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CSO MUNI FORM ORDER FOR ALLEGHENY COUNTY COMMUNITIES

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN THE MATTER OF:

«OwnerOperator»	:	Clean Streams Law
«Municipality»	:	Sewerage
«County» County	:	
	:	
	:	

CONSENT ORDER AND AGREEMENT

This Consent Order and Agreement (“COA”) is entered into this _____ day of _____, 2003, by and between the Commonwealth of Pennsylvania, Department of Environmental Protection (“Department”) and the «OwnerOperator» (“Municipality”).

The Department has found and determined the following:

A. The Department is the agency with the duty and authority to administer and enforce The Clean Streams Law, Act of June 22, 1937, P.L. 1987, *as amended*, 35 P.S. §§ 691.1-691-1001 (“Clean Streams Law”); Section 1917-A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, *as amended*, 71 P.S. § 510-17 (“Administrative Code”), and the rules and regulations (“rules and regulations”) promulgated thereunder.

B. The Municipality is a municipality as defined in Section 1 of the Clean Streams Law, 35 P.S. § 691.1, with a mailing address of «StreetAddress1»«StreetAddress2», «CityPaZip».

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C. A combined sewer system (“CSS”) is a sewer system or parts thereof which was designed, permitted, built and operated to carry sanitary sewage, storm water and industrial waste. For purposes of this Consent Order and Agreement, the term CSS includes wildcat sewers and common sewers not privately owned but shall not include private laterals and privately owned common sewers.

D. A combined sewer overflow (“CSO”) is a wet weather overflow discharge from a CSS occurring before the headworks of the Woods Run Sewage Treatment Plant (“Woods Run STP”). As used in this Consent Order and Agreement, the term CSO may also be used to refer to a point within the CSS at a location prior to the headworks of the Woods Run STP, at which materials are discharged from the combined sewer systems.

E. The Municipality «PartiallyJointly»owns or operates a CSS with «NumberCSOs» CSOs in «Municipality», «County» County. The CSOs discharge to «StreamName», a water(s) of the Commonwealth. The CSOs constitute sewage under Section 1 of the Clean Streams Law, 35 Pa. Code § 691.1.

F. The CSO(s) from the CSS of the Municipality is/are authorized by a General National Pollutant Discharge Elimination System (“NPDES”) Permit PAG-6 No. «PermitNumber» (“PAG-6”) issued by the Department to the «OwnerOperator» on «IssueDate», pursuant to Sections 201 and 202 of the Clean Streams Law, 35 Pa. Code §§ 691.201 and 691.202.

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G. The Municipality is upstream of and contributes to CSOs from sewer systems owned or operated by another municipality or municipal authority including the Allegheny County Sanitary Authority (“ALCOSAN”).

H. The Municipality ultimately conveys sewage flows to the Woods Run STP which is owned and operated by ALCOSAN. ALCOSAN has a NPDES Permit to discharge treated sewage under certain conditions from the Woods Run STP.

I. Under Section 402(q) of the Clean Water Act, 33 U.S.C. § 1342(q), the Municipality and ALCOSAN must comply with the Combined Sewer Overflow Control Policy signed by the Environmental Protection Agency Administration on April 11, 1994 (“CSO Control Policy”).

J. The CSO Control Policy represents a comprehensive national strategy to ensure that municipalities and the public engage in a comprehensive and coordinated planning effort to achieve CSO controls that ultimately meet appropriate health and environmental objectives.

K. The Municipality, pursuant to the CSO Control Policy and Part C of PAG-6, and ALCOSAN, pursuant to the CSO Control Policy and its NPDES Permit, was required to evaluate their CSSs and CSOs.

L. Pursuant to Part C of PAG-6, the Municipality was required to complete, inter alia, the following reports and tasks in accordance with the following schedule:

1. A System Inventory Characterization (“SIC”) by «SICDate».

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2. A System Hydraulic Characterization (“SHC”) by «SHCDate».

3. Submission to the Department of a Documentation of Implementation of the Nine Minimum Technology-Based Controls (“NMCs”) by «NMCDate».

4. Submission to the Department of a Long Term CSO Control Plan (“LTCP”) by «LTCPDate».

M. The Department alleges that the Municipality has «ProvideNMC»«AndOr»failed to submit to the Department an adequate LTCP.

N. To develop a LTCP, a municipality must, in part, rely on the SIC, SHC and Documentation of Implementation of the NMCs.

O. The CSO Control Policy requires all municipalities, such as the Municipality, tributary to a CSO to cooperate with the development and implementation of an LTCP.

P. Development and implementation of a LTCP is a comprehensive process which will require coordination with other municipalities and with ALCOSAN.

Q. The Department alleges that the Municipality’s failure to submit plans and reports as described in Paragraph M above, constitute violations of PAG-6, and Sections 201 and 202 of the Clean Streams Law, 35 P.S. §§ 691.201 and 691.202; constitute statutory nuisances pursuant to Section 202 of the Clean Streams Law, 35 P.S. § 691.202;

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and constitute unlawful conduct pursuant to Section 611 of the Clean Streams Law, 35 P.S. § 691.611.

R. The Department issued to the Municipality Water Quality Management Permits which require the Municipality, inter alia, to properly operate and maintain its CSS and CSO structures.

S. Also, pursuant to PAG-6, the Municipality is required to properly operate and maintain its CSS and CSO structures.

T. Section 203 of the Clean Streams Law, 35 P.S. § 691.203, requires, inter alia, municipalities to file reports with the Department to enable the Department to determine whether existing sewer systems are adequate to meet present and future needs.

U. In addition, Section 203 of the Clean Streams Law, 35 P.S. § 691.203, requires municipalities to construct, complete, extend and operate treatment facilities necessary to properly provide for the prevention of pollution or prevention of a public health nuisance and to negotiate with other municipalities for combined or joint sewer systems and treatment facilities.

V. Section 210 of the Clean Streams Law, 35 P.S. § 691.210, requires a municipality to diligently comply with any Order issued pursuant to Section 203 of the Clean Streams Law.

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After full and complete negotiation of all matters set forth in this Consent Order and Agreement and upon mutual exchange of covenants contained herein, the parties desiring to avoid litigation and intending to be legally bound, it is hereby ORDERED by the Department and AGREED to by the Municipality as follows:

1. **Authority.** This Consent Order and Agreement is an Order of the Department authorized and issued pursuant to Sections 5, 203, 316, 402 and 610 of the Clean Streams Law, 35 P.S. §§ 691.5, 691.203, 691.316, 691.402 and 691.610 and Section 1917-A of the Administrative Code, *supra*.

2. **Findings.**

a. The Municipality agrees that the findings in Paragraphs A through L, N through P and R through V are true and correct and, in any matter or proceeding involving the Municipality and the Department, the Municipality shall not challenge the accuracy or validity of these findings.

b. The parties do not authorize any other persons to use the findings in this Consent Order and Agreement in any matter or proceeding.

Phase I - System Inventory and Characterization/Basic Operation and Maintenance

3. **Retention of Engineer.** As to all tasks set forth in Paragraphs 4 through 10 below, the Municipality shall employ the services of a Professional Engineer to be knowledgeable of the status of such tasks and to maintain an appropriate level of oversight regarding the completion of all such tasks.

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4. **Physical Survey/Visual Inspection.** By May 31, 2007, the Municipality shall complete a physical survey/visual inspection of its combined sewer system that directly or indirectly is tributary to the ALCOSAN Sewer System, excepting any portion of the system constructed or reconstructed since January 1, 1995 with records of post-construction municipal inspection consistent with the requirements of this Paragraph 4. The physical survey/visual inspection shall include all accessible manholes, exposed sewer lines and other visible sewer appurtenances, including, but not limited to, siphon chambers, pump stations, exposed force mains, combined sewer regulators, diversion chambers and accessible outfall pipes and structures. The physical survey/visual inspection shall identify defects related to safety, defects related to structural stability, accumulated sediment and debris deposits, visible flow bottlenecks, evidence of present or prior surcharging (excepting areas where surcharging has been intentionally induced in accordance with NMC requirements) or overflows, and any other condition that compromises or diminishes the hydraulic design capacity of the combined sewer system. The physical survey/visual inspection shall also identify defects including the conveyance of streams and receiving stream back flow. A physical survey/visual inspection shall be performed for all accessible manholes, both interior and exposed exterior, and of each sewer line connection at such manholes. The physical survey/visual inspection shall note all documented manholes that cannot be located, visually or with metal detectors, and areas where additional manholes need to be constructed.

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The Municipality shall be given credit for past physical survey/visual inspection work if it has been completed since January 1, 1998 and the Municipality can demonstrate through documentation that said work meets the requirements of Paragraph 4.

5. **Sewer Line Cleaning and Closed Circuit Television (CCTV) Internal Inspection.**

a. By May 31, 2010, the Municipality shall complete a CCTV internal inspection of its combined sewer system that directly or indirectly is tributary to the ALCOSAN Sewer System, excepting any portion of the system constructed or reconstructed since January 1, 1995 with records of post-construction municipal inspection consistent with the requirements of Paragraph 5.d. The Municipality shall perform sewer line cleaning to support CCTV inspection to the extent possible via conventional sewer cleaning techniques to allow an internal inspection by CCTV to detect structural defects, misalignment, infiltration sources and root intrusions.

b. As a result of CCTV inspection the Municipality shall record:

- (i) all defects that allow the entrance of infiltration to its combined sewers;
- (ii) all structural defects;
- (iii) all defects that compromise or diminish the carrying capacity of the combined sewer lines; and

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- (iv) all defects in siphons; combined regulator structures, diversion chambers and accessible outfall pipes and structures.

This CCTV record shall also include audio/video documentation with a written summary to include, but not be limited to, the location of roots, defective joints, defective pipes, sewer line depressions, break-in lateral connections, grease accumulations and sediment accumulations.

Additionally, this CCTV record shall include a location reference, incorporate a defect code and defined level of severity or grade associated with each condition noted in the inspection report. These codes and grades shall utilize a uniform ranking and rating system, for example NASSCO.

c. By November 30, 2006, the Municipality shall inspect by CCTV its sewers in that portion of its combined sewer system that directly or indirectly is tributary to the ALCOSAN Sewer System that:

- (i) are trunk sewers which are a final conveyance to the ALCOSAN Sewer System,
- (ii) are associated with areas of chronic basement flooding, chronic maintenance and chronic surcharge areas, unless the surcharge is initiated intentionally as part of the Municipality's NMC Compliance effort;

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(iii) where feasible, sewer lines that are downstream of flow diversion structures; priority will be given to structures exhibiting dry weather overflows;

(iv) require additional information suitable for model development purposes; and/or

(v) are deemed necessary by a Professional Engineer for priority inspection.

d. Data from previous sewer line CCTV inspections conducted between January 1, 1993 and December 31, 1999 may be used to meet the requirements of Paragraph 5, if the following conditions are met:

(i) the inspection indicated that the sewer had no defects causing a restriction in flow or conditions allowing excessive infiltration into the system and/or significant root intrusions,

(ii) the documentation for the inspection is readily available and includes a visual record of observations, a written summary and conclusions,

(iii) there are no basement backups along the sewer line segment (A "sewer line segment" is defined herein as a contiguous manhole-to-manhole section of sewer pipe), and

(iv) the sewer line segment does not have chronic surcharges.

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e. Supplemental CCTV inspection shall not be required for sewer line segments televised on or after January 1, 2000 that document conditions as stated in Paragraph 5.b.

f. Previous CCTV inspection submitted to the Department for past work credit need not be transferred into a standard format.

6. **Sewer System Mapping.** By May 31, 2007, the Municipality shall submit to the Department an updated comprehensive sewer map of its sewer system directly or indirectly tributary to the ALCOSAN Sewer System, in accordance with the GIS Protocol set forth in Appendix A, and which is attached and fully incorporated by reference. The Municipality shall be given credit for previous sewer system mapping data if the data meets the requirements of Appendix A and is incorporated into the updated comprehensive sewer map as required in this Paragraph.

7. **Sewer System Deficiency Corrections.** By November 30, 2010, the Municipality shall:

a. complete the repair of all structurally deficient manholes and all defective siphons, pump stations, force mains, combined sewer regulators, diversion chambers and all outfall pipes and structures identified pursuant to Paragraphs 4 and/or 5.b(iv),

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- b. eliminate the conveyance of streams by the sewer system and receiving stream backflow into the sewer system, as appropriate, based on a cost-effectiveness analysis to be submitted for Department review and written approval,
- c. replace or repair all sewer lines identified during sewer line cleaning and internal inspection completed pursuant to Paragraphs 4 and 5 that restrict flows to the extent wet weather backups or overflows occur at locations other than permitted outfall structures; and
- d. within thirty (30) days of discovery, initiate repair of all significant structural defects identified pursuant to Paragraphs 4 and 5 such as, sewer lines with collapsed section(s), section(s) with crown and/or invert missing, dirt pipe (missing pipe), void in backfill, complete sewage flow blockage, and any other defect that the overseeing Professional Engineer determines to need immediate attention and complete such repairs within six (6) months of discovery.

8. **System Hydraulic Characterization.**

- a. By May 31, 2008, as part of its System Hydraulic Characterization, the Municipality shall complete a hydraulic capacity evaluation of its sewer system directly or indirectly tributary to the ALCOSAN Sewer System, signed and sealed by a Professional Engineer utilizing accepted engineering methods that, at a minimum, includes a hydraulic capacity analysis of each sewer line listed in Paragraph 5.c and inclusive of siphons, force mains, pump stations, regulator chambers, diversion chambers

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and outfall sewers; their dry weather flow; and their peak flow. This evaluation shall analyze the dry weather flow and hydraulic capacities, characterize the collection system's performance, provide data on the frequency, volume, and duration of combined sewer overflows on an annual basis and evaluate where opportunities exist for in-system storage and maximization of wet weather flows. Also, this evaluation may be performed simultaneously with the physical survey/visual inspection, sewer line cleaning, and internal inspection requirements contained herein. This data shall be documented in accordance with the Sewer Data Dictionary referenced in Appendix A. The Municipality shall submit to the Department the information the Municipality develops for the Municipality's System Hydraulic Characterization in the following manner:

- (i) information as to one-quarter of its sewer system by May 31, 2005;
- (ii) information as to one-half of its sewer system by May 31, 2006, and
- (iii) information as to three-quarters of its sewer system by May 31, 2007, and
- (iv) information as to all of its sewer system by May 31, 2008.

b. Previous System Hydraulic Characterization may be used to satisfy the requirements of this Paragraph if the following conditions are met:

- (i) the evaluation verifies the current hydraulic conditions;

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(ii) the evaluation was performed, and signed and sealed by a Professional Engineer utilizing accepted engineering methods; and

(iii) the results of the evaluation have the information necessary to characterize the hydraulic performance of the CSS under various precipitation/wet weather conditions.

9. **Implementation Schedule.**

a. The Municipality shall complete the actions required by Paragraphs 4 and 6 for at least one-third of its combined sewer system each twelve (12) months (i.e., one-third by May 31, 2005, two-thirds by May 31, 2006, and all by May 31, 2007).

b. The Municipality shall complete the actions required by Paragraph 5 for at least one-sixth of its combined sewer system each twelve (12) months (i.e. one-sixth by May 31, 2005; one-third by May 31, 2006; one-half by May 31, 2007; two-thirds by May 31, 2008, five-sixths by May 31, 2009, and all by May 31, 2010) beginning with sewers referenced in Paragraph 5.c.

c. The Municipality shall complete the actions required by Paragraph 5.c by November 30, 2006.

d. The Municipality shall complete the actions required by Paragraph 7 in at least one-fifth of its combined sewer system each twelve (12) months starting in the second year of the Phase I System Inventory and Characterization (i.e. one-fifth by

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November 30, 2006; two-fifths by November 30, 2007; three-fifths by November 30, 2008; four-fifths by November 30, 2009; and all by November 30, 2010).

e. The Municipality shall complete the actions required by Paragraph 8 in at least one-fourth of its combined sewer system each twelve (12) months (i.e. one-fourth by May 31, 2005; one-half by May 31, 2006; three-quarters by May 31, 2007; and all by May 31, 2008).

10. **Data Collection and Submission.** All data collected under the Phase I tasks shall be retained and shall be made available for submission upon request by the Department within fifteen (15) days after the end of each calendar quarter to the Department at the address listed in Paragraph 27. GIS data shall be stored and shall be submitted to the Department upon request in Environmental Systems Research Institute (ESRI)-compatible format, as specified in Paragraph 6. The CCTV data collected under Paragraph 5 shall be stored in digital format and shall be submitted to the Department upon request. All other data collected under Phase I tasks shall be formatted and stored in a relational database (Open Database Configuration compliant), such as Microsoft Access, Microsoft Excel or equivalent, and submitted to the Department upon request in a form equivalent to the example attached hereto as Appendix B. Flows shall be calculated and reported in million gallons per day (MGD), not cubic feet per second (CFS). Data shall be formatted to three (3) decimal places (x.xxx).

Phase II - Long Term Control Plan, Flow Monitoring and Planning

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11. **Retention of Professional Engineer.** The Municipality shall employ the services of a Professional Engineer to oversee the completion of all Phase II flow monitoring and planning tasks set forth in Paragraphs 12 through 15. All reports and submissions associated with the Phase II flow monitoring and planning tasks set forth in Paragraphs 12 through 15 shall be signed and sealed by the Professional Engineer.

12. **NMC.** On or before December 1, 2005, the Municipality shall submit to the Department appropriate documentation as set forth in Appendix C, demonstrating on a system-wide basis implementation of and compliance with the nine minimum technology-based controls (“NMC”) listed in the CSO Control Policy. Appendix C, which is attached hereto and incorporated fully by reference, lists the actions that, at a minimum, shall be included in the NMC Report.

13. **Flow Monitoring.**

a. On June 1, 2007, the Municipality shall begin a program of flow monitoring of its combined sewer system to determine the average dry and peak wet weather flows conveyed directly or indirectly from the municipality to the ALCOSAN sewer system. This flow monitoring shall include monitoring of flows from the CSOs listed in the Municipality’s PAG-6 as set forth in 13.e.(iii) below and shall provide protocol-compliant data for joint use by ALCOSAN and the Municipality in developing a LTCP and/or Wet Weather Plan (as hereinafter defined in Paragraph 14.b of this Consent Order and Agreement) with a range of practicable alternatives.

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b. Flow monitoring shall be performed as per the Allegheny County Health Department (“ACHD”) Flow Monitoring Protocol attached hereto and incorporated by reference as Appendix D and according to manufacturer’s specifications for the monitoring equipment utilized. Additionally, the flow monitoring program shall:

(i) Provide quality assured/quality controlled data suitable for system hydraulic characterization efforts, wet weather plan development, feasibility studies and associated alternative analyses or regulatory compliance reporting.

(ii) Result in data suitable for the quantification of: (a) base infiltration, (b) dry weather flow and (c) wet weather response.

c. The Municipality shall coordinate with ALCOSAN to develop a flow monitoring plan that complements any flow monitoring program implemented by ALCOSAN in accordance with the following:

(i) At least twenty-four (24) months prior to instituting flow monitoring, (i.e. by June 1, 2005), the Municipality shall submit a preliminary draft flow monitoring plan to ALCOSAN for comment.

(ii) Eighteen (18) months prior to instituting flow monitoring (i.e. by December 1, 2005), the Municipality shall have developed a Flow Monitoring Plan (as described in Appendix D) and shall submit it to

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ALCOSAN for comment. The Municipality shall share with ALCOSAN all available flow monitoring data.

d. Twelve (12) months prior to instituting flow monitoring (i.e. by June 1, 2006), the Municipality shall submit the Flow Monitoring Plan along with any comments by ALCOSAN to the Department for approval. In the event the Department does not approve the submittal, the Municipality shall make all corrections required by the Department and shall resubmit the flow monitoring plan to the Department in a time frame specified by the Department. In the event a dispute arises regarding the corrections to the flow monitoring plan required by the Department under this sub-paragraph, such dispute shall be subject to the Dispute Resolution provisions of this Consent Order and Agreement.

e. The Flow Monitoring Plan shall, at a minimum, include provisions for:

(i) The installation of flow monitors at locations that will document the average daily dry weather flows, the peak hourly dry weather flows, the peak hourly wet weather flows, the total sewage volume during each rainfall event and document and verify the dry and wet weather hydrographs in conformance with Paragraph 13.b.

(ii) Monitoring flow at all points of connection with municipalities and/or authorities whose sanitary and/or combined sewer

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systems are tributary to that of the Municipality and at all points of connection at which the sewer system of the Municipality becomes tributary to the sanitary and/or combined sewer system of another municipality or authority. Best professional judgment may be applied to determine points for flow monitoring where, for example, a collector sewer or trunk sewer follows or crisscrosses municipal and/or authority boundaries creating multiple points of connection between the same municipalities and/or authorities. In such cases, monitoring points shall be established such that flows are monitored where the sewer effectively first enters into the Municipality's sewer system from that of another municipality and/or authority and where the sewer finally leaves the Municipality's sewer system and flows into that of another municipality and/or authority.

(iii) Monitoring flow from all CSOs listed in the Municipality's PAG-6. If flow cannot feasibly be measured with one or more flow monitoring devices, the Municipality shall provide the date and estimate the time, duration, rate and amount of the CSO. For the purposes of this subparagraph, the availability of differential monitoring, in which flows upstream and downstream are monitored and the overflow rate is calculated as the difference, is a feasible flow monitoring alternative.

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(iv) If the Municipality chooses to evaluate the hydraulic performance of its combined sewer system directly from the flow monitoring data without modeling, the installation of flow monitors at locations that will support this approach.

(v) If the Municipality chooses to use modeling to evaluate the hydraulic performance of its combined sewer system, the installation of flow monitors at locations that will support the calibration and verification of the models.

(vi) Monitoring of the combined sewer system in a manner (A) to calibrate and verify any tools or methodology used to characterize system hydraulics, (B) to provide for development of a Wet Weather Plan, as defined in Paragraph 14.b, (C) to develop a Feasibility Study, as defined in Paragraph 14.c, with associated alternative analyses and (D) to quantify CSO occurrences for future compliance monitoring.

(vii) Coordinating flow monitoring activities required by this Paragraph 13 with all municipalities and/or authorities whose sanitary and/or combined sewer systems are either tributary to, or receive flows from, that of the Municipality.

(viii) Coordinating flow monitoring activities required by this Paragraph 13 with other municipalities and/or authorities so that monitoring

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within a given sewershed is conducted at the same time within all municipalities in that sewershed, and so that flows are measured with compatible devices and protocol-compliant methodology. The Department's approval of the Municipality's Flow Monitoring Plan which proposes a coordinated sewershed-based approach may be contingent upon adequate demonstration and documentation of the coordination of the flow monitoring program with the other municipalities in the sewershed.

f. The flow monitoring program shall be scheduled during a period of sufficient time to account for seasonality effects on the combined sewer system flows. This shall include flow monitoring for a minimum duration of one (1) year, which shall have a total annual rainfall volume of no less than 30.9 inches and which shall include at least two (2) significant rainfall events, excluding any contribution from snow melt, equal to or exceeding one (1) inch of rainfall in a twenty-four (24) hour period. If during the monitoring period the rainfall volume exceeds 30.9 inches and the two (2) significant rainfall events occur in less than one (1) year, the monitoring program may be terminated when such conditions have been met. If during that one year, the total rainfall volume does not equal or exceed 30.9 inches and two such significant rainfall events do not occur, monitoring shall be extended for (i) an additional nine (9) months, or (ii) until such conditions have been met, whichever occurs first.

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g. Within 120 days of completion of the flow monitoring program, the Municipality shall submit to the Department a summary and report of the flow monitoring conducted pursuant to Paragraph 13.e above. The Municipality shall also submit all flow monitoring data to ALCOSAN, the Department and/or the municipalities and authorities within the sewershed upon their written requests.

h. Prior Flow Monitoring Data. If (i) the Municipality has demonstrated that the service area tributary to the flow monitor has not changed appreciably since data was collected from the site and (ii) Quality Assurance/Quality Control documentation consistent with Appendix D and this Paragraph 13 exists; data from protocol-compliant flow monitoring (as described in Appendix D) conducted prior to June 1, 2007, but after January 1, 1997 may be used: (A) to inform and refine development of the Municipality's flow monitoring plan with respect to the total number of meters and meter locations; or (B) to supplement new data collected under the regional flow monitoring program required by Paragraph 13.

To obtain approval for use of previous flow monitoring data, the Professional Engineer must submit to the Department a summary and data assessment report of such flow monitoring and data as a supplement to the Municipality's proposed flow monitoring plan be submitted, under Paragraph 13.d. The supplement must provide documentation that the previous flow monitoring and data are protocol-compliant, consistent with Appendix D. The request for approval for use of previous flow monitoring data must include a

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signed certification statement as set forth in Paragraph 20 of this Consent Order and Agreement.

14. Feasibility Study in Conjunction with an ALCOSAN Enforcement Order.

a. For purposes of this Consent Order and Agreement, the term “Enforcement Order” shall mean a Consent Decree or Consent Order and Agreement, or an order issued by a court or tribunal of competent jurisdiction that requires ALCOSAN to develop and implement a regional Wet Weather Plan and/or a LTCP to eliminate SSOs and to provide CSO control in conformance with Federal, State and local laws, and with NPDES Permit requirements. The Enforcement Order must have resulted from a lawsuit or administrative action initiated by the United States of America, Environmental Protection Agency.

b. For purposes of this Consent Order and Agreement, the term “Wet Weather Plan” includes any plan submitted by ALCOSAN to EPA and/or DEP, which incorporates the requirements of a LTCP and/or addresses other wet weather problems in Allegheny County such as SSOs.

c. If on or before July 1, 2008, ALCOSAN is subject to an Enforcement Order, as defined above, then the Municipality shall, in accordance with the schedule set forth in the Enforcement Order, participate with and cooperate with ALCOSAN in the development of the Wet Weather Plan and/or LTCP required by the

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Enforcement Order. Such participation and cooperation by the Municipality shall include, but not be limited to:

(i) establishing with ALCOSAN the quantity and rate of sewage flow from the Municipality that ALCOSAN will be able to retain, store, convey and treat upon implementation of a Wet Weather Plan and/or LTCP; and

(ii) developing a feasibility study with an alternatives analysis evaluating the Municipality's options to construct sewage facilities necessary to retain, store, convey and treat any sewage flows from the Municipality including, but not limited to, any sewage flows that: (A) ALCOSAN cannot accommodate or (B) ALCOSAN could accommodate, but which the Municipality decides to address in a separate manner ("Feasibility Study").

d. The Municipality shall submit to the Department the Feasibility Study within six (6) months after ALCOSAN submits a Wet Weather Plan and/or LTCP to EPA and/or the Department as required by the Enforcement Order. The Feasibility Study shall evaluate a range of alternatives and estimate the cost and time necessary to implement or construct each alternative.

15. **Feasibility Study in Conjunction with ALCOSAN in the Absence of an ALCOSAN Enforcement Order.** In the event that ALCOSAN is not subject to an

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Enforcement Order by July 1, 2008, the Municipality shall, commencing on August 1, 2008 and completing on May 31, 2010:

a. participate with ALCOSAN in the development of a LTCP and/or Wet Weather Plan that will resolve the regional wet weather sewer overflow problem by eliminating SSOs and providing for CSO control in conformance with Federal, State and local law and with NPDES Permit requirements;

b. establish with ALCOSAN the quantity and rate of sewage flow from the Municipality that ALCOSAN will be able to retain, store, convey and treat; and

c. on or before May 31, 2010, submit to the Department, for approval, a schedule for preparation by the Municipality of a LTCP, which schedule, upon written approval by the Department, shall be incorporated as an enforceable provision of this Consent Order and Agreement.

16. **Effect of Consent Order and Agreement.** Notwithstanding any other provisions of this Consent Order and Agreement, the parties acknowledge that the Municipality's entry into this Consent Order and Agreement is not intended to, and does not, supersede or alter the terms and/or obligations of (a) any existing agreements between the Municipality and ALCOSAN and (b) any existing agreements between or among municipalities relating to sewage. In signing this Consent Order and Agreement, the Municipality specifically reserves and does not waive any rights under the foregoing

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agreements. In addition, this Consent Order and Agreement shall not be construed as to afford third party beneficiary status to ALCOSAN, its successors and assigns.

17. **Joint Municipal Scheduling.** The Municipality can fulfill some or all of its obligations by entering into a legally binding agreement with one or more municipalities or authorities within a common sewershed, for the purpose of regional project management. In order to complete the tasks in Phase I and Phase II, the Municipality may submit to the Department, for its approval, a modified schedule for completing these tasks. The modified schedule need not specify an equal distribution of these tasks for each municipality within a year; however, on a total regional project basis, the modified schedule completion dates shall not exceed the original completion dates. Each municipality or authority entering into the legally binding agreement shall cooperate with one another to assure the completion of all of these tasks within all of the municipalities represented within the legally binding agreement. Nothing in this Consent Order and Agreement is intended nor shall it be interpreted to prohibit any municipality or authority who enters into the above-referenced joint agreement from seeking and/or obtaining indemnification from any other municipality or authority that is party to the joint agreement. In addition, nothing in this Consent Order and Agreement is intended nor shall it be interpreted to prohibit or preclude any municipality or authority who enters into the above-referenced joint agreement from seeking or obtaining contribution and/or indemnification from any person or entity.

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18. **Tap Control Plans.** The Municipality, with regard to any Tap Control Plan in place as part of a Department-mandated Corrective Action Plan (hereinafter “CAP”) shall:

a. self-regulate connections to portions of its sewer system tributary to ALCOSAN so as to not exacerbate the existing hydraulic overload in its sewer system and/or in any sewer systems into which its sewer system discharges. Self-regulation can continue as long as the Municipality is in compliance with this Consent Order and Agreement. The Municipality’s compliance with this Consent Order and Agreement shall constitute compliance with any current CAP for portions of its sewer system tributary to ALCOSAN, and the Department will not impose any future restrictions on tap-ins for portions of its sewer system tributary to ALCOSAN as long as the Municipality is in compliance with this Consent Order and Agreement.

b. in areas with known basement backups of sewage contributed to by the Municipality sewer system, provide for interim protection against basement backups. Methods of protection shall include, but not be limited to, the installation of municipally maintained backflow preventers and/or pressurized laterals.

c. notwithstanding any other provision or term of this Consent Order and Agreement, submit to the ACHD and the Department all necessary planning modules and revisions for any new connections required by Chapter 71 of DEP’s rules and regulations, 25 Pa. Code §§ 71.1, et seq.

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19. **Additional Information.** If the Department requires additional information for any submittal pursuant to this Consent Order and Agreement, NPDES Permit and/or the laws and regulations of the Commonwealth of Pennsylvania or the United States, the Municipality shall provide such additional information to the Department within fifteen (15) days unless a longer time is specified in the Department's notice.

20. **Semi-Annual Progress Reports.** The Municipality shall submit semi-annual written reports to the Department of its efforts to comply with the obligations set forth in Paragraphs 3 through 15 and 17 and 18 above until those obligations are completed. Said report shall be sent to the address in Paragraph 27 and submitted to the Department no later than the 31st day of January and July of each year. The first semi-annual progress report shall be due by July 31, 2004 and shall cover the period of January 1 through June 30, 2004. The first semi-annual progress report shall also include a detailed list of all prior work that meets the criteria set forth in Paragraphs 4, 5, 6 and 8 for credit toward compliance with the Municipality's obligations under this Consent Order and Agreement. In addition to the detailed list of prior work, the Municipality shall also submit a "Credit for Past Work Form" signed by a municipal representative. The Credit for Past Work Form is attached hereto as Appendix F and must be signed, with the following certification:

I certify under the penalty of law that I believe the information provided in this document is true, accurate, and

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complete. I certify under penalty of law that I am familiar with the information submitted in this document and all attached documents and, based on my inquiry of those individuals immediately responsible for obtaining the information, believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information.

Within sixteen (16) months of the submittal, the Department will issue a decision accepting or rejecting the Municipality's claim for past work. In the event that a dispute should arise as to the Department's decision in this matter, that shall be subject to the Dispute Resolution provision of this Consent Order and Agreement. If the Department fails to make a decision concerning the credit for past work within sixteen (16) months, the Municipality's request for Credit for Past Work will be deemed approved provided that the information in the Municipality's submittal for credit for past work was not false. If during the term of this Consent Order and Agreement, even after the sixteen (16) month period from submittal, the Department discovers that the Municipality submitted materially false information, the deemed approval provision of this Paragraph 20 will be null and void and of no effect as to the affected task(s) (i.e. Physical Survey/Visual Inspection, CCTV, Sewer System Mapping or System Hydraulic Characterization) and the Municipality shall be responsible for fully complying with all the requirements of the Paragraph(s) of this Consent Order and Agreement that required such task(s) without receiving credit for any past work for such task(s).

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20. **Record Keeping.**

a. The Municipality shall maintain copies of any records, reports, plans, data, permits and documents, related to or developed pursuant to this Consent Order and Agreement, including any underlying research and data, for a period of five (5) years beyond the termination date of this Consent Order and Agreement. The Municipality shall require any independent contractor, employee, agent or officer implementing any portion of this Consent Order and Agreement to also retain such materials for a period of five (5) years beyond the termination date of this Consent Order and Agreement. The Municipality shall submit such supporting documents to the Department upon request.

b. The Municipality shall notify the Department ninety (90) days prior to disposal or destruction of such records at the end of this five (5) year period and shall, upon the Department's request, deliver such records to the Department prior to such disposal or destruction.

21. **Stipulated Civil Penalties.**

a. In the event the Municipality fails to comply in a timely manner with any term or provision of this Consent Order and Agreement, the Municipality shall be in violation of this Consent Order and Agreement and, in addition to other applicable remedies, shall pay a civil penalty per day for each violation as follows:

- (i) Days 1 through 14 of each violation - \$100 per day per violation;

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(ii) Days 15 through 30 of each violation - \$200 per day per violation;

(iii) Days 31 through 60 of each violation - \$300 per day per violation; and

(iv) Days 61 and beyond of each violation - \$500 per day per violation.

b. Stipulated civil penalty payments shall be payable monthly on or before the fifteenth day of each succeeding month. The payment shall be made by certified check or the like, made payable to the “Commonwealth of Pennsylvania, Clean Water Fund” and shall be sent to the address in Paragraph 27.

c. Any payment under this Paragraph shall neither waive the Municipality’s duty to meet its obligations under this Consent Order and Agreement nor preclude the Department from commencing an action to compel the Municipality’s compliance with the terms and conditions of this Consent Order and Agreement. The payment resolves only the Municipality’s liability for civil penalties arising from the violation of this Consent Order and Agreement for which the payment is made.

d. Stipulated civil penalties shall be due automatically and without notice.

23. **Additional Remedies.**

a. In the event the Municipality fails to comply with any provision of this Consent Order and Agreement, the Department may, in addition to the remedies prescribed

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herein, pursue any remedy available for a violation of an order of the Department, including an action to enforce this Consent Order and Agreement.

b. The remedies provided by this Paragraph and Paragraph 21 (Stipulated Civil Penalties) are cumulative and the exercise of one does not preclude the exercise of any other. The failure of the Department to pursue any remedy shall not be deemed to be a waiver of that remedy. The payment of a stipulated civil penalty, however, shall preclude the Department any further assessment of civil penalties for the violation for which the stipulated civil penalty is paid.

24. **Reservation of Rights.** The Department reserves the right to require additional measures to achieve compliance with applicable law. The Municipality reserves the right to challenge any action which the Department may take to require those measures.

25. **Liability of the Municipality.** The Municipality shall be liable for any violations of the Consent Order and Agreement, including those caused by, contributed to, or allowed by its officers, agents, employees, or contractors. The Municipality also shall be liable for any violation of this Consent Order and Agreement caused by, contributed to, or allowed by its successors and assigns unless the Department terminates the Municipality's duties and obligations under this Consent Order and Agreement pursuant to Paragraph 26.c below.

26. **Transfer of Site.**

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a. The duties and obligations under this Consent Order and Agreement shall not be modified, diminished, terminated or otherwise altered by the transfer of any legal or equitable interest in its Combined Sewer System or any part thereof unless agreed to by the Department as set forth in sub-Paragraph 26.c. below.

b. If the Municipality intends to transfer any legal or equitable interest in its Combined Sewer System which is affected by this Consent Order and Agreement, the Municipality shall serve a copy of this Consent Order and Agreement upon the prospective transferee of the legal and equitable interest at least thirty (30) days prior to the contemplated transfer and shall simultaneously inform the Regional Office of the Department of such intent.

c. The Department in its reasonable discretion may agree to modify or terminate the Municipality's duties and obligations under this Consent Order and Agreement upon transfer of the Combined Sewer System to an entity that agrees to and is capable of complying with the terms and conditions of this Consent Order and Agreement. In the event a dispute should arise as to the Department's decision in this matter, that shall be subject to the Dispute Resolution provision of this Consent Order and Agreement.

27. **Correspondence with Department.** All correspondence with the Department concerning this Consent Order and Agreement shall be addressed to:

CSO Coordinator
400 Waterfront Drive
Pittsburgh, PA 15222-4745
Phone: 412-442-4000

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Fax: 412-442-4328

28. **Correspondence with the Municipality.** All correspondence with the Municipality concerning this Consent Order and Agreement shall be addressed to:

«ContactName»
«ContactTitle»
«StreetAddress1» «StreetAddress2»
«CityPaZip»
Phone: «ContactPhone»
Fax: «ContactFax»

The Municipality shall notify the Department whenever there is a change in the contact person's name, title, or address. Service of any notice or any legal process for any purpose under this Consent Order and Agreement, including its enforcement, may be made by mailing a copy by first class mail to the above address.

29. **Force Majeure.**

a. In the event that the Municipality is prevented from complying in a timely manner with any time limit imposed in this Consent Order and Agreement solely because of a strike, fire, flood, act of God, or other circumstances beyond the Municipality's control and which the Municipality, by the exercise of all reasonable diligence, is unable to prevent, then the Municipality may petition the Department for an extension of time. An increase in the cost of performing the obligations set forth in this Consent Order and Agreement shall not constitute circumstances beyond the Municipality's control. The Municipality's economic inability to comply with any of the

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obligations of this Consent Order and Agreement shall not be grounds for any extension of time.

b. The Municipality shall only be entitled to the benefits of this Paragraph if it notifies the Department within five (5) working days by telephone and within ten (10) working days in writing of the date it becomes aware or reasonably should have become aware of the event impeding performance. The written submission shall include all necessary documentation, as well as a notarized affidavit from an authorized individual specifying the reasons for the delay, the expected duration of the delay, and the efforts which have been made and are being made by the Municipality to mitigate the effects of the event and to minimize the length of the delay. The initial written submission may be supplemented within 10 working days of its submission. The Municipality's failure to comply with the requirements of this Paragraph specifically and in a timely fashion shall render this Paragraph null and of no effect as to the particular incident involved.

c. Commercial Unavailability. The Municipality shall be solely responsible for compliance with any deadline or the performance of any work described in this Consent Order and Agreement that requires the acquisition and installation of equipment or contracting with a vendor. If it appears that the commercial unavailability of equipment or vendor may delay the Municipality's performance of work according to the applicable implementation schedule, the Municipality shall notify the Department in accordance with the requirements of Paragraph 29.b of any such delays as soon as the Municipality

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reasonably concludes that the delay could affect its ability to comply with the implementation schedule. The Municipality shall propose a modification to the applicable schedule of implementation set forth herein. Prior to the notice required by this Paragraph, the Municipality must have undertaken reasonable efforts to obtain such equipment and/or contacted a reasonable number of vendors and obtained a written representation that the equipment and/or the vendor(s) are in fact commercially unavailable. In the notice, the Municipality shall reference this Paragraph, identify the milestone date(s) it contends it will not be able to meet, provide the Department with written correspondence to the vendor identifying efforts made to secure the equipment and/or services of the vendor, and describe the specific efforts the Municipality has taken and will continue to take to find such equipment or vendor. The Municipality may propose a modified schedule or modification of other requirements of this Consent Order and Agreement to address such commercial unavailability.

d. The Department will decide whether to grant all or part of the extension requested on the basis of all documentation submitted by the Municipality and other information available to the Department. In any subsequent litigation, the Name shall have the burden of proving that the Department's refusal to grant the requested extension was an abuse of discretion based upon the information then available to it.

30. **Dispute Resolution.**

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a. The Municipality may initiate dispute resolution under this Paragraph in response to any decision of the Department under this Consent Order and Agreement involving the following matters: (i) the modification or disapproval of any flow monitoring plan submitted by the Municipality to the Department pursuant to Paragraph 13; (ii) a dispute regarding the NMC Report pursuant to Paragraph 12; (iii) the Department's disapproval of the transfer of Municipality's duties and obligations hereunder pursuant to Paragraph 26; and (iv) the Department's modification or disapproval of prior work completed by the Municipality for which it desires credit toward its compliance with Paragraphs 4, 5, 6, and 8 of this Consent Order and Agreement; and (v) the Department's disapproval of a schedule submitted under Paragraph 15.c. The Municipality shall bear the burden of proving that the disputed action on the part of the Department was an abuse of discretion based upon the information then available to it.

b. To initiate dispute resolution, the Municipality shall provide written notice to the Water Management Program Manager of the Department's Southwest Regional Office (or equivalent position) (the "Manager") within ten (10) days of receiving the Department's decision. The Municipality shall have an additional ten (10) days to provide the Department with a written list of objections to the decision in dispute (the "Statement of Position"). The Department shall have twenty (20) days to provide its Statement of Position.

c. Within twenty (20) days following receipt of the Department's Statement of Position, the Municipality's representative(s) and the Manager shall meet and

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confer in an attempt to resolve the dispute. In the event the parties are unable to resolve the dispute within this period, the Manager will issue a decision concerning the dispute. Either party may request a review of the Manager's decision by the Regional Director of the Department's Southwest Regional Office (the "Regional Director") within ten (10) days of its receipt of the Manager's decision. The Statements of Position shall be provided to the Regional Director to issue a decision regarding the dispute.

(i) For matters described in subparts a. (i) and (ii) of this Paragraph, the Regional Director's decision shall be a decision under this Consent Order and Agreement subject to Paragraph 36.

(ii) For matters described in subparts a. (iii), (iv) and (v) of this Paragraph, the Regional Director's decision shall constitute a final action under 25 Pa. Code § 1021.2, and Municipality shall have the right to an appeal to the Environmental Hearing Board ("EHB"). The parties agree to jointly request the EHB to expedite any proceedings related to an appeal under this Paragraph.

d. During the pendency of the dispute resolution process set forth above, the Municipality shall not be obligated to perform any work which is the subject of or which performance is directly dependent on the resolution of the dispute. All other obligations and activities shall be completed in accordance with the terms of the Consent Order and Agreement. Stipulated civil penalties with respect to the disputed matter shall continue to accrue from the first day of noncompliance with any applicable provision of this Consent

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Order and Agreement, but payment shall be stayed pending resolution of the dispute as provided in this Paragraph. In the event the Municipality does not prevail on the disputed issue, stipulated penalties shall be paid as provided in Paragraph 21 (Stipulated Civil Penalties). In the event the Municipality prevails on the disputed issue, stipulated civil penalties shall not be due and owing.

e. Any time period for dispute resolution set forth herein may be extended by written agreement of the parties.

31. **Severability.** The paragraphs of this Consent Order and Agreement shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

32. **Entire Agreement.** This Consent Order and Agreement shall constitute the entire integrated agreement of the parties. No prior or contemporaneous communications or prior drafts shall be relevant or admissible for purposes of determining the meaning or intent of any provisions herein in any litigation or any other proceeding.

33. **Attorney Fees.** The parties shall bear their respective attorney fees, expenses and other costs in the prosecution or defense of this matter or any related matters, arising prior to execution of this Consent Order and Agreement.

34. **Modifications.** No changes, additions, modifications, or amendments of this Consent Order and Agreement shall be effective unless they are set out in writing and signed by the parties hereto.

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35. **Titles.** A title used at the beginning of any paragraph of this Consent Order and Agreement may be used to aid in the construction of that paragraph, but shall not be treated as controlling.

36. **Decisions under Consent Order and Agreement.** Except as provided in Paragraph 30.c(ii), any decision which the Department makes under the provisions of this Consent Order and Agreement is intended to be neither a final action under 25 Pa. Code § 1021.2, nor an Adjudication under 2 Pa.C.S. § 101. Any objection which the Municipality may have to the decision will be preserved until the Department enforces this Consent Order and Agreement.

37. **Termination.** The obligations of this Consent Order and Agreement shall terminate on June 30, 2012, or when the Department determines that the Municipality has complied with the terms and conditions of this Consent Order and Agreement, whichever occurs first.

38. **Resolution.** Attached hereto and incorporated by reference as Appendix G is a resolution of the Municipality authorizing its signatories below to enter into this Consent Order and Agreement on its behalf.

IN WITNESS WHEREOF, the parties hereto have caused this Consent Order and Agreement to be executed by their duly authorized representatives. The undersigned representatives of the Municipality certify under penalty of law, as provided by 18 Pa.C.S. §

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4904, that they are authorized to execute this Consent Order and Agreement on behalf of the Municipality; that the Municipality consents to the entry of this Consent Order and Agreement as a final ORDER of the Department; and that the Municipality hereby knowingly waives its rights to appeal this Consent Order and Agreement and to challenge its content or validity, which rights may be available under Section 4 of the Environmental Hearing Board Act, the Act of July 13, 1988, P.L. 530, No. 1988-94, 35 P.S. § 7514; the Administrative Agency Law, 2 Pa.C.S. § 103(a) and Chapters 5A and 7A; or any other provision of law. Signature by the Municipality’s attorney certifies only that the agreement has been signed after consulting with counsel.

FOR THE «OwnerOperator»:

FOR THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION:

Name
Title

Name
Title

Name
Title

Name
Title

Name
Attorney for the «OwnerOperator»

Name
Assistant Counsel

Appendix A

GIS PROTOCOL

INTRODUCTION

The physical inspections required in the Consent Order and Agreement are intended to provide four categories of information for inclusion on comprehensive sewer maps:

- General information on the configuration of sewer manholes and their connecting pipes to provide field verification for sewer system mapping
- General information on the condition of sewer manholes and pipes to identify any non-structural operation and maintenance (O&M) needs such as, but not limited to, accumulated sediment and debris deposits, shifted manhole frames, or unsafe manhole steps
- General information regarding sewage pump stations; their configuration, operation, hydraulic capacities, and back-up power sources; force mains; inverted siphons and their condition
- Identify defects related to structural stability, excessive infiltration or inflow, evidence of present or prior surcharging or overflows, hydraulic restrictions, and any other conditions that would compromise and/or diminish the capacity of the sanitary and/or combined sewer system

In order for the Municipality to create an updated, comprehensive sewer map of the sanitary and/or combined sewers within its sewer system, directly or indirectly tributary to the ALCOSAN Sewer System, the Municipality may build upon the base sewer map that has been created by the 3 Rivers Wet Weather Demonstration Program (3RWWDP), or a comparable base sewer map. The comprehensive sewer map shall be submitted in Environmental Systems Research Institute (ESRI)-compatible format, and shall indicate, at a minimum, the location of the sewer lines, the direction of flow, the size of the sewer lines, the sewer line material, the locations where flows from other municipalities enter the sewer system, the field-verified location of manholes and the location of catch basins connected to the sewer system

(identified by a comprehensive numbering or lettering system), the location of pump stations, force mains, and siphons, and the location of streams or drainage ways tributary to the sewers. These maps shall be created using Geographic Information System (GIS) mapping and verified using Global Positioning System (GPS) ground monitoring or land surveying methods. The GIS mapping shall include the use of the specified attribute tables, data dictionary, etc., defined in this protocol. The maps must include street names, municipal boundaries, and streams. This base data is available from the Allegheny County Division of Computer Services from Kathryn Ross, at 412-350-5126. Additionally, maps should include points of interconnection with other municipal or private sewer systems and any known points of sewer overflow including combined sewer overflows and sanitary sewer overflows (SSOs), including manhole overflows and basement back-ups from the public sewer. The investigations conducted in preparing these maps shall include the location of any buried or lost manholes through metal detection, CCTV or excavation, the identification of all unsewered residential areas within the sewer system and the associated estimated population of these unsewered residential areas.

PART 1: TECHNICAL REQUIREMENTS

- A. All significant sewer system structures such as manholes, regulating chambers, SSO outfalls, pump stations, or other appurtenances should be located to a minimum horizontal accuracy of three (3) feet. Coordinates should be recorded as “real coordinates” in State Plane Pennsylvania South NAD83 or WGS84. Vertical survey information should reference the NGVD29 datum. A spatial data projection file should be included in ESRI format noting the projection and datum used.
- B. Structure locations may be determined using the following alternative methods:
 - Existing “as-built” sewer system maps, as long as the maps have been field-verified, digitized, and rectified to the existing GIS base maps, or

- Using a GPS where conditions allow, or
 - Using traditional land surveying methods
- C. In some geographic areas traditional surveying methods may be more productive than using GPS and, in some cases, a combination of above methods may be required. With regard to GPS data collection, additional information such as the number of readings used to define a point; standard deviation of values and the type of data correction should be recorded. The type of data correction can either be real time, post process or raw. The type of equipment and operator should also be included. Adherence to this minimum acceptable requirement will ensure that field verified data throughout the area are consistent.
- D. For most of the Municipality's sewer system, the precise elevations of manhole covers and manhole inverts are not required. However, surveyed manhole inverts, rim elevations, dam heights, overflow pipe elevations and slopes are required to a minimum vertical accuracy of 0.10 feet for regulator structures, structures that directly affect hydraulic performance and SSO and/or CSO outfalls. Manhole inverts and rim elevations of all accessible manhole structures on trunks sewers shall also be surveyed to a minimum vertical accuracy of 0.10 feet when:
- The sewer pipe has a diameter of 24 inches or greater, or
 - The sewer pipe is connected to an ALCOSAN interceptor, in which case survey data will be required for a distance of 600 linear feet above the point of connection with ALCOSAN, or
 - The sewer pipe segment needs more precise invert and slope data to meet the objectives of the hydraulic capacity evaluations.

If the data referenced in this Paragraph has been completed by ALCOSAN, the Municipality is not required to duplicate this work, but must obtain the necessary documentation from ALCOSAN.

- E. Digital data for basic sewer configuration, such as manhole locations, pipe sizes and materials, and manhole depths, will be entered into attribute tables within the 3RWWDP regional GIS system.

PART 2: GIS ATTRIBUTE DATA

The 3 Rivers Wet Weather Demonstration Program (3RWWDP) has created a GIS base sewer map from the information provided by the communities and/or municipal engineering firms. Using existing municipal GIS mapping, computer drawn maps (CAD), or paper maps converted by heads up digitizing, standardized system base maps were created. All of these individual maps were used to build a comprehensive, though not comprehensively field verified, system-wide map.

This protocol will serve as a guide for the creation of an updated GIS sewer map. It is critical that all municipalities use standard field names and formats so the GIS data collected from each municipality/authority can be easily and cost-effectively integrated to form a complete system-wide map for the ALCOSAN service area.

The Data Dictionary defines the most common fields and field values. While the Data Dictionary does not include all possible fields or field values, the primary aspects of mapping a sewer system are covered. The primary aspects that are covered in the dictionary relate to the physical description and location of the appurtenances and may not be complete enough for an evaluation. If additional fields must be added, for example the manhole inspection reports, then those fields or values should be described in the metadata, the documentation accompanying the GIS data.

2.01 GIS Sewer Data Dictionary: The most recent version of the Sewer Data Dictionary which is in the process of being developed and maintained by Allegheny County.

PART 3: METADATA

Metadata documentation should be compiled and maintained. Metadata documentation should explain the accuracy, source, projection and datum, update schedule, etc., for the comprehensive GIS mapping. Metadata should conform to the standards developed by PaMagic, an organization developing statewide standards, or comparable metadata standards based on the Federal Geographic Data Committee's (FGDC) metadata standard. The entire Metadata Workbook can be found at www.fgdc.gov/metadata.

PART 4: REVIEW AND ACCEPTANCE CRITERIA

All sewer-mapping products generated to be in compliance with this Consent Order and Agreement shall be submitted to:

Pennsylvania Department of Environmental Protection
Southwest Regional Office
Attn: Water Management Program
400 Waterfront Drive
Pittsburgh, PA 15222-4745

Data submissions should be made on CD/DVD ROM and should be accompanied by a cover letter describing the contents of the disk. The data format should be consistent with the specifications outlined in the GIS protocols, i.e. ESRI compatible format. The data files should include projection files and metadata files.

Should the submitted data fail to meet the requirements of the GIS protocols, the data will be returned to the Municipality with a cover letter indicating the deficiencies along with a description of the necessary corrections and/or additions.

Appendix B- Relational Database Example Sewer Segments

Pipe Segment (1)	Pipe Size (in)	Cleaned (date)	TV (date)	Deficiency Noted (May use NASSCO code identification)	Deficiency Corrected (Y/N)	Hydraulic Design Capacity (mgd)	Tributary Population (EDU)	Expected Dry Weather Flow (mgd)	Design Peak Flow (mgd)
1-2	24	1/14/03	1/14/03	Collapsed Pipe	Y		200		
2-3	24	1/14/03	1/14/03				200		
3-4	24	1/14/03	1/14/03				200		
4-5	24	1/14/03	1/14/03				200		
5-6	24	1/14/03	1/14/03				130		
6-7	10	1/14/03	1/14/03				130		
7-8	10	1/14/03	1/14/03	Deformed Pipe	Y		130		
8-9	10						130		
9-10	10						130		
10-11	10						130		
11-12	10						130		
12-13	10						130		
13-14	8						100		
14-15	8						100		
15-16	8	1/22/03		Fractured Pipe			100		
16-17	8						100		
17-18	8						100		
18-19	8						100		
19-20	8						100		
20-21	8						100		
21-22	8						100		

(1) Pipe Segment must be identical to the naming convention used in the GIS Map. Some municipalities identify the pipe segment from upstream manhole to downstream manhole (1-2).

Appendix B- Relational Database Example Sewer Structures

Type of Structure	Structure Identification (1)	Field Verified (Y/N)	Deficiency Noted (May use NASSCO code identification)	Deficiency Corrected (Y/N)	<u>Notes</u>
MH	1	Y	Missing Brick	Y	
MH	2	Y			
MH	3	Y			
MH	4	Y			
MH	5	Y			
MH	6	Y			
MH	7	N	Not located	N	
MH	8	Y			
MH	9	Y			
MH	10	Y			
Siphon	32A	Y	Blocked Barrel	Y	
Siphon	32B	Y	Blocked Barrel	Y	
MH	11	Y			
MH	12	Y			
MH	13	Y	Fractured Rim	Y	
MH	14	Y			
MH	15	Y			
MH	16	Y			
Pump Station	Jones	Y	Stand-by Pump not working	N	
MH	17	Y			
MH	18	Y			

(1) Structure Identification must be identical to the naming convention used in your GIS map

APPENDIX C

The Municipality shall submit the Nine Minimum Controls (“NMC”) Report required by Paragraph 12 of this Consent Order and Agreement in a manner consistent with EPA guidance, Combined Sewer Overflows, Guidance for Nine Minimum Controls, 832-B-95-003, May 1995. The actions taken and documented in the NMC Report shall include, at a minimum:

NMC #1 - Proper Operation and Maintenance (“O & M”)

- a. Identification of staff and resources necessary to implement an adequate O & M program
- b. Schedules for preventative and corrective maintenance
- c. Response to non-routine maintenance and emergency situations
- d. Systematic training of O & M personnel
- e. Periodic review and update of O & M program

NMC #2 - Maximum Use of the Collection System for Storage

- a. Regular inspection of the municipal collector sewer system and removal of accumulated debris and solids
- b. Regular inspection of flap gates to prevent backflow into the system
- c. Identification and utilization of opportunities for additional storage within the system, upstream storm water detention and reduction of inflow (see, e.g., Combined Sewer Overflow Technology Fact Sheet, Inflow Reduction, 832-F-99-035, EPA, September 1999).

NMC #3 - Modification of the Pretreatment Program

- a. Coordination with ALCOSAN to identify potentially significant non-industrial users
- b. Maintenance of inventories of significant non-domestic facilities and assessment of the potential impacts of those non-domestic discharges on CSOs
- c. Coordination with ALCOSAN unusual flows or conditions in the municipal sewer system

APPENDIX C

NMC #4 - Maximizing Flow to the Treatment Plant

- a. Maximization of flows to ALCOSAN owned and/or operated sewers through regular cleaning of collector sewers, trunk sewers and catch basins as well as maintenance of municipal regulators and flap gates.
- b. Performance of hydraulic assessments and modifications of the municipal collection systems as needed to optimize the hydraulic performance of the system.
- c. Provision of backflow prevention for the CSOs owned and/or operated by the municipality

NMC #5 - Eliminate Chronic Dry Weather Overflows

- a. Performance of regular inspections, preventive and corrective maintenance to prevent dry weather overflows
- b. Inspection of regulator structures owned and/or operated by the municipality to promptly identify and mitigate storm induced overflows after storm events
- c. Assessment to identification of chronic dry overflows and development of a plan to eliminate the same

NMC #6 - Control of Solids and Floatable Materials

- a. Performance of catch basin cleaning and sewer flushing on scheduled basis
- b. Performance of field investigations to verify that solids and floatables control mechanisms are in place and in proper working order
- c. Modification of existing catch basins as necessary to trap solids and floatables
- d. Performance of street sweeping on a regularly scheduled basis
- e. Performance of community awareness programs to address street litter
- f. Enforcement municipal sewer use, litter and refuse disposal measures
- g. Placement and maintenance of trash receptacles in areas where the public congregates to minimize street litter

APPENDIX C

NMC #7 - Pollution Prevention Programs

- a. Maintenance of public trash receptacles at key locations along streets, parks and business districts
- b. Provision of support mechanisms for the collection of household hazardous wastes
- c. Provision of public education (re: source control, recycling, etc.) and stenciling of storm drains
- d. Cooperation with ALCOSAN to begin and maintain public recycling, proper disposal of wastes and proper application of fertilizer

NMC #8 - Public Notification of Overflow Occurrences and Impacts

- a. Assistance and supplementation of ALCOSAN and ACHD efforts to educate the public, including through the River Recreation Advisory Program and the hotline
- b. Provision of a sign, 2 feet by 4 feet in size with red lettering on a yellow background, at each CSO owned and/or operated by the municipality. Each sign shall bear the following language: “These waters receive sewage from sewer overflows during rain events. Please avoid contact with these waters at this time. For more information please call [insert appropriate municipality contact number].”
- c. Cooperation with ALCOSAN in its efforts to post the same sign at any CSO owned and/or operated by ALCOSAN that is located within the geographic boundaries of the municipality.
- d. Maintenance of a local public notification system that informs the public of appropriate action to take in the event of CSO discharges, particularly discharges from manholes, backups into basements and other discharges with which the public may have more immediate and/or intense contact.

NMC #9 - Monitoring to Characterize CSO Impacts

- a. Inspection (visual) of CSO discharges from outfalls listed in the NPDES permit
- b. Characterization of the frequency, duration, and volume of discharges from CSO
- c. Summarization of CSO discharges on a monthly basis

In the event the Department requests any modification to this NMC Report, the Municipality shall make all corrections required by the Department. The Municipality shall implement the activities identified in this NMC Report.

Appendix D:
ALLEGHENY COUNTY HEALTH DEPARTMENT FLOW
MONITORING PROTOCOL

PART 1: OVERSIGHT

- A. The Municipality shall employ the services of a professional engineer to oversee the completion of all flow monitoring and planning tasks.

PART 2: MONITORING PLAN REQUIREMENTS

- A. The Flow Monitoring Plan shall provide data suitable for developing an LTCP/Wet Weather Control Plan.
- B. The Flow Monitoring Plan shall include all of the items stipulated in Paragraph 13 of the Consent Order and Agreement.
- C. The Flow Monitoring Plan shall contain at a minimum the following items:
- A GIS map showing the location of all flow monitoring sites
 - A delineation of the sewered area for each flow monitor
 - The Flow monitoring Technique to be employed
 - Manufacturer of Flow Monitors to be used at each site
 - Monitoring Crew experience conducting Flow Monitoring
 - Approaches to monitoring at or near overflows
 - A Data Quality Assurance and Control Plan
 - Methods to be used in approximating overflow volume, frequency and duration
- D. Flow monitoring shall be performed as per the approved monitoring plan and according to manufacturer’s specifications for the monitoring equipment utilized.

PART 3: RAIN DATA

- A. An approved Monitoring Plan shall designate a rain gage as a source of rainfall data. The Radar Calibrated Rainfall Network is an approved source of rainfall data. The municipality shall use either the nearest available existing rain gage or propose to install a new rain gage at an appropriate location. Use of a multiple gage network may be necessary and appropriate. Use of data from alternate sources shall be qualified on a case-by-case basis and subject to the approval of the Department.

PART 4: MONITORING LOCATIONS

- A. Monitoring sites shall be designated following field inspection to determine optimal monitoring locations, in conformance with Paragraph 13 of the Consent Order and Agreement.
- B. Field investigations shall verify that monitoring locations conform to the requirements of Paragraph 13 of the Consent Order and Agreement.
- C. Field investigations shall be conducted at selected monitoring locations to verify that hydraulic, site access, safety, and maintenance conditions are suitable for successful flow monitoring. Flow regime conditions such as surface turbulence and backwater interference from downstream pipes and structures shall be recorded. Observed site conditions shall be documented using standardized forms.
- D. If the field investigation reveals that the required site is not suitable for successful flow monitoring, an alternate site shall be selected that most closely meets the requirements stipulated in Paragraph 13 of the Consent Order and Agreement.

PART 5: MONITORING AT OVERFLOW STRUCTURES

- A. Following field evaluation, the feasibility of monitoring to quantify flows from an overflow shall be documented. A site-specific monitoring plan shall then be prepared in advance of monitoring overflow points. At a minimum, the overflow monitoring plan shall contain a description of the overflow, a dimensioned sketch, the proposed monitoring approach and/or technology to be used.
- B. The overflow monitor points shall be interrogated every three days following the start of monitoring until the equipment is performing properly. Thereafter, weekly interrogation shall be performed or as is appropriate to the approach employed in accordance with the monitoring plan. The sites must also be checked after every precipitation event over one inch in depth at its designated rain gage to check for possible washout or damage to the monitoring equipment. The reliability of monitoring data shall be assessed on a weekly basis for the month following

commencement of monitoring. The monitoring results shall be evaluated quarterly thereafter and the findings of each evaluation shall be documented.

- C. Monitoring data shall permit flow estimates to be made in units of MGD.

PART 6: MONITOR INSTALLATION

- A. A field sketch of each of the selected monitoring locations will be prepared. The sketch will include a dimensioned profile section and plan view of the monitoring manhole, the adjacent upstream and downstream manholes and connecting pipes, and the equipment installation configuration. Describe any adverse hydraulic conditions. Monitoring locations will be identified on a municipal sewer GIS map.
- B. Site set-up information such as measured sensor offsets, site name, manhole number, pipe size, meter number, should be provided on hard copy along with pre-installation calibration information verifying the initial calibration and calibrators name, dates of calibration and installation, and an explanation of any variance from manufacturer-recommended procedures.
- C. Bench and field calibration of flow metering devices shall be performed as applicable for the monitor type and in accordance with the manufacturer's instructions, and defined in the Data Quality Assurance and Control Plan submitted by the Engineer. Calibration measurements and adjustments shall be documented and dates and time recorded on field sheets. If velocity profiling is performed, appropriate methods shall be employed for the pipe or channel of interest: the 0.9 times U-max or 0.2, 0.4, 0.8 methods will be employed for low flow conditions in smaller pipes; the 2-D method will be used for higher flows in larger pipes.
- D. The municipality shall report within 30 days if any monitoring devices are being moved or if there are any substantive changes to meter installations or adherence to the Data Quality Assurance and Control Plan. The approved monitoring plan shall be amended and submitted to the Department within 45 days of changes.

PART 7: DATA RECORDING

- A. The memory modules shall be programmed for obtaining and storing readings at 15-minute intervals at the quarter hour (i.e. 2:00, 2:15, 2:30 **not** 2:03, 2:18, 2:33). To match flow data with rainfall data, care shall be taken to ensure all clocks in all the meters are synchronized. Make assurances that no data is lost by checking the manufacturers manual to determine the maximum period of record before new data wraps over previous memory module data.
- B. Flows shall be calculated and recorded in million gallons per day (MGD) **not** CFS. Data shall be formatted to three (3) decimal places (X.XXX). Levels shall be recorded in inches, and velocity will be calculated in FPS.

PART 8: METER MAINTENANCE & INTERROGATIONS

- A. Each monitor will be interrogated every three days following the initial meter installation until the equipment is performing properly. The monitors shall be interrogated a week later and bi-weekly thereafter for the duration of the monitoring period. The sites must also be checked after every precipitation event over one inch in depth at its designated rain gage to check for possible washout or damage to the monitoring equipment.
- B. Field data information, such as depth and velocity readings or flow-points, shall be measured every time a data interrogation is conducted and recorded on the site information sheets to verify the equipment is properly calibrated and providing reliable results. Interrogations shall be scheduled at differing times of day and weather conditions to obtain field data points over a wide range of flow depths.
- C. It may be necessary to take additional velocity measurements to get a representative range of field data points to ensure proper calibration.
- D. Maintenance of monitoring devices shall be performed during every interrogation. Battery charge, desiccants and vent tubes shall be checked. Sensors shall be inspected and paper, rags, oil, and/or debris shall be cleaned off the sensors in accordance with manufacturer’s instructions. It may also be necessary to remove sediment and gravel when it interferes with proper operation of the monitoring devices. Ensure the sensor surfaces remain clean, in good condition and properly formed.
- E. A field log of all measurements and interrogations shall be maintained as documentation and shall be available upon request by the Department.

PART 9: DATA SUBMISSION

- A. Consistent file naming conventions will be adopted. Files will be named in accordance with the following format: SITE#MON.TXT, where:
 - SITE = 4 character municipality ID (BALD, WMIF, WHIT, PITT, and BREN)
 - # = The monitor number within a municipality (e.g. BALD3, WMIF1, PITT2, etc.)
 - MON = month (APR for submission 1, MAY for submission 2, JUN for submission 3).

EXAMPLE: SITE#MON.TXT (e.g. BALD3APR.TXT, WMIF1MAY.TXT, etc.)

- B. Submit comma-delineated ASCII files of the flow monitoring data in the format below. Add header lines with monitor location and column headings consistent with the following example:

```
BALDIMAR.TXT - Main Interceptor along Glass Run Road
MM , DD , YY , HH , MM , FLOW (MGD) , LEVEL (IN) , VEL (FT/SEC)
2 , 26 , 96 , 11 , 45 , 3.56 , 14.24 , 2.49
2 , 26 , 96 , 12 , 00 , 3.42 , 13.92 , 2.42
2 , 26 , 96 , 12 , 15 , 3.38 , 13.89 , 2.40
2 , 26 , 96 , 12 , 30 , 3.43 , 13.94 , 2.42
```

Excel files are also acceptable for data submission.

- C. Prepare and submit superimposed flow/level/rainfall versus time plots covering one-month intervals, beginning with the first day of the month. Monthly flow, level and rainfall (vertical axis) versus time (horizontal axis) plots will be prepared for each monthly data submission.
- D. Prepare and maintain other quality control documentation such as "scatter plots" (flow versus level or velocity versus level) covering the entire four-week reporting period. Consistent user-selected vertical axis scales shall be used as opposed to varying computer selected axis scales.
- E. Prepare and submit the field measurement information in a consistent format.
- F. Upon completion of the flow monitoring and planning tasks, prepare a summary report for Department review. Provide a summary and analysis of these aspects of the monitoring and planning effort:
- its conformance with the approved monitoring plan,
 - historic QA/QC practices,
 - intermunicipal monitoring efforts, and
 - both submittals described in above Paragraphs C and D of this Appendix D.

Assess the utility, applicability and scope of the data and the extent to which all of the above components impact fulfilling the objectives of the monitoring effort required by Paragraph 13 of this document.

Appendix E

Semi-Annual Progress Report

Reporting Period _____

Authority _____

Watershed _____

Facility: CSO Municipalities _____

From _____ to _____

Revision Date _____

Task Description	Proposed Start Date	Actual Start Date	Required Completion Date	Actual Completion Date	Required Percentage of Project Completed	Actual Percentage of Project Completed	Comments
Phase I: System Inventory/ Operation and Maintenance							
(A) Physical survey (Year 1)	June 1, 2004		May 31, 2005		33%		
Physical survey (Year 2)	June 1, 2005		May 31, 2006		66%		
Physical survey (Year 3)	June 1, 2006		May 31, 2007		100%		
(B) Cleaning / CCTV (Year 1)	June 1, 2004		May 31, 2005		16.7%		
Cleaning / CCTV (Year 2)	June 1, 2005		May 31, 2006		33.3%		
Cleaning / CCTV (Year 3)	June 1, 2006		May 31, 2007		50%		
Cleaning / CCTV (Year 4)	June 1, 2007		May 31, 2008		66.7%		
Cleaning / CCTV (Year 5)	June 1, 2008		May 31, 2009		83.3%		
Cleaning / CCTV (Year 6)	June 1, 2009		May 31, 2010		100%		
(C) GIS Mapping (Year 1)	June 1, 2004		May 31, 2005		33%		
GIS Mapping (Year 2)	June 1, 2005		May 31, 2006		66%		
GIS Mapping (Year 3)	June 1, 2006		May 31, 2007		100%		
(D)* Deficiency corrections (Year 1)	June 1, 2005		November 30, 2006		20%		
Deficiency corrections (Year 2)	December 1, 2006		November 30, 2007		40%		
Deficiency corrections (Year 3)	December 1, 2007		November 30, 2008		60%		
Deficiency corrections (Year 4)	December 1, 2008		November 30, 2009		80%		
Deficiency corrections (Year 5)	December 1, 2009		November 30, 2010		100%		
(E) Complete system hydraulic characterization (Year 1)	June 1, 2004		May 31, 2005		25%		
Complete system hydraulic characterization (Year 2)	June 1, 2005		May 31, 2006		50%		
Complete system hydraulic characterization (Year 3)	June 1, 2006		May 31, 2007		75%		
Complete system hydraulic characterization (Year 4)	June 1, 2007		May 31, 2008		100%		
(F) Submit report of implementation of nine minimum controls			December 1, 2005				

*Attach documentation of work completed during the reporting period.

Appendix E

Semi-Annual Progress Report

Authority _____

Reporting Period _____

Watershed _____

Facility: CSO Municipalities

From _____ to _____

Revision Date _____

Task Description	Proposed Start Date	Actual Start Date	Required Completion Date	Actual Completion Date	Required Percentage of Project Completed	Actual Percentage of Project Completed	Comments
PHASE II: Planning							
Flow monitoring	June 1, 2007		May 31, 2008				

Tap allocations for this year _____ Taps issued for this report period _____

Based on the above information, is the Municipality in compliance with the approved schedule? _____ If no, please include an explanation.
(Yes/No)

Municipality Official: _____
Signature / Title

_____ Date

CONFIDENTIAL
SETTLEMENT COMMUNICATION
NOT A PUBLIC RECORD
September 24, 2003

ENGINEER'S WORKING DRAFT
APPENDIX F - CREDIT FOR PRIOR WORK FORM

CREDIT FOR PRIOR WORK FORM

COA Program Task	System Description	Protocol Compliant Prior Work	Program Scope for Remaining Work
Physical survey/visual inspection: Structure physical inspection	Total number of structures: _____	Total number of credited structures: _____	Remaining number of structures to be inspected: _____
CCTV internal inspection	Total length of public sewers in linear feet: _____	Total length of public sewer segments with protocol compliant CCTV inspection: _____	Length of segments needing CCTV inspection in linear feet: _____
Sewer line cleaning	Total length of public sewers in linear feet: _____	Total length of public sewer segments with protocol compliant sewer line cleaning: _____	Length of segments needing sewer line cleaning in linear feet: _____
Sewer system mapping	Total length of public sewers in linear feet: _____	Completed mapping in linear feet: _____	Remaining mapping in linear feet to be compliant with protocols: _____
Sewer system mapping: Structure location survey	Total number of structures: _____	Total number of credited structures: _____	Remaining number of structures to be surveyed: _____

CONFIDENTIAL
SETTLEMENT COMMUNICATION
NOT A PUBLIC RECORD
September 24, 2003

ENGINEER'S WORKING DRAFT
APPENDIX F - CREDIT FOR PRIOR WORK FORM

CREDIT FOR PRIOR WORK FORM

COA Program Task	System Description	Protocol Compliant Prior Work	Program Scope for Remaining Work
Sewer system mapping: Structure vertical elevations	Total number of trunkline manholes, regulating structures, SSO Outfalls: _____	Total number of credited structures: _____	Remaining number of structures to be surveyed: _____
Hydraulic capacity evaluation	Length of trunkline plus length of segment with chronic wet weather problems in feet: _____	Length of trunkline where evaluation has been performed in feet: _____	Remaining length to be evaluated in feet: _____

Submitted by _____ Municipality

I certify under the penalty of law that I believe the information provided in this document is true, accurate, and complete. I certify under penalty of law that I am familiar with the information submitted in this document and all attached documents and, based on my inquiry of those individuals immediately responsible for obtaining the information, believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information.

 Name Date

APPENDIX G

Resolution of the
Municipality
Authorizing signatories to enter into this Consent Order and Agreement