Watershed Outlet Monitoring Program

Willow Creek Station

Burnsville, MN

Quarterly Report

Preliminary Data

October – December 2004

Prepared By: Dakota County Soil and Water Conservation District
Prepared For: Lower Minnesota River Watershed District
March 2005

The Willow Creek WOMP site, located in Burnsville behind the Cub Foods Store on Hwy. 13, has been in operation since 1999. This report summarizes the results of flow, precipitation, and water quality for the 4th quarter of 2004. This data is preliminary and is subject to change until the Metropolitan Council submits the final report for this period.

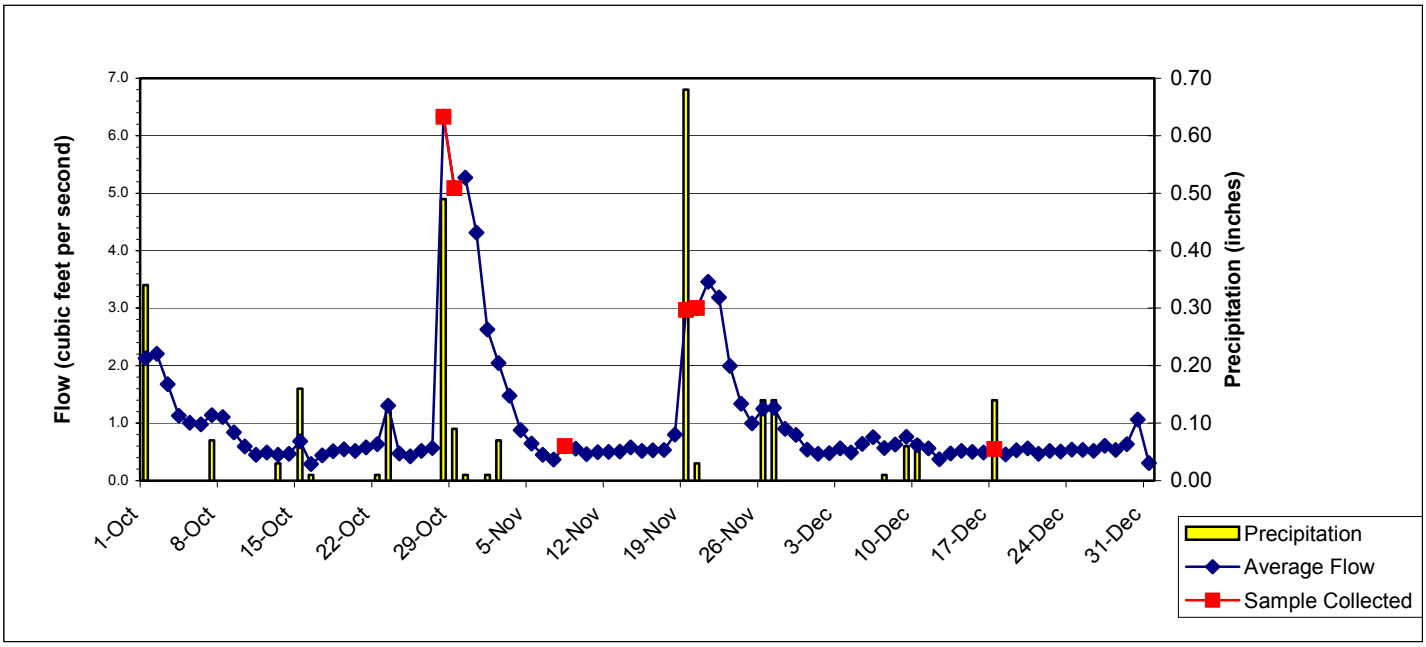
Flow and Precipitation

Average flow in Willow Creek was 1.05 cubic feet per second (cfs) or 0.679 million gallons per day (mgd) and total precipitation was 2.68 inches (Table 1, Figure 1).

Table 1. Average flow and total precipitation at Willow Creek WOMP Station October – December 2004

Period	Average Flow (cfs/mgd)	Precipitation (inches)
OCTOBER	1.42 / 0.918	1.33
NOVEMBER	1.21 / 0.782	1.07
DECEMBER	0.56 / 0.362	0.28
TOTAL QUARTER	1.05 / 0.679	2.68

Figure 1. Flow and precipitation at Willow WOMP Station October – December 2004



Water Quality

Two composite samples during runoff events (October 28 – 29 and November 19 – 20) and two low flow grab samples (November 11 and December 17) were taken at the Willow WOMP Station during the 4th quarter 2004. Overall, the water quality was fair to good with most parameters below the state standard (in compliance with standards) or below the ecoregion mean (Table 2).

Table 2. Average concentrations at Willow Creek WOMP Station October – December 2004

Parameter	Concentration	Notes
Alkalinity	192 mg/L $CaCO_3$	Typical for freshwater; higher during low flow
Biological Oxygen Demand (BOD5)	2.23 mg/L	Fair level; higher during runoff events
Cadmium	0.08 ug/L	In compliance with state standard
Chloride	68.5 mg/L	In compliance with state standard; higher during low flow
Chlorophyll-a	1.3 ug/L	Fair level
Chromium	1.05 ug/L	In compliance with state standard
Conductivity	1090 mMHOs	Higher than average for metro streams, higher during low flow
Copper	3.3 ug/L	In compliance with state standard
Fecal Coliform Bacteria	3.0 CFU	In compliance with state standard
Hardness	331 mg/L $CaCO_3$	Moderately hard during runoff events; very hard during low flow
Lead	0.7 ug/L	In compliance with state standard
Nickel	5.35 ug/L	In compliance with state standard
Nitrogen Ammonia	32.5 ug/L	Average is in compliance with state standard; one runoff event sample above standard
Nitrate + Nitrite	0.535 mg/L	Slightly above ecoregion mean
Phosphorus, Total	0.1545 mg/L	Below ecoregion mean; slightly above EPA recommendation; higher during runoff events
Suspended Solids	29.75 mg/L	Above ecoregion mean; higher during runoff events
Turbidity	1.75 NTU	In compliance with state standard
Zinc	13.8 ug/L	In compliance with state standard

mg/L = milligrams per liter or parts per million (ppm)
ug/L = micrograms per liter or parts per billion (ppb)
mMHO = micromhos or micorseimens
CFU = colony forming units
NTU = nephelometric turbidity units