



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.

| Supplemental Operations Plan Requirements – 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. | | |
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| 1. | Addition of Alkali/Lime Stabilization | <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. | |

| Supplemental Monitoring Requirements – for the required monitoring, please provide a monitoring plan that provides direction such that a sampler could collect and process all the required samples. | | |
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| 1. | Nutrient Monitoring of Biosolids is required to determine the agronomic application rate. | <u>page/section</u> |
| | For assistance with agronomics: Alaska Association of Conservation Districts - http://www.alaskaconservationdistricts.org/contact-us Alaska DNR Division of Agriculture - http://dnr.alaska.gov/ag/index.htm | |
| | a. Provide the analytical method the laboratory will use to test for the required nutrients: <ul style="list-style-type: none"> • Total Kjeldahl nitrogen (TKN) [SM 4500, Norg B, SM 4500, Norg C, ASTM D3590-89, or ASTM D3590-02] • Nitrate nitrogen (NO₃-N) [EPA 353.2 or SM 4500-NO₃ E, F, or H] • Ammonia nitrogen (NH₄-N), [SM 4500-NH₃ B + C, D, E, or G] • Phosphorus (P) [Mehlich-3 extraction] • Potassium (K) [Mehlich-3 extraction] | |
| | 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. | Inorganic Pollutant Monitoring 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"> • Arsenic, Cadmium, Copper, Lead, Molybdenum, Nickel, Selenium, Zinc [EPA 6010, EPA 6020, or EPA 7010] • Mercury [EPA 7470 or EPA 7471] | |
| | 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) | | |
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| 3. | PCB Monitoring 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. | Fecal Coliform Monitoring – 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. | pH Monitoring – 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. | Sampling - 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. | Quality Control | |
| | 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. | Data Analysis | |
| | 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. | |