

# Statement of Basis

## Beardsley Wastewater Treatment Facility

NPDES/SDS Permit No. MN0040703

May 2017

### Description of permitted facility

The City of Beardsley (City) Wastewater Treatment Facility (Facility) is located in the SW ¼ of Section 9, Township 124 North, Range 48 West, Browns Valley Township, Big Stone County, Minnesota.

This Class D Facility discharges from WS 002 to land via spray irrigation, and is designed to treat:

- An average wet weather (AWW) flow of 0.025 million gallons per day (MGD)
- 5-day carbonaceous biochemical oxygen demand (CBOD5) of 211 milligrams per liter (mg/L)

The Facility consists of a collection system, lift station, force main, two-cell stabilization pond, and a 29.5-acre spray irrigation site (using a center-pivot irrigator). The two ponds have a surface area of 2.0 acres each at the mean water level, are designed to operate between two feet and six feet from pond bottom, and provide 210 days of storage at AWW flow. The spray irrigation site (station LA303) is split into a north half and a south half; wiregrass and alfalfa are grown and harvested on the north half, and an annual corn-soybean rotation on the south. Up to 0.41 million gallons per acre per year of effluent is permitted to be applied to this site.

The facility also has a 1.3-acre rapid infiltration basin for disposal of wastewater on an emergency basis only.

This Facility was originally described in plans and specifications dated 1971, and in an MPCA plans and specifications approval letter dated March 12, 1976. The Facility was upgraded in 1989-1991, by sealing two of the original three cells with a synthetic liner and replacing the spray irrigation equipment with a center pivot irrigation rig. This facility upgrade is described in plans and specifications dated April 10, 1987, in a revised plans and specifications approval letter dated December 20, 1988, in a proposal for spray irrigation equipment received from the City on December 5, 1990, and in an MPCA approval letter dated June 6, 1991.

### Waste streams

Limit and monitoring requirements for waste streams are assigned in order to ascertain their impact on wastewater treatment processes, contributions to other treatment facilities, and/or land treatment/discharge sites. Requirements are based on the MPCA sampling policies and/or state health requirements.

This permit contains three waste streams which have each been assigned a waste stream station for monitoring and reporting purposes. The influent wastewater will be monitored as WS001; WS002 monitors the effluent to the spray irrigation site, and WS003 monitors emergency overflow to the rapid infiltration basin. The following tables outline the associated limit and monitoring requirements for the waste stream stations.

Table 1: WS001 – Influent Waste Stream

Parameter	Quantity /Loading max.	Quantity /Loading units	Quality /Conc. avg.	Quality /Conc. max.	Quality/ Conc. units	Frequency	Sample type	Effective period
BOD, Carbonaceous 05 Day (20 Deg C)				Monitor only. calendar quarter maximum	milligrams per liter	once per quarter	4-Hour Flow Composite	Mar, Jun, Sep, Dec
Flow	Monitor only. calendar month total	million gallons	Monitor only. calendar month average	Monitor only. calendar month maximum	million gallons per day	once per day	Measurement, Continuous	Jan-Dec (Sep-Aug) (Oct-Sep)
pH				Monitor only. calendar quarter maximum	standard units	once per quarter	Grab	Mar, Jun, Sep, Dec
Precipitation	Calendar month total	inches				once per day	Measurement	Jan-Dec (Sep-Aug) (Oct-Sep)
Solids, Total Suspended (TSS)				Monitor only. calendar quarter maximum	milligrams per liter	once per quarter	4-Hour Flow Composite	Mar, Jun, Sep, Dec

Table 2: WS002 – Effluent to Spray Irrigation Site

Parameter	Quantity /Loading max.	Quantity /Loading units	Quality /Conc. min.	Quality /Conc. avg.	Quality /Conc. max.	Quality/ Conc. units	Frequency	Sample type	Effective period
Area Of Disposal, Used	29.5 calendar month total	acres					once per day	Measurement	Apr-Nov
Chloride, Total				Monitor only. calendar month average		milligrams per liter	once per month	Grab	Apr-Nov
Fecal Coliform, MPN or Membrane Filter 44.5C				200 calendar month geometric mean		organisms per 100 milliliter	once per month	Grab	Apr-Nov
Flow	12 calendar year to date total	million gallons					once per day	Calculation	Apr-Nov
Flow	Monitor only. <sup>1</sup> calendar month total intervention	million gallons		Monitor Only. <sup>1</sup> Calendar month average intervention		million gallons per day	once per day	Measurement, Continuous	Dec-Mar
Flow	Monitor only. calendar month total	million gallons		Monitor only. calendar month average		million gallons per day	once per day	Measurement, Continuous	Apr-Nov
Flow Application Rate	0.41 calendar year total	million gallons per acre per year					once per year	Calculation	Apr-Nov
Nitrite Plus Nitrate, Total (as N)				Monitor only. calendar month average		milligrams per liter	once per month	Grab	Apr-Nov
Nitrogen, Ammonia, Total (as N)				Monitor only. calendar month average		milligrams per liter	once per month	Grab	Apr-Nov
Nitrogen, Kjeldahl, Total				Monitor only. calendar month average		milligrams per liter	once per month	Grab	Apr-Nov
pH					Monitor only. Calendar month maximum	standard units	once per month	Grab	Apr-Nov
Specific Conductance					Monitor only. calendar month maximum	micromhos per cm	once per month	Grab	Apr-Nov

<sup>1</sup> The intervention limit is 0 MG. If this limit is exceeded, the Permittee must take action as described in sections 5.5.15-5.5.16, Spray Irrigation Outside of Acceptable Land Application Periods, of the Spray Irrigation Chapter of the permit.

**Table 3: WS003 Emergency overflow to Rapid Infiltration basin**

Parameter	Quantity /Loading max.	Quantity /Loading units	Quality /Conc. min.	Quality /Conc. avg.	Quality /Conc. max.	Quality/ Conc. units	Frequency	Sample type	Effective period
Chloride, Total				Monitor only. calendar month average		milligrams per liter	once per month	4-Hour Flow Composite	Jan-Dec (Sep-Aug) (Oct-Sep)
Flow	Monitor only. calendar month total	million gallons		Monitor only. calendar month average	Monitor only. calendar month maximum	million gallons per day	once per day	Measurement, Continuous	Jan-Dec (Sep-Aug) (Oct-Sep)
Nitrite Plus Nitrate, Total (as N)				Monitor only. calendar month average		milligrams per liter	once per month	4-Hour Flow Composite	Jan-Dec (Sep-Aug) (Oct-Sep)
Nitrogen, Ammonia, Total (as N)				Monitor only. calendar month average		milligrams per liter	once per month	4-Hour Flow Composite	Jan-Dec (Sep-Aug) (Oct-Sep)
Nitrogen, Kjeldahl, Total				Monitor only. calendar month average		milligrams per liter	once per month	4-Hour Flow Composite	Jan-Dec (Sep-Aug) (Oct-Sep)
pH			Monitor only. calendar month minimum		Monitor only. calendar month maximum	standard units	once per month	Grab	Jan-Dec (Sep-Aug) (Oct-Sep)
Solids, Total Suspended (TSS)				Monitor only. calendar month average		milligrams per liter	once per month	4-Hour Flow Composite	Jan-Dec (Sep-Aug) (Oct-Sep)

**Pollutants of Concern**

**Nitrogen** - To gain a better understanding of the current nitrogen concentrations and loadings discharged from the Facility, effluent nitrogen monitoring is included in the permit. This monitoring has been added in accordance with Minnesota Statutes Chapter 115.03.

The draft permit includes monitoring on WS002, effluent to the spray irrigation site, for Ammonia Nitrogen, Nitrite plus Nitrate-Nitrogen, and Total Kjeldahl Nitrogen at a frequency of once per month, during the months of April through November, for the ten-year term of the permit. There is no nitrogen limit in the permit.

**Spray Irrigation/Soils**

Monitoring requirements for soil sampling station LA303 for the irrigation site are listed in Appendix A of the permit and lists the required soil sampling for the irrigation site. There are no Discharge Monitoring Reports for this station; however, the information gathered for this soil sampling station will be used to complete the Land Application of Wastewater Annual Report that is due on January 21<sup>st</sup> of each year following permit issuance.

## **Total Facility Requirements**

### **Certified Laboratory**

Effective January 1, 2013, all Minnesota municipal, county or industrial laboratories that analyze wastewater per the Clean Water Act requirements, must be certified by the MPCA, or the Minnesota Department of Health. Information regarding the MPCA laboratory certification is located on the MPCA website at <http://www.pca.state.mn.us/4p44whk>. If you have questions concerning the MPCA laboratory certification, please contact the MPCA at 1-800-657-3864 or by email at [qa.questions.mpca@state.mn.us](mailto:qa.questions.mpca@state.mn.us). Commercial laboratories doing these analyses must maintain Minnesota Department of Health certification.

### **Electronic Discharge Monitoring Reports (eDMRs)**

The electronic Discharge Monitoring Reports (eDMRs), Sample Values/Operational Spreadsheets, and related attachments shall be electronically submitted via the MPCA Online Services Portal (<https://netweb.pca.state.mn.us/private/>). Paper copies of Discharge Monitoring Reports will no longer be accepted. The eDMR and Sample Value/Operational Spreadsheets are generated directly from the limits and monitoring requirements in the reissued permit for your facility. They are generated by the Pollution Control Data Specialist (PCDS) assigned to manage the data for your facility and will be available online within 30 days of the permit action, please make sure to download the most recent version of the eDMR and Sample Value/Operational Spreadsheet prior to submitting your next monthly eDMRs.

### **Term of Permit**

The Agency has made a preliminary determination to reissue this SDS permit for a term of approximately ten years, per Minn. Rule 7001.0150.