



## Land Application of Biosolids Supplemental Requirements

**Alaska Department of Environmental Conservation  
Solid Waste Program**

**ADEC Office Only:**

Facility Name: \_\_\_\_\_

Authorization #: \_\_\_\_\_

### Instructions

This application is a supplement to a Land Application of Biosolids Application to allow applicators to meet certain Class B biosolids requirements without requiring an additional treatment permit.

#### Allowable Alternatives for **Pathogen Reduction:**

- Pathogen Reduction Alternative 1 [40 CFR 503.32(b)(2)]; or
- Pathogen Reduction Alternative 3 [40CFR 503.32 (b)(3)] Process to Significantly Reduce Pathogens (PSRP) by Lime Stabilization (only); or
- Pathogen Reduction for Domestic Septage by Addition of Alkali [40 CFR 503.32(c)(2)]; **AND**

#### Allowable Alternatives for **Vector Attraction Reduction:**

- Vector Attraction Reduction Alternatives 9 – Injection Below Land Surface [40 CFR 503.33(b)(9)]; or
- Vector Attraction Reduction Alternatives 10 – Incorporation into the Soil [40 CFR 503.33(b)(10)]; or
- Vector Attraction Reduction for Domestic Septage by Addition of Alkali [40 CFR 503.33(b)(12)].

All other pathogen reduction and vector attraction reduction alternatives will require submission of a Biosolids Treatment Permit Application.

This application information must be submitted in conjunction with a Land Application of Biosolids application.

Using the Supplemental Application is considered a Class Y Comprehensive Permit; the fee submitted in Section 3 of the Land Application of Biosolids application must be the fee listed for a Class Y Comprehensive Permit in 18 AAC 60.700(a), Table E-2.

### Pathogen Reduction and Vector Attraction Reduction

1. **Select the Pathogen Reduction Alternative** that will be applied to demonstrate Class B compliance:

Alternative 1 – Seven representative samples demonstrate that the geometric mean of the density of fecal coliform is less than 2 million MPN/g or 2 million CFU/g.

Alternative 3 – PSRP – Lime Stabilization – Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 after two hours of contact.

For Domestic Septage – Raise the pH of the septage to 12 with the addition of alkali; the pH must remain at 12 for 30 minutes or longer without the addition of more alkali.

2. **Select the Vector Attraction Reduction Alternative** that will be applied to demonstrate Class B compliance.

Alternative 9 – Sewage solids will be injected below land surface and no sewage solids are present on land surface after one hour.

Alternative 10 – Sewage solids will be incorporated into the soil within 6 hours of being applied to land.

For Domestic Septage – Raise the pH of the septage to 12 with the addition of alkali; the pH must remain at 12 for 30 minutes or longer without the addition of more alkali.

<b>Supplemental Operations Plan Requirements</b> – for addition of lime or other alkali, please provide a section in the operations plan that includes the appropriate information that an applicator could follow to properly meet the pathogen or vector attraction requirements.		
1.	<b>Addition of Alkali/Lime Stabilization</b>	<u>page/section</u>
	a. Provide a description of how the appropriate amount of alkali to add to the sewage solids or septage is determined.	
	b. Describe how the alkali is added to the sewage solids and mixed to provide consistent distribution.	
	c. Describe how additional alkali is added if the pH does not reach 12.	
	d. Describe how the process is addressed if the pH does not remain at 12 for the applicable period.	

<b>Supplemental Monitoring Requirements</b> – for the required monitoring, please provide a monitoring plan that provides direction such that a sampler could collect and process all the required samples.		
1.	<b>Nutrient Monitoring of Biosolids</b> is required to determine the agronomic application rate.	<u>page/section</u>
	For assistance with agronomics: Alaska Association of Conservation Districts - <a href="http://www.alaskaconservationdistricts.org/contact-us">http://www.alaskaconservationdistricts.org/contact-us</a> Alaska DNR Division of Agriculture - <a href="http://dnr.alaska.gov/ag/index.htm">http://dnr.alaska.gov/ag/index.htm</a>	
	a. Provide the analytical method the laboratory will use to test for the required nutrients: <ul style="list-style-type: none"> <li>• Total Kjeldahl nitrogen (TKN) [SM 4500, Norg B, SM 4500, Norg C, ASTM D3590-89, or ASTM D3590-02]</li> <li>• Nitrate nitrogen (NO<sub>3</sub>-N) [EPA 353.2 or SM 4500-NO<sub>3</sub> E, F, or H]</li> <li>• Ammonia nitrogen (NH<sub>4</sub>-N), [SM 4500-NH<sub>3</sub> B + C, D, E, or G]</li> <li>• Phosphorus (P) [Mehlich-3 extraction]</li> <li>• Potassium (K) [Mehlich-3 extraction]</li> </ul>	
	b. Include the number of samples that will be taken at each monitoring event.	
	c. Provide a description of the location, depth, etc. to collect each sample, and process if samples are composited.	
	d. Indicate the timing and frequency of monitoring.	
2.	<b>Inorganic Pollutant Monitoring</b> is required to determine the pollutant application rate and the concentration of other pollutants.	
	a. Provide the analytical method the laboratory will use to test for the required constituents: <ul style="list-style-type: none"> <li>• Arsenic, Cadmium, Copper, Lead, Molybdenum, Nickel, Selenium, Zinc [EPA 6010, EPA 6020, or EPA 7010]</li> <li>• Mercury [EPA 7470 or EPA 7471]</li> </ul>	
	b. Identify the number of samples that will be taken at a monitoring event.	
	c. Provide a description of the location, depth, etc. to collect each sample, and process if samples are composited.	
	d. Indicate the timing and frequency of monitoring.	

Section 9. Supplemental Monitoring (continued)		
3.	<b>PCB Monitoring</b> is required once per operating year.	<u>page/section</u>
	a. Provide the analytical method the laboratory will use to test for PCBs. [EPA 8082 or EPA 1668]	
	b. Provide a description of the sampling process for a composited sample.	
4.	<b>Fecal Coliform Monitoring</b> – For pathogen reduction alternative 1.	
	a. Provide the analytical method the laboratory will use to test for Fecal Coliform [EPA 1680, EPA 1681, EPA/625/R-92/013 (Appx. F), SM 9221C&E, or SM 9222D]	
	b. Indicate that at least seven individual samples that represent the overall condition of the sewage solids will be collected.	
	c. Provide a description of the location, depth, etc. to collect each sample, and process if samples are composited.	
	d. Indicate the timing and frequency of monitoring.	
	e. Show how the geometric mean will be calculated.	
4.	<b>pH Monitoring</b> – For pathogen reduction alternative 3 and domestic septage.	
	a. Indicate that pH will be monitored using test methods EPA 9040.	
	b. Identify the number of samples that will be tested at each monitoring event and the timing of each sample.	
	c. Include a description of the location, depth, etc. to collect each sample.	
5.	<b>Sampling</b> - For each monitoring analyses above, describe:	
	a. List the name and contact number for the laboratory.	
	b. List the sampling kit that must be requested.	
	c. Describe how each sample will be numbered and documented.	
	d. Describe the proper sample collection method, including proper PPE, tools, containers, decontamination procedures, field tests, field documentation, etc.	
	e. Describe how each sample will be preserved and packed for shipping.	
	f. Include a copy of a chain of custody form that will be filled out and submitted with each cooler of samples.	
6.	<b>Quality Control</b>	
	a. Include the quality control samples or blanks required for each sampling event.	
	b. Include the laboratory quality control samples required for each event.	
	c. Discuss how samples outside the control parameters (such as hold times or laboratory quality measures) will be addressed.	
7.	<b>Data Analysis</b>	
	a. Provide a table of each test and any comparison standard.	
	b. Include an explanation of how results must be evaluated against the standard.	
	c. Describe how samples that fail comparison standards will be addressed.	