties, such as the following:

- Available water-holding capacity
- Color
- Depth
- Horizons
- Percent gravel and boulders
- Soil design group and texture of each soil horizon
- Rooting depth
- Depth to ground water and presence of mottling
- Depth to fractured bedrock, extremely permeable layer, or impermeable layer
- Hydraulic conductivity, internal drainage class, and leaching potential
- Infiltration and permeability
- Nutrient availability (existing nutrients available in soil, include plant available nitrogen, phosphorus, and potassium)
- Percent of organic matter
- Structure

A discussion of permeability, infiltration, internal drainage class, available water-holding capacity, leaching potential, pH, and nutrient availability will assist in understanding the site's potential for accepting domestic septage and should be included in the SMPLA.

The soil hydraulic conductivity or infiltration rate helps to define the appropriate hydraulic loading for the site.

Test pits or borings may adequately determine soil types and thicknesses. Test pit or boring profiles should be recorded, and logs should be included in the SMPLA. The test pit or boring locations, along with the areal extent of the soils, should be shown on a site survey map and identified by the log number.

4.2.1.2 Soil Depth

The SMPLA should discuss soil thickness. In general, a minimum of 2 feet of soil depth is needed for land application. The site's soil depth needs to be determined and provided in the SMPLA. To ensure that pollutants will not be short-circuited to ground water, the underlying substratum, to at least 2 feet below ground level, should not be rapidly draining (see DEQ 2013, section 2 regarding soil types). Soil design group classification will dictate the necessary separation distance between the septage land application depth (depends upon method used) and subsurface features of concern (limiting layer). Separation distances to limiting layers from the land application depth are as listed in Table 1.

Table 1. Required separation depths to limiting layers from the land application depth.

Septage Type	Limiting Layer	Soil Design Group		
		A (feet)	B (feet)	C (feet)
Raw domestic septage	Impermeable layer	8	8	8
	Normal high ground water	12	8	6
	Fractured or extremely permeable material	12	8	6
Lime stabilized septage	Impermeable layer	4	4	4
	Normal high ground water	6	4	3
	Fractured or extremely permeable material	6	4	3

4.2.2 Geological Features

Site-specific geology and hydrogeology help to determine the fate of water and constituents that leach through the soil, potentially to ground water. The site should be on a stable geologic formation that is not subject to flooding or excessive runoff.

Describe and discuss site-specific surface and subsurface features that characterize contaminant movement and behavior having the potential to reach ground water. Provide an indication of risk to existing beneficial uses of ground water from constituents in percolate.

4.2.3 Ground Water and Surface Water

Ground water characteristics of the site should be included in the SMPLA to help identify potential contamination issues. The area(s) that may potentially be chemically, physically, or biologically affected by contaminant migration from domestic septage soil augmentation activities should be included in this description. The size of the potential impact area will depend upon domestic septage quality, volume applied, rates of application, site characteristics, site management, and aquifer characteristics. The applicant can use flow, transport, and mixing zone modeling to help describe these areas related to ground and surface water, if necessary.

4.2.3.1 Ground and Surface Water Terminology

- **Beneficial Use of Ground Water:** The various uses of ground water in Idaho include, but are not limited to, domestic water supplies, industrial water supplies, agricultural water supplies, aquacultural water supplies, and mining. A beneficial use is defined as actual, current or projected future use of ground water.
- **High Ground Water Level:** High ground water level may be established by the presence of low chroma mottles, actual ground water monitoring, or historic records.
  - **Normal High Ground Water Level:** The highest elevation of ground water that is maintained or exceeded for a continuous period of 6 weeks per year ("Individual/Subsurface Sewage Disposal Rules," IDAPA 58.01.03.003.15.a).
  - **Seasonal High Ground Water Level:** The highest elevation of ground water that is maintained or exceeded for a continuous period of 1 week per year (IDAPA 58.01.03.003.15.b).
- **Ground Water:** Any water of the state that occurs beneath the surface of the earth in a saturated geological formation of rock or soil (IDAPA 58.01.03.003.14).

- **Surface Water:** Any waters of the state that flow or are contained in natural or manmade depressions in the earth's surface. This includes, but is not limited to, lakes, rivers, streams, canals, and ditches.
  - **Permanent Surface Water:** Exists continuously for a period of more than 6 months per year.
  - **Intermittent Surface Water:** Exists continuously for a period of more than 2 months but not more than 6 months per year.
  - **Temporary Surface Water:** Exists continuously for a period of less than 2 months per year. (IDAPA 58.01.03.003.34).

4.2.3.2 Ground Water Characteristics

The information provided in this section of the SMPLA is also important in interpreting ground water quality data.

- Ground water underlying the site should be identified and characterized to understand how ground water moves and transports dissolved constituents. Provide a narrative that includes the ground water type, depth, and hydrogeologic parameters used to assess and predict contaminant movement in the ground water.
- Seasonal and normal ground water table elevations, with ground water flow and direction, should be identified for all seasons. Obtaining the data may require seasonal ground water monitoring by the applicant. The minimum depth to seasonal ground water should not be less than 2 feet during periods of application. The minimum depth to normal ground water should not be less than the requirements presented in section 4.2.1.2. Hydrographs and equipotential maps should also be included if available.
- The location of all water wells within one-quarter mile of the domestic septage application sites should be obtained and evaluated. Other information such as construction details, screened intervals, depths, pumping rates, static water levels, geologic information from driller logs, and hydrogeologic positions (upgradient versus downgradient) can be useful in characterizing local geologic and hydrogeologic conditions and shallow or deep aquifers currently or previously used as a water source.

4.2.3.3 Ground Water Beneficial Uses

Include a discussion on beneficial uses of ground water. Beneficial uses of ground water can be evaluated by identifying land ownership, land use, zoning restrictions, and well water use in the surrounding area. Source water assessments for municipal drinking water systems, typically prepared by DEQ, should be consulted as available.

For information about source water assessments in Idaho, visit *www.deq.idaho.gov/water-quality/source-water/assessments.aspx.*

For well driller reports, visit the Idaho Department of Water Resources at *http://www.idwr.idaho.gov/Apps/appsWell/WCInfoSearchExternal/.*

4.2.4 Land Use

The SMPLA should include a description of land uses surrounding the proposed site in a one-quarter mile radius. This information will provide the ability to assess potential health and

environmental risks for the area. Land application of domestic septage should not cause or contribute to the harm of any threatened or endangered species of plant, fish, or wildlife or result in the destruction or adverse modification of the critical habitat of a threatened or endangered species (Endangered Species Act of 1973).

Provide at least a 7.5-minute topographic land use map that includes the following within one-quarter mile of the domestic septage land application site:

- Land use structures (e.g., buildings and roads)
- Public land ownership
- Locations of any threatened or endangered species (information available at *http://www.fws.gov/idaho/*)
- Land use areas, including vegetation type (e.g., irrigated agriculture, dry agriculture, and urban). County land use maps, tax code maps, or comprehensive plans may be a resource.
- All residential and building locations

Discretion will be used in approving application of domestic septage on land that is in proximity to residential areas. *Management practices should take into consideration potential for odors*; the "Rules for the Control of Air Pollution in Idaho" (IDAPA 58.01.01.776) state, in part, that "no person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids into the atmosphere in such quantities as to cause air pollution." Odors are a concern for Idahoans and a frequent source of citizen complaints to state and local agencies.

Describe past, present, and projected future land use and related structures at the site:

- If the site is currently used or has been used for a landfill or feedlot, land use related residual contaminants might exist in the area. Information on such contaminants can be obtained from local knowledge, geographic information system maps, and a site survey. County government offices may provide information regarding projected future land use.
- Previous land use(s) should be identified to determine if any contaminants are present in the subsurface. Previous ownership records can provide historic land use activities and can be obtained from the local county assessor's office.
- Consideration should be given to those activities that may mobilize contaminant constituents already present in the environment.
- If land use changes occur during the life of the project, the responsible party may be required to update the plan to reflect such changes.

4.2.5 Topography

Information on the topography of the site must be provided in the plan. *Topographic information can be included on the land use map described in Section 4.2.4.*

The purpose of a topographic study is to address surface shape, relief, and features to assist in understanding how contaminants could migrate from the site. Topography is also important in land application practices because topographic low positions accumulate water from higher adjacent areas and may have higher moisture contents, shallower ground water, and greater salinity. The natural horizontal movement of ground water usually follows the ground slope, and erosion and runoff potential increase with increasing slope.

Topography of the site should be suitable to allow normal agricultural operations:

- Discuss potential runoff and erosion control measures that will be constructed.
- Discuss slopes:
  - Liquid domestic septage shall not be surface applied on soils where the ground slope would lead to runoff.
  - Liquid domestic septage shall not be applied through injection on soils where the ground slope would lead to runoff.
  - In general, avoid application on steep slopes.
- Discuss any slope orientation. Slope orientation affects erosion, runoff potential, domestic septage drying, crop growth, and other factors.
- The location of the domestic septage land application site should be illustrated on a 7.5-minute topographic map and a more detailed map of the application site.
- Site plans should be submitted that are drawn to approximate scale.
- Site maps should extend one-quarter mile past the outer limits of the land application facility and include the following:
  - Wells
  - Springs
  - Other underground conveyance systems (e.g., underground storage tanks, septic systems, water lines, and gas lines)
  - Geologic borings or test hole excavations and identifying numbers that correspond to soil logs
  - Specific area of proposed septage disposal, storage, or handling
  - Topography
  - Seasonal drainages
  - Surface water
  - Wetlands
  - Floodway and 25-, 50-, and 100-year floodplains as available through the Federal Insurance and Mitigation Administration of the Federal Emergency Management Agency
  - Scarps
  - Rock outcrops
  - Any other relevant information

Other areas of designation may need to be identified, such as the following:

- Idaho Department of Water Resources ground water management areas
- DEQ nitrate priority areas
- Wellhead or source water assessment areas

4.2.6 Horizontal Setbacks for Domestic Septage Land Application Areas

To prevent impacts to public health and the environment and to help mitigate any potential nuisance conditions (i.e., odor), horizontal setback requirements from the septage land application site are necessary. Horizontal setback distances (i.e., buffer zones or separation distances) limit public exposure to land-applied septage, protect waters of the state (i.e., surface water, ground water, and drinking water supplies), and ensure that land-applied septage is

located within the physical boundaries of the land application facility. The following lists minimum horizontal setbacks from land application sites to features of concern (Table 2):

Table 2. Minimum setback distances from the septage land application site to features of concern.

Feature	Horizontal Setback (feet)
Property line	75
Public roadway	75
Occupied structures	300
Unoccupied and enclosed structures	50
Well/spring: Private Public	 500 1,000
Water distribution line: Pressure Suction	 25 100
Permanent or intermittent surface water	300
Spring	100
Temporary surface water and irrigation canals and ditches	50
Slopes > 45%	100

4.2.7 Climate

Information should be included on the climate of the site. Climate, the average weather of an area (over a period of at least 30 years), including seasonal variations and weather extremes, is important for the following reasons:

- Climate establishes many site characteristics because it affects the rates of physical, chemical, and biological weathering processes over a large geographic area.
- Climate influences soil properties; it determines the types of vegetation or agricultural crops that may be grown; and it affects evaporation rates.
- Climate determines the amount of precipitation that must be accounted for during site evaluation and the method of septage application. Many sites can only be used seasonally, depending upon climatic conditions.

Discuss site climate, including the following:

Analyze the precipitation data. Precipitation data are necessary to assess site suitability. The SMPLA should include the following minimum information on climate:

- Total mean annual precipitation
- Mean monthly precipitation
- Peak storm event precipitation (25 year)
- Effects of frozen ground on year-round application systems. For example, frozen ground might require seasonal domestic septage storage.

- Temperature (seasonal)
- Prevailing wind direction
- Wind velocity

Weather and climate data for a specific area can be obtained from the Western Regional Climate Center:
http://www.wrcc.dri.edu/summary/climsmid.html.

4.3 Septage Characterization and Stabilization

Septage characterization includes the septage classification, source, and preland application processing of domestic septage. Septage stabilization refers to the land application methods used and the associated pathogen reduction, VAR, and site access controls in place to protect public health and the environment.

4.3.1 Septage Classification

This guidance describes two classes of domestic septage based upon the source and residence time prior to transfer to a septage hauling vehicle. The classes are referred to as Class I and Class II domestic septage; they do not include domestic septage mixed with commercial or industrial wastes.

- *Class I* domestic septage comes from sources that are typically pumped at infrequent intervals. This domestic septage is largely stabilized due to its long residence time in the septic tank. These sources include septic tanks, cesspools, or other similar devices.
- *Class II* domestic septage comes from devices that are pumped frequently. This domestic septage is only partially stabilized due to its short residency time in the septic/holding tank in comparison to Class I domestic septage. These sources include portable toilets, emergency holding tanks, recreational vehicle (RV) dump stations, vault toilets, Type III marine sanitation devices, or other similar devices.

4.3.2 Septage Generation

Complete the following for this section of the SMPLA:

- Describe the domestic septage sources that will be accepted at the septage land application site (e.g., septic tank sources, RV dumps, vault privies, and portable toilets) and segregate each source under the correct classification as outlined in section 4.3.1 of this guidance.
- Describe how the volume of domestic septage applied to the site will be measured.

4.3.3 Land Application Method

Three methods are approved for the land application of domestic septage. These methods include (1) injection, (2) spraying/spreading and incorporation, or (3) pH adjustment and spraying/spreading methods. A combination of land application methods may be used. A description and the associated requirements of each method are included below.

4.3.3.1 Injection

The injection application method involves directly injecting the domestic septage below the surface of the land. Use of this method also requires that no significant amount (i.e., no surface ponding) of the domestic septage shall be present on the land surface within 1 hour after the domestic septage is injected. Direct injection is a treatment method for pathogens and provides VAR.

4.3.3.2 Spraying/Spreading and Incorporation

In this method of land application, non-pH adjusted domestic septage is sprayed or spread onto the land surface. After spraying or spreading, the domestic septage must be incorporated into the soil surface plow layer within 6 hours after application. Incorporation must occur through adequate plowing or tilling of the soil surface after the application of the domestic septage. Spraying/spreading and incorporation is a treatment method for pathogens and provides VAR.

4.3.3.3 pH Adjustment and Spraying/Spreading

Domestic septage may also be land applied using the spraying/spreading method without incorporation if prior to application the domestic septage is pH adjusted. Adjusting pH reduces the pathogens within the domestic septage and reduces vector attraction to the domestic septage. This process may also reduce crop, grazing, and site restriction time frames depending upon certain application practices (Section 4.3.4).

- If the domestic septage is to be pH adjusted prior to land application
  - *pH adjustment shall occur by* completely mixing the domestic septage with alkaline material to raise the pH to at least 12 and maintain that pH for a minimum of 30 minutes prior to application.
  - *pH adjustment is recommended but not required.* If the domestic septage is not pH adjusted prior to land application, then subsurface injection or incorporation are the only allowable methods for land application of domestic septage that may be used.
- pH adjustment shall take into account the ambient temperature.
  - *pH will vary based upon ambient temperature*. As part of the pH recordkeeping requirements, the following adjustment calculation shall be recorded for each application of pH-temperature adjusted domestic septage (Equation 1):

$$pH_a = (pH_m) + [0.0167 \times (T - 77)]$$ **Equation 1. pH-temperature adjustment calculation.**

where:

pH_a = temperature adjusted pH level

pH_m = measured pH level

T = septage temperature in degrees Fahrenheit (°F)

  - The temperature-adjusted pH level as determined through Equation 1 shall be used for the pH adjustment level time frame requirements (i.e., pH raised to 12 for 30 minutes).

Preadjustment pH readings should be taken with equipment appropriate for septage and justification for the chosen equipment should be included in the SMPLA. The justification would include manufacturer's product specification and any other pertinent data regarding the equipment's recommended use (i.e., calibration requirements).

4.3.4 Pathogen Reduction, Vector Attraction Reduction, and Site Access Controls

To protect public health and the environment:

- All domestic septage that is land applied must meet the requirements for pathogen and VAR.
- Certain crop harvesting restrictions and site access controls must also be in place at the land application site.

The party responsible for managing the SMPLA must inform the owner/operator of the land application site about the specific crop harvesting requirements and site access restrictions.

4.3.4.1 Pathogen Reduction

Septage contains many disease-causing organisms, referred to as pathogens. Pathogen reduction methods should reduce or eliminate dangerous pathogens and reduce odor at the land application site. Land application is a part of the treatment for pathogen reduction. To protect public health, site restrictions will be put in place (including crop harvesting and access restrictions) depending upon the land application method used. Pathogen reduction may occur with or without pH adjustment. Each method has different requirements that are discussed below.

Animals should not be grazed on an active domestic septage application site, unless it can be demonstrated that public health and the environment are protected. Site-specific management practices for grazing on lands that accept domestic septage may be considered. DEQ will consider self-imposed site restrictions on animal grazing which meet Section 4.3.4.1 requirements (e.g., not grazing animals on land for at least 30 days after application of domestic septage).

Crop harvesting time frames depend on the date of the last domestic septage application and the type of crop being grown. Specific harvesting schedules should be discussed and must meet the requirements as provided in section 4.3.4.1 of this guidance. Food and feed crops should not be grown on an active domestic septage application site, unless it can be demonstrated that public health and the environment are protected.

Protecting public health from pathogens includes controlling public access to the site. Site restrictions meeting section 4.3.4.1 and section 4.3.4.2 requirements would be considered acceptable by DEQ.

4.3.4.1.1 Domestic Septage Land Applied to Nonpublic Contact Sites Without Prior pH Adjustment

Domestic septage that is land applied without pH adjustment prior to the land application process will have increased site restrictions over domestic septage that is pH adjusted prior to land application. Site restrictions include crop harvesting restriction timelines, site grazing restriction timelines, and public access restriction timelines. Table 3 and Table 4 provide the timelines for these restrictions.

Table 3. Harvesting restrictions for crops grown on sites where domestic septage is land applied without pH adjustment (40 CFR Part 503).

Crop Description	Harvesting Restriction
Food crops with harvested parts that touch the septage/soil mixture and are totally aboveground	Food crops shall not be harvested for 14 months after application of domestic septage
Food crops with harvested parts below the surface of the land	Food crops shall not be harvested for 38 months after application of domestic septage
Animal feed, fiber, and food crops that do not touch the soil surface	These crops shall not be harvested for 30 days after application of the domestic septage
Turf grown on land where domestic septage is applied	Turf shall not be harvested for 1 year after application of the domestic septage

Table 4. Site access restrictions on sites where domestic septage is land applied without pH adjustment (40 CFR Part 503).

Site Access Use	Site Restriction
Grazing animals	Animals shall not be allowed to graze on the land for 30 days after application of domestic septage
Public access	Public access to land with a low potential for public exposure shall be restricted for 30 days after application of domestic septage

4.3.4.1.2 Domestic Septage Land Applied to Nonpublic Contact Sites With Prior pH Adjustment

Domestic septage that is land applied with pH adjustment prior to the land application process will have less site restrictions than domestic septage that is not pH adjusted prior to land application. Site restrictions include crop harvesting restriction timelines. Table 5 provides the timelines for these restrictions and Table 6 shows that there are no grazing or public access restrictions.

Table 5. Harvesting restrictions for crops grown on sites where domestic septage is land applied with prior pH adjustment (40 CFR Part 503).

Crop Description	Harvesting Restriction
Food crops with harvested parts that touch the septage/soil mixture and are totally aboveground	Food crop shall not be harvested for 14 months after application of domestic septage
Food crops with harvested parts below the surface of the land	Food crop shall not be harvested for 20 months after application of domestic septage when the domestic septage remains on the land surface for 4 months or longer prior to incorporation into the soil
Food crops with harvested parts below the surface of the land	Food crop shall not be harvested for 38 months after application of domestic septage when the domestic septage remains on the land surface for less than 4 months prior to incorporation into the soil
Animal feed, fiber, and food crops that do not touch the soil surface	These crops shall not be harvested for 30 days after application of the domestic septage
Turf grown on land where domestic septage is applied	Turf shall not be harvested for 1 year after application of the domestic septage

Table 6. Site access restrictions on sites where domestic septage is land applied with prior pH adjustment (40 CFR Part 503).

Site Access Use	Site Restriction
Grazing animals	None
Public access	None

4.3.4.1.3 Vector Attraction Reduction

VAR decreases the potential for spreading infectious disease by vectors (e.g., flies, rodents, and birds). Vectors are any living organism capable of transmitting a pathogen from one organism to another either mechanically or biologically. VAR requirements can be satisfied through one of the options provided in Table 7.

Table 7. Vector attraction reduction alternatives and methods employed to meet the required alternatives.

Vector Attraction Reduction Alternative	Method
Alternative 1: Injection	Domestic septage shall be injected below the surface of the land, and no significant amount of domestic septage shall be present on the land surface within 1 hour after domestic septage is injected
Alternative 2: Spraying/spreading and incorporation	Domestic septage applied to the land surface shall be incorporated into the soil surface plow layer within 6 hours after application
Alternative 3: pH adjustment	The pH of domestic septage shall be raised to 12 or higher by alkaline material and, without the addition of more alkaline material, shall remain at 12 or higher for a minimum of 30 minutes.

4.3.4.2 Site Access Controls

Site access controls (SAC) are site designs that restrict public access and domestic animal grazing on the land application site. SACs vary and may be unique to each land application site depending upon the land application site location and application method. SAC measures may include the following:

- Posting the site perimeter with signs that include the message (in English and Spanish) "No Trespassing – Domestic Septage Land Application Site." Signs shall be posted at every road access point onto the land application site and every 300 feet around the land application site perimeter.
- Site remoteness (i.e., public versus nonpublic contact site).
- Fencing.

4.4 Application of Domestic Septage

General site management practices must be followed:

- Domestic septage must be uniformly distributed over the active land application site used during the land application process.

  The application vehicle must be in motion at all times during the land application process.
- Spraying or spreading may not occur from public roadways or across public right of ways.
- Measures must be taken to ensure the domestic septage remains where it was applied so it does not concentrate to low areas of the land application site or run off the site.

A description of the domestic septage land application process should be provided in the SMPLA. This description should include all sites that will receive domestic septage. At each site, identify the application method (Section 4.3.3). The description should incorporate the information deemed necessary from the preapplication meeting.

Minimum content requirements:

- Domestic septage volume and storage
- Management practices appropriate to the site conditions
- Testing and sampling, if using pH adjustment methods
- Transportation and handling, including specific equipment to be used
- Reports and recordkeeping
- Emergency planning procedures

The following sections describe the level of detail for each of the content requirements discussed above.

4.4.1 Domestic Septage Volume and Storage

Describe maximum domestic septage volume intended for land application and related storage volume:

- Maximum domestic septage volume intended for land application:
  - Domestic
    - Class I
    - Class II
  - Commercial (from approved domestic type sources such as restroom waste from schools and restaurants)

Discuss storage needs. Domestic septage may need to be stored. The only option for domestic septage storage is a septage transfer station. Facilities must be designed to meet the requirements of "Facility and Design Standards for Municipal Wastewater Treatment or Disposal Facilities – Septage Transfer Stations" (IDAPA 58.01.16.519). Storage management and facility design considerations provided in the plan should include the following:

- Maximum volume of domestic septage (Class I and Class II) generated annually
- Maximum storage capacity for each storage or transfer site
- Contingency plans in the event that domestic septage generated cannot be land applied (i.e., disposal at wastewater treatment plant or septage transfer station)
- Location of the storage sites, projected use after storage, and maximum volume of domestic septage that could be stored during nonapplication periods
- Other factors such as odor generation, pathogens, and vector attraction

4.4.2 Management Practices

Describe management practices as they apply to the following:

- Application rates
- Application methods
- Application timing
- Prevention of vector access and nuisance conditions
- Horizontal setbacks to features of concern
- Grazing, crop production, and measures to limit public access

The following sections describe the level of detail for some of the management practices discussed above. *Note that management practices should be kept current, and the SMPLA should include methods for keeping written management practices current.*

4.4.2.1 Management Practices for Application Rates

Domestic septage should be applied using methods and application rates that prevent all runoff, erosion, leaching, and nuisance conditions. Domestic septage applied at agronomic rates balances septage nutrients with the crop requirements and minimizes the amount of nitrogen and phosphorus that pass through the root zone into ground water. Address crops and crop assimilative capacity, fertilizer and irrigation practices, timing of crop harvest, waiting periods, and nutrient management.

Domestic septage application rates should be based on the following:

- Crop uptake
- The fractional availability of nitrogen from land-applied domestic septage (Equation 2)
- Total annual loadings applied in gallons per acre

Tracking crop production levels is an important part of the SMPLA. Crops are used to uptake nutrients applied to the site through domestic septage land application. This uptake helps prevent excess nutrients from leaching through the soils to ground water, which protects the environment and public health. The annual application rate is based upon the crop agronomic nutrient (i.e., nitrogen) requirements and the nutrient content of the domestic septage. Nutrient management planning ensures that the appropriate quantity of domestic septage is land applied. The domestic septage application should be specifically calculated to match the nutrient uptake requirements of the particular crop being grown to ensure proper land application and nutrient control. The SMPLA should account for crop type, crop yield, management practices, fertilizer applications, irrigation, and timing of domestic septage applications. The SMPLA should address each crop that appears on the site's crop rotation schedule. A crop rotation schedule can assist the site in maintaining productivity.

Agronomic application rates may be determined in one of two ways. The first method is to use the annual application rate as determined by EPA in 40 CFR Part 503 for domestic septage. The second method is to calculate a site-specific agronomic application rate through septage analysis from nitrogen and trace elements. *If the site-specific agronomic application method is chosen for either domestic septage class, then the SMPLA must follow the DEQ guidance for land application of municipal biosolids and will not be approved under this guidance.* DEQ guidance for the land application of municipal biosolids takes into account detailed nutrient and metals characterization and increased nutrient loading.

4.4.2.1.1 Annual Application Rate for Class I Septage

The application rate for domestic septage developed by EPA may be used without measuring the nutrient content of the land-applied domestic septage. It must be understood that this is a conservative rate calculation and may not provide the full nitrogen requirements of the associated crops, especially if the pH adjustment is used. Adjusting pH will affect nitrogen content in the septage through a loss of ammonia nitrogen. The rate developed by EPA is protective of both the public health and environment while still providing a benefit for

agronomic purposes (pollutants like heavy metals are indirectly limited by this application rate formula). Using this application rate, it may be necessary to supplement crop nitrogen requirements with additional fertilizer. Use of this rate is most suitable for sites where peak productivity is not a major concern. Equation 2 must be used to determine the Class I domestic septage application rate under this guidance:

$$AAR = (N) / (0.0026)$$

Equation 2. Class I domestic septage application rate from EPA (40 CFR § 503.13).

where:

AAR = annual application rate in gallons per acre per 365 days

N = amount of nitrogen needed by the crop in pounds per acre per 365 days

0.0026 = fractional availability of nitrogen from land-applied domestic septage

Specific values for the annual amount of nitrogen needed for crop growth (N), as described in Equation 2, must be provided due to the variation of crop fertilization requirements across soil types. Provide the supporting documentation used to calculate the crop's nitrogen requirement (N) resulting in the annual application rate (AAR). Current information on crop fertilization needs specific to a proposed domestic septage land application site can be obtained by contacting a local agricultural extension agent or university. For example, try a local University of Idaho Extension office at *http://www.uidaho.edu/extension*.

4.4.2.1.2 Annual Application Rate Adjustment for Class II Septage

Class II domestic septage can contain up to 6 times the total nitrogen than household domestic septage. If Class II domestic septage is land applied under the SMPLA, the application rate must be reduced by a factor of 6 to protect public health and the environment. Equation 3 is used to determine the Class II domestic septage application rate under this guidance:

$$AAR = [(N) / (0.0026)] / 6$$

Equation 3. Class II domestic septage application rate.

where:

AAR = annual application rate in gallons per acre per 365 days

N = amount of nitrogen needed by the crop in pounds per acre per 365 days

0.0026 = fractional availability of nitrogen from land-applied domestic septage

6 = annual application rate reduction factor

If the same land application site is applying both Class I and Class II domestic septage the application rates must be calculated independently and the application volume may not exceed the equivalent site volume for Class I domestic septage.

4.4.2.1.3 Management Practices Related to Additional Nutrient Loading

Land application of domestic septage using this guidance to calculate domestic septage application rates may not meet the crop nitrogen requirements. Supplemental fertilizer may be

needed to meet crop nitrogen requirements. The site operator should use crop nitrogen uptake information to calculate crop-specific fertilizer requirements. The SMPLA should include plans to document the following information:

- The type and composition (i.e., nitrogen, phosphorus, potassium, and sulfur) of fertilizer applied
- Nitrogen-specific loading in pounds per acre (lb/acre)

  If additional nutrient requirements are identified, include information regarding these loading rates.
- The quantity of fertilizer applied annually.
- Sites receiving fertilizer

4.4.2.2 Management Practices for Application Timing

Site management practices should account for variable weather that can affect the timing of applications. Due to variable weather and climate, domestic septage may not always be land applied on a year-round basis. Develop contingency plans for times when the site cannot be used. Appropriate contingencies include backup disposal sites (e.g., municipal wastewater treatment plants) or adequate site storage capacity. In general, land application of domestic septage is prohibited under the following conditions:

- The application site soils are frozen on the surface (no surface application).
- The application site soils are frozen on the surface and below the majority of the crop rooting depth (no surface application, incorporation, or injection).
- The application site soils are saturated due to heavy precipitation (e.g., rain, snow, hail, or sleet) or snowmelt events (no surface application, incorporation, or injection).
- The application site is flooded or ponded with water (no surface application, incorporation, or injection).

4.4.2.3 Management Practices for Prevention of Vector Access and Nuisance Conditions

Describe how nuisance conditions, such as the generation of odors and unsightliness of the operation, will be addressed (include response plans for dealing with nuisance conditions).

Septage application may cause strong odors that may be offensive to some people. Much of the odor is caused by compounds containing sulfur and ammonia, both of which are plant nutrients.

DEQ strongly recommends that a nuisance odor management plan be developed as part of the SMPLA and include the following:

- Equipment design (i.e., designing drainage of all transfer lines to prevent septage buildup).
- Actively evaluate management practices to identify potential nuisance conditions.
- Proactive outreach to adjacent property owners and the immediate community to inform them about the domestic septage disposal/soil augmentation site. Effective outreach may consist of offering contact phone numbers, a tour of the facility, or asking the community for input to jointly resolve a potential nuisance condition before it becomes a nuisance.

4.4.3 Transportation and Handling

All vehicles used to transport domestic septage to the land application site must maintain a valid septic tank pumping permit as required by IDAPA 58.01.15.004. Transportation and handling should be achieved in a manner that prevents leaking or spilling of the domestic septage onto highways, streets, roads, other land surfaces, or waterways not approved for domestic septage application or disposal. The information included in this section should discuss accessibility to the site, haul distance, method of transportation, cleaning, and remediation in the event of a spill.

4.4.4 Manifest, Certification, and Recordkeeping

Reporting and record-keeping requirements are needed to assess conditions that protect human health and the environment. Each SMPLA may have different site-specific reporting and analysis requirements. In general, recordkeeping should address the following:

- How and where records are maintained
- Site management practices to be implemented at all new sites (e.g., staging, access restrictions, and how setbacks are achieved)
- Dates land application occurred if a site was used, the application methods, amount of domestic septage land applied, and the number of acres on which the domestic septage is land applied
- Site crops, including acreage of each crop, agronomic rate limitations (i.e., nitrogen loading limits), and cropping management practices

Recordkeeping performed in accordance with this section would be deemed adequate by DEQ. All records will be retained on site for a period of 5 years. Records must be made available to DEQ on request and are subject to inspection at any time.

4.4.4.1 Manifest

A manifest of pumping activities should be maintained by each land application facility. Copies of a pumper's manifest shall be obtained by the party, or designated employee, responsible for the SMPLA with each load of domestic septage that is delivered to the land application facility. Manifests should include the following information:

- Pumper company name and permit number
- Property owner name (septage generator)
- Date of pumping
- Address or legal description of property (septage generator)
- Septic tank size
- Volume of septage pumped
- Type of domestic septage (i.e., Class I or Class II)
- Any comments regarding the septage
- Property owner's signature
- Pumper truck operator's signature

4.4.4.2 Certification

Each load of domestic septage that is land applied shall include a certification signed by the septage land application operator (40 CFR Part 503). The certification statement shall be followed by the land application operator's signature and the date of the land application associated with the statement. The certification shall state the following:

I certify, under penalty of law, that the pathogen requirements in [insert method used identified in section 4.3.4 of this guidance] and the vector attraction reduction requirements in [insert method used identified in section 4.3.4 of this guidance] have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

4.4.4.3 Records

Records must be maintained for at least 5 years. Required records to show compliance with 40 CFR Part 503 and IDAPA 58.01.15 shall include the following:

- Copies of the manifest of pumping activities required for each load of domestic septage land applied (section 4.4.4.1).
- A copy of the certification for each load of domestic septage land applied (section 4.4.4.2).
- The volume of domestic septage of each load brought to the land application site.
- If domestic septage is to be pH adjusted prior to land application, records for pH adjustment must include the following:
  - The amount and type of material used to raise the pH of the mixed domestic septage load.
  - The pH of the septage immediately after mixing with the adjustment material and the time the pH reading is taken.
  - The pH of the septage 30 minutes after the initial pH reading is taken and the time that the second pH reading is taken.

    If pH is not maintained at 12 or above for the 30-minute period, the pH adjustment must start over and records of the readjustment shall include the items identified above.
  - pH adjustment calculations based on ambient temperature.
- The location of land application for each load of domestic septage land applied and the number of acres to which the domestic septage is applied.
- The volume of each load of domestic septage land applied and its associated class designation.
- The date and time of each domestic septage application.
- The method of land application that is used for each load of domestic septage land applied.
- Verification that the VAR method is met as identified in section 4.3.4.

- The volume of domestic septage applied to all of the land application sites and each land application site's approved agronomic volume of domestic septage.
- Supplemental fertilization records.

4.4.5 Inspections

The SMPLA shall include a statement that any land application or domestic septage storage or transfer site approved under the plan is open for inspection by DEQ during any time of operation and that the site may be accessed during closed hours upon notification of the site owners or land application operator by DEQ.

DEQ may perform inspections of each land application site approved under the SMPLA. Inspections shall verify that the land application site or domestic septage storage site is being operated according to the approved SMPLA. During inspections, DEQ may access all areas of the land application or domestic septage storage site and associated equipment. All required records shall be made available upon request during the inspection. DEQ also reserves the right to collect samples of septage, soil, or crops for analysis. Complaint investigations may be performed simultaneously with an inspection.

4.4.6 Emergency Planning Procedures

Identification and planning for potential emergencies (i.e., storage failure or spills) and response/remediation procedures are part of the land application site's management practices.

Emergency planning procedures should include contact names and phone numbers of people that should be notified, how a failure will be corrected, and how a spill will be cleaned up.

Emergency and noncompliance incidents that could endanger the public health or the environment should be reported to the Idaho State Communication Center at 1-800-632-8000 within 24 hours, and as soon as practical (not to exceed 24 hours) to the DEQ regional office by telephone.

Additionally, the SMPLA should make clear that emergency and noncompliance situations will be reported to DEQ in writing within 5 days of the date of occurrence.

The plan should include corrective action for the following events:

- A domestic septage treatment process failure (e.g., holding area breach and pump truck spill)
- A domestic septage spill at the land application site or septage generating source
- A domestic septage spill between the generating source and land application site or receiving facility (e.g., domestic septage transferred from one facility to another where it would be processed).

Resources

The following documents may be used as resources in the development of A SMPLA:

DEQ (Idaho Department of Environmental Quality). 2007. *Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater.* Boise, ID: DEQ. *www.deq.idaho.gov/media/516329-guidance_reuse_0907.pdf.*

DEQ (Idaho Department of Environmental Quality). 2013. *Technical Guidance Manual: Individual and Subsurface Sewage Disposal Systems*. Boise, ID: DEQ. *www.deq.idaho.gov/water-quality/wastewater/septic-systems/technical-guidance-manual.aspx.*

EPA (United States Environmental Protection Agency). 2013. *Environmental Regulations and Technology Control of Pathogens and Vector Attraction in Sewage Sludge*. Cincinnati, OH: Office of Research and Development. EPA 625 R-92013. *http://www.epa.gov/nrmrl/pubs/625r92013/625R92013.pdf.*

EPA (United States Environmental Protection Agency). 2013. "Biosolids." Water: Sewage Sludge web page. *http://www.epa.gov/OWM/mtb/biosolids/.*

EPA (United States Environmental Protection Agency). 2000. *Guide to Field Storage of Biosolids*. Washington, DC: Office of Wastewater Management. EPA/832 B-00-007. *http://water.epa.gov/scitech/wastetech/biosolids/guide.cfm.*

EPA (United States Environmental Protection Agency). 1993. *Domestic Septage Regulatory Guidance: A Guide to the EPA 503 Rule.* Washington, DC: Office of Water. EPA 832-B-92-005. *http://nepis.epa.gov/Exe/.*

EPA (United States Environmental Protection Agency). 1994. *Guide to Septage Treatment and Disposal*. Washington, DC: Office of Research and Development. EPA/625/R-94/002. *http://nepis.epa.gov/Exe/.*

EPA (United States Environmental Protection Agency). 1994a. *A Plain English Guide to the EPA Part 503 Biosolids Rules.* EPA/832R-93/003. *http://water.epa.gov/scitech/wastetech/biosolids/503pe_index.cfm.*

Washington Department of Ecology and Northwest Biosolids Management Association. 1999. *Managing Nitrogen from Biosolids*. *http://www.ecy.wa.gov/programs/swfa/biosolids/reglinks.html*.

Washington State Department of Ecology. 2000. *Biosolids Management Guidelines*. *http://www.ecy.wa.gov/programs/swfa/biosolids/reglinks.html*.

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Appendix A. Information Checklist for the Domestic Septage Management Plan Preapplication Meeting

Plan ahead to ensure plenty of time for the Idaho Department of Environmental Quality (DEQ) to review the submitted plans. DEQ recommends a minimum of 45 days for review. Note that the site, scale, and application methods will influence the detail of information that is needed to assess the application plan, so it is recommended that the following checklist be used in the preapplication meeting. The outline on the following pages provides a checklist of items that should be included and considered within the SMPLA.

Checklist: Septage Management Plan for Land Application

This checklist provides a general example of a Septage Management Plan for Land Application (SMPLA) outline. Additional detail to address each item on this checklist is found in the *Guidance for the Land Application of Domestic Septage.*

- ☐ Site Ownership Information:
  - ☐ Responsible Parties (4.1.1)
  - ☐ Local Approvals (4.1.2)
- ☐ Site Identification (Location for All Sites Proposed in the SMPLA) (4.1.3)
- ☐ Site Selection (including site history) (4.2):
  - ☐ Soil Description including (4.2.1):
    - ☐ Soil Properties (4.2.1.1)
    - ☐ Soil Depth (4.2.1.2)
  - ☐ Geologic Features including (4.2.2):
    - ☐ Geologic Formation of Site: Surface Features
    - ☐ Subsurface Features
    - ☐ Geologic Parameters that can Affect Contaminant Movement
  - ☐ Ground Water Characteristics including (4.2.3):
    - ☐ Aquifer Type and Depth Underlying Site (4.2.3.2)
    - ☐ Existing Quality of Ground Water
    - ☐ Water Table Elevations (seasonal and static) (4.2.3.2)
    - ☐ Direction and Flow of Ground Water (4.2.3.2)
    - ☐ Hydrographs and Equipotential Maps if Possible (4.2.3.2)
    - ☐ Beneficial Uses (4.2.3.3)
  - ☐ Land Use Map for Site and Surrounding Area including (4.2.4 and 4.2.5):
    - ☐ Topography
    - ☐ Ground Water Uses and Existing Wells

- ☐ Identification of Private, Public, and Irrigation Water Supply Wells
- ☐ Public Roadways, Drainage Ditches, and Surface Water
- ☐ Residences and Buildings
- ☐ Floodplains

☐ Required Horizontal Setback Distances (4.2.6)

☐ Climate Information including (4.2.7):

- ☐ Mean Annual and Monthly Precipitation
- ☐ Peak Storm Event Precipitation
- ☐ Snow Effects on Year-Round Application Systems
- ☐ Temperature
- ☐ Wind velocity

☐ Septage Characterization including (4.3):

- ☐ Classification (4.3.1)
- ☐ Generation (4.3.2)

☐ Land Application Method(s) to be Used at the Land Application Site (4.3.3)

☐ Pathogen Reduction, Vector Attraction Reduction, and Site Access Controls (4.3.4)

☐ Septage Land Application including:

- ☐ Annual Septage Volumes (4.4.1)
- ☐ Septage Storage Evaluation (4.4.1)

☐ Management Practices for (4.4.2):

- ☐ Septage Application Rates (4.4.2.1)
- ☐ Additional Nutrient Loading (4.4.2.1.3)
- ☐ Application Timing (4.4.2.2)
- ☐ Practices for Vector and Nuisance Conditions (4.4.2.3)

☐ Transportation and Handling (4.4.3)

- ☐ Recordkeeping (4.4.4):
  - ☐ Manifest (4.4.4.1)
  - ☐ Certification (4.4.4.2)
  - ☐ Records (4.4.4.3)
- ☐ Inspection Allowance (4.4.5)
- ☐ Emergency Planning Procedures (4.4.6)

Appendix B. Example Outline of a SMPLA

A Septage Management Plan for Land Application (SMPLA) that follows the format and contains the information suggested within section 4 of the *Guidance for the Land Application of Domestic Septage* should expedite Idaho Department of Environmental Quality (DEQ) staff review. The following example provides an outline that would follow the suggested format of the *Guidance for the Land Application of Domestic Septage* and contain the necessary information that would expedite staff review by DEQ

1. **Site Information**
   - **a. Responsible Parties**
     - i. Individual/Party responsible for SMPLA
       - Name
       - Address
       - Phone number
     - ii. Land owner
       - Name
       - Address
       - Phone number
     - iii. Site operator
       - Name
       - Address
       - Phone number
     - iv. Septage pumpers/haulers using site
       - Name(s)
       - Address(es)
       - Phone number(s)
       - Copy of current septic tank pumping permit(s)
   - **b. Site Identification**
     - i. Site name
     - ii. Site location (legal description or address)
     - iii. Total number of acres
     - iv. Number of acres septage is to be applied on
   - **c. Local Approvals**
     - i. Describe the manner in which local approvals have been addressed and provide copies of approvals if available

2. **Site Selection Criteria**
   - **a. Soils Description**
     - i. Soil properties
       1) Depth
       2) Horizons
       3) Percent gravel and boulders

4) Soil design group of each soil horizon
5) Rooting depth
6) Depth to ground water
7) Depth to
    a) Fractured bedrock
    b) Extremely permeable layer
    c) Impermeable layer
8) Attach copies of all test pit or boring profiles recorded during site survey

ii. Soil thickness
    1) Range of site soil thickness
    2) Statement that the site soil thickness will support the separation distances to limiting layers from the application depth (must be supported by the SMPLA)

b. Geologic Features

i. Description of surface geologic features (e.g., exposed rock, slopes)
    1) Statement of the feature's effect on surface runoff of domestic septage (must be supported by the SMPLA)

c. Ground Water and Surface Water

i. Ground water characteristics
    1) Permanent ground water identification
        a) Type
        b) Depth
    2) Seasonal ground water identification
        a) Seasonal high elevation on the site
        b) Normal high elevation on the site
        c) Ground water flow direction
    3) Well locations within one-quarter mile of site
        a) Other information on wells (if necessary)

ii. Ground water beneficial uses
    1) Existing beneficial uses of ground water in the area
        a) Statement that existing beneficial uses will not be impacted (must be supported by the SMPLA)
    2) Future beneficial uses of ground water in the area
        a) Statement that future beneficial uses will not be impacted (must be supported by the SMPLA)

iii. Ground water contamination
    1) Describe how ground water contamination will be prevented
        a) Describe how nutrient percolation past the root zone will be prevented

iv. Surface water contamination
    1) Describe any possible interactions between surface water and ground water

2) Describe how surface runoff of domestic septage, storm events, and irrigation will be prevented from leaving the land application site
3) Describe how erosion will be prevented from leaving the land application site

d. Land Use

i. Attach a 7.5-minute topographic map of the land application site and all of the following within one-quarter mile of the site:
   1) Land use structures
   2) Public land ownership
   3) Locations of threatened or endangered species
   4) Land use areas including vegetation type
   5) All residential and building locations

ii. Describe past, present, and projected future land uses/structures at the site

e. Topography

i. Attach a 7.5-minute topographic map of the land application site and the area within one-quarter mile of the site that includes the following information:
   1) Natural or man-made features necessary for treatment
   2) Process chemicals and residue storage areas/facilities
   3) Public roadways
   4) Structures
   5) Wells
   6) Springs
   7) Geologic borings or test hole excavations that correspond to the soil logs
   8) Specific area of proposed septage disposal, storage, or handling
   9) Topography
   10) Slope analysis of the land application site
   11) Seasonal drainages
   12) Surface water
   13) Wetlands
   14) Floodway and 25-, 50-, 100-year floodplains
   15) Scarps
   16) Rock outcrops
   17) Other relevant information (if necessary)

ii. Describe any runoff and erosion control measures that will be constructed

iii. Discuss any slope issues on the land application site that might impact the following:
   1) Runoff
   2) Erosion
   3) Crop growth
   4) Septage drying and/or incorporation

f. Horizontal Setbacks for Domestic Septage Land Application Areas

i. Statement that all horizontal setbacks required for the land application site will be met (must be supported by the SMPLA and topographic map)

g. Climate

i. Describe the average weather for the land application site (30-year minimum period) including:
   1) Total mean annual precipitation
   2) Mean monthly precipitation
   3) Peak storm even precipitation (25 year)
   4) Effects of frozen ground on year-round application sites
   5) Temperature (seasonal)
   6) Prevailing wind direction
   7) Wind velocity

3. Septage Characterization and Stabilization

a. Septage Classification

i. Provide information on which class(es) of domestic septage will be accepted at the land application site

b. Septage Generation

i. List the domestic septage sources that will be accepted at the site

ii. Describe how the volume of domestic septage accepted will be measured

4. Land Application Methods

a. Injection, Spraying/Spreading and Incorporation, pH Adjustment, and Spraying/Spreading

i. Describe all of the methods of domestic septage land application that will be used at the site

ii. Describe domestic septage incorporation methods (if applicable)

iii. Provide details and descriptions of all land application equipment

iv. Describe pH adjustment methods and recordkeeping (if applicable)

5. Pathogen Reduction, Vector Attraction Reduction, and Site Access Controls

a. Harvesting Restrictions

i. Describe the management practices for the site based upon the harvesting restrictions for the site

b. Vector Attraction Reduction

i. Describe how vector attraction reduction will be accomplished for each land application

c. Site Access Controls

i. Describe restrictions on site grazing based upon the proposed septage application method
ii. Describe restrictions on public access to the site based upon the proposed septage application method
iii. Provide details on site perimeter posting
iv. Provide a description of site remoteness
v. Provide details on site fencing (if applicable)

6. Domestic Septage Application

a. Volume and Storage

i. Provide the maximum volume of domestic septage intended for land application
    1) Domestic
        a) Class I
        b) Class II
    2) Commercial (domestic type sources)
ii. Provide a description of storage needs
    1) Storage capacity (if applicable)
    2) Attach the engineering for all septage transfer stations (if being constructed)
iii. Provide contingency plans in the event that septage generated cannot be land applied
    1) Provide disposal approval from wastewater treatment plant (if applicable)
iv. Describe how odor generation and vector attraction will be taken into account with storage (if applicable)

b. Management Practices

i. Management practices appropriate to site
    1) Describe why the site is acceptable for domestic septage land application including the following topics:
        a) How the land application of domestic septage will provide soil augmentation
        b) How the site will be managed to prevent a reduction of soil productivity
ii. Management practices for application rates
    1) Annual application rate for Class I domestic septage (if applicable)
    2) Annual application rate for Class II domestic septage (if applicable)
        a) Calculate the annual application rate based upon the crop rotation during the approval period of the SMPLA
            i) If different crops are planned each year on the application site then crop specific application rates must be calculated
            ii) Determine the corresponding application of Class I domestic septage
            iii) Provide an application plan to ensure that over application will not occur if applying both Class I and II septage
    3) Additional nutrient loading

a) If additional fertilization of the site is to occur, provide a sample form capable of recording the following records:
   i) Type and composition of the fertilizer applied
   ii) Nitrogen specific loading in lb/acre
   iii) Date the fertilizer is applied
   iv) Sites receiving fertilizer

iii. Management practices for application timing
   1) Provide a contingency plan for times when the land application site cannot be used during prohibited conditions

iv. Management practices for nuisance conditions
   1) Describe how nuisance conditions (i.e., odors and unsightliness) will be addressed
      a) Attach an odor management plan (if applicable)

c. Transportation and Handling

i. Describe how the transportation and handling of domestic septage will occur to the site and at the site including:
   1) How leaks and spills will be prevented
   2) Accessibility of the land application site for transportation trucks
   3) Maximum haul distance
   4) Method of transportation
   5) Cleaning and remediation in the event of a spill or leak

d. Manifest, Certification, and Recordkeeping

i. Manifest
   1) Provide a copy of the manifest that will be used at the land application site for each domestic septage delivery

ii. Certification
   1) Provide a copy of the certification statement that will be signed by the septage land application operator each time septage is land applied

iii. Records
   1) Describe how and where all records will be maintained
   2) Provide a record retention schedule
   3) Describe how records will be maintained in an organized manner
   4) Provide a statement that all required records will be maintained

e. Inspections

i. Provide a statement that any land application or domestic septage storage or transfer site approved under the SMPLA is open for inspection by DEQ during any time of operation and that the site may be accessed during closed hours upon notification of the site owners or land application operator by DEQ

ii. Provide a statement that all records will be available upon request during inspection

iii. Provide a statement that DEQ may collect samples of septage, soil, or crops during any site visit

f. Emergency Planning Procedures

i. Provide emergency planning procedures based upon site operations including:

1) Treatment process failures

2) Domestic septage spills