

STATEMENT OF BASIS

Permit Number: SDG860000

Permit Type: General permit to discharge under the South Dakota Surface Water Discharge System for Water Treatment and Distribution Activities

PERMIT DESCRIPTION

The operation of water treatment plants often results in a release of water or wastewater to surface waters in the state. These discharges contain pollutants which, if not properly managed, can result in impacts to water quality. In accordance with the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota (ARSD), the discharge of pollutants into waters of the state requires a Surface Water Discharge permit. This proposed general permit is intended to outline the requirements for water treatment plants to release water or wastewater into surface waters of the state.

The proposed general permit contains discharge requirements and limits that are based on technology and water quality considerations, Best Management Practices (BMPs), and other conditions applicable to the types of discharges generated by water treatment plant activities.

BACKGROUND

As stated above, water treatment plants periodically need to release wastewater, whether due to operational considerations or due to emergency circumstances. Obtaining an individual surface water discharge permit for each discharge may significantly impact the timing of a project due to administrative delays. The intent of a general permit for water treatment plants is to:

1. Facilitate the scheduling of activities by reducing the administrative delays in permit authorization;
2. Establish uniform criteria for management practices and effluent limits for discharges from these activities; and,
3. Promote a consistent permitting and enforcement posture with respect to these discharges.

The general permit regulations of the ARSD Section 74:52:02:46 provide for the issuance of general permits where covered facilities:

1. Involve the same or substantially similar types of operations;
2. Discharge the same types of waste;
3. Require the same effluent limitations, operating conditions, or standards;
4. Require the same or similar monitoring; and
5. Are more appropriately controlled under a general permit.

The discharges from South Dakota's water treatment plants meet the requirements of ARSD Section 74:52:02:46. Therefore, the South Dakota Department of Environment and Natural Resources (SDDENR) is proposing to issue a general permit for water treatment plant discharges.

DISCHARGE DESCRIPTION

There are a wide variety of discharges that may potentially occur from a drinking water system. These sources of discharges are explained below.

Filter Backwash and Settling Basins – Outfall DW1

Typical water treatment plant filtration processes include presedimentation, oxidation, coagulation, flocculation, sedimentation, and filtration. Although any one facility may not use all the processes, the wastestream produced by any combination of these processes is relatively similar. When the raw water or source water has significant levels of suspended solids such as sand, an initial settling tank may be employed to remove these solids. The settling tank can be designed to allow for continuous removal of the solids or, periodically, the tank may be drained and the solids removed. These solids are typically disposed of separately as a solid waste or stored in holding ponds.

Coagulants and polymers are often added to the raw water to improve settling and filtration. The most common coagulant in use is aluminum sulfate (alum), but facilities may also use ferric chloride and other coagulants. Drinking water systems also use additives to adjust pH (e.g., soda ash) and oxidants (e.g., chlorine, potassium permanganate, and ozone) for disinfection or precipitation of dissolved minerals.

Additives are generally applied with great care and in precise amounts. Dosage is based on the amount of suspended solids to be removed or the dissolved solids to be precipitated. This not only makes economic sense but many of these chemicals work best at the proper dosage. Too much can produce as poor a result as too little.

A sedimentation basin may also be incorporated before the filtration process to settle solids after the addition of coagulants and flocculants. Like a presedimentation basin, the sedimentation basin may be equipped for continuous cleaning or may be cleaned periodically and the solids disposed of separately.

Filters are used to remove solids from drinking water and are periodically backwashed to remove accumulated solids. Filter backwash water is typically stored in a settling basin to reduce suspended solids and chlorine residuals.

The pollutants expected to be present in these discharges include fluoride, sulfate, chlorine or chloramines from treatment, as well as suspended and dissolved solids from the source water. In addition, additives are likely present in small levels.

Discharges from these sources will be subject to the requirements of outfall DW1 in the proposed permit.

Treatment or Storage System Overflows – Outfall DW2

Specific water treatment plant components are often designed with overflow structures to prevent damage to the system.

For example, water storage towers typically have an overflow structure to prevent overfilling the storage unit. Specific treatment units such as sedimentation tanks or filters are also occasionally designed to prevent overfilling. Discharges from these units would only occur during an emergency due to overfilling. Water treatment plants are expected to have alarm systems to provide a warning before such a discharge occurs. However, it is possible discharges could occur during treatment or storage system overflows.

The principal pollutant of concern from the overflow of water treatment equipment would be the disinfection chemicals (typically chlorine or chloramines), fluoride, and sulfate used in treating the water. Treatment system overflows can also result in the release of suspended solids and dissolved solids from the treatment system.

Discharges from these sources will be subject to the requirements of outfall DW2 in the proposed permit.

Disinfection and Flushing of Potable Water Lines – Outfall DW2

Potable water lines may need to be flushed and/or disinfected as a part of routine maintenance and water line construction. These lines can vary in size from a small section of a neighborhood water main to a large section of a rural water distribution system.

The principal pollutant of concern from the disinfection of water lines would be the disinfectant (usually chlorine or chloramines) used. These disinfectants are toxic to aquatic life at high levels. Therefore, the concentrations of these disinfectants must be non-detectable in the discharge by the time it reaches waters of the state. Flushing of potable water lines can also result in the release of suspended solids in the discharge.

Discharges from these sources will be subject to the requirements of outfall DW2 in the proposed permit.

Storage System Disinfection – Outfall DW2

Storage systems may need to be disinfected as a part of routine maintenance and construction. These storage systems often contain a large amount of water.

The principal pollutant of concern from the disinfection of storage systems would be the disinfectant (usually chlorine or chloramines) used. These disinfectants are toxic to aquatic life at high levels. Therefore, the concentrations of these disinfectants must be non-detectable in the discharge by the time it reaches waters of the state.

Discharges from these sources will be subject to the requirements of outfall DW2 in the proposed permit.

Water Line Breaks and Leak Repairs – Emergency Discharge

Water lines may need to be pumped out as part of repairing a potable water line break or leak. Line breaks and leaks are usually limited to a small section of pipe, but may involve a very large amount of water. The permit requires the permittee to take any reasonable measures to minimize the impact from a release of this sort.

The principal pollutant of concern would be soils surrounding the line break or leak, in the form of Total Suspended Solids (TSS). Filtration or sedimentation would lower the amounts of soil being discharged. However, leaks and line breaks are considered emergency discharges, and are not subject to effluent limits. The permittee is required to develop a Best Management Practices plan for responding to emergency discharges and minimizing the impact of discharges. See Section 5.7, Emergency Releases and Bypass of Treatment Facilities, of the permit.

Other Discharges:

There are potentially many other activities that could result in the need for a discharge from water treatment plants. These activities may be eligible for coverage under this general permit providing the following conditions are met:

1. The general permit limits, monitoring and reporting requirements, and management practices are appropriate;
2. The discharge is of a temporary nature; and
3. The discharge consists of relatively uncontaminated water consistent with the discharges described above.

When a request for coverage is received, SDDENR shall determine if the discharge meets the above criteria. If there is a potential for the discharge to contain pollutants other than those limited in the permit, SDDENR may require the discharger to demonstrate that pollutants in question are not present to receive coverage under this permit. This can be accomplished by sampling the water to be discharged, analyzing it for the pollutants in question, and comparing the results with method detection levels for that parameter according to approved methods.

The permittee may be required to reaffirm the absence of potential pollutants during the period of coverage. If it is shown that significant pollutants other than those limited by this permit are present, coverage under this permit shall be terminated. The facility would be required to obtain an individual surface water discharge permit prior to any further discharges.

COVERAGE UNDER THE PERMIT

Inclusion of the above-described activities under a single surface water discharge general permit appears to be a reasonable approach in regulating these related discharges. The characteristics of the discharged water from these activities are similar because they discharge the same types of wastes, involve similar operations, and are appropriately

controlled by the similar effluent limits. Therefore, SDDENR has determined that these activities will be more appropriately controlled under a general permit rather than individual permits.

The U.S. Environmental Protection Agency is currently reviewing water treatment plants to determine if federal technology-based effluent limits are needed. If new effluent guidelines are promulgated for any of the listed discharges, any facility covered by the guidelines, as defined in the ARSD Section 74:52:01:01, shall be evaluated to determine whether it can be authorized to discharge under this permit or be required to apply for an individual surface water discharge permit if a discharge is required. If appropriate, it may be necessary to modify this general permit to address newly promulgated effluent guidelines.

Appendix A of the proposed permit contains a copy of the Notice of Intent for coverage under the proposed permit. This represents the minimum information SDDENR needs to provide coverage under the permit. SDDENR currently has several applications for individual permits for water treatment plant and distribution systems. These facilities submitted SDDENR's application form for obtaining a permit to discharge Industrial Nonprocess water from New and Existing Industrial Facilities. These applications will be reviewed to determine if the facilities are eligible for coverage under the proposed permit.

When SDDENR receives a notice of intent for coverage under the proposed general permit or an application for an individual permit from a water system, department staff will conduct a thorough review of the application and other available information to determine if the facility is eligible for coverage under the General Permit. Based on this review, the department will then make the decision to grant or deny coverage under the general permit, or request any additional information. Facilities that meet the conditions for coverage under the general permit still have the option of obtaining an individual permit if requested. In addition, the Secretary may require an individual permit for a facility, pursuant to the provisions in ARSD Section 74:52:02:47.

DISCHARGES NOT COVERED

Discharges of water needing to be treated for radioactive components will not be covered by this permit. This includes discharges of raw water, filter backwash, and other water that has not received complete treatment for any radioactive component. Treated water that meets the requirements of the Safe Drinking Water Act (SDWA) for radionuclides, such as discharge from water towers, disinfection of distribution lines, or a distribution line breakage can be covered under this permit.

This permit does not authorize a discharge or spill of chemical used in the treatment process. Such releases must be reported to SDDENR and properly cleaned up.

This permit will also not authorize a discharge to a lake. Typically, SDDENR does not allow the discharge of pollutants to a lake. Therefore, this general permit will not authorize a discharge that may reach a lake.

This permit does not address a discharge to a sanitary sewer system or publicly owned treatment works. SDDENR requires a Pretreatment Industrial User for any non-domestic discharge into a publicly owned treatment works if the discharge is a significant contributor of pollutants. In most cases, a discharge from a water system will not result in a significant contribution of pollutants to the publicly owned treatment works. However, if SDDENR determines that a water system is impacting a publicly owned treatment works, SDDENR would require the system to obtain an individual pretreatment industrial user permit. This general permit will not address such a discharge.

EFFLUENT LIMITS

SDDENR has developed effluent limits to ensure the protection of surface waters of the state. These limits are intended to be protective of any water body in South Dakota. Where the water quality standards dictate more stringent limits, these differences have been noted below. The following limits are based on the South Dakota Surface Water Quality Standards (SDSWQS), existing water treatment plant permits, and best professional judgment (BPJ).

Since raw water sources, partially treated water, and treated, finished water may have different characteristics, SDDENR has divided these sources of discharge into two distinct “outfalls” for the purposes of reporting under this permit:

Outfall DW1 Any discharge of raw water or partially treated water from a water treatment plant. This includes overflows or discharges from treatment units, line failures within the treatment plant, or discharges of untreated source water.

Outfall DW1

1. Total Suspended Solids
Alternative treatment technologies and BMPs are available to reduce the total suspended solids (TSS) in the discharge. However, the cost effectiveness of using these various technologies and BMPs varies from site to site because of the differences in water and sediment characteristics, duration of the discharge, scope of the project, geography of the site, and other factors. Temporary settling ponds and/or portable treatment units (e.g., filters) have been the most common treatment schemes utilized for TSS control.

A facility exercising reasonably diligent control of TSS through the use of a pond system, filtration, or other BMP should be capable of reliably achieving a TSS level of 90 mg/L or less. Effluent guidelines for conventional pollutants do not exist for the categories of point source dischargers covered by this permit. Therefore, the effluent limit for TSS will be 90 mg/L in any sample, based on best professional judgement (BPJ), using the SDSWQS as a guideline. This effluent limit applies to discharges to all waters of the state **except** discharges to waters classified as coldwater permanent fish life propagation waters according to the

SDSWQS (ARSD Section 74:51:03). For discharges to waters of the state classified as coldwater permanent fish life propagation waters, the effluent limit for TSS, based on the SDSWQS, shall be 30 mg/L in any sample.

As stated above, settling aids are commonly used for water treatment. Because of the variety of available chemical flocculants, SDDENR must be notified of the type of such settling aids in the notice of intent for coverage under the permit. If SDDENR determines the chemicals could enter the discharge and impact the water quality of the receiving stream, the facility may be required to obtain an individual permit for the release of such chemicals.

2. Total Dissolved Solids

The Total Dissolved Solids (TDS) concentration shall not exceed 2,500 mg/L in any sample, based on the SDSWQS. This effluent limit applies to discharges to all waters of the state **except** discharges to waters classified as domestic water supply waters in ARSD Chapter 74:51:03. For discharges to waters of the state classified as domestic water supply waters, the effluent limit for TDS, based on the SDSWQS, shall be 1,000 mg/L in any sample.

3. pH

The effluent limits for pH will depend on the classification of the receiving stream according to the ARSD Chapter 74:51:03. The following table summarizes pH limits, which are based on the beneficial uses criteria for waters of each respective classification.

| Receiving water classification | Effluent pH limit |
|--|-------------------|
| Water Treatment and Distribution | 6.5 – 9.0 |
| Coldwater, warmwater permanent, or warmwater semipermanent fish life propagation | 6.5-9.0 |
| All other waters | 6.0-9.0 |

These pH values will ensure the protection of the beneficial uses assigned to any receiving streams in South Dakota. These limits are based on SDDENR’s proposed changes to the South Dakota surface water quality standards. If these changes are not approved by the South Dakota Water Management Board or the United States Environmental Protection Agency, the pH limits in the proposed permit will be modified to the more restrictive pH values currently listed in the surface water quality standards. ***This change will be made without further public notice.***

4. Total Residual Chlorine

Alternative treatment technologies and BMPs are available to reduce the total residual chlorine in the discharge. However, the cost effectiveness of using these various technologies and BMPs varies from site to site because of the differences in initial concentration, duration of the discharge, scope of the project, geography

of the site, and other factors. BMPs used for Erosion or Total Suspended Solids may also work to lower chlorine residuals; as they allow time, exposure to light and air, and space for the chlorine to dissipate. If these BMPs are not effective, several temporary dechlorination technologies are available.

The total residual chlorine concentration must be non-detectable at the point the discharge reaches the receiving waters.

SDDENR considers the analytical detection limit for total residual chlorine to be 0.05 mg/L. Any sample results less than 0.05 mg/L will be considered non-detectable. This can be verified by monitoring at any of the following locations:

- at the point where the discharge reaches the receiving water;
- at the discharge location; or
- at a location between these two points.

This limit is based on BPJ.

5. Ammonia

The ammonia concentration shall not exceed 1.0 mg/L in any sample. This limit is based on the department's experience modeling discharges and should be protective of most waters of the state. If it is shown that a limit of 1.0 mg/L is not protective of the receiving water, an individual permit with more stringent limits will be necessary. This limit only applies if the facility is adding ammonia as part of its disinfection process. If the facility does not add ammonia, ammonia monitoring and limits will not be required.

SDDENR has done modeling showing that streams with at least five times as much flow as the water treatment plant effluent are unlikely to be affected by the discharge. Therefore, plants that discharge 20% or less of the critical upstream flow will not be required to perform ammonia monitoring or be subject to the ammonia limit listed above. SDDENR will review the notice of intent or permit application to determine if ammonia limits will be applied based on this stream flow exemption.

6. Wastewaters

There shall be no discharge of sanitary wastewater from toilets or related facilities. This limit is based on BPJ as this permit is for the discharge of relatively uncontaminated water. The permit does not have limits for parameters such as Biochemical Oxygen Demand and fecal coliform.

7. Floating Solids

There shall be no discharge of floating solids or visible foam in other than trace amounts. This limit is based on the SDSWQS (ARSD Section 74:51:01:06).

8. Sludges

There shall be no direct discharge of any solids and/or sludges generated by the treatment of the discharge. These limits are based on the SDSWQS (ARSD, Section 74:51:01:06).

9. Erosion

The permittee shall take all reasonable measures to prevent or minimize the possibility of stream channel scouring or erosion caused by the discharge with the implementation of recognized BMPs. Some examples of BMPs are included in Attachment A of this document.

10. Additives

No chemical may be added to the discharge unless the SDDENR was notified in writing.

Outfall DW2

Outfall DW2 Any discharge of treated drinking water from water storage units or distribution lines. This includes a discharge of fully treated water from the water treatment plant, line breaks, line flushing, and overflows and releases from storage units.

1. Total Suspended Solids

Alternative treatment technologies and BMPs are available to reduce the total suspended solids (TSS) in the discharge. However, the cost effectiveness of using these various technologies and BMPs varies from site to site because of the differences in water and sediment characteristics, duration of the discharge, scope of the project, geography of the site, and other factors. Temporary settling ponds and/or portable treatment units (e.g., filters) have been the most common treatment schemes used for TSS control.

A facility exercising reasonably diligent control of TSS through the use of a pond system, filtration, or other BMP should be capable of consistently achieving a TSS level of 90 mg/L or less. Effluent guidelines for conventional pollutants do not exist for the categories of point source dischargers covered by this permit. Therefore, the effluent limit for TSS will be 90 mg/L in any sample, based on best professional judgement (BPJ), using the South Dakota Surface Water Quality Standards (SDSWQS) as a guideline. This effluent limit applies to discharges to all waters of the state **except** discharges to waters classified as coldwater permanent fish life propagation waters according to the SDSWQS (ARSD Section 74:51:01:45). For discharges to waters of the state classified as coldwater permanent fish life propagation waters, the effluent limit for TSS, based on the SDSWQS, shall be 30 mg/L in any sample.

2. pH

The effluent limits for pH will depend on the classification of the receiving stream according to the ARSD Chapter 74:51:03. The following table summarizes pH

limits, which are based on the beneficial uses criteria for waters of each respective classification and previous permit limits.

| Receiving water classification | Effluent pH limit |
|--|-------------------|
| Domestic water supply | 6.5 – 9.0 |
| Coldwater, warmwater permanent, or warmwater semipermanent fish life propagation | 6.5-9.0 |
| All other waters | 6.0-9.0 |

These pH values will ensure the protection of the beneficial uses assigned to any receiving streams in South Dakota. These limits are based on SDDENR’s proposed changes to the South Dakota surface water quality standards. If these changes are not approved by the South Dakota Water Management Board or the United States Environmental Protection Agency, the pH limits in the proposed permit will be modified to the more restrictive pH values currently listed in the surface water quality standards. ***This change will be made without further public notice.***

3. Total Residual Chlorine

The total residual chlorine concentration must be non-detectable at the point the discharge reaches a waterbody. For example, if the discharge enters a dry road ditch, the chlorine limit must be met at the point the road ditch enters a flowing stream or joins another waterbody. The limit does not apply if the drainage way is dry and does not reach another waterbody. SDDENR considers the analytical detection limit for total residual chlorine to be 0.05 mg/L. Any sample results less than 0.05 mg/L will be considered non-detectable. This can be verified by monitoring at any of the following locations:

- at the point where the discharge reaches the receiving water;
- at the discharge location; or
- at a location between these two points.

This limit is based on BPJ.

4. Ammonia

The ammonia concentration shall not exceed 1.0 mg/L in any sample. This limit is based on the department’s experience modeling discharges, and should be protective of most waters of the state. If it is shown that a limit of 1.0 mg/L is not protective of the receiving water, an individual permit with more stringent limits will be necessary. This limit only applies if the facility is adding ammonia. If the facility does not add ammonia, monitoring and limits will not be required.

SDDENR has done modeling showing that streams with at least five times as much flow as the water treatment plant effluent are unlikely to be affected by the discharge. Therefore, plants that discharge 20% or less of the critical upstream

flow will not be required to perform ammonia monitoring or be subject to the ammonia limit listed above. SDDENR will review the notice of intent or permit application to determine if ammonia limits will be applied based on this stream flow exemption.

5. Wastewaters

There shall be no discharge of process generated wastewater except wastewater resulting from the temporary activities described in the Notice of Intent Form and approved by the department in the authorization letter.

There shall be no discharge of sanitary wastewater from toilets or related facilities. This limit is based on BPJ as this permit is for the discharge of relatively uncontaminated water. The permit does not have limits for parameters such as Biochemical Oxygen Demand or fecal coliform.

6. Floating Solids

There shall be no discharge of floating solids or visible foam in other than trace amounts. This limit is based on the SDSWQS (ARSD Section 74:51:01:06).

7. Sludges

There shall be no direct discharge of any solids and/or sludges generated by the treatment of the discharge. These limits are based on the SDSWQS (ARSD Section 74:51:01:06).

8. Erosion

The permittee shall take all reasonable measures to prevent or minimize the possibility of stream channel scouring or erosion caused by the discharge with the implementation of recognized BMPs. Some examples of BMPs are included in Attachment A.

9. Additives

No chemical may be added to the discharge unless the SDDENR was notified in writing.

SELF MONITORING REQUIREMENTS

Outfall DW1

Representative monitoring is required of each activity that will result in a discharge to waters of the state. The following table shows the sample type and frequency for various parameters for discharge activities classified as outfall DW1.

| Effluent Characteristic | Frequency ¹ | Sample Type ² |
|---|------------------------|--------------------------|
| Flow Rate, (GPD) | Daily | Instantaneous |
| Total Flow, gallons | Monthly | Calculated |
| Duration of Discharge, days | Monthly | Calculated |
| Conductivity, μ mhos/cm | Monthly ³ | Grab |
| Total Alkalinity (as CaCO ₃), mg/L | Monthly ³ | Grab |
| Total Ammonia Nitrogen (as N), mg/L ⁴ (if adding ammonia) | Weekly ³ | Grab |
| Total Fluoride, mg/L | Weekly ³ | Grab |
| Total Sulfate, mg/L | Weekly ³ | Grab |
| Total Suspended Solids, mg/L | Weekly ³ | Grab |
| Total Dissolved Solids, mg/L | Weekly ³ | Grab |
| Total Residual Chlorine, mg/L ⁵ (if adding chlorine) | Weekly ³ | Instantaneous |
| pH, standard units | Weekly ³ | Instantaneous |
| Water Temperature, °C | Weekly ³ | Instantaneous |

¹ If the duration of the discharge is shorter than the required sample frequency, a minimum of one sample shall be taken for all parameters.

² See Definitions.

³ If violations occur, the SDDENR can increase frequency without further public notice.

⁴ This limit only applies if the facility is adding ammonia.

⁵ This limit only applies if the facility is adding chlorine.

Monitoring results shall be reported in accordance with Section 4.3 of the proposed general permit. If no discharge occurs during a month, no report shall be necessary.

Monitoring shall consist of **monthly** inspections of the water treatment facility and storage units to verify that proper operation and maintenance procedures are being practiced and whether or not there is a discharge occurring from this facility. **Daily** inspections are required during a discharge. Overflow pipes and lines being flushed shall be inspected on a **daily** basis. Documentation of each of these visits shall be kept in a notebook to be reviewed by SDDENR or EPA personnel when an inspection occurs.

Outfall DW2

Representative monitoring is required of each activity that will result in a discharge to waters of the state. The following table shows the sample type and frequency for various parameters for discharge activities.

| Effluent Characteristic | Frequency ¹ | Sample Type ² |
|---|-------------------------------|---------------------------------|
| Total Flow, gallons | Each discharge | Calculated |
| Duration of Discharge, days | Each discharge | Calculated |
| Flow Rate, gpd | Each discharge | Measured |
| pH, standard units | Daily ³ | Instantaneous |
| Total Residual Chlorine, mg/L ^{4,5} (if adding chlorine) | Daily ³ | Instantaneous |
| Total Suspended Solids, mg/L ⁴ | Daily ³ | Grab |
| Total Ammonia Nitrogen (as N), mg/L ⁶ (if adding ammonia) | Daily ³ | Grab |

¹ If the duration of the discharge is shorter than the required sample frequency, a minimum of one sample shall be taken for all parameters.

² See Definitions.

³ If violations occur, the SDDENR may increase frequency without further public notice.

⁴ Best Management Practices may be used in lieu of monitoring. See the Best Management Practices Plan section.

⁵ This limit only applies if the facility is adding chlorine.

⁶ This limit only applies if the facility is adding ammonia.

Monitoring results shall be reported in accordance with Section 4.3 of the proposed general permit. If no discharge occurs during a month, no report shall be necessary.

Monitoring shall consist of **monthly** inspections of the facility to verify that proper operation and maintenance procedures are being practiced and whether or not there is a discharge occurring from this facility. **Daily** inspections are required during a discharge. Overflow pipes and lines being flushed shall be inspected or electronically monitored on a **daily** basis. Documentation of this surveillance shall be kept in a notebook to be reviewed by SDDENR or EPA personnel when an inspection occurs.

Representative Outfalls

A permittee may have more than one outfall at a particular site or have several sites in the same geographical area. To avoid excessive sampling and monitoring requirements, the permittee may request that representative outfalls cover activities at similar sites. In this way, sampling would only have to be performed at selected outfalls, and other outfalls could be considered similar in quality and nature without sampling. In requesting this allowance, the permittee must have documentation showing the activities are similar or

identical, and that discharges from these activities will be similar in quality and nature. The justification for including this allowance is based on BPJ.

BEST MANAGEMENT PRACTICES PLAN

A Best Management Practice (BMP) plan needs to be available describing what will be done to reduce pollution from temporary discharges such as overflows and line flushing. Attachment A lists some examples of best management practices applicable to temporary discharge activities.

BMPs can be used in lieu of sampling for Total Suspended Solids and Total Residual Chlorine at outfall DW2, if it can be shown the BMPs reduce those pollutants below the proposed permit limit and the BMPs are properly implemented and maintained.

BMPs must also be developed in case of emergency discharges. As these are unplanned discharges, the most effective BMP will often be minimizing the length of the discharge. Temporary portable devices that may be used to reduce total suspended solids or total residual chlorine should be readily available to personnel during an emergency discharge. BMPs may also involve preventative maintenance to avoid failures that can lead to emergencies, carefully monitoring levels to prevent overflows, and preparedness when performing activities such as digging near a pipeline.

REQUIRING AN INDIVIDUAL SURFACE WATER DISCHARGE PERMIT

In accordance with ARSD Section 74:52:02:47, the secretary may require any owner or operator covered under a general permit to apply for an individual surface water discharge permit for any of the following reasons:

1. The discharge is a significant contributor of pollution to waters of the state or it presents a health hazard;
2. The receiving waters are impaired for one or more of the pollutants being discharged, and the limits in this permit will prevent the facility for causing or contributing to the impairment;
3. The discharge is not in compliance with the conditions of the permit;
4. A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source;
5. Effluent limitation guidelines are promulgated for point sources covered by this general permit;
6. A water quality management plan containing requirements applicable to such point sources is approved; or

7. Conditions or standards have changed so the discharge no longer qualifies for the general permit.

In addition, a facility covered by this general permit may apply for an individual surface water discharge permit pursuant to the provisions in the SDSWQS (ARSD, Section 74:52:02:46).

DRAINAGE ISSUES

The county in which the discharge will occur has the authority to regulate drainage. The permittee is responsible for obtaining any necessary drainage permits from the respective county prior to discharging, if applicable.

ANTIDegradation REVIEW

Antidegradation will not apply to this general permit due to the intermittent nature of most discharges and the expected limited impact of the discharge.

ENDANGERED SPECIES

Due to the water-quality based effluents limits contained in the general permit, no listed endangered species are expected to be affected by activities related to this permit.

PERMIT EXPIRATION

A five-year permit is recommended.

CONTACT

Any questions pertaining to this statement of basis can be directed to Anthony Mueske, Natural Resources Engineer for the Surface Water Quality Program at (605) 773-3351.

January 22, 2009

ATTACHMENT A

Best Management Practices (BMPs)

| BEST MANAGEMENT PRACTICE | USES |
|--------------------------------|---|
| Buffer Zones | <ul style="list-style-type: none"> • Floodplains, next to wetlands, along stream banks, and on steep, unstable slopes |
| Check Dams | <ul style="list-style-type: none"> • Across swales or drainage ditches to reduce the velocity of flow |
| Drainage Swale or Earth Dike | <ul style="list-style-type: none"> • Divert upslope flows from disturbed areas and to divert runoff to a stabilized outlet • To reduce the length of slope the runoff will cross • At the perimeter of the construction site to prevent sediment-laden runoff from leaving the site • To direct sediment-laden runoff to a sediment trapping device |
| Filter Fabric Inlet Protection | <ul style="list-style-type: none"> • Used in small drainage areas before the area has been permanently stabilized • Where there is danger of silting in an inlet |
| Geotextiles | <ul style="list-style-type: none"> • Stabilize the flow on channels and swales • Used on recently planted slopes to protect seedlings until they become established |
| Mulching | <ul style="list-style-type: none"> • Areas where slopes are steeper than 2:1 • Where runoff is flowing across the area • When seedlings need protection from bad weather |
| Permanent Seeding and Planting | <ul style="list-style-type: none"> • Areas where soils are unstable because of their texture, structure, water table, winds, or slopes • Filter strips, buffer areas, vegetated swales, steep slopes, and stream banks |
| Pipe Slope Drain | <ul style="list-style-type: none"> • On slopes before permanent storm water drainage structures have been installed • Where diversion measures have been used to concentrate flows • On any slope where concentrated runoff crossing the face of the slope may cause gullies, channel erosion, or saturation of slide-prone soils • As an outlet for a natural drainage way |
| Silt Fence | <ul style="list-style-type: none"> • Immediately upstream of the point(s) of runoff discharge from a site before flow becomes concentrated • Below disturbed areas where runoff may occur in the form of overland flow |
| Temporary Sediment Trap | <ul style="list-style-type: none"> • At the outlet of the perimeter controls installed during the first stage of construction • At the outlet of any structure which concentrates sediment-laden runoff, e.g. at the discharge point of diversions, channels, slope drains, or other runoff conveyances • Above a storm water inlet that is in line to receive sediment-laden runoff |
| Temporary Seeding | <ul style="list-style-type: none"> • Areas which have been disturbed by construction and which are likely to be redisturbed, e.g. denuded areas, soil stockpiles, dikes, dams, sides of sediment basins, and temporary roadbanks |

| BEST MANAGEMENT PRACTICE | USES |
|---------------------------------|---|
| Aeration | <ul style="list-style-type: none"> • When flushing hydrants • Attaches to the hydrant to aerate the water as it is discharged to dissipate any chlorine residual |
| Controlled Discharge Rate | <ul style="list-style-type: none"> • Line and hydrant flushing • Discharge slowly enough to allow solids to settle out • Allow enough time that water can soak into the ground • Water at lower velocity will pick up less solids |
| Dechlorinator | <ul style="list-style-type: none"> • When discharges are planned • Attaches to the end of the pipe to remove chlorine • Contains chemicals to remove chlorine |
| Managing Discharges | <ul style="list-style-type: none"> • Timing hydrant flushing for times when chlorine residual is getting too low to be useful • Discharge long enough to accomplish the goal, then stop • Allow water to settle and chlorine to dissipate before pumping |

Information obtained from the Environmental Protection Agency's "Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices" (September 1992).