



August 8, 2007

Mr. John DeLashmit
U.S. Environmental Protection Agency
Region VII
901 North Fifth Street
Kansas City, KS 66101

Re: City of Buffalo's State Operating Permit in Lieu of a Total Maximum Daily Load for
Little Lindley Creek (WBID 1438)

Dear Mr. DeLashmit:

Little Lindley Creek, near the City of Buffalo in Dallas County, Missouri, was placed on Missouri's 1998 303(d) List of impaired waters for Biochemical Oxygen Demand (BOD) and Non-Filterable Residue (NFR). It was subsequently placed on the 2002 303(d) List for BOD and Volatile Suspended Solids (VSS). The change to VSS was made to better distinguish between organic solids coming from wastewater treatment plants (WWTPs) and mineral solids coming from soil erosion or erosion of mine waste materials or stockpiles. The sole source of these impairments is listed as the Buffalo WWTP, Permit Number MO-0094854. The Missouri Department of Natural Resources (department) has opted to correct these impairments through permit limits in lieu of a Total Maximum Daily Load (TMDL).

Historically, two outfalls have been listed on Buffalo's WWTP permit. However, the storm water clarifier actually discharges, as "Outfall 002," into a manhole where it combines with the effluent from the secondary treatment side of the plant prior to being discharged at Outfall 001. Outfall 001 discharges into a ditch that runs into an unnamed tributary that runs into Little Lindley Creek less than 0.1 mile from the outfall. Little Lindley Creek is unclassified at its confluence with the unnamed tributary. The classified segment starts approximately 0.5 miles downstream from that confluence. As a result, the one-mile segment of Little Lindley Creek that was placed on the 1998 303(d) List included both unclassified and classified portions.

There are no other point source discharges above the Buffalo WWTP and land use in the watershed is mostly agricultural. The listing for the impaired reach was based on visual surveys conducted by department personnel in 1992, 1993, 1994, and 1997 (see enclosed *Stream Survey Data*). During the surveys, personnel observed violations of narrative standards, including objectionable bottom deposits (the narrative criteria for VSS) in the form of thick sludge, discolored water, bad odor, and pollution tolerant (or no) invertebrates below the outfall. In addition to the stream surveys, numerous permit violations were issued to the Buffalo WWTP from 1990 to 1998 for BOD and VSS (the latter listed as Total Suspended Solids (TSS) in the permit).

Following improvements to the system in March 2001, the WWTP met monthly permit effluent limits of 30 mg/L BOD and 30 mg/L TSS in discharges to the creek. In order to assess stream health following the WWTP upgrades, the department conducted a biological and “physicochemical” assessment of Little Lindley Creek in September 2002 and April 2003 (see enclosed *Biological Assessment Study, Little Lindley Creek*). Based on the biological assessment, the macroinvertebrate population was deemed impaired when compared to four reference streams. The department believed the sludge releases from the facility caused the impairment. Additional chemical monitoring (see enclosed Water Chemistry Data – two pages) was conducted in the creek in April, July and September 2003, and BOD was found to be very low in one sample (2.65 mg/L) and not detectable in 27 of the remaining 28 samples. However, VSS continued to be a problem.

During visits to the WWTP in February, May and June 2005, department personnel found significant discharges of sludge (VSS) had been deposited during heavy rains in the ditch receiving outfall discharge, the unnamed tributary, and in Little Lindley Creek itself. In order to address this and other concerns, the permit was reopened, a modification made to it, and reissued on December 2, 2005. The modified permit included two elements not found in the previous permit – instream monitoring for dissolved oxygen (DO), ammonia, pH and temperature and a Schedule of Compliance (SOC). The SOC required that, by January 2006, the permittee submit an engineering evaluation detailing future needs of the WWTP and a plan and modifications necessary to prevent further releases of sludge into the creek. The SOC also required that within 180 days of department approval of the plan, the permittee submit an application for a construction permit to begin implementing newly identified specifications. In January 2006, the department received the engineering report that identified the need for additional sludge holding, correction of sludge handling facilities, increased capacity, disinfection, and other improvements. The required application for a construction permit was subsequently received (and appropriate elements were incorporated into the currently issued permit as discussed later in this letter).

The facility continues to be the sole source of VSS due to their peak flow clarifier (Outfall 002) and inadequate sludge storage. The peak flow clarifier is not adequately removing solids from the influent, and when cleaning is necessary, there is no method for preventing releases of additional solids. The lack of sludge storage means that excess sludge is retained in the treatment train, allowing it to be washed out during high flows.

To replace the permit that expired November 15, 2006, the department issued a new permit to the City of Buffalo on July 20, 2007. The water quality standard (WQS) for VSS will be achieved by continuing to limit the effluent from Outfall 001 to a 45 mg/L TSS maximum weekly average (30 mg/L monthly average), and, most importantly, by eliminating Outfall 002 (the peak flow clarifier). The WQS for DO of 5.0 mg/L will be achieved by continuing to limit the effluent from Outfall 001 to a BOD of 45 mg/L maximum weekly average (30 mg/L monthly average), and eliminating Outfall 002. The permit included a SOC requiring initiation of construction for upgrading the facility by January 1, 2008 and submission of a detailed progress report by January 1, 2009. All upgrades (including elimination of Outfall 002) must be completed by December 31, 2009.

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The upgraded facility will include an aeration basin, headwork upgrades, expanded sludge storage, and ultraviolet disinfection. It will also have an expanded peak flow handling capability (4.25 MGD), without compromising secondary treatment, which will result in elimination of sludge releases. The WQS for VSS (under the narrative criteria for unsightly bottom deposits) will be achieved through compliance with standard secondary treatment limits. Eliminating the sludge releases will remove a BOD source from the creek, allow the plant to meet existing effluent permit limits for BOD (which are believed to be protective of WQS), and achieve WQS for DO.

The Missouri State Operating Permit for the City of Buffalo's WWTP is enclosed (it may also be found at: <http://www.dnr.mo.gov/env/wpp/permits/wpcpermits-issued.htm>). Upgrading the WWTP should result in WQS being achieved in Little Lindley Creek. In order to determine if the impairment has been eliminated post-construction, the department will schedule ambient stream monitoring to confirm compliance with WQS. In addition, the permit continues to include the following monitoring requirement to ensure permit limits are being achieved - once per month instream monitoring ¼ of a mile downstream of the confluence of the effluent and Little Lindley Creek for DO, ammonia, pH and temperature. The permit includes a reopener clause to allow for incorporation of stricter limits if monitoring reveals violations of Missouri's WQS.

With this letter, the department submits the Buffalo WWTP State Operating Permit to the U.S. Environmental Protection Agency (EPA) for concurrence that the permit will serve in lieu of a TMDL on Little Lindley Creek. We appreciate EPA taking prompt action on this matter. If you have any questions, please contact Ms. Donna Menown at (573) 526-1595, via e-mail at donna.menown@dnr.mo.gov, or by mail at Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

WATER PROTECTION PROGRAM

(Signed by Edward Galbraith)

Edward Galbraith
Director

EG:dml

Enclosures

c: Mr. Daniel R. Schuette, Director, Division of Environmental Quality
Mr. Earl Pabst, Deputy Director, Division of Environmental Quality
Missouri Clean Water Commission