

**SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES**

**JOE FOSS BUILDING
523 EAST CAPITOL AVENUE
PIERRE, SD 57501-3182**

**SURFACE WATER DISCHARGE PERMIT
AUTHORIZING LAND APPLICATION OF BIOSOLIDS
UNDER THE
SOUTH DAKOTA SURFACE WATER DISCHARGE SYSTEM**

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota, Article 74:52,

the City of Aberdeen

is authorized under this permit to land apply biosolids, from its wastewater treatment facility located at 700 SE 135th Street, which is about one mile south of the city in the Northeast ¼ of Section 36, Township 123 North, Range 64 West, in Brown County, South Dakota (Latitude 45.428581°, Longitude -98.478499°), in accordance with application sites, specific limits, monitoring requirements, management practices, and other conditions set forth herein. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modifications; or for denial of a permit renewal application.

This permit shall become effective **[PERMIT EFFECTIVE DATE]**.

This permit and the authorization to discharge shall be in full force and effect until, **[EXPIRATION DATE]**.

Signed this day of

DRAFT

Authorizing Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

TABLE OF CONTENTS

COVER SHEET – Issuance and Expiration Dates

TABLE OF CONTENTS	2
DEFINITIONS	3
1.0 BIOSOLIDS LIMITS AND MONITORING REQUIREMENTS	6
1.1. DESCRIPTION OF BIOSOLIDS GENERATING FACILITIES	6
1.2. CHANGE IN TREATMENT SYSTEM OR USE/DISPOSAL PRACTICES	6
1.3. BIOSOLIDS LIMITS – <i>OUTFALL 201</i>	7
1.4. SELF-MONITORING REQUIREMENTS	9
1.5. BEST MANAGEMENT PRACTICES	12
1.6. RECORDKEEPING REQUIREMENTS.....	14
1.7. REPORTING REQUIREMENTS	14
1.8. SPECIAL CONDITIONS ON BIOSOLIDS STORAGE.....	15
2.0 MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS	16
2.1. REPRESENTATIVE SAMPLING	16
2.2. MONITORING PROCEDURES	16
2.3. REPORTING OF MONITORING RESULTS	16
2.4. SIGNATORY REQUIREMENTS	16
2.5. ADDITIONAL MONITORING BY THE PERMITTEE.....	17
2.6. RECORDS CONTENTS	17
2.7. DUTY TO PROVIDE INFORMATION.....	17
2.8. OTHER INFORMATION	17
2.9. PLANNED CHANGES.....	17
2.10. RETENTION OF RECORDS	17
2.11. TWENTY-FOUR HOUR NOTICE OF NONCOMPLIANCE REPORTING	18
2.12. OTHER NONCOMPLIANCE REPORTING	18
2.13. PERMIT TRANSFERS	18
3.0 COMPLIANCE REQUIREMENTS	19
3.1. DUTY TO COMPLY	19
3.2. DUTY TO MITIGATE	19
3.3. PROPER OPERATION AND MAINTENANCE	19
3.4. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE.....	19
3.5. INSPECTION AND ENTRY	19
3.6. REMOVED SUBSTANCES.....	19
3.7. DUTY TO REAPPLY	20
3.8. AVAILABILITY OF REPORTS	20
3.9. PROPERTY RIGHTS.....	20
3.10. SEVERABILITY	20
3.11. REOPENER PROVISION	20
3.12. PERMIT ACTIONS.....	20
4.0 PENALTIES FOR NONCOMPLIANCE	21
4.1. PENALTIES FOR VIOLATIONS OF PERMIT CONDITIONS.....	21
4.2. PENALTIES FOR TAMPERING	21
4.3. PENALTIES FOR FALSIFICATION OF REPORTS.....	21
4.4. OIL AND HAZARDOUS SUBSTANCE LIABILITY.....	21

DEFINITIONS

30-day (and monthly) average means the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting.

ARSD means the Administrative Rules of South Dakota.

Agronomic Rate is the whole biosolids application rate (dry weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation growth on the land, and (2) minimize the amount of nitrogen in the biosolids that passes below the root zone of the crop or vegetation grown on the land to the ground water.

The **Approval Authority** is the Secretary of the South Dakota Department of Environment and Natural Resources, or designated representative.

Animals for the purposes of this permit are domestic livestock.

Annual Pollutant Loading Rate is the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.

Annual Whole Biosolids Application Rate is the amount of biosolids (dry-weight basis) that can be applied to a unit area of land during a cropping cycle.

Application Site or Land Application Site means all contiguous areas of a users' property intended for biosolids application.

Batch is when a pile of biosolids is created, allowed to sit for a specific period of time and then removed from the site. A batch of biosolids could be a compost pile or long-term treatment piles.

Biosolids means any sludge or material derived from sludge that can be beneficially used. Beneficial use includes, but is not limited to, land application to agricultural land, forest land, a reclamation site or sale or give away to the public for home lawn and garden use.

Bulk Biosolids is biosolids that is not sold or given away in a bag or other container for application to the land.

Ceiling Concentration is the maximum concentration limits for 9 heavy metal pollutants in biosolids; specifically arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc. If a limit for any one of the pollutants is exceeded, the biosolids cannot be applied to the land.

CFU/gram is the number of colony forming fecal coliform units per gram of biosolids on a dry weight basis.

Composite Biosolids Sample is a sample taken either in a wastewater treatment process, dewatering facility, or application device consisting of a series of individual grab samples. For liquid biosolids, a minimum of three grab samples of 500 milliliters taken during the first one-third, second one-third and final one-third of a pumping cycle and combined in equal volumetric amounts. For semi-dewatered, dewatered or dried biosolids, a composite sample consisting of a minimum of three grab samples of 0.5 pounds taken over a period of 24 hours not less than two hours apart or another representative sample as defined or approved by the permitting authority.

Cumulative Pollutant Loading Rate is the maximum amount of an inorganic pollutant (dry-weight basis) that can be applied to a unit area of land.

CWA means the Clean Water Act (formerly referred to as either the Federal Water Pollution Act or the Federal Water Pollution Control Act Amendments of 1972), Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, and Pub. L. 100-4.

Daily Maximum (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

dmt means dry metric tons.

Dry Weight Basis means 100 percent solids (i.e. zero percent moisture).

EPA or US EPA means United States Environmental Protection Agency.

A **geometric mean**, unlike an arithmetic mean, tends to dampen the effect of very high or low values, which might bias the mean if a straight average (arithmetic mean) were calculated. This is helpful when analyzing bacteria concentrations, because levels may vary anywhere from 10 to 10,000 fold over a given period.

A **Grab Sample**, for monitoring requirements, is a single “dip and take” sample collected at a representative point in wastewater treatment or biosolids land application processes.

Grit and Screenings are sand, gravel, cinders, or other materials with a high specific gravity and relatively large materials such as rags generated during preliminary treatment of domestic sewage at a treatment works and shall be disposed of according to 40 CFR 258.

Ha means hectare. One hectare equals 2.47 acres.

High Potential for Public Contact Site includes but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

IU means industrial user.

An **Instantaneous Measurement**, for monitoring requirements, is a single reading, observation, or measurement either taken instantaneously at the facility or within 15 minutes of the sample.

Kg/Ha is kilogram of pollutants per hectare of land.

Kg/Ha/Yr is the kilograms of pollutants applied to a hectare of land in a single calendar year.

Land Application is the spraying or spreading of biosolids onto the land surface; the injection of biosolids below the land surface; or the incorporation of biosolids into the land so the biosolids can either condition the soil or fertilize crops or vegetation grown in the soil. Land application includes distribution and marketing (i.e. the selling or giving away of biosolids).

Low Potential for Public Contact Site includes, but is not limited to, farms, ranches, reclamation areas, and other lands which are private lands, restricted public lands, or lands which are generally not accessible to or used by the public.

MPN/gram is the most probable number of fecal coliform bacteria per gram of biosolids on a dry weight basis.

Monthly Average is the arithmetic mean of all measurements taken during the month.

pH is the measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

Pathogen means an organism that is capable of producing an infection or disease in a susceptible host.

PFRP means Processes to Further Reduce Pathogens, as described in detail in 40 CFR Part 257, Appendix II and consists of composting, heat drying, heat treatment, thermophilic aerobic digestion, irradiation or pasteurization.

Pollutant for the purposes of this permit is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly through the food-chain, could, on the basis of information available, cause death, disease, behavioral abnormalities, cancer, genetic mutations,

physiological malfunctions (including malfunction in reproduction), or physical deformations in either organism or offspring of the organisms.

Pollutant Limit is a numerical value that describes the maximum amount of a pollutant allowed per unit amount of biosolids (e.g., milligrams per kilogram of total solids); the maximum amount of a pollutant that can be applied to a unit area of land (e.g., pounds per acre); the maximum density of microorganisms per unit amount of biosolids (e.g., Most Probable Number per gram of total solids); the maximum volume of a material that can be applied to a unit area of land (e.g., gallons per acre); or the maximum amount of a pollutant allowed in plant tissue (e.g., parts per million).

PSRP means Processes to Significantly Reduce Pathogens, as described in detail in 40 CFR Part 257, Appendix II and consists of aerobic digestion, air drying, anaerobic digestion, composting, or lime stabilization.

A **Publicly-owned Treatment Works** or **POTW** is any device or system used in the treatment, including recycling and reclamation of municipal sewage or industrial waste of a liquid nature, which is owned by the state or a municipality. This term includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works providing treatment.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off over the land surface.

SDDENR means the South Dakota Department of Environment and Natural Resources.

Secretary means the Secretary of the South Dakota Department of Environment and Natural Resources, or other authorized representative.

Severe Property Damage is substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources, which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Sludge is any solid, semi-solid, or liquid residue generated during the treatment of municipal wastewater or domestic sewage and/or a combination of domestic sewage and industrial waste of a liquid nature in the Treatment Works. Sludge includes but is not limited to domestic septage, scum or solids removed during primary, secondary, or advanced wastewater treatment, portable toilet pumpings, and sludge products. Sludge does not include grit, screenings, or ash generated during the incineration of biosolids.

Similar Container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Specific Oxygen Uptake Rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in the biosolids.

Total Solids are the materials in the biosolids that remain as residue if the biosolids is dried at 103 to 105 degrees Celsius.

TSS means Total Suspended Solids. TSS is a measure of the filterable solids present in a sample.

Unstabilized Solids are organic materials in biosolids that have not been treated in either an aerobic or anaerobic treatment process.

Vector Attraction is the characteristic of biosolids that attracts rodents, flies, mosquitoes or other organism capable of transporting infectious agents.

Volatile Solids is the amount of the total solids in biosolids lost when the biosolids is combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.

1.0 BIOSOLIDS LIMITS AND MONITORING REQUIREMENTS

1.1. Description of Biosolids Generating Facilities

The authorization to land apply treated biosolids provided under this permit is limited to those biosolids produced from the treatment works owned and operated by the permittee specifically designated below.

Outfall Number	Description of Biosolids Source(s)
201	Biosolids produced at the city of Aberdeen's treatment works are anaerobically digested and then applied to agricultural land.

1.2. Change in Treatment System or Use/Disposal Practices

The permittee must inform the SDDENR at least 180 days prior of any significant change in the biosolids generation and handling processes at the plant and any major change in use/disposal practices. This includes, but is not limited to, the addition or removal of biosolids treatment units (e.g., digesters, drying beds, etc.) and/or any other change which would require a major modification of the permit (e.g., changing from land application to surface disposal).

1.3. Biosolids Limits – Outfall 201

Effective immediately and lasting through the life of this permit, all biosolids generated by this facility to be used for land application shall meet the requirements listed below. The permittee is currently generating Class B Biosolids. **Class B biosolids cannot be sold or given away in bags or other containers or applied on lawns or home gardens.**

1.3.1 Chemical

If the biosolids are to be land applied to agricultural land, forest land, a public contact site, or reclamation area it shall meet at all times:

1. The ceiling concentrations listed in Table 1 and the cumulative pollutant loadings in Table 2; or
2. The ceiling pollutant concentrations listed in Table 1 and the monthly average pollutant concentrations in Table 3.

<i>Pollutant</i>	<i>Table 1</i>	<i>Table 2</i>	<i>Table 3</i>
	Daily Maximum mg/Kg^{1, 2, 3}	Cumulative Loading Kg/Ha^{1, 4}	Monthly Average mg/Kg^{1, 2, 4, 5}
Total Arsenic	75	41	41
Total Cadmium	85	39	39
Total Copper	4300	1500	1500
Total Lead	840	300	300
Total Mercury	57	17	17
Total Molybdenum	75	N/A	N/A
Total Nickel	420	420	420
Total Selenium	100	100	100
Total Zinc	7500	2800	2800

¹ See definitions.

² All limits are on a dry weight basis.

³ All biosolids used for land application must meet the ceiling concentrations for pollutants listed in this table.

⁴ If biosolids that exceed Table 3 values are land applied to a site, that site thereafter is subject to the cumulative pollutant loading rates in Table 2.

⁵ These limits represent the maximum allowable levels of pollutants for land application of any biosolids generated by the facility based on an average of all samples taken during a calendar month.

If the biosolids do not meet the above requirements, the biosolids shall not be land applied.

1.3.2 Pathogens – Class B

If the biosolids are to be land applied to agricultural land, forest land, a public contact site, or a reclamation site, the biosolids shall be either Class A or Class B (including the site restrictions) as described below. If the biosolids does not meet Class A or Class B requirements, the biosolids cannot be land applied.

If the biosolids is to be sold or given away in a bag or similar enclosure for application to land or for use on a lawn or home garden it shall be Class A. The permittee is currently generating Class B biosolids. **Class B biosolids cannot be sold or given away in bags or other containers or applied on lawns or home gardens.**

To continue generating a Class B biosolids with respect to pathogens, the permittee has a choice of meeting either a process requirement or a numerical microbiological limit:

<i>Microbiological Limit</i> ¹	OR	<i>Process Requirement</i>
Fecal Coliforms shall be <2,000,000 MPN or CFU/gram of total solids		The biosolids are anaerobically digested between the times specified: 15 days at 35-55°C and 60 days at 20°C. ²

¹ Based on a geometric mean of a minimum of seven (7) samples of biosolids collected over a two-week period.

² For minimum digestion temperatures between 35°C and 20°C, determine the minimum mean cell residence time using the following equation: $\theta = -3T + 120$, where θ is the required minimum mean cell residence time in days ($15 \leq \theta \leq 60$) and T is the minimum temperature (°C) during anaerobic digestion time. For temperatures greater than 35°C, use θ equal to 15 days. Mean cell residence time (MCRT, days) is calculated using the following $MRCT = V/q$, where V is the reactor volume and q is the flow rate leaving the reactor.

If the biosolids do not meet the requirements above, the biosolids shall not be land applied.

There are additional approved pathogen reduction alternatives available in 40 CFR 503.32 (a.b.r. in ARSD Chapter 74:52:09) for both Class A and Class B. If the permittee intends to use one of these alternatives or to produce a Class A biosolids, the SDDENR must be informed at least 30 days prior to this change. ***This change may be made without additional public notice.***

1.3.3 Vector Attraction Reduction

For land application to agricultural land, forest land, a public contact site or a reclamation area the biosolids must meet one of the alternatives listed below.

- The mass of volatile solids in the biosolids shall be reduced by a minimum of 38 percent prior to land application; or
- Biosolids applied to the land surface shall be injected into the soil so that no biosolids are present on the land surface after injection.

If the biosolids do not meet the requirements above, the biosolids shall not be land applied.

There are additional approved vector attraction reduction alternatives available in 40 CFR 503.33 (a.b.r. in ARSD Chapter 74:52:09). If the permittee intends to use one of these alternatives, SDDENR must be informed at least 30 days prior to its use. ***This change may be made without additional public notice.***

1.3.4 Site Restrictions

The permittee shall comply with **all** site restrictions listed below:

- Food crops with harvested parts that contact the biosolids/soil mixture and are totally above the land surface, such as melons, tomatoes, etc., shall not be harvested for 14 months after application.
- Food crops with harvested parts below the land surface, such as potatoes, onions, etc., shall not be harvested for 20 months after application if the biosolids remain on the land surface for *four months or more* prior to incorporation into the soil or 38 months after application if the biosolids remain on the land surface for *less than four months* prior to incorporation into the soil.
- Other food, fiber, and feed crops, whose edible parts do not touch the surface of the soil, such as apples, corn, soybeans, etc., shall not be harvested from the land within 30 days after application.
- Animals shall not be allowed to graze on the land within 30 days after application.
- Turf grown on land where biosolids are applied shall not be harvested for at least one year after application if the harvested turf is placed on either a lawn, or an area with a high potential for public exposure.
- Public access to land with a high potential for public exposure shall be restricted for one year after application.
- Public access to land with a low potential for public exposure shall be restricted for 30 days after application.

1.4. Self-Monitoring Requirements

1.4.1 Biosolids Monitoring

At a minimum, all chemical pollutants, pathogens and applicable vector attraction reduction requirements shall be monitored for the following parameters at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the biosolids.

Parameter	Frequency ¹	Reporting Values	Sample Type
Total Arsenic, mg/kg	Quarterly	Actual Value	Composite ²
Total Cadmium, mg/kg	Quarterly	Actual Value	Composite ²
Total Copper, mg/kg	Quarterly	Actual Value	Composite ²
Total Lead, mg/kg	Quarterly	Actual Value	Composite ²
Total Mercury, mg/kg	Quarterly	Actual Value	Composite ²
Total Molybdenum, mg/kg	Quarterly	Actual Value	Composite ²
Total Nickel, mg/kg	Quarterly	Actual Value	Composite ²
Total Selenium, mg/kg	Quarterly	Actual Value	Composite ²
Total Zinc, mg/kg	Quarterly	Actual Value	Composite ²
Total Solids, %	Quarterly, prior to land application	Percent	Grab or Composite
Total volatile solids, raw sludge	Quarterly, prior to land application ³	Percent of Total Solids	Grab
Total volatile solids, digested sludge	Quarterly, prior to land application ³	Percent of Total Solids	Grab
Total volatile solids, % reduction ⁴	Quarterly, prior to land application ³	Percent reduction	Calculate
pH, s.u.	Quarterly, prior to land application	Actual Value	Instantaneous

Parameter	Frequency ¹	Reporting Values	Sample Type
Ammonia as N, mg/kg	Quarterly, prior to land application ⁵	Actual Value	Grab or composite
Total Kjeldahl Nitrogen, mg/kg	Quarterly, prior to land application ⁵	Actual Value	Grab or composite
Organic Nitrogen, mg/kg	Quarterly, prior to land application ⁵	Actual Value	Calculate ⁶
Nitrates as N, mg/kg	Quarterly, prior to land application ⁵	Actual Value	Grab or Composite
Total Phosphorous as P, mg/kg	Quarterly, prior to land application	Actual Value	Grab or Composite
Fecal Coliform, MPN/gram ⁷	Quarterly	Geometric Mean	Grab
Mean cell residence time, days ⁸	Daily	Days Digesting	Calculate
Digester temperature, °C	Continuously or twice daily ⁹	Actual Value	Instantaneous
Total amount of biosolids generated, dry metric tons	Quarterly	Actual Value	Calculate

- ¹ Facilities that land apply greater than or equal to 290 dmt, but less than 1,500 dmt of biosolids per year must sample the biosolids at a frequency of once per quarter for the parameters listed. If the permittee land applies more than 1,500 dmt of biosolids per year, the sampling frequency will increase. ***This change will be made without additional public notice.***
- ² Subsamples of material shall be taken from several locations and time periods and combined to provide a representative composite sample. The sample shall be analyzed for the specified parameters using the methods approved in 40 CFR 503 (a.b.r. in ARSD Chapter 74:52:09).
- ³ Sampling for the amount of volatile solids in the raw sludge and the digested sludge is necessary to verify that the sludge meets the requirements for a VAR of at least 38% volatile solids reduction. If a different VAR option is selected, such as incorporation into the soil within 6 hours, this sampling protocol is not applicable.
- ⁴ If a batch process is used, determine the volatile solids reduction for each batch. If a continuous process is used, determine the volatiles solids reduction for material being put in and withdrawn.
- ⁵ The biosolids must be sampled quarterly and analyzed for these parameters if land applying that quarter. These parameters shall be used to calculate an agronomic loading rate. If using a contract hauler, this information must be presented to the contractor so the agronomic rate is not exceeded. The permittee is ultimately responsible for ensuring that any contract haulers comply with the permit requirements.
- ⁶ Organic nitrogen is the Total Kjeldahl Nitrogen (TKN) less the Ammonia.
- ⁷ Seven individual representative biosolids samples shall be taken each quarter within a two-week time period and analyzed for fecal coliform bacteria. The sample shall be analyzed using standard method 9221C as required by the EPA Region VIII Biosolids Management Handbook. Fecal coliform monitoring is only required if the microbiological limit is used as the pathogen reduction method.
- ⁸ Mean cell residence time is only required if the minimum mean cell residence time process requirement is used as the pathogen reduction method.
- ⁹ Temperature in the digesters must be monitored continuously or at least twice daily, with the readings being taken at least 8 hours apart. A log showing temperature is maintained for a sufficient period of time shall be kept. This frequency shall only be required if the minimum mean cell residence time process requirement is used as a pathogen reduction method.

1.4.2 Soil Sampling

Since the permittee applies biosolids to the land, soil sampling is required for all land application sites. The soil samples shall be taken and analyzed for the parameters listed below.

Parameter	Frequency ¹	Sample Depth	Sample Type
Phosphorus as P, mg/kg ²	Annually	0-6 inches	Composite ³
Shallow Nitrate as N, mg/kg	Annually	0-1 foot and 1-2 feet	Composite ³
Deep Nitrate as N, mg/kg	Annually ⁴	2-5 feet ⁵	Composite ³
pH, s.u.	Annually	Actual value	Composite ³

¹ Soil samples shall be taken yearly from fields prior to land application. If the field is not being used for biosolids application that calendar year, soil sampling is not required.

² Phosphorus shall be analyzed using either the sodium bicarbonate extraction Olsen method or the AB-DPTA extraction analytical method for soils with a pH greater than 6.5 s.u. or the Bray Kurtz I method for soils with pH less than or equal to 6.5 s.u. as outlined in the 1999 version of the EPA Region VIII Biosolids Management Handbook.

³ A minimum of six representative samples for each 320 (or less) acre area are to be collected, composited, and analyzed.

⁴ At the request of the permittee, SDDENR will evaluate each land application site on a case-by-case basis to determine if the deep nitrate soil monitoring frequency can be reduced to once every five years. SDDENR will evaluate whether or not the site is located over a shallow aquifer or if deep soil monitoring is warranted. This will be done using the published South Dakota Geological Survey county studies, precipitation data, number of years biosolids were applied to the field, irrigation records, hydrologic reports, first occurrence of aquifer materials maps, and well log information located near the fields. ***This change will be made without additional public notice.***

⁵ Samples are to be collected down to either 5 feet or to the confining layer, whichever is shallower. Each foot increment is to be composited with the other samples from the site and one analysis for nitrate is to be conducted for each increment e.g. 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet.

1.5. Best Management Practices

The permittee is currently generating a Class B biosolids. Therefore, the facility shall operate and maintain the land application site operations in accordance with the following requirements:

1. Within 180 days of permit effective date, the permittee shall submit a current Biosolids Management Plan to SDDENR. At a minimum, this plan shall include the elements found in Attachment 2 of the Statement of Basis. After approval of the Biosolids Management Plan by SDDENR, the plan becomes an enforceable part of the permit.

If the permittee would like to add or remove field application sites from its Biosolids Management Plan, it must notify SDDENR in writing at least 30 days prior to the change for site review and approval.

2. Application of biosolids shall be conducted in a manner that will not contaminate groundwater. The Secretary will determine on a case-by-case basis if the land application sites are located over a shallow aquifer. This will be done by using published South Dakota Geological Survey county studies, hydrologic reports, first occurrence of aquifer materials maps, and well log information located near the fields. If the land application site is located over a shallow aquifer, additional deep soil monitoring may be required.
3. There shall be no runoff of biosolids from land application sites. Biosolids shall not be applied to land within 100 feet of waters of the state.
4. Application of biosolids shall not exceed the agronomic rate for available nitrogen of the crops grown on the site. At a minimum, the permittee is required to follow the methods for calculating agronomic rate outlined in the 1999 version of the Region VIII Biosolids Management Handbook (other methods may be approved by SDDENR on a case-by-case basis). The permittee shall notify the applicator of the total nitrogen content (as N on a dry weight basis) in the biosolids.
5. Biosolids shall not be applied to frozen, ice-covered, or snow-covered sites if the slope of the land is greater than six percent.
6. Biosolids shall not be applied to frozen, ice-covered, or snow-covered sites if the slope of the land is between 3 and 6 percent, unless one of the following requirements is met:
 - a. There is 80 percent vegetative ground cover; or
 - b. SDDENR has approved a plan demonstrating adequate runoff containment measures.
7. Biosolids shall not be land applied to sites where the available phosphorous content of the soil exceeds the following levels:
 - a. For soil pH greater than 6.5 s.u.
 1. 100 ppm based on sodium bicarbonate extraction method (e.g. Olsen); or
 2. 50 ppm based on AB-DPTA extraction analytical method;
 - b. For soil pH 6.5 s.u. or less:
 1. 170 ppm based on the Bray and Kurtz P1 extraction method.

The permittee may request these limits be modified if different limits are justified based on local conditions. The alternative limits are required to be developed in cooperation with the local agricultural extension office or university and must be approved by SDDENR. ***This change may be made without additional public notice.***
8. Biosolids shall not be applied to waters of the state or to any site with standing water.

9. The specified cover crop shall be planted during the next available planting season. If this does not occur, the permittee shall notify SDDENR in writing. Additional restrictions may be placed on the application of the biosolids on that site on a case-by-case basis to control nitrate movement. Deep soil monitoring is required and may be increased under the discretion of SDDENR.
10. The biosolids or the application of the biosolids shall not cause or contribute to the harm of a threatened or endangered species or result in the destruction or adverse modification of critical habitat of a threatened or endangered species during or after application.
11. Biosolids shall not be applied on the site when weather and/or soil conditions prohibit proper application procedures.
12. Biosolids shall not be applied to agricultural land, forest, a public contact site, or a reclamation site if any of the cumulative pollutant loading rates have been reached. Prior to land applying biosolids that are subject to the cumulative pollutant loading rates, the permittee must submit a request to SDDENR to apply these biosolids.
13. Prior to land application of biosolids which meet the cumulative pollutant loading rates, the following conditions must be met:
 - a. Determine if biosolids subject to cumulative pollutant loading rates have been applied to the site since July 19, 1993.
 - b. If biosolids have not been applied to the site since July 19, 1993, the biosolids may be applied to the site.
 - c. If biosolids have been applied to the site and the cumulative amount of each pollutant applied to date is known, this can be used to determine if additional amounts can be applied.
 - d. If biosolids have been applied to the site and the cumulative amount of each pollutant applied to date is not known, biosolids shall not be applied to the site.
14. If the permittee applies the biosolids to land not owned by the permittee, the owner or lease holder of the land on which the biosolids is applied shall be provided notice and necessary information to comply with the site restrictions. The permittee is ultimately responsible for ensuring that these site restrictions are followed.
15. If biosolids, or material derived from biosolids such as compost, is to be stockpiled for 30 days or longer, measures must be taken to prevent erosion (by wind or water) from occurring. Best management practices should also be used if stockpiles are used for treatment of biosolids (i.e. composting). If a treatment pile is considered to have caused a problem, best management practices may be added as a requirement in the next permit renewal.
16. The permittee shall inspect the application of the biosolids to active sites **daily** when land applying. An inspection notebook shall be kept which includes the following:
 - a. name of inspector;
 - b. date and time of biosolids application,
 - c. weather conditions at time of application and for 24 hours prior to and following application;
 - d. the method used to apply the biosolids;
 - e. observations made; and
 - f. the date and nature of any corrective actions required or taken.

In the future, if biosolids generated by the permittee meets Class A requirements, the permittee may request SDDENR remove some or all of the management practices. If approved, this change would be made following proper administrative procedures under the reopener provision of the permit.

1.6. Recordkeeping Requirements

The permittee is required to retain the following records for at least five years as required in 40 CFR 503.17 (a.b.r. in ARSD Chapter 74:52:09). These recordkeeping requirements are dependent upon the quality of the biosolids produced by the permittee. At a minimum, the following records shall be kept:

1. Concentration of: Arsenic, Cadmium, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, and Zinc;
2. A description of how the pathogen reduction requirements were met;
3. A description of how the vector attraction reduction requirements were met;
4. A description of how the best management practices were met;
5. A description of how the site restrictions were met (if necessary);
6. Yearly certification statements for pathogen reduction and vector attraction reduction requirements, best management practices, and site restrictions followed. This statement shall be as follows:

I certify under penalty of law that the pathogen requirements in Part 1.3.2 of the permit, one of the vector attraction reduction alternatives in Part 1.3.3 of the permit, the best management practices in Part 1.5 of the permit, and the site restrictions in Part 1.3.4 of the permit have been met. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment.

7. For each land application site where biosolids are land applied during the reporting year the following information shall be maintained:
 - a. Site name;
 - b. Site owner and/or operator;
 - c. Person or entity that applies the biosolids to the land;
 - d. Latitude and longitude of site;
 - e. Street address or Section, Township, and Range;
 - f. Size (hectares);
 - g. Crop to be grown or harvested on application site;
 - h. Application rate (metric tons/hectare); and
 - i. Cumulative pollutant loading rate (Kg/Ha), if applicable.
 - j. Cumulative pollutant loading rate certification statement, if applicable.

1.7. Reporting Requirements

The permittee is required to monitor, collect, and provide the following information for each reporting year:

1. The total amount of biosolids, in dry metric tons, that is generated by the facility during the reporting year;
2. A summary of any biosolids received from other facilities:
 - a. Summary of total amount of biosolids received, in dry metric tons;
 - b. Summary of amount of biosolids received from each individual facility, in dry metric tons;
 - c. Name of each facility sending biosolids; and
 - d. Location of each facility.
3. A summary of any biosolids sent to other facilities/operations:

- a. Summary of total amount of biosolids set to other facilities, in dry metric tons;
 - b. Summary of amount of biosolids sent to each individual facility, in dry metric tons;
 - c. Name of each facility receiving biosolids; and
 - d. Location of each facility.
4. The amount of biosolids, in dry metric tons, placed in storage during the reporting year and the total amount of biosolids already in storage and how long it has been stored.
 5. The amount of biosolids land applied during the reporting year.

The permittee shall develop an annual biosolids report in accordance with 40 CFR 503.18 (a.b.r. in ARSD Chapter 74:52:09). This report shall include the results of all monitoring performed in accordance with the self-monitoring requirements of the permit, information on best management practices, land application sites, site restrictions, and certifications. This report shall be submitted to SDDENR no later than **February 19th of each year**. Each report is for the previous calendar year.

1.8. Special Conditions on Biosolids Storage

Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two years. Written permission to store biosolids for more than two years must be obtained from SDDENR. Storage of biosolids for more than two years will only be allowed if it is determined that significant treatment is occurring.

2.0 MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

2.1. Representative Sampling

Samples taken in compliance with the monitoring requirements established under this permit shall be collected from locations representative of the quality of biosolids generated at the treatment works and immediately prior to land application.

2.2. Monitoring Procedures

Monitoring shall be conducted according to test procedures approved under 40 CFR Part 503 (a.b.r in ARSD Chapter 74:52:09), unless other test procedures have been specified in this permit.

2.3. Reporting of Monitoring Results

The permittee is required to report annually as required in 40 CFR 503.18 (a.b.r in ARSD Chapter 74:52:09). This report is to include the results of all monitoring performed in accordance with the self-monitoring requirements of the permit, the required information on pathogen requirements, vector attraction reduction requirements, information on management practices, land application sites, site restrictions, and the required signed certification statements. This report shall be submitted no later than **February 19th of each year**. Each report is for the previous calendar year. If no biosolids were applied during the reporting period, "no biosolids were applied" shall be reported. Biosolids monitoring results may be reported in the testing laboratory's normal format. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with Section 2.4 and submitted to the Secretary at the following addresses:

original to: South Dakota Department of Environment and Natural Resources
 Surface Water Quality Program
 PMB 2020
 Joe Foss Building
 523 East Capitol Avenue
 Pierre, South Dakota 57501-3182

copy to: Regional Biosolids Program
 Wastewater Unit (8P-W-WW)
 U.S. EPA, Region 8
 1595 Wynkoop Street
 Denver, CO 80202-1129

2.4. Signatory Requirements

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.
2. All reports required by the permit and other information requested by the Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described above and submitted to the Secretary; and,
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of superintendent or equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may be either a named individual or any individual occupying a named position.)

3. If an authorization under 2.a above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Secretary.
4. Any person signing a document under this section shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

2.5. Additional Monitoring by the Permittee

If the permittee monitors, at the designated points, any pollutants more frequently than required by this permit, using test procedures approved under 40 CFR 503 (a.b.r. in ARSD, Section 74:52:09) or as specified in this permit, the results of this monitoring shall be used in determining compliance with this permit and shall be submitted in the Annual Biosolids report. Such increased frequency shall also be indicated.

2.6. Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The initials or names of the individuals who performed the sampling or measurements;
3. The dates analyses were performed;
4. The time analyses were initiated;
5. The initials or names of individuals who performed the analyses;
6. References and written procedures, when available, for the analytical techniques or methods used; and
7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

2.7. Duty to Provide Information

The permittee shall furnish to the Secretary, within a reasonable time, any information the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

2.8. Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Secretary, it shall promptly submit such facts or information.

2.9. Planned Changes

The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of biosolids produced, or could result in noncompliance with permit conditions.

2.10. Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a

period of at least five years from the date of the sample, measurement, report, or application. This period may be extended by request of the Secretary at any time. Data collected on site, copies of Annual Biosolids Reports, and a copy of this permit must be maintained on site during the duration of the permitted activity.

2.11. Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or the environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. The report shall be made to the Secretary at (605) 773-3351 during regular business hours or to South Dakota Emergency Management at (605) 773-3231 any other time.
2. The following instances of noncompliance shall be reported by telephone to the Secretary at (605) 773-3351 by the first workday (8:00 a.m. – 5:00 p.m. Central Time) following the day the permittee became aware of the circumstances: violation of any of the Table 1 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that has been land applied.
3. A written submission shall also be provided within five days of becoming aware of the circumstances above. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected; and,
 - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
4. The Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Surface Water Quality Program, South Dakota Department of Environment and Natural Resources, Pierre, (605) 773-3351.
5. Reports shall be submitted in accordance with Section 2.3 of this permit.

The permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2.12. Other Noncompliance Reporting

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Section 2.3 are submitted. The reports shall contain the information listed in Section 2.11 paragraph 3.

2.13. Permit Transfers

This permit may be transferred to a new permittee if:

1. The current permittee notifies the Secretary at least 30 days in advance of the proposed transfer date; and,
2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them.

The Secretary will notify the existing and new permittee of his or her intent to transfer, modify, or revoke and reissue the permit based on the information received and other permit information.

3.0 COMPLIANCE REQUIREMENTS

3.1. Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give the Secretary advance notice of any activity which may result in permit noncompliance.

3.2. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any land application of biosolids in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

3.3. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and treatment and control systems (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit or other conditions required by the Secretary upon issuance. This may include but is not limited to, all treatment, transportation, and application equipment which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3.4. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3.5. Inspection and Entry

The permittee shall allow the Secretary or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit including but not limited to biosolids treatment, collection, storage, facilities or area, transport vehicles and containers, and land application sites; and,
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the South Dakota Water Pollution Control Act, any substances or parameters at any location including but not limited to digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites, or biosolids, soils, or any vegetation on land application sites.
5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, so that the Secretary or authorized representative thereof, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

3.6. Removed Substances

Collected screenings, grit, solids, biosolids, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard in accordance with applicable requirements of SDCL 34A-2, -6, and -11.

3.7. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain coverage under a new permit. The permit application must be submitted at least 180 days before the expiration date of this permit. Periodically during the term of this permit and at the time of reissuance, the permittee may be requested to reaffirm its eligibility to land apply biosolids under this permit.

3.8. Availability of Reports

Except for data determined to be confidential under ARSD, Section 74:52:02:17, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of SDDENR. Permit applications, permits, and biosolids data shall not be considered confidential.

3.9. Property Rights

The Secretary's issuance of this permit, adoption of design criteria, and approval of plans and specifications, does not convey any property rights of any sort, and exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation, or use of eminent domain against any property owned by third parties. The State of South Dakota does not warrant that the permittee's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state, or local laws or regulations. The permittee is solely and severably liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state, or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

3.10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

3.11. Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedules, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit and/or it has been determined that the permittee's biosolids use and/or land application practices do not comply with existing applicable state or federal regulations.

3.12. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including failure to comply with any provision of this permit or any condition imposed by the Secretary upon granting coverage under this permit. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4.0 PENALTIES FOR NONCOMPLIANCE

4.1. Penalties for Violations of Permit Conditions

Any person who violates a permit condition is in violation of the provisions of SDCL 34A-2-36, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state. Nothing in this permit shall be construed to relieve the permittee of the civil of criminal penalties for noncompliance.

4.2. Penalties for Tampering

Any person who falsifies, tampers with, or knowingly render inaccurate, any monitoring device or method required to be maintained under this permit is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.3. Penalties for Falsification of Reports

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude SDDENR from taking any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the federal Clean Water Act.