SANITATION DISTRICT NO. 1

January 30, 2009

Acting Director of the Division of Enforcement
Department for Environmental Protection
300 Fair Oaks Lane
Frankfort, KY 40601

Chief, Environmental Enforcement Section
Environmental and Natural Resources Division
U.S. Department of Justice
601 D street NW
Washington, DC 20005
DOJ Case No. 90-5-1-1-08591

Chief, Water Program Enforcement Branch
Water Management Division
U.S. Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

Re: Consent Decree Case No. 2:05-cv-00199-WOB

Dear Gentlemen:

Pursuant to the above-referenced Consent Decree, Sanitation District No. 1 (SD1) is required to submit quarterly reports that demonstrate SD1's compliance with the Consent Decree:

> **42. Quarterly Reports**. The District shall submit to the Cabinet/EPA a quarterly report that describes the District's progress in complying with this Consent Decree for the previous quarter no later than thirty days after the end of each calendar quarter. The first such report shall be submitted to the Cabinet/EPA no later than thirty days after the second full quarter after entry of this Consent Decree.

Information contained within the enclosed Quarterly Report describes SD1's compliance with Consent Decree Case No. 2:05-cv-00199-WOB for the period of October 1, 2008 through December 31, 2008. This report also contains an outlook for the upcoming calendar quarter period of January 1, 2009 through March 31, 2009.

1045 EATON DRIVE • FT. WRIGHT, KENTUCKY 41017-9681 • PH: (859) 578-7450 • FAX: (859) 331-2436

A certification as required by the Consent Decree is also enclosed (Consent Decree paragraph 38). The Cabinet and EPA have 90 days from receipt to review submittals unless SD1 receives notification before the expiration of the 90-day period that review will take longer (Consent Decree paragraph 44).

I am confident in the integrity of the enclosed document, and I am certain that its content not only satisfies regulatory requirements, but also helps further the mission and vision of SD1 by demonstrating aggressive, proactive, achievable measures underway in Northern Kentucky to protect water resources and enhance the quality of life.

I look forward to receiving your comments in the near future. If you have any questions or concerns, do not hesitate to contact me at 859-578-7465 or by e-mail at jeger@sd1.org.

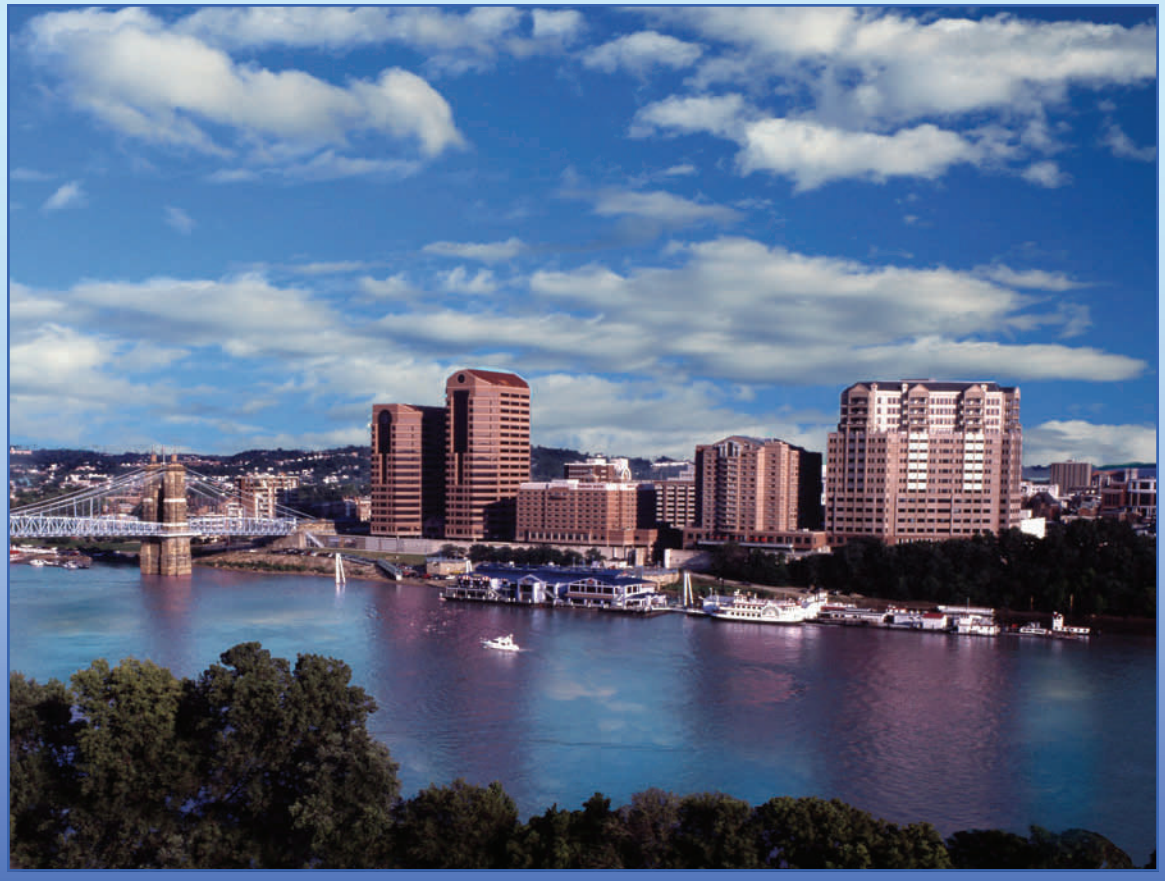
Best regards,

Jeffery A. Eger
General Manager

JAE/jh
Enclosures

Consent Decree Quarterly Report No. 05
(October 1, 2008 through December 31, 2008)

Sanitation District No. 1
January 30, 2009



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CERTIFICATION

Consent Decree Quarterly Report No. 05
Consent Decree Case No. 2:05-cv-00199-WOB

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Jeffery A. Eger
General Manager

1/30/09
Date

COMMONWEALTH OF KENTUCKY
)ss.
COUNTY OF Kenton

The foregoing instrument was acknowledged before me this 30 day of January, 2009 by Jeffery A. Eger, General Manager of Sanitation District. No. 1.

Kathleen A. Frisch
NOTARY PUBLIC

Kenton County, Kentucky

My commission expires: 9-15-11

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CONSENT DECREE
QUARTERLY REPORT NO. 05

January 30, 2009

Sanitation District No. 1
1045 Eaton Drive
Ft. Wright, KY 41017

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS

Cabinet	Kentucky Energy and Environment Cabinet
CSO	Combined Sewer Overflow
EPA	U.S. Environmental Protection Agency
gbaMS	GBA Master Series (information tracking system)
SD1	Sanitation District No. 1
SSO	Sanitary Sewer Overflow

SECTION 1. INTRODUCTION

1.1 Purpose

This Quarterly Report is submitted to fulfill the requirements of Sanitation District No. 1's (SD1) Consent Decree as entered on April 18, 2007. This Consent Decree is a legal agreement with the U.S. Environmental Protection Agency (EPA) and the Kentucky Energy and Environment Cabinet (Cabinet). The purpose of the Consent Decree is to address sanitary sewer overflows (SSOs) in SD1's sanitary sewer system and combined sewer overflows (CSOs) in the combined sewer system in an effort to improve water quality throughout SD1's service area. Specifically, Section V Reporting Requirements, states that:

> **42. Quarterly Reports**. The District shall submit to the Cabinet/EPA a quarterly report that describes the District's progress in complying with this Consent Decree for the previous quarter no later than thirty days after the end of each calendar quarter.

1.2 Report Period

Information contained within this report describes SD1's compliance with Consent Decree Case No. 2:05-cv-00199-WOB for the period of October 1, 2008 through December 31, 2008. This report also contains an outlook for the upcoming calendar quarter period of January 1, 2009 through March 31, 2009.

1.3 Consent Decree Compliance Schedule

A comprehensive Gantt chart outlining SD1's project schedule for meeting the requirements of the Consent Decree can be found in Appendix A. This project schedule includes tasks, responsible parties, and deadlines for the first five years of the Consent Decree (2007 through 2012). Additionally, a more detailed listing of the Initial Watershed Projects that were not complete prior to October 1, 2008, including current status, project updates for the current reporting period, and planned activity for the subsequent quarter can be found in Appendix B.

SECTION 2. OVERFLOW DATA

This section of the Quarterly Report presents SD1's estimates of overflow activity in the collection systems. While SD1 has a long history of comprehensive data collection and inspection programs, our existing programs were implemented to meet pre-Consent Decree needs and must be realigned and optimized to fit into the framework of the quarterly reports. This realignment is taking place as part of SD1's wet-weather management activities, and future reports will continue to incorporate expanded overflow metrics based on more quantitative measures as they become available.

Over the last quarter, we have made further progress with developing standardized reports in SD1's computerized maintenance management system, GBA Master Series (gbaMS), to help support the specific reporting needs for these quarterly reports and to better track system performance. We are continuing to fine-tune and improve our tracking and reporting capabilities to increase efficiency in our work. SD1 has been using gbaMS since 1999 and has added several modules and applications in response to evolving needs over the years. As there are now new uses for this tool after entering into the Consent Decree, SD1 is undergoing adjustments to both the data input and output processes for gbaMS to generate more precise data for use in these quarterly reports. Because the refinement of gbaMS is ongoing to meet these evolving needs, several numbers generated from this software program will be reported as "approximate." As SD1 moves forward with structuring its reporting procedures, quality assurance and quality control issues regarding data input and output from gbaMS will continue to be addressed.

Overflow Categories

For reporting and system performance measurement purposes, SD1 has categorized sewer overflows throughout the service area into five distinct categories:

- *Recurring SSOs* – Recurring overflows from SD1's sanitary sewer system, typically during wet weather. Overflows are determined to be "recurring" if they have been observed to overflow twice in a 12-month period. This category includes wet-weather discharges at pump stations that may or may not have a constructed bypass.

- *Non-recurring SSOs* – Overflows from SD1's sanitary sewer system, including pump stations, that have been observed to overflow less frequently than twice in a 12-month period. Many of these are one-time, dry-weather occurrences caused by temporary system issues that are investigated and corrected as soon as practicable.

- *Wet Weather CSOs* – Wet-weather discharges from the combined sewer system.

- *Dry Weather CSOs* – Dry-weather discharges from the combined sewer system.

- *Building Backups* – The release of raw sewage from a service lateral into a building in SD1's service area. Building backups can be caused by several factors, such as constrained capacity during wet weather or a blockage or collapse in the service lateral or main line, and can be determined to be either SD1's responsibility or the building owner's responsibility.

Precipitation Data

Rainfall statistics are an important component of overflow reporting, as rainfall conditions represent an uncontrolled variable impacting SD1's CSO and SSO activity.

Quarterly CSO and SSO activations and volumes will constantly vary over time, with or without system improvements, due to natural variations in rainfall patterns. Over time, SD1 expects system improvements to show a clear trend in reduced overflow activity. However, reviewing overflow reports for any individual quarter relative to the previous quarter also requires careful review of the rainfall associated with each quarter, in order to understand the relative impact of rainfall patterns. For this reason, storm event summaries are included in all overflow reporting submittals. The data in Table 2.1 is from the Cincinnati-Northern Kentucky International Airport rain gauge maintained by the National Weather Service (CVG).

Table 2.1 Summary of Storm Events
(October 1, 2008 – December 31, 2008)

Month	Approximate # of Storm Events	Rainfall (in)
October 2008	4	1.63
November 2008	5	1.73
December 2008	15	4.42
Total	**24**	**7.78**

The remainder of this section reports overflows that occurred throughout SD1's service area during the period of October 1, 2008 through December 31, 2008.

2.1 Recurring SSOs

SD1 uses three general methods for developing quantitative estimates of recurring SSO activity:

- Field inspections during, or shortly after, wet-weather events to identify activations. This inspection program has been in place since 2005 and will be expanded as warranted for ongoing reporting. SD1's wet weather crew continues to perform routine inspections before and after rain events at recurring and suspected SSO locations. This is part of SD1's ongoing effort to characterize overflows throughout the collection systems and ensure they are categorized accurately. Proper characterization of overflows will help identify the most appropriate and effective solutions to be included in SD1's Watershed Plans.

- Simple hydraulic estimating using Manning's Gravity Flow and Pipe Calculation to report overflows from pump stations with constructed bypasses. This method has been used historically for reporting purposes, and its results are included in this Quarterly Report.

- Estimates developed from SD1's system-wide collection system models. SD1 has recently completed a year-long flow monitoring program, consisting of more

than 245 flow meters and 45 rain gauges installed throughout the combined and separate sewer systems, that was utilized to update the calibration and validation of the system-wide hydraulic models. This calibration was undertaken to provide a model network that could confidently be used as a planning level tool in preparing the Watershed Plans for June 2009. In addition to the use of the models for planning future capital improvements, the models can also be used to provide information about the current performance of SD1's system. Given the system-wide extent of the model, SD1 has elected to use the models to provide estimates of the overflow locations within the system for quarterly reporting purposes. This approach is consistent with SD1's commitment to provide the best available information on overflow activity within these reports.

For this submittal, SD1 has collected rainfall data from a series of eight rain gauges located across the system and simulated the rainfall which occurred between October 1, 2008 and December 31, 2008 within the hydraulic models. The results of the model simulations have been summarized and included as an estimate of the frequency and total volume of the overflow locations within SD1's system for this period. For the modeled locations, these results are not a summary of observed or confirmed activations but are an estimate of the overflow statistics based on the calibrated model. The presented statistics should be viewed with the knowledge that the data provided is only estimated and could differ from actual field conditions due not only to the inherent potential error in any model but also specific local conditions (maintenance issues, localized rainfall, etc.). However, we do not anticipate these estimates to be significantly different than field conditions. As noted in earlier quarterly reports, SD1 is actively realigning and optimizing their field activities to support the framework of Consent Decree requirements, and this process includes constantly working to verify the model results against actual field conditions through monitoring and observation. Over time, these field verifications will continue to improve the model as appropriate to better reflect any discrepancies found with observed conditions. It is an ongoing and continual process to refine the modeling tools to provide the most accurate information possible about overflow locations, including future model updates to incorporate system improvements.

Modeled activation and volume statistics for SD1's 99 recurring SSO locations for the current reporting period can be found in Appendix C. It should be noted that for the two largest SSO locations, the data provided is based on flow meters that were present during the monitoring period; the remainder of the SSO locations are estimated based on the model results.

Updates to the locations of SD1's recurring SSOs will be reported on an annual basis to include any revisions based upon the field inspection and hydraulic modeling programs. Appendix D of SD1's April 2008 Quarterly Report, titled "Recurring SSO Revisions – Transaction Database," included revisions to the recurring SSO list. Therefore, any revisions to the SSO list documented after April 2008 will be published in the April 2009 Quarterly Report.

In addition to the 99 recurring SSOs, there are also 14 pump stations identified in the Consent Decree that have historically documented recurring wet weather capacity issues. SD1 submitted a Pump Station Overflow Elimination Plan to the EPA and the Cabinet on September 18, 2007 that provides the plan to identify watershed projects to eliminate overflows at these stations. Table 2.2 lists each of the 14 pump stations identified in Exhibit E of the Consent Decree and demonstrates their SSO occurrences during the current reporting period. The 14 pump stations listed in the Consent Decree discharged a total of 7 times during the current reporting period, with an estimated overflow volume of 2,728,000 gallons, of which 95% can be attributed to the Lakeview Pump Station. As previously mentioned, SD1 uses Manning's Gravity Flow and Pipe Calculation to estimate discharge volume from pump stations. The only exception to this calculation methodology is at the Lakeview Pump Station, which has a metered bypass pipe.

Table 2.2 Discharges from Consent Decree Pump Stations
(October 1, 2008 – December 31, 2008)

Name of Pump Station	Number of Discharge Occurrences	Total Estimated Volume (gallons)
Alex-Licking	0	0
Allen-Fork	0	0
Crestview	0	0
Harrison Harbor	0	0
Highland Acres	0	0
Kentucky Aire	1	51,000
Lakeview	2	2,590,000
Reilly Road	2	68,000
Ripple Creek	1	9,000
South Hampton	0	0
South Park	0	0
Sunset	1	10,000
Taylorsport	0	0
Union	0	0
TOTAL	**7**	**2,728,000**

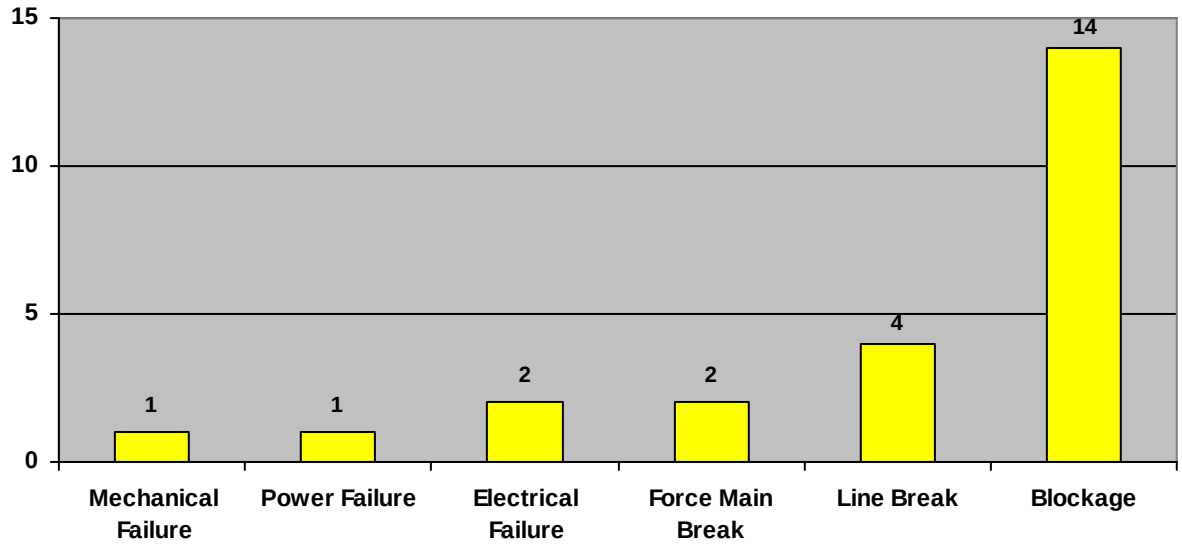
In addition to tracking bypasses at the pump stations listed in the Consent Decree, SD1 continuously monitors all pump stations throughout the service area for wet weather capacity issues. During the current reporting period, the Highland Heights Pump Station was the only pump station not listed in the Consent Decree that discharged during wet weather due to lack of capacity, with 3 wet-weather related discharge occurrences recorded and a total estimated volume of 111,000 gallons. As SD1 moves forward with developing the Watershed Plans required under the Consent Decree, priorities will be established based on severity and known wet weather issues will be addressed.

2.2 Non-recurring SSOs

During the current reporting period, there were a total of 24 non-recurring SSOs throughout SD1's service area with a total estimated overflow volume of 290,000 gallons. As previously mentioned, this category of overflows includes discharges from SD1's sanitary sewer system that have been observed to overflow less frequently than twice in a 12-month period. Included in this category are occurrences at pump stations that are not a result of wet weather capacity issues. Many of these are one-time, dry-weather occurrences caused by temporary system issues that are investigated and corrected as soon as practicable. Manning's Gravity Flow and Pipe Calculation is used to estimate discharge volume from any overflow release out of a pipe, and industry standard volume estimation techniques and calculations are used for spills or for any witnessed overflow from a manhole.

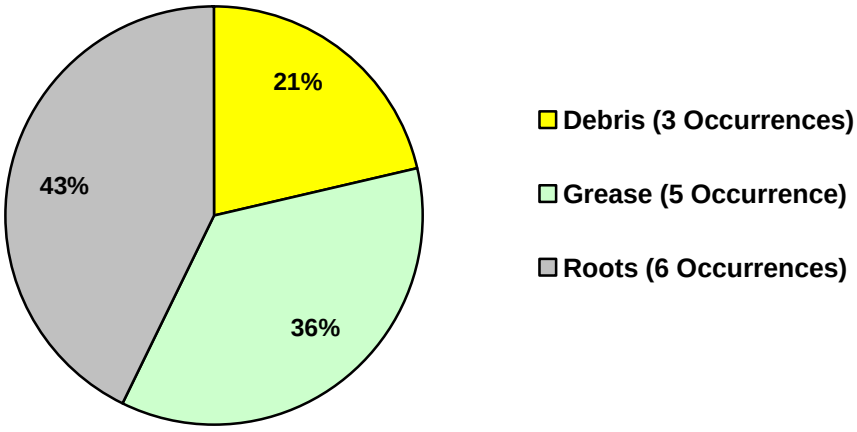
The 24 overflows reported in this category can be broken down by the primary causes demonstrated in Figure 2.1.

Figure 2.1 Causes for Non-recurring SSOs
(October 1, 2008 – December 31, 2008)



The 14 non-recurring SSOs caused by blockages can further be broken down into 3 secondary causes, as demonstrated in Figure 2.2.

Figure 2.2 Causes for Blockages in Pipes Resulting in Non-recurring SSOs
(October 1, 2008 – December 31, 2008)



All of these SSOs were immediately acted upon and the problems repaired. Where blockages and line breaks were found, the reasons for the blockages and breaks were identified and recorded in gbaMS. If deemed necessary, the sewers were then put on a preventive maintenance list to be inspected and cleaned as-needed in the next six months as part of our Continuous Sewer Assessment Program.

2.3 Wet Weather CSOs

Included in Appendix D are the modeled activation and volume statistics for SD1's 94 CSOs. This data was generated from the hydraulic modeling program previously described in Section 2.1. This list was revised subsequent to the October 2008 Quarterly Report based on SD1's construction activities and characterization efforts. Nine CSOs were eliminated through construction projects, and seven CSOs were added to the list after being discovered and confirmed through field investigations. A detailed transaction database outlining structure numbers and transaction descriptions for the revisions described above can be found in Appendix E.

2.4 Dry Weather CSOs

During the current reporting period, there were six CSOs during dry weather, with a total estimated discharge volume of 2,207,500 gallons. These dry weather CSOs were evaluated for cause, and solutions were identified to ensure they do not reoccur in accordance with our Nine Minimum Control No. 5 plan to reduce and eliminate dry weather CSOs. Table 2.3 summarizes the locations, causes of the overflows, estimated overflow volumes, and the actions taken to prevent these overflows from occurring in the future.

Table 2.3 Dry Weather CSOs
(October 1, 2008 – December 31, 2008)

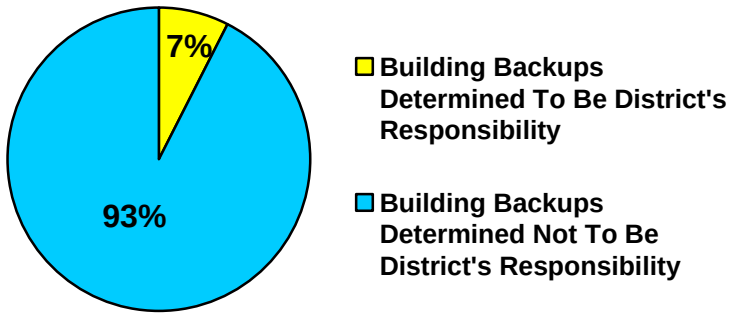
Structure ID#	Location	Overflow Cause	Estimated Volume	Corrective Action Taken
0820001	4th Street Chamber	This overflow occurred the morning after a rain event had ended. After the rain event, the diversion was inspected and the bar rack was cleaned. The next day when the diversion was inspected again the bar rack was full with debris, leading to the dry weather overflow. The new weir wall recently installed minimized the amount of the overflow.	500 gallons	The inspection procedure for this diversion has been modified to ensure that flow is kept in the interceptor. The diversion is now inspected daily, during and after a rain event, and immediately the day following a rain event. In addition, the bar rack is cleaned at least twice per week or more frequently, as needed.
0910064	Ashland Oil CSO Diversion	A contractor was hired to clean the area interceptor sewers per our NMC plan. In this area, the interceptor was found to be approximately 50% full of accumulated debris. The cleaning process increased the velocity of flow in the interceptor which, in turn, caused settled debris to become suspended. The debris was then conveyed downstream and built-up. The flow was restricted before the contractor could get all of the debris removed, resulting in the dry weather overflow.	1,157,000 gallons	The cleaning contractor immediately responded and began removing the debris that caused the build-up and flow restriction. The flow restriction and debris were removed and the overflow was stopped. The cleaning project is still in progress and will resume in the Spring under warmer temperatures. When complete, the cleaning project will increase flow capacity in the interceptors, which will aid in preventing future dry weather overflows and reducing wet weather overflows.

0960032	Patton St, CSO Diversion	Construction debris from a cured-in-place liner installation caused a line blockage. This project entailed lining two existing rock and brick sewers to restore their structural integrity and flow capacity. After the liner was installed, excess liner was cut at the manholes. The contractor allowed some pieces of the cut liner to become lodged in the diversion dry weather flow pipe leading to the dry weather overflow.	192,000 gallons	The contractor and SD1 crews immediately responded to remove the pieces of liner from the sewer to stop the overflow. The contractor and SD1 inspectors were instructed about protecting the diversion and sewer system from construction debris during work. Actions will be taken in future construction projects to ensure closer inspection, and to route flows around the diversion or install a temporary device to keep debris from entering the diversion sewer.
0910005	Oakland and Florist, CSO Diversion	Debris	30,000 gallons	An inspection of the dry weather flow diversion pipe revealed defects in the pipe that were trapping debris. The pipe was replaced to eliminate the defects.
1500131	Altamont St, CSO Outfall	Debris	780,000 gallons	An inspection of the dry weather flow diversion pipe revealed a blockage of several pieces of clay pipe and a cinder block. The debris was removed from the line and re-inspected to ensure the blockage was completely cleared. The dry weather pipe is currently being evaluated for replacement.
1710119	Butler St, CSO Outfall	Debris	48,000 gallons	An inspection of the dry weather flow diversion pipe revealed defects in the pipe that were trapping debris. The pipe is in the process of being replaced to eliminate the defects.

2.5 Building Backups

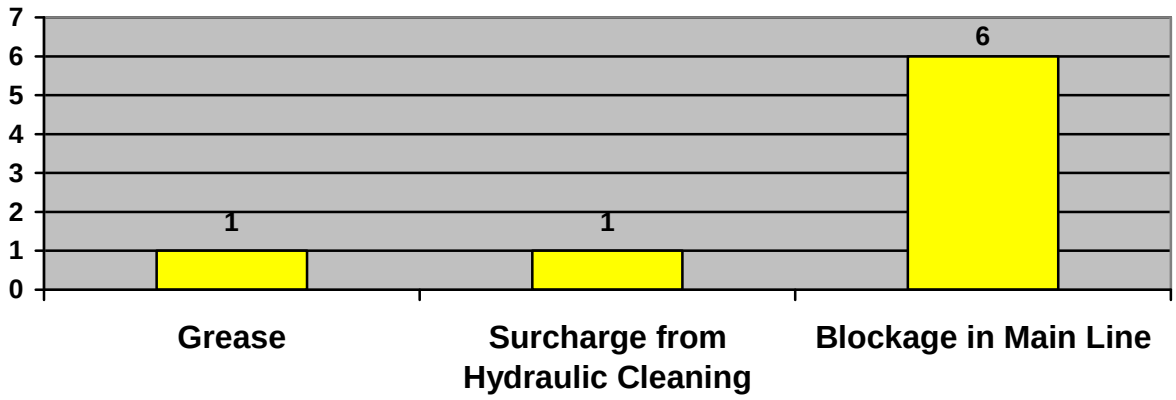
During the current reporting period, there were approximately 108 building backups throughout SD1's service area. Of these 108**,** approximately 8 were determined to be SD1's responsibility and 100 were determined not to be the responsibility of SD1, as shown in Figure 2.3. The backups determined not to be the responsibility of SD1 were due to causes such as breaks and blockages in private service laterals.

Figure 2.3 Building Backups: Public vs. Private
(October 1, 2008 – December 31, 2008)



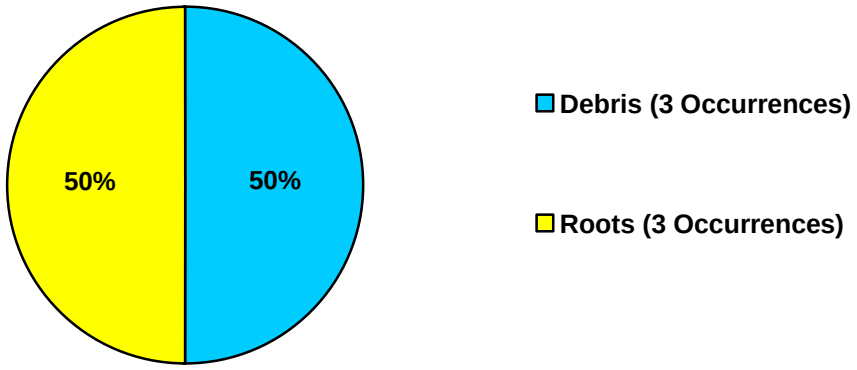
Causes for the approximate 8 building backups determined to be SD1's responsibility are detailed in Figure 2.4 below.

Figure 2.4 Causes of SD1-Responsible Building Backups
(October 1, 2008 – December 31, 2008)



The 6 building backups caused by blockages can further be broken down into 2 secondary causes, as demonstrated in Figure 2.5.

Figure 2.5 Causes for Blockages in Main Line Resulting in a Building Backup
(October 1, 2008 – December 31, 2008)



All of these backups were immediately acted upon and the problems repaired. Where blockages and line breaks were found, the reasons for the blockages and breaks were identified and recorded in gbaMS. If deemed necessary, the sewers were then put on a preventive maintenance list to be inspected and cleaned as-needed in the next six months as part of our Continuous Sewer Assessment Program.

APPENDIX A:

Consent Decree Schedule-2007 thru 2012

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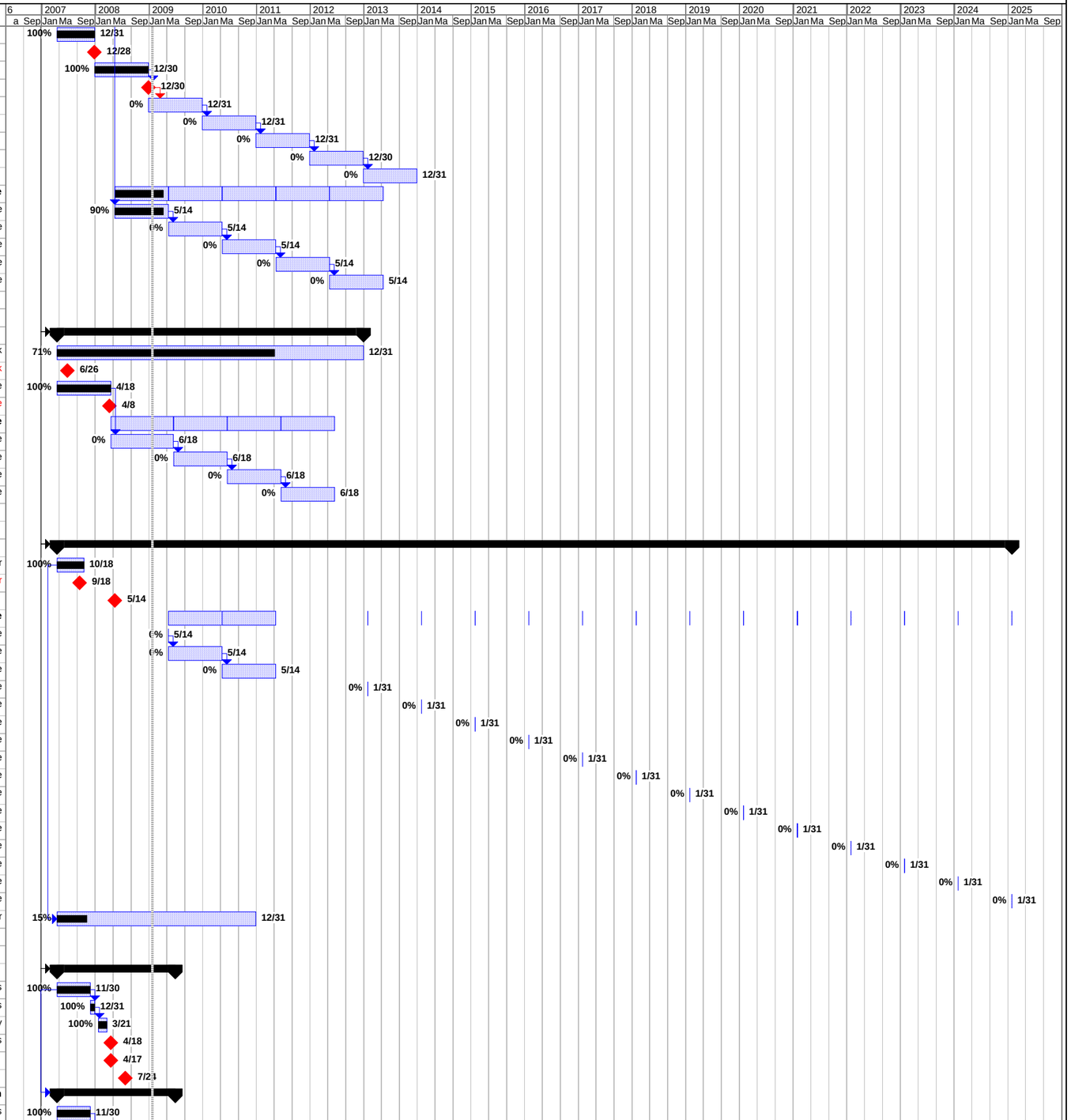
Consent Decree Schedule-2007 thru 2012

ID	ℹ	Task Name	Duration	Start	Finish	CD Paragraph	Responsible Party
63	✓	Submit CMOM Annual Report 1	257 days	Wed 4/18/07	Mon 12/31/07		
64	▦	Actual Submittal Date	0 days	Fri 12/28/07	Fri 12/28/07		
65	✓	Submit CMOM Annual Report 2	365 days	Mon 12/31/07	Tue 12/30/08		
66	✓	Actual Submittal Date	0 days	Tue 12/30/08	Tue 12/30/08		
67	▦	Submit CMOM Annual Report 3	365 days	Wed 12/31/08	Thu 12/31/09		
68	▦	Submit CMOM Annual Report 4	365 days	Thu 12/31/09	Fri 12/31/10		
69	▦	Submit CMOM Annual Report 5	365 days	Fri 12/31/10	Sat 12/31/11		
70	▦	Submit CMOM Annual Report 6	365 days	Sat 12/31/11	Sun 12/30/12		
71	▦	Submit CMOM Annual Report 7	365 days	Mon 12/31/12	Tue 12/31/13		
72	↻	**Complete SORP Annual Review**	**1826 days**	**Wed 5/14/08**	**Tue 5/14/13**	**36(c)**	**Kendall/Mulshine**
73	▦	Complete SORP Annual Review 2	365 days	Wed 5/14/08	Thu 5/14/09	36(c)	Kendall/Mulshine
74	▦	Complete SORP Annual Review 3	364 days	Fri 5/15/09	Fri 5/14/10	36(c)	Kendall/Mulshine
75	▦	Complete SORP Annual Review 4	364 days	Sat 5/15/10	Sat 5/14/11	36(c)	Kendall/Mulshine
76	▦	Complete SORP Annual Review 5	364 days	Mon 5/16/11	Mon 5/14/12	36(c)	Kendall/Mulshine
77	▦	Complete SORP Annual Review 6	365 days	Mon 5/14/12	Tue 5/14/13	36(c)	Kendall/Mulshine
78							
79							
80		**INITIAL WATERSHED PROJECT LIST**	**2084.38 days**	**Wed 4/18/07**	**Mon 12/31/12**		
81	▦	Complete Initial Watershed Projects (51 Total) (Actual Deadline 2014)	2084 days	Wed 4/18/07	Mon 12/31/12	37	Novak
82	▦	34 Projects Complete, 9 Under Construction (8 Associated with WRWWTP)	0 days	Tue 6/26/07	Tue 6/26/07	37	Novak
83	✓	Submit First Initial Watershed Projects Annual Report	366 days	Wed 4/18/07	Fri 4/18/08	37	Hunt/M. Frye
84	✓	Actual Submittal Date	0 days	Tue 4/8/08	Tue 4/8/08	37	Hunt/M. Frye
85	↻	**Submit Initial Watershed Projects Annual Report**	**1521.38 days**	**Sat 4/19/08**	**Mon 6/18/12**	**37**	**Hunt/M. Frye**
86	▦	Submit Initial Watershed Projects Annual Report 2	425 days	Sat 4/19/08	Thu 6/18/09	37	Hunt/M. Frye
87	▦	Submit Initial Watershed Projects Annual Report 3	365 days	Thu 6/18/09	Fri 6/18/10	37	Hunt/M. Frye
88	▦	Submit Initial Watershed Projects Annual Repor t4	365 days	Fri 6/18/10	Sat 6/18/11	37	Hunt/M. Frye
89	▦	Submit Initial Watershed Projects Annual Repor t5	365 days	Sun 6/19/11	Mon 6/18/12	37	Hunt/M. Frye
90							
91							
92		**PUMP STATION PLAN**	**6498 days?**	**Wed 4/18/07**	**Fri 1/31/25**		
93	✓	Submit Pump Station Plan (PSP)	183 days	Wed 4/18/07	Thu 10/18/07	38	Novak/Vatter
94	✓	Actual Submittal Date	0 days	Tue 9/18/07	Tue 9/18/07		Novak/Vatter
95	▦	APPROVAL DATE	0 days	Wed 5/14/08	Wed 5/14/08		
96	↻	**Submit Pump Station Overlow Elimination Plan Annual Report**	**5741.63 days?**	**Wed 5/13/09**	**Fri 1/31/25**	**38**	**Hunt/M. Frye**
97	▦	Submit Pump Station Overlow Elimination Plan Annual Report 1	1 day?	Wed 5/13/09	Thu 5/14/09	38	Hunt/M. Frye
98	▦	Submit Pump Station Overlow Elimination Plan Annual Report 2	365 days	Thu 5/14/09	Fri 5/14/10	38	Hunt/M. Frye
99	▦	Submit Pump Station Overlow Elimination Plan Annual Report 3	365 days	Fri 5/14/10	Sat 5/14/11	38	Hunt/M. Frye
100	▦	Submit Pump Station Overlow Elimination Plan Annual Report 4	1 day?	Wed 1/30/13	Thu 1/31/13		Hunt/M. Frye
101	▦	Submit Pump Station Overlow Elimination Plan Annual Report 5	1 day?	Thu 1/30/14	Fri 1/31/14		Hunt/M. Frye
102	▦	Submit Pump Station Overlow Elimination Plan Annual Report 6	1 day?	Fri 1/30/15	Sat 1/31/15		Hunt/M. Frye
103	▦	Submit Pump Station Overlow Elimination Plan Annual Report 7	1 day?	Sat 1/30/16	Sun 1/31/16		Hunt/M. Frye
104	▦	Submit Pump Station Overlow Elimination Plan Annual Report 8	1 day?	Mon 1/30/17	Tue 1/31/17		Hunt/M. Frye
105	▦	Submit Pump Station Overlow Elimination Plan Annual Report 9	1 day?	Tue 1/30/18	Wed 1/31/18		Hunt/M. Frye
106	▦	Submit Pump Station Overlow Elimination Plan Annual Report 10	1 day?	Wed 1/30/19	Thu 1/31/19		Hunt/M. Frye
107	▦	Submit Pump Station Overlow Elimination Plan Annual Report 11	1 day?	Thu 1/30/20	Fri 1/31/20		Hunt/M. Frye
108	▦	Submit Pump Station Overlow Elimination Plan Annual Report 12	1 day?	Sat 1/30/21	Sun 1/31/21		Hunt/M. Frye
109	▦	Submit Pump Station Overlow Elimination Plan Annual Report 13	1 day?	Sun 1/30/22	Mon 1/31/22		Hunt/M. Frye
110	▦	Submit Pump Station Overlow Elimination Plan Annual Report 14	1 day?	Mon 1/30/23	Tue 1/31/23		Hunt/M. Frye
111	▦	Submit Pump Station Overlow Elimination Plan Annual Report 15	1 day?	Tue 1/30/24	Wed 1/31/24		Hunt/M. Frye
112	▦	Submit Pump Station Overlow Elimination Plan Annual Report 16	1 day?	Thu 1/30/25	Fri 1/31/25		Hunt/M. Frye
113		Complete Remedial Measures at 8 Pump Stations	1353 days	Wed 4/18/07	Fri 12/31/10	38	Novak/Vatter
114							
115							
116		**WATERSHED PLANNING (1st of 4 Plans)**	**804 days**	**Wed 4/18/07**	**Tue 6/30/09**		
117	✓	Develop Watershed Framework	226 days	Wed 4/18/07	Fri 11/30/07	39(a)	Gibson/Clements
118	✓	Complete Internal Review of Draft Framework	30 days	Sat 12/1/07	Mon 12/31/07	39(a)	Gibson/Clements
119	✓	Obtain Public Input on Framework for Watershed Plans	58 days	Wed 1/23/08	Fri 3/21/08	40	Casey
120	✓	Submit Framework for Watershed Plans	0 days	Fri 4/18/08	Fri 4/18/08	39(a)	Gibson/Clements
121	✓	Actual Submittal Date	0 days	Thu 4/17/08	Thu 4/17/08		
122	▦	APPROVAL DATE	0 days	Thu 7/24/08	Thu 7/24/08		
123		**First Round of Watershed Plans**	**804 days**	**Wed 4/18/07**	**Tue 6/30/09**	**39(b)**	**Gibson**
124	✓	Draft 16 Watershed Characterization Reports	226 days	Wed 4/18/07	Fri 11/30/07		Clements

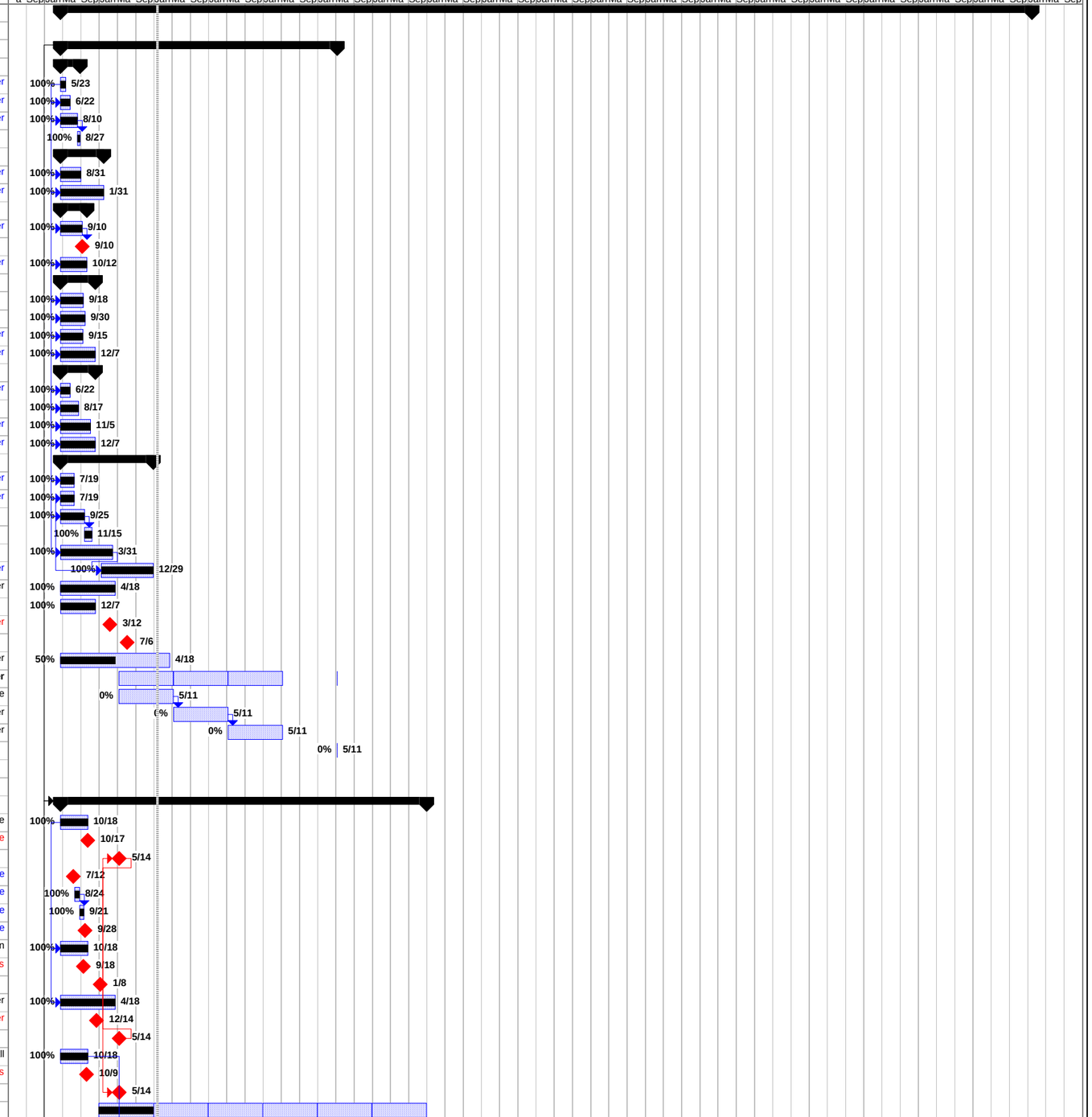


Project: CD Project First Five Years-Au
Date: Tue 1/20/09

Task	▭	Milestone	◆	Rolled Up Task	▭	Rolled Up Progress	▬
Progress	▬	Summary	▬	Rolled Up Milestone	◇	Split	┆
External Tasks	▭	Group By Summary	▬				
Project Summary	▬	Deadline	⇩				

Consent Decree Schedule-2007 thru 2012

ID	Task Name	Duration	Start	Finish	CD Paragraph	Responsible Party
1	**Consent Decree**	**6498 days?**	**Wed 4/18/07**	**Fri 1/31/25**		
2						
3	**NMC PROGRAM REQUIREMENTS**	**1850.38 days?**	**Wed 4/18/07**	**Fri 5/11/12**		
4	**NMC 1 -- Operation and Maintenance**	**131 days**	**Wed 4/18/07**	**Mon 8/27/07**		
5	O&M Criteria and Weighting Workshop	35 days	Wed 4/18/07	Wed 5/23/07		Novak/Vatter
6	Complete Draft O&M Scoping for entire system	65 days	Wed 4/18/07	Fri 6/22/07		Novak/Vatter
7	Driaft Prioritized O&M Program	114 days	Wed 4/18/07	Fri 8/10/07		Novak/Vatter
8	Revised Program Presented to District	17 days	Fri 8/10/07	Mon 8/27/07		
9	**NMC 2 -- Maximization of Storage**	**288.38 days**	**Wed 4/18/07**	**Thu 1/31/08**		
10	Draft Plan	135 days	Wed 4/18/07	Fri 8/31/07		Novak/Vatter
11	Final Plan	288 days	Wed 4/18/07	Thu 1/31/08		Novak/Vatter
12	**NMC 3 -- Pretreatment**	**177 days**	**Wed 4/18/07**	**Fri 10/12/07**		
13	Draft Plan	145 days	Wed 4/18/07	Mon 9/10/07		Novak/Vatter
14	Recommendations Presented at Meeting	0 days	Mon 9/10/07	Mon 9/10/07		
15	Final Plan	177 days	Wed 4/18/07	Fri 10/12/07		Novak/Vatter
16	**NMC 4 -- Maximize Collection and Treatment**	**233 days**	**Wed 4/18/07**	**Fri 12/7/07**		
17	Interceptor Inspection	153 days	Wed 4/18/07	Tue 9/18/07		
18	Dry Creek Analysis	165 days	Wed 4/18/07	Sun 9/30/07		
19	Draft Plan	150 days	Wed 4/18/07	Sat 9/15/07		Novak/Vatter
20	Final Plan	233 days	Wed 4/18/07	Fri 12/7/07		Novak/Vatter
21	**NMC 5 -- Prevent Dry Weather Overflows**	**233 days**	**Wed 4/18/07**	**Fri 12/7/07**		
22	Develop regulator solutions	65 days	Wed 4/18/07	Fri 6/22/07		Novak/Vatter
23	Dry Weather Overflow Assessment and Recommendations	121 days	Wed 4/18/07	Fri 8/17/07		
24	Draft River Water Intrusion Feasibility Plan	201 days	Wed 4/18/07	Mon 11/5/07		Novak/Vatter
25	Final River Water Intrusion Feasibility Plan	233 days	Wed 4/18/07	Fri 12/7/07		Novak/Vatter
26	**NMC 6 -- Solids and Floatable Control**	**621 days**	**Wed 4/18/07**	**Mon 12/29/08**		
27	Draft plan with typical sketches	92 days	Wed 4/18/07	Thu 7/19/07		Novak/Vatter
28	Identify locations for pilot floatables control	92 days	Wed 4/18/07	Thu 7/19/07		Novak/Vatter
29	Complete Installation Details (Awaiting Modeling to Confirm Sizing)	160 days	Wed 4/18/07	Tue 9/25/07		
30	Complete Fabrication & Installation	50 days	Wed 9/26/07	Thu 11/15/07		
31	Complete Pilot Field Study (Dependent on rain events captured)	348 days	Wed 4/18/07	Mon 3/31/08		
32	Final prioritized plan	348 days	Wed 1/16/08	Mon 12/29/08		Novak/Vatter
33	Submit NMC Documentation of Compliance	366 days	Wed 4/18/07	Fri 4/18/08	35	Novak/Vatter
34	Draft report to SD1	233 days	Wed 4/18/07	Fri 12/7/07		
35	Actual Submittal Date	0 days	Wed 3/12/08	Wed 3/12/08		Novak/Vatter
36	APPROVAL DATE	0 days	Sun 7/6/08	Sun 7/6/08		
37	Submit NMC Documentation of Full Compliance	731 days	Wed 4/18/07	Sat 4/18/09	35	Novak/Vatter
38	**Submit NMC Annual Report**	**1460 days?**	**Mon 5/12/08**	**Fri 5/11/12**	**35**	**Novak/Vatter**
39	Submit NMC Annual Report 1	364 days	Mon 5/12/08	Mon 5/11/09	35	Hunt/M. Frye
40	Submit NMC Annual Report 2	364 days	Tue 5/12/09	Tue 5/11/10	35	Novak/Vatter
41	Submit NMC Annual Report 3	365 days	Tue 5/11/10	Wed 5/11/11	35	Novak/Vatter
42	Submit NMC Annual Report 4	1 day?	Thu 5/10/12	Fri 5/11/12		
43						
44						
45	**CMOM PROGRAM REQUIREMENTS**	**2449 days**	**Wed 4/18/07**	**Tue 12/31/13**		
46	Submit CMOM Program Self-Assessment	183 days	Wed 4/18/07	Thu 10/18/07	36	Hunt/M. Frye
47	Actual Submittal Date	0 days	Wed 10/17/07	Wed 10/17/07		Hunt/M. Frye
48	APPROVAL DATE	0 days	Wed 5/14/08	Wed 5/14/08		
49	Regroup Meeting	0 days	Thu 7/12/07	Thu 7/12/07		Kendall/Mulshine
50	CMOM Workshops	32 days	Mon 7/23/07	Fri 8/24/07		Kendall/Mulshine
51	Report submitted for internal review	28 days	Fri 8/24/07	Fri 9/21/07		Kendall/Mulshine
52	Report submitted to key people for final review	0 days	Fri 9/28/07	Fri 9/28/07		Kendall/Mulshine
53	Submit Grease Control Program (FOG)	183 days	Wed 4/18/07	Thu 10/18/07	36(a)	Clark/Martin
54	Actual Submittal Date	0 days	Tue 9/18/07	Tue 9/18/07	36(a)	Casey/Waters
55	APPROVAL DATE	0 days	Tue 1/8/08	Tue 1/8/08		
56	Submit Pump Station Backup Power Plan	366 days	Wed 4/18/07	Fri 4/18/08	36(b)	Novak/Vatter
57	Actual Submittal Date	0 days	Fri 12/14/07	Fri 12/14/07	36(b)	Novak/Vatter
58	APPROVAL DATE	0 days	Wed 5/14/08	Wed 5/14/08		
59	Submit Sewer Overflow Response Plan (SORP)	183 days	Wed 4/18/07	Thu 10/18/07	36(c)	Kendall
60	Actual Submittal Date	0 days	Tue 10/9/07	Tue 10/9/07	36(c)	Casey/Waters
61	APPROVAL DATE	0 days	Wed 5/14/08	Wed 5/14/08		
62	**Submit CMOM Annual Report**	**2449 days**	**Wed 4/18/07**	**Tue 12/31/13**		

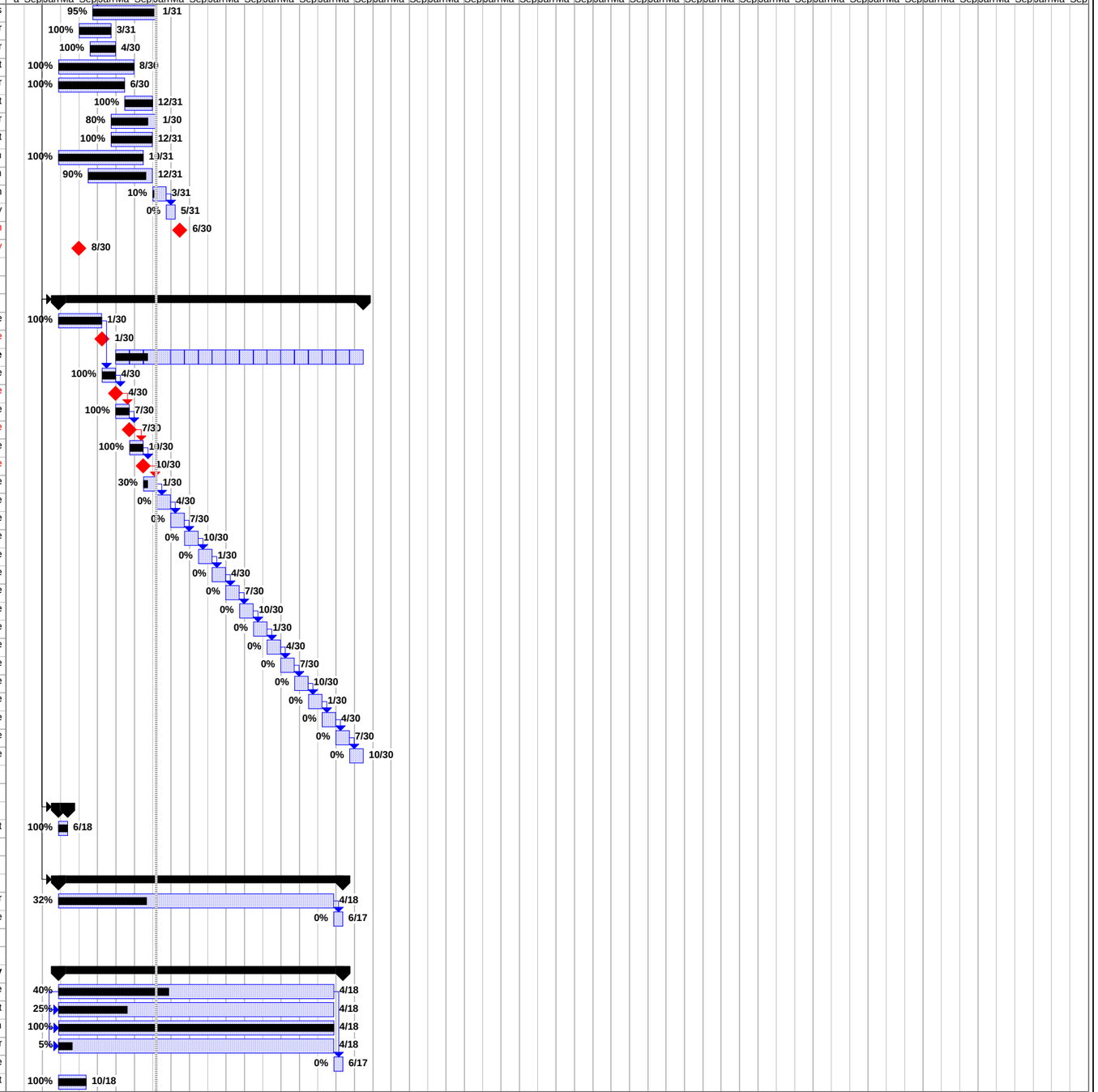


Project: CD Project First Five Years-Au
Date: Tue 1/20/09

Task | Milestone | Rolled Up Task | Rolled Up Progress | External Tasks | Group By Summary
Progress | Summary | Rolled Up Milestone | Split | Project Summary | Deadline

Consent Decree Schedule-2007 thru 2012

ID	ℹ	Task Name	Duration	Start	Finish	CD Paragraph	Responsible Party
125	▦	Complete 16 Watershed Characterization Reports	427 days	Sat 12/1/07	Sat 1/31/09		Clements
126	✓	Develop Alternatives Analysis Approach	212 days	Sat 9/1/07	Mon 3/31/08		Vatter/Turner
127	✓	Conduct Banklick Pilot Project	169 days	Tue 11/13/07	Wed 4/30/08		Vatter/Turner
128	✓	Refine Interim Water Quality Models	500 days	Wed 4/18/07	Sat 8/30/08		Scott
129	✓	Develop Infrastructure Models	439 days	Wed 4/18/07	Mon 6/30/08		Vatter
130	✓	Confirm Water Quality Models	183 days	Tue 7/1/08	Wed 12/31/08		Scott
131	▦	Conduct Alternatives Analysis	304 days	Tue 4/1/08	Fri 1/30/09		Vatter/Turner
132	✓	Conduct Financial Affordability Analysis	274 days	Tue 4/1/08	Wed 12/31/08	39(a)	Turner/Schmitt
133	✓	Conduct Water Quality Assessments (Stream Monitoring)	562.38 days	Wed 4/18/07	Fri 10/31/08		Scott/Wooten
134	▦	Develop Stream Condition Index	426 days	Thu 11/1/07	Wed 12/31/08		Wooten
135	▦	Complete Draft Watershed Plans	88 days	Fri 1/2/09	Tue 3/31/09	39(b)	Gibson
136	▦	Obtain Public Input on First Round of Watershed Plans	60 days	Wed 4/1/09	Sun 5/31/09	40	Casey
137	▦	Submit First Round of Watershed Plans	0 days	Tue 6/30/09	Tue 6/30/09	39(b)	Gibson
138	▦	Watershed Summit -- Meets Public Input Requirement for Watershed Plan Process	0 days	Thu 8/30/07	Thu 8/30/07	40	Casey
139							
140							
141		**REPORTING**	**2022.38 days**	**Wed 4/18/07**	**Tue 10/30/12**		
142	✓	Submit Quarterly Report 1	287 days	Wed 4/18/07	Wed 1/30/08		Hunt/M. Frye
143	✓	Actual Submittal Date	0 days	Wed 1/30/08	Wed 1/30/08		Hunt/M. Frye
144	⟳	**Quarterly Reports**	**1734 days**	**Thu 1/31/08**	**Tue 10/30/12**	**42**	**Hunt/M. Frye**
145	✓	Submit Quarterly Report 2	90 days	Thu 1/31/08	Wed 4/30/08		Hunt/M. Frye
146	▦	Actual Submittal Date	0 days	Wed 4/30/08	Wed 4/30/08		Hunt/M. Frye
147	✓	Submit Quarterly Report 3	3 mons	Thu 5/1/08	Wed 7/30/08	42	Hunt/M. Frye
148	▦	Actual Submittal Date	0 days	Wed 7/30/08	Wed 7/30/08		Hunt/M. Frye
149	✓	Submit Quarterly Report 4	3 mons	Fri 8/1/08	Thu 10/30/08	42	Hunt/M. Frye
150		Actual Submittal Date	0 days	Thu 10/30/08	Thu 10/30/08		Hunt/M. Frye
151	▦	Submit Quarterly Report 5	3 mons	Sat 11/1/08	Fri 1/30/09	42	Hunt/M. Frye
152	▦	Submit Quarterly Report 6	3 mons	Fri 1/30/09	Thu 4/30/09	42	Hunt/M. Frye
153	▦	Submit Quarterly Report 7	3 mons	Fri 5/1/09	Thu 7/30/09	42	Hunt/M. Frye
154	▦	Submit Quarterly Report 8	3 mons	Sat 8/1/09	Fri 10/30/09	42	Hunt/M. Frye
155	▦	Submit Quarterly Report 9	3 mons	Sun 11/1/09	Sat 1/30/10	42	Hunt/M. Frye
156	▦	Submit Quarterly Report 10	3 mons	Sat 1/30/10	Fri 4/30/10	42	Hunt/M. Frye
157	▦	Submit Quarterly Report 11	3 mons	Sat 5/1/10	Fri 7/30/10	42	Hunt/M. Frye
158	▦	Submit Quarterly Report 12	3 mons	Sun 8/1/10	Sat 10/30/10	42	Hunt/M. Frye
159	▦	Submit Quarterly Report 13	3 mons	Mon 11/1/10	Sun 1/30/11	42	Hunt/M. Frye
160	▦	Submit Quarterly Report 14	3 mons	Sun 1/30/11	Sat 4/30/11	42	Hunt/M. Frye
161	▦	Submit Quarterly Report 15	3 mons	Sun 5/1/11	Sat 7/30/11	42	Hunt/M. Frye
162	▦	Submit Quarterly Report 16	3 mons	Mon 8/1/11	Sun 10/30/11	42	Hunt/M. Frye
163	▦	Submit Quarterly Report 17	3 mons	Tue 11/1/11	Mon 1/30/12	42	Hunt/M. Frye
164	▦	Submit Quarterly Report 18	3 mons	Tue 1/31/12	Mon 4/30/12	42	Hunt/M. Frye
165	▦	Submit Quarterly Report 19	3 mons	Tue 5/1/12	Mon 7/30/12	42	Hunt/M. Frye
166	▦	Submit Quarterly Report 20	3 mons	Wed 8/1/12	Tue 10/30/12	42	Hunt/M. Frye
167							
168							
169	✓	**CIVIL PENALTY**	**61 days**	**Wed 4/18/07**	**Mon 6/18/07**		
170	✓	Pay Civil Penalties to EPPC and US EPA	61 days	Wed 4/18/07	Mon 6/18/07	46	Schmitt
171							
172							
173		**SUPPLEMENTAL PROJECTS**	**1887 days**	**Wed 4/18/07**	**Sun 6/17/12**		
174		Supplemental Env. Projects	1827 days	Wed 4/18/07	Wed 4/18/12	47	Turner
175		SEP Completion Reports	60 days	Wed 4/18/12	Sun 6/17/12	48	Hunt/M. Frye
176							
177							
178		**STATE ENVIRONMENTAL PROJECTS**	**1887.38 days**	**Wed 4/18/07**	**Sun 6/17/12**	**49**	**Gibson/Casey**
179	▦	Conservancies	1827 days	Wed 4/18/07	Wed 4/18/12	49	C. Frye
180	▦	Licking River Watershed Watch	1827 days	Wed 4/18/07	Wed 4/18/12	49	Scott
181	✓	Split Rock	1827 days	Wed 4/18/07	Wed 4/18/12	49	Wooten
182	▦	Education Programs	1827 days	Wed 4/18/07	Wed 4/18/12	49	Casey/Eggemeyer
183		State Environmental Project Completion Report	60 days	Wed 4/18/12	Sun 6/17/12	50	Hunt/M. Frye
184	✓	Set up 6 Separate Escrow Accounts	183 days	Wed 4/18/07	Thu 10/18/07	Exhibit H	Schmitt



Project: CD Project First Five Years-Au
Date: Tue 1/20/09

Task	▭	Milestone	◆	Rolled Up Task	▭	Rolled Up Progress	▬	External Tasks	▭	Group By Summary	▬
Progress	▬	Summary	▬	Rolled Up Milestone	◇	Split	┆	Project Summary	▬	Deadline	⇩

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APPENDIX B:

Initial Watershed Projects

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Initial Watershed Projects

CIP Code	CIP Title	Project Manager	Past Activity on Project from 10/1/2008 to 12/31/2008	Planned Activity for 1/1/2009 to 3/31/2009
East Watershed Projects				
C-054-00	Eastern Regional - Contract 1--Pond Creek Force Main and Gravity Sewer to Eastern Regional WWTP	Darleen McGuire	Completed a few minor punchlist items.	No planned activity; project is complete.
C-075-00	Eastern Regional - Contract 3--Riley Force Main and Gravity Sewer to the ERWWTP	Darleen McGuire	Pump operating problems delayed putting the Riley Road Pump Station in service. No tie-ins were complete.	Four tie-ins to be complete by the end of January. Complete a few minor restoration items.
C-077-01	Eastern Regional - Contract 5--Sunset Force Main and Gravity Sewer	Jim Turner	Construction did not start; coordination discussions began with the land developer.	Continue coordination discussions with the land developer.
C-079-00	Eastern Regional - Contract 7--Riley Road #2 Pump Station	Brandon Vatter	Continued construction.	Complete construction and place pump station into service.
C-080-00	Eastern Regional - Contract 8--Alex-Licking and Sunset Pump Stations	Jim Turner	Final completion of remaining punchlist items for Alex Licking Pump Station. Construction did not start on the Sunset Pump Station; coordination discussions began with the land developer.	There is no planned activity for the Alex Licking Pump Station; the project is complete. Continue coordination discussions with land developer for Sunset Pump Station.
West Watershed Projects				
C-001-00	Western Regional Conveyance System to Western Regional WWTP	Brandon Vatter	Bids received 11/11/08; Bids were reviewed in December.	A contract award is anticipated in January. Following the award final contract documents will be executed and a pre-construction conference will be held. Onsite work is anticipated to begin in the second quater of 2009.
C-002-00	Western Regional - Sunnybrook Sewer	Brandon Vatter	Construction began in December. Construction period is approx 1 year.	Continue construction
C-003-00	Western Regional - Frogtown Interceptor Sewer (from Sunnybrook Dr. to Frogtown Rd.)	Brandon Vatter	Continued design.	Continue design.
C-004-00	Western Regional - South Fork Gunpowder Interceptor Sewer and Rosetta Sewer	Brandon Vatter	Continued design.	Continue design.
C-005-00	Western Regional - Narrows Road Diversion Pump Station	Brandon Vatter	Continued design.	Continue design.
C-038-00	Western Regional - Gunpowder Interceptor Sewer	Bob Wilson	Continued installation of 72-inch gravity sewer and manholes.	Continue installation of 72-inch gravity sewer and manholes.
C-039-00	Western Regional - Richwood Sewer and Force Main	Brandon Vatter	Continued design.	Continue design.
C-063-00	Western Regional - Turkeyfoot Industrial Road Force Main	Bob Wilson	Identified new cost-effective options for Phase 2 and revised the design to incorporate the new options. Continued design of Phase 3.	Complete construction of Phase 2. Continue design of Phase 3.
C-414-02	American Sign Pump Station Rehabilitation	Jim Turner	No construction activity, waiting to receive O&M manuals before releasing final payment.	No planned activity; project is complete.

Initial Watershed Projects

CIP Code	CIP Title	Project Manager	Past Activity on Project from 10/1/2008 to 12/31/2008	Planned Activity for 1/1/2009 to 3/31/2009
C-424-00	Western Regional Wastewater Treatment Plant	Chris Novak	Bids received 11/14/08; a contract was awarded by the Board of Directors 12/16/08.	Execute final contract documents and hold pre-construction conference; on-site work is anticipated to begin in the second quarter of 2009.
Central Watershed Projects				
C-414-16	Meyer Road Pump Station Rehabilitation	Jim Turner	No construction activity, waiting to receive O&M manuals before releasing final payment.	No planned activity; project is complete.

APPENDIX C:

Recurring SSOs

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Recurring SSOs					
No.	MHID	City	County	Model Predicted Overflow Activations	Model Predicted Overflow Volume (MG)
1	0020014	Silver Grove	Campbell	0	0.000
2	0050022	Fort Thomas	Campbell	2	0.012
3	0060001	Unincorp Campbell County	Campbell	2	0.005
4	0060002	Unincorp Campbell County	Campbell	0	0.000
5	0090009	Highland Heights	Campbell	0	0.000
6	0100001	Highland Heights	Campbell	0	0.000
7	0100002	Highland Heights	Campbell	2	0.018
8	0110010	Highland Heights	Campbell	2	0.072
9	0150023	Southgate	Campbell	0	0.000
10	0150058	Wilder	Campbell	2	0.572
11	0150063	Wilder	Campbell	0	0.000
12	0150064	Wilder	Campbell	0	0.000
13	0150065	Wilder	Campbell	2	0.034
14	0150069	Wilder	Campbell	0	0.000
15	0150351	Southgate	Campbell	0	0.000
16	0150356	Southgate	Campbell	0	0.000
17	0300008	Fort Thomas	Campbell	0	0.000
18	0410010	Fort Thomas	Campbell	2	0.021
19	0410011	Fort Thomas	Campbell	0	0.000
20	0410019	Fort Thomas	Campbell	1	0.014
21	0410036	Fort Thomas	Campbell	0	0.000
22	0410068	Newport	Campbell	0	0.000
23	0440074	Fort Thomas	Campbell	0	0.000
24	0530083	Newport	Campbell	2	0.157
25	0650025	Bellevue	Campbell	2	0.855
26	0650053	Bellevue	Campbell	0	0.000
27	0650098	Bellevue	Campbell	0	0.000
28	0860001	Wilder	Campbell	10	7.741
29	0860003	Wilder	Campbell	0	0.000
30	0860016	Wilder	Campbell	0	0.000
31	1040060	Independence	Kenton	0	0.000
32	1090069	Edgewood	Kenton	0	0.000
33	1110025	Erlanger	Kenton	0	0.000
34	1110067	Erlanger	Kenton	0	0.000
35	1110161	Erlanger	Kenton	0	0.000
36	1110294	Erlanger	Kenton	1	0.001
37	1160004	Crestview Hills	Kenton	0	0.000
38	1190007	Erlanger	Kenton	0	0.000
39	1220029	Erlanger	Kenton	0	0.000
40	1240008	Erlanger	Kenton	3	0.127
41	1280008	Erlanger	Kenton	0	0.000
42	1560016	Fort Mitchell	Kenton	0	0.000
43	1560019	Fort Mitchell	Kenton	0	0.000
44	1560074	Fort Mitchell	Kenton	0	0.000
45	1570100	Fort Mitchell	Kenton	2	0.019
46	1590006	Lakeside Park	Kenton	0	0.000
47	1600005	Lakeside Park	Kenton	0	0.000
48	1600009	Lakeside Park	Kenton	0	0.000
49	1600029	Lakeside Park	Kenton	0	0.000
50	1600049	Lakeside Park	Kenton	0	0.000
51	1600050	Lakeside Park	Kenton	0	0.000
52	1600059	Lakeside Park	Kenton	0	0.000
53	1600110	Lakeside Park	Kenton	0	0.000

Recurring SSOs					
No.	MHID	City	County	Model Predicted Overflow Activations	Model Predicted Overflow Volume (MG)
54	1600113	Lakeside Park	Kenton	0	0.000
55	1610102	Fort Mitchell	Kenton	0	0.000
56	1610114	Fort Mitchell	Kenton	0	0.000
57	1610115	Fort Mitchell	Kenton	0	0.000
58	1620001	Fort Mitchell	Kenton	0	0.000
59	1630012	Crescent Springs	Kenton	0	0.000
60	1680001	Unicorp Kenton County	Kenton	0	0.000
61	1690043	Fort Wright	Kenton	0	0.000
62	1700025	Park Hills	Kenton	0	0.000
63	1730104	Fort Mitchell	Kenton	0	0.000
64	1730110	Bromley	Kenton	0	0.000
65	1760047	Edgewood	Kenton	0	0.000
66	1760048	Edgewood	Kenton	0	0.000
67	1820014	Villa Hills	Kenton	0	0.000
68	1830017	Unincorp Boone County	Boone	0	0.000
69	1830020	Unincorp Boone County	Boone	0	0.000
70	1830067	Unincorp Boone County	Boone	0	0.000
71	1860108	Taylor Mill	Kenton	0	0.000
72	1870013	Covington	Kenton	0	0.000
73	1890001	Lakeside Park	Kenton	0	0.000
74	1890010	Lakeside Park	Kenton	0	0.000
75	1890011	Lakeside Park	Kenton	0	0.000
76	1900028	Cold Spring	Campbell	2	0.021
77	1920163	Cold Spring	Campbell	0	0.000
78	1950199	Fort Wright	Kenton	0	0.000
79	1960012	Crestview Hills	Kenton	0	0.000
80	2030097	Edgewood	Kenton	0	0.000
81	2090001	Elsmere	Kenton	0	0.000
82	2090026	Elsmere	Kenton	0	0.000
83	2110002	Elsmere	Kenton	2	0.100
84	2120001	Elsmere	Kenton	0	0.000
85	2120002	Elsmere	Kenton	0	0.000
86	2120041	Elsmere	Kenton	0	0.000
87	2130022	Villa Hills	Kenton	0	0.000
88	2150050	Crestview	Kenton	0	0.000
89	2160036	Fort Mitchell	Kenton	0	0.000
90	2280011	Unicorp Kenton County	Kenton	2	0.127
91	2280012	Unicorp Kenton County	Kenton	0	0.000
92	2290001	Crescent Springs	Kenton	0	0.000
93	2300123	Unicorp Kenton County	Kenton	5	1.609
94	2380001	Unincorp Boone County	Boone	0	0.000
95	2390002	Unincorp Boone County	Boone	0	0.000
96	2390006	Unincorp Boone County	Boone	0	0.000
97	2390008	Unincorp Boone County	Boone	0	0.000
98	2390762	Unincorp Boone County	Boone	0	0.000
99	1950PS1	Fort Wright	Kenton	2	2.464
			TOTAL	**48**	**13.971**

Threshold for model activation is 0.01 MGD and 0.001 MG

APPENDIX D:

Wet Weather CSOs

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Wet Weather CSOs				
No.	CSO ID	KPDES Permit #	Model Predicted Activations	Model Predicted Overflow Volume (MG)
1	1870194	KY0021466 - Outfall 79	0	0.000
2	1850158	KY0021466 - Outfall 76	18	4.732
3	1870193	KY0021466 - Outfall 78	5	0.063
4	1840130	To Be Permitted	3	0.015
5	0880081	KY0021466 - Outfall 36	15	3.055
6	0570089	KY0021466 - Outfall 16	12	8.070
7	0840116	KY0021466 - Outfall 27	14	0.956
8	0570090	KY0021466 - Outfall 17	9	5.704
9	0790086	KY0021466 - Outfall 29	14	11.618
10	1480187	KY0021466 - Outfall 30	18	103.658
11	0640090	KY0021466 - Outfall 24	14	17.592
12	1420142	KY0021466 - Outfall 51	16	10.905
13	0840111	To Be Permitted	15	5.206
14	0910068	KY0021466 - Outfall 37	11	7.631
15	0980081	KY0021466 - Outfall 48	17	9.360
16	1500131	KY0021466 - Outfall 66	10	1.151
17	0840112	To Be Permitted	11	0.303
18	1490132	KY0021466 - Outfall 65	4	2.226
19	0630061	KY0021466 - Outfall 83	4	0.085
20	0790084	KY0021466 - Outfall 31	17	2.136
21	0650090	KY0021466 - Outfall 26	2	0.729
22	0910065	KY0021466 - Outfall 38	19	25.579
23	0610071	KY0021466 - Outfall 21	16	2.297
24	0620075	KY0021466 - Outfall 23	14	1.459
25	0880082	KY0021466 - Outfall 35	0	0.000
26	0600104	To Be Permitted	0	0.000
27	0600097	KY0021466 - Outfall 19	7	0.370
28	0540009	To Be Permitted	4	0.189
29	0540044	To Be Permitted	5	0.297
30	0600094	KY0021466 - Outfall 18	7	0.113
31	0610072	KY0021466 - Outfall 20	3	0.030
32	0620077	KY0021466 - Outfall 22	3	0.013
33	0930105	KY0021466 - Outfall 41	15	3.429
34	1440209	KY0021466 - Outfall 56	19	12.896
35	1470093	KY0021466 - Outfall 63	11	9.090
36	1720109	KY0021466 - Outfall 73	9	2.797
37	1880091	KY0021466 - Outfall 80	0	0.000
38	0960063	KY0021466 - Outfall 45	1	0.010
39	1710116	KY0021466 - Outfall 68	13	2.032
40	0600096	To Be Permitted	1	0.002
41	0770096	KY0021466 - Outfall 28	15	1.078
42	0870079	KY0021466 - Outfall 34	15	5.308
43	0930104	KY0021466 - Outfall 40	0	0.000
44	0930106	KY0021466 - Outfall 39	0	0.000
45	1420144	KY0021466 - Outfall 52	0	0.000
46	1420145	KY0021466 - Outfall 53	0	0.000
47	1420147	KY0021466 - Outfall 55	0	0.000
48	1440206	KY0021466 - Outfall 61	8	0.132
49	1730263	KY0021466 - Outfall 74	10	0.295
50	0870078	KY0021466 - Outfall 33	0	0.000
51	1350155	KY0021466 - Outfall 49	0	0.000
52	1420141	KY0021466 - Outfall 50	7	0.061
53	1440205	KY0021466 - Outfall 60	3	0.022
54	1710114	KY0021466 - Outfall 69	1	0.002

Wet Weather CSOs				
No.	CSO ID	KPDES Permit #	Model Predicted Activations	Model Predicted Overflow Volume (MG)
55	1710119	KY0021466 - Outfall 70	7	0.959
56	1710121	KY0021466 - Outfall 71	3	0.197
57	1880090	KY0021466 - Outfall 81	2	0.351
58	0550024	To Be Permitted	0	0.000
59	0930102	KY0021466 - Outfall 43	0	0.000
60	0930103	KY0021466 - Outfall 42	0	0.000
61	0960064	KY0021466 - Outfall 44	0	0.000
62	0980073	KY0021466 - Outfall 46	1	0.003
63	0980080	KY0021466 - Outfall 47	0	0.000
64	1420146	KY0021466 - Outfall 54	0	0.000
65	1470089	KY0021466 - Outfall 62	0	0.000
66	1480185	To Be Permitted	3	0.310
67	1490172	KY0021466 - Outfall 64	0	0.000
68	1710124	KY0021466 - Outfall 72	3	0.185
69	0530110	To Be Permitted	0	0.000
70	0330100	KY0021466 - Outfall 12	0	0.000
71	0340050	KY0021466 - Outfall 14	1	0.014
72	0340051	KY0021466 - Outfall 13	4	0.167
73	0910066	To Be Permitted	0	0.000
74	1320093	To Be Permitted	0	0.000
75	0010001	To Be Permitted	4	0.299
76	1730259	KY0021466 - Outfall 75	4	0.244
77	0200069	KY0021466 - Outfall 11	2	0.006
78	1310100	To Be Permitted	0	0.000
79	1380054	To Be Permitted	0	0.000
80	1380083	To Be Permitted	0	0.000
81	1440204	KY0021466 - Outfall 59	0	0.000
82	1440207	To Be Permitted	0	0.000
83	0030031	KY0021466 - Outfall 10	0	0.000
84	0650100	KY0021466 - Outfall 25	0	0.000
85	1510098	To Be Permitted	0	0.000
86	0690008	To Be Permitted	0	0.000
87	1510133	To Be Permitted	0	0.000
88	0360079	To Be Permitted	7	0.207
89	0650098	To Be Permitted	2	0.855
90	0650054	To Be Permitted	0	0.000
91	0530117	To Be Permitted	14	0.500
92	0010228	To Be Permitted	0	0.000
93	0730129	To Be Permitted	12	0.298
94	1730262	To Be Permitted	0	0.000
		TOTAL	**504**	**267.292**

Threshold for model activation is 0.01 MGD and 0.001 MG

APPENDIX E:

Wet Weather CSO Revisions Transaction Database

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Wet Weather CSO Revisions Transaction Database		
CSO ID	**KPDES Permit #**	**Comments**
1870194	KY0021466 - Outfall 79	
1850158	KY0021466 - Outfall 76	
1870193	KY0021466 - Outfall 78	
1510199	KY0021466 - Outfall 67	Eliminated with South Hills outfall sewer construction
1840130	To Be Permitted	
0880081	KY0021466 - Outfall 36	
0570089	KY0021466 - Outfall 16	
0840116	KY0021466 - Outfall 27	
0570090	KY0021466 - Outfall 17	
0790086	KY0021466 - Outfall 29	
1480187	KY0021466 - Outfall 30	
0640090	KY0021466 - Outfall 24	
1420142	KY0021466 - Outfall 51	
0840111	To Be Permitted	
0910068	KY0021466 - Outfall 37	
0980081	KY0021466 - Outfall 48	
1500131	KY0021466 - Outfall 66	
0840112	To Be Permitted	
1490132	KY0021466 - Outfall 65	
0630061	KY0021466 - Outfall 83	
0790084	KY0021466 - Outfall 31	
0650090	KY0021466 - Outfall 26	
0910065	KY0021466 - Outfall 38	
0610071	KY0021466 - Outfall 21	
0620075	KY0021466 - Outfall 23	
0880082	KY0021466 - Outfall 35	
0600104	To Be Permitted	
0600097	KY0021466 - Outfall 19	
0540009	To Be Permitted	
0540044	To Be Permitted	
0600094	KY0021466 - Outfall 18	
0610072	KY0021466 - Outfall 20	
0620077	KY0021466 - Outfall 22	
0930105	KY0021466 - Outfall 41	
1440209	KY0021466 - Outfall 56	
1470093	KY0021466 - Outfall 63	
1720109	KY0021466 - Outfall 73	
1880091	KY0021466 - Outfall 80	
0960063	KY0021466 - Outfall 45	
1710116	KY0021466 - Outfall 68	
0600096	To Be Permitted	
0770096	KY0021466 - Outfall 28	
0870079	KY0021466 - Outfall 34	
0930104	KY0021466 - Outfall 40	
0930106	KY0021466 - Outfall 39	
1420144	KY0021466 - Outfall 52	
1420145	KY0021466 - Outfall 53	
1420147	KY0021466 - Outfall 55	
1440206	KY0021466 - Outfall 61	
1440212	KY0021466 - Outfall 58	Eliminated due to pipe collapse. Flow consolidated to downstream CSO
1730263	KY0021466 - Outfall 74	
0870078	KY0021466 - Outfall 33	
1350155	KY0021466 - Outfall 49	
1420141	KY0021466 - Outfall 50	
1440205	KY0021466 - Outfall 60	
1710114	KY0021466 - Outfall 69	

Wet Weather CSO Revisions Transaction Database		
CSO ID	**KPDES Permit #**	**Comments**
1710119	KY0021466 - Outfall 70	
1710121	KY0021466 - Outfall 71	
1880090	KY0021466 - Outfall 81	
0550024	To Be Permitted	
0930102	KY0021466 - Outfall 43	
0930103	KY0021466 - Outfall 42	
0960064	KY0021466 - Outfall 44	
0980073	KY0021466 - Outfall 46	
0980080	KY0021466 - Outfall 47	
1420146	KY0021466 - Outfall 54	
1470089	KY0021466 - Outfall 62	
1480185	To Be Permitted	
1490172	KY0021466 - Outfall 64	
1710124	KY0021466 - Outfall 72	
0530110	To Be Permitted	
0330100	KY0021466 - Outfall 12	
0340050	KY0021466 - Outfall 14	
0340051	KY0021466 - Outfall 13	
0600095	To Be Permitted	Eliminated. Two CSO outfalls served the same diversion point, 0600095 & 0600096. 0600095 was no longer needed. 0600096 is still in-service.
0910066	To Be Permitted	
0910067	To Be Permitted	Eliminated. Catch basins were separated and outfall was converted to a separate storm sewer
1320093	To Be Permitted	
0010001	To Be Permitted	
1730259	KY0021466 - Outfall 75	
0200069	KY0021466 - Outfall 11	
0630054	To Be Permitted	Not a CSO. Outfall part of ACOE Flood Control System
0660085	To Be Permitted	Not a CSO. Outfall part of ACOE Flood Control System
1310100	To Be Permitted	
1310106	To Be Permitted	Not a CSO. Outfall is a storm water outlet point to a ditch that drains into our combined system
1380054	To Be Permitted	
1380083	To Be Permitted	
1440204	KY0021466 - Outfall 59	
1440207	To Be Permitted	
0030031	KY0021466 - Outfall 10	
0650100	KY0021466 - Outfall 25	
0010047	To Be Permitted	Eliminated. This is a diversion point from the sanitary into a storm sewer. Diversion eliminated with upstream catch basin separation.
0650008	To Be Permitted	Not a CSO. Just a manhole mistakenly identified.
1510098	To Be Permitted	
0690008	To Be Permitted	
1510133	To Be Permitted	
0360079	To Be Permitted	Anchor Inn CSO outfall. Confirmed to be a CSO.
0650098	To Be Permitted	Wildcat Run CSO. Confirmed to be a CSO.
0650054	To Be Permitted	Glazier St. Confirmed to be a CSO.
0530117	To Be Permitted	Wilson Road. Confirmed to be a CSO.
0010228	To Be Permitted	Maple St Silver Grove - Storm water outfall with diversion 0010042 tied in. Working on elimination with catch basin separation project.
0730129	To Be Permitted	Fitzsimmons St. Confirmed to be a CSO.
1730262	To Be Permitted	Steve Tanner & Moore Sts. Confirmed to be a CSO.

New CSO Count is 94

CSOs eliminated

CSOs added