

Permit No.: ND-0026247

Effective Date: \*

Expiration Date: June 30, 2008

AUTHORIZATION TO DISCHARGE UNDER THE  
NORTH DAKOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with Chapter 33-16-01 of the North Dakota Department of Health rules as promulgated under Chapter 61-28 (North Dakota Water Pollution Control Act) of the North Dakota Century Code,

North Dakota State Water Commission

is authorized to discharge from the Devils Lake outlet project in Benson County, North Dakota

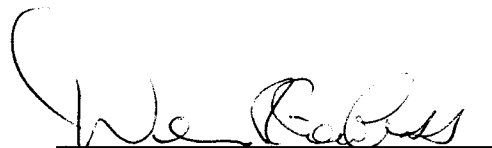
to the Sheyenne River

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I and II, hereof.

This permit and the authorization to discharge shall expire at midnight,

June 30, 2008.

8/22/03  
Date

  
Dennis R. Fewless, Director  
Division of Water Quality

\* Date of receipt by applicant

DESCRIPTION OF DISCHARGE POINTS

**Discharge 001** - Devils Lake Outlet. This is an intermittent discharge consisting of surface water diverted from the West Bay of Devils Lake to the Sheyenne River. The discharge from the diversion system enters the Sheyenne River in the SW 1/4, SE 1/4 Section 8, T151N, R68W.

The intake structure from the West Bay is located in the SW 1/4 Section 35, T153N, R67W (also known as Round Lake). The intake must be fitted with a screen system of sufficient mesh and size to preclude the uptake or transfer of adult fish species.

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through expiration date, the permittee is authorized to discharge from the Devils Lake Outlet (West Bay), Discharge 001.

Prior to operating of the outlet discharge, the permittee shall complete the following conditions:

- a. The initial biological assessment of ecological condition of the Sheyenne River as outlined in item 10 of appendix 2 of this permit.
- b. The written adaptive management plan identifying procedures developed to ensure compliance with the permit requirements and applicable water quality standards as outlined in item 11 of appendix 2 of this permit. The adaptive management plan is not complete until approved by the Department of Health.

The discharge may operate only during the open-water season, the months May through November. There shall be no discharge during the months December through April. There shall be no discharge when the water elevation in Devils Lake is below 1445 ft (msl). Any discharge shall be limited and monitored by the permittee as specified below:

<u>Parameter</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>	
	<u>Daily Maximum</u>		<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow	See Part I.A.3		Continuous	Recorder
Sulfate	See Part I.A.4		Weekly <sup>1/</sup>	Grab
pH	See Part I.A.5		Weekly	Grab
Specific Conductance	See Part I.A.6		Continuous	Recorder
Total Suspended Solids	100 mg/l		Weekly	Grab

( Additional monitoring requirements are described in Appendix 2.)

- <sup>1/</sup> The initial sampling frequency for sulfate shall be 5 times per week. After the outlet has operated for a period of one year, the sampling frequency shall be reevaluated and could be adjusted upon notification by the Department.
2. The Sheyenne River shall be monitored both upstream and downstream of the discharge from the outlet system ("insertion point") to determine compliance with the effluent limitations contained in this permit. The monitoring schedule for the stream stations shall be the same as that provided in Part I.A.1, above. The general location of the stream monitoring stations shall be as follows:
    - a. Upstream compliance monitoring shall be conducted at a point upstream of the outlet which is representative of river water quality prior to mixing with the effluent from the outlet system.
    - b. Downstream compliance monitoring shall be conducted at a point downstream of the outlet which is representative of river water quality after mixing with the effluent from the outlet system.
  3. The flow rate of Discharge 001 shall not exceed the most limiting of the following:

a. 100 cfs

b. The value in cfs determined by:

$$600\text{cfs} - Q_i \quad \text{Where: } Q_i = \text{flow in cfs at the upstream location}$$

c. The value in cfs determined by:

$$\frac{Q_i(300 - C_i)}{(C_d - 300)} \quad \text{Where: } Q_i = \text{flow in cfs at the upstream location}$$

$C_i = \text{sulfate concentration (mg/l) at upstream location}$   
 $C_d = \text{sulfate concentration (mg/l) at outlet}$

4. During periods of outlet operation, the 7-day average sulfate concentration measured in samples from the downstream monitoring location shall not exceed 300 mg/l.
5. The pH at the downstream monitoring station should remain within the range 7.0 to 9.0. Natural processes may cause the pH to drift outside the stated range. In the event the measured downstream pH is outside of the range, the discharge may continue only if it can be determined that the pH excursion is not a result of the outlet discharge.
6. Continuous monitoring for specific conductance (conductivity) provides an immediate indication of the TDS (salt) content of water at all times. The conductivity measurements are made with direct reading instruments which can provide realtime information for operating the outlet. The relationship between specific conductance and sulfate, as a component of dissolved solids, will need to be developed over time through the comparison of conductance and measured sulfate.
7. The permittee must conduct (or otherwise provide) a downstream monitoring program as outlined in Appendix 2, Process Control Monitoring. The monitoring program will provide information needed to verify and refine model predictions used in designing an operating plan for the outlet. The information may also be used to adjust limitations on the discharge to maintain the desired water quality in the Sheyenne and Red Rivers.
8. River flow and water quality information collected by other agencies may be used to satisfy the compliance monitoring requirements. The collection and transportation of all samples must conform with EPA preservation techniques and holding times to satisfy Part I.B.2, Test Procedures. The permittee is responsible for obtaining the data in a timely manner and including it in the discharge monitoring reports. Should an agency relied upon for compliance monitoring data discontinue monitoring at a location, it is the permittee's responsibility to make the arrangements to continue the required monitoring.
9. The Department may make certain adjustments to the effluent limitations and monitoring requirements, not qualifying as major modifications under 40 CFR 122.62, described in this part without providing a public notice and comment period. Increased or additional monitoring may be required if deemed necessary to further evaluate the impact of the discharge. The Department may specify additional discharge conditions or restrictions (including temporary limitations) to ensure established Water Quality Standards are maintained and/or to prevent the discharge from interfering with downstream uses.
10. The Department must be notified, in advance, of any facility expansions, additions, or modifications to increase outlet capacity. The increase in any effluent limitation, including

the instream limit for sulfate, is considered a major permit modification. Major modifications require the issuance of a public notice inviting public comment.

11. The actual dates of discharge, frequency of analyses, total volume discharged, discharge flow rates, and number of exceedances shall also be included on the Discharge Monitoring Reports (DMR). A separate attachment shall be included with the DMRs which provides the sample dates and test results for sulfate, TDS, and daily flow rates for the compliance monitoring stations (discharge, upstream and downstream).
12. Acute Toxicity and Whole Effluent Testing

Beginning on the effective date and lasting through expiration date, there shall be no acute toxicity in the discharge as defined and determined as follows:

Beginning with the start of operation, the permittee shall, once each calendar quarter, conduct acute static replacement toxicity tests on separate grab samples of discharge 001. Unless specifically waived by the Department, tests shall be performed on the first discharge made each calendar year. Thereafter, tests shall be performed so that there is at least one test for each calendar quarter in which there is a discharge.

The static replacement toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms," EPA/600/4-90/027F (Fourth Ed. August 1993) and the "Region VIII EPA NPDES Acute Test Conditions-Static Renewal Whole Effluent Toxicity Tests." In the case of conflicts, the Region VIII document will prevail. The permittee shall conduct an acute 48-hour static toxicity test using Ceriodaphnia sp. and an acute 96-hour static replacement toxicity test using fathead minnows.

Acute toxicity occurs when 50 percent or more mortality is observed for either species at any effluent concentration. If more than 10 percent control mortality occurs, the test shall be repeated until satisfactory control survival is achieved.

If acute toxicity occurs in a routine test, an additional test shall be conducted within four weeks of the date of sampling. Should acute toxicity occur in the second test, testing shall be conducted monthly until further notification by the Department.

Test results shall be reported along with the DMR submitted for that month. The format for the reports shall be consistent with the latest revision of the "Region VIII Guidance for Acute Whole Effluent Reporting" and shall include all chemical and physical data as specified for the tests.

If the results of a minimum of four consecutive samples taken over at least a 12-month period indicate no acute toxicity, the permittee may request the Department to allow a reduction to quarterly acute toxicity testing on only one species. The Department may approve or deny the request based on the biomonitoring results and other available information. If the request is approved, the test procedures are to be the same as specified above for test species.

### 13. Toxicity Reduction Evaluation (TRE)

If toxicity is detected, and it is determined by the permit issuing authority that a TRE is necessary, the permittee shall be so notified and shall initiate a TRE immediately thereafter. The purposes of the TRE will be to establish the cause of the toxicity, locate the source(s) of the toxicity, and control or provide treatment for the toxicity.

If the TRE establishes that the toxicity cannot be eliminated by the deadline contained in this permit, the permittee shall submit a proposed compliance plan to the permit issuing authority. The plan shall include the proposed approach to control toxicity and a proposed compliance schedule for achieving control. If the approach and schedule are acceptable to the permit issuing authority, this permit may be reopened and modified.

If the TRE shows that the toxicity is caused by a toxicant(s) that may be controlled with specific numerical limitations or proper discharge management as approved by the Department, the permittee may:

- a. Submit an alternative control program for compliance with the numerical requirements.
- b. If necessary, provide a modified biomonitoring protocol which compensates for the pollutant(s) being controlled numerically.

If acceptable to the permit issuing authority, this permit may be reopened and modified to incorporate any additional numerical limitations, a modified compliance schedule if judged necessary by the permit issuing authority, and/or a modified biomonitoring protocol.

Failure to conduct an adequate TRE, or failure to submit a plan or program as described above, or the submittal of a plan or program judged inadequate by the permit issuing authority, shall in no way relieve the permittee from the deadline for compliance contained in Part I.A.12 of this permit.

## B. MONITORING AND REPORTING

### 1. Representative Sampling

All samples and measurements taken shall be representative of the discharge.

### 2. Test Procedures

The collection and transportation of all samples shall conform with EPA preservation techniques and holding times. All laboratory tests shall be performed by a North Dakota certified laboratory in conformance with test procedures pursuant to 304(h) of the Clean Water Act. The method of determining the total amount of water discharged shall provide results within 10 percent of the actual amount.

### 3. Recording of Results

For each sample taken, the name of the sampler, the exact place, and the date and time of the sampling shall be recorded. For each sample analyzed, the name of the laboratory, the name of the analyzer, the analytical techniques used, the test results, and the date and time of the analysis shall be recorded.

### 4. Additional Monitoring

If the discharge is monitored more frequently than this permit requires, all additional results, if in compliance with Part I.B.2, Test Procedures, above, shall be included in the summary on the Discharge Monitoring Report.

### 5. Reporting

Monitoring results shall be summarized and reported on Discharge Monitoring Report forms. If no discharge occurs during a reporting period, "no discharge" shall be reported. Each report shall cover a period of one (1) month. The first period shall be January 1 to January 31, the second period shall be February 1 to February 28, etc. All reports must be postmarked by the last day of the month following the end of each reporting period. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the Department and EPA at the following addresses:

North Dakota Department of Health  
Division of Water Quality  
PO Box 5520  
Bismarck, ND 58506-5520

U.S. Environmental Protection Agency  
Attn: Enforcement Office (ENF-PT)  
One Denver Pl., Ste. 300  
999 - 18th St.  
Denver, CO 80202-2466

## A. COMPLIANCE RESPONSIBILITIES

## 1. Duty to Comply

The permittee must 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.

## 2. Operation and Maintenance

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. If necessary to achieve compliance with the conditions of this permit, this shall include the operation and maintenance of backup or auxiliary systems.

## 3. Planned Changes

The Department shall be given advance notice of any planned changes at the permitted facility or of an activity which may result in permit noncompliance. Any anticipated facility expansions, production increase, or process modifications which might result in new, different, or increased discharges of pollutants shall be reported to the Department as soon as possible. Changes which may result in a facility being designated a "new source" as determined in 40 CFR 122.29(b) shall also be reported.

## 4. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department 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 Department, upon request, copies of records required to be kept by this permit. When a permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in a permit application or any report, it shall promptly submit such facts or information.

## 5. Records Retention

All records and information (including calibration and maintenance) required by this permit shall be kept for at least three years or longer if requested by the Department or EPA.

## 6. Signatory Requirements

All applications, reports or information submitted to the Department shall be signed and certified.

- a. All permit applications shall be signed by a responsible corporate officer, a general partner, or a principal executive officer or ranking elected official.
- b. All reports required by the permit and other information requested by the Department 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:



- (1) The authorization is made in writing by a person described above and submitted to the Department; and
- (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

If an authorization, under paragraph b above, is no longer accurate for any reason, a new authorization satisfying the above requirements must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.

Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

#### 7. Noncompliance Notification

The permittee shall report any noncompliance which may seriously endanger health or the environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The report shall be made to the EPA, Region VIII, Emergency Response Branch at (303) 293-1788 and the State of North Dakota, Division of Emergency Management at (701) 328-2121.

The following occurrences of noncompliance shall be reported by telephone to the Department at (701) 328-5210 by the first workday (8:00 a.m. - 5:00 p.m. Central time) following the day the permittee became aware of the circumstances:

- a. Any lagoon cell overflow or any unanticipated bypass which exceeds any effluent limitation in the permit (see Part II.A.8, Bypass of Treatment Facilities);
- b. Any upset which exceeds any effluent limitation in the permit (see Part II.A.9, Upset Conditions); or
- c. Violation of any instream or discharge limitation for any of the pollutants listed in the permit.

A written submission shall also be provided within five days of the time that the permittee became aware of the circumstances. 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 recurrence of the noncompliance.

Reports shall be submitted to the addresses in Part I.B.5, Reporting. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Department at (701) 328-5210 as identified above.

All other instances of noncompliance shall be reported no later than at the time of the next Discharge Monitoring Report submittal. The report shall include the four items listed in paragraph 3 of this section.

#### 8. Bypass of Treatment Facilities

Any bypass of facilities which does not cause effluent limitations to be exceeded may be made only if it is for essential maintenance to assure efficient operation.

Any bypass of facilities which results in noncompliance is prohibited except where unavoidable to prevent loss of life, personal injury, or severe property damage and no feasible alternatives to the bypass exist. The permittee shall provide notification of unanticipated bypasses as required by Part II.A.7, Noncompliance Notification. If, for other reasons, a bypass is considered necessary, a request to bypass shall be submitted, at least 60 days in advance if possible, to the Department. No bypass of this type shall occur until permission has been obtained from the Department.

#### 9. Upset Conditions

An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of the following paragraph are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- a. An upset occurred and the permittee can identify its cause(s);
- b. The permitted facility was, at the time being, properly operated;
- c. The permittee submitted notice of the upset as required under Part II.A.7, Noncompliance Notification; and
- d. The permittee complied with any remedial measures required under Part II. A.10, Duty to Mitigate.

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

#### 10. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. The permittee, at the Department's request, shall provide accelerated or additional monitoring as necessary to determine the nature and impact of any discharge.

#### 11. Removed Materials

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not be directly blended with or enter either the final plant discharge and/or waters of the state. The permit issuing authority shall be contacted prior to the disposal of any sewage sludges. At that time, concentration limitations and/or self-monitoring requirements may be established.

#### 12. Duty to Reapply

Any request to have this permit renewed should be made six months prior to its expiration date.

### B. GENERAL REQUIREMENTS

#### 1. Right of Entry

The permittee shall allow Department and EPA representatives, at reasonable times and upon the presentation of credentials if requested, to enter the permittee's premises to inspect the wastewater treatment facilities and monitoring equipment, to sample any discharges, and to have access to and copy any records required to be kept by this permit.

#### 2. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department and EPA. As required by the Act, permit applications, permits, and effluent data shall not be considered confidential.

#### 3. Transfers

This permit is not transferable except upon the filing of a Statement of Acceptance by the new party and subsequent Department approval. The current permit holder should inform the new controller, operator, or owner of the existence of this permit and also notify the Department of the possible change.

#### 4. New Limitations or Prohibitions

The permittee shall comply with any effluent standards or prohibitions established under Section 306(a), Section 307(a), or Section 405 of the Act for any pollutant (toxic or conventional) present in the discharge or removed substances within the time identified in the regulations even if the permit has not yet been modified to incorporate the requirements.

#### 5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. This includes the establishment of limitations or prohibitions based on changes to Water Quality Standards, the development and approval of waste load allocation plans, the development or revision to water quality management plans, changes in sewage sludge practices, or the establishment of prohibitions or more stringent limitations for toxic or conventional pollutants and/or sewage sludges. 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.

#### 6. Need to Halt or Reduce

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.

#### 7. State Laws

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation preserved under Section 510 of the Act.

#### 8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of 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 Act.

#### 9. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

#### 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.

## DEFINITIONS

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

"Composite" for monitoring requirements, means a sample composed of a minimum of four grab samples collected at equally spaced two hour intervals and proportioned according to flow.

"Daily maximum concentration" means the greatest discharge concentration during any calendar day. If more than one sample is taken on a calendar day, the average of all such samples shall be the daily concentration for that day.

"Daily maximum quantity" discharge means the greatest discharge by weight during any calendar day.

"Department" means the North Dakota Department of Health, Division of Water Quality.

"Grab," for monitoring requirements, means a single "dip and take" sample collected at a representative point in the discharge stream.

"Instantaneous," for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.

"Severe property damage" means 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.

"Seven Consecutive Day Period" means the average discharge concentration during a 7-consecutive day period. It shall be determined by the summation of all daily concentrations divided by the number of days on which measurements were made. If more than one sample is taken on a calendar day, the average of all such samples shall be the daily concentration for that day.

"Thirty Consecutive Day Period" means the average discharge concentration during a 30-consecutive day period. It shall be determined by the summation of all daily concentrations for 30 days divided by the total number of days on which the values were obtained. If more than one sample is taken on a calendar day, the average of all such samples shall be the daily concentration for that day.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

"Waters of the state" Any and all surface waters that are contained in or flow in or through the state of North Dakota as defined in NDCC 61-28-02. This definition includes all water courses, even if they are usually dry.

## PROCESS CONTROL MONITORING

The purpose of this monitoring is to regulate and/or adjust the discharge rate to ensure that the desire to manage Devils Lake levels is balanced by the protection of water quality and the beneficial uses of the Sheyenne and Red Rivers. Monitoring will also be used to refine the HEC-5Q Model and to interpret significant changes in biological and physical characteristics.

The Department may consider requests for less frequent monitoring. Less frequent monitoring may be granted when the accumulated test data for the parameter is consistent and at a level which would not result in a violation of an established water quality standard. A reduction in monitoring frequency for a parameter may also be considered if a satisfactory relationship between the parameter and an alternate test can be demonstrated.

1. Devils Lake Outlet

The sampling location will be at the canal terminal structure.

<u>Parameters</u>	<u>Sampling Frequency</u>
Temperature	Continuous
Specific Conductance	Continuous
pH	Daily
TDS & Major Ions *	Weekly
Ammonia	2 Weeks
Nitrate/Nitrite	2 Weeks
Total Kjeldahl Nitrogen	2 Weeks
Total Phosphorus	2 Weeks
Dissolved Phosphorus	2 Weeks
Suspended Solids	2 Weeks
Trace Metals **	Monthly

2. Sheyenne River Upstream of the Devils Lake Discharge

This site shall be located as near as is practicably feasible upstream of the outlet. Exact location will be identified after a field survey is completed. Parameters and sampling frequency are the same as for No. 1 (above).

3. Sheyenne River Downstream of Discharge

This site will be located immediately downstream of the outlet after mixing with the Sheyenne River. The exact location for complying with the mixed waters is subject to review and approval by the department. Field surveys will be required to determine this location and its suitability for access. Parameters and sampling frequency are the same as for No.1.

4. Sheyenne River Near Cooperstown, ND

<u>Parameters</u>	<u>Sampling Frequency</u>
Stream Flow	Continuous
Specific Conductance	Continuous
TDS & Major Ions *	Weekly
Ammonia	2 Weeks
Nitrate/Nitrite	2 Weeks
Total Kjeldahl Nitrogen	2 Weeks
Total Phosphorus	2 Weeks
Dissolved Phosphorus	2 Weeks
Suspended Solids	2 Weeks
Trace Metals **	Monthly

5. Sheyenne River Near Valley City, ND

Parameters and sampling frequency are the same as for No. 4.

6. Sheyenne River Above Diversion Near Horace, ND

Parameters and sampling frequency are the same as for No. 4.

7. Red River Above the Confluence of the Sheyenne River Near Harwood, ND

<u>Parameters</u>	<u>Sampling Frequency</u>
Flow	Continuous
Specific Conductance	Continuous
TDS & Major Ions *	Weekly

8. Red River at Halstad, MN

Parameters and sampling frequency are the same as for No. 7.

9. Red River at Pembina, ND

Parameters and sampling frequency are the same as for No. 7.

10. The ecological condition of the Sheyenne River will be determined through a biological assessment of the river within four stream reaches. One assessment reach should be located upstream from the outlet, one downstream of the outlet (approximately 1 mile), one just upstream from Lake Ashtabula, and one near the river's confluence with the Red River. Three sites will be sampled within each reach as a measure of spacial variability. The site located upstream of the outlet will be sampled the same time the downstream reaches are sampled to provide a measure of temporal variability. The biological assessment will consist of three biological assemblages (macroinvertebrates, fish, and periphyton) and a physical habitat assessment. At the same time these samples are collected, a grab water sample will be collected for chemical analysis. Field procedures should follow those used by the U.S. Environmental Protection Agency's Environmental Monitoring and Assessment Program for the Western States (EMAP Western Pilot). An initial assessment shall be completed by the permit holder prior to the operation of the outlet. Subsequent assessments will be completed on a periodic basis deemed appropriate by the Department.

11. Adaptive Management Plan. Criteria for establishing and implementing the adaptive management plan should be developed to ensure compliance with permit requirements and maintenance of beneficial uses of the water resources downstream. The plan should outline the basic procedures for evaluating monitoring data, responding to observed impacts to downstream water resources, and adjusting the operation discharge as needed.

The adaptive management plan shall be submitted to the Department for approval. Upon approval, the operation of the discharge may commence. The adaptive management plan will be considered part of the permit with all future discharges being required to comply with the operational conditions identified in the plan. All other permit limitations and conditions of the permit will remain in effect.

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#### Water Chemistry Groupings

- \* TDS and Major Ions consists of the following parameters:

Bicarbonate	Calcium	Carbonate
Chloride	Conductivity	Fluoride
Iron	Magnesium	Manganese
Nitrate	Percent sodium	pH
Potassium	Sodium	Sodium absorption ratio
Sulfate	Total alkalinity	Total Hardness
Total dissolved solids	Turbidity	

- \*\* Trace Metals consist of the following parameters:

Aluminum	Antimony	Arsenic
Barium	Beryllium	Boron
Cadmium	Chromium	Copper
Lead	Nickel	Selenium
Silver	Thallium	Zinc