IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

UNITED STATES OF AMERICA, and THE STATE OF OHIO, Plaintiffs, v. THE CITY OF TOLEDO, OHIO, A Municipal Corporation, Defendant.	Civil Action No. 3:91:CV7646 Chief Judge James G. Carr

FIRST AMENDMENT TO CONSENT DECREE

Plaintiff the United States, on behalf of the United States Environmental Protection Agency ("EPA") filed a complaint in this matter on October 29, 1991, and amended its complaint on December 17, 1992, seeking injunctive relief and civil penalties for violations of Section 301(a) of the Clean Water Act (the "Act"), 33 U.S.C. § 1311(a), against the Defendant, the City of Toledo ("Toledo").

Plaintiff the State of Ohio (the "State") was originally named as a defendant pursuant to Section 309(e) of the Act, 33 U.S.C. § 1319(e). The State moved, and this Court granted Ohio's motion, to be realigned as a party plaintiff in this matter. The State then filed a complaint and, subsequently, an amended complaint against Toledo seeking injunctive relief and civil penalties pursuant to Section 505(a) of the Act, 33 U.S.C. § 1365(a), for violations of Section 301(a) of the Act, 33 U.S.C. § 1311(a), and Chapter 6111 of the Ohio Revised Code.

The parties in this matter (the "Parties") entered into a Consent Decree (the "Consent

Decree"), resolving the Plaintiffs' claims, which was entered by the Court on December 16, 2002.

Paragraph 143 of the Consent Decree provides that material modifications to the Consent Decree must be approved in writing by all of the Parties and the Court.

The Parties have now agreed to certain modifications to the Consent Decree, as set forth herein. The proposed modifications address certain injunctive obligations related to improvements that have either been built or are required under the Consent Decree to be built at Toledo's Bay View Plant, and, as an additional requirement, requires Toledo to perform a certain Pathogen Study, described in Paragraph 4, below. The proposed amendments to the Consent Decree result from negotiations among the Parties regarding these amendments and EPA's conditional approval of Toledo's proposed Long Term Control Plan to control Toledo's combined sewer overflows, which Toledo submitted to EPA on April 24, 2009, pursuant to Paragraph 32 of the Consent Decree. EPA has conditioned its approval of Toledo's proposed Long Term Control Plan, issued to Toledo on June 5, 2009, upon the Court's entry of this proposed First Amendment to Consent Decree (the "First Amendment").

The Parties recognize, and the Court by entering this First Amendment finds, that this First Amendment has been negotiated at arms-length and in good faith, and that this First Amendment is fair, reasonable, and in the public interest.

NOW THEREFORE, before the taking of any further testimony, without further adjudication of any issue of fact or law, and upon the consent and agreement of the Parties, it is hereby ORDERED, JUDGED, and DECREED as follows:

1. The Consent Decree shall remain in full force and effect in accordance with its

terms, except that Paragraphs 8(d), 8(e), 9 through 11, 32(c), and 78 are revised or deleted as set forth below, effective upon entry of this First Amendment to Consent Decree by the Court.

2. Paragraph 8(d) of the Consent Decree, which currently requires construction of an equalization basin in accordance with the design approved pursuant to Paragraph 7(d), is revised as follows:

"(d) An equalization basin with a capacity of no less than twenty-five million gallons. Toledo has already complied with this requirement;"

3. Paragraph 8(e), which currently requires construction of an additional secondary clarifier, is hereby deleted.

4. Paragraphs 9-11 of the Consent Decree are revised as follows:

9. U.S. EPA and Ohio EPA have approved Toledo's work plan, dated December 12, 2003, for conducting a two year study ("Ballasted Flocculation Study") of the effectiveness of the ballasted flocculation facilities constructed pursuant to Paragraph 8(f) of the Consent Decree. In addition to the Ballasted Flocculation Study, Toledo shall conduct a second study (the "Pathogen Study") to further understand the effectiveness of Toledo's ballasted flocculation facilities. Toledo has prepared, and with the lodging of this First Amendment to Consent Decree, the U.S. EPA and Ohio EPA have approved, a protocol for the Pathogen Study, which is attached to and incorporated in this First Amendment to Consent Decree as Attachment A. In addition, Toledo shall prepare and submit to U.S. EPA for its approval a proposed Sampling and Quality Assurance Project Plan (the "QAPP"), for the Pathogen Study in accordance with the approved protocol. The QAPP shall be submitted no later than December 1, 2010.

10. Toledo has already commenced and is implementing the Ballasted Flocculation Study. Toledo shall complete the Ballasted Flocculation Study in accordance with the approved work plan and schedule set forth in the approved work plan for the Ballasted Flocculation Study. Toledo has commenced and shall implement and complete the Pathogen Study in accordance with the protocol (Attachment A), including the schedule set forth in the protocol, and in accordance with the QAPP described in Paragraph 9 of the Consent Decree. Toledo shall submit annual reports to U.S. EPA and Ohio EPA in accordance with Section 4 of the protocol.

11. Within sixty (60) days after completion of the Ballasted Flocculation Study, Toledo shall submit a written report to U.S. EPA and Ohio EPA, for approval, which contains the results of the Ballasted Flocculation Study. Within sixty days of completion of the Pathogen Study in accordance with the protocol and approved QAPP, Toledo shall submit a written report to U.S. EPA and Ohio EPA for approval which contains the results of the Pathogen Study."

5. The last sentence of Paragraph 32(c) of the Consent Decree is hereby revised as follows:

"The schedule shall also include a deadline for the completion of all construction of and full implementation of all measures under the Long Term Control Plan, as provided for in the Consent Decree, as amended by this First Amendment to Consent Decree, which shall be completed as early as possible, but in no event later than August 31, 2020."

6. Paragraph 78 of the Consent Decree is hereby revised as follows:

"For each CSO that violates the water quality-based or technology-based effluent

limitations and conditions in Toledo's NPDES permit (including the General Effluent Limitations) that occurs subsequent to completion of all construction and full implementation of all measures under the Long Term Control Plan or August 31, 2020, whichever is earlier, Toledo shall pay stipulated penalties of $5,000 per day for each day of each CSO occurring."

7. This First Amendment shall be lodged with the Court for a period of not less than 30 days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding this First Amendment disclose facts or considerations indicating that the First Amendment is inappropriate, improper, or inadequate. Toledo and the State of Ohio consent to entry of this First Amendment without further notice and agree not to withdraw from or oppose entry of this First Amendment by the Court or to challenge any provision of the First Amendment, unless the United States has notified Defendant and the State of Ohio in writing that it no longer supports entry of the First Amendment.

This First Amendment to Consent Decree is entered and approved this _____ day of _____, 2010.

_____
JAMES G. CARR, SENIOR DISTRICT JUDGE
United States District Court
Northern District of Ohio

First Amendment to Consent Decree, *United States and State of Ohio v. City of Toledo, Ohio*, Civil Action No. 3:91:CV7646, (N.D. OH)

FOR THE UNITED STATES OF AMERICA

DATED: 8/23/10

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First Amendment to Consent Decree, *United States and State of Ohio v. City of Toledo, Ohio*, Civil Action No. 3:91:CV7646, (N.D. OH)

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First Amendment to Consent Decree, *United States and State of Ohio v. City of Toledo, Ohio*, Civil Action No. 3:91:CV7646, (N.D. OH)

FOR THE STATE OF OHIO

RICHARD CORDRAY
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By: _____ DATED: July 16, 2010

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By: _____ DATED: _____

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First Amendment to Consent Decree, *United States and State of Ohio v. City of Toledo, Ohio*, Civil Action No. 3:91:CV7646, (N.D. OH)

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ATTACHMENT A TO FIRST AMENDMENT TO CONSENT DECREE
UNITED STATES AND STATE OF OHIO v. CITY OF TOLEDO
BALLASTED FLOCCULATION PATHOGEN SAMPLING STUDY

The objective of this study is to further understand the effectiveness of the DensaDeg® High Rate Clarification ballasted flocculation wet weather treatment system ("WWTS"), by analyzing pathogen removal by the WWTS and the activated sludge systems when the ballasted flocculation facility is discharging through the main plant outfall.

1 Introduction

The study described herein is intended to expand upon Toledo's ongoing wet weather treatment facility study. This addendum study seeks to further characterize the effectiveness of the ballasted flocculation treatment technology employed by Toledo in controlling the discharge to the environment of pathogens which may adversely impact human health. The study will focus upon viable rather than total organism counts. The study began on April 1, 2009.

2 Sampling

The type of sampling, timing of the sampling, sampling frequency, and sample volumes will be identified in the Quality Assurance Project Plan ("QAPP"), described below.

The QAPP will provide that, at a minimum, discrete grab samples will be taken. Continuous sampling will be required, as set forth in the QAPP, where necessary to meet the study objectives. The QAPP will provide that sampling of effluent from the WWTS will begin after stable operation of the WWTS is achieved and within 15 minutes of when actual discharge of the disinfected effluent from the WWTS begins. Sampling will continue during the time while the WWTS treatment facility is actively discharging through the main plant permitted outfall, up to a period of 10 hours. Toledo will only analyze samples from events where 3 or more sets of samples have been collected. If the wet weather event lasts at least 10 hours, Toledo will complete at least five sets of samples for such event. Specific details of number and timing of samples will be included in the QAPP, based upon information gathered during the trial runs, as described below.

The QAPP will provide for sampling to be carried out for a total of ten wet weather events. Because disinfection is practiced seasonally, consistent with permit requirements, the sampling will take place between April 1 and October 31. Given the frequency at which discharges occur from the WWTS, it is anticipated that the monitoring of ten discharge events will take several years to accomplish.

The QAPP will provide that samples will be collected at the following designated locations:

- DensaDeg® Post-screening Raw Influent
- DensaDeg® Effluent (before disinfection)
- DensaDeg® disinfected Effluent (disinfected effluent from the WWTS)
- Main Plant Post-screening Raw Influent*

- Main Plant Secondary Effluent*
- Main Plant Final Disinfected Effluent*

Collected samples will be analyzed for both conventional pollutants and specific pathogens as identified in Table 1, below. The three main plant samples, identified with an asterisk, are intended to provide a baseline data set.

3 Development of the QAPP

The QAPP will be based upon two trial runs to develop specific procedures for the Pathogen Sampling Study.

The first trial run, a dry trial run was performed on May 5, 2009. Samples were taken of the Main Plant Post-screening Influent and the Main Plant Final Disinfected Effluent. Toledo will conduct a second trial during a wet weather event. In the second trial, Toledo will collect samples from the six sites identified above, except that the DensaDeg® disinfected Effluent need not be sampled if the wet weather event is of insufficient magnitude to allow for sampling at that location. Sampling will commence after the WWTS has been in operation for at least four hours and the Equalization Basin Cells 1A and 1B are full and overflowing into Cell 2. At this stage, the Equalization Basin will have captured at least the first eight million gallons of wet weather flow received at the plant after the plant influent exceeds 195 MGD. During this trial run, Toledo shall collect one sample every two hours at each of the sampling locations at three separate times for a total of fifteen samples from five sampling points or eighteen samples from six sampling points.

4 Sampling Specifics and QA/QC Procedures

The QAPP will require appropriate sample collection, storage, preservation, and handling procedures developed through consultation with the laboratories selected to conduct the analyses and trial monitoring. The procedures will focus upon the enumeration of viable rather than total organisms. The QAPP will also will also identify plant operational data that Toledo must collect during each sampling event, such as flow rates, chemical feed rates, and related matters. The QAPP will also set forth the quality assurance and quality control procedures needed to ensure the quality of the data to be generated. Further, the QAPP will include an itemization of anticipated study costs.

The QAPP will provide for specific holding times between collection of a sample and the commencement of analysis of the sample. Keeping holding times as short as the standard methods prescribe may not be possible for all parameters. Any necessary deviation of standard method holding times will be set forth in the QAPP. Toledo will endeavor to keep holding times under 24 hours unless the pertinent standard method allows for a longer holding time.

5 Parameters and Analytical Procedures

Table 1 provides the parameters and methods intended to be used during this study. Modifications may be proposed in the QAPP based upon results of the trial run(s). The QAPP will identify any changes to the methods that are to be followed for the study.

Table 1: Parameters and Analytical Methods

Parameter	Method
Adenoviruses, types 40 and 41	Adenovirus is analyzed using integrated cell culture (ICC) - TaqMan® Reverse Transcription Polymerase Chain Reaction (RT-PCR). Briefly, cultured cell monolayers (used as viral hosts) are inoculated with adenoviral samples followed by cell harvesting, lysis and mRNA extraction as described earlier (Ko et al., 2005). Samples are treated with DNAse to eliminate potential DNA contamination and adenoviral mRNA is quantified using quantitative real time RT-PCR (Ko et al. 2005). (Ko , G., N. Jothikumar, V.R. Hill, and M.D. Sobsey (2005). "Rapid detection of infectious adenoviruses by mRNA real time RT-PCR." *Journal of Virological Methods*. 127:148-153.) Positive and negative controls will be included and recovery efficiency will be assessed. Quality Assurance/Quality Control measures follow recommended EPA guidelines (EPA 815-B-04-001 - Quality Assurance/ Quality Control Guidance for Laboratories Performing PCR Analyses on Environmental Samples, October 2004). Analyses to be carried out so as to focus on viable rather than total viral counts.
Campylobacter	A mRNA detection method for thermotolerant *Camplyobacter* spp. has not been established and Sung et al. (2004) showed evidence of viability correlating poorly with mRNA detection. (Sung, K.D., N.J. Stern, and K.L. Hiett(2004). "Relationship of Messenger RNA Reverse Transcriptase-Polymerase Chain Reaction Signal to *Campylobacter* spp. Viability." *American Association of Avian Pathologists*. 48(2):254-262). The following procedure combining enrichment, isolation, and species confirmation will be followed:*Campylobacter jejuni* will be analyzed by

Table 1: Parameters and Analytical Methods	
Parameter	**Method**
	quantitative PCR (QPCR). Samples will undergo filtration, enrichment, and isolation using selective media (Coulliette and Noble 2009). Samples will be identified as *C. jejuni* positive and viable when colonies illustrate similar morphology and biochemical test results as in comparison to positive controls. Confirmation at the species level will be conducted by using QPCR as described by Nayak (2008). (Coulliette, A.D. and R.T. Noble (2009). "*Campylobacter* spp. in Eastern North Carolina Shellfish Harvesting Waters: Comparison of Detection Methods and Relation to Fecal Indicator Bacteria." *Water Research.* IN REVIEW.; Nayack, A.K. (2008). "Stability and Quantitative Surveillance of *Helicobacter pylori* and *Campylobacter jejnui* in Environmental Waters by Real Time QPCR." Master Thesis. Summer 2008. Michigan State University, Department of Fisheries and Wildlife. Advisor: Joan B. Rose) Analyses to be carried out so as to focus on viable rather than total viral counts.
Enterococcus	Enterolert™ method (ASTM D6503-99)
Salmonella	EPA Method 1682
E. coli	Colilert® Method (Colilert Reagent version of SM 9223B)
Fecal coliform	Fecal Coliforms Membrane Filter Technique, SM 9222 D, Modified
Cryptosporidium and *Giardia*	*Cryptosporidium* and *Giardia* in Water by Filtration/IMS/FA (EPA Method 1623)
Coliphage	Somatic and F+ specific coliphage are fecal indicator organisms that have similar environmental resistance properties to enteroviruses. Coliphage are detected using double agar layer methods and *E.coli* hosts as described in EPA method 1601 (Method 1601: Male-specific (F+) and Somatic Coliphage in Water by Two-step Enrichment Procedure. 2001. EPA 821-R-01-030. Office of Water, Washington D.C.)
Flow volume (or rate)	Field measurement
Water Temperature and Air Temperature	Field measurement

Table 1: Parameters and Analytical Methods	
Parameter	**Method**
pH	Field measurement
Total Chlorine Residual (TRC) (as applicable)	Field/on-site measurement
Dissolved Oxygen (DO)	Field measurement
Turbidity	Field measurement
Total Suspended Solids (TSS)	SM 2540 D
Total Dissolved Solids (TDS)	SM 2540 C
Biochemical Oxygen Demand (BOD_5)	SM 5210 B
Chemical Oxygen Demand (COD)	SM 5220 or EPA 410.4

The QAPP will provide the details of the field sampling protocols and organization and staffing. The City may propose alternate parameters and procedures at any time during conduct of the study, based upon experience during the study to ensure that the goals of the study will be achieved. Any proposed changes to the methodology will be submitted to US EPA and OEPA for approval.

6 Reporting

During the period of the study, Toledo shall present and summarize the analytical results and provide EPA with a report detailing each calendar year's monitoring events by March 1st of the following calendar year. The report will contain for each event:

- Discharge event time, date and duration.
- Discharge flow hydrograph
- Date and time of collection for each sample.
- Status of the target treatment units and relevant operational data.
- The average hourly and total rainfall amounts for the Toledo service area.
- Analytical results - Including copies of the actual laboratory reports.
- QA/QC results - Including copies of the laboratory QA/QC results; any discrepancies will be identified and explained by the city.
- Copies of completed chain of custody pages.

The report shall include an analysis of the removal or inactivation effectiveness of the DensaDeg® treatment system and the wet weather disinfection system for each parameter of interest. This analysis should consider each event individually, as well as all events monitored

up to that time. The report shall also identify any non-qualifying discharge events (i.e., insufficient duration) and provide the time, date, duration and volume discharged for said events.