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December 29, 2015

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Subject: Annual Report
July 1, 2014 through June 30, 2015
Civil Action No. 3:08-cv-00608-CRS
DOJ Case No. 90-5-1-1-08254

Attention Chief:

Please find attached our Annual Report, prepared in accordance with Paragraph 30 of our Amended Consent Decree. This report is for the period July 1, 2014, through June 30, 2015.

I certify under penalty of law that this document and all attachments were prepared under our 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.

If you have questions or need additional information, please contact me at (502) 540-6136.

Sincerely,

Angela Akridge, PE
Chief Engineer

FY15 AR transmittal letter.doc

cc: Tony Parrott Paula Purifoy



Beneficial Use of Louisville's Biosolids
www.louisvillegreen.com

Louisville and Jefferson County Wet Weather Consent Decree Annual Report



Reporting Period:

July 1, 2014 through June 30, 2015

Submitted To:

Kentucky Department of Environmental Protection

United States Environmental Protection Agency

United States Department of Justice

Submitted By:

Louisville and Jefferson County Metropolitan Sewer District

700 W. Liberty Street

Louisville, Kentucky 40203-1911

Submittal Date:

December 31, 2015

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- Appendix B-2 - Discharge Work Orders-Bypass
- Appendix B-3 - Discharge Work Orders-Blending
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- Appendix B-5 - Discharge Work Orders-Interior
- Appendix C - Annual Average Overflow Volume
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- Appendix E - Acronyms
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- Appendix G - Phosphorus Monitoring Data
- Appendix H - Organizational Chart
- Appendix I - FY15 CSSA Annual Report
- Appendix J – Morris Forman WQTC FY15 Charts
- Appendix K - Jeffersontown WQTC Blending Event Charts
- Appendix L – Bypass Event Corrective Actions

INTRODUCTION

The Louisville and Jefferson County Metropolitan Sewer District (MSD) has entered into an Amended Consent Decree with the Kentucky Department of Environmental Protection (KDEP) and the United States Environmental Protection Agency (EPA). The Amended Consent Decree was signed by United States District Judge Simpson on April 10, 2009 and filed in United States District Court, Western Division of Kentucky, Louisville Division, on April 15, 2009.

This is the tenth Annual Report submitted in accordance with Paragraph 30 of the Amended Consent Decree. This report covers the time period from July 1, 2014, through June 30, 2015. The structure for this report is outlined as follows:

Section 1: Project WIN Performance Overview - This section provides an accounting of the number of overflow occurrences, including unauthorized discharges, from the separate sanitary sewer and combined sewer system and the estimated volumes of each. A discussion of the probable reductions, in both unauthorized discharge points and the discharges from MSD's Combined Sewer Overflow (CSO) locations, identified in the Morris Forman Water Quality Treatment Center (WQTC) Kentucky Pollutant Discharge Elimination System (KPDES) permit, that are expected to result from MSD's projects and activities during the reporting period are also contained in this section.

Section 2: Program Activities for Nine Minimum Controls - This section describes the scope, schedule and status for projects and other activities that were active during the reporting period July 1, 2014, through June 30, 2015, and the anticipated projects and activities that are scheduled to be performed during the next reporting period (July 1, 2015, through June 30, 2016) for continued compliance with the Amended Consent Decree.

Section 3: Program Activities for Sewer Overflow Response Protocol - This section describes the scope, schedule and status for activities that were active during the reporting period July 1, 2014 through June 30, 2015, and the anticipated activities that are scheduled to be performed during the next reporting period (July 1, 2015, through June 30, 2016) for continued compliance with the Amended Consent Decree.

Section 4: Program Activities for Discharge Abatement Plans - This section describes the scope, schedule and status for projects and other activities that were active during the reporting period July 1, 2014, through June 30, 2015, and the anticipated projects and activities that are scheduled to be performed during the next reporting period (July 1, 2015, through June 30, 2016) for continued compliance with the Amended Consent Decree.

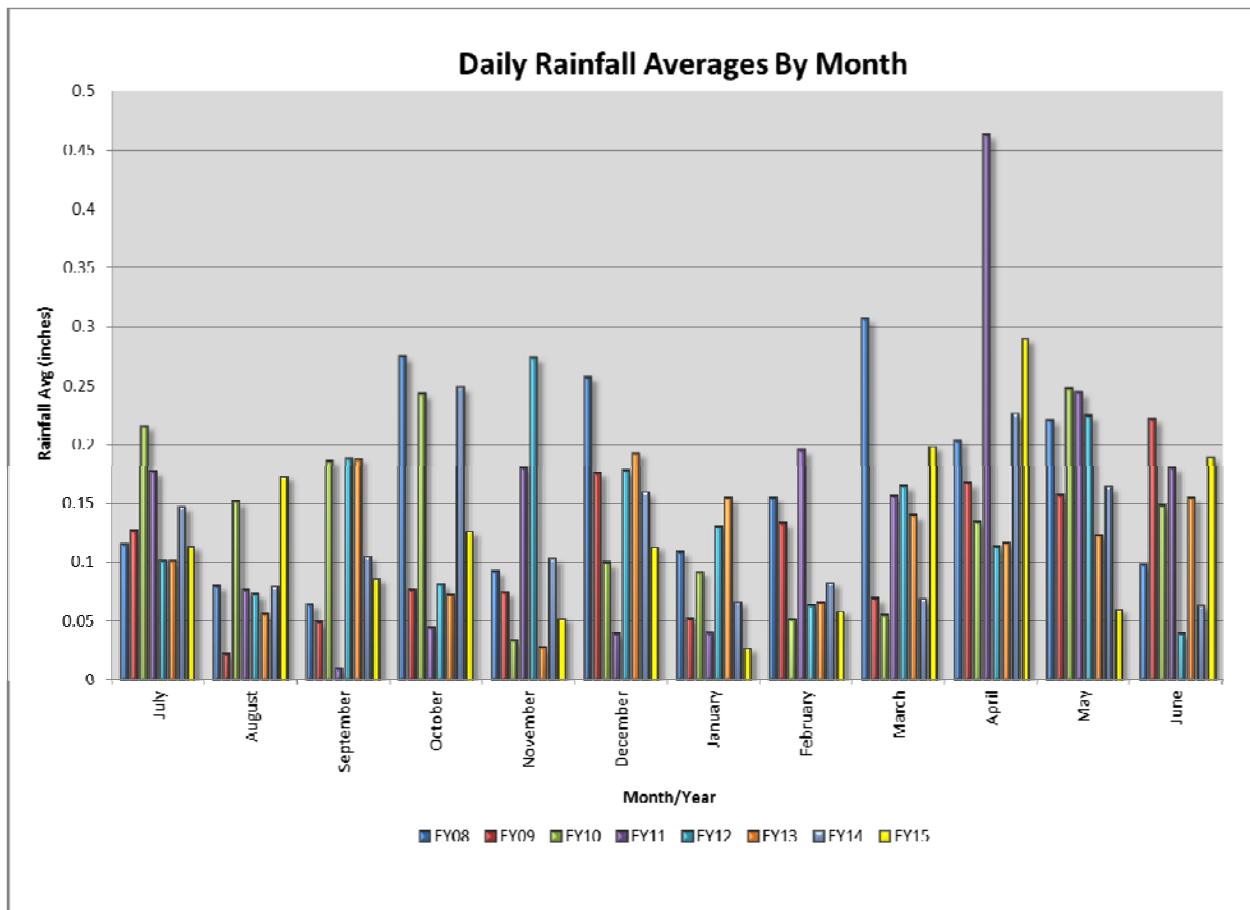
Section 5: Public Outreach, Education, Notification and Participation - This section describes the activities related to public outreach, education, notification and participation that were active during the reporting period July 1, 2014, through June 30, 2015, and the anticipated activities that are scheduled to be performed during the next reporting period (July 1, 2015, through June 30, 2016) for continued compliance with the Amended Consent Decree.

Section 6: Capacity Management Operations and Maintenance (CMOM) Report - The program activities performed during the reporting period July 1, 2014, through June 30, 2015, and activities planned for the next reporting period (July 1, 2015, through June 30, 2016) are included in this section for continued compliance with the Amended Consent Decree.

SECTION 1: Project WIN Performance Overview

1.1 FY15 Rainfall

The number and the volume of wet weather overflows are directly related to the amount of rain that has fallen during the reporting period. The following graph shows the Jefferson County monthly average daily rainfall amounts (with an average of all MSD Rain Gauges) for the period between FY08 and FY15.



1.2 FY15 Unauthorized Discharges to Waters of the United States

Appendix B-1 includes information related to MSD’s discharges to Waters of the United States for the reporting period. This information is entered and maintained in the Hansen Information Management System (Hansen) utilizing procedures reviewed and improved through efforts

associated with various components of the Amended Consent Decree. These discharges have been reported to Kentucky Department of Environment Protection (KDEP) and Environmental Protection Agency (EPA) through automated email, telephone calls and monthly wastewater treatment plant discharge monitoring reports (DMRs).

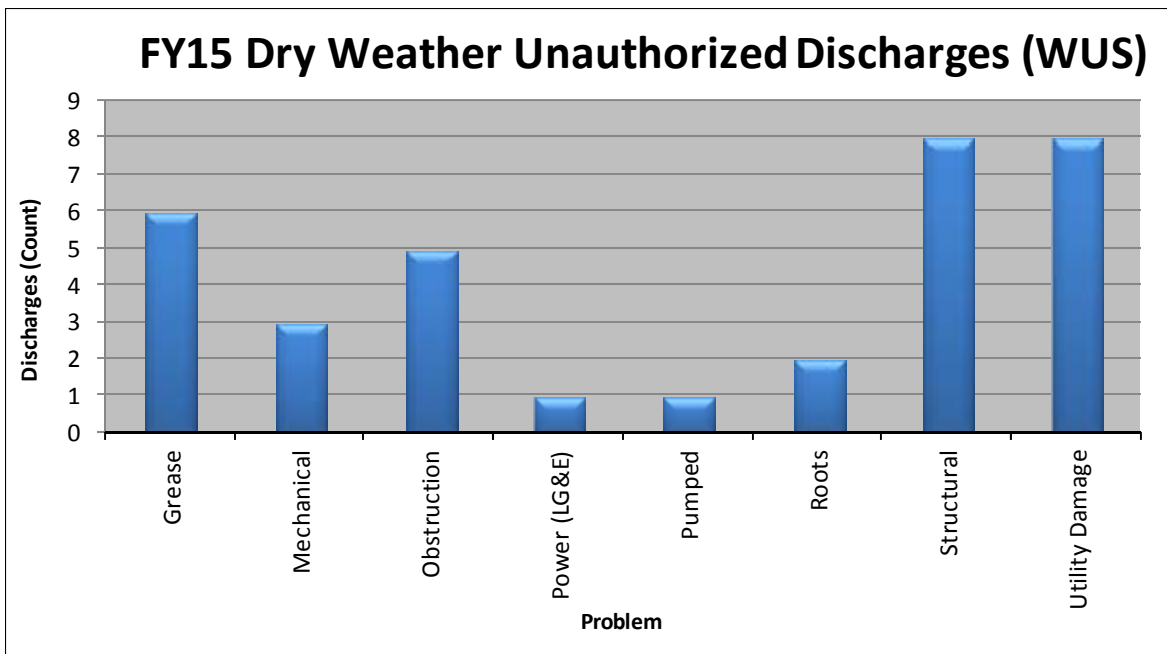
There were 455 overflows that reached the Waters of the United States (WUS) in FY15. Thirty-four were reported during dry weather and 421 were wet weather related. The following table shows the breakdown of unauthorized discharges by problem code and weather for the current reporting period.

UNAUTHORIZED DISCHARGES (WUS)			
	Dry Weather	Wet Weather	Total
BLENDING AT JTOWN WQTC	0	15	15
BYPASS AT WQTC	0	10	10
ELECTRICAL PROBLEMS AT MSD	0	5	5
GREASE BLOCKAGE	6	1	7
LACK OF SYSTEM CAPACITY	0	374	373
MECHANICAL FAILURE	3	2	5
OBSTRUCTION-NOT GREASE / ROOTS	5	1	6
POWER OUTAGE (LG&E)	1	1	2
PUMPED OVERFLOW	1	7	8
ROOTS	2	3	5
STRUCTURAL FAILURE	8	2	10
UTILITY DAMAGED MSD ASSET	8	0	7
Total	34	421	455

An analysis, by asset type, of the 34 dry weather unauthorized discharges was performed. The results are shown in the table below.

DRY WEATHER DISCHARGES (WUS) BY ASSET TYPE AND CAUSE									
	Grease	Mechanical	Obstruction	Power	Pumped	Roots	Structural	Utility Damage	Total
Sewer Lift Station	0	2	0	1	0	0	0	4	7
Sewer Main	1	0	0	0	0	1	5	1	8
Sewer Manhole	5	0	3	0	1	1	2	2	14
Sewer Node	0	1	1	0	0	0	1	0	3
Sewer Service Line	0	0	1	0	0	0	0	1	2
Total	6	3	5	1	1	2	7	8	34

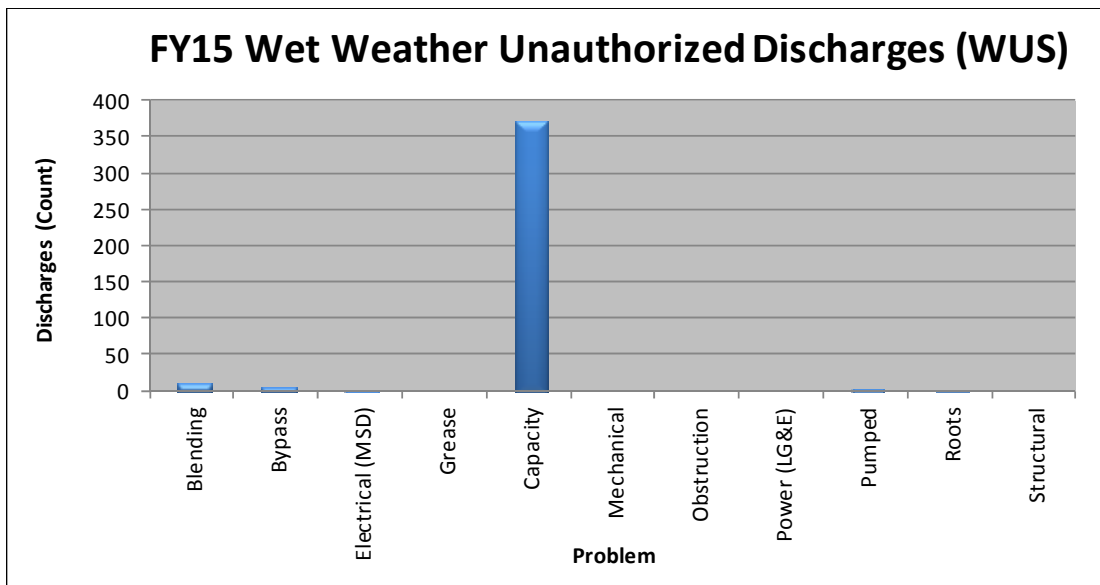
The next chart shows an analysis of unauthorized dry weather overflows by problem code. In FY15, 34 (multiple dry weather related problem codes) dry weather overflows were attributed to dry weather problems. There was an increase in dry weather related overflows due to grease, obstructions, structural failures, and mechanical failures compared to the previous fiscal year.



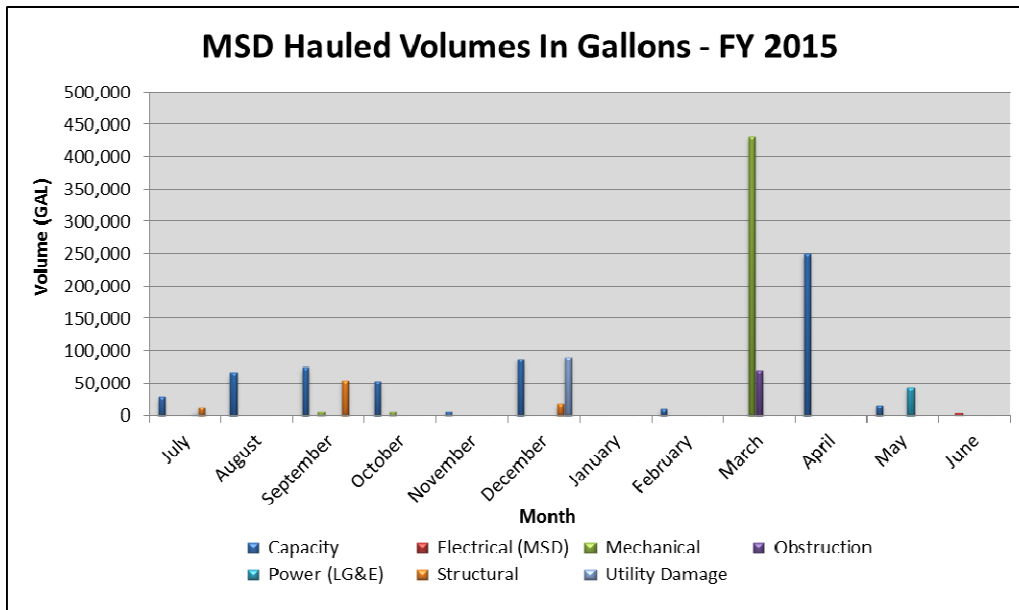
An analysis by asset type of the 421 unauthorized wet weather discharges was performed. The results of this analysis are shown in the table below.

WET WEATHER DISCHARGES (WUS) BY ASSET TYPE AND CAUSE												
	Blending	Bypass	Electrical (MSD)	Grease	Capacity	Mechanical	Obstruction	Power (LG&E)	Pumped	Roots	Structural	Total
SEWER LIFT STATION	0	0	3	0	31	1	0	0	7	0	1	43
SEWER MAIN	0	0	0	0	1	0	0	0	0	0	1	2
SEWER MANHOLE	0	0	2	1	323	1	1	1	0	3	0	332
SEWER SERVICE LINE	0	0	0	0	19	0	0	0	0	0	0	19
SEWER TREATMENT PLANT	15	10	0	0	0	0	0	0	0	0	0	25
Total	15	10	5	1	374	2	1	1	7	3	2	421

The next chart shows the unauthorized wet weather overflows by problem code. In FY15, 421 (multiple wet weather related problem codes) overflows were attributed to wet weather capacity issues. There was a slight increase in wet weather related overflows, due to capacity from increased precipitation compared to the previous fiscal year.



To reduce the number of overflows in wet weather, MSD hauls sewage from multiple locations. MSD proactively monitors known and suspected locations that have wet weather capacity issues which may cause sewer line surcharging, basement back-ups and SSOs. MSD staff only haul from these locations as needed based on actual wet weather event data. Hauling efforts are summarized below.



MSD HAULED VOLUME IN GALLONS - FY 2015								
	Capacity	Electrical (MSD)	Mechanical	Obstruction	Power (LG&E)	Structural	Utility Damage	Total
July	28,500	0	0	0	1	12,500		41,001
August	66,500	0	0	0	0	0		66,500
September	74,200	0	5,000	0	0	54,000		133,200
October	53,501	0	5,000	0	0	0		58,501
November	5,000	0	0	0	0	0		5,000
December	86,400	0	0	0	0	17,600	90,000	194,000
January	0	0	0	0	0	0		0
February	9,500	0	0	0	0	0		9,500
March	0	0	431,900	70,000	0	0		501,900
April	250,300	0	0	0	0	0		250,300
May	15,301	0	0	0	42,800	0		58,101
June	0	3,000	0	0	0	0		3,000
Total	589,202	3,000	441,900	70,000	42,801	84,100	90,000	1,321,003

1.2.1 FY15 Bypass Events at Water Quality Treatment Centers

Included in Appendix B-2 is a report that details the 10 bypasses which occurred at water quality treatment centers (WQTC) during FY15. Bypasses were reported for the following WQTCs:

FY15 BYPASS EVENTS				
	KPDES Permit Number	Dry Weather	Wet Weather	Total
BERRYTOWN	KY0036501	0	5	5
CEDAR CREEK	KY0098540	0	1	1
KEN CARLA	KY0022497	0	1	1
MORRIS FORMAN	KY0022411	0	1	1
STARVIEW	KY0031712	0	1	1
TIMBERLAKE	KY0043087	0	1	1
TOTALS		0	10	10

Project WIN Quarterly Report 18 included a memorandum, included as Appendix K, which described the analysis of 44 bypass events that occurred between July 1, 2008, and December 31, 2009. This analysis delineated bypasses into the following categories:

- Capacity (CAP)
- External Power failures (LGE Related – PWR)
- Equipment Failure (Mechanical -MCH, Electrical - ELE, Structural-STR)
- Human Error (OPN)

In a continuation of the above analysis process, an assessment of FY15 WQTC bypasses was performed to determine the root cause of each bypass, the failure category, corrective actions to be taken, possible programmatic solutions, and corrective action completion date. Refer to Appendix L for details of this analysis. This analysis does not include the Jeffersontown WQTC blending events. Refer to Section 1.2.2 for details of the Jeffersontown WQTC blending events.

1.2.2 FY15 Blending Events at the Jeffersontown WQTC

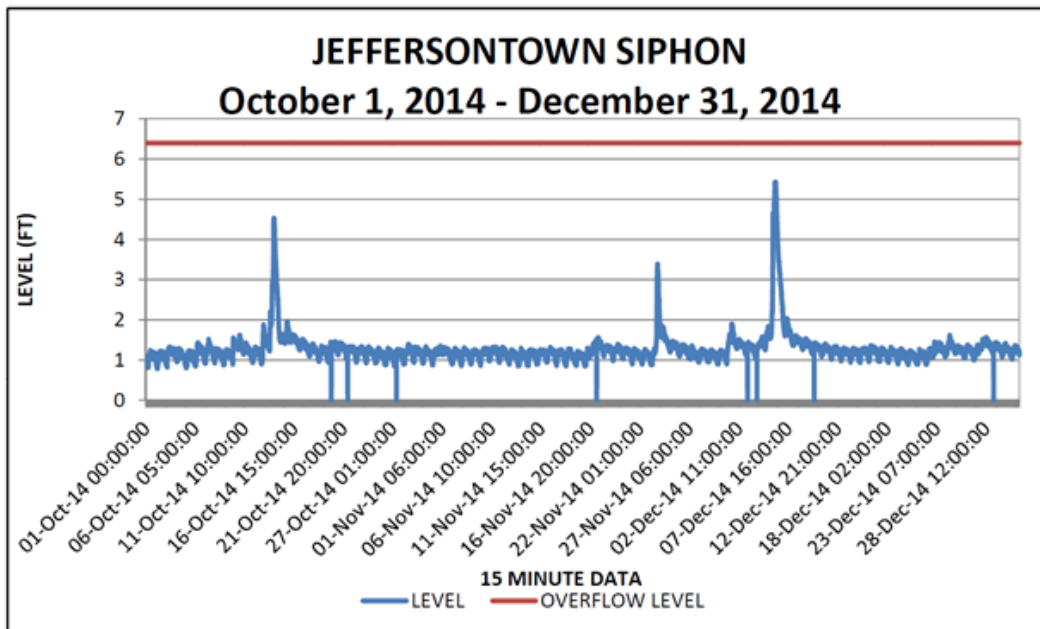
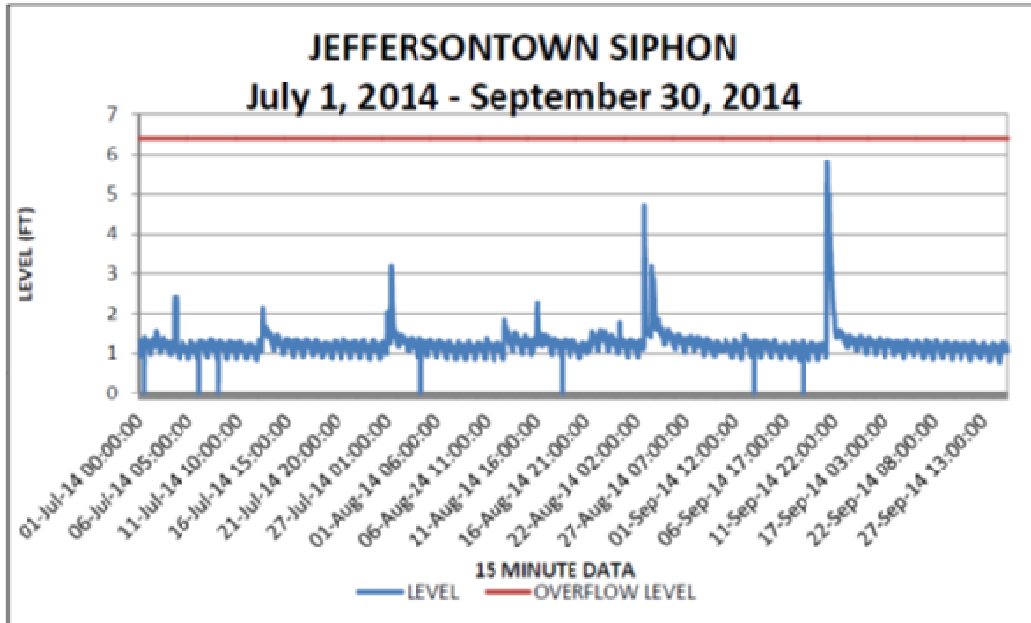
Included in Appendix B-3 is a report that lists the 15 blending events which occurred at the Jeffersontown WQTC during FY15. The total blended amount, from the events, reported and documented on the Project WIN webpage was 38,603,318 gallons. The blending events, as posted on the Project WIN website, are as follows:

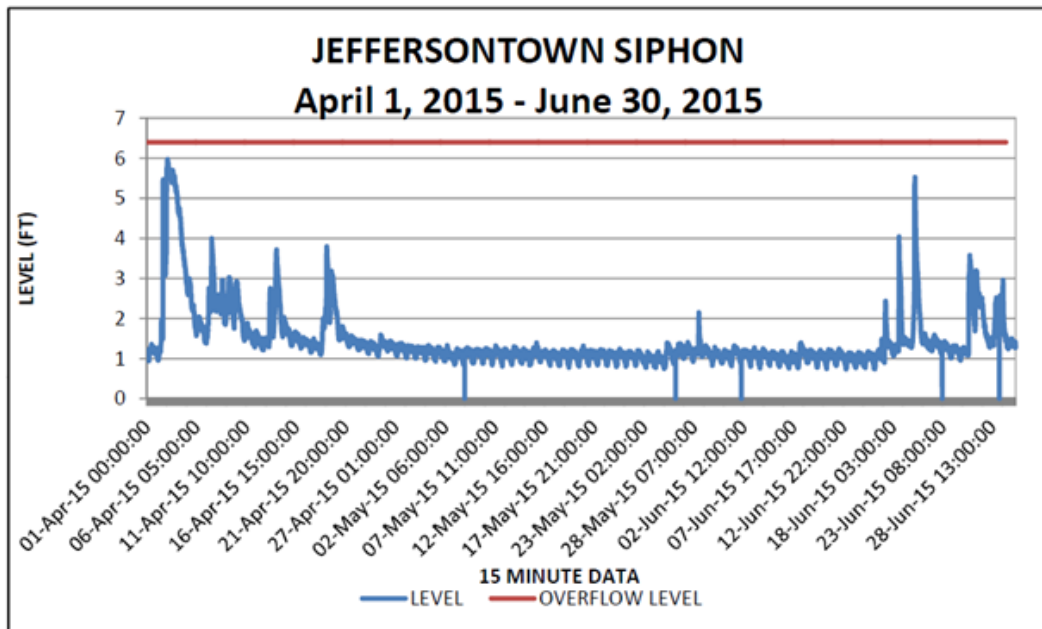
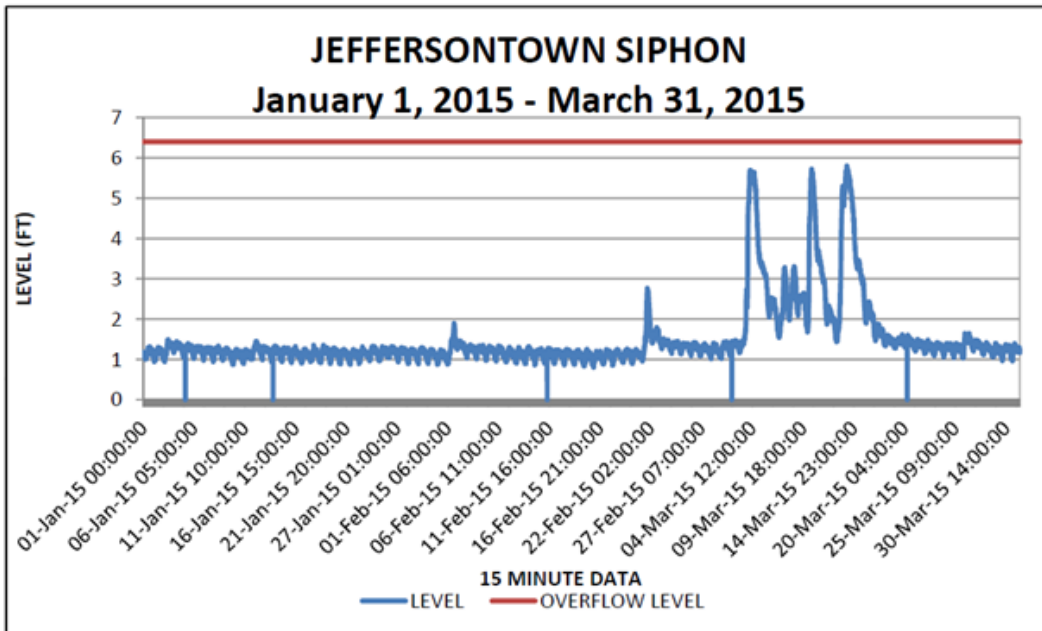
BLENDING EVENTS	
NUMBER	DATE
1	August 22, 2014
2	September 11, 2014
3	October 14, 2014
4	November 23, 2014
5	December 6, 2014
6	March 4, 2015
7	March 10, 2015
8	March 13, 2015
9	April 2, 2015
10	April 7, 2015
11	April 14, 2015
12	April 19, 2015
13	June 18, 2015
14	June 20, 2015
15	June 26, 2015

MSD submitted a Jeffersontown WQTC Process Control Plan on October 31, 2008, as required by paragraph 26a of the Amended Consent Decree. MSD received comments on December 12, 2008, and resubmitted the plan January 16, 2009, and again on February 20, 2009. MSD received conditional approval of this document from EPA on April 1, 2009, pending finalization of the Amended Consent Decree that was under consideration by the Federal Court at the time the Process Control Plan was submitted. The Process Control Plan was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, that was entered into public record February 15, 2010.

MSD conducted seventeen inspection routes for the Jeffersontown siphon during FY15. The inspections were completed on July 3, July 13, July 27, August 8, August 22, September 11, October 5, November 23, and December 6, 2014 followed by March 4, March 10, March 13, April 2, April 7, June 18, June 20, and June 26, 2015. Two overflows were identified at manhole 28551 and seven overflows were identified during these inspections along the siphon route at manhole 28173 upstream of the Jeffersontown Siphon. Levels in the siphon did not exceed the overflow elevation during the reporting period.

Inspection routes documented 2 suspected overflows at the siphon on April 4, 2015, and April 6, 2015. The graphs are shown for the reporting period in three month intervals for clarity.





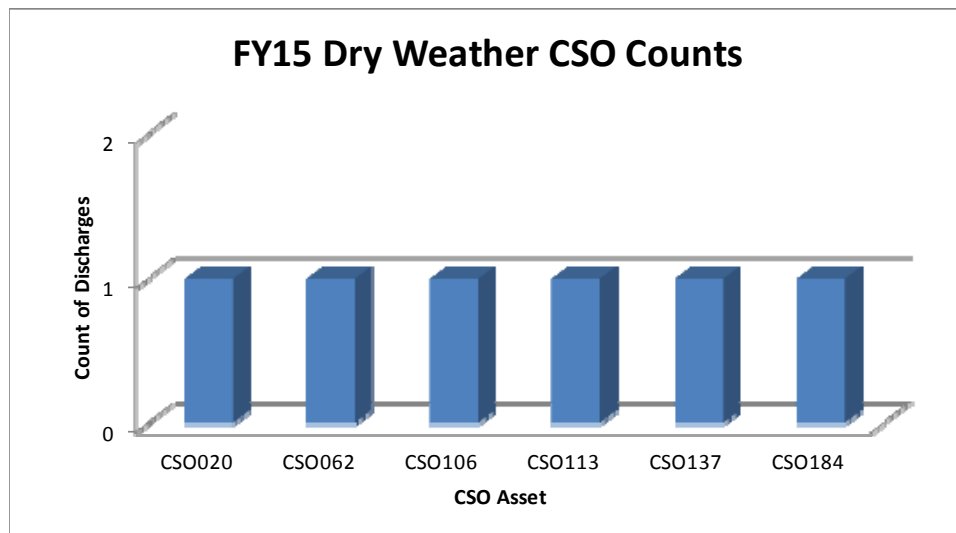
See section 6.2 for an update on the Comprehensive Performance Evaluations (CPE) / Composite Correction Plans (CCP) projects for the Jeffersontown WQTC.

1.2.3 FY15 Phosphorus Monitoring at the Prospect WQTCs

As part of the Amended Consent Decree, MSD submits phosphorus monitoring data including the calculations of monthly averages with the quarterly reports. The charts in Appendix G show the monthly average phosphorous results for the five Prospect WQTCs. The phosphorous limit for these facilities is shown on the charts with a red line at 1 milligrams/liter (mg/l). The five WQTCs met permit limits for phosphorous in every month during the FY15 reporting period.

1.2.4 FY15 Dry Weather CSOs

During the FY15 reporting period there were 6 dry weather overflows from permitted CSO locations. At this time, 101 CSOs are functioning properly. The dry weather CSO's were analyzed by location and problem to identify issues that can be corrected. The two major causes for dry weather CSOs during the reporting period were electrical problems and utility damage.



In FY15, the volume attributed to Dry Weather CSOs was approximately 120,011,735 gallons. Two dry weather overflows were over 50,000 gallons. Dry weather CSOs are described below:

DRY WEATHER CSOS - BY PROBLEM				
CSO	Date	Problem	Description	Volume (gal)
CSO020	7/26/14	ELECTRICAL PROBLEMS AT MSD	SCADA MALFUNCTION. POWER RELATED PROBLEM AT STARKEY PS NOT REPORTED THROUGH SCADA SYSTEM DUE TO MALFUNCTION.	110,000,000

DRY WEATHER CSOS - BY PROBLEM				
CSO	Date	Problem	Description	Volume (gal)
CSO062	7/26/14	ELECTRICAL PROBLEMS AT MSD	SCADA MALFUNCTION. POWER RELATED PROBLEM AT STARKEY PS NOT REPORTED THROUGH SCADA SYSTEM DUE TO MALFUNCTION.	10,000,000
CSO106	11/3/14	OBSTRUCTION-NOT GREASE / ROOTS	LEAVES BLOCKING THE LOW FLOW LINE AT THE DAM	1,175
CSO113	5/14/15	OBSTRUCTION-NOT GREASE / ROOTS	OBSTRUCTION IN CSO	360
CSO137	4/22/15	ROOTS	ROOT CUTTER STUCK IN PIPE DURING PM	1,000
CSO184	2/20/15	UTILITY DAMAGED MSD ASSET	WATER MAIN BREAK AT THE INTERSECTION OF ALEXANDER AVENUE AND KESWICK BOULEVARD RESULTING IN A SIGNIFICANT AMOUNT OF WATER IN THE COMBINED SEWER SYSTEM	9,200

1.3 FY15 Overflows

Overflows in FY15 were delineated into three categories: overflows to Waters of the US (WUS), overflows to the exterior, and overflows to the interior. This section focuses on overflows to the exterior and interior. Please refer to Section 1.2 for overflows to Waters of the US.

1.3.1 FY15 Overflows to the Exterior

MSD recorded information related to overflows to the ground that did not reach WUS for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and approved through efforts associated with various components of the Amended Consent Decree. These overflows are included in Appendix B-4 for the period July 1, 2014, through June 30, 2015.

FY15 EXTERIOR OVERFLOWS			
	DRY	WET	TOTAL
Electrical	1	1	2
Capacity	0	4	4
Mechanical	5	1	6
Obstruction	5	0	5
Roots	4	0	4
Structural	5	1	6
Utility Damage	2	0	2
TOTAL	22	7	29

1.3.2 FY15 Overflows to the Interior

MSD recorded information related to overflows to building interiors for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. These overflows, that are the result of an issue in the main line, are included in Appendix B-5 for the period of July 1, 2014, through June 30, 2015.

FY15 INTERIOR OVERFLOWS			
	Dry	Wet	TOTAL
Grease	7	0	7
Capacity	0	50	50
Mechanical	1	0	1
Obstruction	28	2	30
Roots	35	2	37
TOTAL	71	54	125

1.4 FY15 CSO and SSO Reductions

The following sections outline the activities performed in FY15 to reduce or eliminate CSOs and SSOs.

1.4.1 FY15 CSO Reductions

Appendix C includes the modeled Annual Average Overflow Volume (AAOV) for the permitted CSOs. The AAOV was derived from the InfoWorks CSO hydraulic model. The CSO data for FY15 is included in Appendix D. The observed CSO data for each monitored overflow has been tabulated along with rainfall information from the nearest rain gauge to facilitate review of the overflows that occurred.

The following projects were completed during FY15 and reduced or eliminated permitted CSOs:

- 17th Street Flood PS Dry Weather Overflow (DWO) Elimination – Completed December 18, 2014 – Eliminated the following CSOs during dry weather: CSO190
- CSO058 Sewer Separation – Completed December 30, 2014 – Reduced Volume and Occurrence of the following CSOs: CSO058

Please refer to Section 4.5 Post Construction Compliance Monitoring (PCCM) for information regarding system monitoring.

1.4.2 FY15 SSO Reductions

Estimation of SSO volume is not available in the same manner as it is for the CSO locations. The SSO volume reductions are estimates based on actual observations or from flow monitoring information. The following projects that impacted SSOs were completed during this reporting period:

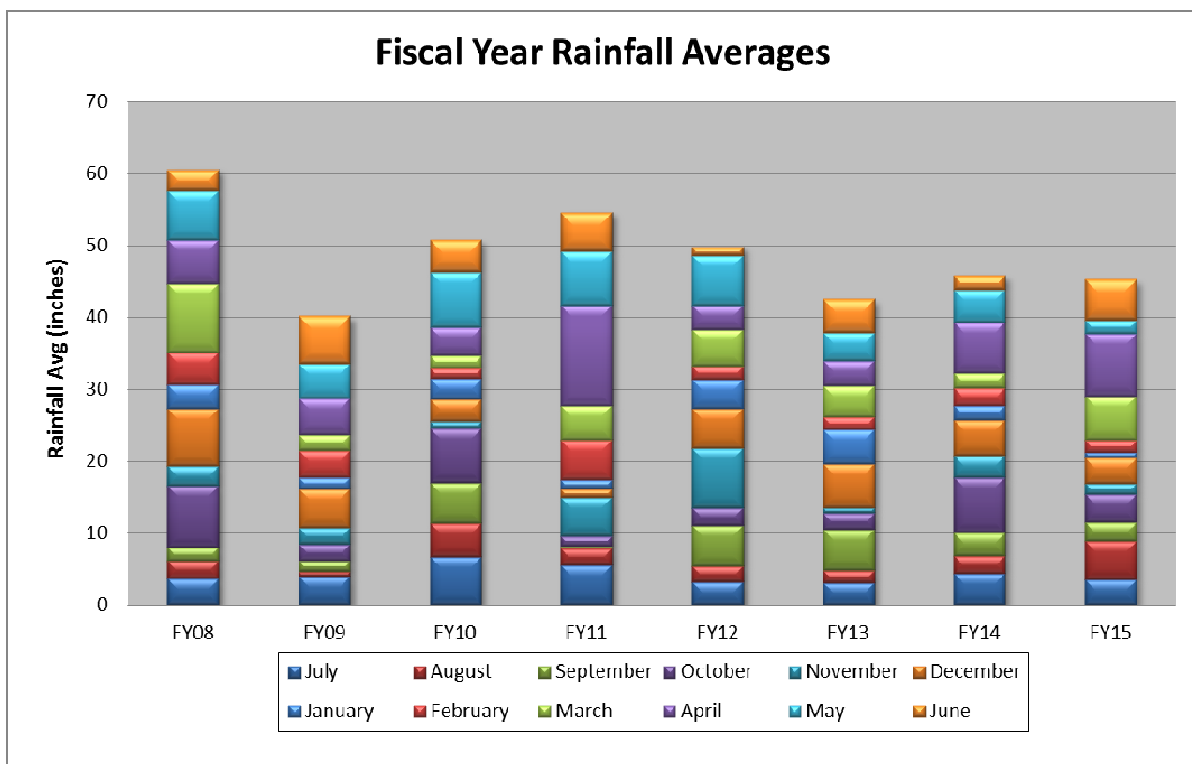
- The Chenoweth Hills Water Quality Treatment Center Elimination and Pump Station (PS) Improvements Project -Completed September 22, 2014 – Eliminated the following SSOs: MS00263A-PS, MS00263
- The St. Rene Road Pump Station Inline Storage Project – Completed September 19, 2014 – Eliminated the following SSOs: 94187
- Fairway View PS Improvements – Completed December 30, 2014 – Eliminated the following SSOs: MSD1065-PS
- Riding Ridge PS Improvements – Completed November 15, 2014 – Eliminated the following SSOs: MSD1060-LS
- Klondike Interceptor – Completed July 17, 2014 – Eliminated the following SSOs: 26651, 26650, 20644, 66232, 49513, 25676

1.5 Performance Measures - Trends

MSD has developed performance measures to monitor the operation of the collection system and WQTC's, with the goal of reducing sewer overflows and improving surface water quality.

1.5.1 Rainfall

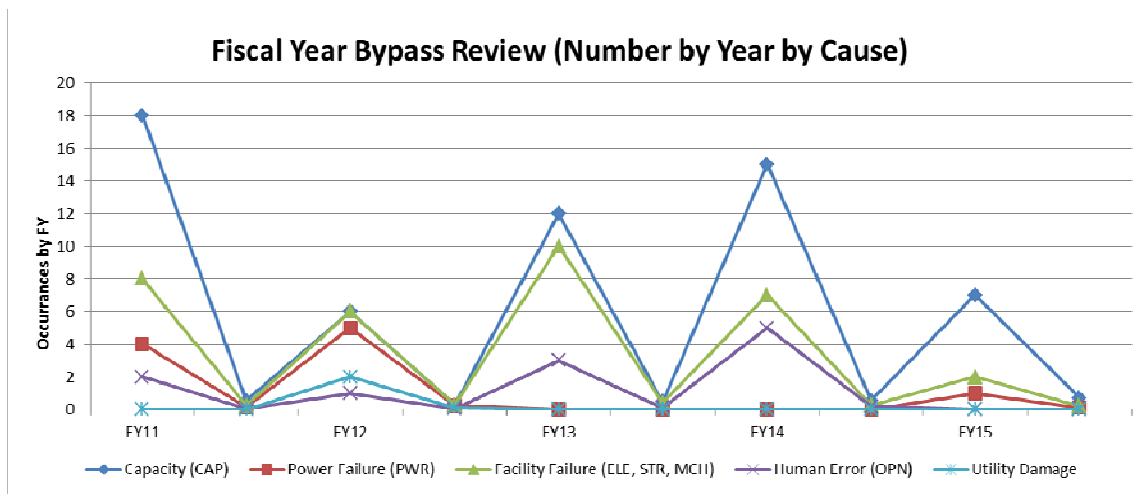
The Louisville area experienced approximately the same amount of rainfall in FY15, compared to FY14, and the overflow data reflects that trend. The chart below shows the eight fiscal years of rainfall data broken up by month to show the significant months of rainfall over these years.



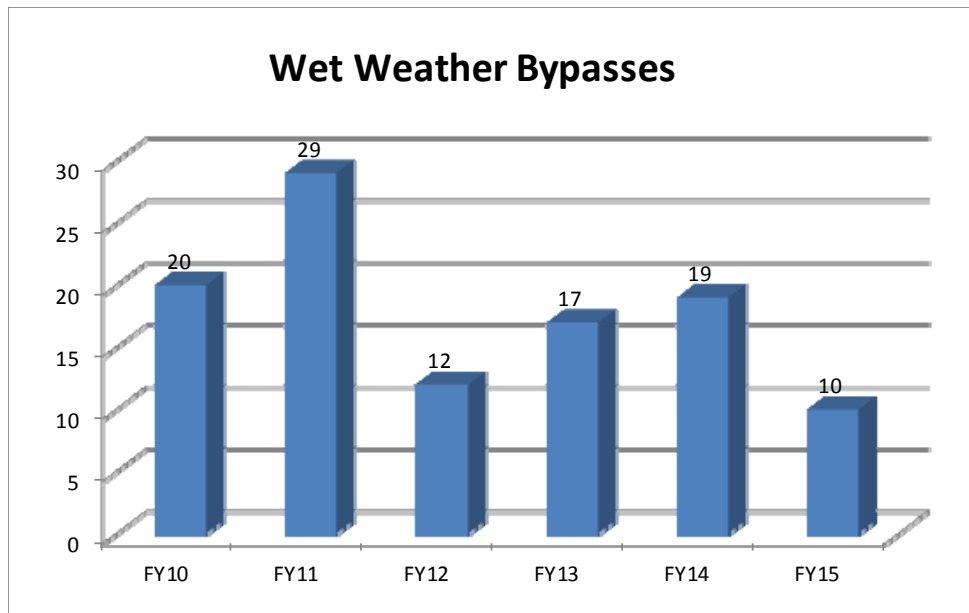
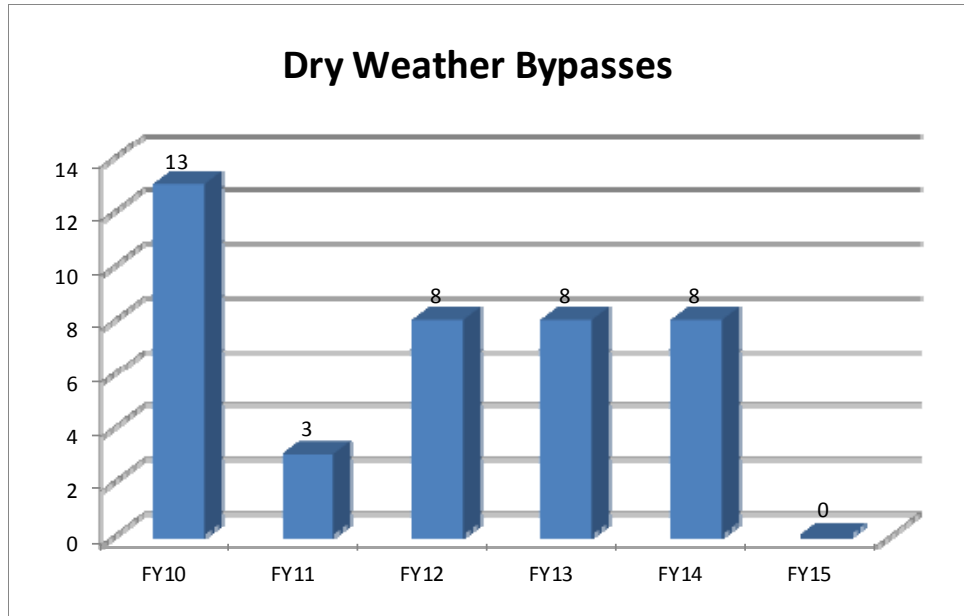
1.5.2 Bypass

The following table and graph shows the results of the previous five fiscal years of bypasses by cause. Human Error related bypasses are significantly reduced from the March 2010 analysis due to an increase in training, accountability, and implementation of CPE Phase I activities. A significant decrease in Capacity, Facility Failure and Human Error bypasses were observed during the reporting period. These improvements are likely due to the increased preventative maintenance, inspections, and training activities.

Bypass Events - Causes											
Determined Cause	FY11		FY12		FY13		FY14		FY15		
Capacity (CAP)	18	56%	6	30%	12	48%	15	56%	7	70%	
Power Failure (PWR)	4	13%	5	25%	0	0%	0	0%	1	10%	
Facility Failure (ELE, STR, MCH)	8	25%	6	30%	10	40%	7	26%	2	20%	
Human Error (OPN)	2	6%	1	5%	3	12%	5	19%	0	0%	
Utility Damage	0	0%	2	10%	0	0%	0	0%	0	0%	
Total	32		20		25		27		10		



The following charts show the WQTC dry weather and wet weather bypass events. Wet and dry weather bypasses declined significantly in FY15 compared to the previous fiscal year due to continued training activities. It is expected that this category will decrease in the future due to continued CMOM and CPE efforts.



FY10-FY15 BYPASS COUNT TRENDING												
TREATMENT PLANT	DRY WEATHER						WET WEATHER					
	FY10	FY11	FY12	FY13	FY14	FY15	FY10	FY11	FY12	FY13	FY14	FY15
BANCROFT	1	0	0	0	0	0	0	0	0	0	0	0
BERRYTOWN	1	0	0	0	0	0	2	9	3	6	13	5
CEDAR CREEK	1	2	1	0	0	0	3	3	1	0	2	1
CHENOWETH HILLS	4	0	0	1	2	0	4	1	2	3	1	0
CHENOWETH RUN	0	0	1	0	0	0	2	3	0	0	0	0
DEREK R. GUTHRIE	1	0	0	0	0	0	1	2	1	0	1	0
FLOYDS FORK	1	0	1	0	0	0	1	0	0	3	0	0
HITE CREEK	2	0	0	0	0	0	1	2	1	0	0	0
HUNTING CREEK NORTH	0	0	0	0	1	0	0	2	0	0	0	0
HUNTING CREEK SOUTH	1	0	0	0	0	0	1	0	0	0	0	0
JEFFERSONTOWN	1	0	2	1	0	0	2	0	0	4	0	0
KEN CARLA	0	0	0	0	0	0	0	0	0	0	1	1
LAKE OF THE WOODS	0	0	0	1	0	0	0	0	0	0	0	0
MCNEELY LAKE	0	1	0	1	1	0	0	2	1	0	0	0
MORRIS FORMAN	0	0	2	2	0	0	0	1	1	0	0	1
SHADOW WOOD	0	0	1	0	3	0	0	0	0	0	0	0
SILVER HEIGHTS	0	0	0	0	0	0	0	1	0	0	0	0
STARVIEW	0	0	0	0	0	0	2	3	2	0	1	1
TIMBERLAKE	0	0	0	2	1	0	0	0	0	1	0	1
YORKTOWN	0	0	0	0	0	0	1	0	0	0	0	0
Total	13	3	8	8	8	0	20	29	12	17	19	10

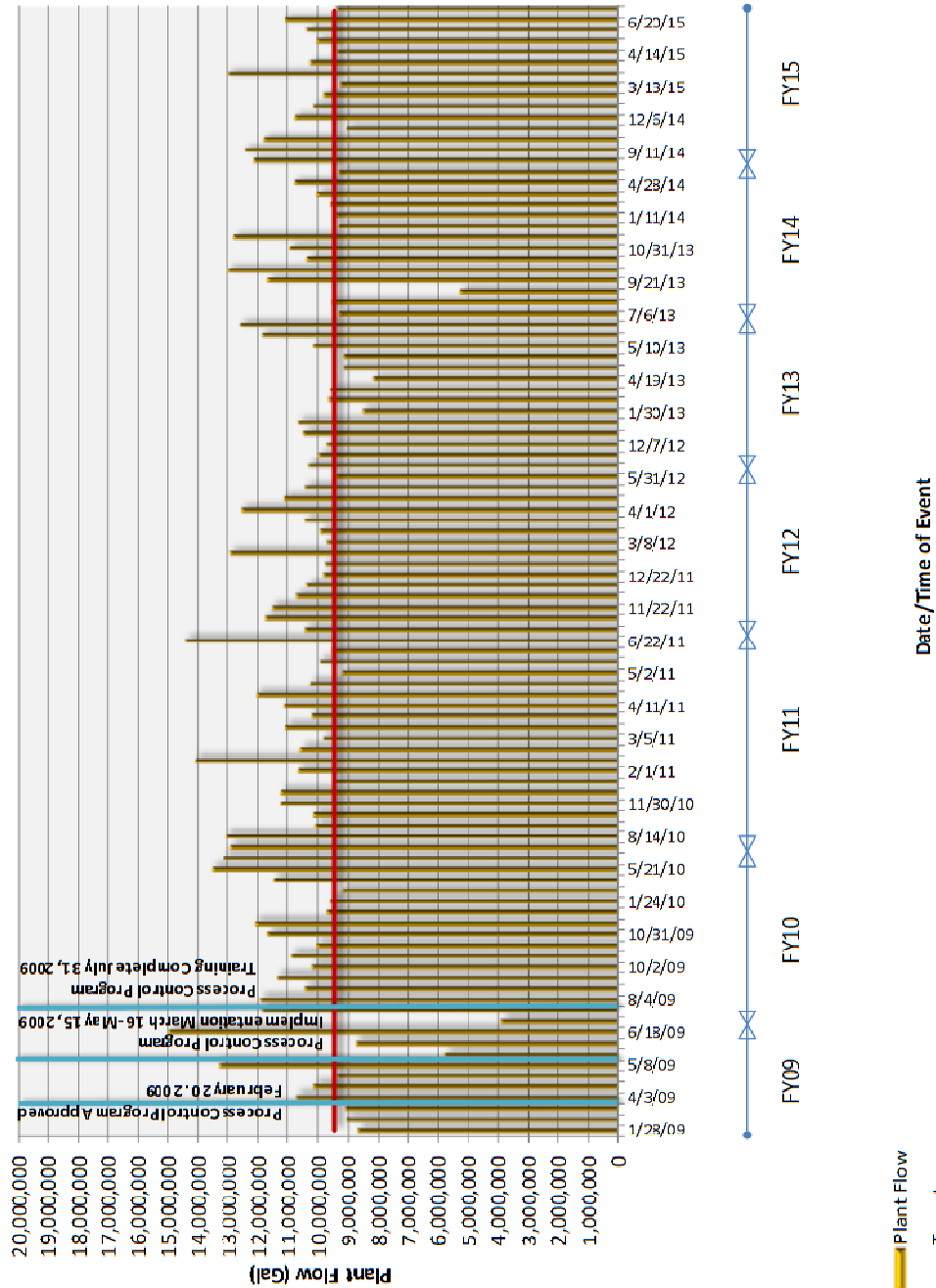
1.5.3 Jeffersontown Water Quality Treatment Center

MSD has been documenting the blended flow at the Jeffersontown WQTC since February 2008. The FY 09 Jeffersontown WQTC Process Control Program describes the implementation of wet weather standard operating procedures (SOPs).

The Jeffersontown WQTC Process Control Program includes SOPs for the initiation and disengagement of blending activities, with the goal of maximizing flow through secondary treatment during wet weather. The program was completed in February 2009, and implementation began in May, 2009, with training of all currently affected staff completed prior to July 31, 2009.

The FY15 plant flows and blended flows are presented in Appendix K – Jeffersontown WQTC Blending Event Charts. The blending events were analyzed and compared to the wet weather protocols included in the SOPs regarding the flow rate when blending will occur. The chart that follows shows the plant flow when blending events began at the Jeffersontown WQTC. The red line on the chart is shown at 9.5 MGD, which is the SOP guidance for initiating blending. The chart shows that once the wet weather SOPs training was completed, blending practice closely conformed to SOP guidance. In some cases the flows significantly exceeded 9.5 MGD before blending occurred. This is due to the rapid increase in flows that the Jeffersontown WQTC can experience, and the relatively slow response time of the blending gate. Operating at these higher flows is not sustainable, as the aeration basins may overflow if more than 9.5 MGD is delivered to them for more than a few minutes.

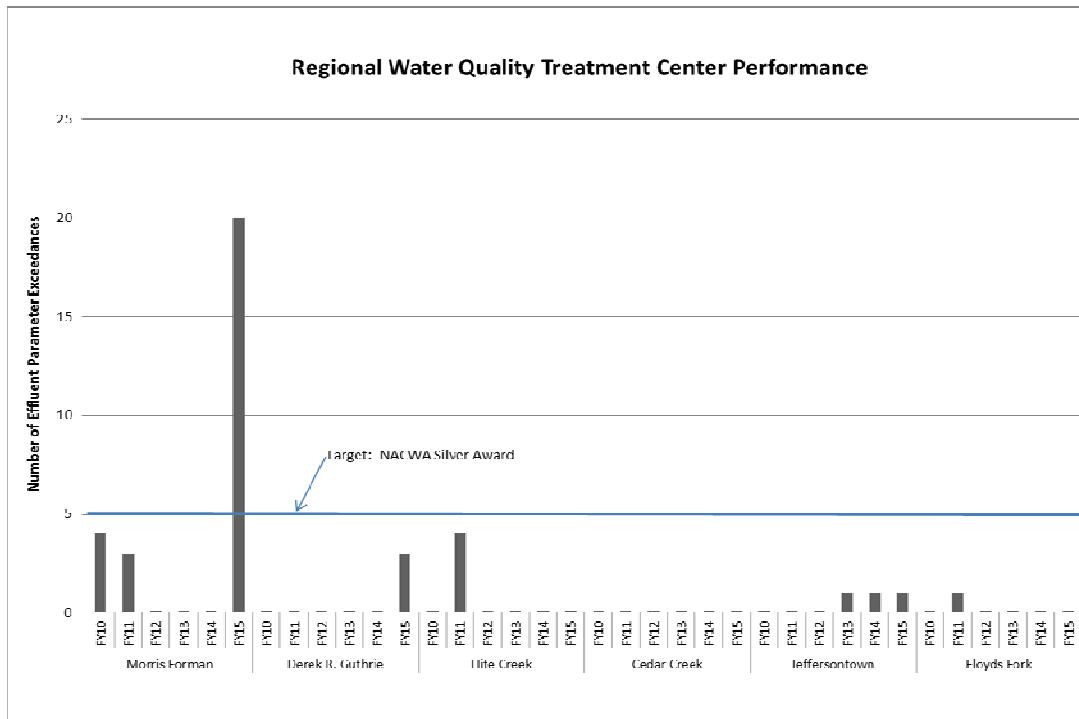
**JEFFERSONTOWN WQTC FLOW
BLENDING INITIATION**



1.5.4 WQTC Effluent Compliance

MSD’s policy is to operate Water Quality Treatment Centers (WQTC’s) in full compliance with the permitted effluent water quality standards. However, circumstances sometimes arise that may cause wastewater WQTC’s to exceed the permitted effluent limits. This reality is recognized by the National Association of Clean Water Agencies (NACWA), which gives awards at different levels (platinum, gold, silver) based on the number of effluent parameter exceedances during the calendar year. Based on past operating history, MSD has established the target for regional treatment centers of receiving at least the NACWA Silver Award, which requires that the WQTC have five or fewer exceedances per year of any permit parameters.

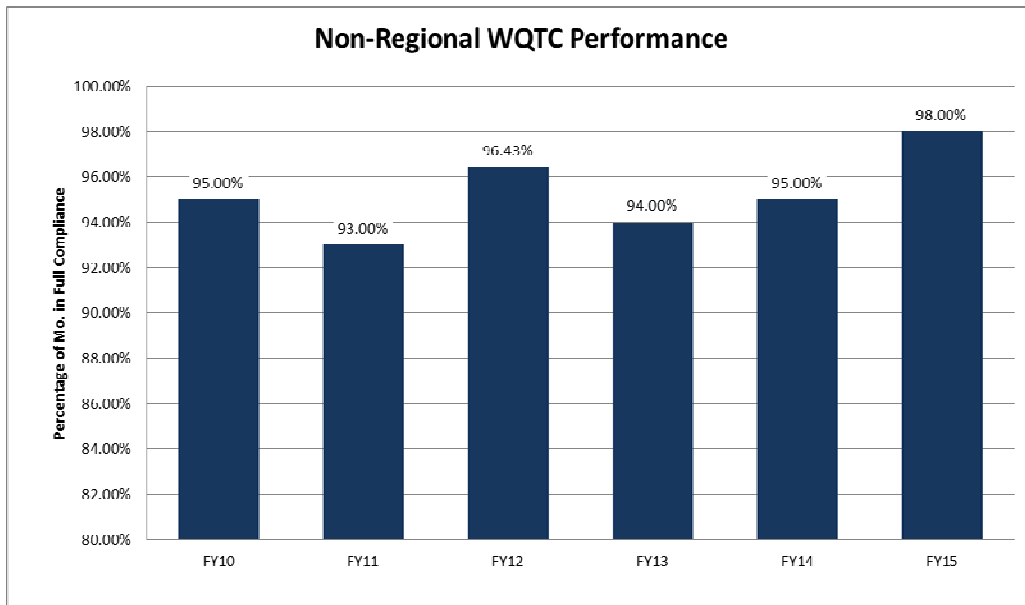
As shown in the chart below, all six regional WQTCs have achieved the NACWA Silver goal in FY10, FY11, FY12, FY13, and FY14. However, due to a combination of snow melt and rainfall along with failures at the Morris Forman WQTC, a total number of 20 exceedances occurred in FY15. All other regional treatment centers met the targeted compliance goal for FY15.



Since 1985, MSD has acquired more than 200 privately owned non-regional WQTCs (“package plants”). At the beginning of reporting period MSD operated 11 non-regional treatment centers. MSD continues the effort to eliminate the non-regional treatment plants by diverting wastewater flow to the regional treatment centers. MSD currently operates 9 non-regional treatment centers. The non-regional WQTCs typically have very limited operating flexibility, and are subject to high levels of variability in loads. Most of the non-regional WQTCs have been in operation over 35

years and typically have much poorer records of compliance compared to MSD’s regional WQTCs. Therefore, MSD has worked aggressively to eliminate non-regional WQTCs.

While in operation, MSD has a targeted goal of achieving full compliance with permit parameters in 95% of operating months for the non-regional treatment centers. As shown in the chart below, for fiscal years FY09, FY10, FY12, FY14 and FY15 the non-regional treatment plants were in compliance for 95% of their operational months. In FY15 the non-regional facilities were at full compliance at 98% of the operational months while FY14 these facilities were in full compliance 95% of the operational months. Continued work on the CPE/CCE activities such as additional training and SOP review, as well as completed projects that removed lagoons and polishing ponds. It is anticipated that these activities will reduce the occurrence of non-compliance in the future.



1.5.5 Dry Weather CSOs

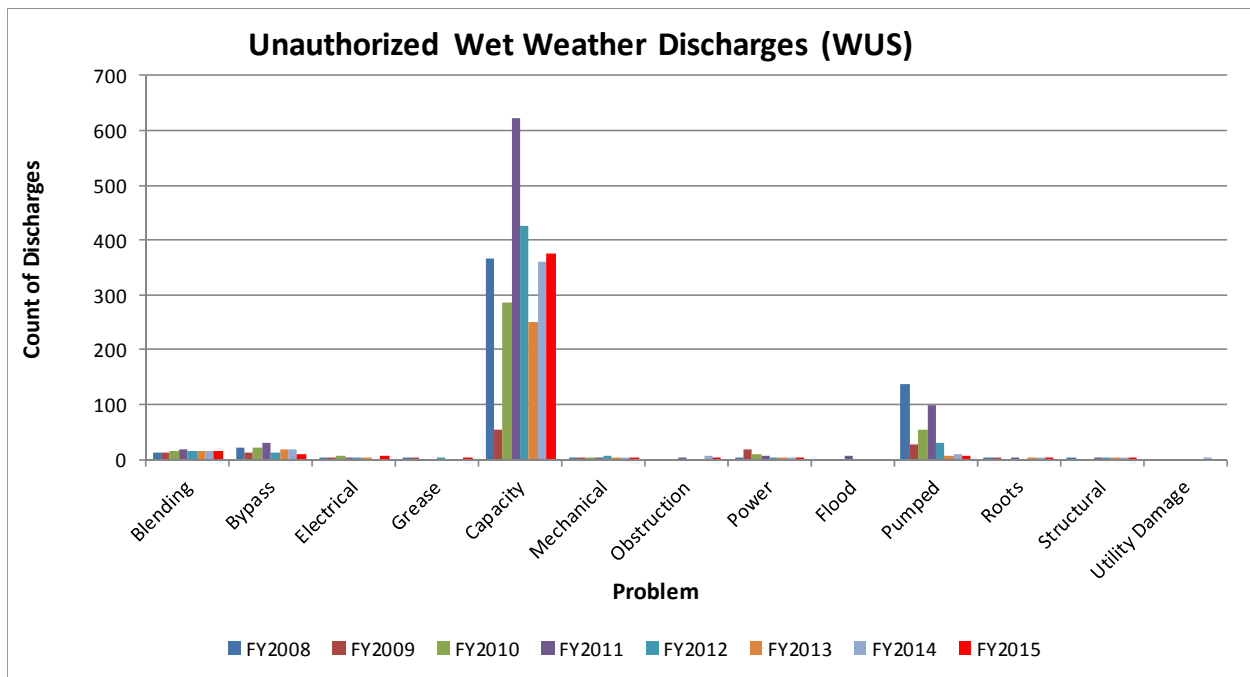
MSD has implemented the Nine Minimum Controls (NMC) programs and provided resources to reduce dry weather combined sewer overflows (CSOs). The table below shows the number of occurrences of dry weather CSOs between FY08 and FY15, broken down by the problem that caused the overflow.

DRY WEATHER CSOS BY PROBLEM CODE														
PROBLEM	FY08		FY09		FY10		FY12		FY13		FY14		FY15	
	Count	Volume	Count	Volume	Count	Volume	Count	Volume	Count	Volume	Count	Volume	Count	Volume
Electrical	1	2,500,000	1	67,500	2	13,059	1	2,225,000	0	0	1	6,000,000	0	0
Flood	8	194,802,815	1	400,754	0	0	0	0	0	0	0	0	0	0
Mechanical	0	0	0	0	4	11,553,781	2	1,989,813	0	0	0	0	0	0
Obstruction	1	675	0	0	4	16,146	8	5,783	6	26,270	3	3,025	3	2,535
Power	0	0	0	0	2	1,415,000	0	0	0	0	0	0	0	0
Roots	0	0	0	0	1	1,500	0	0	0	0	1	13	0	0
Structural	1	200	0	0	1	6,600	1	280	0	0	0	0	0	0
Utility Damage	0	0	1	20,000	2	315,333	3	887,656	2	73,892	9	7,867,889	1	9,200
Grand Total	11	197,303,690	3	488,254	16	13,321,419	15	5,108,532	8	100,162	14	13,870,927	4	11,735

1.5.6 Wet and Dry Weather SSOs

MSD is committed to reducing SSOs that occur during wet weather events. The following table and chart shows the wet weather SSOs (WUS) by problem code. Due to rainfall intensity in FY15, the unauthorized discharges increased when compared to the last fiscal year, but are still down from FY12. MSD staff continues to utilize tanker trucks, which include portable pumps, to haul wet weather flow that is in excess of the pump station capacity, to reduce the number of documented overflows.

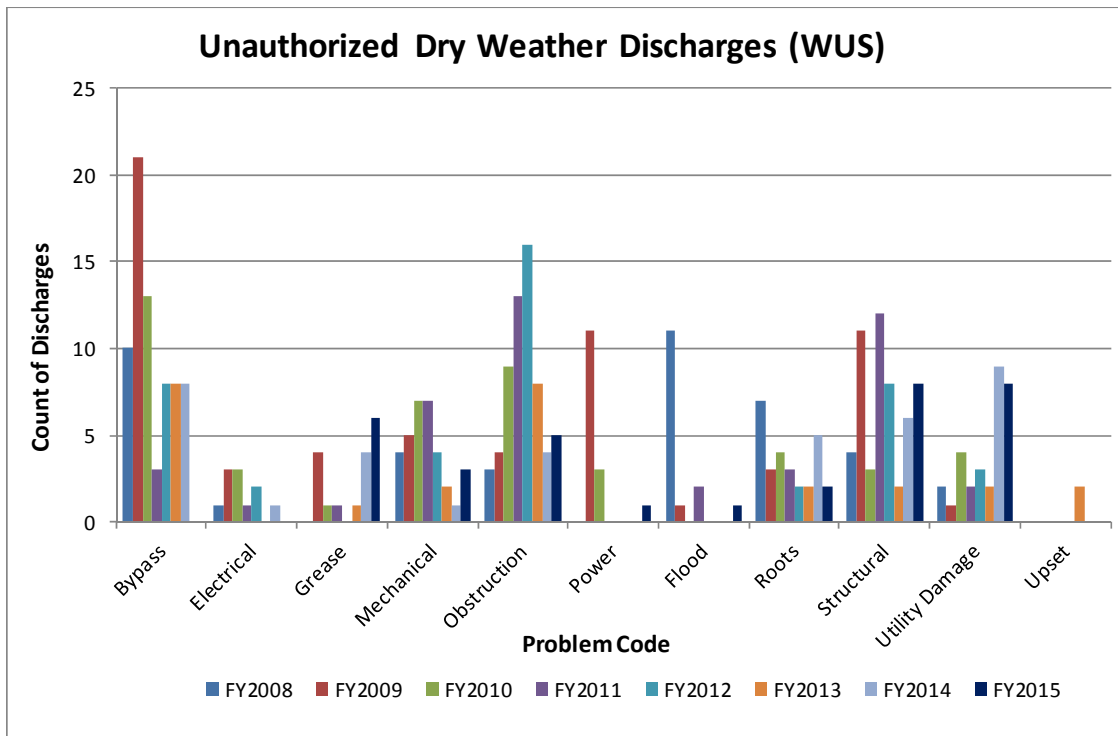
UNAUTHORIZED WET WEATHER DISCHARGES (WUS)									
PROBLEM	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	
Blending	12	12	16	17	16	14	14	15	
Bypass	21	11	20	29	12	17	19	10	
Electrical	2	4	5	3	3	1	0	5	
Grease	2	1	0	0	1	0	0	1	
Capacity	365	53	286	623	425	250	359	374	
Mechanical	3	1	1	1	5	2	3	2	
Obstruction	0	0	0	2	0	0	5	1	
Power	3	19	8	5	1	3	2	1	
Flood	0	0	0	5	0	0	0	0	
Pumped	136	26	55	99	30	5	10	7	
Roots	3	1	0	2	0	3	1	3	
Structural	1	0	0	3	1	1	2	2	
Utility Damage	0	0	0	0	0	0	1	0	
Total	548	128	391	789	494	296	416	421	



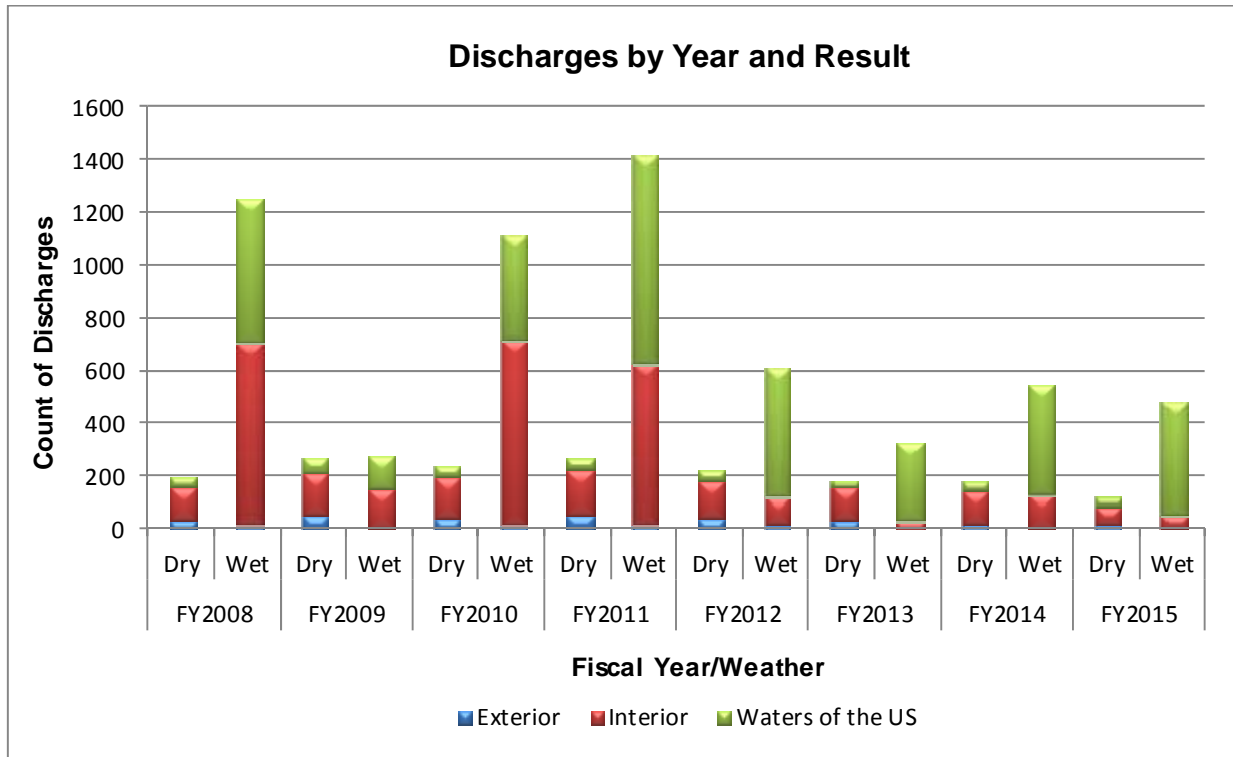
The following table shows the distribution of unauthorized dry weather overflows (WUS) by problem code. Structural damage and utility damage are the prevalent cause of dry weather overflows during FY15. MSD will continue to review, analyze and implement measures to reduce overflows caused by all of these problems.

Unauthorized Dry Weather Discharges (WUS)								
PROBLEM	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Bypass	10	21	13	3	8	8	8	0
Electrical	1	3	3	1	2	0	1	0
Grease	0	4	1	1	0	1	4	6
Mechanical	4	5	7	7	4	2	1	3
Obstruction	3	4	9	13	16	8	4	5
Power	0	11	3	0	0	0	0	1
Flood	11	1	0	2	0	0	0	1
Roots	7	3	4	3	2	2	5	2
Structural	4	11	3	12	8	2	6	8
Utility Damage	2	1	4	2	3	2	9	8
Upset	0	0	0	0	0	2	0	0
Total	42	64	47	44	43	27	38	34

The following chart shows the unauthorized dry weather overflows (WUS) by result for the past eight fiscal years. No dry weather bypasses occurred in FY15. Overall, the Dry weather trend is down from the previous fiscal year. Trends for most categories show continued improvement. The trends show that Fats, Oils, & Grease (FOG) enforcement and removal programs have been effective in preventing SSOs in the past, but trends are going up. MSD will continue to enhance the Gravity Line Preventive Maintenance (GLPM) program to continue to improve the overall dry weather trend.

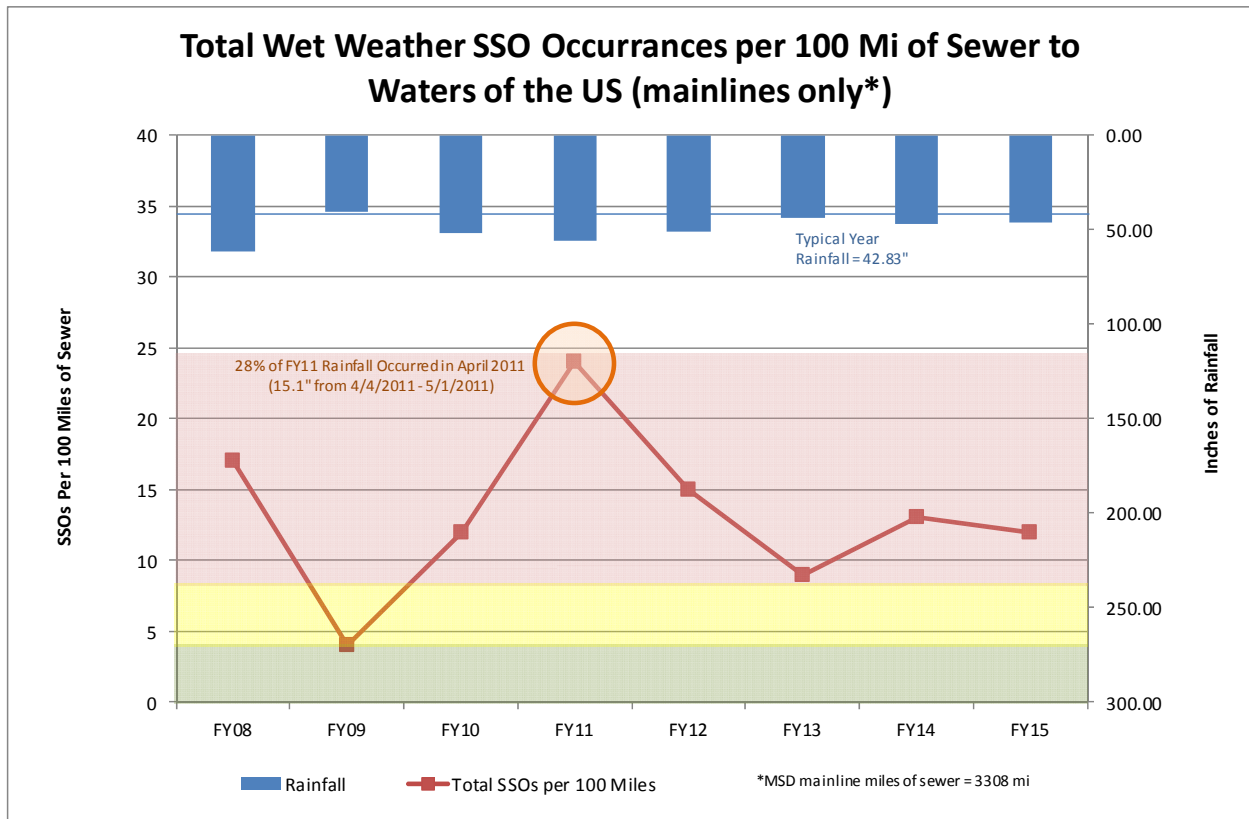


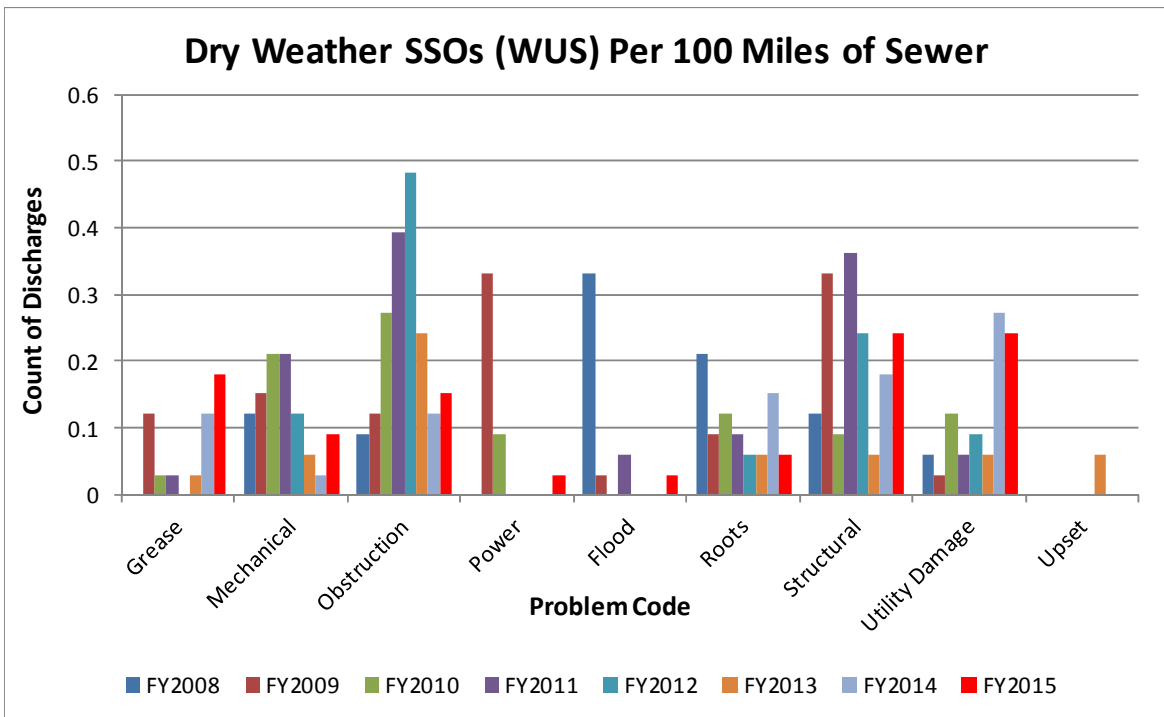
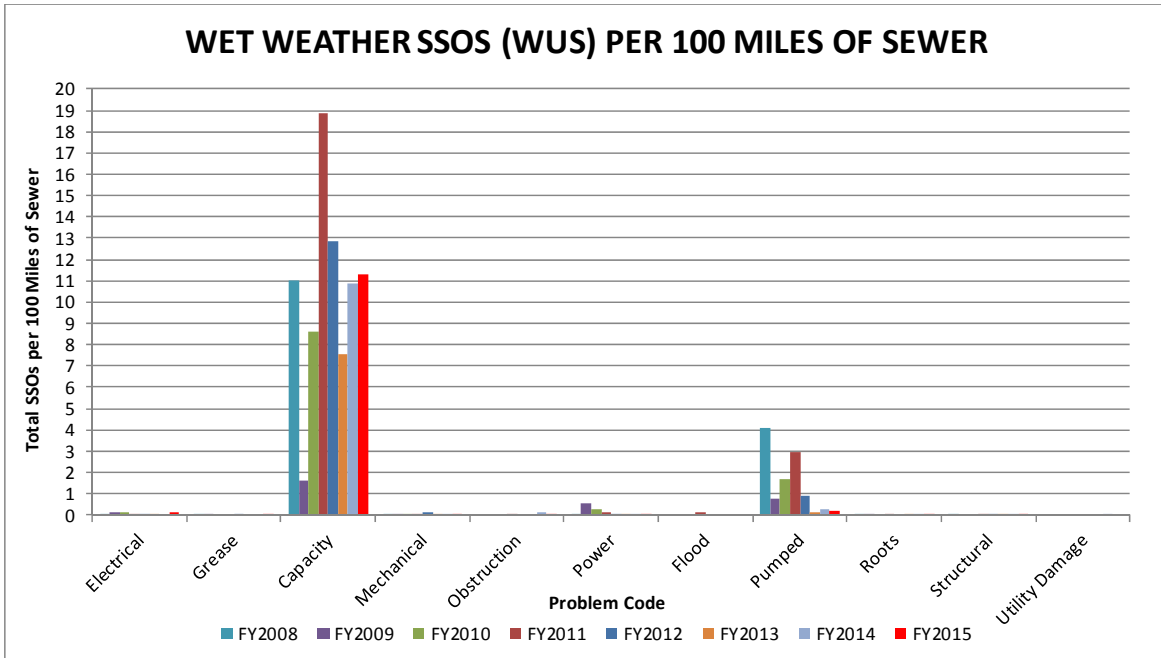
The following chart shows the breakdown of SSOs by category (Int., Ext., and WUS) for the past eight fiscal years.

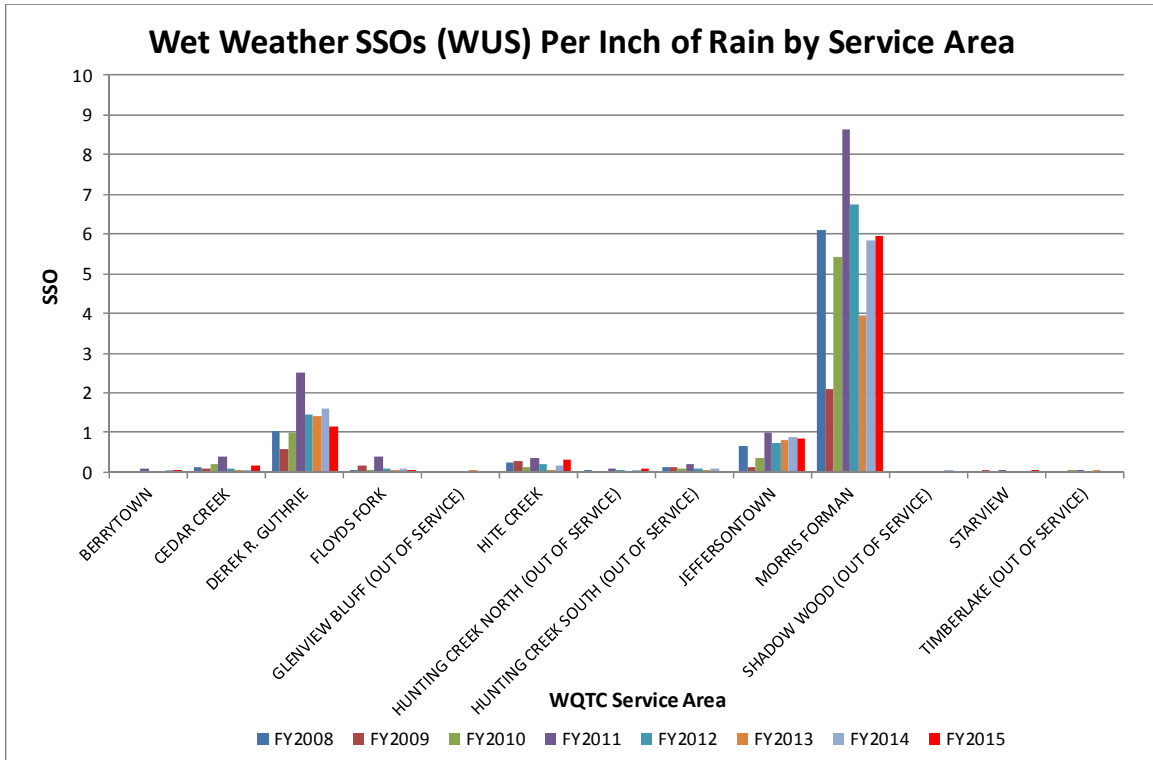


1.5.7 SSOs per 100 Miles of Sewer

Per the request of EPA, and in keeping with benchmarks from other utilities, MSD has prepared the following analysis of SSOs per 100 Miles of sewer by cause for FY15, as well as by year and compared to national benchmarks. The green, yellow, and red bars on the following chart represent benchmarking from other utilities and EPA studies on overflows per mile of sewer. It is shown that MSD is trending favorably against benchmarks, and efforts documented in this Annual Report (CMOM, SORP, CPE, Bypass Reviews, etc.) are proving effective at reducing overflows.







SECTION 2: Program Activities for Nine Minimum Controls (NMC)

2.1 Nine Minimum Controls Program Background

Per Paragraph 24.a. of the Amended Consent Decree, the Nine Minimum Controls (NMC) Compliance Report was initially submitted to EPA and KDEP on February 10, 2006. MSD received an approval letter, dated February 22, 2007, for the NMC Compliance Report. The approved NMC Compliance document can be viewed on the MSD Project WIN website www.msdlouky.org/projectwin. Highlights of the NMC program implementation during FY15 are outlined below.

2.2 NMC 1: Proper Operation and Maintenance Programs

FY15 Program

Program Metrics

- Inspected and cleaned 20,926 Catch Basins within the Combined Sewer System (CSS) during FY15.
- Continued to inspect, maintain and properly operate the CSS pump stations and the Morris Forman WQTC.
- Performed 5,279 weekly inspections on CSOs, 1,092 creek inspections, 604 siphon inspections, and initiated 540 work orders for debris removal and/or repairs as determined to be necessary to allow proper system operation during FY15.
- Flushed 489 sewer line segments in the CSS, including 86,386 feet (16 miles) of sewer lines ranging in size from 6 inches to 48 inches. Vactored 818 sewer line segments, amounting to 0.2 miles. Performed formula Television (TV) inspection on 130,364 feet (24.7 miles) of sewer lines, as part of the Gravity Sewer Preventive Maintenance (PM) program in the CSS, during FY15.
- Chemically treated 446,024 feet (77 miles) of sanitary sewer for roots during FY15.
- Achieved the following program metrics:

TARGET	RESULT
95% of CSOs inspected weekly.	100% Compliance - 101 CSOs were inspected weekly.
95% of flap gates inspected weekly.	100% Compliance – 15 flap gates on CSOs were inspected weekly.
95% of siphons inspected monthly.	100% Compliance - 10 siphons were inspected weekly and 7 additional siphons were inspected monthly.

TARGET	RESULT
95% of Debris or Repair Work Orders on CSO assets created the next work day after the inspection of the asset and open for no more than 5 days.	99% Compliance - 533 of 534 DEBRIS work orders and 6 of 6 CSOREP work orders created in FY15.
95% of the catch basins within the CSSA cleaned every 15 months.	100% Compliance - Currently MSD performs on a 14-month cycle.

Annual Training

- Annual CSO training was not administered for FY15. This program will restart in FY16.

Annual Asset Review and Documentation

- Continued several projects to create improved access to selected CSO sites to facilitate cleaning activities.
- Continued to review catch basin areas against the CSS area and explored re-alignment to confirm that regulatory commitments of cleaning on a 15-month cycle in the CSS are being achieved.

CSSA

- Provided details on the CSSA activities for FY15 in Appendix I: FY15 CSSA Annual Report.

FY16 Program

Program Metrics

- Continue cleaning and inspection programs.
- Continue reporting on the following program goals:
 - 95% of CSOs Inspected/Week.
 - 95% of flap gates inspected weekly.
 - 95% of siphons inspected monthly.
 - 95% of Debris or Repair Work Orders on CSO assets created the next work day after the inspection of the asset and open for no more than 5 days.
 - 95% catch basins within the CSS cleaned every 15 months.

Annual Training

- Incorporate the results of the annual field investigation to adjust and enhance the annual CSO Field training modules.
- Schedule and conduct the annual CSO field training with the MSD Division Infrastructure & Flood Protection (I&FP) and Morris Forman WQTC personnel.

Asset Review and Documentation

- Continue implementation of field verification efforts to determine operation and maintenance enhancements to be incorporated into annual training.
- Continue to design and build access enhancement projects at CSO and siphon locations.
- Review the CSO Inventory schematics and revise as necessary.
- Update the CSO characterization sheets to reflect the updated and calibrated hydraulic model.

CSSA

- Evaluate sewers requiring additional and/or immediate maintenance or cleaning based upon CSSA inspection results from FY15.
- Define and complete inspection of critical areas and large diameter sewers in FY16.
- Continue to enhance the Blockage Abatement Program (BAP). Continued implementation of the PipeLogic Pipeline Assessment and Certification Program (PACP) software for internal crews.

2.3 NMC 2: Maximization of Storage in the Collection System

FY15 Program

Real Time Control (RTC) Optimization

- Continued operation of Phase 1 and Phase 2 of the Real Time Control (RTC) system. During FY15, over 1208 MG were stored in the system during rain events and routed to the Morris Forman WQTC once the system was able to handle the flow. See the end of Section 2.3 for a detailed report.
- SOPs for the Phase 1 and Phase 2 facilities were updated to reflect current operations and incorporate adjustments for future RTC facilities.
- Continued review of CSOs upstream of Morris Forman WQTC, and noted that flow through the plant is optimized prior to overflows occurring, as shown in the Morris Forman WQTC charts attached as Appendix J – Morris Forman WQTC FY15 Charts.
- Continued utilization of “RTC active storage” to standardize the calculation of the volume of flow stored during wet weather events by RTC facilities.
- Continued programming of tracking mechanisms to determine the volume of combined sewage stored in the system during rain events.
- Continued CSOFT maintenance and service agreement contract with Tetra Tech CSO.
- Began the integration of the ICM hydraulic model, ICM Exchange and CSOFT. Prepared a trimmed hydraulic model for use with the RTC system and programmed the controller.

Performed a preliminary sensitivity analysis to determine the impact of reduced time steps to the system performance.

- Purchased software needed for the RTC CSOFT and InfoWorks ICM hydraulic model integration. Identified and purchased hardware upgrades required for the RTC system to enable management and utilization of the integration of the ICM model and upgraded CSOFT program.
- Held an RTC Workshop for key regulatory and engineering personnel presenting the current and future RTC network supporting the IOAP. Identified paths to improve coordination between planning, engineering, and construction of RTC facilities and facilitate timely completion of projects.
- RTC Phase 3 Integration – Staff worked with the RTC consultant to review, revise and begin implementing the draft wet weather SOP for the system that also includes the Southeast Diversion Structure, Buechel Basin, Northern Ditch Diversion, and the Derek R Guthrie WQTC Wet Weather treatment facility. Full integration in an automated mode will not be achieved until the RTC software (CSOFT) is upgraded to the most current version and the hydraulic engine is converted to use MSD's InfoWorks ICM hydraulic model which is expected to be completed during the next reporting period. While this work was being done, the SOP was implemented incrementally, starting with a period of manual operation to validate the control assumptions for each site, followed by increasing levels of system automation as the automated controls for individual components are implemented, validated, and then incorporated into the overall RTC system.
- RTC Performance – Staff continued to implement recommendations for improvements designed to optimize the utilization and performance of the existing RTC system. Improvements to programming at the Ashland, Brady Lake, and Executive Inn facilities were completed which improve utilization and reliability of the sites.

Storage Optimization

- CSO108 Dam Modification – Continued to monitor the performance of the bending weir installed at CSO108. Analysis of this flow data shows performance of the bending weir and adjustments to the inlet of the solids and floatables (S&F) control reduces overflows to the prescribed level of control.
- Continued planning of opportunities for bending weirs at other CSO outfalls to reduce overflow frequency. A bending weir was installed at CSO058. CSO023, CSO178 and CSO190 are currently being evaluated for bending weirs as well.
- SWOR2 Modifications – Design was completed for the improvements to the gate actuators at the site. Improvements include replacing the hydraulic gate actuators with electric actuators mounted at grade level. This will remove all the operating sensors out of the flow in the pipe to improve reliability and maintenance conditions. Construction began in March 2015 and is expected to be completed in August 2015.

-
- **RTC Performance** – Staff continued to implement recommendations for improvements designed to optimize the utilization and performance of the existing RTC system. Improvements to programming at the Ashland, Brady Lake, and Executive Inn facilities were completed which improve utilization and reliability of the sites. These activities were completed on September 18, 2014.

FY16 Program

RTC Optimization

- **RTC Phase 3 Integration** – Staff will continue to work with the RTC consultant to review, revise and implement wet weather SOP changes. Full integration in an automated mode is anticipated to start once the RTC software (CSOFT) is upgraded to the most current version and the hydraulic engine is converted to use MSD's InfoWorks ICM hydraulic model. MSD's Operations Division will continue to implement operational set point control changes for individual components and then incorporated into the overall RTC system.
- **RTC Performance Assessment and Improvements** – MSD staff and the RTC consultant will continue to work to implement the hardware, software and set-point changes as applicable to each existing RTC.
- **Update SOPs for the NPS, SWOR1, and SWPS sites** to incorporate modifications to operations stemming from upgrades or the addition of new facilities.
- **Prepare SOPs for the Bells Lane High Rate Treatment Facility and the Logan & Breckinridge Storage Facility.**

Storage Optimization

- **Continue to evaluate opportunities to raise dams and maximize storage to reduce overflow volumes and frequencies.** MSD is currently designing dam raises at CSO178, CSO023, CSO193, CSO201, CSO202, CSO181, CSO036, CSO195, CSO197, CSO199, CSO029, CSO196, and CSO198.
- **Continue to plan and design for bending weir installation at strategic outfalls.** Bending weirs are currently being considered for CSO023, CSO190 and CSO178.
- **SWOR2 Modifications** – Complete improvements to the gate actuators at the site and reinitiate the site into the RTC system.



Louisville/Jefferson County
Metropolitan Sewer District

WET WEATHER STORAGE IN THE MORRIS FORMAN SEWER SYSTEM VIA THE RTC SYSTEM



Period	
From :	07/01/2014
To :	06/30/2015

Event Number	Wet Weather Event			Rainfall			CSO Saved Volume (MG)								High River Levels	Comments
	Start Date	End Date	Duration	Average*	Max**		SWPS SG Chamber (14.5)	SWOR2 (7.5)	Brady Lake and Executive Inn Storage (13.4)	Southern Outfall (3.5)	Ashland (1.0)	Ohio River Interceptor (4.1)	Sneads Branch (2.5)	Total (46.5)		
				TRFD (in)	TRFD (in)	Rain Gauge										
2014-059	07/02/2014 16:45	07/03/2014 4:25	11:40:00	0.14	0.27	TR05	0.35	0.00	0.50	0.75	0.00	1.85	0.00	3.45	No	Small storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled, with its gates in the open position and minimal available storage utilization. Brady Lake and Ashland were also manually operated.
2014-060	07/07/2014 20:05	07/08/2014 16:55	20:50:00	0.37	1.56	TR05	0.00	0.00	0.00	3.20	0.00	2.15	0.00	5.35	No	Small storm cells heterogeneously distributed over the service area. Ashland and SWOR2 were manually controlled, with their gates in the open position and minimal available storage utilization. Brady Lake was also manually operated. The SWSG (SWOR1), Brady Lake, and Executive Inn sites were not really used due to the geographical repartition of the rainfall (more on the North-West side of the service region (Southern Outfall Interceptor and Ohio River Interceptor)).
2014-061	07/13/2014 22:25	07/15/2014 21:40	47:15:00	1.17	1.74	TR11	12.20	4.40	4.20	4.00	0.20	4.20	2.00	31.20	No	Very large storm cells heterogeneously distributed over the service area with high intensity (up to 10-year return period). Ashland and SWOR2 were manually controlled, with their gates in the open position and minimal available storage utilization. However, storage occurred at these sites, either due to backflow at SWSG or inflow s greater than their gate's capacity.
2014-062	07/26/2014 21:40	07/28/2014 19:15	45:35:00	1.53	2.11	TR11	17.05	1.15	6.60	6.85	0.90	7.85	3.35	43.75	No	Very large storm cells homogeneously distributed over the service area (up to 2-year return period). Back-to-back storm cells with dew attering of storage sites between cells. SWOR2 was manually controlled, with its gates in the open position and minimal available storage utilization. However, storage occurred at SWOR2, either due to backflow at SWSG or inflow s greater than its gate's capacity. Ashland was also manually controlled--some storage occurred due to maintenance operations (gate actuator partially repaired).
2014-063	08/08/2014 4:55	08/10/2014 19:15	62:20:00	1.38	2.75	TR11	22.75	1.50	10.25	6.80	0.80	5.60	2.50	50.20	No	Very large storm cells homogeneously distributed over the service area (up to 2-year return period). Back-to-back storm cells with dew attering of storage sites between cells. Ashland and SWOR2 were manually controlled, with their gates in the open position and minimal available storage utilization. However, storage occurred at these sites, either due to backflow at SWSG or inflow s greater than their gate's capacity.
2014-065	08/11/2014 15:50	08/12/2014 21:15	29:25:00	0.45	1.08	TR11	10.20	2.00	0.80	3.40	0.20	3.60	2.00	22.20	No	Large storm cells homogeneously distributed over the service area. Ashland and SWOR2 were manually controlled, with their gates in the open position and minimal available storage utilization. However, storage occurred at these sites, either due to backflow at SWSG or inflow s greater than their gate's capacity.
2014-066	08/16/2014 22:30	08/18/2014 12:30	38:00:00	0.64	1.00	TR11	13.50	0.00	1.45	4.40	0.00	4.10	0.00	23.45	No	Large storm cells heterogeneously distributed over the service area. Back-to-back storm cells with dew attering of storage sites between cells (MDS). Ashland and SWOR2 were manually controlled, with their gates in the open position and minimal available storage utilization. However, storage occurred at these sites, either due to backflow at SWSG or inflow s greater than their gate's capacity.
2014-067	08/22/2014 18:50	08/23/2014 8:20	13:30:00	0.90	1.77	TR13	12.90	3.50	1.25	1.05	0.10	1.75	0.35	20.90	No	Large storm cells heterogeneously distributed over the service area with high intensity. Ashland and SWOR2 were manually controlled, with their gates in the open position and minimal available storage utilization. However, storage occurred at these sites, either due to backflow at SWSG or inflow s greater than their gate's capacity.
2014-068	08/23/2014 16:00	08/25/2014 8:15	40:15:00	0.66	0.95	TR11	12.50	0.00	5.60	3.75	0.00	2.75	1.95	26.55	No	Large storm cells heterogeneously distributed over the service area. Ashland and SWOR2 were manually controlled, with their gates in the open position and minimal available storage utilization. SWSG was operated manually for two hours during this event.
2014-069	08/27/2014 15:25	08/28/2014 8:10	16:45:00	0.43	1.12	TR13	3.40	1.25	4.95	3.50	0.00	3.70	2.50	19.30	No	Large storm cells heterogeneously distributed over the service area. Ashland and SWOR2 were manually controlled, with their gates in the open position and minimal available storage utilization. However, storage occurred at these sites, either due to backflow at SWSG or inflow s greater than their gate's capacity.
2014-070	08/30/2014 15:35	08/31/2014 7:45	16:10:00	0.32	0.88	TR04	12.40	2.30	1.15	3.40	0.00	3.00	2.00	24.25	No	Large storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled, with its gates in the open position and minimal utilization of the available storage. However, storage occurred at this site, either due to backflow at SWSG or inflow s greater than its gate's capacity. Ashland was also manually operated. The hard connection between Verizon and Morris Forman was lost several times during the rainfall event, resulting in communication failures at several sites (Ashland, Brady Lake, Executive Inn, NPS, Sneads Branch, SED, SWOR2, and SWSG).





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WET WEATHER STORAGE IN THE MORRIS FORMAN SEWER SYSTEM VIA THE RTC SYSTEM



Period	
From :	07/01/2014
To :	06/30/2015

Event Number	Wet Weather Event			Rainfall			CSO Saved Volume (MG)								High River Levels	Comments
	Start Date	End Date	Duration	Average*	Max**		SWPS SG Chamber (14.5)	SWOR2 (7.5)	Brady Lake and Executive Inn Storage (13.4)	Southern Outfall (3.5)	Ashland (1.0)	Ohio River Interceptor (4.1)	Sneads Branch (2.5)	Total (46.5)		
				TRFD (in)	TRFD (in)	Rain Gauge										
2014-072	09/02/2014 7:20	09/03/2014 1:25	18:05:00	0.30	0.39	TR13	7.75	2.00	1.20	2.50	0.00	1.80	0.30	15.55	No	Large storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled, with its gates in the open position and minimal utilization of the available storage. However, storage occurred at this site either due to backflow at SWSG or inflow s greater than its gate's capacity. Ashland w as also manually operated.
2014-073	9/11/14 0:45	9/12/14 4:55	28:10:00	2.34	2.86	TR15	12.8	2.7	11.4	5.0	0.9	3.7	2.5	38.8	No	Large storm cells homogeneously distributed over the service area (up to a 5-year return period). Ashland and SWOR2 were manually controlled, with their gates in the open position and minimal available storage utilization. However, storage occurred at these sites, either due to backflow at SWSG or inflow s greater than their gate's capacity. SWSG w as manually operated. Brady Lake did not dew ater correctly during this event. This was due to a problem with the SWOR2 gate positioning status. Also, there w as an actuator malfunction at this site.
2014-077	10/3/14 3:10	10/4/14 3:40	24:30:00	0.26	0.44	TR15	0.3	0.0	0.1	0.9	0.0	2.7	0.0	3.9	No	Moderate storm cells homogeneously distributed over the service area. SWOR2 w as manually controlled, with its gates in the open position and minimal utilization of the available storage. Also, Ashland and Brady Lake were not optimally managed due to the SWOR2 gate positioning status.
2014-078	10/5/14 23:10	10/6/14 23:30	24:20:00	0.32	0.49	TR04	0.7	0.4	0.6	2.7	0.0	2.4	0.0	6.7	No	Moderate storm cells unevenly distributed over the service area. SWOR2 w as manually controlled, with its gates in the open position and minimal utilization of the available storage. Also, Ashland and Brady Lake were not optimally managed due to the SWOR2 gate positioning status.
2014-079	10/7/14 11:10	10/7/14 19:40	8:30:00	0.17	0.19	TR15	0.4	0.0	0.1	0.5	0.0	1.7	0.0	2.6	No	Small storm cells homogeneously distributed over the service area. SWOR2 w as manually controlled, with its gates in the open position and minimal utilization of the available storage. Also, Ashland and Brady Lake were not optimally managed due to the SWOR2 gate positioning status.
2014-080	10/10/14 1:15	10/11/14 5:00	27:45:00	0.82	1.11	TR05	14.1	3.0	2.3	3.5	0.2	4.4	1.0	28.4	No	Large storm cells homogeneously distributed over the service area. SWOR2 w as manually controlled, with its gates in the open position and minimal utilization of the available storage. However, storage occurred at this site, due to backflow at SWSG and/or inflow s greater than the gate's capacity.
2014-081	10/13/14 03:55	10/15/14 03:40	47:45:00	1.61	2.07	TR04	24.3	6.3	9.6	8.5	1.5	5.1	1.4	56.5	No	Very large storm cells homogeneously distributed over the service area. Back-to-back storm cells with dew atering of storage sites betw een cells. SWOR2 w as manually controlled, with its gates in the open position and minimal available storage utilization. However, storage occurred at this site, either due to backflow at SWSG and inflow s greater than its gate's capacity.
2014-090	11/23/14 12:15	11/24/14 15:55	27:40:00	0.85	0.94	TR04	15.8	0.6	1.4	3.5	0.7	4.0	0.2	26.2	No	Large storm cells homogeneously distributed over the service area. SWOR2 w as manually controlled, with its gates in the open position and minimal utilization of the available storage.
2014-092	11/30/14 23:40	12/1/14 23:45	24:05:00	0.74	0.86	TR04	5.3	0.0	0.9	4.0	0.5	4.4	0.3	15.3	No	Moderate storm cells homogeneously distributed over the service area. Back-to-back storm cells with light dew atering of storage sites betw een cells. SWOR2 w as manually controlled, with its gates in the open position and minimal utilization of the available storage.
2014-093	12/4/14 8:45	12/9/14 11:00	122:15:00	1.88	2.05	TR13	25.1	4.9	6.5	4.2	1.2	5.5	2.0	49.3	No	Very large storm cells homogeneously distributed over the service area. Back-to-back storm cells with dew atering of storage sites betw een cells. SWOR2 w as manually controlled, with its gates in the open position and minimal available storage utilization. However, storage occurred at this site, either due to backflow at SWSG and inflow s greater than its gate's capacity. .
2014-095	12/22/14 20:55	12/24/14 21:05	48:10:00	0.53	0.75	TR15	0.8	0.1	0.5	1.0	0.0	4.4	0.1	6.7	No	Moderate storm cells heterogeneously distributed over the service area. SWOR2 w as manually controlled, with its gates in the open position and minimal utilization of the available storage.





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WET WEATHER STORAGE IN THE MORRIS FORMAN SEWER SYSTEM VIA THE RTC SYSTEM

Period	
From :	07/01/2014
To :	06/30/2015

Event Number	Wet Weather Event			Rainfall			CSO Saved Volume (MG)								High River Levels	Comments
	Start Date	End Date	Duration	Average*	Max**		SWPS SG Chamber (14.5)	SWOR2 (7.5)	Brady Lake and Executive Inn Storage (13.4)	Southern Outfall (3.5)	Ashland (1.0)	Ohio River Interceptor (4.1)	Sneads Branch (2.5)	Total (46.5)		
				TRFD (in)	TRFD (in)	Rain Gauge										
2014-096	12/27/14 15:25	12/28/14 8:20	16:55:00	0.30	0.36	TR15	2.0	0.0	0.4	1.4	0.0	2.4	0.0	6.0	No	Moderate storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled, with its gates in the open position and minimal utilization of the available storage.
2015-001	1/3/15 4:45	1/4/15 5:30	24:45:00	0.36	0.51	TR04	0.3	0.2	0.0	0.8	0.0	2.5	0.0	3.8	No	Small storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled, with its gates in the open position and minimal utilization of the available storage (The end date of the event was modified due to technical malfunction in Snead Branch which did not permit to close properly this event).
2015-006	2/1/15 11:00	2/2/15 10:50	23:50:00	0.44	0.52	TR15	2.3	0.8	0.1	1.4	0.2	3.5	0.1	8.4	No	Moderate storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled, with its gates in the open position and minimal utilization of the available storage. MDS was manually operated.
2015-008	2/21/15 3:05	2/22/15 9:40	30:35:00	1.11	1.33	TR04	10.8	1.7	1.8	3.2	0.8	2.1	0.1	20.2	No	Large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. MDS was manually operated.
2015-012/013/014	3/3/15 18:20	3/10/15 0:40	150:20:00	2.11	2.05	TR15	25.1	8.5	7.8	4.6	3.0	5.9	2.3	57.1	Yes	Very large storm cells homogeneously distributed over the service area. Back-to-back storm cells with dewatering of storage sites between cells. SWOR2 was manually controlled, with its gates in the open position and minimal available storage utilization. However, storage occurred at this site, either due to backflow at SWSG and inflows greater than its gate's capacity. SWSG and MDS were manually operated.
2015-015	3/10/15 3:45	3/13/15 1:10	69:25:00	1.31	1.48	TR01	22.3	10.5	7.9	3.7	2.3	4.9	2.3	53.8	Yes	Large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled, with its gates in the open position and minimal available storage utilization. However, storage occurred at this site, either due to backflow at SWSG and inflows greater than its gate's capacity. SWSG and MDS were manually operated. MDS and SWSG were manually operated.
2015-016	3/13/15 9:05	3/16/15 19:35	82:30:00	1.95	2.38	TR15	23.6	7.9	9.0	4.3	1.7	5.6	2.9	55.0	Yes	Large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled, with its gates in the open position and minimal available storage utilization. However, storage occurred at this site, either due to backflow at SWSG and inflows greater than its gate's capacity. MDS and SWSG were manually operated.
2015-017	3/24/2015 15:15	3/25/2015 4:55	13:40:00	0.51	0.62	TR04	11.6	0.0	1.5	3.5	0.4	2.9	0.5	20.4	No	Moderate storm cells homogeneously distributed over the service area. SWOR2 was manually controlled, with its gates in the open position and minimal utilization of the available storage. MDS and SWSG were manually operated.
2015-019	4/2/2015 10:05	4/6/2015 16:40	102:35:00	6.26	7.29	TR15	25.0	7.9	20.3	10.3	1.3	6.9	2.6	74.4	Yes	Extreme storm cells homogeneously distributed over the service area (up to 200-year return period). Ashland, Brady Lake, Executive Inn, NPS, Sneads Branch, SWOR2 and SWSG had regulator malfunctions due to critical alarms (water level exceeding a given threshold). SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. SWSG and Brady Lake were mostly manually operated.
2015-020	4/6/2015 16:40	4/8/2015 23:55	55:15:00	1.07	1.58	TR11	31.2	7.3	5.4	10.4	0.9	6.1	2.0	63.3	Yes	Large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. Ashland was partially in manual mode and SWSG and Brady Lake were manually operated.
2015-022	4/9/2015 12:00	4/12/2015 4:20	64:20:00	0.51	0.65	TR05	20.5	2.5	2.6	4.3	1.1	4.7	2.2	37.8	Yes	Moderate storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. Brady Lake was manually operated. On April 8th around 9:35 PM, the Morris Forman WWTP was without power for about 9 hours. The Brady Lake and MDS SG1 gates were closed manually during the storm event.





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WET WEATHER STORAGE IN THE MORRIS FORMAN SEWER SYSTEM VIA THE RTC SYSTEM

Period	
From :	07/01/2014
To :	06/30/2015

Event Number	Wet Weather Event			Rainfall			CSO Saved Volume (MG)								High River Levels	Comments
	Start Date	End Date	Duration	Average*	Max**		SWPS SG Chamber (14.5)	SWOR2 (7.5)	Brady Lake and Executive Inn Storage (13.4)	Southern Outfall (3.5)	Ashland (1.0)	Ohio River Interceptor (4.1)	Sneads Branch (2.5)	Total (46.5)		
				TRFD (in)	TRFD (in)	Rain Gauge										
2015-023	4/13/2015 18:10	4/15/2015 20:50	50:40:00	0.52	0.74	TR15	18.0	0.0	1.4	6.4	1.2	7.4	0.3	34.7	Yes	Moderate storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. SWSG and Brady Lake were mostly manually operated.
2015-025	4/19/2015 7:05	4/20/2015 22:20	39:15:00	0.83	0.93	TR04	16.9	0.0	5.3	3.4	0.9	4.8	0.9	32.1	Yes	Moderate storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. SWSG was manually operated.
2015-026	4/25/2015 4:10	4/26/2015 5:55	25:45:00	0.23	0.35	TR05	1.9	0.0	0.3	1.8	0.1	3.1	0.1	7.1	No	Small storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-029	5/11/2015 18:05	5/12/2015 3:45	9:40:00	0.22	0.58	TR11	5.6	1.9	2.4	0.9	0.3	3.4	0.2	14.5	No	Small storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-030	5/16/2015 12:00	5/17/2015 0:10	12:10:00	0.35	1.12	TR04	7.1	1.1	0.8	3.5	0.3	4.8	0.0	17.4	No	Small storm cells heterogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-031	5/17/2015 12:20	5/18/2015 4:35	16:15:00	0.14	0.24	TR11	4.1	0.0	0.3	2.7	0.2	3.7	0.7	11.6	No	Small storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-032	5/25/2015 3:55	5/29/2015 2:15	94:20:00	0.68	0.96	TR11	7.2	0.0	2.0	3.7	0.7	6.6	0.9	21.0	No	Moderate storm cells homogeneously distributed over the service area with back-to-back cells. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization. SWSG and Brady Lake were manually operated.
2015-035	6/8/2015 6:20	6/8/2015 17:05	10:45:00	0.20	0.38	TR05	4.1	0.0	0.2	1.2	0.0	3.2	0.2	8.8	No	Small storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-037	6/16/2015 21:00	6/18/2015 7:40	34:40:00	0.78	1.43	TR11	4.6	0.0	4.0	3.5	0.7	4.9	1.2	18.8	No	Moderate storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-038	6/18/2015 16:30	6/19/2015 21:00	28:30:00	1.01	1.75	TR12	16.0	0.0	10.5	3.5	0.7	4.8	2.5	37.9	No	Large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-039	6/19/2015 21:30	6/21/2015 11:55	38:25:00	0.96	1.18	TR11	14.5	0.0	7.0	3.5	0.9	5.4	2.0	33.3	No	Large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
2015-041	6/26/2015 0:20	6/27/2015 21:55	45:35:00	1.53	2.21	TR11	18.5	0.0	7.5	10.0	1.4	10.5	3.2	51.1	No	Very large storm cells homogeneously distributed over the service area. SWOR2 was manually controlled with its gates in the open position and minimal available storage utilization.
TOTAL				32.89			517.40	85.90	169.15	168.70	25.70	190.00	51.15	1208.10		

* Average total rainfall depth based on rain gauge TR04, TR05, TR11, TR12, TR13, TR14 and TR15
 ** Maximum total rainfall depth measurement and its location during the wet weather event
 *** MDS is always manually controlled by operator



2.4 NMC 3: Review and Modification of Pretreatment Requirements

FY15 Program

- Completed FY15 NMC 3 Trunk Sewer Water Quality Data Collection.
- Completed review and evaluation of Non-Domestic Dischargers (NDD) of concern and trunkline sewer data contributory to CSOs to determine if they discharge a disproportionate share of pollutants of concern (POC) to the CSS.
- Finalized POC, NDD, and trunkline sewer data (contributory to CSOs) for FY15 Dry Weather Sampling Result Report, drafted report to document findings.
- Continued to send wet weather alerts to NDD of concern prior to rain events, reminding them of their commitment to implement voluntary controls during wet weather events. During this reporting period, the MSD service area experienced measurable rain events on 46 days, four events with only trace rainfall and two snow events. MSD sent email notices to NDD 147 times prior to a precipitation event. There are currently 7 NDD that voluntarily implement controls during wet weather by alternating their cleaning schedule and/or by storing wastewater during a rain event and releasing later.
- Continued to track performance measures to quantify the effectiveness of voluntary controls program during wet weather events. The pollutant loading kept out of the CSS per typical rain event in the last six fiscal years was quantified with the data from wet weather logs submitted by NDDs. The typical results of pollutants kept out of the CSS when all NDDs participate are presented in the table below.

TYPICAL POLLUTANTS KEPT OUT OF THE CSS PER RAIN EVENT ⁽¹⁾						
Parameter	FY10	FY11	FY12	FY13	FY14	FY15
Number of NDDs Participating	9	9	9	8 ⁽²⁾	7 ⁽²⁾	7 ⁽²⁾
Volume (gallons)	134,000	139,000	110,000	170,000	170,000	235,000
BOD (lbs)	3,860	4,310	3,910	5,430	5,500	6,830
TSS (lbs)	2,180	2,490	1,690	3,370	4,060	5,770

⁽¹⁾When all NDDs Participate.

⁽²⁾Solae ceased operation in FY13 and Kent Feed ceased operation in FY14.

- Quantified flow and mass of pollutants kept out of the CSS in the last six fiscal years based on the actual rain events when NDDs detained their flow or otherwise reduced their discharge. The table below lists the annual quantity of pollutants kept out of the CSS in the last 6 fiscal years.

Total Quantity Pollutant Kept Out of the CSS in						
Parameter	FY10	FY11	FY12	FY13	FY14	FY15

Number of Wet Weather Days	136	130	68	72	46	58
Volume, gal	4,507,000	7,909,000	3,524,000	9,143,000	5,721,000	14,838,000
BOD, lbs	140,000	265,000	109,000	290,000	181,000	448,000
TSS, lbs	83,000	160,000	51,000	213,000	147,000	385,000

- Quantified average pollutant amounts kept out of the CSS per rain event in the last six fiscal years, as presented in the table below.

Average Pollutants Kept Out of the CSS per Rain Event						
Parameter	FY10	FY11	FY12	FY13	FY14	FY15
Flow, gal	33,100	60,800	51,800	127,000	124,400	235,000
BOD, lbs	1,000	2,000	1,600	4,000	3,900	6,830
TSS, lbs	600	1,200	800	3,000	3,200	5,770

- Continued to include specific NMC #3 related language as appropriate, in new and re-issued wastewater discharge permits to facilities located in the CSS, as well as in all Unusual Discharge Requests approved for discharge to the CSS. MSD re-issued 25 wastewater discharge permits to users discharging to or immediately upstream of the CSS. The total number of 42 Unusual Discharge Requests went to Morris Forman WQTC in FY15. That includes 21 that were in the CSS and 21 that were located in SSS but end up at Morris Forman WQTC. To avoid the risk of overflow, Unusual Discharge Requests were authorized for discharge into the collection system when overflows were not occurring and wet weather was not anticipated.
- Conducted NMC #3 site inspections at NDD facilities as part of the permit renewal process. During this FY15 reporting period, MSD conducted seven of these inspections.
- Conducted NMC #3 site inspections at Industrial User Facilities not currently in the formal NMC #3 program as part of the initial permitting or permit renewal process. These are facilities that were found to have little to no impact during rain events. During this reporting period, MSD conducted 18 of these inspections. MSD elected not to request implementation of voluntary controls at this time because of the limited benefit to be gained. MSD heightened the understanding of the CSS operation during wet weather for these industries during the inspections.
- Continued to include hold and release requirements in permits for all new industrial users in the combined sewer system and for existing industrial customers that expand production in the combined sewer system. The volume and duration of each hold and release requirement was determined through use of MSD’s hydraulic model. MSD applied this requirement to two permits in the FY15 reporting period.
- Continued to seek out green infrastructure opportunities at NDDs discharging to the CSS. For example, Copper & Kings, an industry within the CSS, has completed a green infrastructure capital project (rain garden).

-
- Continued to track performance measures to monitor the effectiveness of the implementation of NMC #3 within the Pretreatment Program.
 - Conducted NMC #3 program refresher training for all current pretreatment program staff. A total of 10 MSD employees participated in the training session.

FY16 Program

- Complete FY16 NMC #3 Trunk Sewer Water Quality Data Collection effort.
- Complete review and evaluation of user data of NDDs of concern and trunkline sewer data contributory to CSOs to determine if they discharge a disproportionate share of pollutants of concern to the CSS. Determine POCs, NDDs, and trunkline sewer (contributory to CSOs) for FY16. Review NDDs to identify those that may be removed from the program, as well as any that may need to be added. Prepare a file report to document the findings and recommendations resulting from FY16 NMC #3 trunk sewer collection data.
- Continue to send wet weather alerts to NDDs of concern prior to rain events, reminding them of their commitment to implement voluntary controls during wet weather events.
- Continue to include specific NMC #3 related language as appropriate, in new and re-issued wastewater discharge permits to facilities located in the CSS, as well as in all Unusual Discharge Requests approved for discharge to the CSS.
- Conduct NMC #3 site inspections at Industrial User permitted facilities not currently in the formal NMC #3 program as part of the permit renewal process.
- Discuss NMC #3 program participation at each annual site inspection for Industrial Users who are currently in the NMC #3 program.
- Continue to seek out green infrastructure opportunities at NDDs discharging to the CSS.
- Track performance measures to monitor the effectiveness of the implementation of NMC #3 within the Pretreatment Program.
- Review all new industrial users and existing industrial users with increased discharges in the combined sewer system to determine if hold and release requirements need to be added into their permits.
- Document which NDDs have ceased operation and quantify the impact/reduction on CSS operation.
- Document which permitted industries have hold and release permit requirements.
- Document which permitted industries use green infrastructure to trade off for their hold and release program.
- Perform a hospital waste survey to quantify reductions in waste loadings over the past decade. Produce a memo to the file.

-
- Review the impact of improvements made to the combined sewer system infrastructure. Consider updated flows from the most recent calibrated hydraulic model. Some changes may result in changes to the ongoing NMC #3 program. Document the changes and impacts in a memo to the file.

2.5 NMC 4: Maximization of Flow at the Morris Forman Water Quality Treatment Center (WQTC)

FY15 Program

- Bid and awarded the Morris Forman Headworks Replacement project which provides upgrades to the screening and grit removal systems for both the East and West Headworks at the Morris Forman WQTC. MSD is targeting this project for completion before the commissioning of the major off-line storage basins, in anticipation of increased grit and screenings loading to the Morris Forman WQTC when the new storage basins are cleaned following wet weather events. This project is not included in the IOAP and does not have a fixed deadline for completion.
- Completed design of Electrical High-Yard Modifications project, and Final Effluent Pump Station (FEPS) Generator project. Both projects are intended to improve the electrical reliability of the Morris Forman WQTC. This project is not included in the IOAP and does not have a fixed deadline for completion.

FY16 Program

- Bid and award the Electrical High-Yard Modifications project and the Final Effluent Pump Station (FEPS) Generator project. Begin construction of both projects and also continue construction of the Headworks Replacement project.
- Continue the evaluation of the proposed Capacity Calculator modifications to reflect results of secondary clarifier stress testing. Also continue to refine the algorithm developed to calculate flow under Sluice Gate 1 (SG-1) at the Main Diversion Structure into the RTC system. Full RTC automation of SG-1 will be evaluated as part of the RTC integration of the Bells Lane WWTF in 2016 and 2017.
- Continue development of Effective Utility Management (EUM) performance measures for treatment parameters. After EUM metrics are up and running, develop and implement additional measures supporting maximization of treatment through Morris Forman WQTC.

2.5.1 Morris Forman Water Quality Treatment Center

FY15 Program

- The charts provided in Appendix J illustrate performance in maximizing flow to the Morris Forman WQTC. The top of the chart shows rainfall inches per day. The middle part of the chart shows Morris Forman WQTC effluent flow and secondary treatment flow. The difference between these is the secondary bypass flow. The bottom of the chart shows days with a CSO activation at the five CSOs in the vicinity of the Morris Forman WQTC (CSOs 015, 016, 191, 210, and 211). Note that the flow meter downstream from CSO211 is known to be affected by backwater effects of the Ohio River and the ultrasonic signal is sometimes blocked by mist and condensation when air and sewage temperatures are significantly different. CSO activations at CSO 211 are keyed to water levels upstream and downstream of the inflatable dam in the Main Diversion Structure. The other CSO activations are tied to flow measurement downstream of the respective CSOs. At times, “blips” representing very small volumes of overflow are indicated by flow meters even though an overflow cannot be verified by level measurements or other indicators. These blips are not reported as overflows, but are noted in the CSO monitoring data reported on elsewhere. There are occasions in which a communications failure with telemetry has led to short-term gaps in the data. In addition, indications of rainfall and CSO activations are shown on the day they happened, but are not aligned with the exact time, so the effluent flow graph (which is tied to actual time) may show peaks that are offset from the indicated rain or CSO events. The charts show the high performance of delivering flow to and through the plant prior to active storage and overflows occurring. The following discussion describes significant events that impact the data shown on the Morris Forman WQTC charts.
- During this reporting period, there were several outages in the Headworks and Primary Sedimentation that impacted plant capacity. During July, Primary Sedimentation Tank #1 and West Headworks Grit Chamber #2 were taken out of service for scheduled rehabilitation and preventive maintenance which reduced the plant capacity to 260 MGD. During this time period, West Headworks Grit Chamber #1 and West Headworks Grit Chamber #3 were taken out of service in shorter spans due to equipment failure, taking the capacity as low as 230 MGD. Rain events did occur in this span of low capacity, and overflows were likely impacted by the reduced plant capacity. By September, Primary Sedimentation Tank #1 was placed back in service. Sedimentation Basin #2 was taken out of service for most of the month of October for a scheduled rehabilitation and preventative maintenance, taking the plant capacity down to 270 MGD. During this time East Headworks Grit Chamber #2, East Headworks Grit Chamber #3 and West Headworks Grit Chamber #2 were also taken out of service in shorter spans due to equipment failure, but these outages did not affect the wet weather capacity which remained at 270 MGD due to the sedimentation basin outage. Rain events occurred during this time and overflows were likely impacted by the reduced plant capacity. By the end of October, Sedimentation Basin #2 was placed back in service. From November through June there were only minor outages in the Headworks and Primary

Sedimentation (except for the flooding event in April to be discussed later). Wet weather capacity was not significantly affected. At the end of June, the Sedimentation Basins were experiencing high blanket depths limiting the effective plant capacity to 280 MGD.

- On October 31, 2014, at 9:30 PM, a 10 inch diameter pressurized Process Water Line broke in the Dissolved Air Flotation Thickener (DAFT) area. The break filled the 2nd level of the Main Equipment Building (MEB), the connecting tunnel to the Aeration Services Building (ASB), the lowest level of the ASB, the connection tunnel to the Secondary Building, and the lowest level of that building. An estimated 250,000 to 500,000 gallons of process water filled those portions of the buildings. As a result, Morris Forman WQTC lost the ability to return and waste secondary solids. All process water removed from the buildings was returned to the Morris Forman WQTC process for treatment. The liquid treatment in secondary was controlled in manual in the field by Morris Forman WQTC operations staff. Partial solids processing and liquid control was returned by November 2, 2014, with full solids processing capacity returned by November 4, 2014, utilizing alternate control methods. As a result of the process water line break, multiple electrical, instrumentation, and control systems are being replaced. Although the secondary capacity was not limited during the outage, due to the inability to process solids, the impact resulted in higher than normal solids in Secondary, and elevated Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD) effluent values. As a result of this incident the plant exceeded its KPDES limits for Weekly TSS, Monthly TSS, and Monthly BOD in the month of November 2014.
- There were several very significant and extended wet weather events during the January to March reporting period. A significant rain event occurred February 21, at a time when high blanket depths in the Sedimentation Basins reduced the effective capacity to 290 MGD before CSO discharges occurred at CSO210. On March 4, 2015, heavy amounts of snow melt and rain caused discharges at CSO015, CSO016 and CSO210. This wet weather event was followed by wet weather events on March 10, March 13 and March 14, 2015. These back-to-back precipitation events resulted in a 14-day long secondary bypass event and several CSO discharge events from all the CSOs in the Morris Forman WQTC area. From March 24 to March 26, 2015, more rain fell over the Morris Forman WQTC service area with the majority of rain falling on March 26. The Morris Forman WQTC was able to handle the rain events with very little secondary bypassing early March 25, 2015, with no overflows from the major CSOs. Morris Forman WQTC was able to sustain flows of 310 MGD while discharging at CSO015, CSO16 and CSO210.
- On April 8, 2015 at 9:35 p.m., Morris Forman WQTC experienced a failure of the electrical station for the incoming 69KV electrical feed and began bypassing the entire treatment system. All plant systems shutdown including the FEPS, which was in service due to the elevation of the Ohio River. The main Influent flows to Morris Forman, Main Diversion Structure and Southwestern Pump Station, were shutdown to reduce the impact of flooding inside the plant boundaries. Flow from Rubbertown industries was also suspended. The plant flow at the time of the failure was approximately 280 MGD. MSD was unable to verify the total number of gallons which completely bypassed the

plant as MSD had no SCADA, Telemetry, or flow recording capabilities available. Additionally, prior to power restoration, LG&E mandated a cleaning and safety evaluation for the North Side Electrical Station. Power was restored to Morris Forman on April 9 at 5:30 a.m. Final Effluent pumping was restored at 5:47 a.m. with one pump in service, and three pumps in service by 6:00 a.m. with the primary effort being to drain the flooding from the plant and re-establish normal liquid levels. At 7:30 a.m. a meeting was held to identify a plan to investigate the cause of the power failure, remove flooding from the plant buildings, assess and investigate to identify equipment replacement needs, determine a process to re-establish flow through functional plant processes, identify contractor needs to assist in the recovery process, and document a sequence to restore the treatment streams to normal operations in the shortest time possible. At approximately 8:30 a.m. levels within the plant had been restored to the point where primary settling, chlorination and dechlorination of the plant flow were in effect. By April 11 at 11:35 a.m., no bypassing in the collection system was attributable to flow restrictions at Morris Forman. Over the remainder of April 2015 secondary treatment was re-established. On April 30 at 10:00 a.m. FEPS was taken out of service and on April 30 at 12:28 p.m. plant flow was normal.

- There were no KPDES permit violations at Morris Forman WQTC during July, August, September, or October 2014. In November the plant exceeded KPDES limits for Weekly TSS, Monthly TSS, and Monthly BOD. There were no KPDES permit violations at Morris Forman WQTC in December 2014 or January 2015. There were five violations in February and four in March, due to sustained elevated flows, higher than normal BOD and TSS loadings, limitations in Solids Handling, and limited options for offloading excess solids to the landfill as a result of wet conditions and severe landfill odor concerns. In February the violations were 7-Day, Monthly BOD, Monthly TSS and Percent Removal for TSS. In March the violations were 7-Day, Monthly BOD and Monthly TSS. There were two violations in April due to the extensive flooding experienced by the Morris Forman WQTC on April 8, 2015. For the month of April, Morris Forman was unable to complete a full sampling regimen and the violations were the 7-Day Fecal Coliform and the Monthly TSS effluent limits. In May, there were no KPDES permit violations at Morris Forman WQTC. There were four violations in June due to the continued recovery from the April event and an extended stretch of hot weather. The violations were the 7-Day Secondary Effluent BOD and TSS, 30-Day Secondary Effluent BOD and TSS, 7-Day Plant Effluent Fecal and one Daily Plant Effluent Dissolved Oxygen.

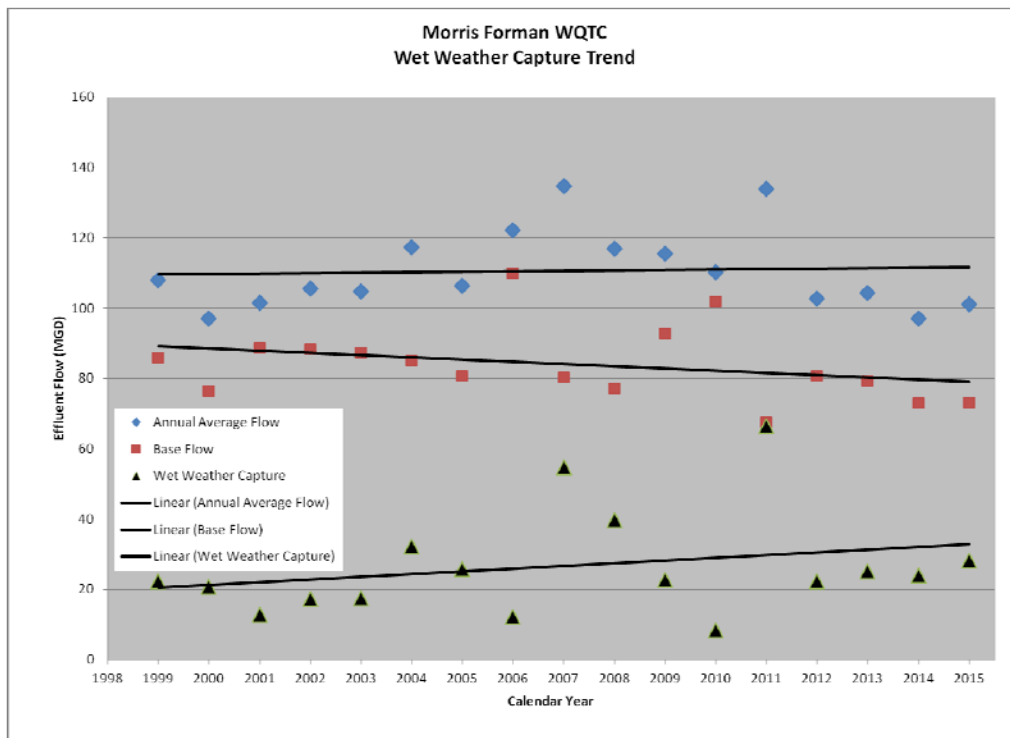
Note that the Morris Forman Headworks Replacement Project has been bid and awarded with construction anticipated to commence 4th quarter 2015. Design for replacement of equipment at the Morris Forman WQTC High-Yard Substation is complete and expected to be advertised in July 2015. Additionally, the Final Effluent Pump Station (FEPS) Generator project is anticipated to be awarded for construction in July 2015.

FY16 Program

The FY16 program for the Morris Forman WQTC is as described previously under Section 2.5.

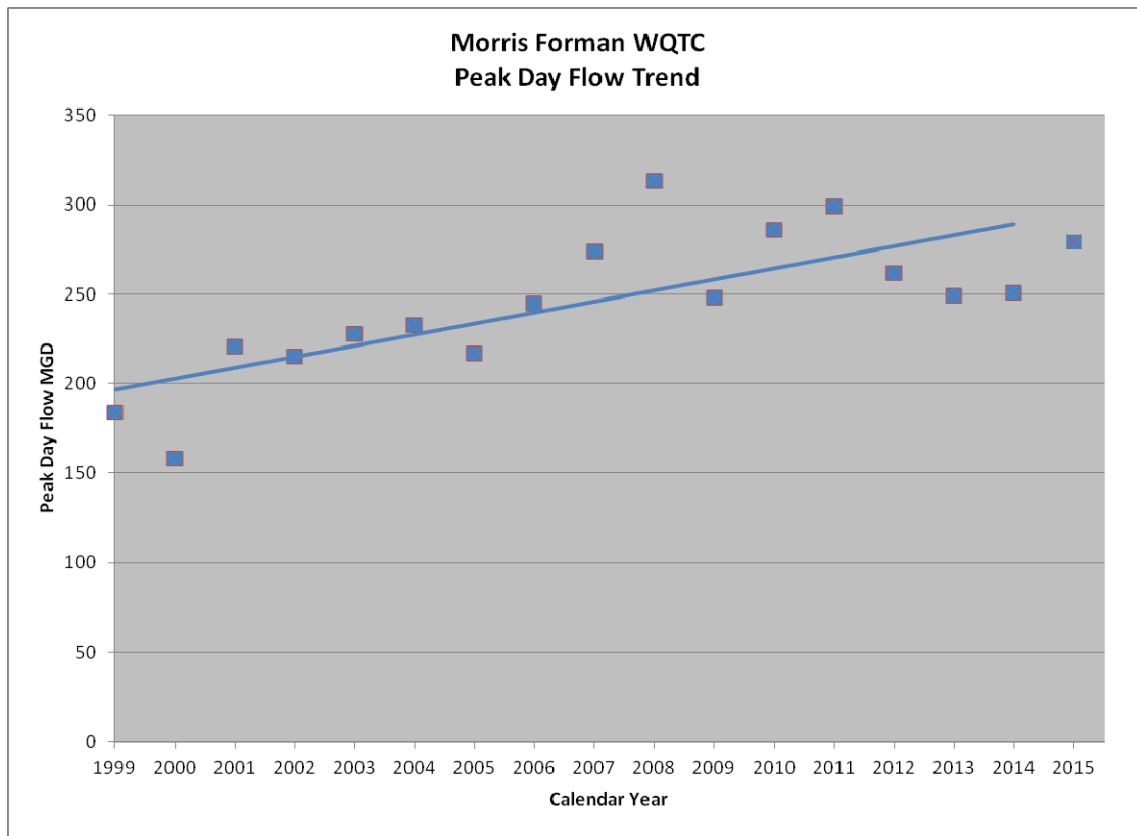
2.5.2 Wet Weather Capture

Over the past several years, the long term trend continues to show that MSD has increased the amount of wet weather flow treated at the Morris Forman WQTC. The wet weather capture is the difference between the annual average flow treated and the base wastewater flow (defined in state regulations as the lowest monthly average day flow during the calendar year). Calendar year 2015 (through June 30) shows no significant change in base flow compared to 2014. Overall, the long term base flow trend is dropping slightly, reflective of a trend toward lower per capita water use as identified by the Louisville Water Company records, and also some loss of customers in the industrial/commercial and residential customer base in the Morris Forman WQTC service area. The long-term trend shown in the figure below confirms that while individual year data is highly variable due to weather impacts, the long-term trend in wet weather capture continues to increase. The increasing trend in wet weather capture is largely attributed to a combination of capital improvements at the Morris Forman WQTC, development of wet weather operational procedures, and implementation of RTC facilities in the CSS.



The improving trend in plant wet weather flow capture performance is also reflected in the long term trend in the maximum day flow treated at Morris Forman WQTC, as shown in the figure below. Each data point represents the maximum daily flow treated during the year. Although the instantaneous peak hydraulic capacity of the Morris Forman WQTC is 350 MGD, the sustained flow that can be treated on a daily basis is governed by a number of other factors, including the performance of the biological treatment processes.

The data trend continues to show increases in peak day flows treated. While individual years are highly variable due to weather impacts, the long-term trend continues to be up. Factors contributing to this long-term positive trend are implementation of the new wet weather SOP, and better wet weather process control at the Morris Forman WQTC. These two factors result in the Morris Forman WQTC being able to treat elevated flows for a longer period of time without jeopardizing permit compliance, resulting in more flow being treated for longer periods of time during wet weather events.



2.6 NMC 5: Elimination of CSOs During Dry Weather

FY15 Program

Flood Pump Stations (FPSs)

- Continued updates of the U.S. Army Corps of Engineers (USACE) Flood Operations and Maintenance Manual per staff review and to reflect changes in operations that have occurred with the IOAP projects and operational SOP improvements. This will be an ongoing task until all the projects in the IOAP and an ongoing task as NMC programmatic activities are completed.
- Pumped approximately 110,000 gallons of trapped flow back into the combined sanitary sewer system to avoid dry weather overflows as a result of operation of the flood protection system from the 34th Street, Starkey, and 4th Street FPSs during FY15.
- Completed construction activities for the 17th Street FPS DWO Elimination project on December 18, 2014. The Consent Decree deadline for the completion of this project was December 31, 2014.

Asset Analysis

- Performed the quarterly evaluation of dry weather unauthorized discharges to the Waters of the United States, with emphasis on the CSS, to determine causes and to determine if there is a need for corrective activities. Some of the recommendations delivered from the inspection included: continued interaction with the Louisville Water Company on response to water main breaks, and continued analysis of options for the CSO153 diversion structure to prevent materials from entering the siphon. MSD will continue to report dry weather overflows from the CSS in accordance with the Sewer Overflow Response Protocol (SORP).
- Performed inspection and cleaning of FOG hotspots within the CSS, in accordance with CMOM commitments.
- A detailed analysis of CSO153 and the related siphon for a capital solution to the dry weather overflow issue was completed. A cost analysis was performed, and replacement of the siphon was deemed not cost efficient.

FY16 Program

FPSs

- Continue to implement additional operational modifications at FPSs within the CSS to prevent dry weather overflows. Discussions with the USACE continued regarding proposed modifications to these pumping stations that will minimize dry weather CSOs due to high river levels. This will be an ongoing activity until all the IOAP projects are completed and as staff implements programmatic NMC activities.
- Continue to review SOPs for the FPSs to reflect ongoing operational changes that occur as capital projects and NMC programmatic activities are completed.

Asset Analysis

- Perform a quarterly evaluation of dry weather overflows to the Waters of the United States, with emphasis on the CSS, to determine causes and to determine if there is a need for corrective activities.
- Perform inspection and cleaning of FOG hotspots within the CSS, in accordance with CMOM commitments.

2.7 NMC 6: Control of Solids and Floatable Materials in Combined Sewer Overflows
FY15 Program

Field Verification

- Continued to monitor and document performance of the, CSO108 Solids & Floatables (S&F) Control, Continuous Deflection Separator (CDS) operation in accordance with the Memorandum of Understanding (MOU) with the Kentucky (KY) Nature Preserve in FY15. Copies of the semi-annual CSO108 efficacy report are provided in Appendix A.
- Continued to review new S&F technologies for potential incorporation into the program.

S&F Debris Removal

- Continued inspection and maintenance procedures for the S&F structures as part of the weekly CSO inspections and PM cleaning routines, outlined under NMC #1. During FY15, 534 work orders were issued for debris removal at the S&F structures.
- Continued working with staff to determine the quantity of debris and floatables captured by street sweeping, catch basin cleaning, at the Headworks of the Morris Forman WQTC, and at the end of line S&F Controls. Reports have been developed to capture the amount of material removed through Catch Basin cleaning and at the end of the line S&F Controls. It has been determined that cleaning activities result in material amounts being captured at the Morris Forman WQTC head works. Results for the FY15 are shown in the table below:
- The digester contents sent to the landfill was 1,722 tons.

LOCATION	APPROXIMATE AMOUNT OF DEBRIS REMOVED
Catch Basin and Sewer Cleaning	1,540 CY
Debris removed via Street Sweeping	1,259 Tons
Headworks of Morris Forman WQTC	3589 Tons

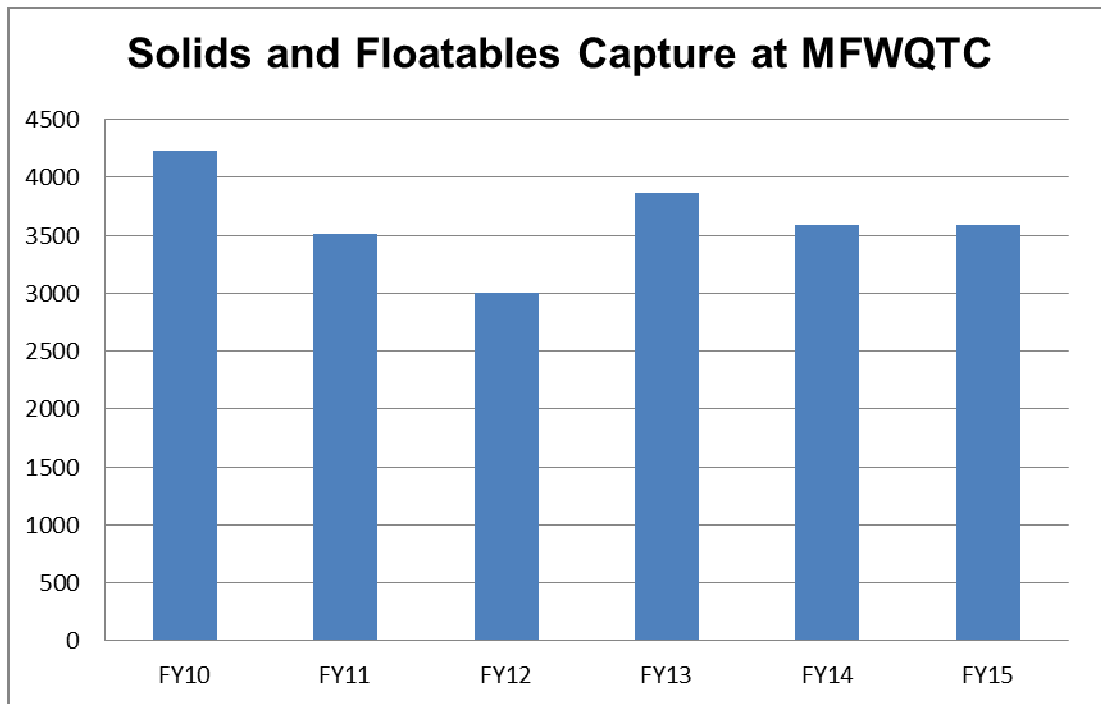
FY16 Program

Field Verification

- Performed field review of CSOs with dams that are planned to be raised as part of the LTCP. S&F Controls are being evaluated for needed updates as part of the design at these CSOs. CSOs currently under investigation are CSO178, CSO023, CSO193, CSO201, CSO202, CSO181, CSO036, CSO195, CSO197, CSO199, CSO029, CSO196, CSO198.
- Continue to monitor and document performance of the CSO108 Solids & Floatable structure operation in accordance with the MOU with the Kentucky Nature Preserve by MSD Crews. Reports will be submitted on June 30, and December 31, annually.

S&F Debris Removal

- Track the volume of S&F materials removed from the CSS.



2.8 NMC 7: Pollution Prevention Programs to Reduce Contaminants in CSOs

FY15 Program

- Continued coordination of activities performed by Louisville Metro such as: Street Sweeping, Operation Brightside (trash and litter clean-up), and other Metro Pollution Prevention programs.

-
- Continued administration of the Hazardous Materials Ordinance, which requires users with hazardous materials on site to submit a spill prevention and control plan. Continued response to spills of hazardous materials and incidents involving discharges to the sewer system and provided spill mitigation kits to the Louisville Metro Fire Department to use to absorb vehicle fluids rather than flushing to the sewer.
 - Continued administration of the Erosion Prevention and Sediment Control Ordinance (EPSC). Continued use of a tracking system for EPSC NOVs and Field Correction Notices within the CSS. In FY15, 129 field correction notices and 3 NOVs were issued for activities within the CSS.
 - Continued issuance of Wastewater Discharge Permits under the Industrial Pretreatment Program.
 - Volunteers participated in the Mayors Give-A-Day April 15, 2015 and April 17, 2015, to cleanup Beargrass Creek.
 - Volunteers participated in Living Lands & Waters cleanup of the Ohio River October 11, 2014 and October 18, 2014 at the Carrie Gaulbert Cox Park.
 - Volunteers participated in the Annual Ohio River Sweep June 20, 2015. The event was canceled and rescheduled to August due to weather.
 - Promoted Green Infrastructure initiatives within Jefferson County, such as guidance on downspout disconnection and rain garden installation.
 - Continued to prepare and distribute informational pieces, targeted to inform customers and residents on activities that can be practiced within their homes to assist in the reduction of overflows within the collection system.
 - Continued to enhance and train on Stormwater Pollution Prevention Plans (SWPPPs) for the WQTCs, major Pump Stations, and CMF.
 - Distributed literature to SIUs on BMPs for prevention of pollution.
 - Continued enhancement of the framework for the IOAP green infrastructure program tracking in Hansen.
 - Utilized and distributed the rain garden handbook to Louisville Metro agencies and to the public in order to encourage green infrastructure.

FY16 Program

- Utilize and distribute the rain garden handbook to Louisville Metro agencies and to the public in order to encourage green infrastructure.
- Continue to track green infrastructure projects and initiatives in Hansen and Sharepoint.
- Enhance the green infrastructure BMP manual as necessary.
- Continue to track EPSC NOVs and Field Correction Notices within the CSS.

- Continue to prepare and distribute informational pieces, targeted to inform customers and residents on activities that can be practiced within their homes to assist in the reduction of overflows within the collection.

2.9 NMC 8: Public Notification

To reduce duplication, public notification information will be reported in Section 5: Project WIN Program Activities for Public Outreach, Education, Notification and Participation.

2.10 NMC 9: Monitoring to Characterize CSO Impacts and the Efficacy of CSO Controls

Please refer to Section 4.5 - Post Construction Compliance Monitoring for information regarding system monitoring.

SECTION 3: Program Activities for Sewer Overflow Response Protocol (SORP)

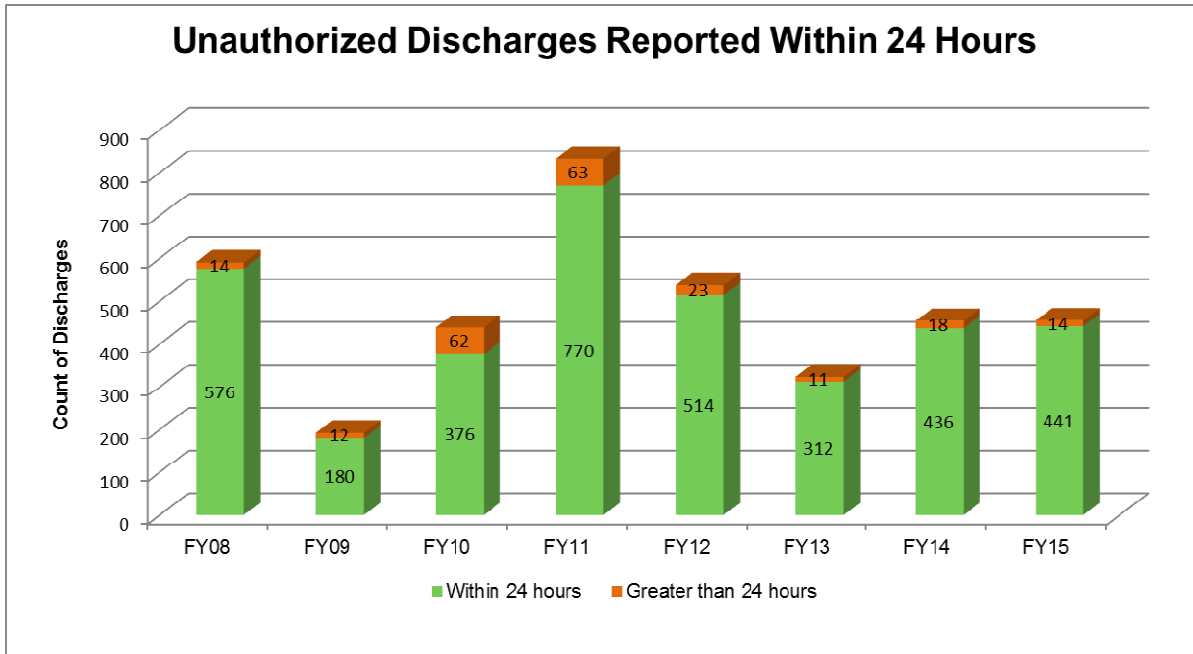
3.1 SORP Program Background

Per Paragraph 24.d. of the Amended Consent Decree, MSD initially submitted the Sewer Overflow Response Protocol (SORP) to EPA and KDEP on February 10, 2006, and received comments on March 13, 2006. MSD resubmitted the revised SORP on May 12, 2006, and received an approval letter for the SORP on August 22, 2006. The most recent version is dated February 12, 2012. The approved SORP document can be viewed on the MSD Project WIN website www.msdlouky.org/projectwin. The following activities were performed during this reporting period.

3.2 Overflow Management and Field Documentation

FY15 Program

- Documented a total of 609 overflows in FY15. The charts pertaining to overflows in Section 1 show these overflows broken down by Dry/Wet, Interior, Exterior, Waters of the US (WUS), and by Problem Code. Interior overflows are from MSD main line issues only, and do not include those that are the result of a problem on MSD's portion of the lateral. In addition, any interior overflow that is caused by a private property matter is also excluded from reporting.
- Reported 444 of the 455 overflows that reached the WUS (98%) within 24 hours.
- Reported 25 of the 455 overflows that reached the WUS (5.5%), as a Bypass or Blending event that required an additional 5-day written report.
- Reported 18 of the 127 dry weather discharges (14%), each with a volume between 1,000 and 50,000 gallons.
- Reported 4 of the 127 dry weather discharges (3%), each with a volume greater than 50,000 gallons.
- Continued to review and enhance the SORP Implementation Manual.



- Revised SORP Documentation and adjusted overflow/wet weather inspection routes as part of the annual SORP review.
- Continued daily, monthly and quarterly reviews with staff from MSD Operations and MSD Engineering Divisions
- Continued to monitor Sanitary Sewer Overflow (SSO) sites, which have been grouped into routes based on the range of rainfall rates necessary to cause a SSO. These routes were monitored during rain events depending on the magnitude and location of the storm. If an overflow was observed, a Discharge Work Order was created to document the event. During FY15 there were a total of 19 days when MSD executed routes. MSD staff executed a total of 80 inspection routes and documented 214 unauthorized discharges through route reconnaissance.
- Continued to monitor over 300 sites via telemetry. There were approximately 12 sites where sewage was routinely (3 or more times per year) hauled from Pump Stations to prevent overflows during rain events depending on the magnitude and location of the storm. Due to capacity issues during FY15, MSD staff hauled over 589,000 gallons of sewage.

FY16 Program

- Continue to monitor data, train staff and update information as needed.
- Continue to monitor over 300 sites via telemetry.
- Continue to haul to prevent overflows and backups during rain events until system improvements are completed.

-
- Continue to monitor documented collection system SSO sites, which have been grouped into routes based on the range of rainfall rates necessary to cause a SSO.
 - Continue the daily, monthly and quarterly data reviews with staff from MO, Infrastructure & Flood Protection and RS to ensure accuracy and consistency in reporting.
 - Schedule additional field reviews of SORP procedures after rain events to both ensure successful implementation and to assist with the annual SORP overall review.

3.3 Regulatory Reporting and Data Management

FY15 Program

- Conducted monthly meetings with staff to perform quality control on discharge work orders.
- Conducted a monthly review of the discharge work orders and updated the associated assets in Hansen as needed.
- Performed a detailed review and trend analysis on the discharge data, incorporated the findings into the quarterly SORP training and the quarterly reports.

FY16 Program

- Continue to perform quality control on discharge work orders with appropriate staff.
- Update assets in Hansen when new overflow locations are identified.
- Continue to review the overflow data for trends. These trends are discussed with staff in the Quarterly SORP training and documented in the Quarterly Reports.

3.4 Staff Training and Communication

FY15 Program

- Facilitated the SORP FY15 Annual Training from November through December 2014. A total of 23 training sessions were held and 558 of Louisville MSD staff attended.
- Updated the modules for each of the quarterly SORP training prior to each session.

- Facilitated the SORP FY15 Quarterly Training.

Key Learning Objective	SESSION 1	SESSION 2	SESSION 3	SESSION 4
	July through September	October through December	January through March	April through June
Clean Up & Public Notification	13 classes in September - 261 staff trained			
Overflow Field Documentation		2 classes in November, 11 classes in December - 258 staff trained		
Monitoring, Staging, Reconnaissance and Mobilization.			12 classes in March, 1 class in April - 242 staff trained	
Control Zones, Mitigation & Volume Estimation.				13 classes in June, - 251 staff trained

FY16 Program

- Schedule the FY16 SORP Quarterly Training as described below.

Key Learning Objectives	SESSION 1	SESSION 2	SESSION 3	SESSION 4
	July through September	October through December	January through March	April through June
Clean Up & Public Notification		Overflow Field Documentation	Monitoring, Staging, Reconnaissance and Mobilization.	Control Zones, Mitigation & Volume Estimation.

- Conduct the Annual SORP training in November and December 2015, for MSD staff.
- Continue to review and update the data associated with overflows.

3.5 Annual Program Review

FY15 Program

- Completed the annual SORP document review in August 2014. Revised SSO Routes in the SORP document as part of the review.

- Reviewed and updated routes to include any new SSO locations.

FY16 Program

- Perform the annual SORP review prior to August 2015. There are no major program updates anticipated at this time. Routes will be reviewed and updated to include any new SSO locations or changes in responsible MSD reporting departments.
- Send new routes to EPA/KDEP by August 12, 2015. New routes will be published once approved by EPA/KDEP.

3.6 Public Notification and Communication

To reduce duplication, public notification information will be reported in Section 5: Project WIN Program Activities for Public Outreach, Education, Notification and Participation.

SECTION 4: Program Activities for Discharge Abatement Plans

4.1 Integrated Overflow Abatement Plan (IOAP)

As a requirement of the Amended Consent Decree, per Paragraph 25, MSD is to prepare and submit for review and approval discharge abatement plans for the elimination of unauthorized discharges from the separate sanitary sewer system and the combined sewer system (CSS), the reduction and control of discharges from the CSO locations identified in the Morris Forman WQTC KPDES permit, and the improvement of water quality in the receiving waters.

The Final Sanitary Sewer Discharge Plan (SSDP) and the Final CSO Long Term Control Plan (LTCP) were submitted concurrently and certified on December 19, 2008, under the title of the Integrated Overflow Abatement Plan (IOAP). The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, that was entered into public record February 15, 2010.

MSD submitted an IOAP modification request to EPA/KDEP on September 20, 2012, with partial approval granted via certified letter on October 25, 2012. The modified project package, program descriptions and progress, and updated supporting text are included in the revised IOAP, submitted to EPA/KDEP on June 14, 2013.

4.2 Sanitary Sewer Discharge Plan (SSDP)

The Sanitary Sewer Discharge Plan (SSDP) addresses the overflows and unauthorized discharges from the separate sanitary sewer system. Three separate plans have been submitted under this program as described below and outlined in Paragraph 25.a. of the Amended Consent Decree.

4.2.1 Updated Sanitary Sewer Overflow Plan (SSOP) Implementation

MSD prepared and submitted the Updated SSOP on February 10, 2006. This plan included an overview of the MSD sanitary sewer overflow abatement program and specific actions taken to reduce/eliminate overflows from the sanitary sewer system. This document included a list of the proposed improvements to be accomplished by December 31, 2008. Activities required under the Updated SSOP have been completed.

4.2.2 Interim Sanitary Sewer Discharge Plan (ISSDP)

MSD submitted for approval an ISSDP on September 30, 2007. Comments were received on January 8, 2008. MSD resubmitted the revised ISSDP on March 7, 2008, and received an approval letter for the ISSDP on July 24, 2008. The approved ISSDP document can be viewed on the MSD Project WIN website www.msdlouky.org/projectwin.

4.2.3 Final Sanitary Sewer Discharge Plan

MSD submitted for approval a Final Sanitary Sewer Discharge Plan (SSDP) on December 19, 2008, as Volume 3 of the Integrated Overflow Abatement Plan (IOAP). The IOAP was accepted

by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, that was entered into public record February 15, 2010.

Prospect WQTC Elimination Projects Easement Status - A total of 54 easements have been identified that are necessary to complete the entire suite of projects related to the plant eliminations. To date, MSD has acquired all 54 of these easements.

Project Status Details:

- River Road Interceptor – project complete.
- River Road Interceptor Phase 1A – project complete.
- Harrods Creek Pump Station – project under construction.
- Harrods Creek Interceptor and Force Main Phase 1 – project complete.
- Harrods Creek Interceptor and Force Main Phase 2 – project complete.
- Harrods Creek Force Main Phase 3A – project complete.
- Harrods Creek Force Main Phase 3B – project complete.
- Shadow Wood WQTC Elimination – project under construction.
- Hunting Creek North WQTC Elimination - project under construction.
- Timberlake and Hunting Creek South WQTC Elimination - project under construction.
- Ken Carla WQTC Elimination - project under construction.

4.3 CSO LTCP

The CSO LTCP addresses the overflows and unauthorized discharges from the CSS. Two separate plans have been submitted under this program as described below and outlined in Paragraph 25.b. of the Amended Consent Decree.

4.3.1 Interim CSO LTCP

The Interim CSO LTCP was initially submitted to EPA and KDEP on February 10, 2006. MSD received an approval letter dated February 22, 2007, for the Interim LTCP. The approved Interim LTCP can be viewed on the MSD Project WIN website www.msdlouky.org/projectwin.

This plan includes an overview of the MSD program efforts taken to reduce/eliminate discharges from the CSS and the list of proposed improvements to be accomplished by December 31, 2008. All projects associated with this plan have been completed.

4.3.2 Final CSO LTCP

MSD submitted for approval the Final CSO LTCP on December 19, 2008, as Volume 2 of the Integrated Overflow Abatement Plan (IOAP). The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, that was entered into public record February 15, 2010.

4.3.3 Green Demonstration Project Update

The Final CSO LTCP (Volume 2 of the IOAP) included 19 green demonstration projects with schedules for completion in 2010 and 2011. The 19 green demonstration projects have been certified.

4.3.4 Green Infrastructure Programmatic Activities

FY15 Program

During FY15 the following programmatic activities related to the Green Infrastructure Program occurred:

- Developed updates to the Green Best Management Practice (BMP) manual.
- Promoted the Green Incentives and Savings program for private property.
- Accepted and approved applications for the Urban Reforestation program.
- Developed and utilized a green tracking protocol for green infrastructure projects.
- Executed memoranda of agreement on the urban reforestation program applicants (1307 trees included in proposals) to satisfy the 1000 tree/year IOAP commitment.
- Funded the 2015 Louisville Urban Tree Canopy study, which documented the status and trends of tree canopy throughout the county.
- Maintained www.msddgreen.org, an MSD Green Infrastructure website intended to advertise the private property incentive program and to offer general information on Green Infrastructure.
- Tracked and calculated the impacts of green infrastructure projects on stormwater capture and estimated overflow reductions.
- Continued the arrangement with EPA Office of Research and Development (ORD) to determine the performance of green infrastructure practices to determine most effective applications, maintenance cycles, and areas with high potential for reduction of overflows.
- Received the first annual EPA Region 4 Rain Catcher Award, which recognized the CSO130 suite of green projects for excellence in demonstrating the use of green infrastructure to meet regulatory commitments.
- Applied for and received the 2015 National Association of Clean Water Agencies (NACWA) Award for the CSO130 suite of green projects for operations and environmental performance.
- Applied for and received the 2015 Kentucky-Tennessee Water Environment Association 2015 Outstanding Watershed Management Award for central Louisville green infrastructure projects which capture and infiltrate over 123,000,000 gallons of stormwater and remove over 300,000 gallons of combined sewer overflow volume in a typical year.

- Partnered with the development community to display and discuss green infrastructure during the Homearama and Home & Garden Show events, which showcases new housing developments and construction practices to the community.
- Implemented the revised stormwater credit program which offers monthly drainage fee reductions to individuals who construct green infrastructure practices.
- Hosted a Construction Field Day at Fairdale High School on August 5, 2014, the site of a major green infrastructure installation, to demonstrate the viability of green infrastructure to the construction and development communities.
- Participated in the Louisville Sustainability Summit, UrbanTree Canopy Public Meetings, Kentucky Green Roof & Wall Symposium, and the Green Building & Green Infrastructure Action Team.
- Supported a joint funding partnership with the Louisville Metro Office of Sustainability to further incentivize the construction of green infrastructure on private property.
- Received approval for the following green partnership projects:

PROJECT APPROVAL DATE	PROJECT NAME
15-Jul-14	Portland DaVita Dialysis
29-Aug-14	Zephyr Gallery
3-Sep-14	Spindletop Draperies
1-Sep-14	UL Foundation-Brook St. Basin
3-Feb-15	JD Nichols Parking Garage
3-Feb-15	West Market Phase 2

FY16 Program

- Revise and re-publish the Green BMP Manual.
- Continue to participate in the Louisville Metro Sustainability Plan.
- Continue to provide urban reforestation grants.
- Continue to track green infrastructure projects in the Hansen and MSD Geographic Information System (GIS) systems.
- Continue to provide incentives for green infrastructure on private property.

4.4 Activity Progress Chart

A Gantt chart showing the 2009 and 2012 IOAP Modification schedules (Refer to IOAP, Volume 1 – Figure 6.3.1 for the previous) for the entire program is provided below.

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009- 31 Dec 2024)

Activity Name	Scheduled Finish	2009 IOAP Completion	2012 IOAP Modification	Year																							
				2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024								
MSD IOAP ANNUAL SCHEDULE																											
LONG TERM CONTROL PLAN	01-Jan-21	31-Dec-20	31-Dec-20																								
GREEN DEMONSTRATION PROJECTS																											
GREEN INFRASTRUCTURE DEMONSTRATION PROJECTS	31-Dec-11 A	31-Dec-11	31-Dec-11																								
GREEN INFRASTRUCTURE PROGRAM	31-Dec-20	31-Dec-20	31-Dec-20																								
GRAY INFRASTRUCTURE PROJECTS																											
CSO 123 DOWNSPOUT DISCONNECTION	31-Dec-12	31-Dec-12	31-Dec-12																								
I-64 AND GRINSTEAD DRIVE STORAGE BASIN	31-Dec-20	21-Dec-14	31-Dec-20																								
CSO 140 INCREASE PIPE CONVEYANCE	31-Dec-15	31-Dec-15	31-Dec-15																								
CSO 206 SEWER SEPARATION	30-Dec-13	31-Dec-13	30-Dec-13																								
CLIFTON HEIGHTS STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18																								
BELL'S LANE WET WEATHER TREATMENT FACILITY AND IN LINE STORAGE	31-Dec-16	31-Dec-14	31-Dec-16																								
PORTLAND WHARF STORAGE BASIN	31-Dec-19	31-Dec-19	31-Dec-19																								
STORY AVENUE AND MAIN STREET STORAGE BASIN	31-Dec-20	31-Dec-13	31-Dec-20																								
CSO 058 IN-LINE STORAGE AND GREEN INFRASTRUCTURE CONTROLS	31-Dec-14	31-Dec-14	31-Dec-14																								
SOUTHWESTERN PARKWAY STORAGE BASIN	31-Dec-18	31-Dec-18	31-Dec-18																								
13TH STREET AND ROWAN STREET STORAGE BASIN	31-Dec-20	31-Dec-20	31-Dec-20																								
CENTRAL RELIEF DRAIN IN-LINE STORAGE, GREEN INFRASTRUCTURE AND DISTRIBUTED STORAGE	01-Jan-21	31-Dec-18	31-Dec-18																								
CSO 160 IN-LINE STORAGE AND GREEN INFRASTRUCTURE CONTROLS	31-Dec-15	31-Dec-15	31-Dec-15																								
ADAMS STREET SEWER SEPARATION AND STORAGE BASIN	31-Dec-12	31-Dec-12	31-Dec-12																								
18TH AND NORTHWESTERN PKY STORAGE BASIN	31-Dec-17	31-Dec-17	31-Dec-17																								
ALGONQUIN PARKWAY STORAGE BASIN	01-Jan-19	31-Dec-18	31-Dec-18																								
SOUTHERN OUTFALL IN-LINE STORAGE (SOR 1)	31-Dec-18	31-Dec-18	31-Dec-18																								
SOUTHERN OUTFALL IN-LINE RETENTION (SOR 2)	01-Jan-19	31-Dec-18	31-Dec-18																								
NIGHTINGALE PUMP STATION AND STORAGE BASIN	31-Dec-16	31-Dec-16	31-Dec-16																								
LEXINGTON ROAD AND PAYNE STREET STORAGE BASIN	31-Dec-20	31-Dec-20	31-Dec-20																								
LOGAN STREET AND BRECKENRIDGE ST STORAGE BASIN	31-Dec-17	31-Dec-17	31-Dec-17																								
CSO 093 STRUCTURAL MODIFICATIONS AND GREEN INFRASTRUCTURE CONTROLS	31-Dec-15	31-Dec-15	31-Dec-15																								
CSO 108 DAM MODIFICATIONS	31-Dec-10 A	31-Dec-10	31-Dec-10																								
STORY AVENUE AND SPRING STREET GREEN INFRASTRUCTURE CONTROLS	31-Dec-16	31-Dec-16	31-Dec-16																								
FLOOD PUMP STATION PROJECTS																											
27TH STREET FLOOD PUMP STATION	30-Jun-13	30-Jun-13	30-Jun-13																								
34TH STREET FLOOD PUMP STATION	31-Dec-12	31-Dec-12	31-Dec-12																								
4TH STREET FLOOD PUMP STATION	31-Dec-12	31-Dec-12	31-Dec-12																								

Approved 2009 IOAP
 Remaining Work
 Completed Work

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009- 31 Dec 2024)				2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Activity Name	Scheduled Finish	2009 IOAP Completion	2012 IOAP Modification	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
SHAWNEE FLOOD PUMP STATION	30-Jun-13	30-Jun-13	30-Jun-13																
SHAWNEE FLOOD PUMP STATION	30-Jun-13	30-Jun-13	30-Jun-13																
17TH STREET FLOOD PUMP STATION	31-Dec-14	31-Dec-14	31-Dec-14																
17TH STREET FLOOD PUMP STATION	31-Dec-14	31-Dec-14	31-Dec-14																
SANITARY SEWER DISCHARGE PLAN	31-Dec-24	31-Dec-24	31-Dec-24																
BEARGRASS CREEK MIDDLE FORK AREA	31-Dec-24	31-Dec-24	31-Dec-24																
GOOSE CREEK PUMP STATION	31-Dec-24	31-Dec-24	31-Dec-24																
GOOSE CREEK PUMP STATION	31-Dec-24	31-Dec-24	31-Dec-24																
GOOSE CREEK PS PH1 - DEVONDALE PS WW STORAGE	31-Dec-24	31-Dec-24	31-Dec-24																
GOOSE CREEK PS PH1 - DEVONDALE PS WW STORAGE	31-Dec-24	31-Dec-24	31-Dec-24																
GOOSE CRK PS PH2 - PS & WET WEATHER STORAGE	31-Dec-24	31-Dec-24	31-Dec-24																
GOOSE CRK PS PH2 - PS & WET WEATHER STORAGE	31-Dec-24	31-Dec-24	31-Dec-24																
ANCHOR ESTATES- ANCHOR ESTS PS 1 & 2 PS ELIMINATIONS	31-Dec-18	31-Dec-18	31-Dec-18																
ANCHOR ESTATES- ANCHOR ESTS PS 1 & 2 PS ELIMINATIONS	31-Dec-16	31-Dec-16	31-Dec-16																
ANCHOR ESTATES- VANNAH PS ELIMINATION	15-Oct-11 A	31-Dec-13	31-Dec-13																
ANCHOR ESTATES- VANNAH PS ELIMINATION	15-Oct-11 A	31-Dec-13	31-Dec-13																
HURSTBOURNE I&I INVESTIGATION & REHABILITATION	27-Dec-11 A	31-Dec-11	31-Dec-11																
HURSTBOURNE I&I INVESTIGATION & REHABILITATION	27-Dec-11 A	31-Dec-11	31-Dec-11																
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE, AND UMFLS DIVERSION 1 -	31-Dec-13	31-Dec-13	31-Dec-13																
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE, AND UMFLS DIVERSION 1 - BUECHEL BASIN	31-Dec-13	31-Dec-13	31-Dec-13																
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE, AND UMFLS DIVERSION 2 I	31-Dec-23	31-Dec-23	31-Dec-23																
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE, AND UMFLS DIVERSION 2 PS & WET WEATHER STORAGE	31-Dec-23	31-Dec-23	31-Dec-23																
CEDAR CREEK AREA	31-Dec-24	31-Dec-24	31-Dec-24																
LITTLE CEDAR CREEK INTRECEPTOR IMPROVEMENTS	31-Dec-24	31-Dec-24	31-Dec-24																
LITTLE CEDAR CREEK INTRECEPTOR IMPROVEMENTS	31-Dec-24	31-Dec-24	31-Dec-24																
IDLEWOOD INLINE STORAGE	31-Dec-23	31-Dec-23	31-Dec-23																
IDLEWOOD INLINE STORAGE	31-Dec-23	31-Dec-23	31-Dec-23																
BARDSTOWN RD PS IMPROVEMENTS	31-Dec-21	31-Dec-21	31-Dec-21																
BARDSTOWN RD PS IMPROVEMENTS	31-Dec-21	31-Dec-21	31-Dec-21																
RUNNING FOX PS ELIMINATION	05-Apr-10 A	31-Dec-10	31-Dec-10																
RUNNING FOX PS ELIMINATION	05-Apr-10 A	31-Dec-10	31-Dec-10																
FAIRMOUNT RD PS IMPROVEMENTS	01-Jan-15	31-Dec-23	31-Dec-23																
FAIRMOUNT RD PS IMPROVEMENTS	31-Dec-14	31-Dec-23	31-Dec-23																
FAIRMOUNT RD PS IMPROVEMENTS	24-Apr-12 A	31-Dec-23	31-Dec-23																
FAIRMOUNT RD PS IMPROVEMENTS	24-Apr-12 A	31-Dec-23	31-Dec-23																
FAIRMOUNT STORAGE BASIN	01-Jan-15	31-Dec-15	31-Dec-15																
FAIRMOUNT STORAGE BASIN	01-Jan-15	31-Dec-15	31-Dec-15																
COMBINED SEWER SYSTEM AREA	31-Dec-23	31-Dec-23	31-Dec-23																
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	30-Jun-11 A	30-Jun-11	30-Jun-11																
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	30-Jun-11 A	30-Jun-11	30-Jun-11																
SONNE PUMP STATION I&I INVESTIGATION & REHABILITATION	30-Jun-11 A	30-Jun-11	30-Jun-11																
SONNE PUMP STATION I&I INVESTIGATION & REHABILITATION	30-Jun-11 A	30-Jun-11	30-Jun-11																
CAMP TAYLOR SSES	08-Jul-11 A	31-Dec-11	31-Dec-13																
CAMP TAYLOR SSES	08-Jul-11 A	31-Dec-11	31-Dec-13																
CAMP TAYLOR SANITARY SEWER #1A	31-Dec-12	31-Dec-13	31-Dec-13																
CAMP TAYLOR SANITARY SEWER #1A	31-Dec-12	31-Dec-13	31-Dec-13																
CAMP TAYLOR SANITARY SEWER #1B	31-Dec-13	31-Dec-13	31-Dec-13																
CAMP TAYLOR SANITARY SEWER #1B	31-Dec-13	31-Dec-13	31-Dec-13																
CAMP TAYLOR SANITARY SEWER #2	31-Dec-13	31-Dec-13	31-Dec-13																
CAMP TAYLOR SANITARY SEWER #2	31-Dec-13	31-Dec-13	31-Dec-13																
CAMP TAYLOR #3- SEWER REHABILITATION	31-Dec-17	31-Dec-17	31-Dec-17																
CAMP TAYLOR #3- SEWER REHABILITATION	31-Dec-17	31-Dec-17	31-Dec-17																
CAMP TAYLOR #4-SEWER REHABILITATION & REPLACEMENT	31-Dec-23	31-Dec-23	31-Dec-23																
CAMP TAYLOR #4-SEWER REHABILITATION & REPLACEMENT	31-Dec-23	31-Dec-23	31-Dec-23																
FLOYDS FORK AREA	01-Apr-10 A	31-Dec-21	01-Apr-10																
WOODLAND HILL PS DIVERSION	01-Apr-10 A	30-Jun-11	01-Apr-10																
WOODLAND HILL PS DIVERSION	01-Apr-10 A	30-Jun-11	01-Apr-10																
ASHBURTON PS IMPROVEMENTS AND DIVERSION	22-Jan-10 A	31-Dec-21	22-Jan-10																
ASHBURTON PS IMPROVEMENTS AND DIVERSION	22-Jan-10 A	31-Dec-21	22-Jan-10																
HITE CREEK AREA	31-Dec-24	31-Dec-24	31-Dec-24																
MEADOW STREAM PS AND FORCE MAIN	31-Dec-12	31-Dec-16	31-Dec-16																
MEADOW STREAM PS AND FORCE MAIN	31-Dec-12	31-Dec-16	31-Dec-16																
KAVANAUGH RD PS IMPROVEMENTS	31-Dec-24	31-Dec-24	31-Dec-24																

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 Remaining Work
 Completed Work

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009- 31 Dec 2024)				2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Activity Name	Scheduled Finish	2009 IOAP Completion	2012 IOAP Modification																
KAVANAUGH RD PS IMPROVEMENTS	31-Dec-24	31-Dec-24	31-Dec-24																
FLOYDSBURG RD SSES, REHAB AND PUMP STATION UPGRADE	17-Dec-10 A	31-Dec-10	31-Dec-10																
FLOYDSBURG RD SSES, REHAB AND PUMP STATION UPGRADE	17-Dec-10 A	31-Dec-10	31-Dec-10																
INTERIM SSDP PROJECTS	27-Nov-12	27-Nov-12	27-Nov-12																
ISSDP BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A	27-Apr-11	27-Apr-11																
ISSDP BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A	27-Apr-11	27-Apr-11																
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT (WEST)	29-Sep-10 A	27-Apr-11	27-Apr-11																
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A	27-Apr-11	27-Apr-11																
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT (EAST)	29-Sep-10 A	27-Apr-11	27-Apr-11																
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	29-Sep-10 A	27-Apr-11	27-Apr-11																
SINKING FORK RELIEF SEWER	23-Dec-09 A	30-Dec-10	23-Dec-09																
SINKING FORK RELIEF SEWER	23-Dec-09 A	30-Dec-10	23-Dec-09																
ISSDP DEREK R GUTHRIE WATER QUALITY TREATMENT CENTER	30-Sep-12	31-Dec-11	27-Nov-12																
ISSDP DEREK R GUTHRIE WATER QUALITY TREATMENT CENTER	30-Jul-12	31-Dec-11	27-Nov-12																
DEREK R GUTHRIE WQTC WET WEATHER TREATMENT FACILITY	20-May-12 A	27-Nov-12	27-Nov-12																
DEREK R GUTHRIE WQTC WET WEATHER TREATMENT FACILITY	20-May-12 A	27-Nov-12	27-Nov-12																
WCWTP: WW FLOW EQU & TMT	30-Sep-12	27-Nov-12	27-Nov-12																
WCWTP: WW FLOW EQU & TMT	30-Sep-12	27-Nov-12	27-Nov-12																
DRGWQTC: BLOWER PACKAGE	03-Mar-11 A	27-Nov-12	27-Nov-12																
DRGWQTC: BLOWER PACKAGE	03-Mar-11 A	27-Nov-12	27-Nov-12																
DRGWQTC: WET WEATHER EQUALIZATION BASIN	31-Jul-12	27-Nov-12	27-Nov-12																
DRGWQTC: WET WEATHER EQUALIZATION BASIN	31-Jul-12	27-Nov-12	27-Nov-12																
ISSDP HIKES LANE INTERCEPTOR HIGHGATE SPRINGS PS	27-Nov-12	27-Nov-12	27-Nov-12																
ISSDP HIKES LANE INTERCEPTOR HIGHGATE SPRINGS PS	30-Oct-12	27-Nov-12	27-Nov-12																
HIKES POINT INTERCEPTOR	30-Nov-11 A	27-Nov-12	27-Nov-12																
HIKES POINT INTERCEPTOR	30-Nov-11 A	27-Nov-12	27-Nov-12																
HIKES POINT INTERCEPTOR PHASE 2	27-Nov-12	27-Nov-12	27-Nov-12																
HIKES POINT INTERCEPTOR PHASE 2	27-Nov-12	27-Nov-12	27-Nov-12																
CARSON & RIBBLE RELIEF	20-Nov-09 A	27-Nov-12	27-Nov-12																
CARSON & RIBBLE RELIEF	20-Nov-09 A	27-Nov-12	27-Nov-12																
HIKES POINT RELIEF EFFORT	31-Oct-12	27-Nov-12	27-Nov-12																
HIKES POINT RELIEF EFFORT	31-Oct-12	27-Nov-12	27-Nov-12																
ISSDP NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A	31-Jul-11	31-Jul-11																
ISSDP NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A	31-Jul-11	31-Jul-11																
NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A	31-Jul-11	31-Jul-11																
NORTHERN DITCH DIVERSION INTERCEPTOR	16-Feb-11 A	31-Jul-11	31-Jul-11																
NORTHERN DITCH DIVERSION INTERCEPTOR PH 2	16-Feb-11 A	31-Jul-11	31-Jul-11																
NORTHERN DITCH DIVERSION INTERCEPTOR PH 2	16-Feb-11 A	31-Jul-11	31-Jul-11																
ISSDP SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	30-Sep-12	27-Nov-12	30-Sep-12																
ISSDP SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	28-Sep-12	27-Nov-12	30-Sep-12																
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	12-May-12 A	12-May-12	12-May-12																
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	12-May-12 A	12-May-12	12-May-12																
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR Phase 2	30-Sep-12	30-Sep-12	30-Sep-12																
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR Phase 2	30-Sep-12	30-Sep-12	30-Sep-12																
JEFFERSONTOWN AREA	31-Dec-22	31-Dec-22	31-Dec-22																
JEFFERSONTOWN WQTC ELIMINATION	01-Jan-16	31-Dec-15	31-Dec-15																
JEFFERSONTOWN WQTC ELIMINATION	31-Dec-15	31-Dec-15	31-Dec-15																
JEFFERSONTOWN WQTC ELIMINATION	31-Dec-15	31-Dec-15	31-Dec-15																
JEFFERSONTOWN FORCE MAIN	31-Dec-15	31-Dec-15	31-Dec-15																
JEFFERSONTOWN FORCE MAIN	31-Dec-15	31-Dec-15	31-Dec-15																
GRAND AVENUE PUMP STATION	31-Dec-15	31-Dec-15	31-Dec-15																
GRAND AVENUE PUMP STATION	31-Dec-15	31-Dec-15	31-Dec-15																
UPPER BILTOWN RD INTERCEPTOR	31-Dec-15	31-Dec-15	31-Dec-15																
UPPER BILTOWN RD INTERCEPTOR	31-Dec-15	31-Dec-15	31-Dec-15																
BILTOWN RD INTERCEPTOR SS	01-Jan-16	31-Dec-15	31-Dec-15																
BILTOWN RD INTERCEPTOR SS	01-Jan-16	31-Dec-15	31-Dec-15																
BILTOWN RD PS, FM & INT	31-Dec-12	31-Dec-12	31-Dec-12																
BILTOWN RD PS, FM & INT	31-Dec-12	31-Dec-12	31-Dec-12																
CHENOWETH HILLS WQTC ELIMINATION & PS IMPROVEMENTS	31-Dec-15	31-Dec-15	31-Dec-15																
CHENOWETH HILLS WQTC ELIMINATION & PS ELIMINATION	31-Dec-15	31-Dec-15	31-Dec-15																
DELL RD & CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	31-Dec-22	31-Dec-22	31-Dec-22																
DELL RD & CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	31-Dec-22	31-Dec-22	31-Dec-22																
RAINTREE & MARIAN CT PH1 - PS ELIMINATION	31-Dec-21	31-Dec-21	31-Dec-21																
RAINTREE & MARIAN CT PH1 - PS ELIMINATION	31-Dec-21	31-Dec-21	31-Dec-21																
RAINTREE & MARIAN CT PS ELIMINATION	31-Dec-21	31-Dec-21	31-Dec-21																

Approved 2009 IOAP
 Remaining Work
 Completed Work

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009- 31 Dec 2024)

Activity Name	Scheduled Finish	2009 IOAP Completion	2012 IOAP Modification	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
RAINTREE & MARIAN CT PS ELIMINATION	31-Dec-21	31-Dec-21	31-Dec-21																
MONTICELLO PS ELIMINATION	31-Dec-22	31-Dec-22	31-Dec-22																
MONTICELLO PS ELIMINATION	31-Dec-22	31-Dec-22	31-Dec-22																
KLONDIKE INTERCEPTOR	31-Dec-15	31-Dec-15	31-Dec-15																
KLONDIKE INTERCEPTOR	31-Dec-15	31-Dec-15	31-Dec-15																
MILL CREEK AREA	13-Apr-12 A	31-Dec-21	31-Dec-21																
SHIVELY INTERCEPTOR	13-Apr-12 A	31-Dec-14	31-Dec-14																
SHIVELY INTERCEPTOR	13-Apr-12 A	31-Dec-14	31-Dec-14																
EAST ROCKFORD LANE PS RELOCATION	30-Mar-12 A	31-Dec-21	31-Dec-21																
EAST ROCKFORD LANE PS RELOCATION	30-Mar-12 A	31-Dec-21	31-Dec-21																
OHIO RIVER FORCE MAIN AREA	31-Dec-24	31-Dec-24	31-Dec-24																
MELLWOOD SYS 1 - MELLWOOD PS & FORCE MAIN	31-Dec-12	31-Dec-12	31-Dec-12																
MELLWOOD SYS 1 - MELLWOOD PS & FORCE MAIN	31-Dec-12	31-Dec-12	31-Dec-12																
MELLWOOD SYS 2 - WINTON & MOCKINGBIRD PS ELIM & PIPE UPGRADES	31-Dec-24	31-Dec-24	31-Dec-24																
MELLWOOD SYS 2 - WINTON & MOCKINGBIRD PS ELIM & PIPE UPGRADES	31-Dec-24	31-Dec-24	31-Dec-24																
DERINGTON CT PS I/ INVESTIGATION & REHABILITATION	30-Mar-12 A	31-Mar-12	31-Mar-12																
DERINGTON CT PS I/ INVESTIGATION & REHABILITATION	30-Mar-12 A	31-Mar-12	31-Mar-12																
PROSPECT WQTC ELIMINATIONS	31-Dec-15	31-Dec-15	31-Dec-15																
PROSPECT WQTC ELIMINATIONS	31-Dec-15	31-Dec-15	31-Dec-15																
HARRODS CREEK PS & FM	31-Dec-15	31-Dec-15	31-Dec-15																
HARRODS CREEK PS & FM	31-Dec-15	31-Dec-15	31-Dec-15																
HARRODS CREEK INT	31-Dec-15	31-Dec-15	31-Dec-15																
HARRODS CREEK INT	31-Dec-15	31-Dec-15	31-Dec-15																
HARRODS CREEK INT PH 2	31-Dec-15	31-Dec-15	31-Dec-15																
HARRODS CREEK INT PH 2	31-Dec-15	31-Dec-15	31-Dec-15																
RIVER ROAD INT	31-Dec-15	31-Dec-15	31-Dec-15																
RIVER ROAD INT	31-Dec-15	31-Dec-15	31-Dec-15																
TIMBERLAKE & HUNTING CREEK S WQTC ELIM	31-Dec-15	31-Dec-15	31-Dec-15																
TIMBERLAKE & HUNTING CREEK S WQTC ELIM	31-Dec-15	31-Dec-15	31-Dec-15																
KEN CARLA WQTC ELIM	31-Dec-15	31-Dec-15	31-Dec-15																
KEN CARLA WQTC ELIM	31-Dec-15	31-Dec-15	31-Dec-15																
HARRODS CREEK FORCE MAIN PH 3	31-Dec-15	31-Dec-15	31-Dec-15																
HARRODS CREEK FORCE MAIN PH 3	31-Dec-15	31-Dec-15	31-Dec-15																
SHADOW WOOD WWTP ELIM	31-Dec-15	31-Dec-15	31-Dec-15																
SHADOW WOOD WWTP ELIM	31-Dec-15	31-Dec-15	31-Dec-15																
N HUNTING CREEK PS & FM	31-Dec-15	31-Dec-15	31-Dec-15																
N HUNTING CREEK PS & FM	31-Dec-15	31-Dec-15	31-Dec-15																
PROSPECT #3- ORFM SYSTEM IMPROVEMENTS	31-Dec-16	31-Dec-16	31-Dec-16																
PROSPECT #3- ORFM SYSTEM IMPROVEMENTS	31-Dec-16	31-Dec-16	31-Dec-16																
OTHER PROJECTS	30-Dec-24	31-Dec-24	30-Dec-24																
CPE/CCP MODIFICATIONS TO WQTC	19-Dec-11 A	31-Dec-11	31-Dec-11																
CPE/CCP MODIFICATIONS TO WQTC	19-Dec-11 A	31-Dec-11	31-Dec-11																
I/ REDUCTION PROGRAM	30-Dec-24	31-Dec-24	30-Dec-24																
I/ REDUCTION PROGRAM	30-Dec-24	31-Dec-24	30-Dec-24																
POND CREEK AREA	31-Dec-23	31-Dec-24	31-Dec-24																
LEE ANN WAY PUMP STATION IMPROVEMENTS	31-Dec-21	31-Dec-15	31-Dec-15																
LEE ANN WAY PUMP STATION IMPROVEMENTS	31-Dec-14	31-Dec-15	31-Dec-15																
LEE ANN WAY SANITARY SEWER I/ REHAB	31-Dec-21	31-Dec-15	31-Dec-15																
LEE ANN WAY SANITARY SEWER I/ REHAB	31-Dec-21	31-Dec-15	31-Dec-15																
LEE ANN WAY PS SYSTEMSSES	30-Mar-11 A	31-Dec-15	31-Dec-15																
LEE ANN WAY PS SYSTEMSSES	30-Mar-11 A	31-Dec-15	31-Dec-15																
LEE ANN WAY PH 2 ICA	31-Dec-11 A	31-Dec-15	31-Dec-15																
LEE ANN WAY PH 2 ICA	31-Dec-11 A	31-Dec-15	31-Dec-15																
LEE ANN WAY SSR PH 1	31-Dec-14	31-Dec-15	31-Dec-15																
LEE ANN WAY SSR PH 1	31-Dec-14	31-Dec-15	31-Dec-15																
LEE ANN WAY SSR PH 2	01-Jan-15	31-Dec-15	31-Dec-15																
LEE ANN WAY SSR PH 2	01-Jan-15	31-Dec-15	31-Dec-15																
LEE ANN WAY INTERCEPTOR I/ REHAB	31-Dec-13	31-Dec-15	31-Dec-15																
LEE ANN WAY INTERCEPTOR I/ REHAB	31-Dec-13	31-Dec-15	31-Dec-15																
OUTER LOOP & CAVEN AREA PIPE UPGRADES	31-Dec-16	31-Dec-16	31-Dec-24																
OUTER LOOP & CAVEN AREA PIPE UPGRADES	31-Dec-16	31-Dec-16	31-Dec-24																
EDSEL PS I/ INVESTIGATION & REHABILITATION	27-Sep-11 A	30-Sep-11	30-Sep-11																
EDSEL PS I/ INVESTIGATION & REHABILITATION	27-Sep-11 A	30-Sep-11	30-Sep-11																
CINDERELLA PS ELIMINATION	31-Dec-23	31-Dec-23	31-Dec-23																
CINDERELLA PS ELIMINATION	31-Dec-23	31-Dec-23	31-Dec-23																
GOVERNMENT CENTER PS ELIMINATION	01-Apr-11 A	31-Dec-24	31-Dec-24																
GOVERNMENT CENTER PS ELIMINATION	01-Apr-11 A	31-Dec-24	31-Dec-24																
AVANTI PS ELIMINATION	28-Jul-09 A	31-Dec-10	31-Dec-10																

Approved 2009 IOAP Remaining Work
 Completed Work



MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009- 31 Dec 2024)																																				
Activity Name	Scheduled 2009 IOAP Finish	2012 IOAP Modification Completion	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024																		
AVANTI PS ELIMINATION	28-Jul-09 A	31-Dec-10	31-Dec-10	[Gantt bar: 28-Jul-09 to 31-Dec-10]																																
CHARLESWOOD INTERCEPTOR EXTENSION	31-Dec-22	31-Dec-22	31-Dec-22	[Gantt bar: 31-Dec-22 to 31-Dec-22]																																
CHARLESWOOD INTERCEPTOR EXTENSION	31-Dec-22	31-Dec-22	31-Dec-22	[Gantt bar: 31-Dec-22 to 31-Dec-22]																																
LANTANA PS II INVESTIGATION & REHABILITATION	29-Dec-11 A	31-Dec-11	29-Dec-11	[Gantt bar: 29-Dec-11 to 31-Dec-11]																																
LANTANA PS II INVESTIGATION & REHABILITATION	29-Dec-11 A	31-Dec-11	29-Dec-11	[Gantt bar: 29-Dec-11 to 31-Dec-11]																																
LEVEN PS ELIMINATION	31-Dec-22	31-Dec-22	31-Dec-22	[Gantt bar: 31-Dec-22 to 31-Dec-22]																																
LEVEN PS ELIMINATION	31-Dec-22	31-Dec-22	31-Dec-22	[Gantt bar: 31-Dec-22 to 31-Dec-22]																																
CAVEN AVENUE WW STORAGE	31-Dec-16	31-Dec-24	31-Dec-16	[Gantt bar: 31-Dec-16 to 31-Dec-24]																																
CAVEN AVENUE PS ELIMINATION	31-Dec-16	31-Dec-24	31-Dec-16	[Gantt bar: 31-Dec-16 to 31-Dec-24]																																
SMALL WWTP AREA	31-Dec-21	31-Dec-21	31-Dec-21	[Gantt bar: 31-Dec-21 to 31-Dec-21]																																
RIDING RIDGE PS IMPROVEMENTS	31-Dec-14	31-Dec-14	31-Dec-14	[Gantt bar: 31-Dec-14 to 31-Dec-14]																																
RIDING RIDGE PS IMPROVEMENTS	31-Dec-14	31-Dec-14	31-Dec-14	[Gantt bar: 31-Dec-14 to 31-Dec-14]																																
LUCAS LN PS INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21	[Gantt bar: 31-Dec-21 to 31-Dec-21]																																
LUCAS LN PS INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21	[Gantt bar: 31-Dec-21 to 31-Dec-21]																																
ST. RENE RD PS INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21	[Gantt bar: 31-Dec-21 to 31-Dec-21]																																
ST. RENE RD PS INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21	[Gantt bar: 31-Dec-21 to 31-Dec-21]																																
LAKE FOREST PS IMPROVEMENTS	31-Dec-12	31-Dec-12	31-Dec-12	[Gantt bar: 31-Dec-12 to 31-Dec-12]																																
LAKE FOREST PS IMPROVEMENTS	31-Dec-12	31-Dec-12	31-Dec-12	[Gantt bar: 31-Dec-12 to 31-Dec-12]																																
GUNPOWDER PS INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21	[Gantt bar: 31-Dec-21 to 31-Dec-21]																																
GUNPOWDER PS INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21	[Gantt bar: 31-Dec-21 to 31-Dec-21]																																
FOX HARBOR INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21	[Gantt bar: 31-Dec-21 to 31-Dec-21]																																
FOX HARBOR INLINE STORAGE	31-Dec-21	31-Dec-21	31-Dec-21	[Gantt bar: 31-Dec-21 to 31-Dec-21]																																
FAIRWAY VIEW PS IMPROVEMENTS	31-Dec-14	31-Dec-14	31-Dec-14	[Gantt bar: 31-Dec-14 to 31-Dec-14]																																
FAIRWAY VIEW PS IMPROVEMENTS	31-Dec-14	31-Dec-14	31-Dec-14	[Gantt bar: 31-Dec-14 to 31-Dec-14]																																
SOUTHEASTERN DIVERSION AREA	31-Dec-23	31-Dec-23	31-Dec-23	[Gantt bar: 31-Dec-23 to 31-Dec-23]																																
PARKVIEW ESTATES II INVESTIGATION & REHABILITATION	28-Jun-11 A	30-Jun-11	30-Jun-11	[Gantt bar: 28-Jun-11 to 30-Jun-11]																																
PARKVIEW ESTATES II INVESTIGATION & REHABILITATION	28-Jun-11 A	30-Jun-11	30-Jun-11	[Gantt bar: 28-Jun-11 to 30-Jun-11]																																
SUTHERLAND INTERCEPTOR	31-Dec-23	31-Dec-23	31-Dec-23	[Gantt bar: 31-Dec-23 to 31-Dec-23]																																
SUTHERLAND INTERCEPTOR	31-Dec-23	31-Dec-23	31-Dec-23	[Gantt bar: 31-Dec-23 to 31-Dec-23]																																
BEARGRASS INTERCEPTOR REHABILITATION PH 2	14-Dec-10 A	31-Dec-10	31-Dec-10	[Gantt bar: 14-Dec-10 to 31-Dec-10]																																
BEARGRASS INTERCEPTOR REHABILITATION PH 2	14-Dec-10 A	31-Dec-10	31-Dec-10	[Gantt bar: 14-Dec-10 to 31-Dec-10]																																

Approved 2009 IOAP
 Remaining Work
 Completed Work



4.4.1 Project Certification Progress

FY15 Program

The following table shows the projects completed and certified during the FY15 reporting period:

IOAP FY15 PROJECT COMPLETION DATES (Sorted By Date Completed)				
BUDGET ID	ACD PROJECT NUMBER	PROJECT NAME	DATE CERTIFIED	ACD DATE
H09138	L_OR_MF_190_S_03_A_A	17TH FPS DWO ELIMINATION	18-Dec-14	31-Dec-14
H09177	S_HC_HS_NB01_S_03_C_A	FAIRWAY VIEW PS IMPROVEMENTS	30-Dec-14	31-Dec-14
H09175	S_HC_HN_NB01_S_03_C_A	RIDING RIDGE PS IMPROVEMENTS	15-Nov-14	31-Dec-14
B06208	S_MC_WC_NB01_M_01_A	SHIVELY INTERCEPTOR	13-Apr-12	31-Dec-14

FY16 Program

The following table shows the projects to be completed and certified during the FY16 reporting period:

IOAP FY16 PROJECT REQUIRED COMPLETION DATES (Sorted By ACD Required Completion Date)				
BUDGET ID	ACD PROJECT NUMBER	PROJECT NAME	DATE CERTIFIED	ACD DATE
H09238	S_JT_JT_NB01A_M_03_C	CHENOWETH HILLS WQTC ELIMINATION & PS IMPROVEMENTS	22-Sep-14	31-Dec-15
H09143	L_SO_MF_093_S_08_A_A_0	CSO 093 STRUCTURAL MODIFICATIONS/GREEN INFRASTRUCTURE	Under Construction	31-Dec-15
H09122	L_MI_MF_140_S_08_A_A_0	CSO 140 SEWER SEPARATION	Under Construction	31-Dec-15
H09134	L_OR_MF_160_S_08_A_A_0	CSO 160 SEWER SEPARATION	Under Construction	31-Dec-15
H09167	S_FF_CC_81316_M_03_C_A	FAIRMOUNT RD OFF-LINE STORAGE BASIN	Under Construction	31-Dec-15
H07293	S_JT_JT_NB01_M_01_C_A	JEFFERSONTOWN WQTC ELIMINATION	Under Construction	31-Dec-15
H09199	S_SD_MF_NB04_S_01_B_A	KLONDKKE INTERCEPTOR	17-Jul-14	31-Dec-15
C08433	S_PO_WC_PC08_M_01_C	LEA ANN WAY SYSTEM IMPROVEMENTS	Under Construction	31-Dec-15
D94206	S_OR_MF_NB04_M_03_B_B	PROSPECT #1 - WQTC ELIMINATIONS	Under Construction	31-Dec-15
D94206	S_OR_MF_NB04_M_03_B_B	PROSPECT #2 - HARRODS CREEK PS	Under Construction	31-Dec-15

4.5 Post Construction Compliance Monitoring Program

Within the Integrated Overflow Abatement Plan, monitoring efforts that support the impact evaluation of both project and plan implementation are discussed in Volume 1, Section 6.5 - Post Construction Compliance Monitoring (PCCM). These efforts are incorporated into MSD's overall environmental data monitoring and management planning and activities, which support various MSD initiatives including operational support, the Municipal Separate Storm Sewer System (MS4) program, hydraulic and water quality modeling, and a range of regulatory reporting and trending requirements. For the IOAP specifically, the PCCM efforts will allow for an evaluation of the efficacy of various projects in meeting regulatory targets and adjusting as needed.

Modeling Program

As implementation of the IOAP continues, the sewer models increasingly support critical planning and design decisions on sizing, location and operation of new facilities (storage basins, pump stations, gates, etc.) as well as reporting MSD's compliance with the IOAP's anticipated efficacy. The following efforts occurred in FY15:

- Engineering design support.
- Capacity assurance evaluations for requests for new capacity.
- Rain event analyses for regulatory reporting.
- Field survey and reconnaissance for improving hydrologic & hydraulic accuracy.
- Sewer modeling calibration using data from the expanded flow monitoring and rainfall networks.
- IOAP capital project assessment resulting from model calibration.
- IOAP capital project impact negotiation with the EPA and KDEP.
- Green infrastructure assessment for various CSO basins and impacts to downstream IOAP projects.
- Sewer model integration and calibration for newly connected service areas (DRG, Morris Forman, Jeffersonstown and Hite Creek WQTCs along with Prospect area WQTCs).
- Model exhibit development (maps, tables, videos, schematics and diagrams).
- Real Time Control integration assessment of new facilities.
- Flooding analysis using two-dimensional modeling of the combined sewer system including flood protection system, Ohio River and Beargrass Creek influences.
- Post-Construction Compliance Monitoring evaluation, recalibration, and validation of results.
- Flow Monitoring support and data review

- Data management for historical and upcoming analyses, memoranda, reports and exhibits for utilization throughout MSD.

Project Performance Reporting

As described in Volume 1, Section 6.5.2 of the 2012 IOAP Modification, dated May 2014, beginning with the FY14 Annual Report, MSD has agreed to provide annual reports on performance findings for completed projects and self-identify cases where remedial measures may be required based on comparison of actual data to the committed level of control. It is the intent that performance analyses will be conducted for all constructed IOAP projects as monitoring data is available to assess them.

The initial reporting effort in 2014 involved developing the PCCM assessment methodology and evaluating a selection of the IOAP projects that were completed prior to December 31, 2013; current reporting is updated to include additional projects completed through June 30, 2014. This PCCM submittal includes projects completed through the end of the previous fiscal year with data through the end of the previous calendar year. Future reporting will be submitted with project completion through the previous fiscal year and data through the current fiscal year to coincide with this annual report. The table below summarizes the IOAP project performance assessments which are completed and planned.

PERFORMANCE ASSESSMENT STATUS	CSO / DWO	SSO	GREEN DEMONSTRATION PROJECT	OTHER
Construction Completed through June 30, 2014	8	30	19	3
Assessment Completed	7	30	19	0
Level of Control Met (Pass)	7	20	N/A	N/A
Remediation Recommended	0	10	N/A	N/A
Remaining to Assess	1	0	0	3
Remaining to Construct	20	35	1	0

To complete this effort and independently assess IOAP projects that have been certified to date, MSD has partnered with the University of Louisville Center for Infrastructure Research (UofL) for the majority of the IOAP projects. One project, Derek R. Guthrie WQTC wet-weather expansion project, was assessed and reported separately by HDR Engineering.

For each project, the PCCM period for monitoring performance and compliance encompasses a three-year window following construction. Of the 60 projects certified between 2009 and June 30, 2014, 25 were previously monitored for at least 36 months post-construction. Four (4) of these projects were gray infrastructure projects found to have met the required level of control; 19 were green demonstration projects; and two (2) were supplemental environmental projects (SEPs) which demonstrated successful restoration. Of the remaining 35 projects, 32 were included in UofL’s 2015 assessment and one (1) was assessed by HDR. The remaining two (2)

projects are included in the following table that summarizes the current monitoring status of all completed projects.

PROJECT NAME	ACD PROJECT NUMBER	PROJECT TYPE	PCCM RESULT	PROJECT CERTIFICATION DATE	ASSESSMENT COMPLETION DATE
2300 BLOCK OF CONGRESS STREET (formerly SEVENTH AND MARKET) PERMEABLE ALLEY	L_OR_MF_053_S_12_A_C	Green	Pass	11/11/2010	12/30/2013
27TH STREET FPS DWO ELIMINATION	L_OR_MF_019_S_03_A_A	DWO	Pass	6/28/2013	
34TH STREET FPS DWO ELIMINATION	L_OR_MF_019_S_03_A_B	DWO	Pass	6/11/2012	
3RD STREET AND CAMPBELL VENTURES GREEN PROJECT (formerly JFK MONTESSORI AREA DRY WELL)	L_OR_MF_191_S_12_A_B	Green	Pass	12/20/2011	12/30/2013
4TH STREET FPS DWO ELIMINATION	L_OR_MF_022_M_03_A_A	DWO	Pass	6/15/2012	
6TH & MARTIN LUTHER KING (formerly SIXTH AND MUHAMMAD ALI) GREEN PARKING LOT	L_OR_MF_022_S_12_A	Green	Pass	12/28/2010	12/30/2013
ADAMS STREET SEWER SEPARATION	L_OR_MF_172_S_09B_B_A_0	CSO	Pass	11/28/2012	
ANCHOR ESTATES- VANNAH PS ELIMINATION	S_MI_MF_NB06_M_01_A_A - 2	SSO	Pass	10/15/2011	12/31/2014
ASHBURTON PS IMPROVEMENTS AND DIVERSION	S_FF_FF_NB03_M_01_C_A	SSO	Pass	1/22/2010	12/30/2013
AVANTI PS ELIMINATION	S_PO_WC_PC07_M_01_A	SSO	Pass	7/28/2009	12/30/2013
BEARGRASS INTERCEPTOR REHABILITATION PH 2	S_SD_MF_NB06_S_13_C	SSO	Remediation Required	12/14/2010	
BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	BEECHWOOD VILLAGE SANITARY SEWER REPLACEMENT	SSO	Pass	9/29/2010	12/31/2014
BILLY GOAT STRUT (formerly CAMPBELL AND MAIN) PERMEABLE ALLEY	L_SO_MF_121_S_12_A	Green	Pass	10/8/2010	12/30/2013
BRANDIES APARTMENTS RAIN GARDEN	ADDITIONAL RAIN GARDEN PROJECT	Green	Pass	11/15/2010	12/30/2013
BROWN-FORMAN GREEN ROOF PROJECT (formerly BARDSTOWN RD PRESBYTERIAN CHURCH GREEN PARKING LOT)	ADDITIONAL RAIN GARDEN PROJECT	Green	Pass	12/30/2011	12/30/2013
CAMP TAYLOR #1 - SSES	S_SF_MF_30917_M_09_A	SSO	Remediation Required	7/8/2011	
CAMP TAYLOR #2- REPLACE SEWERS	S_SF_MF_30917_M_09_A	SSO	Remediation Required	12/20/2013	
CHEROKEE PARK STREAM RESTORATION ¹	SEP PROJECT	Other	Pass	12/3/2010	5/7/2014
CLIFTON TRIANGLE AREA RAIN GARDEN	ADDITIONAL RAIN GARDEN PROJECT	Green	Pass	11/11/2010	12/30/2013
CPE/CCP MODIFICATIONS TO WQTC	CPE/CCP MODIFICATIONS TO WQTC	Other	Not Assessed	12/19/2011	
CSO 108 DAM MODIFICATIONS	L_SO_MF_108_S_09A_B_A_4	CSO	Not Assessed	12/30/2010	
CSO 123 DOWNSPOUT DISCONNECTION	L_MI_MF_123_S_08_A_A_0	CSO	Pass	12/30/2012	
CSO 206 SEWER SEPARATION	L_MI_MF_206_S_08_A_A_0	CSO	Pass	12/12/2013	
DEREK R GUTHRIE WQTC ²	DEREK R GUTHRIE WATER QUALITY TREATMENT CENTER	SSO	Pass	11/15/2012	
DERINGTON CT PS I/I INVESTIGATION & REHABILITATION	S_OR_MF_NB03_S_07_C	SSO	Pass	3/30/2012	
EAST ROCKFORD LANE PS RELOCATION	S_MC_WC_NB02_S_03_C	SSO	Pass	3/30/2012	
EAST WASHINGTON @ ADAMS STREET GREEN DEMONSTRATION PROJECT	L_OR_MF_019_S_12_A	Green	Pass	12/19/2011	12/30/2013

PROJECT NAME	ACD PROJECT NUMBER	PROJECT TYPE	PCCM RESULT	PROJECT CERTIFICATION DATE	ASSESSMENT COMPLETION DATE
(formerly I-264 ON-RAMP DRY WELL)					
EDSEL PS I/I INVESTIGATION & REHABILITATION	S_PO_WC_PC11_M_07_C	SSO	Pass	9/27/2011	12/31/2014
FAIRMOUNT RD PS IMPROVEMENTS	S_FF_CC_81316_M_03_C_A	SSO	Pass	4/24/2012	
FLOYDSBURG RD I/I INVESTIGATION & REHABILITATION	S_HC_HC_MSD1086_M_07_C_A	SSO	Remediation Required	12/17/2010	
GERMAN/PARISTOWN GREEN STREET RAIN GARDEN	ADDITIONAL RAIN GARDEN PROJECT	Green	Pass	12/20/2011	12/30/2013
GOVERNMENT CENTER PS ELIMINATION	S_PO_WC_PC06_M_01_C	SSO	Pass	4/1/2011	12/31/2014
GRAWENMAYER HALL PARKING LOT (formerly the I-264 AND GIBSON DRY WELL)	L_OR_MF_191_S_12_A_A	Green	Pass	12/20/2011	12/30/2013
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	S_MC_MF_55665_S_07_C	SSO	Pass	6/30/2011	12/31/2014
HIKE LANE INTERCEPTOR & HIGHGATE SPRINGS PS	HIKES LANE INTERCEPTOR /HIGHGATE SPRINGS PS	SSO	Remediation Required	11/2/2012	
HOUSING AUTHORITY GREEN ROOF (formerly SIXTH AND BROADWAY RAIN GARDEN)	L_OR_MF_028_S_12_A	Green	Pass	12/30/2010	12/30/2013
HURSTBOURNE I&I INVESTIGATION & REHABILITATION	S_MI_MF_NB07_S_07_C	SSO	Pass	12/27/2011	
LAKE FOREST PS SSO INVESTIGATION	S_FF_LF_NB01_S_13_C_A	SSO	Pass	12/18/2012	
LANTANA PS I/I INVESTIGATION & REHABILITATION	S_PO_WC_PC05_M_07_C	SSO	Remediation Required	12/29/2011	
MEADOW STREAM PS INLINE STORAGE	S_HC_HC_MSD1082_S_09A_C	SSO	Pass	12/18/2012	
MELLWOOD SYS 1 - MELLWOOD PS & FORCE MAIN	S_OR_MF_NB01_M_01_B	SSO	Remediation Required	12/27/2012	
MSD MAIN OFFICE PARKING LOT BIOSWALE	L_OR_MF_053_S_12_A_A	Green	Pass	12/3/2010	12/30/2013
NORTHERN DITCH DIVERSION INTERCEPTOR	NORTHERN DITCH DIVERSION INTERCEPTOR	SSO	Pass	2/16/2011	12/31/2014
PARKVIEW ESTATES I/I INVESTIGATION & REHABILITATION	S_SD_MF_NB03_S_07_C	SSO	Pass	6/28/2011	12/31/2014
POND CREEK TRAIL SEP ³	SEP PROJECT	Other	Pass	2/19/2011	12/16/2014
RUNNING FOX PS ELIMINATION	S_CC_CC_MSD1080_S_01_C	SSO	Pass	4/5/2010	12/30/2013
SCHOLAR HOUSE GREEN PARKING LOT (formerly TWELFTH AND JEFFERSON)	L_OR_MF_208_S_12_A	Green	Pass	12/30/2010	12/30/2013
SEVENTH AND CEDAR GREEN PARKING LOT	L_OR_MF_053_S_12_A_B	Green	Pass	12/30/2010	12/30/2013
SHAWNEE FPS DWO ELIMINATION	L_OR_MF_189_M_03_A_A	DWO	Pass	6/18/2013	
SHIVELY INTERCEPTOR	S_MC_WC_NB01_M_01_A	SSO	Pass	4/13/2012	
SINKING FORK RELIEF SEWER	SINKING FORK RELIEF SEWER	SSO	Pass	12/23/2009	12/31/2014
SONNE PUMP STATION I&I INVESTIGATION & REHABILITATION	S_OR_MF_42007_S_07_C	SSO	Remediation Required	6/30/2011	
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSO	Remediation Required	4/19/2012	
SPEED ART MUSEUM INFILTRATION TRENCH (formerly the I-264 OFF-RAMP DRY WELL)	L_OR_MF_189_S_12_A	Green	Pass	12/20/2011	12/30/2013
SWIFT COMPANY GREEN PROJECT (formerly SECOND AND BROADWAY GREEN PARKING LOT)	L_OR_MF_181_S_12_A	Green	Pass	12/30/2010	12/30/2013
THIRD AND ORMSBY BIOBIOFILTRATION SWALES	L_OR_MF_198_S_12_A	Green	Pass	12/12/2010	12/30/2013

PROJECT NAME	ACD PROJECT NUMBER	PROJECT TYPE	PCCM RESULT	PROJECT CERTIFICATION DATE	ASSESSMENT COMPLETION DATE
UMF #1 - BUECHEL BASIN	S_MISF_MF_NB01_M_01_C_A1	SSO	Remediation Required	12/27/2013	
W. GAULBERT & W. HILL (formerly SEVENTEENTH AND W. HILL) PERMEABLE ALLEY	L_OR_MF_015_S_12_A	Green	Pass	10/15/2010	12/30/2013
WILSON CROSSINGS GREEN PARKING LOT (formerly THE RUSSELL LEE DRIVE DRY WELL)	L_OR_MF_191_S_12_A_C	Green	Pass	12/30/2011	12/30/2013
WOODLAND HILL PS DIVERSION	S_FF_FF_NB01_S_01_C_A	SSO	Pass	4/1/2010	12/30/2013

¹Assessment performed by Stantec Consulting Services, Inc.

²Assessment performed by HDR Engineers, Inc.

³Assessment performed by Redwing Ecological Services, Inc.

Of the 32 CSO and SSO projects analyzed to date, 23 have met the criteria for the project level of control. Ten (10) have been identified to need additional remediation because one or more performance events fell below the level of control. MSD is committed to completing a remediation plan for each of these projects and continued monitoring to ensure efficacy. For each of the projects identified to need additional remediation, the number of events that have occurred below the project level of control, the associated volume, and remediation solution and schedule are provided in the table below.

SSO AND CSO PERFORMANCE REPORTS INDICATING NEED FOR REMEDIATION EVENT SUMMARY AND REMEDIATION SCHEDULE (Evaluated through December 31, 2014)				
PROJECT NAME	Overflow Events Below Level of Control	Estimated Volume Associated with Events Below Level of Control (gallons)	Remediation Measure Action Plan	Remediation Schedule
BEARGRASS INTERCEPTOR REHABILITATION PH 2	32	377,175	Phased Project: Nightingale PS / Basin (S_SD_MF_NB06_S_13_C)	December 2016
CAMP TAYLOR #1 - SSES	8	60,800	Phased Project: Camp Taylor #3 & #4 (S_SF_MF_30917_M_09_A)	December 2023
CAMP TAYLOR #2- REPLACE SEWERS	8	60,800	Phased Project Camp Taylor #3 & #4 (S_SF_MF_30917_M_09_A)	December 2023
FLOYDSBURG RD I/I INVESTIGATION & REHABILITATION	1	560	Additional Rehabilitation	Winter 2015 – Spring 2016
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	1	19,000	Additional Rehabilitation	Winter 2015 – Spring 2016
LANTANA PS I/I INVESTIGATION & REHABILITATION	3	11,875	Sump pump removal at approximately 14 homes	Summer 2014 – Fall 2014
MELLWOOD SYS 1 - MELLWOOD PS & FORCE MAIN	4	208,100	Phased Project Winton & Mockingbird PS (S_OR_MF_NB01_M_01_B)	December 2024

SSO AND CSO PERFORMANCE REPORTS INDICATING NEED FOR REMEDIATION EVENT SUMMARY AND REMEDIATION SCHEDULE (Evaluated through December 31, 2014)				
PROJECT NAME	Overflow Events Below Level of Control	Estimated Volume Associated with Events Below Level of Control (gallons)	Remediation Measure Action Plan	Remediation Schedule
SONNE PUMP STATION I&I INVESTIGATION & REHABILITATION	1	5	Additional Rehabilitation	Winter 2015 – Spring 2016
SOUTHEAST DIVERSION STRUCTURE & INTERCEPTOR	4	372,500	Additional Rehabilitation	Winter 2015 – Spring 2016
UMF #1 - BUECHEL BASIN	21	2,955,181	<i>Phased Project:</i> UMF #2 – PS Diversion & Storage (S_MISF_MF_NB01_M_01_C_A1)	December 2023

Two (2) projects have been completed to date but have not been assessed. These projects are detailed below.

PROJECT NAME	ACD PROJECT NUMBER	PROJECT TYPE	DATE COMPLETED	PCCM DISCUSSION
CPE/CCP MODIFICATIONS TO WQTC	CPE/CCP MODIFICATIONS TO WQTC	Other	12/19/2011	Operational changes will be analyzed beginning with the FY16 report.
CSO 108 DAM MODIFICATIONS	L_SO_MF_108_S_09A_B_A_4	CSO	12/30/2010	On review of the data it was determined that additional flow monitoring equipment would be required. This equipment will be installed in FY16.

Gray Infrastructure – Wet Weather Treatment

A major component of the success of the ISSDP is the Derek R. Guthrie WQTC wet-weather expansion project to increase the peak flow capacity at the WQTC from 100 to 200 MGD and provide storage for an additional 19.7 MG. As described in Volume 1, Section 6.5.3.1 of the 2012 IOAP Modification, MSD committed to a specific PCCM plan for the expansion project, including equipment testing, hydraulic model field verification, process model field verification, and a one-year operations report analyzing twelve months of effluent sampling data post-construction. The project was substantially complete on November 27, 2012, and MSD subsequently contracted with HDR Engineering to provide the PCCM analysis and report. The report found that the project has been successfully implemented, with major permit limits maintained even during extended periods of elevated flow. All major equipment was certified as properly installed by the manufacturer. The hydraulic model was verified in the field with minor recalibration, and the plant model was validated.

Green Demonstration Project Performance Assessment

MSD has completed 19 green demonstration projects as part of our commitment to implementing and testing the effectiveness of a variety of green management practice types. Because the intent of the green demonstration projects was to evaluate the suitability and effectiveness of green infrastructure technologies in various applications, UofL compiled a single performance report to document lessons learned through the planning, design, construction, and maintenance processes. This effort was taken to establish green standards of practice. The suite of Green Infrastructure technologies implemented included:

- Permeable Pavements
- Infiltration trenches
- Rain Gardens / Biofiltration
- Green Roofs

The process of implementing the green demonstration projects has holistically benefited MSD's Green Infrastructure Program. Because all of the green demonstration projects were completed prior to January 1, 2012, their 3-year PCCM period has been fulfilled. The summary below lists the critical lessons learned and improvements that have been made in order to demonstrate compliance with the intent of the green demonstration projects.

Planning

- Site selection is critical and must consider a variety of factors including property ownership, public visibility, soils, geology, watershed size, proximity to adjacent structures, and age of adjacent structures.
- The Green implementation schedule was considered with respect to Amended Consent Decree deadlines in order to effectively right-size downstream grey projects.
- Technology feasibility was a factor that prohibited the installation of dry wells within the required schedule constraints.
- Communication with the public is critical, and a key factor in implementing the MSD Green Infrastructure website (www.msddgreen.org) as well as making improvements to the public engagement process.

Design

- Identification (ID) of the existing utility infrastructure on plans is critical for avoiding costly and time-intensive disruptions during the construction phase.
- Project type selection with respect to the project site is also a factor to consider, especially where organic debris and fines may present potential maintenance issues after installation.
- Consideration of underlying sewer locations that could be impacted by increased stormwater infiltration associated with green infrastructure.

-
- Green Infrastructure Design Manual updates incorporated revised design specifications, including impacts on existing infrastructure, public outreach, aesthetics, consideration of surrounding land use and geophysical limitations during the design phase.
 - Implement lessons learned associated with each project type – permeable pavements, infiltration trenches, rain gardens, and green roofs.

Construction

- Improvements to add detailed material and construction specifications. Importance has also been placed on educating contractors on specific gradation sizes and washing to remove fines.
- Green technologies are relatively new to the construction industry, and the benefit of providing training opportunities for contractors has been recognized. MSD has added construction and installation training, an annual green infrastructure construction field day, increased time in schedule for completing construction of green infrastructure projects, onsite inspector training to verify practices, and daily inspector logs.
- Construction lessons learned associated with each project type – permeable pavements, infiltration trenches, rain gardens, and green roofs.

Maintenance

- Importance of maintenance agreements with potential partners to define maintenance quality and frequency were incorporated in MSD's operation and maintenance guidelines for green infrastructure.
- Maintenance lessons learned associated with each project type – permeable pavements, infiltration trenches, rain gardens, and green roofs.

Additional Project Impacts

- Financial Incentives Program to encourage green infrastructure practices.
- Evaluation of green infrastructure requests by estimating the overflow reduction value and treatment cost savings.

Green Infrastructure Monitoring

MSD has also partnered with the EPA ORD to continue long-term green infrastructure performance monitoring for two CSO areas where green infrastructure solution alternatives have demonstrated more favorable benefit/cost ratios than overflow storage basins. The CSO130 Green Infrastructure Project is nearing completion, downspout disconnections will continue in FY16, A significant amount of monitoring data has been compiled to document the green infrastructure infiltration rates, effectiveness of maintenance practices, and impact on overflow reduction. The monitoring data collected for CSO130 has proven to be valuable in developing an effective regular maintenance program. ORD will continue to be involved in collecting monitoring data when green infrastructure installations begin in the CSO190 basin. Both UofL and ORD will be reviewing field monitoring data for these IOAP projects to ascertain

overflow reduction performance. PCCM findings for CSO130 as well as any remaining IOAP projects completed prior to January 1, 2016, will be included in the FY16 annual report. Should their findings show that MSD has not achieved the proposed level of control; an action plan will be developed.

Water Quality Synthesis Report

As part of our Integrated Overflow Abatement Plan, MSD has committed to produce a Water Quality Synthesis Report every two (2) years that provides information to the public on the state of our streams in Jefferson County. Our last report was submitted in 2014, and since that time, MSD has continued environmental data collection and water quality trending for eleven watersheds in, or near, Jefferson County. MSD submitted the draft 2014 Synthesis Report on December 31, 2014, and modified the due date for subsequent reports to even numbered years (letter dated September 20, 2013) per verbal approval for this change in submittal dates.

MSD's objective for this Synthesis Report has been to continue making water quality trends readily accessible and understandable to the general public and to assess a wide variety of water quality and environmental indicators. The report focuses on trends in the condition of fish diversity, aquatic insects, stream habitat, algae, and Dissolved Oxygen (DO). Because of the one-year extension that was granted, additional environmental data was able to be incorporated, including benthic macroinvertebrate, aquatic habitat, dry and wet weather sampling at 42 sites, algae analyses, and fish diversity assessments. The additional 12-month period used to collect and analyze this data has offered significant improvements to the report and allowed us to produce a much more informative product. In order to allow for a complete review and data analysis, the 2014 Water Quality Synthesis Report was submitted with the third quarter Consent Decree report submittal in April 2015. A draft of the report is included in Appendix N.

SECTION 5: Public Outreach, Education, Notification and Participation

5.1 Public Notification Program

MSD produced and distributed a number of products aimed at notifying the community on the objectives of Project WIN and how to lessen the risks associated with coming into contact with sewage overflows. The following activities occurred within FY15 or are scheduled to occur in FY16.

5.1.1 Overflow Advisory Signs

FY15 Program

- Completed the annual sign inspection process on April 25, 2015. There were 1,217 signs inspected, 213 signs cleaned, and 391 placed or replaced.

FY16 Program

- Schedule the Annual Sign Inspection process.
- Perform an annual evaluation of sign locations against the documented overflows to ensure all needed signs are in place.

5.1.2 Electronic Notifications

FY15 Program

- Notified customers who voluntarily signed up to receive email alerts regarding sewer overflows.
- Provided notification on 22 dry weather unauthorized discharges of more than 1000 gallons.
- Utilized the Louisville Metro e-mail alert system to broadcast messages to the public.

FY16 Program

- Continue email alerts to customers who signed up to receive the information.
- Continue to work with the Louisville Metro alert system to increase participation in the email program, and to improve retention of those who signed up.

5.1.3 Print Notifications

FY15 Program

- Mailed 2,701 Project WIN information packets to customers who called with questions about the Amended Consent Decree – specifically regarding overflows, discharges, plumbing modification and the surcharge fee.
- Distributed the annual mailing to residents within 500 feet from Beargrass Creek and the Ohio River prior to April 18, 2015, advising the use of caution around streams during and

immediately following rain events as they may contain untreated sewage. A copy of the letter to residents is provided in Appendix F.

- Provided annual notification to community at large in May 2015 through Courier Journal newspaper advertisement to use caution around streams during and immediately following rain events as they may contain untreated sewage.
- Included “Rate Increase” print campaign with August & September 2014 Billing.
- Included “Downspout” print campaign with February & March 2015 Billing.

FY16 Program

- Continue to mail Project WIN information packets to customers who call with questions about the Amended Consent Decree – specifically regarding overflows, discharges, plumbing modification and the surcharge fee.
- Continue to send out FOG residential public outreach letters to areas that have FOG issues.
- Distribute notification and informational material, providing a general overview and awareness relating to public health impacts associated with sewer overflows and an update of Project WIN initiatives by May 1, 2016.
- Distribute, prior to May 1, 2016, the annual mailing to residents within 500 feet of BGC and Ohio River.

5.2 Public Education Programs

MSD has developed a public education program aimed at expanding the public’s knowledge on MSD’s primary business functions of wastewater, stormwater and flood protection, with an emphasis on Project WIN Program elements. The following activities occurred within FY15 or are scheduled to occur in FY16.

FY15 Program

- Continued to re-tool public education efforts to address areas of public knowledge requiring additional effort and attention. Modifications to the public education program were implemented in FY15.
- Administered the online survey to residents in July 2015 with an incentive drawing for respondents on August 3, 2015. A total of 1,018 participants completed the survey.
- Launched Social Media Program with an MSD account on Twitter in May 2015. In just over two months, MSD generated 90 followers and released tweets on the following topics: environmental awareness, outreach programs, events, health and safety, and public meetings. Public outreach campaigns supported included World Environment Day, World Oceans Day, Pollinator Week, Skills USA, and Ohio River Sweep.

FY16 Program

- Utilize the results of the 2015 survey to refine public education efforts that address areas of public knowledge of general water quality and personal behavioral impacts that can improve the quality of streams.
- Analysis of survey results and comparison to the baseline survey results is in progress.

5.2.1 Radio and TV Activities

FY15 Program

- Coordinated with Metro TV (Cable Channel 25) to develop and broadcast the Project WIN IOAP Public Input Meetings video series – a series of videos of project review and request for input meetings to encourage the public for input and education. The videos were shown 100 times in the reporting period.
- Coordinated with Metro TV (Channel 25) to broadcast the Downspout Disconnection Video- a short video about how to properly disconnect your downspout and install a rain barrel. This video aired 94 times during the reporting period.

FY16 Program

- Continue to utilize various media outlets, including TV, radio and the newspaper, to serve as a conduit for disseminating information to the public.
- Continue coordination with Metro TV to show IOAP public input meetings and special interest material.

5.2.2 Printed Media Activities

FY15 Program

Louisville Magazine

- October 2014 issue, “67,668 catch basins...billions of leaves, help prevent surface flooding by keeping the catch basins clear of leaves and debris”.
- December 2014 issue, “Everyday our customers flush 2,948 miles of toilet paper, sub message of what not to flush”.
- January 2015 issue, “The work we do is beneath most people...all 3,200 miles of it”. Message of what not to flush and how delayed use of washing machines and dish washers during rain events helps minimize sewer overflows.
- February 2015 issue, “Change of course...creating a watershed movement.”
- March 2015 issue, “Come rain or come shine.”
- April 2015 issue, “Even the little things can make a big difference.”

Business First

- August 15, 2014, issue, “2,948 miles of toilet paper, sub message of what not to flush”.

-
- September 12, 2014, issue, “67,668 catch basins...billions of leaves, help prevent surface flooding by keeping the catch basins clear of leaves and debris”.
 - October 24, 2014, issue, “The work we do is beneath most people...all 3,200 miles of it”. Message of what not to flush and how delayed use of washing machines and dish washers during rain events helps minimize sewer overflows.
 - December 26, 2014 issue, “2,948 miles of toilet paper, sub message of what not to flush”.
 - April 2015 issue, “Even the little things can make a big difference.”

Other Printed Media Activities

- Provided the StreamLine to customers and staff each month. Project WIN related articles are contained in each issue of this newsletter. These publications are available on the MSD Website. Online versions of the StreamLine newsletter can be viewed at <http://www.msdlouky.org/aboutmsd/updatenews.htm>.
- Continued distribution of Rain Garden Manuals to customers.

FY16 Program

- Continue to utilize various media outlets, including TV, radio and the newspaper, to serve as a conduit for disseminating information to the public.
- Continue to send the MSD Streamline to customers and staff each month.

5.2.3 Project WIN and Green Websites

FY15 Program

- Continued to post Project WIN information on the website. On MSD’s home page, the Project WIN area provides important information on the condition of area streams and shows a warning if overflows are likely to be happening or have happened in the past 48 hours. Clicking on the Project WIN logo brings up the Project WIN site, which includes a repository of public documents related to Project WIN, tips for customers to help control overflows through their personal actions, information about the history and background of Project WIN and a place to sign up for overflow advisory emails warning when significant precipitation has caused overflows in MSD’s system. This website can be found at www.msprojectwin.org.
- Continued communication with customers via posts on www.twitter.com.



FY16 Program

- Continue to post Project WIN information on the website.
- Continue to post communication with customers via www.twitter.com.

5.3 Public Outreach Programs

MSD has developed a public outreach program aimed at involving the public on MSD's primary business functions with emphasis on wastewater, storm water and flood protection. The following activities occurred within FY15 or are scheduled to occur in FY16.

5.3.1 Green Infrastructure Workshops and Activities

FY15 Program

Presented, attended, and/or facilitated the following meetings/workshops related to Green Infrastructure:

- July 12, 2014 – July 27, 2014 – Homearama
- August 5, 2014 – Construction Field Day at Fairdale High School
- August 25, 2014– Green Institute
- August 27, 2014 – Urban Land Institute
- September 30, 2014 – IF Water Festival
- October 9, 2014 – Environmental History Class Webinar at Milwaukee/Marquette School.
- October 11, 2014 – Living Lands and Waters Ohio River Clean Up
- October 11, 2014 – LSC Fall Sustainability Summit at Jefferson Community and Technical College.
- October 15 – 17, 2014 – Adventures in Water Festival
- October 18, 2014 – Living Lands and Waters Ohio River Clean Up
- October 30, 2014 – FFA Convention Tour of MFWQTC
- November 11, 2014 – Urban Design Studio presentation on infrastructure, parks, and historic preservation planning.
- December 15, 2015 – Urban Design Studio presentation on infrastructure, parks, and historic preservation planning.
- January 28, 2015 – University of Louisville (UofL) Civil Engineering Class
- February 11, 2015 – UofL Civil Engineering Class
- February 26, 2015 – Water Quality Standard Academy
- March 3, 2015 – Water Quality Standard Academy
- March 3, 2015 – Environmental Stewardship presentation at the Center for Neighborhoods
- March 10, 2015 – Water Quality Standard Academy

- March 17, 2015 – Water Quality Standard Academy
- April 8, 2015 – KSPE Convention
- April 21, 2015 – University of Louisville Capstone Class Presentation
- April 22, 2015 – Mayor's Give-a-Day Event
- April 26, 2015 – LNC Gardenganza
- May 6, 2015 – EWB Professional Development Conference
- May 9, 2015 – How To Festival
- May 11, 2015 – UofL Law School: Water Resources Law & Policy field-study seminar
- May 15, 2015 – UofL Law School: Water Resources Law & Policy field-study seminar
- May 20, 2015 – Urban Tree Canopy Public Meeting
- June 15-16, 2015 – Municipal Wet Weather Stormwater Conference
- June 17, 2015 – YES at Louisville Water Company Tower
- June 18, 2015 – Lincoln Foundation Math and Science Program
- June 26, 2015 – KY Green Roof and Green Wall Symposium

FY16 Program

- Schedule rain garden workshops at various times throughout the year.
- Continued planning for additional signage for green demonstration sites and green partnership locations.
- Continue planning of internal and external workshops explaining the Green Infrastructure Program, including the next Construction Field Day and classes on green infrastructure design, construction and inspection.

5.3.2 Clean Streams Workshops and Activities

FY15 Program

- Facilitated the Ohio River Sweep at the Louisville riverfront on July 21, 2014.
- Assisted BGC Alliance to mark catch basins in critical areas.

FY16 Program

- Continue to facilitate stream cleanup events and workshops.
- Continue work with BGC Alliance to mark catch basins in critical areas.

5.3.3 Outreach Activities for Students

FY15 Program

Attended or presented at the following student based events:

- October 9, 2014 – Environmental History Class
- October 15-17, 2014 – Adventures in Water Festival
- October 30, 2014 – FFA Convention Tour
- November 12, 2014 – Urban Design Studio – Professional Practice Class
- November 12, 2014 – Bellarmine University Environmental Class
- January 28, 2015 – University of Louisville Class
- February 4, 2015 – Kentucky Country Day School Field Trip to Floyds Fork WQTC
- February 11, 2015 – University of Louisville Engineering Class
- March 17, 2015 – Bellarmine University Environmental Science Class tour of Morris Forman WQTC
- April 15, 2015 – Floyds Fork Educational Partnership field trip with Moore Middle School Students
- April 21, 2015 – University of Louisville Capstone Class
- May 11 and May 15, 2015 – University of Louisville Law School Class
- Coordinated with Parklands of Floyds Fork on educational partnerships at the Floyds Fork WQTC.

FY16 Program

- Continue offer Floyds Fork Educational Partnership field trips with The Parklands and Louisville Water Company at Floyds Fork WQTC. Middle school tours have been set for FY16—September, October, April, and May.
- Continue to coordinate with Parklands of Floyds Fork on educational partnerships at the Floyds Fork WQTC. Middle school tours have been set for FY16—September, October, April, and May.

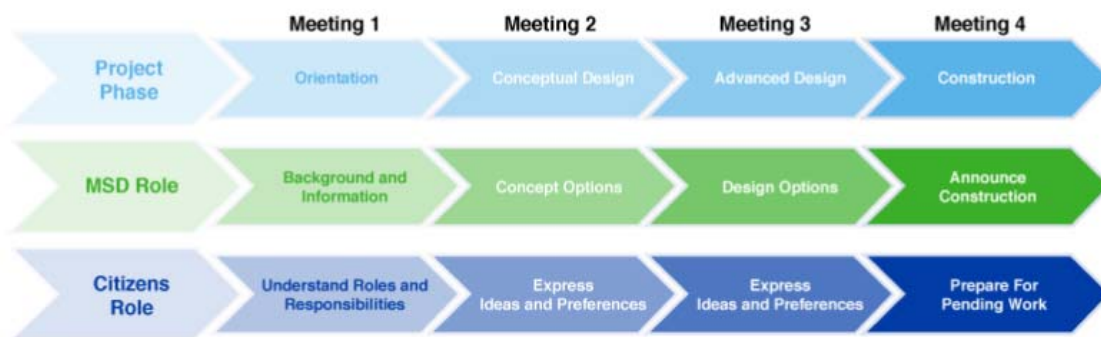
5.3.4 IOAP Project and Program Meetings

FY15 Program

MSD has developed a partnership with Louisville Metro for providing project information and soliciting feedback from stakeholders using a Structured Public Involvement approach. Structured Public Involvement is meant to facilitate relevant input on the design process as MSD prepares to design and construct CSO basins. Our current IOAP outreach activities and public meetings are using this process to elicit qualitative and quantitative information and

enhance our engagement with customers. The Structured Public Involvement approach assures anonymity for each participant using transceivers to compile data which can then be correlated on a customer-specific basis. The plan for Structured Public Involvement includes implementing a four-meeting process that leads stakeholders through the project Design Stages: Orientation, Concept, Advanced, and then a Pardon Our Dust meeting upon construction. Online surveys are also being made available to allow those not in attendance at public meetings to provide similar project-specific input. Creating this secondary online opportunity has been successful and generated responses that otherwise would not have been accounted for at the public meetings. Additional information regarding the Structured Public Involvement Process and meetings held during this reporting period may be found at the Project WIN Public Input Website (<http://www.msdpwin.org/Public-Input.aspx>).

Project Phases and Responsibilities



- Facilitated an IOAP public meeting on September 16, 2014, at Collegiate School to provide an overview of the IOAP and discuss the I-64 and Grinstead Basin project.
- Facilitated a Wet Weather Team Stakeholder meeting on December 9, 2014, at the MSD Main Office to provide updates on MSD’s IOAP progress and activities to date, planned activities for 2015, and a schedule of activities for MSD’s 20-year Comprehensive Facility Plan.
- Held the next IOAP public meeting to incorporate Structured Public Involvement for the Portland Basin and CSO 190 Green Infrastructure projects on February 9, 2015.
- Held a Design Orientation meeting for the Portland Storage Basin and Portland Green Infrastructure at CSO190 on Tuesday, February 9, 2015, at Western Middle School. MSD Staff spoke about plans for these projects, provided an overview of IOAP progress to date, and gathered input using the Structured Public Involvement Process.
- Held a Concept Design meeting for Southwestern Parkway Storage Basin on Tuesday, March 23, 2015, at Shawnee Golf Course Clubhouse. MSD Staff spoke about plans for

the Shawnee Park Uplands Master Plan and the MSD Southwestern Parkway Storage Basin Project, provided an overview of IOAP progress to date, and gathered input using the Structured Public Involvement Process.

- Facilitated a Wet Weather Team Stakeholder meeting on March 24, 2015, at the MSD Main Office to provide updates on MSD's IOAP progress and activities to date, planned activities for 2015, and an update of activities for MSD's 20-year Comprehensive Facility Plan, including detailed presentations on the Stormwater and Wastewater Service Areas.
- Held a Concept Design input meeting to incorporate Structured Public Involvement for the Portland Green Infrastructure at CSO190 project. This meeting was originally scheduled for March 5, 2015, but was postponed until April 14, 2015, due to snow. MSD staff spoke on green infrastructure, provided general designs, and gathered input using the Structured Public Involvement Process.
- Held the Advanced Design Stage of the Portland Green Infrastructure at CSO190 project on May 12, 2015, at Western Middle School. MSD staff discussed project plans, provided design illustrations and maps, and gathered input using the Structured Public Involvement Process.
- Held a Concept Design Stage public input meeting for the Clifton Heights Storage Basin project on May 19, 2015, at the American Printing House for the Blind. MSD staff discussed and provided general designs as well as gathered input using the Structured Public Involvement Process.
- Held a Pardon Our Dust public meeting for the Logan Street Basin on June 9, 2015. MSD staff explained the project plans, offered tips to the public, and provided a construction schedule.
- Held an Initial input meeting for the Story Avenue and Main Street Basin on June 16, 2015. MSD staff spoke on the history of the sewer system, explained the purpose of this basin, and gathered input using the Structured Public Involvement Process.
- Facilitated a Wet Weather Team Stakeholder meeting on June 23, 2015, at the MSD Main Office to provide updates on MSD's IOAP progress and activities to date, planned activities for 2015, and an update of activities for MSD's 20-year Comprehensive Facility Plan, including detailed presentations on the Stormwater and Wastewater Service Areas.
- Provided information from the Wet Weather Team Stakeholders Group and IOAP Public Input meetings on the Project WIN website, at www.msdlouky.org/projectwin.

FY16 Program

- Continue to inform the Wet Weather Team on the progress of the IOAP implementation by hosting two Wet Weather Team meetings per year. A Wet Weather Team meeting will be held prior to December 31, 2014, and a second meeting will be held prior to June 30, 2015.

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- Continue to provide information from the Wet Weather Team Stakeholders Group and IOAP Public Input meetings on the Project WIN website, at www.msdlouky.org/projectwin.
 - Continue to facilitate and document IOAP Public Input Meetings.

SECTION 6: Capacity Management Operations and Maintenance (CMOM) Report

6.1 Capacity Management Operations and Maintenance Program Activities

Per Paragraph 24.c of the Amended Consent Decree, the Capacity Management Operations and Maintenance (CMOM) Self-Assessment Report was submitted to EPA and KDEP on February 10, 2006. MSD received a letter of approval on August 22, 2006. The approved CMOM document can be viewed on the MSD Project WIN website www.msdlouky.org/projectwin. Highlights of the CMOM program implementation during FY15 are outlined below.

6.1.1 Management Programs

6.1.1.1 Table of Organization

This section describes MSD's Table of Organization. The goal of this section is to ensure each department works efficiently and cooperatively by clearly defining each department's role in the organization in terms of authority, function, position, duties, and relation to other departments. This section also identifies positions currently budgeted and filled.

M-A-1 Organizational Chart

- The Louisville MSD Organizational Chart is updated every quarter. See Appendix H for the latest version.

M-A-2 Relationship to other Departments

FY15 Program

- Carried 659.5 approved positions at the beginning of FY15 (July 1, 2014) and 656.5 approved positions at the end of FY15 (June 30, 2015). This is a decrease of 3 positions.
- Carried 58 vacant positions at the beginning of FY15 (July 1, 2014) and 66 vacant positions at the end of FY15 (June 30, 2015).

FY16 Program

- Continue to hire staff to fill vacant positions.

6.1.1.2 Training Programs

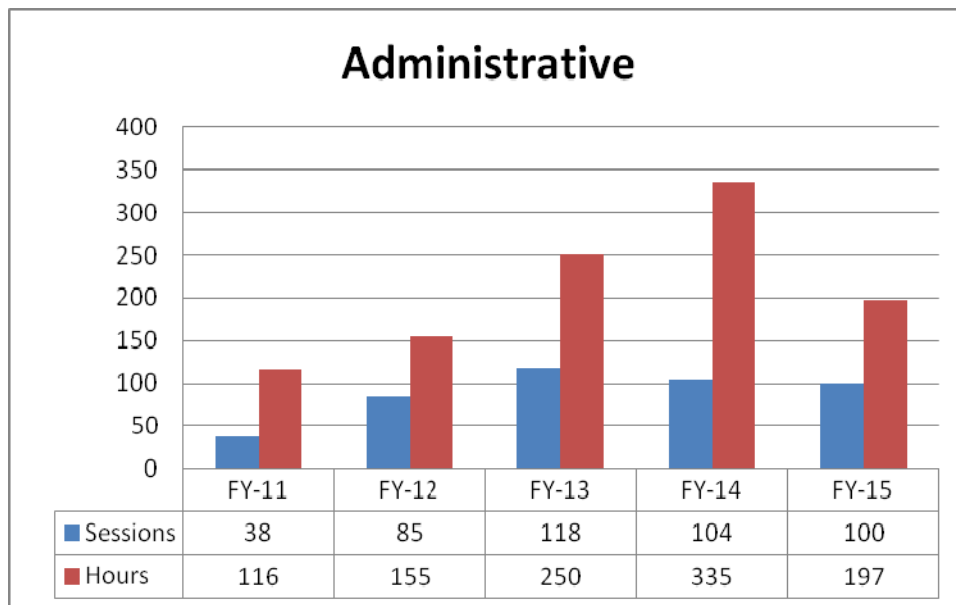
This section describes MSD’s Training Programs. The goal of this section is to ensure employee growth and workplace safety, through mandatory training (both initial and ongoing), attendance to conferences and seminars, certification, accurate record keeping of employee training, and incentives such as pay, promotions, and ability to work. All training programs promote MSD’s fundamental mission, goals, and policies.

Performed training on in the following content areas from FY 2011 through FY 2015 (July 1, 2010 to June 30, 2015)

M-B-1 Technical Training

FY15 Program

Administrative Training



Administrative Training sessions included such topics as New Employee Orientation, Microsoft Office, Crew Management, New Performance Appraisal Processes, Ethics and Supervisory/Management training.

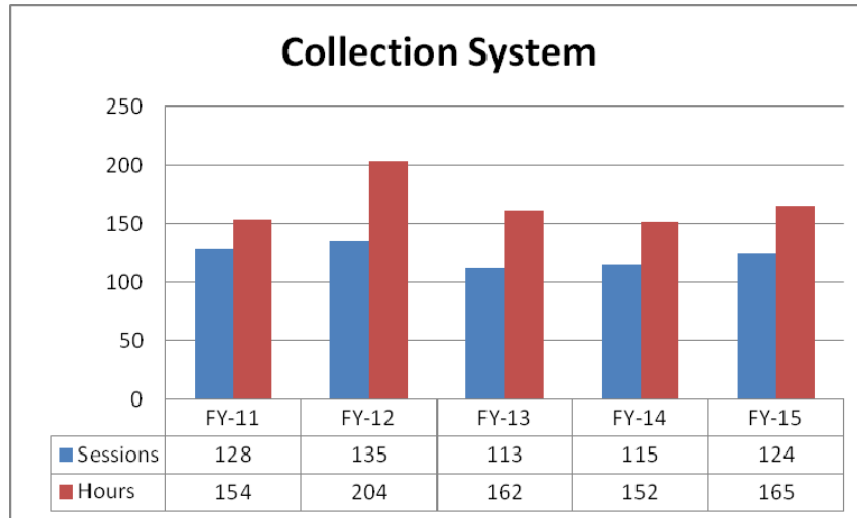
FY16 Program

- Continue to implement employee performance-based goals as part of annual appraisal process.
- Develop processes to better link organizational goals to individual employee goals.

M-B-2 Skills Training

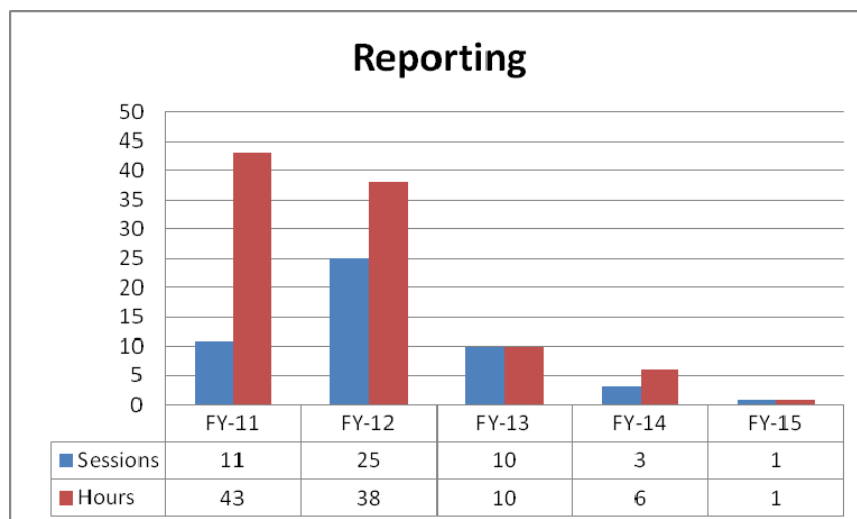
FY15 Program

Collection System Training



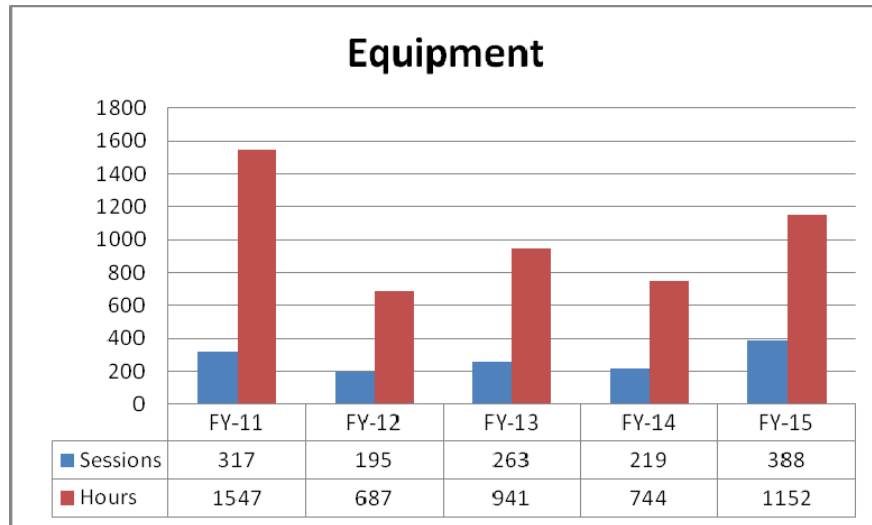
Collection System Training sessions included areas such as Sewer Overflow Response Protocol, Erosion Prevention & Sedimentation Control, CSO & Siphon Preventive Maintenance, Sewer Cleaning, and Construction Blueprints.

Reporting Training



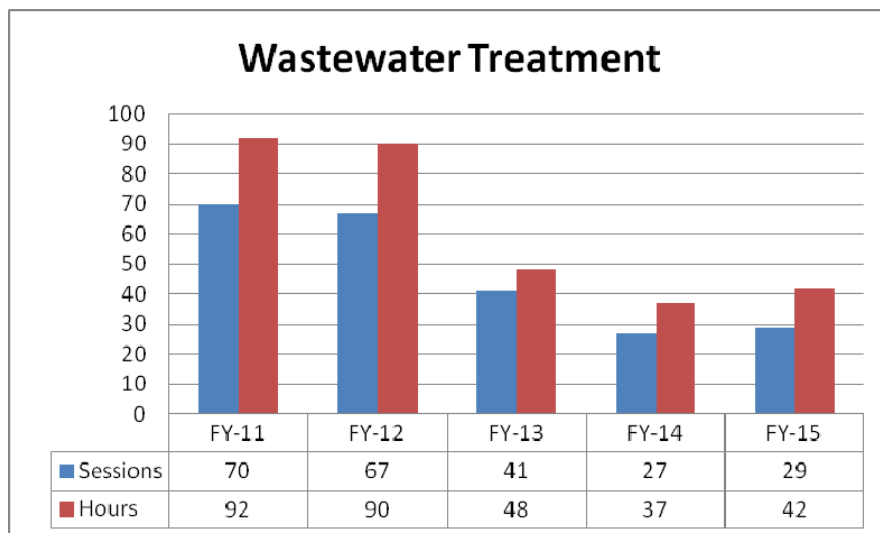
Over this past year Lab Information Management System (LIMS) training was conducted.

Equipment Training



Equipment training primarily includes heavy equipment that enables employees to maintain and operate the collection system, pump stations and treatment plants. Examples include training on mini-excavators, sewer cleaners, cranes, forklifts, and backhoes.

Wastewater Operations



This training focused on knowledge and skills related to wastewater treatment process and control and included sampling and Louisville Green Management System training.

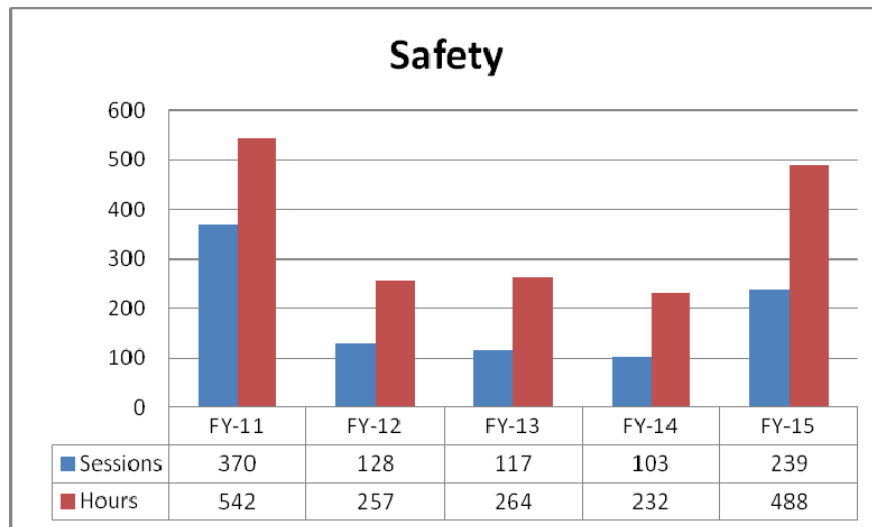
FY16 Program

- Continue to develop competent and capable employees through skills training related to job duties.

M-B-3 Safety Training

FY15 Program

Safety Training



MSD employees receive safety training in such areas as Confined Space Entry, Blood-borne Pathogens, Hazmat, Lock Out/Tag Out, and Competent Person training for trenching and excavation.

FY16 Program

Continue to train employees of MSD Standard Safety Procedures.

6.1.1.3 Safety Programs

This section describes MSD's Safety Programs. The goal of this section is to eliminate on-the-job injuries. MSD's Safety Programs include safety committees, confined space entry procedures, district wide safety policies, traffic management, lock out/tag out procedures, and proper use of safety equipment.

M-C-1 Safety Committee

FY15 Program

- Conducted quarterly meetings with the Safety Committee. This Committee includes three I&FP representatives, Morris Forman WQTC representatives, and Operations representatives.

-
- Performed random job site inspections, inspections at Morris Forman WQTC, and quarterly inspections with Operations of WQTCs and Flood & Viaduct Pump Stations.

FY16 Program

- Continue Safety Committee meetings to perform inspections and review policy and incidents. Address safety concerns presented by safety committee members.

M-C-2 Confined Space Entry

FY15 Program

- Conducted confined space entry training in accordance with the OSHA Confined Space Entry standard 29 CFR 1910.146 for new employees, and on an "as needed" basis for existing employees who have job descriptions requiring confined space entry.
- Maintained entry equipment and personal protective equipment to provide for safe entry conditions and to maintain compliance with 29 CFR 1910.146.
- Contracted with vendor to conduct annual inspections on confined space entry equipment such as tripods, wenchers, and harnesses.

FY16 Program

- Continue to administer training and monitor procedures on confined space entry in order to maintain compliance with 29 CFR 1910.146. Health & Safety personnel will spot check confined space entries to determine compliance with company procedure.
- Continue to ensure that all "Climb Down Lift Stations" in Metro Ops are correctly labeled as "Confined Spaces" and not "Permit Required Confined Spaces" and that all new stations are properly labeled when installed.
- Continue to advise personnel on the purchase of multi-gas monitors to replace older models that will no longer be maintained or manufactured.
- Continue to monitor confined space monitor calibration status and purchase calibration gas for the six calibration stations.

M-C-3 General Safety Procedures

FY15 Program

- Established various general safety procedures based on both 1910 & 1926 OSHA regulations, input from internal personnel, and on the specific needs of the district in order to maintain regulatory compliance and provide safe working procedures for employees.
- Conducted Emergency Response Team (ERT) fire drills and tornado drills at the Main Office, Central Maintenance Facility, and Morris Forman Water Quality Treatment Center.

-
- Conducted 8-hour refresher training on Hazardous Materials for the Emergency Response Teams.
 - Conducted fire extinguisher training district wide.
 - Conducted annual audiograms district wide.

FY16 Program

- Continue to conduct training with employees on the new OSHA Hazardous Communications Standard to include Globally Harmonized Systems for material safety data sheets and container labeling.
- Continue to assess the need to update existing procedures and/or create new procedures as conditions and regulatory requirements dictate.
- Continue to conduct 8-hour refresher training on Hazardous Materials for the Emergency Response Teams.
- Continue to conduct fire extinguisher training district wide.
- Continue to conduct fire and tornado drills.
- Continue to conduct annual audiograms district wide.
- Schedule 40-hr. HAZ-MAT Technician Level training for newly hired employees as needed based on hiring demands.

M-C-4 Traffic Management

FY15 Program

- Purchased and maintained traffic control equipment to reduce hazardous operational exposure. MSD provides training on traffic control through licensing and equipment operating training as employees are hired or as employee job duties require.

FY16 Program

- Continue to train on traffic control and continue to review existing traffic control equipment to ensure continued compliance with MSD standards.

M-C-5 Lock Out/Tag Out

FY15 Program

- Enhanced lock out and tag out procedures as required by the OSHA Control of Hazardous Energy standard. Procedures are kept, maintained and communicated to employees.
- Developed lock out/tag out procedures as equipment is added or replaced, or as processes are changed.

FY16 Program

- Implement lock out/tag out procedures as equipment is added or replaced, or as processes are changed.
- Work with staff at Morris Forman WQTC to enhance existing program by reviewing existing procedures and converting the procedures to an electronic database that can be accessed at any time to view procedures as needed prior to performing a lock out.

M-C-6 Safety Equipment

FY15 Program

- Continued to provide required personal protective equipment to employees at no cost to the employees.

FY16 Program

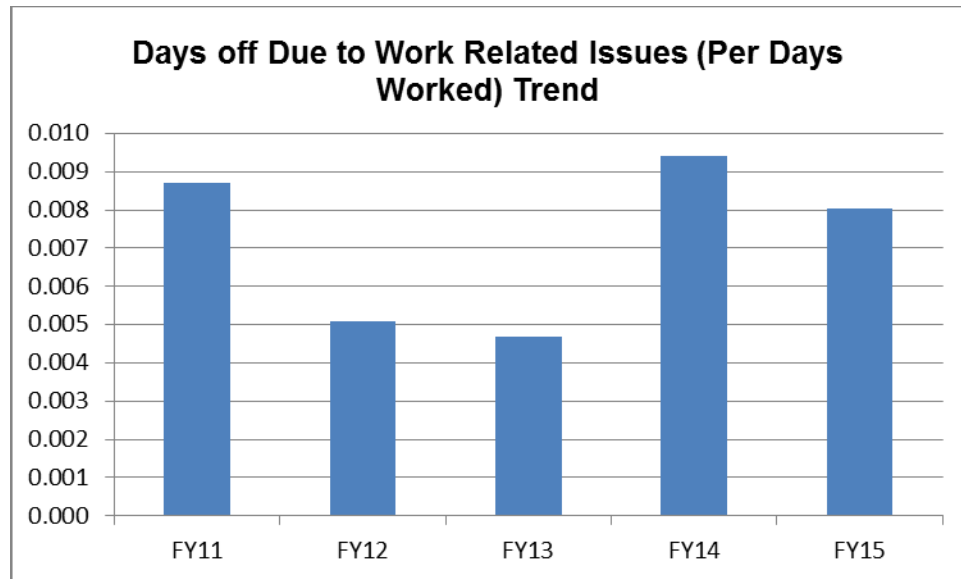
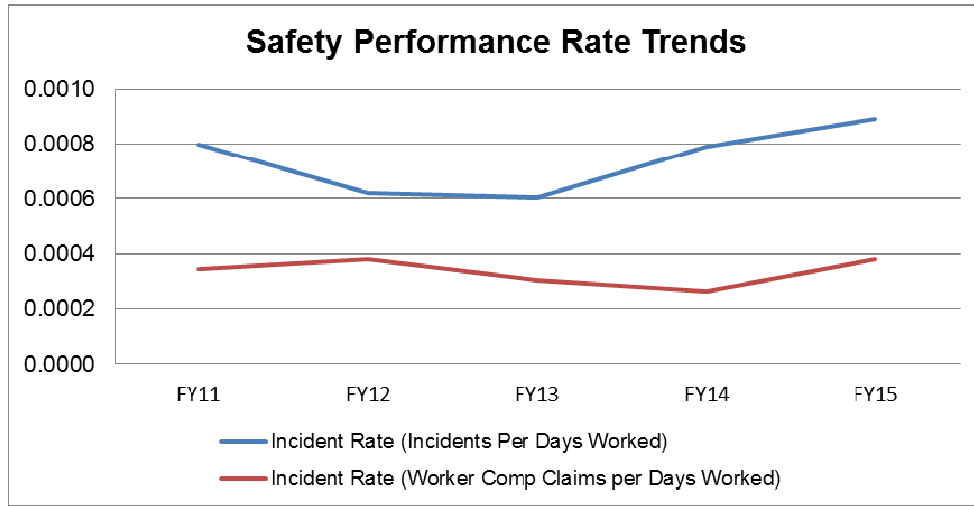
- Maintain safety related equipment or replace the equipment per governing policies or as the need arises.
- Assist MSD Operations Division with the purchase of additional escape bottles.

M-C-7 Performance Measures

FY15 Program

- There were no MSD construction site visits from OSHA, which resulted in no NOVs. There were no fines assessed.
- Ensured that appropriate staff attended mandatory training on Trench Training, Confined Space, First Aid, Hazmat Response and Fire Extinguisher usage.
- Tracked the following safety/worker compensation metrics for MSD employees:

5 Year Safety Performance	Days worked (8 Hours)	Safety Incidents	Worker Comp Claims	Days Off Due to Work related Issues
FY11	151,272	121	52	1317
FY12	151,605	94	58	773
FY13	145,302	88	44	681
FY14	144,178	114	38	1357
FY15	141,353	126	55	1134



FY16 Program

- Enhance compliance objectives based on NFPA 70E (Arc Flash) by conducting an initial arc flash study at one of the flood pump stations in service.
- Maintain field inspections to reduce the number of incidents.
- Continue to review existing crane equipment in use at MSD and determine needs to ensure compliance with the revised OSHA Crane Standard.
- Replace current Material Safety Data Sheets in the MSDS Pro database with updated Safety Data Sheets compliant with the Globally Harmonized System (GHS) standard.

6.1.1.4 Utility Information Management Systems

This section describes MSD's Utility Information Management System. The goal of this section is to produce quality information regarding sewer system performance. MSD's Utility Information Management System supports the following programs: management, operations, maintenance, complaint management, and performance indicators.

M-D 1 Management Information Management Systems

M-D-2 Operations Information Management Systems

M-D-3 Maintenance Information Management Systems

M-D-4 Complaint Management and Tracking Information Management Systems

M-D-5 Performance Indicators

FY15 Program

- Continued to upgrade systems and performance with server and network upgrades.
 - Phase I of Network Upgrade was complete. All new Cisco Switches were installed at all MSD locations.
 - Virtual environment was upgraded with new Dell Chassis, Blade Servers and additional storage.
 - Upgraded Telog to latest version with new SQL Failover Cluster Servers.
- Completed Windows 7 upgrade.
- Completed/ published the update of Planimetric/Topographic mapping of Jefferson, Oldham and Bullitt Counties.
- Acquired 1-meter fully classified LiDar data for Jefferson, Oldham, Bullitt Counties.

- Utilized a wide variety of software to operate the day to day business activities associated with wastewater collection, conveyance and treatments. The major Utility Information Management (UIM) applications is shown in the chart below:

UTILITY INFORMATION MANAGEMENT (UIM) APPLICATIONS	
eB	OneRain
GIS (HARP)	Performance Measures
Crystal Reports	SAP
EGIS	SCADA
Hansen	Telog
InfoWorks	GPS
LIMS	

- Continued enhancement of The Project WIN website with update information related to the Amended Consent Decree. Some general statistics for the site include:

METRIC	FY11	FY12	FY13	FY14*	FY15*
Number of Visits:	139,919	89,753	93,326	109,689	149,677
Average Number of Visits Per Day:	383	380	256	301	408
Average Visit Duration (minutes):	31	20	6	10	15
Unique Visitors:	38,371	31,387	12,714	31,155	38,649
One-time Visitors:	28,822	23,115	7,224	16,855	25,416
Repeat Visitors:	9,549	8,272	7,749	14,270	13,233
Average Visits per Visitor:	3.65	2.85	2.52	3.52	3.93

** FY14 & FY15 values are estimated due to Web Statistics process failure*

- Provided network availability 24/7, 365 days per year.
- Maintained a helpdesk system to track and respond to requests from users.

FY16 Program

- Acquire/publish updated aerial imagery and begin the update of the Planimetric/Topographic data and LiDar in GIS.
- Implement Phase II of Network Upgrade with the implementation of Cisco ASA Firewalls.

-
- Implement Phase III of Network Upgrade with the Upgrade to AT&T Switched Ethernet Network connectivity for faster network speeds.
 - Complete the replacement of all Windows 2003 Servers.

6.1.1.5 Engineering Programs

This section describes MSD's Engineering CMOM activities. The goal of this section is to maintain accurate plans of current sewer system infrastructure, oversee construction quality of new infrastructure, and conduct assessments to maximize the efficiency of current WQTCs. MSD's engineering programs include the following: collection and transmission system plans, system inventory, mapping, sewer system design, sewer construction, construction inspection, acquisition considerations, continuing sewer system assessment (CSSA), infrastructure rehabilitation, and a system capacity assurance plan (SCAP).

M-E-1 Collection and Transmission System Plans

M-E-2 System Inventory

M-E-3 Mapping

FY15 Program

- Captured assets in the GIS and Asset Management software. Added 1017 Property Service Connection records and 74,660 ft of sewer records.
- Corrected 64 Sewer Errata.
- Scanned Construction Plan Sheets into the eB Imaging System. 308 Consent Decree Project Documents were added in eB.

FY16 Program

- Continue to scan plans and update data in the GIS and asset management software from the collection and transmission plans.
- Continue the enhancement of the HARP application.

M-E-4 Sewer System Design

FY15 Program

- The Green Infrastructure Chapter of the Design Manual (Chapter 18) was updated in December 2013, including new requirements for aggregate specifications, plan review and inspection forms, design calculation sheets, and infiltration testing specifications. Louisville MSD staff review and updated the document. Final completion of the document is in progress.
- Continued to hold The Qualified Post-Construction Inspector (QPCI) training course, which includes a 4-hour training course and qualifying exam that participants must pass to become a certified QPCI. All green infrastructure projects are required to submit an annual inspection by a QPCI to verify continued on-site stormwater management.

-
- Continued use of new AutoCAD templates to the MSD public Web page, including new AutoCAD 3D templates, for use by private firms as well as in-house design.

FY16 Program

- Continue implementing the program to finance replacement of private sewer service lines at property owner request.
- Continue to review and update the MSD design manual.
- Continue to administer training on the green infrastructure review and inspection process.

M-E-5 Sewer Construction

M-E-6 Construction Inspection

M-E-7 Acquisition Considerations

FY15 Program

- Financed capital expenditures of \$120,298,703 (includes capitalized project management and administration costs).
- Continued to work on the migration to tracking performance measures and project milestones through SharePoint.
- Committed professional services funds of \$14,120,613.00.
- Committed construction funds of \$159,662,618.00.
- Awarded construction contracts valued at \$175,553,170.00.
- Processed total change orders equaling \$504,605.00:
 - MSD-requested scope change – 10%
 - Unforeseen conditions – 84%
 - Design error or omission – 3%
 - Final compensating quantities – (3%)
 - Emergency Work – 0%

FY16 Program

- Continue the migration to tracking performance measures and project milestones through SharePoint.

M-E-8 Continuing Sewer System Assessment (CSSA)

- Provided details on the CSSA activities for FY15 in Appendix I: CSSA Annual Report.

M-E-9 Infrastructure Rehabilitation

- Refer to Section 4: Program Activities for Discharge Abatement Plans for more details on infrastructure rehab projects.

M-E-10 System Capacity Assurance Program (SCAP)

FY15 Program

- Continued to collect formula-based defect inspection of significant footage of sewer lines in various sewersheds across the county. This information is being used to prioritize cleaning and rehabilitation efforts that will remove inflow and infiltration from the system and create capacity credits. Refer to the FY15 CSSA Annual Report in Appendix I for a progress update.
- Tracked pump station capacities, reviewed drawdown testing results and identified action items pertaining to deficiencies. Critical results of this effort are being documented on each asset within the Hansen system.
- In accordance with the SCAP, reviewed capacity requests as follows:
 - Approved 105 capacity requests with projected flow of 645,451 GPD.
 - Denied approval of six capacity requests with projected flow of 18,220 GPD due to capacity limitations.
 - Conditionally approved 143 capacity requests with projected flow of 1,262,399 GPD.
- Continued to work on the procedures for documentation of rehabilitation and the calculation of SCAP credits.
- Submitted credit catchment ledgers to the State and EPA as part of quarterly reports.

FY16 Program

- Continue to perform formula-based inspection of sewer lines in various sewer sheds across the county. Refer to the CSSA Annual Report in Appendix I of this report for an update on the areas selected for inspection.
- Continue tracking pump station capacities through testing, investigation and capacity evaluations.
- Update water quality treatment center capacities and track new development flows.
- Generate inflow and infiltration reduction projects and calculate related capacity credits.

-
- Continue to enhance credit calculation protocols and tracking in Hansen.
 - Continue to enhance on the procedures for documentation of rehabilitation and the calculation of SCAP credits.
 - Conduct a programmatic gap analysis of implementation processes, procedures, outcomes, and recommend program enhancements/refinements for both the CSSA and SCAP programs.

6.1.1.6 Sanitary Sewer Overflow Reporting and Notification Program

This section describes MSD's Sanitary Sewer Overflow (SSO) Reporting and Notification Program. The goal of this section is to maintain accurate, up to date records of SSOs and to ensure proper, timely notification of the agencies and organizations through un-permitted discharge reporting, SSO notification, and tracking.

M-F-1 Unauthorized Discharge Reporting

- Refer to Section 1: Project WIN Performance Overview for detailed information.

M-F-2 Sanitary Sewer Overflow Notification

- Refer to Section 3: Sewer Overflow Response Protocols for detailed information.

M-F-3 Tracking Sanitary Sewer Overflows

- Refer to Section 3: Sewer Overflow Response Protocols for detailed information.

6.1.1.7 Financing and Cost Analysis Program

This section describes MSD's Financing and Cost Analysis Program. The goal of this section is to provide a detailed cost analysis for both the capital and operational costs of MSD for use in future budgeting and decision making. The following cost analysis programs are included in this section: operations, maintenance, capital improvement program funding, management, life cycle, and budget and customer rate setting.

M-G-1 Operations Cost

M-G-2 Maintenance Cost

M-G-3 Capital Improvement Funding

M-G-4 Management Programs Cost

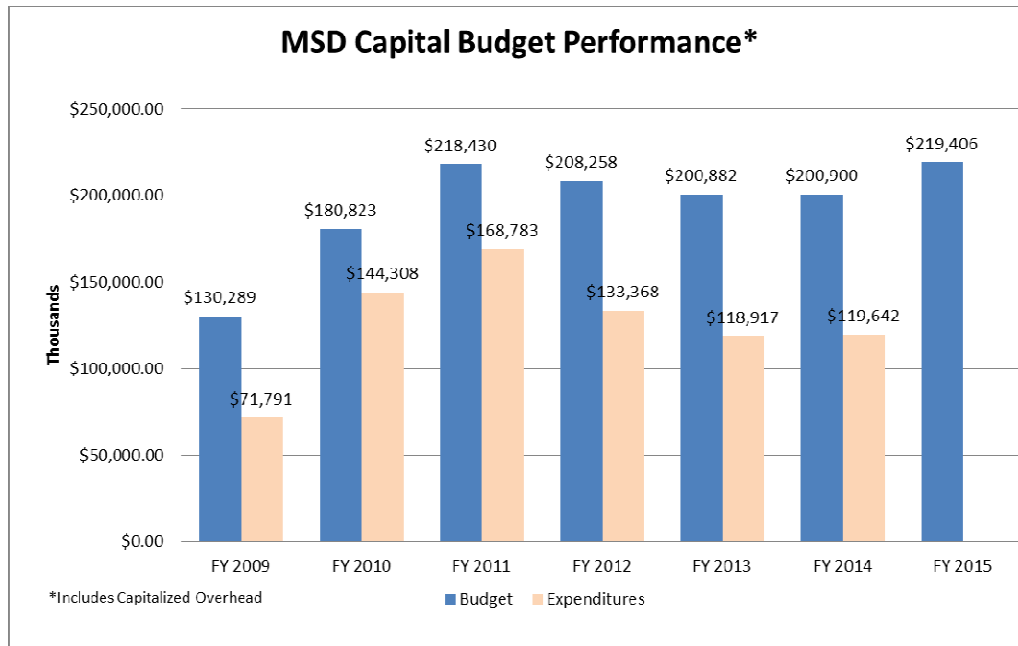
M-G-5 Life Cycle Cost

M-G-6 Budget and Customer Rate Setting

FY15 Program (values reported in thousands)

- Reported Operating Revenues growth of 5.4% in FY15 (\$228,370 in FY15 vs. \$216,632 in FY14).

- Determined FY15 operating revenues were \$681 more than the budgeted amount (\$227,689).
- Determined wastewater & storm water revenue was \$604 more than budgeted & miscellaneous income was \$77 more than budgeted.
- Reported investment income of \$17,628 was \$1,365 less than the budget of \$18,984.
- Reported FY15 debt service coverage of 179%. This was down from 184% in FY14.
- Reported total operating expenses of \$140,811 were \$3,942 more than FY14 and \$4,372 less than FY15 budget of \$145,183.
- Increase in operating expense from prior year can be attributed to an increase in administrative costs of \$4,180.



FY16 Program (values reported in thousands)

- Set the operating budget at \$116,020 and the capital budget at \$187,500.
- Issue \$175 million of revenue bonds in FY16 to fund the capital program.

6.1.1.8 Equipment and Tools Management and Maintenance Program

This section describes MSD's Equipment and Tools Management Programs. The goal of this section is to facilitate efficient repair and support of MSD's sewer systems through an accurate spare parts inventory, a timely equipment maintenance schedule, vehicle repair, and needed tools and supplies.

M-H-1 Spare Parts Inventory Management

FY15 Program

- Identified obsolete clay pipe and fittings inventory then processed disposal of assets.
- Improved under-stated and over-stated variance reporting of annual physical inventories at Morris Forman, CMF and Hite Creek storerooms, and new locations at Cedar Creek and DRG.
- Provided Customer Service survey to all MSD employees and results reviewed by Storeroom Team.
- Increased departmental meetings from monthly to weekly for improvements with customer service, critical spare parts stock requirements, safety standards, and asset management of non-inventory spare parts.
- Reviewed security list for Morris Forman storeroom after hours access, recommended a more controlled list to Security Asset administration, met with Morris Forman Management on security asset policy and SOP, and then provided training for all personnel who will be accountable for assets after hours.
- Established asset management process of flood related equipment for insurance claim replacement and storage.

FY16 Program

- Establish Customer Service team goal for continual operations improvements.
- Continue weekly meetings with departments for improved customers service, inventory management of critical spare parts, reorganization of new storeroom locations, and future consideration of site delivery for field crews.
- Continue improvements with asset security at all storeroom locations.
- Provide advanced training to Storeroom Team members on inventory management applications and utilize software for regular inventory counts to manage spare parts.
- Continue asset management process to replace identified spare parts from Morris Forman flood event.

M-H-2 Equipment and Tools Repair Management

FY15 Program

- Implemented standard tooling lists for all Treatment and Collection operators, electricians, mechanics, control specialist, and field supervisors.
- Selected two Storeroom Team members to be part of Morris Forman Safety Committee. Membership roles were defined and evaluation processes established for plant safety inspections, controls and materials (eyewash station inspections, hearing protection evaluations, Arc Flash PPE inventory control, harness inspections, monthly safety inspections, quarterly safety inspections with Safety Department).
- Audited Standard Operating Procedures (SOP) for tooling inspections and implemented improved security measures for cost savings initiatives and asset management that aligned with departmental goals.
- Revised Tooling SOP has been updated and training provided to all employees assigned to Derek R. Guthrie (DRG), Cedar Creek, Hite Creek and Beargrass facilities.
- Established tool and equipment repair process and form with MSD Tool Shop to ensure asset management and proper tool handling control measures are followed by employees.

FY16 Program

- Continue updating standard tooling lists for all Treatment and Collection operators, electricians, mechanics, control specialist, and field supervisors for cost savings initiatives by recycling old tools and utilizing internal contracts.
- Participate on Morris Forman Safety Committee Membership by attending regular safety inspections, safety meetings, and supporting safety standards.
- Continue to review and update safety equipment and inspection controls (Arc Flash PPE and equipment, safety harness inspections, eyewash stations, ladders, safety PPE, and fire extinguishers).
- Continue annual audit of SOP for tooling inspections and implement improved security measures for cost savings initiatives and asset management that aligned with departmental goals when necessary.
- Prepare and execute Tooling Inspection and Equipment Repair training for all MSD Treatment and Collections Division operators, mechanics, electricians, and controls technicians.
- Audit Tool and Equipment Repair process and form through MSD Tool Shop for the continuous improvement of MSD systems.

M-H-3 Vehicle Repair

MSD's vehicle repair maintenance program addresses over 600 pieces of rolling stock, including automobiles, trucks, trailers, construction equipment (backhoes, mobile cranes, etc.) and specialty sewer maintenance equipment. Quarterly and annual summary reports specifically address maintenance issues related to the grouping of Mission Critical Equipment (MCEs) that were identified as being essential to meeting Amended Consent Decree commitments related to NMC and CMOM activities. The following five types (41 pieces) of equipment were identified as MCEs in the MSD fleet:

- High-Pressure Sewer Flusher Trucks, qty. 6
- Vacuum Sewer / Catch Basin Cleaner Trucks, qty. 9
- Catch Basin Cleaners (mechanical clamshell type), qty. 5
- Tele-Inspection Vehicles, qty. 7
- Sound Attenuated Six-Inch Trash Pumps, qty. 13

FY15 Program

- MSD Fleet Services performed an analysis on critical equipment maintenance and procurement during the reporting period with the following results:
- Evaluated Mission Critical Equipment Availability:
 - Catch Basin Cleaners (clamshell type) – 97.5%
 - Sewer Flushers – 92.1%
 - Tele-Inspection Trucks – 95.9%
 - Vacuum Catch Basin / Sewer Cleaner Trucks – 88.2%
 - Sound-Attenuated 6" Trash Pumps – 99.3%
 - Average availability for all Mission Critical equipment – 95.4%
- Procured/Repaired Critical Equipment:
- Procured replacements for five new Vacuum Catch Basin / Sewer Cleaner Trucks.
- Monitored equipment and work order data for future replacement planning.
- Coordinated technician training on new Vacuum Catch Basin / Sewer Cleaner Trucks for fleet technicians and operators.

-
- Completed Sewer Flusher operator training for fleet technicians to create an improved understanding of the operating environment and recognition of quality control issues related to outsourced vendor repairs.
 - Began One Water Initiative with the Louisville Water Company to capitalize on fleet services opportunities to realize cost savings while better serving our customers and increasing levels of service to the community.
 - Hired a One Water Fleet Services Manager.
 - Implemented revised Preventative Maintenance (PM) schedules to be class specific and in-line with industry standards. Specifically addressed the operating environment of the Tele-Inspection Trucks increasing the frequency of preventive maintenance performed to improve availability to the operating division.
 - Continued monitoring and reporting availability of Mission Critical Equipment (MCE) targeting an overall average availability of 95% or higher for all MCE.
 - Received and placed in service five new Vacuum Catch Basin / Sewer Cleaner Trucks in service to replace aging units.
 - Analyzed FY16 capital purchasing needs, including the evaluation of sewer flusher equipment replacement.

FY16 Program

- Continue to explore One Water Initiatives with the Louisville Water Company to capitalize on fleet services opportunities to realize cost savings while better serving our customers and increasing levels of service to the community.
- Continue to revise PM schedules which are class specific to address specific needs of MSD based upon the operating environment of equipment to improve overall preventive maintenance program effectiveness.
- Continue monitoring and reporting availability of Mission Critical Equipment (MCE) targeting an overall average availability of 95% or higher for all MCE.
- Continue use of FASTER System reports to analyze and target areas where improvement is needed.
- Prepare specifications and bid for two new Tele-Inspection Trucks and four Sewer Flusher Trucks to replace aging trucks.
- Modify non-scheduled repair classification; update classifications on repair orders on a timely basis, eliminating time that is clocked as down time when unit is already back in service. Monitor supervisors to make sure equipment is in proper status.
- Receive and place in service two new Tele-Inspection trucks to replace two aging trucks.

-
- Hold operator and fleet technician training on new Tele-Inspection trucks and Sewer Flusher Trucks being purchased.
 - Analyze FY17 capital purchasing needs, including the evaluation of remaining two aging Sewer Flusher Trucks for replacement.

M-H-4 Supplies Management

FY15 Program

- Updated Storeroom SOP as they related to supplies management.
- Increased recycling services with MSD Treatment and Collections Divisions as part of mission to provide clean waterways. Improvement plan established for proper chemical disposal and storage, and additional spill containment pallets and flammable storage cabinets were installed in storage locations.
- Improvements to inventory spare parts catalogs for all MSD Treatment and Collections Divisions areas in ongoing.
- Improved chemical storage of temperature sensitive inventory.
- Procurement standard bid list reviewed with Quality Improvement department for inventory supplies.
- Cross training of all Storeroom Team was completed as part of continuous improvement and goal achievement for job performance and skill-training initiative for future advancements. One promotion resulted from cross training efforts.

FY16 Program

- Audit Storeroom SOP for quality improvements and determine best practices to improve operations.
- Analyze storage space at all locations and prepare plan for warehouse improvements of stock management.
- On-line materials catalog goal established for 2016.
- Continue improvements with recycling program.
- Improve cross training of all Storeroom Team and establish goals to learn new inventory management processes.

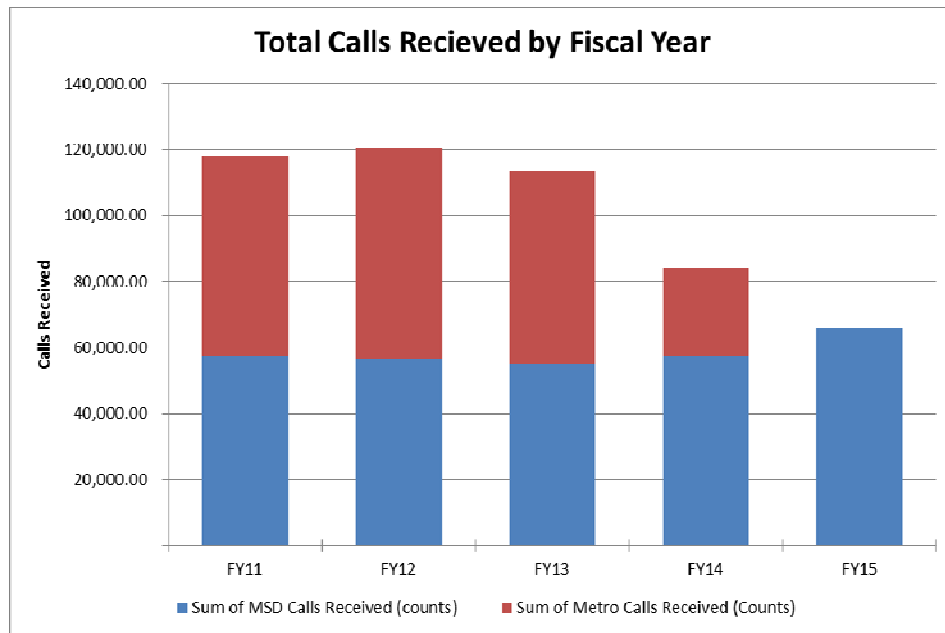
6.1.1.9 Customer Service Programs

This section describes MSD's Customer Service Programs. The goal of this section is to strengthen and maintain a healthy relationship between MSD and the public through service programs which include complaint management, public information, and public education.

M-I-1 Customer Service

FY15 Program

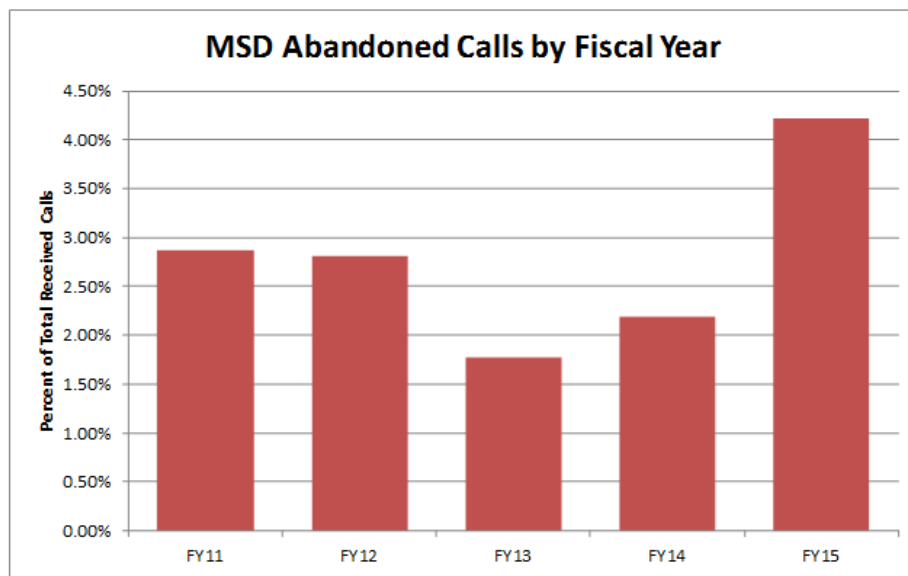
- Louisville MSD mailed out 2,701 Project WIN and Plumbing Modification Program packets of information or applications.
- Louisville MSD received 68,724 calls during this period. The chart below breaks down the calls answered by MSD. FY11 all the way through the first half of FY14 includes calls answered by MSD on behalf of Louisville Metro.



- Louisville MSD launched the Customer Relations new “Customer Care” program to improve communications and provide information to MSD customers who have requested service work from MSD. Customers were asked for their preferred method of communication (phone, email or letter) and MSD agents monitored the progress throughout the service request. This will allow MSD to keep the customers informed of the current project status until its completion. In addition, service requests will be tracked to assure our crews have met customer expectations. The table below shows the Customer Service Call Data along with the "Customer Care" Data for this reporting period.

Month	MSD Calls Received	MSD Calls Abandoned	MSD Avg. Hold Time (sec)	Customer Care Calls
Jul-14	5,178.00	117.00	60.00	938.00
Aug-14	5,182.00	96.00	67.00	1,114.00
Sep-14	5,190.00	93.00	68.00	977.00
Oct-14	4,646.00	96.00	64.00	962.00
Nov-14	3,601.00	86.00	72.00	510.00
Dec-14	3,851.00	94.00	61.00	547.00
Jan-15	4,278.00	86.00	47.00	470.00
Feb-15	4,457.00	86.00	50.00	373.00
Mar-15	6,206.00	257.00	62.00	442.00
Apr-15	9,996.00	1,065.00	74.00	450.00
May-15	6,647.00	314.00	66.00	537.00
Jun-15	6,711.00	391.00	73.00	764.00
Total	65943	2781	764	8084.00

- Louisville MSD continued the effort to keep the percentage of abandoned calls low. The chart below breaks down the abandoned calls for Louisville MSD.



FY16 Program

- Continue to keep the amount of Abandoned Calls at a low level.
- Continue forward with the "Customer Care" Program to keep customers informed of the current project status in their area.

M-I-2 Public Information

M-I-3 Public Education

6.1.1.10 Legal Support Programs

The following support programs are included in this section: inter-jurisdictional agreement, ordinances, pretreatment legal support, grease control legal support, service laterals legal support, septic tank haulers legal support, and “Call Before You Dig” legal support.

M-J-1 Inter-Jurisdictional Agreement

M-J-2 Ordinances

FY15 Program

Over the past fiscal year, the MSD legal department has provided a variety of legal services designed to support MSD in its efforts to implement programs to abate sanitary sewer overflows as required by the Amended Consent Decree. The services most directly related to this effort include:

- Participated in and/or provided legal advice and other functions pertaining to the procurement of construction and professional service contractors to provide services and/or perform work in furtherance of IOAP related projects.
- Participated in the acquisition of properties and/or property interests (easements and/or fee simple ownership) critical to the completion of IOAP related sewer construction projects. The department's participation has included assisting in the negotiation and structuring of purchase and sale agreements, drafting acquisition related documents, title research, and performing or providing oversight of the closing of acquisition transactions.
- Provided legal advice and comments pertaining to compliance functions necessitated by MSD's proposed MS4 NPDES permit.

FY16 Program

- Continue to provide legal services to support MSD.

M-J-3 Pretreatment

M-J-4 Grease Control

M-J-5 Service Laterals

M-J-6 Septic Tank Haulers Legal Support

M-J-7”Call Before You Dig”

- Information on these programs is provided in Section 2.4 NMC 3: Review and Modification of Pretreatment Programs, 6.1.2.2 Pretreatment Program, 6.1.2.4 Grease

Trap Inspection and Enforcement Program, 6.1.2.7 Septic Tank Haulers Program, and 6.1.2.8. “Call Before You Dig” Program.

6.1.1.11 Water Quality Monitoring Programs

This section describes MSD’s Water Quality Monitoring Program. The goal of this section is to maintain an accurate, consistent record of water quality in receiving bodies of water. Monitoring results are used to determine the effect of effluent discharge and/or spills through the following monitoring programs: routine water quality, investigative water quality, and water quality monitoring for spill impact.

M-K-1 Routine Water Quality Monitoring Programs

M-K-2 Investigate Water Quality Monitoring

M-K-3 Water Quality Monitoring for Spill Impact

- Information on these programs is provided in Section 4.5 Post Construction Monitoring Program, for details on water quality monitoring efforts.

6.1.1.12 Contingency Plan for Sewer and Treatment Plant

This section describes MSD’s Contingency Plan for the Sewer and Treatment System. The goal of this section is to provide a protocol for emergency response and notification. The following elements are included in this section: contingency planning process, response flow diagram, public notification plan, agency notification plan, emergency flow control plan, emergency operations and maintenance plan, preparedness training program, water quality monitoring plan, and sewer overflow response protocol (SORP). The SORP requires training for all MSD employees.

M-L-1 Contingency Planning Process

M-L-2 Response Flow Diagram

FY15 Program

- Continued implementation of protocols for emergency and disaster response.
- Updated the contact list of names, phone numbers, and responsibilities for emergency and disaster response protocols.
- Continued to administer training for possible discharges or pollution spill response.
- Compiled a team to review MSD’s disaster response exposure and make recommendations as part of the MSD Strategic Business Plan.

FY16 Program

- Revise the disaster response protocol document to incorporate lessons learned from previous rain events, if necessary.
- Continue training and planning for disaster response protocols and event critiques.

- Develop work plans for FY16 program activities.
- Work with EMA and USACE on USACE Flood Inundation Study.
- Practice Floodwall Closure Installations.
- Develop IT Disaster Recovery Plan.
- Revise Emergency Response Program including identifying needed standard operating procedures and training.

M-L-3 Public Notification Plan

M-L-4 Agency Notification Plan

FY15 Program

- Maintained as part of the emergency and disaster response protocols, inter and intra Agency Notification Plans.
- Maintained the Public Notification Plan as outlined in the SORP. Refer to Section 3: Program Activities for Sewer Overflow Response Protocol for more details.

FY16 Program

- Continue to update protocols and training as outlined in Section 3: Program Activities for Sewer Overflow Response Protocol.

M-L-5 Emergency Flow Control Plan

M-L-6 Emergency Operations and Maintenance Plan

FY15 Program

- Updated procedures for Emergency Flow Control and Emergency Operations and Maintenance.

FY16 Program

- Continue to review the Emergency Flow Control and Emergency Operations and Maintenance procedures.

M-L-7 Preparedness Training

FY15 Program

- Administered training for SORP and Emergency Response procedures. For more detail on SORP see Section 3: Program Activities for Sewer Overflow Response Protocol.
- Refer to Section 6.1.1.2 Training Programs for more details on the number of personnel trained and various preparedness training sessions.

FY16 Program

- Refer to Section 6.1.1.2 Training Programs for more details on the goals for training in FY16.
- Continue to administer training for possible discharge or pollution spill response.

M-L-8 Water Quality Monitoring Plan

- Refer to Section 4.5 Post Construction Monitoring Program for more details on the MSD Water Quality Monitoring Plan

M-L-9 Sewer Overflow Response Protocol (SORP)

- Refer to Section 3: Program Activities for Sewer Overflow Response Protocol for more details on the SORP.

6.1.2 Operations Programs

6.1.2.1 Pump Station Operations Programs

This section describes MSD's Pump Station Operation Programs. The goal of this section is to maintain pump stations for optimal use during routine and emergency operations through well documented operating procedures.

O-A-1 Routine Operating Programs

FY15 Program

- Continued review and updates, as needed, of the U.S. Army Corps of Engineers (USACE) Flood Operations and Maintenance Manual based on USACE and staff review comments. The manual is continuously under review as MSD completes both LTCP and NMC programmatic activities.
- Continued review of SOPs for the Flood Pump Stations to reflect ongoing operational changes that occur as LTCP and NMC programmatic activities are completed.
- Determined capital project priorities and the budgetary needs during regular meetings with MSD Operations and Regulatory Compliance staff.
- Continued to develop operations and maintenance (O&M) manuals for existing sanitary pump stations that do not have formal O&M manuals. Staff prioritized and developed O&M manuals for pump stations from the Greenline Program. New manuals were created for 10 pump stations.
- Continued to develop an application to automate the drawdown testing and to develop trending standards using Telog. Selected sites for testing and begin trending. Sites selected will be simple duplex pumping stations with clearly defined wet well volumes. Pump run time and wet well level data will be used in the spreadsheet to calculate both influent and effluent flow rates. The data will help staff trend pump station operations, plan proactive corrective measures and maintain accurate hydraulic models.
- Reviewed Pump Stations for the automated drawdown effort. MSD staff has installed level sensors in 17 Pump Stations in the collection system. While supporting the automated drawdown effort, the level sensors also add trend information for collection system performance.

FY16 Program

- Continue regular meetings with MSD Operations and Maintenance staff to determine capital project priorities and advise on the budgetary needs on a quarterly basis.
- Continue review of SOPs and job aides for Regional Pump Stations. These are sites with design capacities at two MGD or greater and typically have a building. This will include the development of SOPs for wet/dry weather capacity issues at pump stations and conducting annual pump station field training. This will be a continuous process as MSD completes programmatic CMOM activities.

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- Continue the planning to enhance operations and maintenance (O&M) manuals for existing sanitary pump stations that do not have formal O&M manuals. Staff will prioritize pump stations based on operational history.
 - Continue to provide backup power at critical pump stations based upon the previously performed prioritization, as described in Section O-A-2 Emergency Operating Programs.
 - Automate application to complete automatic pump station draw down tests remotely. Select sites for testing and begin trending.
 - Continue reviewing Pump Stations for the installation of level sensors in support of the Automated Drawdown Application.

O-A-2 Emergency Operating Programs

FY15 Program

- Emergency Generator Program – Continued MSD’s emergency generator program by collecting operational and maintenance data for MSD’s 260+ pump stations to prioritize sites for generator installation. Data collection included frequency of power outages, over flows (including basement back-ups) and hauling events. This data was graphed with pump station horsepower requirements for the selection process. The list was narrowed down further by looking at site access, how far a pump station is from a maintenance facility, generator installation costs and whether a pump station could be eliminated. To date, MSD has installed 43 new generators under this program and have addressed the pump stations with the most significant power failure issues. During the next reporting period, staff will continue to review the program to see if additional permanent generator installations are warranted.
- Flood Pumping Station Emergency Generator Study – MSD previously completed a study of the 16 flood pumping stations to determine generator sizing for emergency back-up power requirements at each site. Study recommended generator sizes, a planning level budget was developed for each site, and implementation is planned to begin in FY17.
- Royster Basin Access Road and Generator Project (Budget ID H09365) – Created this project to install a permanent stand-by generator and access road at the Royster Basin Pump Station. The access road project was advertised on July 15, 2012, and bids were received on August 15, 2012. A notice-to-proceed for construction was issued on September 15, 2012, and all construction activities were completed January 16, 2013. The design project for the new generator was completed, the project was advertised for construction June 22, 2014, and construction was completed April 17, 2015.

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- Greenline Analysis – Received final technical memos for the Greenline Analysis for the (original) 'Central Region' flood pump stations: MSD0026-PS Hurstbourne, MSD0028-PS Farmview Plaza, MSD0035-PS St Matthews #7, MSD0147-LS Plantside, MSD0154-PS Broadfern, and MSD1100-PS Vintage. Received a deliverable for an Abbreviated Green Line Study for MSD0002-PS Hazelwood and MSD1086-PS Floydsburg pump stations.
 - St Matthews #4 Pump Station Rehabilitation Project (Budget ID H14241) – Created this project to replace the pumps, discharge piping, check valves, and gate valves and install a chain hoist at the St Matthews #4 Pump Station. The project was advertised on January 1, 2014, and bids were received on February 24, 2014. A Notice-to-Proceed for construction was issued on May 28, 2014, and all construction activities were completed by February 18, 2015.
 - Rosa Terrace Pump Station Improvement Project (Budget ID H11386) – Created this project to modify the wet well and install an elevated platform between the wet well and valve vault to improve access and safety at Rosa Terrace Pump Station. The project was advertised on April 17, 2014, and bids were received on May 15, 2014. A Notice-to-Proceed for construction was issued on October 31, 2014, and all construction activities will be completed in FY16.
 - Fairway View Pump Station Improvement Project (Budget ID H09177) – Created this project to replace the pumps, control panel, transfer switch, piping and access at Fairway View Pump Station. The project was advertised on May 21, 2014, and bids were received on June 12, 2014. A Notice-to-Proceed for construction was issued on August 22, 2014, and all construction activities were completed June 11, 2015.
 - Riding Ridge Pump Station Improvements (Budget ID H09175) – Created this project to re-grade stream bank adjacent to Riding Ridge Pump Station and install a new feeder between the Service Disconnect switch and the pump station. Quotes for project were solicited on August 29, 2014, and were received on September 19, 2014. A Notice-to-Proceed for construction was issued on September 19, 2014, and all construction activities were completed by November 20, 2014.
 - Bridgepointe Pump Station Improvements (Budget ID H14214) – Created this project to improve access to the Bridgepointe Pump Station. Quotes for project were solicited on March 24, 2015, and were received on April 17, 2015. A Notice-to-Proceed for construction was issued on April 17, 2015, and all construction activities were completed by June 4, 2015.
 - 3rd and L&N Viaduct Pump Station Access Road (Budget ID H14214) – Created this project to install a permanent access road to the 3rd and L&N Viaduct Pump Station. Quotes for project were solicited on June 4, 2015, and were received on June 19, 2015. A Notice-to-Proceed for construction was issued on June 19, 2015, and all construction activities will be completed in FY16.

FY16 Program

- Emergency Generator Program (Budget ID H14115) – Continue MSD’s emergency generator program by collecting operational and maintenance data for MSD’s 260+ pump stations to prioritize sites for generator installation. During the next reporting period, staff will review the program to see if additional permanently installed generators are still needed. The existing mobile generator inventory will be reviewed and a plan created to repair or replacement generators as needed. Staff will also review salvaged generators from Pump Station & Treatment Plant elimination or upgrade projects. The salvaged generators will be sized and placed at sites as needed.
- South Pope Lick Pump Station Project – Bid and awarded a construction project for the installation of an inline valve to isolate flow in the force main downstream of South Pope Lick Pump Station to improve emergency repair capabilities at the station.
- Westover Pump Station Access Road (Budget ID H14115) – Bid and awarded a construction contract for the replacement and expansion of the access road to Westover Pump Station as well as a retaining wall to improve safety during wet weather.
- Gunpowder Pump Station Modifications (Budget ID H09242) – Bid and awarded a construction project to install inline storage upstream of the pump station and also replace the pumps at Gunpowder Pump Station.
- Greenline Analysis - Continue to evaluate pump stations for inclusion in the Greenline program. Greenline pump stations will be prioritized under the program to complete new draw down tests and pump station site assessments. The data from this effort will be collected and will be used to plan future rehabilitation projects. Future rehabilitation work will also correct any pump station operation level settings to prevent line surcharging. An Abbreviated Green Line Study for MSD1203-PS Kirby Lane and MSD0038-PS Woodland Hills was initiated in FY15, but was put on-hold until more accurate hydraulic models could be put in place, MSD expects the completion of the study in FY16. Meanwhile, MSD has planned for another Abbreviated Green Line Study for MSD1218-PS Aiken #1.

6.1.2.2 Pretreatment Program

This section describes MSD's Pretreatment Programs. The goal of this section is to protect MSD's sewer system and treatment plants by requiring industrial users to pre-treat their effluent to required levels through industrial user permitting, inspection, sampling and enforcement.

O-B-1 Industrial User Permit

O-B-2 Inspection

O-B-3 Sampling Enforcement

Louisville MSD administered pretreatment limitations at Hite Creek WQTC, Jeffersontown WQTC, Floyds Fork WQTC, Derek Guthrie WQTC and the Morris Forman WQTC. Additional information related to the MSD Pretreatment Program for the combined sewer system can be found in Section 2.4 NMC 3: Review and Modification of Pretreatment Requirements.

6.1.2.3 Corrosion Controls Program

This section describes MSD's Corrosion Controls Program. The goal of this section is to extend the life of MSD's sewer system by controlling the corrosive effects of Hydrogen Sulfide and other corrosive chemicals in the system through inspection, control measures, monitoring, and performance measures.

O-C-1 Inspection

O-C-2 Control Measures

O-C-3 Monitoring

O-C-4 Performance Measures

FY15 Program

- Continued to clean MSD facilities to minimize odors.
- Recorded service requests for MSD Operations Division into two groups: those that are associated with the Morris Forman WQTC will use the code of MFF and those associated with the remaining WQTCs and Pump Stations will use the code of MOP.

FY16 Program

- Determine the next inspection areas for corrosion based on force main discharge locations.
- Continue to clean MSD facilities to minimize odors.
- Continue to enhance asset review and documentation.
- MSD will conduct a performance assessment of the Corrosion Control Program and develop a plan to address the system's corrosion. The plan will include a 5 year program

to assess assets and develop a budget and a corrective action plan to address priority corrosion.

6.1.2.4 Grease Trap Inspection and Enforcement Program

This section describes MSD's Grease Trap Inspection and Enforcement Programs. The goal of this section is to reduce the amount of fats, oils and grease (FOG) that enter MSD's sewer system and treatment plants through permitting, inspection, enforcement, performance measures, and the FOG program.

O-D-1 Permitting

O-D-2 Inspection

O-D-3 Enforcement

O-D-4 Performance Measures

O-D-5 FOG

FY15 Program

- Conducted 45 inspections at Food Service Establishments (FSE) and issued enforcement actions as appropriate for violations of the MSD Wastewater/Stormwater Discharge Regulations Data review for FOG inspections from July 1, 2014, thru June 30, 2015, and issued Field Correction Notices (FCN).
- Issued 99 FOG Enforcement Actions to Food Service Establishments (FSE) requiring action(s) to prevent and/or eliminate grease blockages in MSDs collection system
- Mailed 603 FOG residential public outreach letters to residents in neighborhoods in the MSD service area that had FOG issues.
- Conducted 4 Certified Grease Waste Hauler training classes. Class No. 12 and 13 were provided to haulers during this period.
- Performed 17 Certified Grease Waste Hauler audits for haulers participating in the Certified Grease Waste Haulers Program.
- Continued to track FOG removal by Certified Grease Waste Haulers; records indicate 3,092,049 gallons of FOG removed during the reporting period.
- Conducted 1 FOG Hot Spot Reconnaissance inspection at CSO125/Mastersons.
- Continued to track and report FOG Program performance measures.
- Completed the Grease Liquefaction Dosing Pilot Project.

FY16 Program

- Continue to conduct inspections at Food Service Establishments and issue enforcements actions as appropriate for violations of the MSD Wastewater/Stormwater Discharge Regulations.
- Continue to send FOG residential public outreach letters to residents in neighborhoods in the MSD service area that had FOG issues.
- Participate in public educations and outreach programs to inform the public regarding MSD's Fats Oils & Grease (FOG) Program.
- Continue to host at least 2 Certified Grease Waste Hauler training classes.
- Continue to conduct Certified Grease Waste Hauler audits.
- Continue to track and report FOG Program performance measures.
- Review 5-year trends in FOG related blockages and compare to similar performance metrics from other cities.

6.1.2.5. New Connection Tap-In Program

This section describes MSD's New Connection Tap-In Program. The goal of this section is to ensure that future connections do not compromise the capacity of the receiving treatment plant. The program is implemented using a new service taps approval process, inspection, enforcement, and performance measures.

O-E-1 Installation of New Service Taps

O-E-1 Inspection

O-E-1 Enforcement

O-E-1 Performance Measures

O-E-5 Other

FY15 Program

- Inspected sewer installations completed by Louisville MSD Field Staff and contractors.
- Forty-Five (45) Property Service Connections (PSCs) were installed into MSD's sewer system. Additionally, there were 61 PSCs installed by contractors for a total of 106 new Property Service Connections.

FY16 Program

- Continue to review projects for capacity availability.

6.1.2.6 Flow Monitoring Field Operation Programs

This section describes MSD's Flow Monitoring Field Operation Programs. The goal of this section is to provide accurate flow data for use in evaluating various aspects of MSD's sewer system. Flow is monitored at both permanent and temporary stations.

O-F-1 Permanent Stations

O-F-2 Temp Stations

- Refer to Section 4.5 Post Construction Monitoring Program for details on water quality monitoring efforts.

6.1.2.7 Septic Tank Haulers Program

MSD does not accept septic tank waste. This is handled through private contractors in Jefferson County.

6.1.2.8. "Call Before You Dig" Program

This section describes MSD's "Call Before You Dig" Program. The goal of this section is to prevent the damaging or cutting of sewer lines and subsequent spills through permitting, inspection, enforcement, and performance measures.

O-H-1 Permitting

O-H-2 Inspection

O-H-3 Enforcement

O-H-4 Performance Measures

FY15 Program

- Contracted \$609,503.01 for fiscal year time frame (July 1, 2014 to June 30, 2015) to process 92,350 Locate Requests to identify MSD facilities.
- Contracted the KY 811 (BUD Center) \$105,000 to participate in this program.
- Requested 3,292 (1,396 via web and 1,896 via phone) to the BUD Center for the marking of other utilities during this time period.

FY16 Program

- Continue to contract for this service.

6.1.3 Maintenance Programs

6.1.3.1 Pump Station Preventive Maintenance

This section describes MSD's Pump Station Preventive Maintenance program. The goal of this section is to prevent unanticipated repairs and subsequent down-time by providing scheduling, staff, and records to perform routine, preventive pump station maintenance. Electrical, mechanical, and physical maintenance are included in this section.

S-A-1 Electrical

S-A-2 Mechanical

S-A-3 Physical

FY15 Program

- Continued implementation of the preventive maintenance and inspection plan for flood pump stations based on the USACE Inspection Guide. Staff is using the Hansen asset management system to track Flood Pump Station work orders as well as associated flood pump station assets such as station related floodgates.
- Continued assessment of the sanitary pump stations based on the previous 2007 drawdown deficiency priorities. The new drawdown data was compared against the 2007 results to update the baseline operations of each pump station. From November 2009 to June 2013, MSD staff completed new draw down tests on 222 pump stations. The testing continues to include an assessment of the mechanical and electrical equipment at each station by the Drawdown Investigation Evaluation Team (DIET). The team consists of two mechanics, electrician, operations supervisor and an engineering representative. The following table lists the repair activities completed for this reporting period.

FY15 Sanitary PS Repair Activities	Count	Cost
Pump Replacement	31	\$145,351.00
Pump Repair	25	\$89,187.00
Generator Repair	42	\$27,983.50
Electrical/ I&C Work	Various	\$50,710.83
PS Generator, Wetwell Modifications & Access Road	1	\$132,887.96
Total:		\$446,120.29

- Performed inspections on pump station sites that have deficiencies determined during the Drawdown and Greenline Programs. Staff will proactively inspect critical equipment on site during the inspections. Checklists were created to document the inspection and list corrective actions needed. Corrective work orders were issued as needed.

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- Continued to use Hansen for preventive maintenance task and corrective work orders for sewer lift stations and WQTCs.
 - Completed a design template for replacing existing pump station electrical and control panels. MSD has several acquired pump stations that have electrical panels nearing their useful design lives. Many of these panels are out dated and do not comply with MSD's current specifications. A standard design and bid documents was developed to standardize the electrical panels.

FY16 Program

- Continue preventive maintenance inspections for flood pump stations based on the revise USACE Inspection Guide. Continue to annually train staff to use the Hansen asset management system to track flood pump station work orders as well as associated flood pump station assets such as station related floodgates.
- Continue sanitary pump station assessments based on the previous drawdown deficiency priorities. The data collected will be used to prioritize rehabilitation and replacement projects.
- Review and select the first round of pump stations for electrical panel replacement utilizing the completed design template for replacing existing pump station electrical and control panels. Sites will be selected based on age and existing panel deficiencies. Bidding of the first round of panels will be completed as budget allows during the next reporting period.
- Continue inspections on pump station sites that have deficiencies determined during the Drawdown and Greenline Programs. These two programs relate only to pump performance and level controls. Staff will proactively inspect critical equipment on site during the inspections. Corrective work orders will be issued as needed.

6.1.3.2 Force Main Preventive Maintenance

This section describes MSD’s Force Main Preventive Maintenance program. The goal of this section is to prevent unanticipated repairs and subsequent down-time by providing scheduling, staff, and records to perform routine, preventive force main maintenance. The maintenance programs include walking the force main alignment to find cave-ins and air relief valve inspections.

S-B-1 Air Release Valves

S-B-2 Valve Exercise Program

FY15 Program

Louisville MSD conducted the Annual Force Main Program evaluation. Additionally, Louisville MSD completed inspections on the following Force Mains:

FY15 INSPECTED FORCEMAINS			
WEST COUNTY SLUDGE MAIN	SUNLIGHT	RIVERS EDGE	BARBOUR LN
EDEN CARE	WOODLAND-BARBER	MUD LN	GLENVIEW HILLS
LAKE FOREST	NEW CUT RD	HILLVIEW	ORFM
BLUEGRASS STATION	ROSA TERRACE	LEVEN	TERRA CROSSING
GLENVIEW PLACE	MEADOWSTREAM	MCNEELY LAKE	BRITANNY WOODS CIRCLE
RIVER CREEK	DOVE LAKE	PROVIDENCE CT	WAL-MART
RUBBERTOWN	NAPA RIDGE	CARSLAW CT	REHL RD
SIGNATURE POINT	STONE LAKES	DEEP TRAIL	HARRODS GLEN
BECKLEY STATION	FANCY GAP	CITY HALL	MT WASHINGTON
GLEN OAKS	SARATOGA SPRINGS	HARRODS VIEW #1	KY22
HARRODS LANDING	CROSSTIMBERS	HARRODS VIEW #2	MIMICH
JACOB SCHOOL RD			

FY16 Program

- Schedule FY16 Force Mains for inspection.
- Complete the annual force main evaluation by December 31, 2015. Adjustments to the inspection schedule will be made based on conditions observed during the inspection cycle.
- Review 5-year trends in activities and performance metrics, comparing to targets established in 2006.

6.1.3.3 Gravity Line Preventive Maintenance Quarterly

This section describes MSD's Gravity Line Preventive Maintenance program. The goal of this section is to reduce infiltration and increase efficiency of the gravity line system through routine cleaning, root control, and manhole preventive maintenance.

S-C-1 Routine Hydraulic Cleaning

S-C-2 Routine Mechanical Cleaning

S-C-3 Root Control Program

S-C- 4 Manhole Preventive Maintenance

- Refer to Appendix I – FY14 CSSA Annual Report for more details on the Gravity Line Preventive Maintenance Program.

6.1.3.4 Equipment and Collection System Maintenance

This section describes MSD's Equipment and Collection System Maintenance program. The goal of this section is to maximize the efficiency of the collection system by maintaining the supporting equipment.

S-D-1 Equipment Maintenance

FY15 Program

- Coordinated technician training on new Vacuum Catch Basin / Sewer Cleaner Trucks for fleet technicians and operators.
- Completed Sewer Flusher operator training for fleet technicians to create an improved understanding of the operating environment and recognition of quality control issues related to outsourced vendor repairs.
- Began One Water Initiative with the Louisville Water Company to capitalize on fleet services opportunities to realize cost savings while better serving our customers and increasing levels of service to the community.
- Hired a One Water Fleet Services Manager. This position has responsibility of managing MSD fleet equipment and One Water initiatives.
- Implemented revised equipment PM schedules to be class specific and in-line with industry standards. Specifically addressed the operating environment of the Tele-Inspection Trucks increasing the frequency of preventive maintenance performed to improve availability to the operating division.
- Continued monitoring and reporting availability of Mission Critical Equipment (MCE) targeting an overall average availability of 95% or higher for all MCE.
- Received and placed in service five new Vacuum Catch Basin / Sewer Cleaner Trucks in service to replace aging units.

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- Analyzed FY16 capital purchasing needs, including the evaluation of sewer flusher equipment replacement.

FY16 Program

- Continue to explore One Water Initiatives with the Louisville Water Company to capitalize on fleet services opportunities to realize cost savings while better serving our customers and increasing levels of service to the community.
- Continue to revise equipment Preventative Maintenance (PM) schedules which are class specific to address specific needs of MSD based upon the operating environment of equipment to improve overall preventive maintenance program effectiveness.
- Continue monitoring and reporting availability of Mission Critical Equipment (MCE) targeting an overall average availability of 95% or higher for all MCE.
- Continue use of FASTER System reports to analyze and target areas where improvement is needed.
- Prepare specifications and bid for two new Tele-Inspection Trucks and four Sewer Flusher Trucks to replace aging trucks.
- Modify non-scheduled repair classification; update classifications on repair orders on a timely basis, eliminating time that is clocked as down time when unit is already back in service. Monitor supervisors to make sure equipment is in proper status.
- Receive and place in service two new Tele-Inspection trucks to replace two aging trucks.
- Hold operator and fleet technician training on new Tele-Inspection trucks and Sewer Flusher Trucks being purchased.
- Analyze FY17 capital purchasing needs, including the evaluation of remaining two aging Sewer Flusher Trucks for replacement.

6.2 Comprehensive Performance Evaluations and Composite Correction Plans (CPE/CCP)

Per requirements of MSD's 2009 Amended Consent Decree, MSD implemented a Comprehensive Performance Evaluation (CPE) and Composite Correction Plan (CCP) program for MSD's Water Quality Treatment Centers (WQTCs). This program defined specific WQTC improvements to be completed by December 31, 2011. These improvements under this program will be discussed under Section 6.2.1. Although the IOAP CPE/CCP improvements were completed by December 31, 2011, MSD will continue to implement CPE/CCP activities as part of the MSD's CMOM Program. Section 6.2.2 will list such activities per WQTC as they occur each reporting period and a comprehensive project schedule for CPE/CCP related capital projects is provided in Section 6.3 – CMOM Activity Schedule.

6.2.1 Amended Consent Decree CPE/CCP Program

All activities under this program were completed by December 31, 2011, as required per the IOAP.

6.2.2 CMOM CPE/CCP Program

This section describes CMOM CPE/CCP activities active during FY15 and being planned for FY16. Schedules for CPE/CCP related capital projects are provided in Section 6.3 – CMOM Activity Schedule.

6.2.2.1 Cedar Creek Water Quality Treatment Center

FY15 Program

In the 4th Quarter of 2014, MSD selected a consultant to complete an alternative solids and tertiary filter replacement study to review options to improve plant operations and efficiency. MSD staff and the consultant completed a feasibility study of automation alternatives and tertiary filter replacement study. The studies have resulted in recommendations for improvements in phases. The first phase includes improvements to the ultraviolet (UV) gate. Design for improvements to the UV gate began in December 2014; construction will be underway during FY16.

FY16 Program

Design and construction of improvements to expand HCWQTC average daily treatment capacity from 6.0 to 9.0 MGD. This Project is expected to go to the Board in January 2016.

MSD expects to execute a design contract for the final design of repairs to the Influent Pump Station Gate. MSD will also evaluate and prioritize recommended improvements to the automation system at Cedar Creek WQTC.

6.2.2.2 Hite Creek Water Quality Treatment Center

FY15 Program

During this reporting period, MSD completed a review the final draft version of the Facilities Plan Update and held a public hearing, MSD submitted the Facilities Plan Update to the Kentucky Division of Water (KDOW) for a review and an approval. By the end of the reporting period, MSD received KDOW final comments and an approval letter dated June 3, 2015 for the Hite Creek WQTC Facilities Plan Update.

In July 2014, MSD received the 60% design plans for the Hydraulic Improvements for the Hite Creek WQTC and met with KDOW staff to review the scope of work. In November 2014, MSD received the 100% design plans and advertised the project for construction. By January 2015, MSD Board awarded the construction project for the Hydraulic Improvements for the Hite Creek WQTC with the construction to begin by the end of the reporting period.

MSD selected a consultant to complete an alternative solids and tertiary filter replacement study. MSD staff will continue to work with the consultant to complete an alternative solids and tertiary filter replacement study.

FY16 Program

Construction will continue on the Hite Creek WQTC Hydraulic Improvements Project. It is anticipated that all work will be completed by late spring 2016.

MSD staff will continue to work with the consultant to complete an alternative solids and tertiary filter replacement study.

6.2.2.3 Floyds Fork Water Quality Treatment Center

FY15 Program

The Floyds Fork Water Quality Treatment Center (FFWQTC) expansion was in full operation and is able to accept the additional flow from upstream customers. MSD and the contractor were in negotiation for a final Completion Schedule and final Change Order. By January 2015, MSD accepted the final compensating Change Order and has officially closed the project. The expansion project provides an average daily design capacity of 6.5 MGD.

FY16 Program

There are no major projects planned for Floyds Fork Water Quality Treatment Center. FFWQTC will continue in full operation service as one of MSD's regional treatment centers

6.2.2.4 Derek R. Guthrie Water Quality Treatment Center

FY15 Program

During the beginning of this reporting period, MSD continued work on the Facilities Plan Update with the alternative analysis finalized and exhibits revised along with the preparation of an internal review of the document. There were substantial completion walkthroughs for the Influent Pump Station Building along the continuing repairs on the Wet Weather Pump Station. The

Facilities Plan document was reviewed by MSD staff prior to the end of the fiscal year.

By the end of 2014, MSD selected a consultant to complete a design for the Secondary Clarifiers 1, 2 and 3 Collection Mechanism replacements, the removal and upgrade of Return Activated Sludge (RAS) Pumps 1 and 4 and the replacement of Pumps 1, 2, 3 and 4 Variable Frequency Drives (VFDs). By the end of the reporting period design was completed and construction contracts bid for the Secondary Clarifiers 1, 2 and 3 Collection Mechanism Replacement was initiated. Meanwhile, design was also completed for the Removal and Upgrade of RAS Pumps 1 and 4, and the replacement of Pumps 1, 2, 3 and 4 VFD although this will be on hold in anticipation of the results of the Facilities Plan document.

FY16 Program

MSD plans to submit the draft Facilities Plan Update to KDOW. During the period of KDOW's review, MSD will schedule public outreach meetings for the proposed Facilities Plan Update. MSD will request to rerate the average design capacity from 30 MG to 45 MG in conjunction with the submittal. MSD also plans for the completion of the repairs to the power system of the Wet Weather Pump Station so that the Wet Weather Pumps can be tested for compliance with specifications. Construction is also expected to continue on the replacement of the Secondary Clarifiers 1, 2, and 3 Collection Mechanisms. Based on approval of the Facilities Plan Update, MSD will upgrade the RAS Pumps 1 and 4, and replace the VFDs for Pumps 1, 2, 3 and 4.

6.2.2.5 Prospect Area Water Quality Treatment Center Updates

MSD submitted the elimination plan for the five WQTCs serving Prospect (Timberlake, Hunting Creek North, Hunting Creek South, Ken Carla, and Shadow Wood) to EPA and KDEP on March 31, 2009. Received approval of this plan on September 24, 2009, and work is proceeding on the projects defined in the IOAP. See Section 4- Program Activities for Discharge Abatement Plans for an update on the design and construction projects that make up the elimination plan for the Prospect Area WQTCs.

6.2.2.5.1 Timberlake Water Quality Treatment Center

Schedules for CPE/CCP related capital projects are provided in Section 6.3 – CMOM Activity Schedule.

6.2.2.5.2 Hunting Creek North Water Quality Treatment Center

Schedules for CPE/CCP related capital projects are provided in Section 6.3 – CMOM Activity Schedule.

6.2.2.5.3 Hunting Creek South Water Quality Treatment Center

Schedules for CPE/CCP related capital projects are provided in Section 6.3 – CMOM Activity Schedule.

6.2.2.5.4 Ken Carla Water Quality Treatment Center

Schedules for CPE/CCP related capital projects are provided in Section 6.3 – CMOM Activity Schedule.

6.2.2.5.5 Shadow Wood Water Quality Treatment Center

Schedules for CPE/CCP related capital projects are provided in Section 6.3 – CMOM Activity Schedule.

6.2.2.6 Starview Water Quality Treatment Center

FY15 Program

Completed design plans for the Chenoweth Run Interceptor Section 2 Project (Budget ID E93353) for the elimination of the Starview WQTC. The plant flows will be diverted to the Floyds Fork WQTC. The gravity portion of this project is approximately 55% of the total length of gravity line required to eliminate the Starview WQTC. A private developer was responsible for the Chenoweth Run Interceptor Section 1. However, only a portion of the Chenoweth Run Interceptor Section 1 was completed due to the developer's bankruptcy. By the end of 2014, MSD completed design plans and easement acquisitions for the Middletown Sanitary Recapture Phase 2 - Section C and Chenoweth Run Interceptor Sections 1 and 2. By the end of the reporting period, the projects were advertised for construction and awarded by MSD's Board.

FY16 Program

During the next reporting period, construction of the Middletown Sanitary Recapture Phase II – Section C and Chenoweth Run Interceptor Sections 1 and 2 will be completed. The Starview WQTC is scheduled to be offline prior to March 31, 2016.

6.2.2.7 Berrytown Water Quality Treatment Center

FY15 Program

During this reporting period, MSD awarded the Middletown Sanitary Recapture Phase II - Section D Project (Budget ID E93353) for the elimination of the Berrytown WQTC. Construction has started and the project is currently 50% complete and scheduled for completion in November 2015. The plant flows will be diverted to the Floyds Fork WQTC.

FY 16 Program

With construction underway, the Berrytown WQTC is scheduled to be off-line prior to December 31, 2015.

6.2.2.8 McNeely Lake Water Quality Treatment Center

FY15 Program

The McNeely Lake Sanitary Sewer and Force Main project is currently in construction phase and is scheduled for completion in July 2015. This gravity portion is approximately 75% of the total length of gravity line required to eliminate the McNeely Lake WQTC. A private developer is responsible for extending the remaining gravity sewer through a future residential development to within 600 feet of the McNeely Lake WQTC. The design of the interceptor that will serve to eliminate the McNeely Lake WQTC and the Brookbend Way PS is complete. MSD advertised, bid and awarded a construction contract for the decommissioning of the McNeely Lake WQTC and Brookbend PS.

FY16 Program

Construction will continue for the decommissioning of the McNeely Lake WQTC and Brookbend PS. MSD anticipates completing the elimination of the McNeely Lake WQTC by December 31, 2015, however it is dependent on the private developer portion being completed.

6.2.2.9 Bancroft Water Quality Treatment Center

FY15 Program

The scope of this project has been modified from storage at Devondale PS to eliminating the Devondale PS as part of the IOAP and conveying flow to a 0.33 MGD Pump Station and a 0.25 MG Storage Basin at the Bancroft site. Design of this project is complete. The project was advertised for construction and awarded in November, 2014 with construction starting on January 5, 2015. Construction continued for the excavation for the basin and work began on the construction of the gravity sewer and force main required for the project.

FY16 Program

During the next reporting period MSD anticipates that the earthwork for the basin will be complete as well as the gravity sewer and force main required by the project. The Bancroft WQTC and Devondale Pump Station are scheduled to be off-line by spring 2016 well ahead of the Consent Decree December 2021 date.

6.2.2.10 Glenview Bluff Water Quality Treatment Center

Glenview Bluff WQTC was made off-line prior to December 2014.

6.2.2.11 Middletown Industrial Park Water Quality Treatment Center

FY15 Program

MSD's Board approved the acquisition of the Middletown Industrial Park WQTC system on January 26, 2015. The City of Middletown will continue to operate and maintain the sewer system until December 31, 2015. It is anticipated that flow will be diverted and the WQTC will be offline by that date. At that time, MSD will take over full operations and maintenance of the system. MSD completed the design, advertised and accepted bids to construct an approximately 800 linear foot collector line for the elimination.

A private developer was responsible for the Middletown Sanitary Recapture Phase I Project which constructed a portion of the Chenoweth Run Interceptor to eliminate the Starview and Berrytown WQTCs. This interceptor will also provide a gravity outlet for the Middletown Industrial Park WQTC.

FY16 Program

MSD will award a construction contract and construction will begin to divert flow and eliminate Middletown Industrial Park WQTC. The Middletown Industrial Park WQTC is scheduled to be off-line by December 31, 2015.

6.3 CMOM Activity Schedule

CMOM capital project milestones for the period of July 1, 2014, through June 30, 2015, as well as a look-ahead for the period of July 1, 2015, through December 31, 2015, are provided in the schedule below.

MSD CMOM Annual Commitments Schedule (FY2015-FY2016)				Date: 02-Dec-15																		
Activity ID	Activity Name	Physical % Complete	Start	Finish	2015																	
					Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CMOM FY ANNUAL REPORT COMMITMENTS FINAL																						
M-E-9 Infrastructure Rehabilitation																						
Annual I/I FY13 Project (H09206)																						
A5090	Contract Administration	100%	19-Nov-12 A	30-Jul-14 A																		
A5100	Warranty	100%	30-Mar-14 A	30-Mar-15 A																		
Lea Ann Way East - Stonybrook Rehabilitation Project (C08433)																						
A4020	Warranty	100%	01-Nov-13 A	01-Nov-14 A																		
Lake Forest Sanitary Sewer Rehabilitation Project (H11303)																						
A3370	Warranty	100%	31-Aug-13 A	31-Aug-14 A																		
Prospect Phase I Sanitary Sewer Rehabilitation Project (H11311)																						
A6470	Warranty	75%	23-Jan-13 A	23-Jan-16																		
A3240	Construction	100%	20-Sep-13 A	23-Jan-15 A																		
Meadow Stream Sanitary Sewer Rehabilitation Project (H11305)																						
A4910	Construction	100%	21-Oct-13 A	21-Oct-14 A																		
Lea Ann Way East - Fegenbush Rehabilitation Project (C08433)																						
A4010	Warranty	100%	28-Feb-14 A	28-Feb-15 A																		
Lea Ann Way East - Fern Creek Rehabilitation Project (C08433)																						
A5690	Warranty	100%	01-Oct-13 A	01-Oct-14 A																		
Caven Avenue Rehab Project (H11304)																						
A5290	Construction	100%	03-Sep-13 A	15-Sep-14 A																		
Middle Fork Beargrass Creek SSR Phase 1 (H11306)																						
A5370	Design	100%	01-Aug-15 A																			
Berrytown Rehab Project (H11299)																						
A5500	Construction	100%	15-Mar-14 A	30-Aug-14 A																		
Starview Rehab Project (H11312)																						
A5550	Construction	100%	15-Mar-14 A	30-Aug-14 A																		
Camp Taylor Area 3 Rehab Project (H09218)																						
A5450	Construction	100%	01-Dec-13 A	31-Dec-14 A																		
Annual I/I FY14 Project (H14184)																						
A5730	Construction	100%	28-Jan-14 A	28-Feb-15 A																		
A5740	Berrytown	100%	28-Jan-14 A	30-Aug-14 A																		
A6140	Camp Taylor Tophats 4&5	100%	28-Jan-14 A	01-Sep-14 A																		
A6150	Hillridge	100%	28-Jan-14 A	30-Dec-14 A																		
A6160	Rosa Terrace	100%	28-Jan-14 A	30-Oct-14 A																		
A6170	Starview	100%	28-Jan-14 A	30-Oct-14 A																		
A6180	Goose Creek	100%	28-Jan-14 A	30-Dec-14 A																		
A6190	LAW Quad3 Whispering Hills Phase I	100%	28-Jan-14 A	28-Feb-15 A																		
Goose Creek PS SSES (H11407)																						
A4950	Planning	100%	01-Apr-13 A	31-Jan-15 A																		
Nightingale PS SSES (H11313)																						
A5110	Planning	100%	15-Jul-13 A	31-May-15 A																		
FY15 Annual Sewer Rehabilitation (H09208)																						
A5470	Design	100%	01-Aug-14 A	01-Sep-14 A																		
A5480	Ad	100%	15-Sep-14 A																			
A5490	Bid Open	100%	15-Oct-14 A																			
A5520	Award	100%	24-Nov-14 A																			
A5530	Construction	74%	01-Feb-15 A	01-Feb-16																		
A5540	LAW Quad 3 - Whispering Hills Phase3 2	80%	15-Feb-15 A	31-Dec-15																		

Actual Work Milestone
Remaining Work

MSD CMOM Annual Commitments Schedule (FY2015-FY2016)					2015												2016			Date: 02-Dec-15				
Activity ID	Activity Name	Physical % Complete	Start	Finish	14	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
A5650	LAW Quad 4	80%	15-Feb-15 A	31-Dec-15																				
Melco Basin Tree Removal (F14171)																								
A6250	Design	100%	01-Nov-14 A	01-Feb-16																				
A6260	Ad	100%	01-Nov-14 A	09-Apr-15 A																				
A6270	Bid Open	100%	19-May-15 A																					
A6280	Award	100%	09-Jun-15 A																					
A6290	Construction	90%	11-Jul-15 A																					
A6290	Construction	90%	04-Aug-15 A	01-Feb-16																				
Pump Station Operations Programs																								
Lea Ann Way West Quads 1 & 2 (H15125)																								
A6480	Ad	100%	09-Apr-15 A																					
A6490	Bid	100%	04-May-15 A																					
A6500	Award	100%	26-May-15 A																					
A6510	Construction	75%	22-Jun-15 A	31-Dec-15																				
34th Street Flood Pump Station Gate 71 Replacement (F15008)																								
A6520	Ad	100%	17-Jun-15 A																					
A6530	Bid	100%	08-Jul-15 A																					
A6540	Award	100%	14-Jul-15 A																					
A6550	Construction	95%	06-Aug-15 A	06-Nov-15																				
O-A-2 Emergency Operation Programs																								
Trinity Homes Pump Station Roof Hatch (H13154)																								
A5560	Warranty	100%	28-Aug-13 A	28-Aug-14 A																				
Royster Basin Generator Project (H12163)																								
A4840	Construction	100%	28-Aug-14 A	18-Jan-15 A																				
St. Matthews #4 Pump Station Modification Project (H14211)																								
A5820	Construction	100%	29-May-14 A	29-Aug-14 A																				
A5840	Warranty	100%	29-Aug-14 A	29-Aug-15 A																				
4th Street FPS Gate and Switch Gear Replacement Project (F12095)																								
A5150	Design	95%	04-Jan-13 A	31-Oct-15																				
A5160	Ad	0%	20-Nov-15*																					
A5170	Bid Open	0%	18-Dec-15*																					
Melco Basin Crane (F14170)																								
A6200	Design	100%	01-Dec-14 A	10-Apr-15 A																				
A6210	Ad	100%	24-Apr-15 A																					
A6220	Bid Open	100%	19-May-15 A																					
A6230	Award	100%	27-Jul-15 A																					
A6240	Construction	5%	17-Aug-15 A	17-Aug-16																				
Starkey Flood Pump Station Rooftop A/C (F15006)																								
A5660	Construction	100%	15-Dec-14 A	17-Mar-15 A																				
A6560	Warranty	55%	18-Mar-15 A	17-Mar-16																				
Bridgepointe Pump Station Access Road																								
A6310	Ad	100%	24-Mar-15 A																					
A6330	Award	100%	17-Apr-15 A																					
A6320	Bid Open	100%	17-Apr-15 A																					
A6300	Construction	100%	20-Apr-15 A	01-Jun-15 A																				
A6570	Warranty	25%	02-Jun-15 A	01-Jun-16																				
Fairway View Pump Station Upgrade (H09177)																								
A6340	Construction	100%	22-Aug-14 A	30-Dec-14 A																				
A6350	Warranty	50%	31-Dec-14 A	06-May-16																				

Actual Work Milestone
Remaining Work



MSD CMOM Annual Commitments Schedule (FY2015-FY2016)					Date: 02-Dec-15																		
Activity ID	Activity Name	Physical % Complete	Start	Finish	2015																		
					Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Riding Ridge Pump Station Improvements (H09175)																							
A6360	Construction	100%	23-Sep-14 A	15-Nov-15																			
A6370	Warranty	95%	15-Nov-14 A	15-Nov-15																			
Rosa Terrace Pump Station Improvement																							
A6440	Award	100%	01-Oct-14 A	10-Jul-16																			
A6450	Construction	100%	03-Nov-14 A	10-Jul-15 A																			
A6400	Design	100%	13-Nov-14 A	10-Jul-15 A																			
A6460	Warranty	10%	10-Jul-15 A	10-Jul-16																			
CPE/CPE Treatment Plant Activities																							
West County Force Main Assessment (H09519)																							
A5340	Planning	100%	20-Jun-14 A	28-Feb-15 A																			
West County Water Quality Treatment Center Gate 145 Electrical Service & Actuator (F14164)																							
A6380	Design	95%	15-Jan-15 A	13-Nov-15																			
A6580	Ad	0%	04-Dec-15*																				
SWOR 2 Improvements																							
A6620	Construction	95%	15-Sep-14 A	01-Oct-15																			
MFWQTC Rubbertown FM Manhole Sampling (H14108)																							
A6630	AD	0%	19-Nov-15*																				
A6640	Bid Open	0%	10-Dec-15*																				
A6650	Award	0%	22-Dec-15*																				
Bogess Property Rehab (H12159)																							
A6670	Ad	100%	03-Jun-15 A																				
A6680	Bid Open	100%	24-Jun-15 A																				
A6690	Award	100%	30-Jun-15 A																				
A6700	Construction	99%	13-Aug-15 A	07-Oct-15																			
A6710	Warranty	0%	07-Oct-15*	07-Oct-16																			
17th Street FPS DWO Elimination (H09138)																							
A6720	Construction	100%	25-Nov-13 A	18-Dec-14 A																			
A6730	Warranty	80%	18-Dec-14 A	18-Dec-15																			
South Pope Lick PS																							
A6740	Design	30%	01-Aug-15 A	30-Nov-15																			
A6750	Ad	0%	17-Dec-15*																				

Actual Work Milestone
Remaining Work

APPENDIX A – CSO108 FY15 EFFICACY REPORTS



Louisville and Jefferson County Metropolitan Sewer District
700 West Liberty Street
Louisville Kentucky 40203-1911
502-540-6000
www.msdlouky.org

December 30, 2014

Joyce Bender
Nature Preserves and Natural Areas Branch Manager
Kentucky State Nature Preserve Commission
801 Schenkel Lane
Frankfort, KY 40601

Subject: CSO 108 Semi-Annual Report #13

Dear Ms. Bender:

As required in Paragraph #10 of the document titled "Memorandum of Understanding by and between the Kentucky State Nature Preserve Commission and the Louisville and Jefferson County Metropolitan Sewer District", MSD submits to you the MOU Semi-Annual Report #13. This report summarizes activities at the CSO 108 CDS Site during the reporting period of July 1, 2014 to December 31, 2014.

Should you have any questions or comments, please feel free to contact me via email at julie.potempa@louisvillemsd.org or phone at (502) 540-6112.

Sincerely,

Julie L. Potempa
Project Administrator

JLP:jlp

cc: J. Loechle A. Akridge D. Thompson File



Beneficial Use of Louisville's Biosolids
www.louisvillegreen.com



INTRODUCTION

The Louisville and Jefferson County Metropolitan Sewer District (MSD) has entered into a Memorandum of Understanding (MOU) with the Kentucky State Nature Preserve Commission (Commission). The MOU was signed by MSD on July 30, 2008, and by the Commission on September 17, 2008. This MOU is effective for the period starting September 1, 2008, and ending on September 1, 2018.

This is the thirteenth Semi-Annual Report submitted in accordance with Paragraph 10 of the MOU. This report covers the time period of July 1, 2014 to December 31, 2014.

This Semi-Annual Report will address only those requirements considered ongoing. The initial Semi-Annual Report, MOU Semi-Annual Report #1, was comprehensive and included a response to each requirement addressed within the MOU. Please refer to the initial Semi-Annual Report should you need additional information not found within this document.

Work and activities undertaken by MSD and relating to the MOU are outlined in the paragraphs below:

Paragraph #10 of the MOU:

MSD shall be diligent of this ten year period in more timely supplying the Commission with semi-annual reports on the efficacy of the CDS unit, water quality monitoring data, and any other such pertinent information. Said reports shall be provided to the Commission by June 30 and December 31 of each year.

- MSD Response: This document is the eleventh semi-annual report to the Commission since the completion of the Project.
- Cleaning and Inspection Activities:

The CSO 108 CDS Unit is inspected weekly and cleaned on an as-needed basis. Between the dates of July 1, 2014, and December 31, 2014, MSD cleaned the CDS Unit bar racks twice. The information, shown in Table 1, is generated from work orders initiated whenever the CDS Unit is inspected and needs to be cleaned. Cleaning consists of either washing debris off of the bar racks or hauling the solids and floatables from the site. Both operations result in removing debris that would otherwise overflow into Beargrass Creek. When cleaning the bar racks, the debris is

reintroduced into the sewer system, and as a result, is difficult to accurately estimate the amount removed during the maintenance process. The Crystal Report often indicates the quantity removed as “unknown”.

TABLE 1: CSO 108 CDS Unit Debris Removal

<u>ACTCO</u>	<u>UNITID</u>	<u>FAILCODE</u>	<u>QTY</u>	<u>COMMENTS</u>	<u>COMPDTM</u>
Debris	CSO 108	Rack and Dam	Unknown	Cleaned heavy debris from dam and rack bar	07/08/2014
Debris	CSO 108	Rack Bar	Unknown	Cleaned medium debris from Rack Bar	12/02/2014

- Maintenance Activities:

In addition to the weekly inspections, MSD has initiated a preventative maintenance program to insure that the CDS Unit and respective pumps are performing optimally. During these quarterly preventative maintenance activities MSD staff also cleans the CDS Unit and rack bars, washing the debris into the interceptor. The CDS Unit’s pumps are removed from the facility twice yearly to more closely inspect and to perform any needed maintenance. The work orders associated with the preventative maintenance activities are shown in Attachment “B”.

- Captured Flow

The CDS system was placed along the Trevillian Way Twin Trunk Sewer to capture solids and floatables from a 485 acre drainage area. The unit uses a vortex action created by the hydraulic energy of incoming flow to separate solids and floatable from the flow. The treated flow is then discharged through the outlet pipe to Beargrass Creek and the debris that is captured is pumped to the Morris Forman Water Quality Treatment Center (MFWQTC).

In an effort to estimate the volume of debris captured by the CDS Unit and kept within the sewer system, a study of the efficiency of the unit was performed in the early 2002. The results of the study indicated that the concentration of solids kept



**MOU Semi-Annual Report #13
July 1, 2014 – December 31, 2014**

within the sewer system was approximately 1ml/l. Using pump run times and knowing the efficiency of the pumps, MSD was able to determine a volume of solids captured by the CDS technology. MSD estimates that the CDS Unit captured 48.11 tons of solids during the reporting period. Attachment "C" lists the pump run times and calculations MSD used to determine the amount of debris captured by the CDS Unit and sent to the MFWQTC for treatment.



**MOU Semi-Annual Report #13
July 1, 2014 – December 31, 2014**

ATTACHMENT “A”

PHOTOS OF AREA ADJACENT TO CSO 108 AND THE CDS UNIT (dated December 19, 2014)



Figure 1 – Entrance to CDS Unit



Figures 2 and 3 – Area Adjacent to CDS Unit



Figure 4 – Area Adjacent to Entrance



Figure 5 – Area Adjacent to Creek



MOU Semi-Annual Report #13
July 1, 2014 – December 31, 2014

ATTACHMENT "B"

PREVENTATIVE MAINTENANCE WORK ORDERS

December 31, 2014



12/31/2014 09:33

Work Order # 2221967
 Sewer Lift Station
 MSD1204-PS
 TELEMETRY CONTROLS 6 MO PM
 CDS UNIT
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activly Code TELEM6
 Asset

Summary
 Closed on 9/2/2014 by STEVEN ROBBINS.
 Authorized by KSLAUG.
 Maintenance Type Is PM.
 Part of Group Project 24079
 Budget Is 7457212.

Information

Work Order Information
 Initiated 8/28/2014 00:00
 Source
 Authorizallon KSLAUG
 Schedule Start 9/1/2014 00:00
 Maint Type PM
 Assigned To CONTROLS-SUP
 Schedule Finish
 Problem
 Responsibility CTRL
 Due 11/24/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 24079
 7457212
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service
 Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00059
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantlly 0.000
 Distance 0.00
 Valuation Type
 Started 9/2/2014 07:47
 Linked Case
 QC Performed no
 Closed 9/2/2014 07:47
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
TELE16	Labor	00059 REGULAR SALARY	1	Hours 68.4200	\$68.42	9/12/2014	00.00	

Planned Tasks

Complete All
 Complete Selected
 1

Task	Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FMTR7	NOTIFY COMPUTER ROOM PRE-TASK	0		0	0			
LOTO	LOCK OUT/TAG OUT	0		0	0			
TELM14	CONFIRM UPS WORKING	0		0	0			
TELM16	CALIBRATE 4-20 MA SIGNAL	0		0	0			
TELM16	VERIFY OVER ENTIRE SPAN	0		0	0			
TELM13	LOOK FOR CORRUPT DATA	0		0	0			
TELM12	CHECK/REPLACE BATTERY	0		0	0			
CKS	CHECK SETTINGS	0		0	0			
REPORT	REPORT ANY PROBLEMS	0		0	0			
FMTR8	NOTIFY COMPUTER ROOM POST-TASK	0		0	0			
WO	NOTE CORRECTIVE WO REQUIRED	0		0	0			
PMPLNR	RETURN COMPLETED PM TO PLANNER	0		0	0			

Cost Summary

Estimated Costs	
Actual Costs	
Difference	
Actual Group Costs	
Contractor	0.00
	0.00
	0.00
	0.00
	0.00
Fleet Equipment	0.00
	0.00
	0.00
	0.00
	0.00

Plant Equipment
0.00
0.00
0.00
0.00
0.00
Extra Item
0.00
0.00
0.00
0.00
Labor
0.00
68.42
-68.42
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
68.42
-68.42
0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:35

Work Order # 2243066

Plant Equipment
 CDS-BGR-00
 Miscellaneous MSD IFP
 CDS GROUNDS

Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
Activity Code MISC
 Assel

Summary

Closed on 10/3/2014 by DAREN THOMPSON.
 Maintenance Type Is UM.
 Budget Is 7478123.

Information

Work Order Information

Initiated 10/3/2014 09:34
Source
Authorization
Schedule Start
Maint Type UM
Assigned To FLOODPS-SUP
Schedule Finish
Problem
Responsibility CONTR
Due
Priority
Reference #
Initiated By 00298
Service Request 0
Project
Estimated Cost 0.00
Group Project 0
Inspection# 0
 Budget Number
Out of Service no
Potential Service Request no
Incident 0

Create eB Container no
Stoppage no
Crew Days 0.00
Flow Depth 0.00
Measured Flow 0.00
Closed By 00298
Hours 0.00
Down Time 0.00
Result WOCOM
Condition
Actual Quantity 0.000
Usage 0.000
Distance 0.00
Valuation Type
Started 8/1/2014 09:37
Linked Case
QC Performed no
Closed 10/3/2014 09:36
QC By
Major Failure no
Cancel Work Order no

Location

Address Information	
Street #	2324
Pre Dir	
Street Name	NEWBURG
Suffix	RD
Post Dir	
Subdesignation	
Cross Street	Address
Cross Street	
City, State, ZIP	LOUISVILLE KY 40205-0000
Location Information	
Location	

Resource Usage								
1								
Resource Usage								
Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
MISC	Extra Item	X\MISC MISCELLANEOUS COSTS	1	578.0000	\$578.00	10/3/2014 00.00		Invoice 12203 08/28/14 wo 2243068 Chero
MISC	Extra Item	X\MISC MISCELLANEOUS COSTS	1	578.0000	\$578.00	12/9/2014 00.00		Inv 12283 WO 2243068 8/28/14 cherokee

Comments	
<p>Cherokee Construction to make repairs to the bollard to make it secure and well as reset pavers in the driveway that as settled.</p> <p>Cherokee compelled these items. nfan</p>	

Cost Summary	
Cost Summary	
Estimated Costs	
Actual Costs	
Difference	
Actual Group Costs	
Contractor	0.00
	0.00
	0.00
	0.00
Fleet Equipment	0.00
	0.00
	0.00
	0.00
Plant Equipment	0.00
	0.00
	0.00
	0.00
Extra Item	0.00
	1158.00
	-1156.00
	0.00
Labor	

0.00
0.00
0.00
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
1156.00
-1156.00
0.00

BUD Data

BUD Data <i>BUD Confirmation #</i>
--

Other Observation

Other Observation 1
(No Data)



12/31/2014 09:35

Work Order # 2186484

Plant Equipment
 CDS-BGR-00
 BUILDING SEMI-ANN (4&34)
 CDS GROUNDS

Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA29
 Asset

Summary

Initiated 6/28/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-assign
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22777
 Budget Is 7478123.

Information

Work Order Information

Initiated 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 9/23/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22777
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service no
 Request
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By
 Hours 0.00
 Down Time 0.00
 Result
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started
 Linked Case
 QC Performed no
 Closed
 QC By
 Major Failure no
 Cancel Work Order no

Location	
Address Information	
Street #	2324
Pre Dir	
Street Name	NEWBURG
Suffix	RD
Post Dir	
Subdesignation	
Address	
Cross Street	
Cross Street	
City, State, ZIP	LOUISVILLE KY 40205-0000

Location Information
Location

Planned Tasks
Complete All
Complete Selected
1

Tasks							
Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS004 VACTOR WETWELLS 0		0	0				

Other Observation
Other Observation
1
(No Data)



12/31/2014 09:36

Work Order # 2241827

Plant Equipment
 CDS-LVL-01
 LEVEL SENSORS MONTHLY (SNTY)
 CDS PUMP LEVEL SENSOR #1 SIGMA 950 FLOW METER
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA04
 Asset

Summary

Closed on 11/3/2014 by DANNY JANSSEN.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 24586
 Budget is 7478123.

Information

Work Order Information

Initiated 9/30/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 10/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 11/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 24586
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00333
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 11/3/2014 08:00
 Linked Case
 QC Performed no
 Closed 11/3/2014 14:00
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA04	Labor	15393 REGULAR SALARY	1	Hours 68.4200	\$68.42	11/14/2014 00.00		
FPSA04	Labor	00333 REGULAR SALARY	1	Hours 68.4200	\$68.42	11/14/2014 00.00		

Planned Tasks

Complete All
 Complete Selected
 1

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS095 CK FOR PROPER OPERATION 0		0	0		11/3/2014		OK

Cost Summary

Estimated Costs	
Actual Costs	
Difference	
Actual Group Costs	
Contractor	0.00
	0.00
	0.00
	0.00
Fleet Equipment	0.00
	0.00
	0.00
	0.00
Plant Equipment	0.00
	0.00
	0.00
	0.00
Extra Item	0.00
	0.00
	0.00
	0.00
Labor	

0.00
136.84
-136.84
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
136.84
-136.84
0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:36

Work Order # 2186702

Plant Equipment
 CDS-LVL-01
 LEVEL SENSORS MONTHLY (SNTRY)
 CDS PUMP LEVEL SENSOR #1 SIGMA 950 FLOW METER
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA04
 Asset

Summary

Closed on 7/24/2014 by JESSE SCHULZ.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22798
 Budget is 7478123.

Information

Work Order Information

Iniitiated 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 8/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22798
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00543
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 7/24/2014 08:00
 Linked Case
 QC Performed no
 Closed 7/24/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Location								
Address Information								
Street #	2324							
Pre Dir								
Street Name	NEWBURG							
Suffix	RD							
Post Dir								
Subdesignation	Address							
Cross Street								
Cross Street								
City, State, ZIP	LOUISVILLE KY 40205-0000							
Location Information								
Location								
Resource Usage								
1								
Resource Usage								
Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
FPS04	Labor	00543 REGULAR SALARY	0.5	Hours 60.4200	\$34.21	8/8/2014	00.00	
Planned Tasks								
Complete All Complete Selected 1								
Tasks								
Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments	
FPS095 CK FOR PROPER OPERATION 0	0	0			7/24/2014		OK	
Cost Summary								
Cost Summary								
Estimated Costs								
Actual Costs								
Difference								
Actual Group Costs								
Contractor	0.00							
	0.00							
	0.00							
	0.00							
Fleet Equipment	0.00							
	0.00							
	0.00							
	0.00							
Plant Equipment	0.00							
	0.00							
	0.00							
	0.00							
Extra Item	0.00							
	0.00							
	0.00							
	0.00							
Labor	0.00							
	0.00							

Work Order Information

34.21
-34.21
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
34.21
-34.21
0.00

Other Observation

Other Observation

1

(No Data)

Work Order Information



12/31/2014 09:39

Work Order # 2241834

Plant Equipment
 CDS-01
 CDS UNIT QUARTERLY
 CDS UNIT - CREEK
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA19
 Asset

Summary

Closed on 11/3/2014 by DANNY JANSSEN.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 24587
 Budget is 7478123.

Information

Work Order Information

Initiated 8/30/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 10/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 11/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 24587
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00333
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 11/3/2014 08:00
 Linked Case
 QC Performed no
 Closed 11/3/2014 14:00
 QC By
 Major Failure no
 Cancel Work Order no

Work Order Information

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignatlon
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Resource Usage

Activity Task	Usage Type	Item Description	Usage	Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA19	Labor	16393 REGULAR SALARY	1	Hours	60.4200	\$60.42	11/14/2014 00:00		
FPSA19	Labor	00333 REGULAR SALARY	1	Hours	68.4200	\$68.42	11/14/2014 00:00		
FPSA19	Labor	00049 REGULAR SALARY	1.6	Hours	68.4200	\$102.63	11/14/2014 00:00		

Planned Tasks

Complete All
 Complete Selected
 1

Tasks

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS160 PUMP DOWN CDS UNIT	0		0	0		11/3/2014	
FPS101 INSPECT FOR SCREEN DAMAGE	0		0	0		11/3/2014	
FPS102 SPRAY OFF SCREENS	0		0	0		11/3/2014	
FPS163 CHECK SPRAY DOWN PIPING	0		0	0		11/3/2014	
FPS164 CK SPRAY NOZZLE FOR CLOG/DURCTN	0		0	0		11/3/2014	
FPS165 CK CDS SUMP FOR DEBRIS	0		0	0		11/3/2014	

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Difference
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00

0.00
0.00
Extra Item
0.00
0.00
0.00
0.00
Labor
0.00
239.47
-239.47
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
239.47
-239.47
0.00

Other Observation

Other Observation

1

(No Data)

Work Order Information



12/31/2014 09:40

Work Order # 2186714

Plant Equipment
 CDS-01
 CDS UNIT QUARTERLY
 CDS UNIT - CREEK
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA19
 Asset

Summary

Closed on 8/29/2014 by STEVEN WILLIAMS.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22801
 Budget is 7478123.

Information

Work Order Information

Initiated 8/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 8/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22801
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service no
 Request
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 15575
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 8/29/2014 08:00
 Linked Case
 QC Performed no
 Closed 8/29/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pro Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignallon Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Activity Task	Usage Type	Item Description	Usage	Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA19	Lebor	00333 REGULAR SALARY	1	Hours	68.4200	\$68.42	8/5/2014 00.00		
FPSA19	Lebor	16575 REGULAR SALARY	1	Hours	68.4200	\$68.42	8/5/2014 00.00		
FP8A19	Lebor	00049 REGULAR SALARY	1	Hours	68.4200	\$68.42	8/5/2014 00.00		

Planned Tasks

Complete All
 Complete Selected
 1

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS160 PUMP DOWN CDS UNIT	0	0	0	0	8/29/2014	YES	
FPS161 INSPECT FOR SCREEN DAMAGE	0	0	0	0	8/29/2014	OK	
FPS162 SPRAY OFF SCREENS	0	0	0	0	8/29/2014	YES	
FPS163 CHECK SPRAY DOWN PIPING	0	0	0	0	8/29/2014	YES	
FPS164 CK SPRAY NOZZLE FOR CLOG/DRC TN	0	0	0	0	8/29/2014	OK	
FPS165 CK CDS SUMP FOR DEBRIS	0	0	0	0	8/29/2014	OK	

Cost Summary

Estimated Costs	
Actual Costs	
Difference	
Actual Group Costs	
Contractor	0.00
	0.00
	0.00
	0.00
Fleet Equipment	0.00
	0.00
	0.00
	0.00
Plant Equipment	0.00
	0.00

Work Order Information

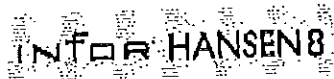
0.00
0.00
Extra Item
0.00
0.00
0.00
0.00
0.00
Labor
0.00
205.26
-205.26
0.00
Material
0.00
0.00
0.00
0.00
Tools
-0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
205.26
-205.26
0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:40

Work Order # 2241835

Plant Equipment
 CDS-02
 CDS UNIT QUARTERLY
 CDS UNIT - STREET
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA19
 Asset

Summary

Closed on 11/3/2014 by DANNY JANSSEN.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 24587
 Budget is 7478123.

Information

Work Order Information

Initiated 9/30/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 10/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 11/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 24587
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service no
 Request
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00333
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 11/3/2014 08:00
 Linked Case
 QC Performed no
 Closed 11/3/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Work Order Information

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

Activity Task	Usage Type	Item Description	Usage	Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA19	Lebor	15393 REGULAR SALARY	1	Hours	68.4200	\$68.42	11/14/2014	00.00	
FPSA19	Lebor	00333 REGULAR SALARY	1	Hours	68.4200	\$68.42	11/14/2014	00.00	
FPSA19	Lebor	00049 REGULAR SALARY	1.5	Hours	68.4200	\$102.63	11/14/2014	00.00	

Planned Tasks

Complete All
 Complete Selected
 1

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS160 PUMP DOWN CDS UNIT	0		0	0		11/3/2014	
FPS161 INSPECT FOR SCREEN DAMAGE	0		0	0		11/3/2014	
FPS162 SPRAY OFF SCREENS	0		0	0		11/3/2014	
FPS163 CHECK SPRAY DOWN PIPING	0		0	0		11/3/2014	
FPS164 CK SPRAY NOZZLE FOR CLOG/DICTN	0		0	0		11/3/2014	
FPS165 CK CDS SUMP FOR DEBRIS	0		0	0		11/3/2014	

Cost Summary

Estimated Costs	
Actual Costs	
Difference	
Actual Group Costs	
Contractor	0.00
	0.00
	0.00
	0.00
Fleet Equipment	0.00
	0.00
	0.00
	0.00
Plant Equipment	0.00
	0.00
	0.00

Work Order Information

0.00
0.00
Extra Item
0.00
0.00
0.00
0.00
Labor
0.00
239.47
-239.47
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
239.47
-239.47
0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:41

Work Order # 2186715

Plant Equipment
 CDS-02
 CDS UNIT QUARTERLY
 CDS UNIT - STREET
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA19
 Asset

Summary

Closed on 8/29/2014 by STEVEN WILLIAMS.
 Authorized by RFLYNN.
 Maintenance Type Is PM.
 Part of Group Project 22801
 Budget Is 7478123.

Information

Work Order Information

Inflated 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 8/12/2014 00:00
 Priority
 Reference #
 Inflated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22801
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service no
 Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 15575
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 8/29/2014 08:00
 Linked Case
 QC Performed no
 Closed 8/29/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Resource Usage

Activity Task	Usage Type	Item Description	Usage	Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA19	Lebor	15576 REGULAR SALARY	1	Hours	68,4200	\$68.42	9/5/2014	00.00	
FPSA19	Lebor	00049 REGULAR SALARY	1	Hours	68,4200	\$68.42	9/5/2014	00.00	
FPSA19	Lebor	00333 REGULAR SALARY	1.5	Hours	68,4200	\$102.63	9/5/2014	00.00	

Planned Tasks

Complete All
 Complete Selected
 1

Tasks

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS160 PUMP DOWN CDS UNIT	0		0	0		8/29/2014	YES
FPS161 INSPECT FOR SCREEN DAMAGE	0		0	0		8/29/2014	OK
FPS162 SPRAY OFF SCREENS	0		0	0		8/29/2014	YES
FPS163 CHECK SPRAY DOWN PIPING	0		0	0		8/29/2014	OK
FPS164 CK SPRAY NOZZLE FOR CLOG/DRGTH	0		0	0		8/29/2014	OK
FPS165 CK CDS SUMP FOR DEBRIS	0		0	0		8/29/2014	OK

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Differance
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00

0.00
0.00
Extra Item
0.00
0.00
0.00
0.00
0.00
Labor
0.00
239.47
-239.47
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
239.47
-239.47
0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:41

Work Order # 2241836

Plant Equipment
 CDS-REG-00
 CDS FLOW REGULATOR BOX QUARTER
 CDS FLOW REGULATOR BOX
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA37
 Asset

Summary

Closed on 11/3/2014 by DANNY JANSSEN.
 Authorized by RFLYNN.
 Maintenance Type Is PM.
 Part of Group Project 24588
 Budget Is 7478123.

Information

Work Order Information

Inltated 9/30/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 10/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 11/12/2014 00:00
 Priority
 Reference #
 Inltated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 24588
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service
 Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00333
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 11/3/2014 08:00
 Linked Case
 QC Performed no
 Closed 11/3/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Work Order Information

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Resource Usage

Activity Task	Usage Type	Item Description	Usage	Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA37	Labor	16393 REGULAR SALARY	1	Hours	68,4200	\$68.42	11/14/2014	00.00	
FPSA37	Labor	00049 REGULAR SALARY	1	Hours	68,4200	\$68.42	11/14/2014	00.00	
FPSA37	Labor	00333 REGULAR SALARY	2	Hours	68,4200	\$136.84	11/14/2014	00.00	

Planned Tasks

Complete All
 Complete Selected
 1

Tasks

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS169 CK FOR DEBRIS	0		0	0		11/3/2014	
FPS167 CK FLOAT OPERATION	0		0	0		11/3/2014	
FPS168 CK GATE OPERATION	0		0	0		11/3/2014	

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Difference
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00
 0.00
 0.00
 Extra Item
 0.00

0.00
0.00
0.00
Labor
0.00
273.68
-273.68
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
273.88
-273.68
0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 08:42

Work Order # 2186717

Plant Equipment
 CDS-REG-00
 CDS FLOW REGULATOR BOX QUARTER
 CDS FLOW REGULATOR BOX
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA37
 Asset

Summary

Closed on 8/29/2014 by STEVEN WILLIAMS.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22802
 Budget is 7478123.

Information

Work Order Information

Initiated 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 8/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22802
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service no
 Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 15575
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 8/29/2014 08:00
 Linked Case
 QC Performed no
 Closed 8/29/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Work Order Information

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

Resource Usage

Activity Task	Usage Type	Item Description	Usage	Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA37	Labor	00049 REGULAR SALARY	0.5	Hours	68.4200	\$34.21	9/5/2014	00.00	
FPSA37	Labor	15575 REGULAR SALARY	1	Hours	68.4200	\$68.42	9/5/2014	00.00	
FPSA37	Labor	00333 REGULAR SALARY	1.6	Hours	68.4200	\$102.83	0/5/2014	00.00	

Planned Tasks

Complete All
 Complete Selected
 1

Tasks

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS166 CK FOR DEBRIS	0	0	0	0		8/29/2014	OK
FPS167 CK FLOAT OPERATION	0	0	0	0		8/29/2014	OK
FPS168 CK GATE OPERATION	0	0	0	0		8/29/2014	OK
FPS169 LUBRICATE UNIT	0	0	0	0		8/29/2014	OK

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Difference
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00
 0.00
 0.00

Extra Item
0.00
0.00
0.00
0.00
Labor
0.00
205.26
-205.26
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
205.26
-205.26
0.00

Other Observation

Other Observation
1
(No Data)



12/31/2014 09:42

Work Order # 2241828

Plant Equipment
 CDS-LVL-02
 LEVEL SENSORS MONTHLY (SNTRY)
 CDS PUMP LEVEL SENSOR #2 (WETWELL HYDROSTAT)

Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000

Activity Code FP5A04

Asset

Summary

Initiated 9/30/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-asslgn
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 24586
 Budget is 7478123.

Information

Work Order Information

Initiated 9/30/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 10/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 11/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 24586
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 incident 0

Create eB Container no
 Stoppage no
 Crow Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By
 Hours 0.00
 Down Time 0.00
 Result
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started
 Linked Case
 QC Performed no
 Closed
 QC By
 Major Failure no
 Cancel Work Order no

Location									
Address Information									
Street #	2324								
Pre Dir									
Street Name	NEWBURG								
Suffix	RD								
Post Dir									
Subdesignation	Address								
Cross Street									
Cross Street									
City, State, ZIP	LOUISVILLE KY 40205-0000								
Location Information									
Location									
Resource Usage									
1									
Resource Usage									
Activity Task	Usage Type	Item Description	Usage	Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA04	Labor	00597 REGULAR SALARY	0.6	Hours	68.4200	\$34.21	10/10/2014	00.00	
Planned Tasks									
Complete All									
Complete Selected									
1									
Tasks									
Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments		
FPS095 CK FOR PROPER OPERATION 0		0	0						
Cost Summary									
Cost Summary									
Estimated Costs									
Actual Costs									
Difference									
Actual Group Costs									
Contractor									
0.00									
0.00									
0.00									
0.00									
Fleet Equipment									
0.00									
0.00									
0.00									
0.00									
Plant Equipment									
0.00									
0.00									
0.00									
0.00									
Extra Item									
0.00									
0.00									
0.00									
0.00									
Labor									
0.00									

34.21
-34.21
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
34.21
-34.21
0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:43

Work Order # 2186703

Plant Equipment
 CDS-LVL-02
 LEVEL SENSORS MONTHLY (SNTRY)
 CDS PUMP LEVEL SENSOR #2 (WETWELL HYDROSTAT)

Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA04
 Asset

Summary

Closed on 7/24/2014 by JESSE SCHULZ.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22798
 Budget Is 7478123.

Information

Work Order Information

Inlited 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 8/12/2014 00:00
 Priority
 Reference #
 Inlited By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22798
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00543
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 7/24/2014 08:00
 Linked Case
 QC Performed no
 Closed 7/24/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Activity Task	Usage Type	Item Description	Usage	Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA04	Labor	00543 REGULAR SALARY	0.5	Hours	68,4200	\$34.21	6/8/2014	00:00	

Planned Tasks

Complete All
 Complete Selected
 1

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS095 CK FOR PROPER OPERATION	0	0	0		7/24/2014		OK

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Difference
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00
 0.00
 0.00
 Extra Item
 0.00
 0.00
 0.00
 0.00
 Labor
 0.00

34.21
-34.21
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
34.21
-34.21
0.00

Other Observation

Other Observation

1

(No Data)

HANSEN8

12/31/2014 09:44

Work Order # 2241829

Plant Equipment
 CDS-LVL-03
 LEVEL SENSORS MONTHLY (SNTRY)
 CDS PUMP LEVEL SENSOR #3 (UNDERFLOW SUMP/CDS UNIT HYDROSTAT)
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA04
 Asset

Summary

Initiated 9/30/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-assign
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 24586
 Budget is 7478123.

Information

Work Order Information

Initiated 9/30/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 10/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 11/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 24586
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service
 Request no
 Incident 0

Create aB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By
 Hours 0.00
 Down Time 0.00
 Result
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started
 Linked Case
 QC Performed no
 Closed
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Resource Usage

Activity Task	Usage Type	Item Description	Usage	Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA04	Labor	00597 REGULAR SALARY	0.5	Hours	68,4200	\$34.21	10/10/2014	00.00	

Planned Tasks

Complete All
 Complete Selected
 1

Tasks

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS095 CK FOR PROPER OPERATION 0		0	0				

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Difference
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00
 0.00
 0.00
 Extra Item
 0.00
 0.00
 0.00
 0.00
 Labor
 0.00

34.21
-34.21
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
Total
0.00
34.21
-34.21
0.00

Other Observation

Other Observation

1

(No Data)

Work Order Information

HANSEN8

12/31/2014 09:45

Work Order # 2186705

Plant Equipment
 CDS-LVL-03
 LEVEL SENSORS MONTHLY (SNTRY)
 CDS PUMP LEVEL SENSOR #3 (UNDERFLOW SUMP/CDS UNIT HYDROSTAT)
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FP5A04
 Asset

Summary

Closed on 7/24/2014 by JESSE SCHULZ.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22798
 Budget is 7478123.

Information

Work Order Information

Initiated 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 8/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22798
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00543
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 7/24/2014 08:00
 Linked Case
 QC Performed no
 Closed 7/24/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Locallon

Resource Usage

1

Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA04	Labor	00543 REGULAR SALARY	0.5	Hours 68.4200	\$34.21	8/8/2014	00:00	

Planned Tasks

Complete All
 Complete Selected
 1

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS095 CK FOR PROPER OPERATION 0		0	0			7/24/2014	OK

Cost Summary

Estimated Costs	
Actual Costs	
Difference	
Actual Group Costs	
Contractor	0.00
	0.00
	0.00
	0.00
Fleet Equipment	0.00
	0.00
	0.00
	0.00
Plant Equipment	0.00
	0.00
	0.00
	0.00
	0.00
Extra Item	0.00
	0.00
	0.00
	0.00
Labor	0.00

34.21
-34.21
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
34.21
-34.21
0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:40

Work Order # 2241830

Plant Equipment
 CDS-LVL-04
 LEVEL SENSORS MONTHLY (SNTRY)
 CDS PUMP FLOW SENSOR #4 (SIGMA 2410 UNDERFLOW FORCEMAIN ULTRASONIC METER)

Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA04
 Asset

Summary

Initiated 9/30/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-assign
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 24586
 Budget is 7470123.

Information

Work Order Information

Initiated 9/30/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 10/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 11/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 24586
 7470123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By
 Hours 0.00
 Down Time 0.00
 Result
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started
 Linked Case
 QC Performed no
 Closed
 QC By
 Major Failure no

Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Resource Usage

Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA04	Labor	00597 REGULAR SALARY	0.5	Hours 68.4200	\$34.21	10/10/2014	00.00	

Planned Tasks

Complete All
 Complete Selected
 1

Tasks

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS095 CK FOR PROPER OPERATION	0		0	0			

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Difference
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00
 0.00
 0.00
 Extra Item
 0.00
 0.00
 0.00
 0.00

Labor	0.00
	34.21
	-34.21
	0.00
Material	0.00
	0.00
	0.00
	0.00
Tools	0.00
	0.00
	0.00
	0.00
Vehicle	0.00
	0.00
	0.00
	0.00
Total	0.00
	34.21
	-34.21
	0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:46

Work Order # 2186706

Plant Equipment
 CDS-LVL-04
 LEVEL SENSORS MONTHLY (SNTRY)
 CDS PUMP FLOW SENSOR #4 (SIGMA 2410 UNDERFLOW FORCEMAIN ULTRASONIC
 METER)
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA04
 Asset

Summary

Closed on 7/24/2014 by JESSE SCHULZ.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22798
 Budget Is 7478123.

Information

Work Order Information

Inflated 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 8/12/2014 00:00
 Priority
 Reference #
 Inflated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22798
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00543
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 7/24/2014 08:00
 Linked Case no
 QC Performed no
 Closed 7/24/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA04	Lebor	00543 REGULAR SALARY	0.6	Hours 68.4200	\$34.21	8/8/2014	00.00	

Planned Tasks

Complete All
 Complete Selected
 1

Task Description	Duration	Days	Hours	Minutes	Completed Date	Comments
FPS095 CK FOR PROPER OPERATION 0	0	0			7/24/2014	OK

Cost Summary

Estimated Costs	
Actual Costs	
Difference	
Actual Group Costs	
Contractor	0.00
	0.00
	0.00
	0.00
Fleet Equipment	0.00
	0.00
	0.00
	0.00
Plant Equipment	0.00
	0.00
	0.00
	0.00
Extra Item	0.00
	0.00
	0.00
	0.00
Labor	0.00

34.21
-34.21
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
34.21
-34.21
0.00

Other Observation

Other Observation
1
(No Data)



12/31/2014 09:47

Work Order # 2241837

Plant Equipment
 CDS-CTN-00
 CURTAIN WALL QUARTERLY
 CSO108 CURTAIN WALL
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA38
 Asset

Summary

Closed on 11/3/2014 by DANNY JANSSEN.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 24589
 Budget is 7478123.

Information

Work Order Information

Initiated 9/30/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 10/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 11/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 24589
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service no
 Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00333
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 11/3/2014 08:00
 Linked Case
 QC Performed no
 Closed 11/3/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pro Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Locallon

Resource Usage

Resource Usage

Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
FPSA38	Labor	15393 REGULAR SALARY	2	Hours 68.4200	\$138.84	11/14/2014	00.00	
FPSA38	Labor	00333 REGULAR SALARY	2	Hours 68.4200	\$138.84	11/14/2014	00.00	
FPSA38	Labor	00049 REGULAR SALARY	2	Hours 68.4200	\$138.84	11/14/2014	00.00	

Planned Tasks

Complete All
 Complete Selected
 1

Tasks

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS170 INSP CURTAIN WALLS FOR DEFECTS	0	0	0	0		11/3/2014	

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Difference
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00
 0.00
 0.00
 Extra Item
 0.00
 0.00
 0.00



0.00
Labor
0.00
410.52
-410.52
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
410.52
-410.52
0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:47

Work Order # 2186718

Plant Equipment
 CDS-CTN-00
 CURTAIN WALL QUARTERLY
 CSO108 CURTAIN WALL
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA38
 Asset

Summary

Closed on 8/29/2014 by STEVEN WILLIAMS.
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22803
 Budget is 7478123.

Information

Work Order Information

Initiated 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 8/12/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22803
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service
 Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 15575
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.00
 Usage 0.00
 Distance 0.00
 Valuation Type
 Started 8/29/2014 08:00
 Linked Case
 QC Performed no
 Closed 8/29/2014 16:00
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

1

Resource Usage

Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
FP9A38	Labor	15575 REGULAR SALARY	1	Hours 68.4200	\$68.42	9/5/2014	00.00	
FP9A38	Labor	00333 REGULAR SALARY	1	Hours 68.4200	\$68.42	9/5/2014	00.00	
FP9A38	Labor	00049 REGULAR SALARY	1	Hours 68.4200	\$68.42	9/5/2014	00.00	

Planned Tasks

Complete All
 Complete Selected
 1

Tasks

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FP9170 INSP CURTAIN WALLS FOR DEFECTS	0	0	0	0		8/29/2014	OK

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Difference
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00
 0.00
 0.00
 0.00
 Extra Item
 0.00
 0.00
 0.00

0.00
Labor
0.00
205.28
-205.28
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
205.28
-205.28
0.00

Other Observation

Other Observation

1

(No Date)



12/31/2014 09:49

Work Order # 2186692

Sewer Pump
 CDS-PMP-01
 SUBMERSIBLE PUMP SEMI-ANNUAL
 CDS PUMP #1
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA16
 Asset

Summary

Initiated 6/28/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-assign
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22796
 Budget Is 7478123.

Information

Work Order Information

Initiated 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 9/23/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22796
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By
 Hours 0.00
 Down Time 0.00
 Result
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started
 Linked Case
 QC Performed no
 Closed
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Planned Tasks

Complete All
 Complete Selected
 1

Tasks

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS054 CK JUNCTION BOX	0		0	0			
FPS055 CHECK TERMINAL BOARD	0		0	0			
FPS056 ISOLATION CHECK	0		0	0			
FPS057 CHECK OIL HOISING	0		0	0			
FPS058 CHECK STATOR HOUSING	0		0	0			
FPS059 CHECK SENSORS	0		0	0			
FPS060 CK IMPEL/PROPEL WEAR RING	0		0	0			
FPS061 CK ZING ANODES	0		0	0			
FPS062 CK SCREW JOINTS	0		0	0			
FPS063 CK LIFTING HANDLE	0		0	0			
FPS064 CK IMPEL/PROPEL ROTATION DIR	0		0	0			
FPS065 CK CABLE	0		0	0			
FPS066 INSPECT BEARINGS	0		0	0			
FPS067 CK ORINGS & RUBBER SEALING PTS	0		0	0			
FPS068 INSPECT SEALS	0		0	0			
FPS069 CHANGE OIL / SYSTEM FLUID	0		0	0			
FPS070 INSPECT IMPELLER/PROPELLER	0		0	0			
FPS071 CHECK RUNNING V&A VALVES	0		0	0			
FPS072 MEGGER TESTING ON PUMP MOTOR	0		0	0			

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:49

Sewer Pump

Pump ID CDS-PMP-02
Asset Description CDS PUMP #2
Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000

Location

Sewer Pump Address

Street # 2324
Pre Dir
Street Name NEWBURG
Suffix RD
Post Dir
Subdesignatlon Address
Cross Street
Cross Street
City, State, ZIP LOUISVILLE
 KY
 40205-0000
Location

Location Information

Position 0
Map # MAM20-A
Area BC
Parcel
Sub Area 10
X Coordinate 0.00000
District CENT
Y Coordinate 0.00000
Location EM
Z Coordinato 0.00000

Structural

Pump Type SUB
Total Dynamic Head
Manufacturer KSB
Discharge 0.00
Model #
Flow 0.00
Serial #
Expected Lifo 0
Motor Serial #
Average Monthly Usage 0.00
Trim
Total Usage 0.00
RPMs
MTBF 0

Associated

Budget#
Manufactured
Service Status 1
Purchased
Ownership MSD
Installed 4/10/1998
As Built 12966-4
Expire Date
 Intersection
 Segment

Main
From
To

Usage Area
Complex
Sewer Lift Station
Site
MSD1204-PS
feet
feet
From 0
To 0
Roadway
1

Safety Messages

(No Data)

Name Plate

Name Plate

Name Plate Description Value:

VOLTS VOLTS 460

Attachments

Attachments

(No Data)

Comments

(Tab Not Loaded)

Perf Indicators

Performance Indicators

(No Data)

Life History

Work Status

(No Data)

Recent Work Orders

Activity ELEC was performed on 8/12/2014
Activity FPSA16 was performed on 8/30/2014
Activity FPSA16 was performed on 12/31/2013
Activity FPSA16 was performed on 6/30/2013

Recent Service Requests

No recent service requests

Recent Inspections

No recent service inspections

Asset Indexes

No indexes

Associated Parts

0 associated parts

Contacts	0 contacts
Failures	0 failures in 16 years of service with a mean time between failures of 0 days
Inspections	0 open inspections No inspections completed against this asset
Inspection Schedules	0 inspection schedules 0 group inspection schedules 0 group inspection schedules
Location History	Previously installed in 1 locations Currently located at 2324 NEWBURG RD LOUISVILLE KY 40205-0000
Maintenance Schedules	0 unit maintenance schedules 1 group maintenance schedules Next scheduled for FPSA16 on 7/1/2015
Usage	Used 0 times in the last 30 days Has never been used
Usage Area History	Previously located at 0 usage areas
Warranties	0 active warranties
Work Orders	3 open work orders Last completed work order was of type ELEC on 8/12/2014
Service Requests	0 open service requests No resolved service requests
Applications, Licenses and Cases	Primary site on 0 applications, licenses and cases Not used as primary site Linked site on 0 applications, licenses and cases Associated site on 0 applications, licenses and cases No recent activity as primary site
Asset Groups	1 asset groups
Asset Risk Events	0 risk events



12/31/2014 09:50

Work Order # 2243074

Sewer Pump
 CDS-PMP-03
 Miscellaneous MSD IFP
 CDS UNDERFLOW PUMP
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code MISC
 Asset

Summary

Closed on 11/5/2014 by DANNY JANSSEN.
 Maintenance Type is UM.
 Budget is 7478123.

Information

Work Order Information

Initiated 10/3/2014 00:00
 Source
 Authorization
 Schedule Start
 Maint Type UM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility MECH
 Due
 Priority
 Reference #
 Initiated By 00298
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 0
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00333
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started 10/3/2014 00:00
 Linked Case
 QC Performed no
 Closed 11/5/2014 00:00
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pro Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
MISC	Extra Item	MISC MISCELLANEOUS COSTS	1	3533.0000	\$3,533.00	12/18/2014 00.00		Inv 351521 WO 2243074 11/09/14
MISC	Labor	00049 REGULAR SALARY	2	Hours 68.4200	\$138.84	11/14/2014 00.00		
MISC	Labor	00333 REGULAR SALARY	2	Hours 68.4200	\$130.64	11/14/2014 00.00		

Comments

Comments

pump had leakage into the motor and needs repair. Krauth will make repairs.
 Krauth rebuilt the pump. It is now back in storage.

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Difference
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00
 0.00
 0.00
 Extra Item
 0.00
 3533.00
 -3533.00
 0.00
 Labor
 0.00
 273.68

-273.08
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
3806.68
-3806.68
0.00

BUD Data

BUD Data <i>BUD Confirmation #</i>
--

Other Observation

Other Observation 1
(No Data)



12/31/2014 09:51

Work Order # 2193508

Sewer Pump
 CDS-PMP-03
 MECHANICAL
 CDS UNDERFLOW PUMP
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code MCHN
 Asset

Summary

Closed on 7/14/2014 by RODERICK PULLIAM.
 Maintenance Type is UM.
 Budget is 7478123.

Information

Work Order Information

Inlited 7/14/2014 00:00
 Source
 Authorizaton
 Schedule Start
 Maint Type UM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility MECH
 Due
 Priority
 Reference #
 Inlited By 00298
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 0
 7478123
 Inspeclon# 0
 Budget Number
 Out of Service no
 Potential Service Request no
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By 00049
 Hours 0.00
 Down Time 0.00
 Result WOCOM
 Condillon
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuelion Type
 Started 7/14/2014 00:00
 Linked Case
 QC Performed no
 Closed 7/14/2014 00:00
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignation
 Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Location

Resource Usage

Resource Usage

Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments
MCHN	Lebor	00049 REGULAR SALARY	1	Hours 68,4200	\$68.42	8/4/2014	00.00	

Comments

Comments

Pump 3 tripped out during the rain event. Troubleshoot as necessary.

Called in. Reset pump. Watched it for 30 minutes and it did not trip again. nfan

Cost Summary

Cost Summary

Estimated Costs
 Actual Costs
 Difference
 Actual Group Costs
 Contractor
 0.00
 0.00
 0.00
 0.00
 0.00
 Fleet Equipment
 0.00
 0.00
 0.00
 0.00
 0.00
 Plant Equipment
 0.00
 0.00
 0.00
 0.00
 Extra Item
 0.00
 0.00
 0.00
 0.00

Labor	0.00
	68.42
	-68.42
	0.00
Material	0.00
	0.00
	0.00
	0.00
Tools	0.00
	0.00
	0.00
	0.00
Vehicle	0.00
	0.00
	0.00
	0.00
Total	0.00
	68.42
	-68.42
	0.00

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:51

Work Order # 2186696

Sewer Pump
 CDS-PMP-03
 SUBMERSIBLE PUMP SEMI-ANNUAL
 CDS UNDERFLOW PUMP
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA16
 Asset

Summary

Initiated 6/28/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-assign
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22796
 Budget is 7478123.

Information

Work Order Information

Initiated 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 9/23/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22796
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service no
 Request
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By
 Hours 0.00
 Down Time 0.00
 Result
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started
 Linked Case
 QC Performed no
 Closed
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street # 2324
 Pre Dir
 Street Name NEWBURG
 Suffix RD
 Post Dir
 Subdesignatlon Address
 Cross Street
 Cross Street
 City, State, ZIP LOUISVILLE
 KY
 40205-0000

Location Information

Locallon

Planned Tasks

Complete All
 Complete Selected
 1

Tasks

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS054 CK JUNCTION BOX	0		0	0			
FPS055 CHECK TERMINAL BOARD	0		0	0			
FPS056 ISOLATION CHECK	0		0	0			
FPS057 CHECK OIL HOISING	0		0	0			
FPS058 CHECK STATOR HOUSING	0		0	0			
FPS059 CHECK SENSORS	0		0	0			
FPS060 CK IMPEL/PROPEL WEAR RING	0		0	0			
FPS061 CK ZING ANODES	0		0	0			
FPS062 CK SCREW JOINTS	0		0	0			
FPS063 CK LIFTING HANDLE	0		0	0			
FPS064 CK IMPEL/PROPEL ROTATION DIR	0		0	0			
FPS065 CK CABLE	0		0	0			
FPS066 INSPECT BEARINGS	0		0	0			
FPS067 CK ORJNGS & RUBBER SEALING PTS	0		0	0			
FPS068 INSPECT SEALS	0		0	0			
FPS030 CHANGE OIL / SYSTEM FLUID	0		0	0			
FPS070 INSPECT IMPELLER/PROPELLER	0		0	0			
FPS071 CHECK RUNNING V&A VALUES	0		0	0			
FPS072 MEGGER TESTING ON PUMP MOTOR	0		0	0			

Other Observation

Other Observation

1

(No Data)



12/31/2014 09:52

Work Order # 2269978

Sewer Pump
 CDS-PMP-04
 ROTATE IMPELLERS
 CDS UNDERFLOW PUMP (SPARE)
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activly Code FPSA54
 Asset

Summary

Initiated 11/28/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-assign
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 25450
 Budget Is 7478123.

Information

Work Order Information

Initiated 11/28/2014 00:00
 Source
 Authorizallon RFLYNN
 Schedule Start 12/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 1/8/2015 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 25450
 7478123
 Inspectionil 0
 Budget Number
 Out of Service no
 Potential Service no
 Request
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By
 Hours 0.00
 Down Time 0.00
 Result
 Condition
 Actual Quantlly 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started
 Linked Case
 QC Performed no
 Closed
 QC By
 Major Failure no
 Cancel Work Order no

Location	
Address Information	
<i>Street #</i>	2324
<i>Pre Dir</i>	
<i>Street Name</i>	NEWBURG
<i>Suffix</i>	RD
<i>Post Dir</i>	
<i>Subdesignation</i>	
<i>Address</i>	
<i>Cross Street</i>	
<i>Cross Street</i>	
<i>City, State, ZIP</i>	LOUISVILLE KY 40205-0000
Location Information	
<i>Location</i>	
Planned Tasks	
Complete All	
Complete Selected	
1	
Tasks	
Task Description	Duration Days Hours Minutes Completed Date Comments
FPS203 COMPLETE ROTATION OF IMPELLER	0 0
Other Observation	
Other Observation	
1	
(No Data)	



12/31/2014 09:52

Work Order # 2257642

Sewer Pump
 CDS-PMP-04
 ROTATE IMPELLERS
 CDS UNDERFLOW PUMP (SPARE)
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA54
 Asset

Summary

(Tab Not Loaded)

Information

Work Order Information

Inltiated 10/29/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 11/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 12/10/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 24923
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service no
 Request
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By
 Hours 0.00
 Down Time 0.00
 Result
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started
 Linked Case
 QC Performed no
 Closed
 QC By
 Major Failure no
 Cancel Work Order no

Location

Address Information

Street #	2324
Pre Dir	
Street Name	NEWBURG
Suffix	RD
Post Dir	
Subdesignation	
Address	
Cross Street	
Cross Street	
City, State, ZIP	LOUISVILLE KY 40205-0000

Location Information
Location

Planned Tasks
Complete All
Complete Selected
1

Task Description	Duration	Days	Hours	Minutes	Completed	Date	Comments
FPS203 COMPLETE ROTATION OF IMPELLER 0	0		0	0			

Other Observation
Other Observation
1
(No Data)



12/31/2014 09:52

Work Order # 2241926

Sewer Pump
 CDS-PMP-04
 ROTATE IMPELLERS
 CDS UNDERFLOW PUMP (SPARE)

Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
Activity Code FPSA54
 Asset

Summary

Initiated 0/30/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-assign
 Authorized by RFLYNN.
 Maintenance Type Is PM.
 Part of Group Project 24820
 Budget Is 7478123.

Information

Work Order Information

Initiated 0/30/2014 00:00
Source
Authorization RFLYNN
Schedule Start 10/1/2014 00:00
Maint Type PM
Assigned To FLOODPS-SUP
Schedule Finish
Problem
Responsibility FLDOPS
Due 11/10/2014 00:00
Priority
Reference #
Initiated By MIDASSYS
Service Request 0
Project
Estimated Cost 0.00
Group Project 24820
 7478123
Inspection# 0
Budget Number
Out of Service no
Potential Service Request no
Incident 0

Create eB Container no
Stoppage no
Crew Days 0.00
Flow Depth 0.00
Measured Flow 0.00
Closed By
Hours 0.00
Down Time 0.00
Result
Condition
Actual Quantity 0.000
Usage 0.000
Distance 0.00
Valuation Type
Started
Linked Case
QC Performed no
Closed
QC By
Major Failure no
Cancel Work Order no

Location	
Address Information	
Street #	2324
Pre Dir	
Street Name	NEWBURG
Suffix	RD
Post Dir	
Subdesignallon	Address
Cross Street	
Cross Street	
City, State, ZIP	LOUISVILLE KY 40205-0000
Location Information	
Location	
Planned Tasks	
Complete All	
Complete Selected	
1	
Tasks	
Task Description	Duration Days Hours Minutes Completed Date Comments
FPS203 COMPLETE ROTATION OF IMPELLER	0 0
Other Observation	
Other Observation	
1	
(No Data)	



12/31/2014 09:53

Work Order # 2221119

Sewer Pump
 CDS-PMP-04
 ROTATE IMPELLERS
 CDS UNDERFLOW PUMP (SPARE)

Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
Activity Code FPSA54
 Assot

Summary

Initiated 8/28/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-assign
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 23940
 Budget is 7478123.

Information

Work Order Information

Initiated 8/28/2014 00:00
Source
Authorization RFLYNN
Schedule Start 9/1/2014 00:00
Maint Type PM
Assigned To FLOODPS-SUP
Schedule Finish
Problem
Responsibility FLDOPS
Due 10/9/2014 00:00
Priority
Reference #
Initiated By MIDASSYS
Service Request 0
Project
Estimated Cost 0.00
Group Project 23940
 7478123
Inspection# 0
Budget Number
Out of Service no
Potential Service Request Incident no
 0

Create eB Container no
Stoppage no
Crew Days 0.00
Flow Depth 0.00
Measured Flow 0.00
Closed By
Hours 0.00
Down Time 0.00
Result
Condition
Actual Quantity 0.000
Usage 0.000
Distance 0.00
Valuation Type
Started
Linked Case
QC Performed no
Closed
QC By
Major Failure no
Cancel Work Order no

Location	
Address Information	
Street #	2324
Pre Dir	
Street Name	NEWBURG
Suffix	RD
Post Dir	
Subdesignation	Address
Cross Street	
Cross Street	
City, State, ZIP	LOUISVILLE KY 40205-0000
Location Information	
Location	
Planned Tasks	
Complete All	
Complete Selected	
1	
Tasks	
Task Description	Duration Days Hours Minutes Completed Date Comments
FPS203 COMPLETE ROTATION OF IMPELLER	0 0
Other Observation	
Other Observation	
1	
(No Data)	



12/31/2014 09:53

Work Order # 2201460

Sewer Pump
 CDS-PMP-04
 ROTATE IMPELLERS
 CDS UNDERFLOW PUMP (SPARE)

Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
Activity Code FPSA54
 Asset

Summary

Initiated 7/28/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-assign
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 23314
 Budget is 7478123.

Information

Work Order Information

Initiated 7/28/2014 00:00
Source
Authorization RFLYNN
Schedule Start 8/1/2014 00:00
Maint Type PM
Assigned To FLOODPS-SUP
Schedule Finish
Problem
Responsibility FLDOPS
Due 9/10/2014 00:00
Priority
Reference #
Initiated By MIDASSYS
Service Request 0
Project
Estimated Cost 0.00
Group Project 23314
 7478123
Inspection# 0
 Budget Number
Out of Service no
Potential Service no
Request
Incident 0

Create eB Container no
Stoppage no
Crew Days 0.00
Flow Depth 0.00
Measured Flow 0.00
Closed By
Hours 0.00
Down Time 0.00
Result
Condition
Actual Quantity 0.000
Usage 0.000
Distance 0.00
Valuation Type
Started
Linked Case
QC Performed no
Closed
QC By
Major Failure no
Cancel Work Order no

Location	
Address Information	
Street #	2324
Pre Dir	
Street Name	NEWBURG
Suffix	RD
Post Dir	
Subdesignation	
Address	
Cross Street	
Cross Street	
City, State, ZIP	LOUISVILLE KY 40205-0000
Location Information	
Location	
Planned Tasks	
Complete All	
Complete Selected	
1	
Tasks	
Task Description	Duration Days Hours Minutes Completed Date Comments
FPS203 COMPLETE ROTATION OF IMPELLER	0 0 0 0 12/5/2014 UNIT IS AT KRAUTH ELECTRIC FOR REPAIR
Other Observation	
Other Observation	
1	
(No Data)	



12/31/2014 09:53

Work Order # 2186770

Sewer Pump
 CDS-PMP-04
 ROTATE IMPELLERS
 CDS UNDERFLOW PUMP (SPARE)
 Address 2324 NEWBURG RD LOUISVILLE KY 40205-0000
 Activity Code FPSA54
 Asset

Summary

Initiated 6/28/2014 Start Now
 FLDOPS is responsible - Assigned to METRO OPS FLOOD PS Re-assign
 Authorized by RFLYNN.
 Maintenance Type is PM.
 Part of Group Project 22823
 Budget Is 7478123.

Information

Work Order Information

Initiated 6/28/2014 00:00
 Source
 Authorization RFLYNN
 Schedule Start 7/1/2014 00:00
 Maint Type PM
 Assigned To FLOODPS-SUP
 Schedule Finish
 Problem
 Responsibility FLDOPS
 Due 8/8/2014 00:00
 Priority
 Reference #
 Initiated By MIDASSYS
 Service Request 0
 Project
 Estimated Cost 0.00
 Group Project 22823
 7478123
 Inspection# 0
 Budget Number
 Out of Service no
 Potential Service no
 Request
 Incident 0

Create eB Container no
 Stoppage no
 Crew Days 0.00
 Flow Depth 0.00
 Measured Flow 0.00
 Closed By
 Hours 0.00
 Down Time 0.00
 Result
 Condition
 Actual Quantity 0.000
 Usage 0.000
 Distance 0.00
 Valuation Type
 Started
 Linked Case
 QC Performed no
 Closed
 QC By
 Major Failure no
 Cancel Work Order no

Location									
Address Information									
<i>Street #</i>		2324							
<i>Pre Dir</i>									
<i>Street Name</i>		NEWBURG							
<i>Suffix</i>		RD							
<i>Post Dir</i>									
<i>Subdesignation</i>		Address							
<i>Cross Street</i>									
<i>Cross Street</i>									
<i>City, State, ZIP</i>		LOUISVILLE KY 40205-0000							
Location Information									
<i>Location</i>									
Resource Usage									
1									
Resource Usage									
Activity Task	Usage Type	Item Description	Usage Units	Rate	Total Cost	Charge From	Charge To	Comments	
FPSA54	Labor	00543 REGULAR SALARY	0.5	Hours 68.4200	\$34.21	08/2014	00.00		
Planned Tasks									
Complete All Complete Selected 1									
Tasks									
Task Description		Duration	Days	Hours	Minutes	Completed	Date	Comments	
FPS203 COMPLETE ROTATION OF IMPELLER		0	0						
Cost Summary									
Cost Summary									
Estimated Costs									
Actual Costs									
Difference									
Actual Group Costs									
Contractor		0.00							
		0.00							
		0.00							
		0.00							
Fleet Equipment		0.00							
		0.00							
		0.00							
		0.00							
Plant Equipment		0.00							
		0.00							
		0.00							
		0.00							
Extra Item		0.00							
		0.00							
		0.00							
		0.00							
Labor		0.00							

34.21
-34.21
0.00
Material
0.00
0.00
0.00
0.00
Tools
0.00
0.00
0.00
0.00
Vehicle
0.00
0.00
0.00
0.00
Total
0.00
34.21
-34.21
0.00

Other Observation

Other Observation
1
(No Data)



MOU Semi-Annual Report #13
July 1, 2014 – December 31, 2014

ATTACHMENT “C”

CDS UNIT PUMP RUN TIMES

December 31, 2014

CSO 108 CDS Facility			
Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
01-Jul-14	0.000	0.000	0.000
02-Jul-14	0.000	0.000	0.050
03-Jul-14	0.000	0.000	0.000
04-Jul-14	0.000	0.000	0.283
05-Jul-14	0.000	0.000	0.033
06-Jul-14	0.000	0.000	0.000
07-Jul-14	0.000	0.000	0.000
08-Jul-14	0.000	0.000	0.000
09-Jul-14	0.000	0.000	0.000
10-Jul-14	0.000	0.000	0.000
11-Jul-14	0.000	0.000	0.000
12-Jul-14	0.000	0.000	0.000
13-Jul-14	0.000	0.000	0.000
14-Jul-14	0.000	0.000	0.000
15-Jul-14	0.650	0.667	1.133
16-Jul-14	0.000	0.000	0.217
17-Jul-14	0.000	0.000	0.000
18-Jul-14	0.000	0.000	0.000
19-Jul-14	0.000	0.000	0.000
20-Jul-14	0.000	0.000	0.050
21-Jul-14	0.000	0.000	0.000
22-Jul-14	0.000	0.000	0.000
23-Jul-14	0.000	0.000	0.000
24-Jul-14	0.000	0.000	0.000
25-Jul-14	0.000	0.000	0.000
26-Jul-14	0.000	0.000	0.000
27-Jul-14	0.000	0.000	0.000
28-Jul-14	0.383	0.650	0.850
29-Jul-14	0.000	0.000	0.450
30-Jul-14	0.000	0.000	0.000
31-Jul-14	0.000	0.000	0.000
01-Aug-14	0.000	0.000	0.000
02-Aug-14	0.000	0.000	0.050
03-Aug-14	0.000	0.000	0.000
04-Aug-14	0.000	0.000	0.000
05-Aug-14	0.000	0.000	0.000
06-Aug-14	0.000	0.000	0.000
07-Aug-14	0.000	0.000	0.000
08-Aug-14	0.000	0.000	0.000
09-Aug-14	0.000	0.000	0.000
10-Aug-14	0.167	0.000	0.600

CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
11-Aug-14	0.000	0.000	0.000
12-Aug-14	0.000	0.000	0.000
13-Aug-14	0.100	0.583	0.567
14-Aug-14	0.000	0.000	0.033
15-Aug-14	0.000	0.000	0.000
16-Aug-14	0.000	0.000	0.000
17-Aug-14	0.000	0.000	0.000
18-Aug-14	0.000	0.000	0.000
19-Aug-14	0.000	0.000	0.000
20-Aug-14	0.000	0.000	0.000
21-Aug-14	0.000	0.000	0.000
22-Aug-14	0.000	0.000	0.067
23-Aug-14	0.000	0.000	0.000
24-Aug-14	0.617	0.867	0.917
25-Aug-14	0.733	0.600	0.917
26-Aug-14	0.000	0.000	0.000
27-Aug-14	0.000	0.000	0.050
28-Aug-14	0.000	0.000	0.000
29-Aug-14	0.883	1.150	1.217
30-Aug-14	0.000	0.000	0.000
31-Aug-14	0.000	0.000	0.167
01-Sep-14	0.000	0.000	0.000
02-Sep-14	0.000	0.000	0.000
03-Sep-14	0.000	0.000	0.000
04-Sep-14	0.183	0.000	0.167
05-Sep-14	0.000	0.000	0.050
06-Sep-14	0.000	0.000	0.000
07-Sep-14	0.000	0.000	0.000
08-Sep-14	0.000	0.000	0.000
09-Sep-14	0.000	0.000	0.000
10-Sep-14	0.000	0.000	0.000
11-Sep-14	0.000	0.000	0.000
12-Sep-14	0.000	0.000	0.000
13-Sep-14	6.033	7.400	7.583
14-Sep-14	0.000	0.000	0.033
15-Sep-14	0.000	0.000	0.000
16-Sep-14	0.000	0.000	0.000
17-Sep-14	0.000	0.000	0.000
18-Sep-14	0.000	0.000	0.000
19-Sep-14	0.000	0.000	0.000
20-Sep-14	0.000	0.000	0.050

CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
21-Sep-14	0.000	0.000	0.000
22-Sep-14	0.000	0.000	0.000
23-Sep-14	0.000	0.000	0.000
24-Sep-14	0.000	0.000	0.000
25-Sep-14	0.000	0.000	0.000
26-Sep-14	0.000	0.000	0.000
27-Sep-14	0.000	0.000	0.000
28-Sep-14	0.000	0.000	0.000
29-Sep-14	0.000	0.000	0.050
30-Sep-14	0.000	0.000	0.000
01-Oct-14	0.000	0.000	0.000
02-Oct-14	0.000	0.000	0.000
03-Oct-14	0.000	0.000	0.000
04-Oct-14	0.000	0.000	0.050
05-Oct-14	0.000	0.000	0.000
06-Oct-14	0.000	0.000	0.000
07-Oct-14	0.000	0.000	0.000
08-Oct-14	0.000	0.000	0.000
09-Oct-14	0.000	0.000	0.000
10-Oct-14	0.000	0.000	0.000
11-Oct-14	0.000	0.000	0.000
12-Oct-14	0.083	0.450	1.517
13-Oct-14	0.000	0.000	0.000
14-Oct-14	0.000	0.000	0.000
15-Oct-14	0.333	0.117	0.650
16-Oct-14	0.000	0.000	0.100
17-Oct-14	0.000	0.000	0.000
18-Oct-14	0.000	0.000	0.000
19-Oct-14	0.000	0.000	0.050
20-Oct-14	0.000	0.000	0.000
21-Oct-14	0.000	0.000	0.000
22-Oct-14	0.000	0.000	0.000
23-Oct-14	0.000	0.000	0.000
24-Oct-14	0.000	0.000	0.000
25-Oct-14	0.000	0.000	0.000
26-Oct-14	0.000	0.000	0.000
27-Oct-14	0.000	0.000	0.067
28-Oct-14	0.000	0.000	0.000
29-Oct-14	0.000	0.000	0.000
30-Oct-14	0.000	0.000	0.000
31-Oct-14	0.000	0.000	0.000

CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
01-Nov-14	0.000	0.000	0.000
02-Nov-14	0.000	0.000	0.000
03-Nov-14	0.000	0.000	0.000
04-Nov-14	0.000	0.000	0.000
05-Nov-14	0.000	0.000	0.183
06-Nov-14	0.000	0.000	0.000
07-Nov-14	0.000	0.000	0.000
08-Nov-14	0.000	0.000	0.000
09-Nov-14	0.000	0.000	0.000
10-Nov-14	0.000	0.000	0.000
11-Nov-14	0.000	0.000	0.000
12-Nov-14	0.000	0.000	0.000
13-Nov-14	0.000	0.000	0.000
14-Nov-14	0.000	0.000	0.000
15-Nov-14	0.000	0.000	0.000
16-Nov-14	0.000	0.000	0.000
17-Nov-14	0.000	0.000	0.000
18-Nov-14	0.000	0.000	0.000
19-Nov-14	0.000	0.000	0.000
20-Nov-14	0.000	0.000	0.000
21-Nov-14	0.000	0.000	0.000
22-Nov-14	0.000	0.000	0.000
23-Nov-14	0.000	0.000	0.000
24-Nov-14	0.000	0.000	0.000
25-Nov-14	0.000	0.000	0.000
26-Nov-14	0.000	0.000	0.000
27-Nov-14	0.000	0.000	0.000
28-Nov-14	0.000	0.000	0.000
29-Nov-14	0.000	0.000	0.000
30-Nov-14	0.000	0.000	0.050
01-Dec-14	0.000	0.000	0.000
02-Dec-14	0.000	0.000	0.000
03-Dec-14	0.000	0.000	0.000
04-Dec-14	0.000	0.000	0.000
05-Dec-14	0.000	0.000	0.000
06-Dec-14	0.000	0.000	0.000
07-Dec-14	0.000	0.000	0.000
08-Dec-14	3.250	5.717	6.267
09-Dec-14	0.000	0.000	0.117
10-Dec-14	0.000	0.000	0.050
11-Dec-14	0.000	0.000	0.050

CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
12-Dec-14	0.000	0.000	0.000
13-Dec-14	0.000	0.000	0.000
14-Dec-14	0.000	0.000	0.000
15-Dec-14	0.000	0.000	0.000
16-Dec-14	0.000	0.000	0.050
17-Dec-14	0.000	0.000	0.000
18-Dec-14	0.000	0.000	0.000
19-Dec-14	0.000	0.000	0.000
20-Dec-14	0.000	0.000	0.000
21-Dec-14	0.000	0.000	0.000
22-Dec-14	0.000	0.000	0.000
23-Dec-14	0.000	0.000	0.000
24-Dec-14	0.000	0.000	0.000
25-Dec-14	0.000	0.000	0.000
26-Dec-14	0.000	0.000	0.033
27-Dec-14	0.000	0.000	0.000
28-Dec-14	0.000	0.000	0.000
29-Dec-14	0.000	0.000	0.000

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
01-Jul-14	0.04	4933.16	36902.61	36.90
02-Jul-14	0.04	5457.11	40822.02	40.82
03-Jul-14	0.04	4936.62	36928.49	36.93
04-Jul-14	0.06	8365.91	62581.34	62.58
05-Jul-14	0.04	5191.49	38835.06	38.84
06-Jul-14	0.04	4936.62	36928.49	36.93
07-Jul-14	0.04	4936.62	36928.49	36.93
08-Jul-14	0.04	4936.62	36928.49	36.93
09-Jul-14	0.04	4936.62	36928.49	36.93
10-Jul-14	0.04	4933.16	36902.61	36.90
11-Jul-14	0.04	4936.62	36928.49	36.93
12-Jul-14	0.04	4936.62	36928.49	36.93
13-Jul-14	0.04	4936.62	36928.49	36.93
14-Jul-14	0.04	4936.62	36928.49	36.93
15-Jul-14	0.13	16872.94	126218.35	126.22
16-Jul-14	0.05	7173.88	53664.32	53.66
17-Jul-14	0.04	4936.62	36928.49	36.93
18-Jul-14	0.04	4936.62	36928.49	36.93
19-Jul-14	0.04	4936.62	36928.49	36.93
20-Jul-14	0.04	5570.38	41669.37	41.67
21-Jul-14	0.04	4936.62	36928.49	36.93
22-Jul-14	0.04	4936.62	36928.49	36.93
23-Jul-14	0.04	4936.62	36928.49	36.93
24-Jul-14	0.04	4936.62	36928.49	36.93
25-Jul-14	0.04	4936.62	36928.49	36.93
26-Jul-14	0.04	4936.62	36928.49	36.93
27-Jul-14	0.04	4936.62	36928.49	36.93
28-Jul-14	0.10	13450.11	100613.84	100.61
29-Jul-14	0.07	9882.39	73925.40	73.93
30-Jul-14	0.04	4942.36	36971.44	36.97
31-Jul-14	0.04	4936.62	36928.49	36.93
01-Aug-14	0.04	4936.62	36928.49	36.93
02-Aug-14	0.04	5522.94	41314.43	41.31
03-Aug-14	0.04	4936.62	36928.49	36.93
04-Aug-14	0.04	4936.62	36928.49	36.93
05-Aug-14	0.04	4936.62	36928.49	36.93
06-Aug-14	0.04	4936.62	36928.49	36.93
07-Aug-14	0.04	4936.62	36928.49	36.93
08-Aug-14	0.04	4933.16	36902.61	36.90
09-Aug-14	0.04	4936.62	36928.49	36.93

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
10-Aug-14	0.10	12809.29	95820.14	95.82
11-Aug-14	0.04	4936.62	36928.49	36.93
12-Aug-14	0.04	4936.62	36928.49	36.93
13-Aug-14	0.08	11127.56	83239.96	83.24
14-Aug-14	0.04	5517.95	41277.11	41.28
15-Aug-14	0.04	4936.62	36928.49	36.93
16-Aug-14	0.03	4271.92	31956.16	31.96
17-Aug-14	0.04	4936.62	36928.49	36.93
18-Aug-14	0.04	4936.62	36928.49	36.93
19-Aug-14	0.04	4936.62	36928.49	36.93
20-Aug-14	0.04	4936.62	36928.49	36.93
21-Aug-14	0.04	4933.16	36902.61	36.90
22-Aug-14	0.04	5568.56	41655.73	41.66
23-Aug-14	0.04	4936.62	36928.49	36.93
24-Aug-14	0.12	15699.50	117440.38	117.44
25-Aug-14	0.11	14938.18	111745.32	111.75
26-Aug-14	0.04	4936.62	36928.49	36.93
27-Aug-14	0.04	5125.52	38341.53	38.34
28-Aug-14	0.04	4936.62	36928.49	36.93
29-Aug-14	0.13	17584.98	131544.75	131.54
30-Aug-14	0.04	4933.16	36902.61	36.90
31-Aug-14	0.05	7081.01	52969.66	52.97
01-Sep-14	0.04	4936.62	36928.49	36.93
02-Sep-14	0.04	4936.62	36928.49	36.93
03-Sep-14	0.04	4936.62	36928.49	36.93
04-Sep-14	0.04	4936.62	36928.49	36.93
05-Sep-14	0.09	12058.20	90201.60	90.20
06-Sep-14	0.04	4936.62	36928.49	36.93
07-Sep-14	0.04	4933.16	36902.61	36.90
08-Sep-14	0.04	4936.62	36928.49	36.93
09-Sep-14	0.04	4936.62	36928.49	36.93
10-Sep-14	0.04	4936.62	36928.49	36.93
11-Sep-14	0.04	4936.62	36928.49	36.93
12-Sep-14	0.04	4936.62	36928.49	36.93
13-Sep-14	0.76	101198.09	757014.27	757.01
14-Sep-14	0.04	5514.41	41250.66	41.25
15-Sep-14	0.04	4936.62	36928.49	36.93
16-Sep-14	0.04	4936.62	36928.49	36.93
17-Sep-14	0.04	4936.62	36928.49	36.93
18-Sep-14	0.04	4936.62	36928.49	36.93

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
19-Sep-14	0.04	4936.62	36928.49	36.93
20-Sep-14	0.04	5488.14	41054.15	41.05
21-Sep-14	0.04	4936.62	36928.49	36.93
22-Sep-14	0.04	4936.62	36928.49	36.93
23-Sep-14	0.04	4940.08	36954.37	36.95
24-Sep-14	0.04	4936.62	36928.49	36.93
25-Sep-14	0.04	4936.63	36928.58	36.93
26-Sep-14	0.04	4936.62	36928.49	36.93
27-Sep-14	0.04	4936.62	36928.49	36.93
28-Sep-14	0.04	4936.62	36928.49	36.93
29-Sep-14	0.04	5575.52	41707.76	41.71
30-Sep-14	0.04	4933.16	36902.61	36.90
01-Oct-14	0.04	4936.62	36928.49	36.93
02-Oct-14	0.04	4936.62	36928.49	36.93
03-Oct-14	0.04	4936.62	36928.49	36.93
04-Oct-14	0.04	5482.16	41009.44	41.01
05-Oct-14	0.04	4936.62	36928.49	36.93
06-Oct-14	0.04	4937.64	36936.12	36.94
07-Oct-14	0.04	4958.11	37089.27	37.09
08-Oct-14	0.04	4936.62	36928.49	36.93
09-Oct-14	0.04	4936.62	36928.49	36.93
10-Oct-14	0.04	4936.62	36928.49	36.93
11-Oct-14	0.04	4936.62	36928.49	36.93
12-Oct-14	0.16	21633.01	161826.18	161.83
13-Oct-14	0.04	4936.62	36928.49	36.93
14-Oct-14	0.04	4936.62	36928.49	36.93
15-Oct-14	0.08	10939.70	81834.67	81.83
16-Oct-14	0.05	6197.25	46358.68	46.36
17-Oct-14	0.04	4936.62	36928.49	36.93
18-Oct-14	0.04	4936.62	36928.49	36.93
19-Oct-14	0.04	5584.05	41771.63	41.77
20-Oct-14	0.04	4936.62	36928.49	36.93
21-Oct-14	0.04	4936.62	36928.49	36.93
22-Oct-14	0.04	4936.70	36929.04	36.93
23-Oct-14	0.04	4936.62	36928.50	36.93
24-Oct-14	0.04	4936.86	36930.27	36.93
25-Oct-14	0.04	4949.30	37023.35	37.02
26-Oct-14	0.04	4938.76	36944.51	36.94
27-Oct-14	0.04	5574.89	41703.08	41.70
28-Oct-14	0.04	4936.62	36928.49	36.93

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
29-Oct-14	0.04	4936.62	36928.49	36.93
30-Oct-14	0.04	4936.62	36928.49	36.93
31-Oct-14	0.04	4936.62	36928.49	36.93
01-Nov-14	0.04	4954.40	37061.45	37.06
02-Nov-14	0.04	4967.36	37158.46	37.16
03-Nov-14	0.04	5023.83	37580.86	37.58
04-Nov-14	0.04	5030.63	37631.72	37.63
05-Nov-14	0.05	6985.85	52257.77	52.26
06-Nov-14	0.04	4936.63	36928.54	36.93
07-Nov-14	0.04	4936.62	36928.49	36.93
08-Nov-14	0.04	4937.80	36937.32	36.94
09-Nov-14	0.04	4955.05	37066.32	37.07
10-Nov-14	0.04	4987.05	37305.73	37.31
11-Nov-14	0.04	4963.95	37132.91	37.13
12-Nov-14	0.04	4972.27	37195.17	37.20
13-Nov-14	0.04	4944.02	36983.81	36.98
14-Nov-14	0.04	5017.82	37535.93	37.54
15-Nov-14	0.04	5104.88	38187.15	38.19
16-Nov-14	0.04	5136.41	38423.04	38.42
17-Nov-14	0.04	5098.34	38138.25	38.14
18-Nov-14	0.04	5002.68	37422.62	37.42
19-Nov-14	0.04	5141.07	38457.90	38.46
20-Nov-14	0.04	5255.04	39310.46	39.31
21-Nov-14	0.04	5119.90	38299.49	38.30
22-Nov-14	0.04	5098.40	38138.67	38.14
23-Nov-14	0.04	5131.45	38385.94	38.39
24-Nov-14	0.04	4985.14	37291.44	37.29
25-Nov-14	0.04	4937.00	36931.30	36.93
26-Nov-14	0.04	4936.64	36928.66	36.93
27-Nov-14	0.04	4982.69	37273.14	37.27
28-Nov-14	0.04	5028.32	37614.46	37.61
29-Nov-14	0.04	5079.61	37998.10	38.00
30-Nov-14	0.04	5682.53	42508.26	42.51
01-Dec-14	0.04	4997.69	37385.35	37.39
02-Dec-14	0.04	4936.62	36928.49	36.93
03-Dec-14	0.04	4996.98	37379.99	37.38
04-Dec-14	0.04	5012.16	37493.60	37.49
05-Dec-14	0.04	4988.98	37320.13	37.32
06-Dec-14	0.04	5027.56	37608.77	37.61
07-Dec-14	0.04	4944.92	36990.59	36.99



Louisville and Jefferson County Metropolitan Sewer District
700 West Liberty Street
Louisville Kentucky 40203-1911
502-540-6000
www.msdlouky.org

June 30, 2015

Joyce Bender
Nature Preserves and Natural Areas Branch Manager
Kentucky State Nature Preserve Commission
801 Schenkel Lane
Frankfort, KY 40601

Subject: CSO 108 Semi-Annual Report #14

Dear Ms. Bender:

As required in Paragraph #10 of the document titled "Memorandum of Understanding by and between the Kentucky State Nature Preserve Commission and the Louisville and Jefferson County Metropolitan Sewer District", MSD submits to you the MOU Semi-Annual Report #14. This report summarizes activities at the CSO 108 CDS Site during the reporting period of January 1, 2015 to June 30, 2015.

Should you have any questions or comments, please feel free to contact me via email at julie.potempa@louisvillemsd.org or phone at (502) 540-6112.

Sincerely,

Julie L. Potempa
Project Administrator

cc: J. Loechle A. Akridge D. Thompson File



Beneficial Use of Louisville's Biosolids
www.louisvillegreen.com



INTRODUCTION

The Louisville and Jefferson County Metropolitan Sewer District (MSD) has entered into a Memorandum of Understanding (MOU) with the Kentucky State Nature Preserve Commission (Commission). The MOU was signed by MSD on July 30, 2008, and by the Commission on September 17, 2008. This MOU is effective for the period starting September 1, 2008, and ending on September 1, 2018.

This is the fourteenth Semi-Annual Report submitted in accordance with Paragraph 10 of the MOU. This report covers the time period of January 1, 2015 to June 30, 2015.

This Semi-Annual Report will address only those requirements considered ongoing. The initial Semi-Annual Report, MOU Semi-Annual Report #1, was comprehensive and included a response to each requirement addressed within the MOU. Please refer to the initial Semi-Annual Report should you need additional information not found within this document.

Work and activities undertaken by MSD and relating to the MOU are outlined in the paragraphs below:

Paragraph #10 of the MOU:

MSD shall be diligent of this ten year period in more timely supplying the Commission with semi-annual reports on the efficacy of the CDS unit, water quality monitoring data, and any other such pertinent information. Said reports shall be provided to the Commission by June 30 and December 31 of each year.

- MSD Response: This document is the fourteenth semi-annual report to the Commission since the completion of the Project.
- Cleaning and Inspection Activities:

The CSO 108 CDS Unit is inspected weekly and cleaned on an as-needed basis. Between the dates of January 1, 2015, and June 30, 2015, MSD cleaned the CDS Unit bar racks three times. The information, shown in Table 1, is generated from work orders initiated whenever the CDS Unit is inspected and needs to be cleaned. Cleaning consists of either washing debris off of the bar racks or hauling the solids and floatables from the site. Both operations result in removing debris that would otherwise overflow into Beargrass Creek. When cleaning the bar racks, the debris is

reintroduced into the sewer system, and as a result, is difficult to accurately estimate the amount removed during the maintenance process. The Crystal Report often indicates the quantity removed as “unknown”.

TABLE 1: CSO 108 CDS Unit Debris Removal

<u>ACTCO</u>	<u>UNITID</u>	<u>QTY</u>	<u>COMMENTS</u>	<u>COMPDTM</u>
Debris	CSO 108	Unknown	None	01/21/15
Debris	CSO 108	Unknown	None	02/03/15
Debris	CSO 108	Unknown	None	03/02/15

- Maintenance Activities:

In addition to the weekly inspections, MSD has initiated a preventative maintenance program to insure that the CDS Unit and respective pumps are performing optimally. During these quarterly preventative maintenance activities MSD staff also cleans the CDS Unit and rack bars, washing the debris into the interceptor. The CDS Unit's pumps are removed from the facility twice yearly to more closely inspect and to perform any needed maintenance.

- Captured Flow

The CDS system was placed along the Trevillian Way Twin Trunk Sewer to capture solids and floatables from a 485 acre drainage area. The unit uses a vortex action created by the hydraulic energy of incoming flow to separate solids and floatable from the flow. The treated flow is then discharged through the outlet pipe to Beargrass Creek and the debris that is captured is pumped to the Morris Forman Water Quality Treatment Center (MFWQTC).

In an effort to estimate the volume of debris captured by the CDS Unit and kept within the sewer system, a study of the efficiency of the unit was performed in the



early 2002. The results of the study indicated that the concentration of solids kept within the sewer system was approximately 1ml/l. Using pump run times and knowing the efficiency of the pumps, MSD was able to determine a volume of solids captured by the CDS technology. MSD estimates that the CDS Unit captured 74.04 tons of solids during the reporting period. Attachment "B" lists the pump run times and calculations MSD used to determine the amount of debris captured by the CDS Unit and sent to the MFWQTC for treatment.

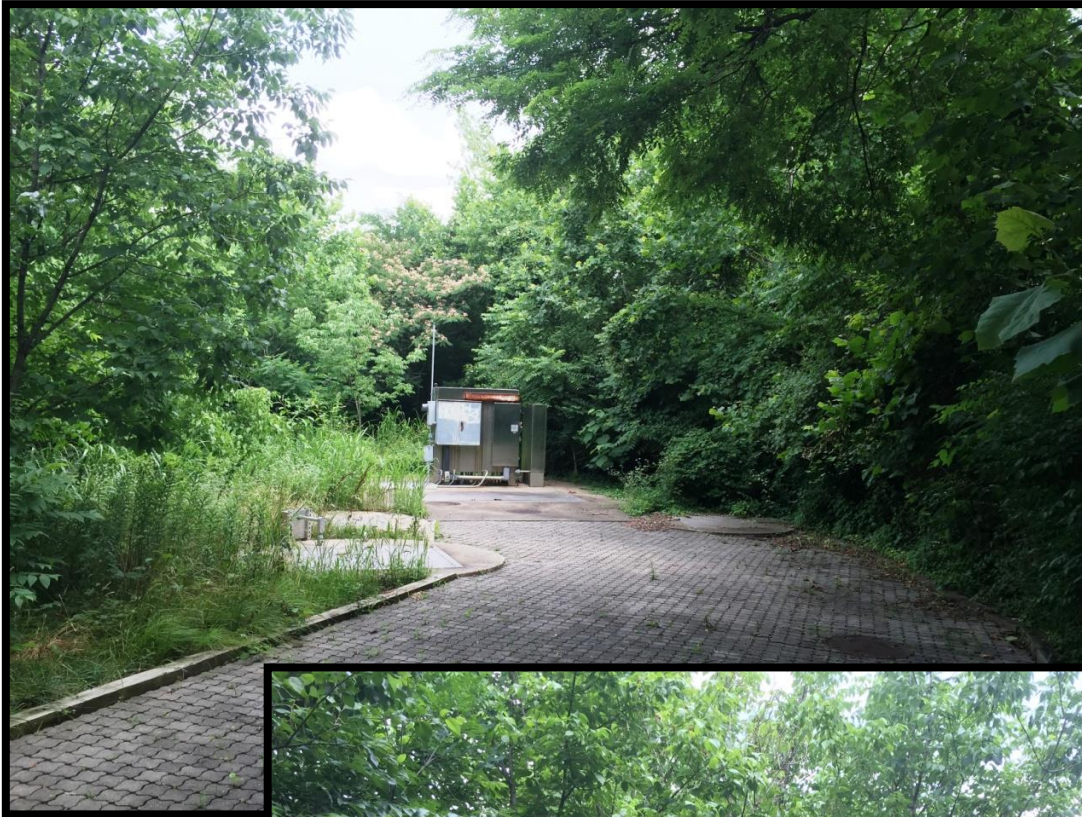


ATTACHMENT “A”

PHOTOS OF AREA ADJACENT TO CSO 108 AND THE CDS UNIT (dated June 23, 2015)



Figures 1 and 2 – Entrance to CDS Unit



Figures 3 and 4 – Area Adjacent to CDS Unit



Figure 5 – Area Adjacent to Entrance

June 30, 2015



Figures 6 and 7 – Area Adjacent to Creek



ATTACHMENT “B”

CDS UNIT PUMP RUN TIMES

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
30-Dec-14	0.0374	5,000.24	37,404.43	37.40
31-Dec-14	0.0390	5,215.01	39,011.01	39.01
01-Jan-15	0.0381	5,098.97	38,142.96	38.14
02-Jan-15	0.0388	5,189.74	38,821.95	38.82
03-Jan-15	0.0382	5,108.25	38,212.35	38.21
04-Jan-15	0.0375	5,013.59	37,504.23	37.50
05-Jan-15	0.0419	5,598.26	41,877.93	41.88
06-Jan-15	0.0372	4,970.81	37,184.23	37.18
07-Jan-15	0.0390	5,211.63	38,985.73	38.99
08-Jan-15	0.0384	5,133.49	38,401.21	38.40
09-Jan-15	0.0397	5,303.79	39,675.09	39.68
10-Jan-15	0.0400	5,342.25	39,962.82	39.96
11-Jan-15	0.0389	5,205.91	38,942.90	38.94
12-Jan-15	0.0394	5,273.05	39,445.15	39.45
13-Jan-15	0.0381	5,098.56	38,139.90	38.14
14-Jan-15	0.0416	5,560.69	41,596.82	41.60
15-Jan-15	0.0384	5,130.48	38,378.66	38.38
16-Jan-15	0.0382	5,102.14	38,166.62	38.17
17-Jan-15	0.0378	5,058.55	37,840.56	37.84
18-Jan-15	0.0379	5,060.71	37,856.75	37.86
19-Jan-15	0.0376	5,030.96	37,634.21	37.63
20-Jan-15	0.0371	4,959.93	37,102.84	37.10
21-Jan-15	0.0375	5,018.16	37,538.48	37.54
22-Jan-15	0.0374	5,001.21	37,411.63	37.41
23-Jan-15	0.0371	4,958.45	37,091.77	37.09
24-Jan-15	0.0376	5,029.60	37,624.00	37.62
25-Jan-15	0.0407	5,437.54	40,675.64	40.68
26-Jan-15	0.0376	5,031.54	37,638.50	37.64
27-Jan-15	0.0374	4,993.66	37,355.14	37.36
28-Jan-15	0.0382	5,105.35	38,190.70	38.19
29-Jan-15	0.0380	5,076.07	37,971.67	37.97
30-Jan-15	0.0381	5,091.21	38,084.87	38.08
31-Jan-15	0.0374	4,997.18	37,381.51	37.38
01-Feb-15	0.0376	5,031.74	37,640.05	37.64
02-Feb-15	0.0379	5,067.05	37,904.15	37.90
03-Feb-15	0.0371	4,959.53	37,099.88	37.10
04-Feb-15	0.0381	5,096.87	38,127.25	38.13
05-Feb-15	0.0421	5,623.35	42,065.60	42.07
06-Feb-15	0.0375	5,006.76	37,453.19	37.45
07-Feb-15	0.0387	5,177.38	38,729.53	38.73
08-Feb-15	0.0384	5,129.68	38,372.67	38.37
09-Feb-15	0.0375	5,019.58	37,549.06	37.55
10-Feb-15	0.0370	4,940.17	36,955.04	36.96
11-Feb-15	0.0375	5,014.45	37,510.70	37.51
12-Feb-15	0.0378	5,055.39	37,816.94	37.82
13-Feb-15	0.0411	5,493.03	41,090.70	41.09

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
14-Feb-15	0.0385	5,145.85	38,493.60	38.49
15-Feb-15	0.0383	5,121.71	38,313.06	38.31
16-Feb-15	0.0383	5,124.05	38,330.54	38.33
17-Feb-15	0.0383	5,124.05	38,330.54	38.33
18-Feb-15	0.0789	10,549.39	78,914.94	78.91
19-Feb-15	0.0392	5,238.69	39,188.11	39.19
20-Feb-15	0.0392	5,244.50	39,231.55	39.23
21-Feb-15	0.0402	5,378.60	40,234.76	40.23
22-Feb-15	0.0398	5,325.63	39,838.49	39.84
23-Feb-15	0.0428	5,717.41	42,769.23	42.77
24-Feb-15	0.0379	5,068.97	37,918.53	37.92
25-Feb-15	0.0388	5,181.64	38,761.33	38.76
26-Feb-15	0.0384	5,135.34	38,415.01	38.42
27-Feb-15	0.0421	5,625.83	42,084.09	42.08
28-Feb-15	0.0381	5,099.25	38,145.06	38.15
01-Mar-15	0.0386	5,166.56	38,648.57	38.65
02-Mar-15	0.0382	5,106.01	38,195.64	38.20
03-Mar-15	0.0376	5,027.14	37,605.60	37.61
04-Mar-15	0.0375	5,017.36	37,532.43	37.53
05-Mar-15	0.0744	9,942.28	74,373.40	74.37
06-Mar-15	1.3141	175,673.73	1,314,130.78	1,314.13
07-Mar-15	0.0839	11,213.31	83,881.40	83.88
08-Mar-15	0.0570	7,618.37	56,989.39	56.99
09-Mar-15	0.0570	7,618.37	56,989.39	56.99
10-Mar-15	0.1142	15,272.18	114,243.85	114.24
11-Mar-15	0.0536	7,168.37	53,623.16	53.62
12-Mar-15	0.8181	109,357.73	818,052.65	818.05
13-Mar-15	0.0897	11,986.78	89,667.35	89.67
14-Mar-15	0.0612	8,186.42	61,238.69	61.24
15-Mar-15	0.1427	19,081.04	142,736.11	142.74
16-Mar-15	0.1976	26,408.83	197,551.77	197.55
17-Mar-15	0.0782	10,451.87	78,185.45	78.19
18-Mar-15	0.0622	8,318.98	62,230.30	62.23
19-Mar-15	0.0564	7,539.33	56,398.08	56.40
20-Mar-15	0.0530	7,079.47	52,958.13	52.96
21-Mar-15	0.0481	6,434.74	48,135.23	48.14
22-Mar-15	0.0492	6,575.33	49,186.89	49.19
23-Mar-15	0.0502	6,706.83	50,170.57	50.17
24-Mar-15	0.0444	5,935.04	44,397.18	44.40
25-Mar-15	0.0450	6,010.29	44,960.11	44.96
26-Mar-15	0.0458	6,116.61	45,755.43	45.76
27-Mar-15	0.0402	5,372.85	40,191.73	40.19
28-Mar-15	0.0449	6,003.77	44,911.31	44.91
29-Mar-15	0.0447	5,979.37	44,728.83	44.73
30-Mar-15	0.0377	5,036.07	37,672.43	37.67
31-Mar-15	0.0418	5,593.43	41,841.76	41.84

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
01-Apr-15	0.0411	5,498.41	41,131.00	41.13
02-Apr-15	0.0370	4,941.74	36,966.79	36.97
03-Apr-15	0.0369	4,938.68	36,943.90	36.94
04-Apr-15	0.3508	46,890.64	350,766.36	350.77
05-Apr-15	1.4939	199,704.93	1,493,896.60	1,493.90
06-Apr-15	1.1313	151,238.15	1,131,339.91	1,131.34
07-Apr-15	0.0768	10,263.77	76,778.36	76.78
08-Apr-15	0.0545	7,290.89	54,539.62	54.54
09-Apr-15	0.2302	30,773.88	230,204.60	230.20
10-Apr-15	0.2160	28,877.88	216,021.52	216.02
11-Apr-15	0.1688	22,568.65	168,825.22	168.83
12-Apr-15	0.0579	7,745.64	57,941.41	57.94
13-Apr-15	0.0459	6,130.27	45,857.58	45.86
14-Apr-15	0.0457	6,110.97	45,713.25	45.71
15-Apr-15	0.0458	6,116.54	45,754.89	45.75
16-Apr-15	0.0458	6,125.05	45,818.54	45.82
17-Apr-15	0.0410	5,475.67	40,960.89	40.96
18-Apr-15	0.0403	5,386.57	40,294.36	40.29
19-Apr-15	0.0402	5,367.87	40,154.45	40.15
20-Apr-15	0.0369	4,936.62	36,928.49	36.93
21-Apr-15	0.0911	12,174.54	91,071.92	91.07
22-Apr-15	0.0458	6,125.68	45,823.29	45.82
23-Apr-15	0.0415	5,546.35	41,489.55	41.49
24-Apr-15	0.0369	4,936.62	36,928.49	36.93
25-Apr-15	0.0411	5,500.62	41,147.52	41.15
26-Apr-15	0.0370	4,949.77	37,026.87	37.03
27-Apr-15	0.0369	4,936.62	36,928.49	36.93
28-Apr-15	0.0386	5,165.67	38,641.93	38.64
29-Apr-15	0.0369	4,936.79	36,929.75	36.93
30-Apr-15	0.0369	4,936.74	36,929.38	36.93
01-May-15	0.0369	4,936.63	36,928.54	36.93
02-May-15	0.0369	4,936.62	36,928.49	36.93
03-May-15	0.0413	5,521.10	41,300.71	41.30
04-May-15	0.0369	4,936.62	36,928.49	36.93
05-May-15	0.0369	4,933.16	36,902.61	36.90
06-May-15	0.0369	4,936.62	36,928.49	36.93
07-May-15	0.0369	4,936.62	36,928.49	36.93
08-May-15	0.0369	4,936.62	36,928.49	36.93
09-May-15	0.0369	4,936.62	36,928.49	36.93
10-May-15	0.0413	5,526.19	41,338.80	41.34
11-May-15	0.0369	4,936.62	36,928.49	36.93
12-May-15	0.0369	4,936.62	36,928.49	36.93
13-May-15	0.0903	12,068.72	90,280.26	90.28
14-May-15	0.0395	5,286.40	39,544.99	39.54
15-May-15	0.0369	4,936.62	36,928.49	36.93
16-May-15	0.0369	4,936.62	36,928.49	36.93

CSO 108 Underflow Pump Flow Meter Data

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
17-May-15	0.0369	4,936.62	36,928.49	36.93
18-May-15	0.0369	4,936.62	36,928.49	36.93
19-May-15	0.0369	4,936.62	36,928.49	36.93
20-May-15	0.0369	4,936.62	36,928.49	36.93
21-May-15	0.0411	5,496.75	41,118.55	41.12
22-May-15	0.0369	4,936.62	36,928.49	36.93
23-May-15	0.0370	4,940.08	36,954.37	36.95
24-May-15	0.0369	4,936.79	36,929.73	36.93
25-May-15	0.0369	4,936.62	36,928.49	36.93
26-May-15	0.0369	4,933.16	36,902.61	36.90
27-May-15	0.0369	4,936.62	36,928.49	36.93
28-May-15	0.0477	6,380.83	47,731.95	47.73
29-May-15	0.0369	4,936.62	36,928.49	36.93
30-May-15	0.0369	4,936.62	36,928.49	36.93
31-May-15	0.0505	6,747.45	50,474.42	50.47
01-Jun-15	0.0369	4,933.16	36,902.61	36.90
02-Jun-15	0.0369	4,936.62	36,928.49	36.93
03-Jun-15	0.0369	4,936.62	36,928.49	36.93
04-Jun-15	0.0369	4,936.62	36,928.49	36.93
05-Jun-15	0.0369	4,936.62	36,928.49	36.93
06-Jun-15	0.0369	4,936.62	36,928.49	36.93
07-Jun-15	0.0369	4,933.16	36,902.61	36.90
08-Jun-15	0.0369	4,936.62	36,928.49	36.93
09-Jun-15	0.0369	4,936.62	36,928.49	36.93
10-Jun-15	0.0369	4,936.62	36,928.49	36.93
11-Jun-15	0.0414	5,540.76	41,447.74	41.45
12-Jun-15	0.0369	4,936.62	36,928.49	36.93
13-Jun-15	0.0369	4,936.62	36,928.49	36.93
14-Jun-15	0.0369	4,933.16	36,902.61	36.90
15-Jun-15	0.0369	4,936.62	36,928.49	36.93
16-Jun-15	0.0369	4,936.62	36,928.49	36.93
17-Jun-15	0.0369	4,936.62	36,928.49	36.93
18-Jun-15	0.0369	4,936.62	36,928.49	36.93
19-Jun-15	0.0369	4,933.16	36,902.61	36.90
20-Jun-15	0.2665	35,629.62	266,528.10	266.53
21-Jun-15	0.0595	7,950.34	59,472.68	59.47
22-Jun-15	0.2057	27,500.07	205,714.79	205.71
23-Jun-15	0.0369	4,936.62	36,928.49	36.93
24-Jun-15	0.0369	4,936.62	36,928.49	36.93
25-Jun-15	0.0369	4,933.16	36,902.61	36.90
26-Jun-15	0.0369	4,936.62	36,928.49	36.93
				13,654.98

148,087.21

Pounds

74.04

Tons

CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
30-Dec-14	0.00	0.00	0.00
31-Dec-14	0.00	0.00	0.02
01-Jan-15	0.00	0.00	0.00
02-Jan-15	0.00	0.00	0.00
03-Jan-15	0.00	0.00	0.00
04-Jan-15	0.00	0.00	0.00
05-Jan-15	0.00	0.00	0.05
06-Jan-15	0.00	0.00	0.00
07-Jan-15	0.00	0.00	0.00
08-Jan-15	0.00	0.00	0.00
09-Jan-15	0.00	0.00	0.00
10-Jan-15	0.00	0.00	0.00
11-Jan-15	0.00	0.00	0.00
12-Jan-15	0.00	0.00	0.00
13-Jan-15	0.00	0.00	0.00
14-Jan-15	0.00	0.00	0.05
15-Jan-15	0.00	0.00	0.00
16-Jan-15	0.00	0.00	0.00
17-Jan-15	0.00	0.00	0.00
18-Jan-15	0.00	0.00	0.00
19-Jan-15	0.00	0.00	0.00
20-Jan-15	0.00	0.00	0.00
21-Jan-15	0.00	0.00	0.00
22-Jan-15	0.00	0.00	0.00
23-Jan-15	0.00	0.00	0.00
24-Jan-15	0.00	0.00	0.00
25-Jan-15	0.00	0.00	0.05
26-Jan-15	0.00	0.00	0.00
27-Jan-15	0.00	0.00	0.00
28-Jan-15	0.00	0.00	0.00
29-Jan-15	0.00	0.00	0.00
30-Jan-15	0.00	0.00	0.00
31-Jan-15	0.00	0.00	0.00
01-Feb-15	0.00	0.00	0.00
02-Feb-15	0.00	0.00	0.00
03-Feb-15	0.00	0.00	0.00
04-Feb-15	0.00	0.00	0.00
05-Feb-15	0.00	0.00	0.05
06-Feb-15	0.00	0.00	0.00
07-Feb-15	0.00	0.00	0.00
08-Feb-15	0.00	0.00	0.00
09-Feb-15	0.00	0.00	0.00
10-Feb-15	0.00	0.00	0.00

CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
11-Feb-15	0.00	0.00	0.00
12-Feb-15	0.00	0.00	0.00
13-Feb-15	0.00	0.00	0.03
14-Feb-15	0.00	0.00	0.00
15-Feb-15	0.00	0.00	0.00
16-Feb-15	0.00	0.00	0.00
17-Feb-15	0.00	0.00	0.00
18-Feb-15	0.00	0.00	0.00
19-Feb-15	0.00	0.00	0.00
20-Feb-15	0.00	0.00	0.00
21-Feb-15	0.00	0.00	0.00
22-Feb-15	0.00	0.00	0.00
23-Feb-15	0.00	0.00	0.05
24-Feb-15	0.00	0.00	0.00
25-Feb-15	0.00	0.00	0.00
26-Feb-15	0.00	0.00	0.00
27-Feb-15	0.00	0.00	0.05
28-Feb-15	0.00	0.00	0.00
01-Mar-15	0.00	0.00	0.00
02-Mar-15	0.00	0.00	0.00
03-Mar-15	0.00	0.00	0.00
04-Mar-15	0.00	0.00	0.00
05-Mar-15	0.57	0.00	0.50
06-Mar-15	16.63	0.00	17.02
07-Mar-15	0.00	0.00	0.48
08-Mar-15	0.00	0.00	0.22
09-Mar-15	0.00	0.00	0.20
10-Mar-15	0.00	0.00	0.22
11-Mar-15	0.00	0.00	0.17
12-Mar-15	12.80	0.00	12.23
13-Mar-15	0.00	0.00	0.53
14-Mar-15	0.00	0.00	0.25
15-Mar-15	5.02	0.00	5.43
16-Mar-15	17.93	0.00	17.23
17-Mar-15	0.00	0.00	0.45
18-Mar-15	0.00	0.00	0.25
19-Mar-15	0.00	0.00	0.22
20-Mar-15	0.00	0.00	0.18
21-Mar-15	0.00	0.00	0.13
22-Mar-15	0.00	0.00	0.12
23-Mar-15	0.00	0.00	0.13
24-Mar-15	0.00	0.00	0.08
25-Mar-15	0.00	0.00	0.10

CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
26-Mar-15	0.00	0.00	0.08
27-Mar-15	0.00	0.00	0.03
28-Mar-15	0.00	0.00	0.10
29-Mar-15	0.00	0.00	0.08
30-Mar-15	0.00	0.00	0.00
31-Mar-15	0.00	0.00	0.03
01-Apr-15	0.00	0.00	0.05
02-Apr-15	0.00	0.00	0.00
03-Apr-15	0.00	0.00	0.00
04-Apr-15	1.90	0.00	10.20
05-Apr-15	0.00	0.00	24.00
06-Apr-15	0.00	0.00	16.40
07-Apr-15	0.00	0.00	0.40
08-Apr-15	0.00	0.00	0.17
09-Apr-15	1.72	0.00	2.03
10-Apr-15	1.48	0.00	1.73
11-Apr-15	1.17	0.00	1.50
12-Apr-15	0.00	0.00	0.22
13-Apr-15	0.00	0.00	0.10
14-Apr-15	0.00	0.00	0.08
15-Apr-15	0.00	0.00	0.08
16-Apr-15	0.00	0.00	0.08
17-Apr-15	0.00	0.00	0.03
18-Apr-15	0.00	0.00	0.05
19-Apr-15	0.00	0.00	0.05
20-Apr-15	0.00	0.00	0.00
21-Apr-15	0.03	0.00	0.52
22-Apr-15	0.00	0.00	0.08
23-Apr-15	0.00	0.00	0.05
24-Apr-15	0.00	0.00	0.00
25-Apr-15	0.00	0.00	0.03
26-Apr-15	0.00	0.00	0.00
27-Apr-15	0.00	0.00	0.00
28-Apr-15	0.00	0.00	0.05
29-Apr-15	0.00	0.00	0.00
30-Apr-15	0.00	0.00	0.00
01-May-15	0.00	0.00	0.00
02-May-15	0.00	0.00	0.00
03-May-15	0.00	0.00	0.03
04-May-15	0.00	0.00	0.00
05-May-15	0.00	0.00	0.00
06-May-15	0.00	0.00	0.00
07-May-15	0.00	0.00	0.00

CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
08-May-15	0.00	0.00	0.00
09-May-15	0.00	0.00	0.00
10-May-15	0.00	0.00	0.05
11-May-15	0.00	0.00	0.00
12-May-15	0.00	0.00	0.00
13-May-15	0.52	0.00	0.63
14-May-15	0.00	0.00	0.03
15-May-15	0.00	0.00	0.00
16-May-15	0.00	0.00	0.00
17-May-15	0.00	0.00	0.00
18-May-15	0.00	0.00	0.00
19-May-15	0.00	0.00	0.00
20-May-15	0.00	0.00	0.00
21-May-15	0.00	0.00	0.05
22-May-15	0.00	0.00	0.00
23-May-15	0.00	0.00	0.00
24-May-15	0.00	0.00	0.00
25-May-15	0.00	0.00	0.00
26-May-15	0.00	0.00	0.00
27-May-15	0.00	0.00	0.00
28-May-15	0.00	0.00	0.10
29-May-15	0.00	0.00	0.00
30-May-15	0.00	0.00	0.00
31-May-15	0.00	0.00	0.15
01-Jun-15	0.00	0.00	0.00
02-Jun-15	0.00	0.00	0.00
03-Jun-15	0.00	0.00	0.00
04-Jun-15	0.00	0.00	0.00
05-Jun-15	0.00	0.00	0.00
06-Jun-15	0.00	0.00	0.00
07-Jun-15	0.00	0.00	0.00
08-Jun-15	0.00	0.00	0.00
09-Jun-15	0.00	0.00	0.00
10-Jun-15	0.00	0.00	0.00
11-Jun-15	0.00	0.00	0.05
12-Jun-15	0.00	0.00	0.00
13-Jun-15	0.00	0.00	0.00
14-Jun-15	0.00	0.00	0.00
15-Jun-15	0.00	0.00	0.00
16-Jun-15	0.00	0.00	0.00
17-Jun-15	0.00	0.00	0.00
18-Jun-15	0.00	0.00	0.00
19-Jun-15	0.00	0.00	0.00

CSO 108 CDS Facility

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
20-Jun-15	2.30	0.00	2.47
21-Jun-15	0.00	0.00	0.22
22-Jun-15	1.13	0.00	1.68
23-Jun-15	0.00	0.00	0.00
24-Jun-15	0.00	0.00	0.00
25-Jun-15	0.00	0.00	0.00
26-Jun-15	0.00	0.00	0.00



APPENDIX B-1 - DISCHARGE WORK ORDERS-WATERS OF THE UNITED STATES



APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
CEDAR CREEK	KY0098540	9800 HOFELICH LN	7/12/14 6:48 PM	07/12/14 07:12 PM	200	SEWER MAIN	28009	GROUND	CEDAR CREEK	GREASE AND ROOTS OBSTRUCTION IN MAIN SEWER.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2193027	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	WORK ORDER 2193450; ROOT CUT TO REMOVE GREASE AND ROOT OBSTRUCTION.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	7/13/14 10:50 PM	07/14/14 01:15 AM	1,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2193300	DISCLN WO# 2193665.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	147 BUCHANAN ST	7/26/14 10:30 PM	07/29/14 10:00 AM	110,000,000	SEWER MANHOLE	CSO020	STREAM	OHIO RIVER	SCADA MALFUNCTION. POWER RELATED PROBLEM AT STARKEY PS NOT REPORTED THROUGH SCADA SYSTEM DUE TO MALFUNCTION.	ELECTRICAL PROBLEMS AT MSD	DISREV RAIN EVENT DISCHARGE	2207547	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	STATION RESTORED. RESET VFD, REBOOT PC FOR SCADA SYSTEM.
MORRIS FORMAN	KY0022411	200 CABEL ST	7/26/14 10:30 PM	07/29/14 10:00 AM	10,000,000	SEWER MANHOLE	CSO062	STREAM	OHIO RIVER	SCADA MALFUNCTION. POWER RELATED PROBLEM AT STARKEY PS NOT REPORTED THROUGH SCADA SYSTEM DUE TO MALFUNCTION.	ELECTRICAL PROBLEMS AT MSD	DISREV RAIN EVENT DISCHARGE	2207550	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	STATION RESTORED. RESET VFD, REBOOT PC FOR SCADA SYSTEM.
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	7/27/14 10:20 AM	07/27/14 02:30 PM	12,500	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2201272	MSD PERSONNEL CLEANED AREA UNDER WORK ORDER#2204779.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	8/8/14 8:35 AM	08/09/14 12:00 PM	22,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2211880	DISCLN # 2212180.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	8/22/14 8:30 AM	08/23/14 09:30 PM	4,591	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2219579	DISCLN WO# 2219975.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3317 BROWNSBORO RD	8/22/14 8:03 PM	08/22/14 11:30 PM	1,000	SEWER MANHOLE	26752	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2219251	DISCLN WO# 2219379.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	8/22/14 8:44 PM	08/23/14 01:52 PM	117,106	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDED AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2219250	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	8/22/14 8:48 PM	08/22/14 11:45 PM	1,000	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2219252	DISCLN WO# 2219380.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	8/22/14 9:09 PM	08/22/14 11:42 PM	118,282	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2219455	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	8/27/14 6:00 PM	08/27/14 07:10 PM	3,000	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2222148	DISCLN WO# 2222152.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	8/27/14 6:12 PM	08/27/14 07:40 PM	4,500	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2222140	DISCLN WO# 4349866.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	8/27/14 6:30 PM	08/27/14 07:50 PM	2,500	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2222160	DISCLN WO# 2222176.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	8/27/14 6:34 PM	08/27/14 07:30 PM	2,221	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2220873	DISCLN WO# 2220873.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4108 LEE AVE	8/27/14 7:20 PM	08/27/14 07:45 PM	200	SEWER SERVICE LINE	KK14815019	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2222138	DISCLN WO# 2222143.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	8/27/14 9:56 PM	08/27/14 11:30 PM	15,000	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2220870	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	334 MOCKINGBIRD VALLEY RD	8/30/14 6:50 PM	08/30/14 07:20 PM	1,500	SEWER MANHOLE	15518	GROUND	MUDDY FORK BEARGRASS CREEK	TREE FELL ON POWER LINES KNOCKING POWER OUT TO THE STATION.	POWER OUTAGE (LG&E)	DISREV RAIN EVENT DISCHARGE	2223558	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	GENERATOR INSTALLED UNTIL POWER RESTORED WO#2223559.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	9/11/14 2:02 AM	09/11/14 05:29 AM	2,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231428	DISCLN WO# 2232095.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	9/11/14 2:10 AM	09/11/14 06:17 AM	7,500	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231224	DISCLN WO# 2232077.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	9/11/14 2:11 AM	09/11/14 06:18 AM	1,500	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231220	DISCLN WO# 2232075.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	9/11/14 2:18 AM	09/11/14 06:23 AM	9,000	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231238	DISCLN WO# 2232092.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4119 LEE AVE	9/11/14 2:23 AM	09/11/14 06:29 AM	7,500	SEWER MANHOLE	104231	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231225	DISCLN WO# 2232083.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4119 LEE AVE	9/11/14 2:24 AM	09/10/14 06:30 AM	500	SEWER MANHOLE	13943	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231229	DISCLN WO# 2232085.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4108 LEE AVE	9/11/14 2:27 AM	09/11/14 06:32 AM	200	SEWER SERVICE LINE	KK14815019	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231237	DISCLN WO# 2232089.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	9/11/14 2:33 AM	09/11/14 11:15 AM	9,500	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231206	DISCLN WO# 2232033.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	9/11/14 2:58 AM	09/11/14 01:01 PM	1,006,453	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDED AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2231197	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
HITE CREEK	KY0022420	7302 FLOYDSBURG RD	9/11/14 3:00 AM	09/11/14 09:15 AM	11,250	SEWER MANHOLE	108956	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231205	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP. MSD HAULED STATION #2231342.
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	9/11/14 3:03 AM	09/12/14 11:03 AM	1,600	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231214	WO# 2231967.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	9/11/14 3:45 AM	09/11/14 11:13 AM	633,437	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231200	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.

**APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
JEFFERSONTOWN	KY0025194	3258 RUCKRIEGEL PKY	9/11/14 3:48 AM	09/12/14 10:50 AM	1,400	SEWER MANHOLE	28173	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231210	WO# 2231965.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	9/11/14 4:20 AM	09/11/14 03:31 PM	48,500	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231215	WO# 2231958.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	9/11/14 4:30 AM	09/12/14 03:40 PM	600	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231217	WO# 2231969.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	9/11/14 4:31 AM	09/12/14 03:40 PM	600	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231216	WO# 2231959.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	201 BULLITT LN	9/11/14 4:50 AM	09/11/14 11:06 AM	6,500	SEWER MANHOLE	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231424	DISCLN WO# 2232032.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	9/11/14 4:50 AM	09/11/14 11:06 AM	6,500	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231418	DISCLN WO# 2232030.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	806 PINE WAY	9/11/14 7:40 AM	09/11/14 08:45 AM	1,625	SEWER LIFT STATION	MSD0057-LS	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2231234	NO DEBRIS.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	201 W RIVER RD	9/17/14 11:52 AM	09/17/14 11:54 AM	100	SEWER NODE	72620-ST	STREAM	OHIO RIVER	CLEAN OUT CAP FAILED. RIVER WATER PUMPED.	MECHANICAL FAILURE	DISDW DRY WEATHER DISCHARGE	2233517	NO DEBRIS.	REPLACED CLEAN OUT PLUG.
MORRIS FORMAN	KY0022411	7001 U S HIGHWAY 42	9/18/14 8:30 AM	09/18/14 04:30 PM	200	SEWER MAIN	69070B-AG	GROUND	LITTLE GOOSE CREEK	SUSPECTED FAILURE OF FORCEMAIN.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2233800	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	CONTRACTOR HAS REPAIRED THE OHIO RIVER FORCE MAIN.
DEREK R. GUTHRIE	KY0078956	4805 MID DR	9/18/14 11:15 AM	09/18/14 11:50 AM	100	SEWER SERVICE LINE	70388	GROUND	PONDER CREEK	OBSTRUCTION IN MAIN SEWER.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2233827	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	WORK ORDER 2233817; FLUSHED MAIN SEWER.
MORRIS FORMAN	KY0022411	4640 BARBOUR LN	9/22/14 9:25 AM	09/22/14 05:20 PM	240,600	SEWER MAIN	62412E-AG	GROUND	LITTLE GOOSE CREEK	FORCE MAIN BREAK.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2234689	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	CONTRACTOR HAS REPAIRED THE BARBOUR LANE FORCE MAIN.
MORRIS FORMAN	KY0022411	4640 BARBOUR LN	9/22/14 6:40 PM	09/22/14 10:40 PM	33,200	SEWER MANHOLE	65633	STREAM	LITTLE GOOSE CREEK	BROKEN FORCE MAIN.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2234908	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	CONTRACTOR HAS REPAIRED THE BARBOUR LANE FORCE MAIN.
MORRIS FORMAN	KY0022411	1726 FRASER DR	10/14/14 10:03 AM	10/14/14 01:00 PM	11,446	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2250396	DISCLN WO #2250576.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	10/14/14 10:32 AM	10/14/14 01:30 PM	1,000	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2250393	DISCLN WO# 2250569.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	10/14/14 10:32 AM	10/14/14 04:16 PM	320,016	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDED AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2250349	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	10/14/14 10:49 AM	10/14/14 01:31 PM	136,383	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2250389	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	10/14/14 11:00 AM	10/14/14 03:00 PM	12,000	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2250410	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7404 ARROWWOOD RD	10/14/14 11:20 AM	10/14/14 11:25 AM	250	SEWER LIFT STATION	MSD0040-PS	DITCH	GOOSE CREEK	PUMPS KICKED OUT.	MECHANICAL FAILURE	DISREV RAIN EVENT DISCHARGE	2250377	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	MSD RESET THE PUMPS.
MORRIS FORMAN	KY0022411	2515 WOODSIDE RD	10/15/14 11:15 PM	10/15/14 11:45 PM	750	SEWER MANHOLE	91781	GROUND	LONGVIEW CREEK	GREASE IN THE WET WELL CAUSED THE PUMP NOT TO KICK ON RESULTING IN A DISCHARGE.	GREASE BLOCKAGE	DISREV RAIN EVENT DISCHARGE	2250907	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	PLACED PUMP IN MANUAL MODE.
STARVIEW	KY0031712	423 BERMUDA WAY	10/24/14 9:15 AM	10/24/14 10:22 AM	1,675	SEWER MANHOLE	31122	GROUND	CHENOWETH RUN	GREASE BLOCKAGE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2255431	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	MSD FLUSHED THE LINE, FLUSH WO# 2255757.
STARVIEW	KY0031712	423 BERMUDA WAY	10/24/14 9:15 AM	10/24/14 10:22 AM	1,675	SEWER MANHOLE	31123	DITCH	CHENOWETH RUN, UPPER	GREASE BLOCKAGE.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2255536	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	MSD FLUSHED THE LINE, FLUSH WO# 2255757.
STARVIEW	KY0031712	423 BERMUDA WAY	10/24/14 9:15 AM	10/24/14 10:22 AM	1,675	SEWER MANHOLE	31124	GROUND	CHENOWETH RUN, UPPER	GREASE BLOCKAGE.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2255540	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	MSD FLUSHED THE LINE, FLUSH WO# 2255757.
MORRIS FORMAN	KY0022411	1212 ROYAL AVE	11/3/14 11:05 AM	11/03/14 12:25 PM	1,175	SEWER MANHOLE	CSO106	STREAM	SOUTH FORK BEARGRASS CREEK	LEAVES BLOCKING THE LOW FLOW LINE AT THE DAM.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2260454	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	WORK ORDER 2260456; REMOVED LEAVES FROM LOW FLOW LINE.
MORRIS FORMAN	KY0022411	346 S PETERSON AVE	11/4/14 6:00 PM	11/04/14 08:15 PM	675	SEWER NODE	68345-CO	DITCH	MIDDLE FORK BEARGRASS CREEK	OBSTRUCTION IN THE MAIN SEWER CAUSED CLEANOUT TO DISCHARGE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2261212	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	WORK ORDER 2261211, FLUSHED 6" MAIN SEWER TO REMOVE THE OBSTRUCTION.
KEN CARLA	KY0022497	8701 LYNNHALL CT	11/6/14 8:44 AM	11/06/14 09:51 AM	34	SEWER TREATMENT PLANT	MSD0208	STREAM	HARRODS CREEK	LEAKING OUT OF CHLORINE CONTACT TANK.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2263290	LIME WAS SPREAD; NO DEBRIS OBSERVED.	CONTRACTOR REPAIRED TANK.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	11/23/14 6:46 PM	11/24/14 08:50 PM	6,000	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2268279	DISCLN WO# 2268279.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	11/23/14 7:45 PM	11/23/14 08:00 PM	178	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2268593	WO# 2268593.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	11/23/14 8:20 PM	11/23/14 09:08 PM	2,140	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDED AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2268282	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
DEREK R. GUTHRIE	KY0078956	6109 RICHIEWAYNE DR	11/24/14 12:49 PM	11/24/14 01:45 PM	2,800	SEWER MANHOLE	57824	DITCH	SOUTHERN DITCH	ROOTS IN MAIN SEWER.	ROOTS	DISREV RAIN EVENT DISCHARGE	2268480	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	WORK ORDER 2268617; ROOT-CUT MAIN SEWER.
HUNTING CREEK NORTH	KY0029106	6918 WYTHE HILL CIR	11/25/14 3:30 PM	11/26/14 04:36 PM	775	SEWER MAIN	73515N-V	DITCH	HUNTING CREEK	MSD CONTRACTOR DAMAGED WHILE DIRECTIONAL DRILLING.	STRUCTURAL FAILURE	DISREV RAIN EVENT DISCHARGE	2269010	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	CONTRACTOR HAS REPAIRED THE OHIO RIVER FORCE MAIN.

APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
HITE CREEK	KY0022420	6808 FAIRWAY VIEW CT	12/3/14 8:00 AM	12/03/14 08:40 AM	50	SEWER LIFT STATION	MSD1065-PS	DITCH	HARRODS CREEK	MSD CONTRACTOR DAMAGED THE FORCE MAIN.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2271775	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	CONTRACTOR HAS REPAIRED THE OHIO RIVER FORCE MAIN.
MORRIS FORMAN	KY0022411	1726 FRASER DR	12/5/14 9:33 PM	12/06/14 08:00 PM	13,600	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273388	WO# 2273591.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	12/6/14 12:20 AM	12/06/14 07:09 PM	2,110,538	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2273389	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	12/6/14 12:33 AM	12/06/14 09:07 AM	100	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273400	WO# 2273593.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	12/6/14 12:54 AM	12/06/14 06:05 AM	100	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273402	WO# 2273569.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	12/6/14 1:15 AM	12/06/14 02:00 PM	21,000	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273390	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6102 COOPER CHAPEL RD	12/6/14 1:30 AM	12/06/14 10:30 AM	13,500	SEWER MANHOLE	25479	CATCH BASIN	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273406	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	12/6/14 1:50 AM	12/06/14 08:00 PM	2,443,790	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273396	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	12/6/14 3:03 AM	12/06/14 11:00 AM	3,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273394	WO# 2273575.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	12/6/14 3:10 AM	12/06/14 11:26 AM	3,000	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273392	WO# 2273578.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	12/6/14 3:10 AM	12/06/14 11:26 AM	3,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273393	WO# 2273393.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	12/6/14 3:15 AM	12/06/14 11:30 AM	4,500	SEWER MANHOLE	72289	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273391	WO# 2273579.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	806 PINE WAY	12/6/14 3:40 AM	12/06/14 11:20 AM	9,200	SEWER MANHOLE	00817	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273407	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	201 BULLITT LN	12/6/14 3:49 AM	12/06/14 11:30 AM	3,000	SEWER MANHOLE	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273399	WO# 2273568.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	12/6/14 3:49 AM	12/06/14 05:25 AM	18,000	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273398	WO# 2273568.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3258 RUCKRIEGEL PKY	12/6/14 5:41 AM	12/06/14 09:07 AM	25	SEWER MANHOLE	28173	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273401	WO# 2273573.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3305 INDIAN CREEK CT	12/6/14 6:15 AM	12/06/14 09:10 AM	100	SEWER MANHOLE	51160	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273571	WO# 2273572.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2120 INDIAN HILLS TRL	12/6/14 10:32 AM	12/06/14 09:05 PM	94,950	SEWER MANHOLE	40871	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273425	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2105 INDIAN HILLS TRL	12/6/14 10:32 AM	12/06/14 09:05 PM	94,950	SEWER MANHOLE	40872	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273424	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2120 INDIAN HILLS TRL	12/6/14 10:32 AM	12/06/14 09:05 PM	31,650	SEWER LIFT STATION	MSD0186-PS	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273426	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	7302 FLOYDSBURG RD	12/6/14 11:20 AM	12/06/14 06:15 PM	4,150	SEWER MANHOLE	108958	CATCH BASIN	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273434	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	804 N ARBOR DR	12/6/14 12:12 PM	12/06/14 12:12 PM	1,815	SEWER MANHOLE	00746	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2273441	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4640 BARBOUR LN	12/7/14 2:07 PM	12/07/14 02:10 PM	300	SEWER MANHOLE	42680	STREAM	LITTLE GOOSE CREEK	#4 PUMP BLOCKAGE CAUSED DEBRIS FROM RAIN EVENT.	OBSTRUCTION-NOT GREASE / ROOTS	DISREV RAIN EVENT DISCHARGE	2273547	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1449 FRANKFORT AVE	12/10/14 3:30 PM	12/11/14 05:15 PM	1,507,875	SEWER MAIN	67844B-AG	CATCH BASIN	SOUTH FORK BEARGRASS CREEK	UTILITY CONTRACTOR DRILLED THROUGH 24" OHIO RIVER FORCE MAIN.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2274763	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	CONTRACTOR HAS REPAIRED THE OHIO RIVER FORCE MAIN.
MORRIS FORMAN	KY0022411	6600 SEMINARY WOODS PL	12/11/14 10:49 AM	12/11/14 04:52 PM	18,150	SEWER LIFT STATION	MSD0123-PS	DITCH	GOOSE CREEK	CONTRACTOR BROKE THE OHIO RIVER FORCE MAIN CAUSING THE STATION TO BE SHUT DOWN RESULTING IN A DISCHARGE.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2274910	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	CONTRACTOR HAS REPAIRED THE OHIO RIVER FORCE MAIN.
MORRIS FORMAN	KY0022411	4640 BARBOUR LN	12/11/14 11:05 AM	12/11/14 05:08 PM	108,900	SEWER LIFT STATION	MSD0192-PS	STREAM	LITTLE GOOSE CREEK	CONTRACTOR BROKE THE OHIO RIVER FORCE MAIN CAUSING THE STATION TO BE SHUT DOWN RESULTING IN DISCHARGE.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2274930	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	CONTRACTOR HAS REPAIRED THE OHIO RIVER FORCE MAIN.
MORRIS FORMAN	KY0022411	2120 INDIAN HILLS TRL	12/11/14 2:07 PM	12/11/14 05:28 PM	10,050	SEWER LIFT STATION	MSD0186-PS	DITCH	MUDDY FORK BEARGRASS CREEK	CONTRACTOR BROKE THROUGH THE OHIO RIVER FORCE MAIN CAUSING THE STATION TO BE SHUT DOWN RESULTING IN DISCHARGE.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2276088	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	CONTRACTOR HAS REPAIRED THE OHIO RIVER FORCE MAIN.
MORRIS FORMAN	KY0022411	4 RIVER BLUFF RD	12/11/14 4:14 PM	12/12/14 10:12 AM	9,400	SEWER MANHOLE	89646	GROUND	MUDDY FORK BEARGRASS CREEK	CONTRACTOR BROKE THE OHIO RIVER FORCE MAIN CAUSING STATIONS TO BE SHUT DOWN RESULTING IN DISCHARGES.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2277198	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	CONTRACTOR HAS REPAIRED THE OHIO RIVER FORCE MAIN.
DEREK R. GUTHRIE	KY0078956	6102 COOPER CHAPEL RD	1/23/15 3:30 PM	01/23/15 05:15 PM	525	SEWER MANHOLE	25479	CATCH BASIN	PENNSYLVANIA RUN	OBSTRUCTION OF GRAVITY LINE TO STATION OR FORCEMAIN FROM STATION.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2301106	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	MSD CONTRACTOR HAULED STATION UNTILL REPAIRS WERE COMPLETED.
MORRIS FORMAN	KY0022411	825 FETTER AVE	2/20/15 3:10 PM	02/20/15 03:21 PM	9,200	SEWER MANHOLE	CSO184	STREAM	SOUTH FORK BEARGRASS CREEK	WATER MAIN BREAK AT THE INTERSECTION OF ALEXANDER AVENUE AND KESWICK BOULEVARD RESULTING IN A SIGNIFICANT AMOUNT OF WATER IN	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2314658	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	NO REPAIRS NEEDED. LOUISVILLE WATER CO. COMPLETED WORK AT 3:30 PM.

APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
DEREK R. GUTHRIE	KY0078956	7100 BLAZIER CT	3/3/15 11:45 AM	03/03/15 02:00 PM	200	SEWER MAIN	82504	GROUND	FERN CREEK	BROKEN PIPE.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2318737	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	CONTRACTOR REPAIRED LINE WITH SLIP.
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	3/4/15 12:30 AM	03/05/15 08:30 AM	43,500	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319276	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	3/4/15 12:43 AM	03/05/15 10:50 PM	7,711,175	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2319250	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
MORRIS FORMAN	KY0022411	1726 FRASER DR	3/4/15 1:00 AM	03/05/15 10:00 PM	66,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319371	WO# 2321404.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	3/4/15 1:21 AM	03/04/15 05:30 PM	9,000	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319316	WO# 2321301.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	3/4/15 1:56 AM	03/05/15 09:07 PM	9,276,279	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319301	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6102 COOPER CHAPEL RD	3/4/15 2:45 AM	03/04/15 09:15 PM	11,100	SEWER MANHOLE	25479	CATCH BASIN	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319251	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	MSD CONTRACTOR HAULED SITE.
MORRIS FORMAN	KY0022411	1012 ALTA CIR	3/4/15 2:50 AM	03/06/15 07:00 AM	360,000	SEWER MANHOLE	27005	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319253	WO# 2321384.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	3/4/15 3:00 AM	03/06/15 07:00 AM	340,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319254	WO# 2321385.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	804 N ARBOR DR	3/4/15 3:05 AM	03/04/15 11:15 PM	53,680	SEWER MANHOLE	00746	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319256	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9114 CINDERELLA LN	3/4/15 3:30 AM	03/04/15 09:05 PM	4,675	SEWER LIFT STATION	MSD1013-PS	DITCH	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319263	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR.
MORRIS FORMAN	KY0022411	806 PINE WAY	3/4/15 3:45 AM	03/05/15 11:15 PM	65,250	SEWER LIFT STATION	MSD0057-LS	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319258	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3258 RUCKRIEGEL PKY	3/4/15 4:09 AM	03/05/15 09:00 AM	21,000	SEWER MANHOLE	28173	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319290	WO# 2321223.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3406 CHARLANE PKY	3/4/15 4:25 AM	03/05/15 09:15 AM	17,000	SEWER MANHOLE	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319296	WO# 2321284.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9317 LANTANA DR	3/4/15 4:30 AM	03/04/15 09:00 PM	4,950	SEWER LIFT STATION	MSD0101-PS	DITCH	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319261	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	3/4/15 5:13 AM	03/05/15 05:25 PM	5,000	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319305	WO# 2321290.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	3/4/15 5:14 AM	03/05/15 07:10 AM	25,000	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319310	WO# 2321296.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3302 TROUT CREEK DR	3/4/15 6:14 AM	03/05/15 07:30 AM	4,500	SEWER MANHOLE	23211	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319357	WO# 2321347.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3305 INDIAN CREEK CT	3/4/15 6:21 AM	03/05/15 07:20 AM	25,000	SEWER MANHOLE	51160	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319354	WO# 2321346.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1044 ALTA VISTA RD	3/4/15 7:30 AM	03/06/15 07:00 AM	72,000	SEWER MANHOLE	27008	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319374	WO# 2321405.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	3/4/15 7:40 AM	03/06/15 09:33 AM	1,000	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319375	WO# 2321407.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	3/4/15 7:40 AM	03/06/15 07:00 AM	1,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319378	WO# 2321409.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2105 INDIAN HILLS TRL	3/4/15 8:10 AM	03/05/15 12:30 PM	85,500	SEWER MANHOLE	40874	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319347	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	5 RIO VISTA DR	3/4/15 8:19 AM	03/05/15 12:30 PM	42,750	SEWER MANHOLE	40879	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319344	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	7302 FLOYDSBURG RD	3/4/15 8:20 AM	03/05/15 06:00 PM	20,200	SEWER MANHOLE	108953	DITCH	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319368	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	7250 FLOYDSBURG RD	3/4/15 8:20 AM	03/05/15 06:00 PM	20,200	SEWER MANHOLE	90776	DITCH	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319366	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4640 BARBOUR LN	3/4/15 8:20 AM	03/05/15 11:00 AM	25,800	SEWER MANHOLE	42680	STREAM	LITTLE GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319370	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	5006 LEA ANN WAY	3/4/15 8:26 AM	03/04/15 08:15 PM	1,803,000	SEWER LIFT STATION	MSD1010-PS	STREAM	NORTHERN DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	PUMPED OVERFLOW	DISREV RAIN EVENT DISCHARGE	2319364	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	USING THREE AUXILIARY PUMPS.
FLOYDS FORK	KY0102784	17009 OLDE COPPER CT	3/4/15 8:51 AM	03/05/15 11:00 AM	7,845	SEWER LIFT STATION	MSD0165-PS	DITCH	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2320545	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	3/4/15 9:00 AM	03/05/15 09:30 AM	54,000	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319380	WO# 2321348.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.

APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
BERRYTOWN	KY0036501	1812 N ENGLISH STATION RD	3/4/15 9:30 AM	03/05/15 11:00 AM	38,250	SEWER LIFT STATION	MSD0073-LS	GROUND	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2320525	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7404 ARROWWOOD RD	3/4/15 9:33 AM	03/05/15 10:00 PM	164,025	SEWER LIFT STATION	MSD0040-PS	DITCH	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319414	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
BERRYTOWN	KY0036501	1203 HEAFER RD	3/4/15 9:40 AM	03/05/15 05:30 PM	191,000	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2319385	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	PLANT IS TO BE ELIMINATED IN 2015. SNOW ACCUMULATION OF APPROXIMATELY 12 INCHES OCCURRED AT THIS FACILITY AFTER BYPASS BEGAN.
CEDAR CREEK	KY0098540	9905 FAIRMOUNT RD	3/4/15 9:40 AM	03/04/15 10:00 AM	100	SEWER MANHOLE	81710	GROUND	BIG RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2319416	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3305 BENT CREEK CT	3/4/15 10:38 AM	03/05/15 05:35 PM	4,000	SEWER SERVICE LINE	BU05074039	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2321050	WO# 2321350.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7913 SHELBYVILLE RD	3/4/15 12:30 PM	03/05/15 11:33 AM	2,000	SEWER MANHOLE	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2321045	WO# 2321354.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1802 ROUND RIDGE RD	3/4/15 2:00 PM	03/05/15 11:15 AM	66,000	SEWER MANHOLE	46600	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2321116	WO# 2321357.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1804 ROUND RIDGE RD	3/4/15 2:00 PM	03/05/15 11:15 AM	66,000	SEWER MANHOLE	65623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2321089	WO# 2321356.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3317 BROWNSBORO RD	3/4/15 2:30 PM	03/06/15 05:00 PM	27,500	SEWER MANHOLE	26752	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2321091	WO# 2321411.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
STARVIEW	KY0031712	423 BERMUDA WAY	3/4/15 6:45 PM	03/04/15 06:50 PM	75	SEWER LIFT STATION	MSD0247B-PS	STREAM	CHENOWETH RUN	PUMPS TRIPPED OUT ON OVERLOAD.	ELECTRICAL PROBLEMS AT MSD	DISREV RAIN EVENT DISCHARGE	2321111	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	RESET OVER LOADS.
MORRIS FORMAN	KY0022411	2120 INDIAN HILLS TRL	3/5/15 1:15 AM	03/05/15 01:27 AM	300	SEWER LIFT STATION	MSD0186-PS	DITCH	MUDDY FORK BEARGRASS CREEK	#5 PUMP TRIPPED OUT AT STATION CAUSING DISCHARGE FROM WET WELL.	ELECTRICAL PROBLEMS AT MSD	DISREV RAIN EVENT DISCHARGE	2321146	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	RESET PUMP PUT STATION BACK IN SERVICE.
MORRIS FORMAN	KY0022411	2105 INDIAN HILLS TRL	3/5/15 8:55 AM	03/05/15 09:35 AM	1,000	SEWER MANHOLE	40872	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2321163	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2120 INDIAN HILLS TRL	3/5/15 8:55 AM	03/05/15 09:10 AM	1,500	SEWER LIFT STATION	MSD0186-PS	DITCH	MUDDY FORK BEARGRASS CREEK	#5 PUMP TRIPPED OUT.	ELECTRICAL PROBLEMS AT MSD	DISREV RAIN EVENT DISCHARGE	2321162	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	MAKING REPAIRS TO #5 PUMP.
MORRIS FORMAN	KY0022411	7404 ARROWWOOD RD	3/6/15 2:05 AM	03/06/15 02:18 AM	325	SEWER MANHOLE	21628-W	DITCH	GOOSE CREEK	BOTH PUMPS WERE AIR LOCKED.	MECHANICAL FAILURE	DISREV RAIN EVENT DISCHARGE	2321373	NO DEBRIS.	bled air from pumps.
MORRIS FORMAN	KY0022411	1726 FRASER DR	3/8/15 4:30 PM	03/08/15 09:45 PM	2,250	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2322443	WO# 2322443.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6102 COOPER CHAPEL RD	3/9/15 9:45 AM	03/10/15 10:25 PM	19,800	SEWER MANHOLE	25479	CATCH BASIN	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2322884	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9317 LANTANA DR	3/9/15 12:55 PM	03/10/15 07:10 PM	11,475	SEWER MANHOLE	25484	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323005	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3930 PRODUCE RD	3/9/15 1:30 PM	03/09/15 04:00 PM	500,000	SEWER LIFT STATION	MSD1213-PS	GROUND	GREASY DITCH	LEAK IN EARTHEN LINER OF BASIN #2 REACHING GROUND WATER PUMP AND GREASY DITCH.	STRUCTURAL FAILURE	DISREV RAIN EVENT DISCHARGE	2322775	NO DEBRIS, NO CLEAN UP WILL OCCUR.	MSD & CONTRACTOR MADE NEEDED REPAIRS.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	3/10/15 8:55 AM	03/11/15 05:13 PM	4,893,106	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2322895	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	3/10/15 9:33 AM	03/11/15 05:45 AM	1,000	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2322949	WO# 2323296.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	3/10/15 9:34 AM	03/12/15 01:45 AM	75,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2322948	WO# 2324850.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	3/10/15 10:00 AM	03/10/15 09:30 PM	17,250	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2322907	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	3/10/15 10:38 AM	03/12/15 12:47 AM	10,105,914	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2322946	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	3/10/15 12:10 PM	03/11/15 02:02 PM	7,000	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323225	WO# 2324826.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	3/10/15 12:11 PM	03/11/15 02:02 PM	50,000	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323226	WO# 2324822.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	3/10/15 12:17 PM	03/11/15 01:45 PM	3,000	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323227	WO# 2324819.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	3/10/15 12:25 PM	03/12/15 10:35 AM	66,000	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323186	WO# 2324828.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3305 INDIAN CREEK CT	3/10/15 12:35 PM	03/11/15 01:45 PM	10,000	SEWER MANHOLE	51160	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323229	WO# 2324812.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	3/10/15 12:40 PM	03/12/15 12:15 AM	60,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323191	WO# 2324835.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9114 CINDERELLA LN	3/10/15 1:15 PM	03/10/15 10:20 PM	14,250	SEWER LIFT STATION	MSD1013-PS	DITCH	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323003	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR.

**APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	3317 BROWNSBORO RD	3/10/15 1:38 PM	03/12/15 12:15 AM	75,000	SEWER MANHOLE	26752	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323192	WO# 2324846.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	8409 SABERDEE DR	3/10/15 2:00 PM	03/10/15 08:50 PM	4,100	SEWER MANHOLE	43472	DITCH	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323210	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3258 RUCKRIEGEL PKY	3/10/15 2:14 PM	03/11/15 08:30 PM	9,000	SEWER MANHOLE	28173	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323198	WO# 2323294.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7404 ARROWWOOD RD	3/10/15 2:15 PM	03/11/15 01:00 AM	61,500	SEWER LIFT STATION	MSD0040-PS	DITCH	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323199	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	5006 LEA ANN WAY	3/10/15 2:20 PM	03/10/15 09:35 PM	441,000	SEWER LIFT STATION	MSD1010-PS	STREAM	NORTHERN DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	PUMPED OVERFLOW	DISREV RAIN EVENT DISCHARGE	2323194	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	PLACED AUXILIARY PUMPS TO PUMP OVERFLOW.
JEFFERSONTOWN	KY0025194	3406 DELL RD	3/10/15 2:28 PM	03/10/15 08:35 PM	9,000	SEWER MANHOLE	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323195	WO# 2323291.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3406 CHARLANE PKY	3/10/15 2:35 PM	03/11/15 06:27 AM	18,000	SEWER MANHOLE	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323201	WO# 2323301.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3506 CHARLANE PKY	3/10/15 2:40 PM	03/11/15 06:40 AM	12,000	SEWER MANHOLE	28250	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323204	WO# 2323305.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	5006 LEA ANN WAY	3/10/15 2:40 PM	03/10/15 09:35 PM	375,000	SEWER LIFT STATION	MSD1010-PS	STREAM	NORTHERN DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	PUMPED OVERFLOW	DISREV RAIN EVENT DISCHARGE	2323197	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	PLACED AUXILIARY PUMPS TO PUMP OVERFLOW.
JEFFERSONTOWN	KY0025194	3620 CHARLANE PKY	3/10/15 2:45 PM	03/11/15 06:30 AM	18,000	SEWER MANHOLE	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323208	WO# 2323309.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3620 CHARLANE PKY	3/10/15 2:50 PM	03/11/15 06:35 AM	18,000	SEWER MANHOLE	104289	GROUND	BEATTY BROOK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323211	WO# 2323311.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	5006 LEA ANN WAY	3/10/15 2:50 PM	03/10/15 03:15 PM	15,750	SEWER LIFT STATION	MSD1010-PS	STREAM	NORTHERN DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	PUMPED OVERFLOW	DISREV RAIN EVENT DISCHARGE	2323202	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	PLACED AUXILIARY PUMP TO PUMP OVERFLOW.
BERRYTOWN	KY0036501	1203 HEAFER RD	3/10/15 3:30 PM	03/11/15 01:20 PM	65,500	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2323203	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	PLANT IS TO BE ELIMINATED IN 2015. DISINFECTED AND CLEANED BY MSD STAFF.
DEREK R. GUTHRIE	KY0078956	6808 SANDSTONE BLVD	3/10/15 3:30 PM	03/11/15 05:30 PM	3,000	SEWER MANHOLE	31073	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323137	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	10723 COPPER RIDGE DR	3/10/15 3:35 PM	03/10/15 09:00 PM	30,000	SEWER MANHOLE	108674	GROUND	HITE CREEK	SEWERS AT CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323218	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP; REFERRED TO BRYON RICHARDSON FOR MH REPAIR.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	3/10/15 3:37 PM	03/11/15 02:08 PM	7,500	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323235	WO# 2324815.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4108 LEE AVE	3/10/15 3:37 PM	03/11/15 02:07 PM	300	SEWER SERVICE LINE	KK14815019	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323230	WO# 2324339.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	804 N ARBOR DR	3/10/15 3:55 PM	03/11/15 04:15 AM	18,500	SEWER MANHOLE	00056-W	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323193	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	HAULING TO PREVENT FURTHER DISCHARGE.
MORRIS FORMAN	KY0022411	3302 TROUT CREEK DR	3/10/15 4:19 PM	03/11/15 01:40 PM	15,000	SEWER MANHOLE	23211	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2324804	WO# 2324808.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3305 BENT CREEK CT	3/10/15 4:30 PM	03/11/15 01:43 PM	1,000	SEWER SERVICE LINE	BU05074039	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323232	WO# 2324329.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3303 TROUT CREEK DR	3/10/15 4:30 PM	03/11/15 01:41 PM	3,000	SEWER SERVICE LINE	BU05091039	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323233	WO# 2324315.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4313 PRUITT CT	3/10/15 5:11 PM	03/11/15 02:11 PM	1,000	SEWER MANHOLE	08427	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323237	WO# 2324311.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	5006 LEA ANN WAY	3/10/15 5:20 PM	03/10/15 09:35 PM	112,050	SEWER LIFT STATION	MSD1010-PS	STREAM	NORTHERN DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	PUMPED OVERFLOW	DISREV RAIN EVENT DISCHARGE	2323206	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	PLACED AUXILIARY PUMP TO PUMP OVERFLOW.
MORRIS FORMAN	KY0022411	4640 BARBOUR LN	3/10/15 5:50 PM	03/11/15 03:10 AM	56,000	SEWER MANHOLE	65633	STREAM	LITTLE GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323219	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7913 SHELBYVILLE RD	3/10/15 6:15 PM	03/11/15 06:12 AM	72,000	SEWER MANHOLE	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323238	WO# 2323282.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	3/10/15 6:50 PM	03/11/15 06:08 AM	36,000	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323248	WO# 2323281.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	3/10/15 7:05 PM	03/11/15 05:57 AM	15,000	SEWER MANHOLE	90700	CATCH BASIN	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323249	WO# 2323280.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	3/10/15 7:07 PM	03/11/15 06:05 AM	33,000	SEWER MANHOLE	47593	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323250	WO# 2323284.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	201 BULLITT LN	3/10/15 7:10 PM	03/11/15 06:20 AM	1,000	SEWER MANHOLE	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323251	WO# 2323288.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1802 ROUND RIDGE RD	3/10/15 8:10 PM	03/11/15 10:10 AM	1,000	SEWER MANHOLE	46600	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323254	WO# 2324219.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.

APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	1804 ROUND RIDGE RD	3/10/15 8:10 PM	03/11/15 10:10 AM	1,000	SEWER MANHOLE	65623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323253	WO# 2324211.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1552 CHEROKEE RD	3/11/15 2:30 AM	03/12/15 10:30 AM	16,500	SEWER MANHOLE	40471	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2324286	WO# 2324861.	LOCATION IS NEW TO SSO ROUTES AND WILL NE INSPECTED AND MONITORED FOR OBSTRUCTIONS OR JUST CAPACITY ISSUES.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	3/11/15 10:00 AM	03/12/15 10:35 AM	16,500	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2324288	WO# 2324863.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1044 ALTA VISTA RD	3/11/15 12:30 PM	03/12/15 10:30 AM	16,500	SEWER MANHOLE	27008	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2323921	WO# 2324855.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
FLOYDS FORK	KY0102784	2410 S POPE LICK RD	3/12/15 11:15 AM	03/13/15 01:15 AM	50,000	SEWER LIFT STATION	MSD1189-PS	STREAM	POPE LICK	BROKEN 18" FORCE MAIN.	MECHANICAL FAILURE	DISREV RAIN EVENT DISCHARGE	2324825	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	MSD & CONTRACTOR MADE NEEDED REPAIRS.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	3/13/15 11:00 AM	03/14/15 09:20 AM	3,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325219	WO# 2325567.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	3/13/15 2:00 PM	03/16/15 05:30 AM	3,500	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325288	WO# 2325627.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	3/13/15 2:15 PM	03/14/15 05:33 AM	2,500	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325295	WO# 2325629.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	3/13/15 2:20 PM	03/16/15 05:40 AM	3,500	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325296	WO# 2325630.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1552 CHEROKEE RD	3/13/15 2:45 PM	03/16/15 05:50 AM	3,500	SEWER MANHOLE	40471	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325298	WO# 2325632.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	3/13/15 3:18 PM	03/16/15 12:22 AM	17,914,139	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325299	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	3/13/15 3:20 PM	03/15/15 05:59 PM	8,919,626	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2325293	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
MORRIS FORMAN	KY0022411	1726 FRASER DR	3/13/15 3:33 PM	03/16/15 06:30 AM	3,500	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325300	WO# 2325626.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	3/13/15 4:19 PM	03/15/15 10:10 AM	108,000	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325301	WO# 2325572.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3305 INDIAN CREEK CT	3/13/15 5:25 PM	03/15/15 02:10 PM	129,000	SEWER MANHOLE	51160	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325325	WO# 2325655.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	3/13/15 6:05 PM	03/15/15 06:00 PM	36,000	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325289	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	7302 FLOYDSBURG RD	3/13/15 7:20 PM	03/14/15 10:43 PM	41,075	SEWER MANHOLE	108953	DITCH	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325305	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	7302 FLOYDSBURG RD	3/13/15 7:20 PM	03/14/15 10:43 PM	41,075	SEWER MANHOLE	108957	DITCH	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325304	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7404 ARROWWOOD RD	3/13/15 7:20 PM	03/15/15 01:15 AM	88,750	SEWER LIFT STATION	MSD0040-PS	DITCH	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325294	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	804 N ARBOR DR	3/13/15 8:03 PM	03/15/15 12:25 AM	25,515	SEWER MANHOLE	00056-W	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325306	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	804 N ARBOR DR	3/13/15 8:03 PM	03/15/15 12:07 AM	42,100	SEWER MANHOLE	00746	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325307	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	806 PINE WAY	3/13/15 9:15 PM	03/15/15 12:17 AM	32,440	SEWER MANHOLE	00817	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325309	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
BERRYTOWN	KY0036501	1203 HEAFER RD	3/14/15 1:40 AM	03/15/15 12:15 PM	206,700	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2325355	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	PLANT IS TO BE ELIMINATED IN 2015.
DEREK R. GUTHRIE	KY0078956	6102 COOPER CHAPEL RD	3/14/15 2:40 AM	03/14/15 04:15 PM	20,375	SEWER MANHOLE	25479	CATCH BASIN	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325365	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9317 LANTANA DR	3/14/15 2:50 AM	03/14/15 12:30 PM	14,500	SEWER LIFT STATION	MSD0101-PS	DITCH	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325363	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	5006 LEA ANN WAY	3/14/15 3:50 AM	03/14/15 06:20 PM	2,454,500	SEWER LIFT STATION	MSD1010-PS	STREAM	NORTHERN DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	PUMPED OVERFLOW	DISREV RAIN EVENT DISCHARGE	2325362	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	AUXILIARY PUMPS SET UP TO PREVENT FLOODING.
DEREK R. GUTHRIE	KY0078956	9114 CINDERELLA LN	3/14/15 5:05 AM	03/14/15 04:40 PM	34,750	SEWER LIFT STATION	MSD1013-PS	DITCH	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325364	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR.
DEREK R. GUTHRIE	KY0078956	6808 SANDSTONE BLVD	3/14/15 5:15 AM	03/14/15 08:15 AM	4,500	SEWER MANHOLE	31073	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325360	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7913 SHELBYVILLE RD	3/14/15 6:50 AM	03/14/15 09:28 AM	60,000	SEWER MANHOLE	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325351	WO# 2325560.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
CEDAR CREEK	KY0098540	8605 CEDAR CREEK RD	3/14/15 6:50 AM	03/14/15 08:00 AM	35,000	SEWER TREATMENT PLANT	MSD0289	GROUND	CEDAR CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2325349	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	MSD STAFF DIVERTED FLOW INTO THE #1 OXIDATION DITCH TO PROTECT THE UV EQUIPMENT AND MAINTAIN TERTIARY TREATMENT FOR THE MAJORITY OF PLANT

APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	202 OXMOOR LN	3/14/15 7:01 AM	03/15/15 09:21 AM	144,000	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325352	WO# 2325579.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	3/14/15 7:15 AM	03/15/15 09:25 AM	36,000	SEWER MANHOLE	90700	CATCH BASIN	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325354	WO# 2325561.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	3/14/15 7:20 AM	03/14/15 07:27 PM	76,000	SEWER MANHOLE	47593	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325356	WO# 2325586.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7713 WESTPORT RD	3/14/15 8:03 AM	03/14/15 09:10 AM	39,000	SEWER MANHOLE	105936	GROUND	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325357	WO# 2325565.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1802 ROUND RIDGE RD	3/14/15 8:35 AM	03/15/15 08:55 AM	72,000	SEWER MANHOLE	46600	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325361	WO# 2325589.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1804 ROUND RIDGE RD	3/14/15 8:35 AM	03/18/15 08:55 AM	72,000	SEWER MANHOLE	65623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325359	WO# 2325587.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	3/14/15 8:43 AM	03/14/15 02:20 PM	4,000	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325413	WO# 2325609.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4108 LEE AVE	3/14/15 8:45 AM	03/14/15 02:22 PM	1,000	SEWER SERVICE LINE	KK14815019	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325423	WO# 2325620.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	37 ARROWHEAD RD	3/14/15 8:50 AM	03/15/15 08:45 AM	1,000	SEWER MANHOLE	89791	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325399	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	3/14/15 8:59 AM	03/14/15 10:14 PM	11,000	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325425	WO# 2325621.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	3/14/15 8:59 AM	03/14/15 10:15 PM	3,000	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325426	WO# 2325622.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6810 SANDSTONE BLVD	3/14/15 9:00 AM	03/14/15 02:00 PM	9,000	SEWER MANHOLE	29948	GROUND	FERN CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325388	MSD PERSONNEL TO CLEAN AND SANITIZE AFFECTED AREA UNDER WORKORDER# 2325397.	NO REPAIR NEEDED DISCHARGE ON PRIVATE PROPERTY DUE TO MAIN SEWER DISCHARGING DUE TO RAIN EVENT LACK OF SYSTEM CAPACITY.
MORRIS FORMAN	KY0022411	3317 BROWNSBORO RD	3/14/15 9:00 AM	03/16/15 06:00 AM	2,500	SEWER MANHOLE	26752	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325401	WO# 2325640.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3302 TROUT CREEK DR	3/14/15 9:40 AM	03/14/15 10:30 PM	12,000	SEWER MANHOLE	23211	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325421	WO# 2325619.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	10723 COPPER RIDGE DR	3/14/15 9:56 AM	03/14/15 02:30 PM	28,800	SEWER MANHOLE	30521	STREAM	HITE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325382	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3305 BENT CREEK CT	3/14/15 9:58 AM	03/14/15 10:32 PM	5,000	SEWER SERVICE LINE	BU05074039	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325418	WO# 2325618.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2216 FAIRLAND AVE	3/14/15 10:00 AM	03/14/15 10:50 PM	6,000	SEWER MANHOLE	49445	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325415	WO# 2325617.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	8113 SHELBYVILLE RD	3/14/15 10:15 AM	03/14/15 07:30 PM	96,000	SEWER MANHOLE	30376	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325403	WO# 2325593.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4315 PRUITT CT	3/14/15 10:43 AM	03/14/15 10:59 PM	1,000	SEWER MANHOLE	08426	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325410	WO# 2325607.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4339 PRUITT CT	3/14/15 10:47 AM	03/14/15 11:00 PM	6,000	SEWER MANHOLE	08431	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325412	WO# 2325608.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3258 RUCKRIEGEL PKY	3/14/15 10:50 AM	03/14/15 07:54 PM	18,000	SEWER MANHOLE	28173	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325405	WO# 2325596.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3506 CHARLANE PKY	3/14/15 11:15 AM	03/14/15 07:47 PM	15,000	SEWER MANHOLE	28250	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325408	WO# 2325604.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3406 CHARLANE PKY	3/14/15 11:20 AM	03/14/15 07:45 PM	16,500	SEWER MANHOLE	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325407	WO# 2325598.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	4005 KIRBY LN	3/14/15 12:50 PM	03/15/15 12:17 AM	6,870	SEWER MANHOLE	61266	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325428	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HUNTING CREEK NORTH	KY0029106	7300 SHADWELL LN	3/14/15 2:25 PM	03/15/15 02:58 PM	50	SEWER MANHOLE	66701	STREAM	HUNTING CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325460	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4200 RIVER RD	3/15/15 10:20 AM	03/22/15 12:00 PM	9,999	SEWER LIFT STATION	MSD0188-PS	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325547	NO CLEANUP - STATION UNDERWATER.	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR.
MORRIS FORMAN	KY0022411	2 RIO VISTA DR	3/15/15 10:43 AM	03/18/15 01:55 PM	9,999	SEWER MANHOLE	40880	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325551	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2120 INDIAN HILLS TRL	3/15/15 10:43 AM	03/18/15 01:55 PM	9,999	SEWER LIFT STATION	MSD0186-PS	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325549	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HUNTING CREEK NORTH	KY0029106	6100 MAYFAIR AVE	3/16/15 6:00 AM	03/20/15 01:00 PM	9,999	SEWER LIFT STATION	MSD1206-PS	GROUND	OHIO RIVER	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325633	NO CLEANUP- STATION UNDERWATER.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
TIMBERLAKE	KY0043087	5504 TIMBER RIDGE DR	3/16/15 6:00 AM	03/20/15 02:00 PM	364,000	SEWER TREATMENT PLANT	MSD0293	GROUND	HARRODS CREEK	RAIN EVENT CAUSED RIVER TO RISE CAUSING CONTACT CHAMBER TO BE SUBMERGED UNDER WATER.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2325628	CONTRACTOR CLEANED CL2 TANK.	THE PLANT IS SCHEDULED TO BE ELIMINATED BEFORE JANUARY 1, 2016. CHLORINE CONTACT BASIN WAS CLEANED ON MARCH 24, 2015 AND PUT BACK IN

**APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	2700 RIVER GREEN CIR	3/16/15 6:15 AM	03/22/15 12:00 PM	9,999	SEWER LIFT STATION	MSD1132-PS	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325635	NO CLEANUP- STATION UNDERWATER.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	420 W RIVER RD	3/16/15 7:00 AM	03/22/15 12:00 PM	9,999	SEWER LIFT STATION	MSD1017-PS	STREAM	OHIO RIVER	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325639	NO CLEANUP- STATION UNDERWATER.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	231 N CAMPBELL ST	3/16/15 7:00 AM	03/22/15 12:00 PM	9,999	SEWER LIFT STATION	MSD1137-PS	GROUND	OHIO RIVER	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325637	NO CLEANUP- STATION UNDERWATER.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	4005 KIRBY LN	3/17/15 6:50 PM	03/18/15 09:10 AM	8,600	SEWER MAIN	MSD1203-PS	GROUND	FERN CREEK	STRUCTURAL FAILURE OF FORCE MAIN.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2326469	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	MSD CONTRACTOR HAULED STATION UNTIL REPAIRS WERE MADE.
DEREK R. GUTHRIE	KY0078956	4005 KIRBY LN	3/17/15 10:52 PM	03/18/15 08:20 AM	14,200	SEWER MANHOLE	61266	DITCH	FERN CREEK	FORCE MAIN BREAK.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2326477	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	CONTRACTOR REPAIRED THE FORCE MAIN.
MORRIS FORMAN	KY0022411	1 AUDUBON PLAZA DR	3/30/15 8:42 PM	03/31/15 05:00 PM	7,110	SEWER MAIN	50351	STREAM	SOUTH FORK BEARGRASS CREEK	STRUCTURAL FAILURE OF THE MAIN SEWER.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2332904	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	MSD CONTRACTOR REPAIRED THE MAIN SEWER.
HITE CREEK	KY0022420	8900 U S HIGHWAY 42	3/31/15 12:10 PM	03/31/15 01:00 PM	250	SEWER NODE	107555-T	GROUND	HARRODS CREEK	FORCE MAIN BREAK.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2333215	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	CONTRACTOR REPAIRED LINE.
MORRIS FORMAN	KY0022411	4108 LEE AVE	4/2/15 4:02 PM	04/04/15 09:33 AM	1,000	SEWER SERVICE LINE	KK14815019	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337491	WO# 2338556.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	4/2/15 4:03 PM	04/04/15 09:45 AM	1,000	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337494	WO# 2338569.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	4/2/15 4:14 PM	04/05/15 03:11 PM	10,000	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337497	WO# 2338783.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	4/2/15 4:14 PM	04/06/15 02:15 PM	50,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337498	WO# 2339347.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	4/2/15 4:15 PM	04/05/15 03:10 PM	1,000	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337495	WO# 2338782.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	4/2/15 4:20 PM	04/04/15 10:19 AM	1,000	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337490	WO# 2338551.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/2/15 4:50 PM	04/05/15 01:30 AM	12,588,944	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2337464	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
DEREK R. GUTHRIE	KY0078956	6102 COOPER CHAPEL RD	4/2/15 5:20 PM	04/04/15 02:30 AM	99,500	SEWER MANHOLE	25479	CATCH BASIN	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337505	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6102 COOPER CHAPEL RD	4/2/15 5:20 PM	04/04/15 02:30 AM	9,500	SEWER LIFT STATION	MSD0130-PS	DITCH	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337502	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	4/2/15 5:42 PM	04/04/15 06:48 AM	55,500	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337526	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	9732 BOXFORD WAY	4/2/15 6:04 PM	04/02/15 07:00 PM	26	SEWER MANHOLE	22950	GROUND	GOOSE CREEK	ROOTS IN THE MAIN SEWER.	ROOTS	DISREV RAIN EVENT DISCHARGE	2337481	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	ROOT CUT MAIN #2337488.
MORRIS FORMAN	KY0022411	9731 BOXFORD WAY	4/2/15 6:13 PM	04/02/15 07:30 PM	15	SEWER MANHOLE	22949	DITCH	GOOSE CREEK	ROOTS IN MAIN.	ROOTS	DISREV RAIN EVENT DISCHARGE	2337486	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	ROOT CUT MAIN #2337488.
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	4/3/15 1:33 AM	04/04/15 03:26 PM	100	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337604	WO# 2338632.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9317 LANTANA DR	4/3/15 2:00 AM	04/04/15 02:45 AM	37,125	SEWER MANHOLE	25484	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337554	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	4/3/15 2:03 AM	04/05/15 02:17 PM	21,042,883	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337592	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9114 CINDERELLA LN	4/3/15 2:22 AM	04/04/15 03:10 AM	74,400	SEWER MANHOLE	102339	GROUND	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337555	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	4005 KIRBY LN	4/3/15 2:25 AM	04/05/15 10:59 PM	196,700	SEWER MANHOLE	61266	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337556	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	8304 CLOVERPORT DR	4/3/15 2:30 AM	04/03/15 04:00 PM	9,999	SEWER MANHOLE	29239	GROUND	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337846	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6810 SANDSTONE BLVD	4/3/15 2:30 AM	04/04/15 08:00 AM	9,999	SEWER MANHOLE	29948	GROUND	FERN CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337826	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6808 SANDSTONE BLVD	4/3/15 2:30 AM	04/03/15 11:00 AM	9,999	SEWER MANHOLE	31073	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337831	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6808 SANDSTONE BLVD	4/3/15 2:30 AM	04/03/15 11:00 AM	9,999	SEWER MANHOLE	31074	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337836	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	5109 MARJORIE DR	4/3/15 2:30 AM	04/03/15 04:00 PM	9,999	SEWER MANHOLE	35309	GROUND	MANSLICK BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337851	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
CEDAR CREEK	KY0098540	7906 GAINSBOROUGH CT	4/3/15 2:30 AM	04/03/15 04:00 PM	99,999	SEWER MANHOLE	67997	STREAM	LITTLE CEDAR CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337822	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.

**APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
CEDAR CREEK	KY0098540	7702 CEDAR CREEK RD	4/3/15 2:30 AM	04/05/15 10:00 AM	9,999	SEWER MANHOLE	83011	GROUND	CEDAR CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337820	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7404 ARROWWOOD RD	4/3/15 3:24 AM	04/05/15 08:20 AM	238,200	SEWER MANHOLE	21628-W	DITCH	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337553	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	8410 SAUREL DR	4/3/15 4:00 AM	04/04/15 12:27 PM	146,025	SEWER MANHOLE	91624	GROUND	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337557	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3406 DELL RD	4/3/15 4:07 AM	04/05/15 10:59 PM	203,600	SEWER MANHOLE	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337559	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3501 MARLIN DR	4/3/15 4:07 AM	04/05/15 10:59 PM	203,600	SEWER MANHOLE	28416	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337560	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3506 DELL RD	4/3/15 4:07 AM	04/05/15 10:59 PM	203,600	SEWER MANHOLE	28417	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337561	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	5006 LEA ANN WAY	4/3/15 4:10 AM	04/04/15 07:40 AM	4,966,000	SEWER LIFT STATION	MSD1010-PS	STREAM	NORTHERN DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	PUMPED OVERFLOW	DISREV RAIN EVENT DISCHARGE	2337552	NO DEBRIS.	AUXILIARY PUMPS SET UP TO PREVENT BASEMENT FLOODING.
MORRIS FORMAN	KY0022411	7713 WESTPORT RD	4/3/15 4:32 AM	04/04/15 01:46 AM	1,000	SEWER MANHOLE	105936	GROUND	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337585	WO# 2338561.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	911 BROADFIELDS DR	4/3/15 4:38 AM	04/04/15 03:10 AM	1,000	SEWER MANHOLE	24507	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338625	WO# 2338628.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4313 PRUITT CT	4/3/15 4:39 AM	04/04/15 08:00 AM	10,000	SEWER MANHOLE	08427	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337920	WO# 2338722.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1568 MCKAY AVE	4/3/15 4:50 AM	04/04/15 09:30 AM	10,000	SEWER SERVICE LINE	KK14849419	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337916	WO# 2338721.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1562 MCKAY AVE	4/3/15 4:51 AM	04/04/15 09:31 AM	10,000	SEWER MANHOLE	13931	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337909	WO# 2338719.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4103 LEE AVE	4/3/15 5:00 AM	04/06/15 09:38 AM	16,000	SEWER MANHOLE	104224	GROUND	UNNAMED TRIBUTARY	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337941	WO# 2339303.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4103 LEE AVE	4/3/15 5:05 AM	04/04/15 09:39 AM	10,000	SEWER MANHOLE	104223	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337899	WO# 2339751.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3530 FINCASTLE RD	4/3/15 5:31 AM	04/04/15 10:00 AM	10,000	SEWER MANHOLE	36763	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337894	WO# 2339745.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3536 FINCASTLE RD	4/3/15 5:32 AM	04/04/15 09:57 AM	10,000	SEWER MANHOLE	99259	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337896	WO# 2338717.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3542 FINCASTLE RD	4/3/15 5:34 AM	04/04/15 09:56 AM	1,000	SEWER SERVICE LINE	34093542	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337886	WO# 2338711.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4119 LEE AVE	4/3/15 6:02 AM	04/04/15 08:15 AM	3,000	SEWER MANHOLE	13943	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337906	WO# 2339771.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1619 NIGHTINGALE RD	4/3/15 6:31 AM	04/04/15 10:03 AM	10,000	SEWER MANHOLE	13833	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337950	WO# 2338733.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
CEDAR CREEK	KY0098540	11306 WOODSONG CT	4/3/15 7:12 AM	04/04/15 08:03 PM	19,275	SEWER MANHOLE	94955	GROUND	HAWKINS RILL	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337576	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	201 BULLITT LN	4/3/15 7:13 AM	04/04/15 11:20 AM	10,000	SEWER MANHOLE	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338477	WO# 2338763.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	4/3/15 7:13 AM	04/06/15 06:00 AM	10,000	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338475	WO# 2339330.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7900 SHELBYVILLE RD	4/3/15 7:19 AM	04/04/15 11:28 AM	22,500	SEWER MANHOLE	02935	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337791	WO# 2338666.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7900 SHELBYVILLE RD	4/3/15 7:28 AM	04/06/15 06:10 AM	288,000	SEWER MANHOLE	02933	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337793	WO# 2339296.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	5500 HITT RD	4/3/15 7:30 AM	04/04/15 06:15 AM	9,999	SEWER MANHOLE	102447A	GROUND	HITE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337588	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	5500 HITT RD	4/3/15 7:30 AM	04/04/15 06:15 AM	9,999	SEWER MANHOLE	11877	STREAM	HITE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337597	NO DEBRIS.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	5500 HITT RD	4/3/15 7:30 AM	04/04/15 06:15 AM	9,999	SEWER MANHOLE	11877A	STREAM	HITE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337607	NO DEBRIS.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	4/3/15 7:35 AM	04/04/15 11:33 AM	1,000	SEWER MANHOLE	90700	CATCH BASIN	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337794	WO# 2338667.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	4/3/15 7:45 AM	04/04/15 11:38 AM	150,000	SEWER MANHOLE	47593	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337795	WO# 2338701.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
CEDAR CREEK	KY0098540	9905 FAIRMOUNT RD	4/3/15 7:45 AM	04/06/15 10:59 PM	114,425	SEWER MANHOLE	81710	GROUND	BIG RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337611	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.

**APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
JEFFERSONTOWN	KY0025194	3258 RUCKRIEGEL PKY	4/3/15 7:46 AM	04/04/15 08:38 AM	54,000	SEWER MANHOLE	28173	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337677	WO# 2338636.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3317 DELL RD	4/3/15 7:50 AM	04/04/15 10:43 PM	18,000	SEWER MANHOLE	28413	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337680	WO# 2338641.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2630 PHOENIX HILL DR	4/3/15 7:50 AM	04/04/15 12:10 AM	52,000	SEWER LIFT STATION	MSD1044-PS	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337650	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR.
JEFFERSONTOWN	KY0025194	3400 DELL RD	4/3/15 7:52 AM	04/04/15 07:45 AM	18,000	SEWER MANHOLE	28414	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337686	WO# 2338644.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3402 CHARLANE PKY	4/3/15 7:55 AM	04/04/15 07:55 AM	1,000	SEWER MANHOLE	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338521	WO# 2338526.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
CEDAR CREEK	KY0098540	9601 HARVARD COMMONS CT	4/3/15 7:57 AM	04/05/15 10:59 PM	576,300	SEWER MANHOLE	88545	GROUND	BIG RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337613	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR.
JEFFERSONTOWN	KY0025194	3406 CHARLANE PKY	4/3/15 8:00 AM	04/04/15 07:57 AM	36,000	SEWER MANHOLE	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337730	WO# 2338650.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HUNTING CREEK NORTH	KY0029106	7501 HUNTING CREEK DR	4/3/15 8:03 AM	04/03/15 05:05 PM	13,550	SEWER LIFT STATION	MSD1060-LS	DITCH	HARRODS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337689	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR.
JEFFERSONTOWN	KY0025194	3506 CHARLANE PKY	4/3/15 8:05 AM	04/04/15 08:00 AM	18,000	SEWER MANHOLE	28250	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337733	WO# 2338652.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4640 BARBOUR LN	4/3/15 8:05 AM	04/04/15 10:00 AM	143,000	SEWER MANHOLE	42680	STREAM	LITTLE GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337643	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7913 SHELBYVILLE RD	4/3/15 8:10 AM	04/06/15 06:22 AM	432,000	SEWER MANHOLE	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337800	WO# 2339285.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	10807 ORELAND MILL RD	4/3/15 8:15 AM	04/04/15 05:00 AM	62,250	SEWER LIFT STATION	MSD0164-LS	DITCH	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337636	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3620 CHARLANE PKY	4/3/15 8:20 AM	04/04/15 08:11 AM	72,000	SEWER MANHOLE	104289	GROUND	BEATTY BROOK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337736	WO# 2338656.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4327 PRUITT CT	4/3/15 8:24 AM	04/04/15 08:01 AM	1,000	SEWER SERVICE LINE	135273	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337938	WO# 2338730.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	10601 LEVEN BLVD	4/3/15 8:25 AM	04/04/15 04:30 AM	12,050	SEWER MANHOLE	103958	GROUND	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337647	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4315 PRUITT CT	4/3/15 8:25 AM	04/04/15 08:00 AM	10,000	SEWER MANHOLE	08426	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337922	WO# 2338724.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4332 PRUITT CT	4/3/15 8:28 AM	04/04/15 08:10 AM	10,000	SEWER SERVICE LINE	085100290046A	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337937	WO# 2338729.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3620 CHARLANE PKY	4/3/15 8:30 AM	04/04/15 08:11 AM	18,000	SEWER MANHOLE	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337753	WO# 2338658.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4339 PRUITT CT	4/3/15 8:30 AM	04/04/15 08:04 AM	10,000	SEWER MANHOLE	08431	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337928	WO# 2338726.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
CEDAR CREEK	KY0098540	9719 COLLIER LN	4/3/15 8:30 AM	04/03/15 07:00 PM	126,000	SEWER MANHOLE	98022	STREAM	CEDAR CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337678	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	9 MUIRFIELD PL	4/3/15 8:31 AM	04/04/15 11:54 AM	900,000	SEWER MANHOLE	01793	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337796	WO# 2338702.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	9 MUIRFIELD PL	4/3/15 8:31 AM	04/04/15 11:54 AM	39,000	SEWER MANHOLE	67535	GROUND	HURSTBOURNE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337797	WO# 2338704.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	8619 WESTOVER DR	4/3/15 8:40 AM	04/03/15 05:30 PM	13,250	SEWER LIFT STATION	MSD1064-PS	DITCH	HARRODS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337692	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1000 N HURSTBOURNE PKY	4/3/15 8:48 AM	04/03/15 08:58 AM	10	SEWER MANHOLE	71004	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338478	SITE FLOODED, IT ONLY APPEARED TO HAVE DISCHARGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	5 RIO VISTA DR	4/3/15 8:55 AM	04/04/15 05:30 AM	310,000	SEWER MANHOLE	40879	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337696	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2120 INDIAN HILLS TRL	4/3/15 8:55 AM	04/04/15 05:35 AM	124,000	SEWER LIFT STATION	MSD0186-PS	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337695	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
BERRYTOWN	KY0036501	1203 HEAFER RD	4/3/15 9:00 AM	04/04/15 10:20 AM	228,000	SEWER MANHOLE	24012	DITCH	CHENOWETH RUN, UPPER	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337681	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
BERRYTOWN	KY0036501	1203 HEAFER RD	4/3/15 9:00 AM	04/04/15 10:20 AM	760,000	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY AND CLARIFIERS OVERFLOWED.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2337674	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3500 ST EDWARDS DR	4/3/15 9:00 AM	04/04/15 08:04 AM	18,000	SEWER MANHOLE	28249	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337765	WO# 2338660.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	4511 ST RITA DR	4/3/15 9:00 AM	04/03/15 05:50 PM	5,300	SEWER MANHOLE	17446	GROUND	ROBERSON RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337683	WATER HAS NOT RECEDED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.

**APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	2 RIO VISTA DR	4/3/15 9:00 AM	04/04/15 05:30 AM	217,875	SEWER MANHOLE	40880	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337698	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	8113 SHELBYVILLE RD	4/3/15 9:02 AM	04/04/15 12:17 PM	216,000	SEWER MANHOLE	30376	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337799	WO# 2338708.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	2711 GRASSLAND DR	4/3/15 9:14 AM	04/04/15 03:14 PM	36,000	SEWER MANHOLE	31733	DITCH	BEATTY BROOK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337777	WO# 2338661.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2216 FAIRLAND AVE	4/3/15 9:22 AM	04/04/15 07:12 AM	10,000	SEWER MANHOLE	49445	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337912	WO# 2338720.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4609 BLENHEIM RD	4/3/15 9:38 AM	04/04/15 12:42 PM	100	SEWER MANHOLE	21170	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337807	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4609 BLENHEIM RD	4/3/15 9:38 AM	04/04/15 12:42 PM	100	SEWER MANHOLE	21171	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337809	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	208 BRUNSWICK RD	4/3/15 9:44 AM	04/04/15 12:39 PM	9,000	SEWER MANHOLE	115183	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337805	WO# 2339795.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	207 BRUNSWICK RD	4/3/15 9:44 AM	04/04/15 12:39 PM	9,000	SEWER MANHOLE	21089A	DITCH	UPPER MILL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337803	WO# 2339787.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	3706 NOBEL CT	4/3/15 9:45 AM	04/04/15 05:00 PM	9,999	SEWER LIFT STATION	MSD0049-PS	GROUND	MILL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337702	NO DEBRIS.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	2901 LIVINGSTON AVE	4/3/15 9:50 AM	04/04/15 07:32 AM	16,000	SEWER MANHOLE	28395	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337789	WO# 2338665.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	9514 TAYLORSVILLE RD	4/3/15 9:50 AM	04/04/15 06:45 AM	16,000	SEWER MANHOLE	28711	DITCH	BEATTY BROOK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337786	WO# 2338664.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	806 PINE WAY	4/3/15 9:55 AM	04/04/15 01:25 PM	82,500	SEWER LIFT STATION	MSD0057-LS	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337764	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	7014 JOHN PAUL LN	4/3/15 10:00 AM	04/04/15 03:00 AM	102,000	SEWER MANHOLE	64054	GROUND	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337772	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	804 N ARBOR DR	4/3/15 10:00 AM	04/04/15 11:40 AM	38,500	SEWER MANHOLE	00056-W	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337761	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	804 N ARBOR DR	4/3/15 10:00 AM	04/04/15 11:40 AM	115,500	SEWER MANHOLE	00746	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337759	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4119 LEE AVE	4/3/15 10:42 AM	04/04/15 09:39 AM	10,000	SEWER MANHOLE	104231	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337903	WO# 2339764.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2219 RICHLAND AVE	4/3/15 11:20 AM	04/04/15 07:10 AM	10,000	SEWER MANHOLE	49446	STREAM	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337948	WO# 2338732.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6615 MOORMAN RD	4/3/15 11:30 AM	04/04/15 10:10 AM	465,500	SEWER MANHOLE	22370	GROUND	MILL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337813	CLEAN UP NOT POSSIBLE AT THIS TIME DUE TO AREA FLOODING. MSD WILL CLEAN AS SOON AS POSSIBLE. DISCLN #2339908.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4345 PRUITT CT	4/3/15 12:10 PM	04/04/15 08:03 AM	10,000	SEWER SERVICE LINE	85055	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337931	WO# 2338728.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4341 PRUITT CT	4/3/15 12:11 PM	04/04/15 08:05 AM	10,000	SEWER SERVICE LINE	85097	GROUND	PADDY RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337930	WO# 2338727.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
BERRYTOWN	KY0036501	1203 HEAFER RD	4/3/15 12:42 PM	04/04/15 10:20 AM	64,900	SEWER LIFT STATION	MSD0209A-PS	GROUND	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337876	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1804 ROUND RIDGE RD	4/3/15 1:03 PM	04/06/15 06:44 AM	72,000	SEWER MANHOLE	65623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338318	WO# 2339309.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1910 CHARBDIN PL	4/3/15 1:15 PM	04/04/15 02:15 PM	132,000	SEWER MANHOLE	65606	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338312	WO# 2338734.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3305 BENT CREEK CT	4/3/15 1:15 PM	04/04/15 11:32 AM	10,000	SEWER SERVICE LINE	BU05074039	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338442	WO# 2338748.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1910 CHARBDIN PL	4/3/15 1:20 PM	04/04/15 02:15 PM	78,000	SEWER MANHOLE	46627	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338356	WO# 2338740.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1802 ROUND RIDGE RD	4/3/15 1:20 PM	04/04/15 02:15 PM	39,000	SEWER MANHOLE	65610	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338365	WO# 2338743.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3303 TROUT CREEK DR	4/3/15 1:22 PM	04/05/15 05:50 PM	10,000	SEWER SERVICE LINE	BU05091039	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338446	WO# 2338789.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3302 TROUT CREEK DR	4/3/15 1:25 PM	04/05/15 05:58 PM	10,000	SEWER MANHOLE	23211	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338439	WO# 2338786.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3305 INDIAN CREEK CT	4/3/15 1:28 PM	04/05/15 05:53 PM	10,000	SEWER MANHOLE	51160	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338436	WO# 2338784.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3416 TUCKER WOOD LN	4/3/15 1:30 PM	04/03/15 08:35 PM	4,240	SEWER LIFT STATION	MSD1115-PS	GROUND	POPE LICK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337935	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.

**APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	1913 CHARBDIN PL	4/3/15 1:32 PM	04/04/15 02:15 PM	99,000	SEWER MANHOLE	16455	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338339	WO# 2338739.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1707 EAGLE NEST WAY	4/3/15 1:45 PM	04/04/15 08:30 AM	222,000	SEWER MANHOLE	62417	STREAM	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337964	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1707 EAGLE NEST WAY	4/3/15 1:45 PM	04/04/15 08:30 AM	166,500	SEWER MANHOLE	62418	GROUND	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337962	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	37 ARROWHEAD RD	4/3/15 1:59 PM	04/04/15 02:38 PM	10,000	SEWER MANHOLE	89791	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338322	WO# 2338735.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3317 BROWNSBORO RD	4/3/15 2:08 PM	04/04/15 02:53 PM	36,000	SEWER MANHOLE	26752	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338328	WO# 2338737.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1122 ROSTREVOR CIR	4/3/15 2:20 PM	04/04/15 07:26 AM	600,000	SEWER MANHOLE	45900	DITCH	HAWKINS RILL	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338449	WO# 2338749.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4002 BROOKFIELD AVE	4/3/15 2:25 PM	04/04/15 02:53 PM	36,000	SEWER MANHOLE	24448	GROUND	CHERRYWOOD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338330	WO# 2338738.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2002 MILLVALE RD	4/3/15 2:30 PM	04/03/15 02:40 PM	10	SEWER MANHOLE	45829	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338483	SITE WAS FLOODED, IT ONLY APPEARED TO HAVE DISCHARGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	4/3/15 2:30 PM	04/06/15 05:30 AM	18,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338474	WO# 2339323.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4119 LEE AVE	4/3/15 2:34 PM	04/04/15 09:43 AM	10,000	SEWER MANHOLE	13944	GROUND	UNNAMED TRIBUTARY	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337945	WO# 2338731.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7400 SIX MILE LN	4/3/15 3:00 PM	04/04/15 07:14 AM	10,000	SEWER MANHOLE	20491	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338485	WO# 2338715.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7401 SIX MILE LN	4/3/15 3:00 PM	04/04/15 07:15 AM	10,000	SEWER MANHOLE	32461	CATCH BASIN	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338484	WO# 2338713.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1012 ALTA CIR	4/3/15 3:10 PM	04/03/15 03:20 PM	10	SEWER MANHOLE	27005	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338482	SITE FLOODED, IT ONLY APPEARED TO HAVE DISCHARGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	4/3/15 3:10 PM	04/06/15 05:39 AM	10,000	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338480	WO# 2339334.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	4/3/15 3:10 PM	04/06/15 05:39 AM	1,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338481	WO# 2339341.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	4/3/15 3:15 PM	04/04/15 07:47 AM	24,000	SEWER MANHOLE	15195	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338452	WO# 2338753.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1012 ALTA CIR	4/3/15 3:15 PM	04/04/15 07:52 AM	10,000	SEWER MANHOLE	40559	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338479	WO# 2338765.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	4/3/15 3:15 PM	04/04/15 07:52 AM	180,000	SEWER MANHOLE	72289	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338472	WO# 2338761.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	1081 SPRINGVIEW DR	4/3/15 4:00 PM	04/03/15 10:10 PM	9,000	SEWER MANHOLE	27628	GROUND	FILSON FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338298	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	5423 TRACY WAY	4/3/15 4:05 PM	04/04/15 06:00 AM	12,525	SEWER LIFT STATION	MSD0002-PS	DITCH	MILL CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338302	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1552 CHEROKEE RD	4/3/15 4:24 PM	04/06/15 05:45 AM	144,000	SEWER MANHOLE	40471	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338465	WO# 2339320.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2500 WYETH CT	4/3/15 4:29 PM	04/04/15 07:20 AM	1,000	SEWER MANHOLE	49514	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338541	WO# 2338543.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2504 WYETH CT	4/3/15 4:33 PM	04/04/15 07:23 AM	10,000	SEWER MANHOLE	66232	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338369	WO# 2338746.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1108 DUPONT CIR	4/3/15 4:58 PM	04/04/15 03:24 PM	9,000	SEWER MANHOLE	43726	GROUND	WEICHER CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338470	WO# 2338759.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6926 SANDSTONE BLVD	4/3/15 5:00 PM	04/03/15 08:20 PM	20,000	SEWER MANHOLE	29933	GROUND	FERN CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338314	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3920 DUTCHMANS LN	4/3/15 5:04 PM	04/04/15 03:22 PM	825,000	SEWER MANHOLE	96673	STREAM	WEICHER CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338460	WO# 2338757.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1106 BROADFIELDS DR	4/3/15 5:14 PM	04/04/15 03:17 PM	30,000	SEWER MANHOLE	74513	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338469	WO# 2338758.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4801 CASSIA CT	4/3/15 7:19 PM	04/06/15 06:44 AM	360,000	SEWER MANHOLE	46623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338347	WO# 2339312.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9718 TITAN DR	4/3/15 7:23 PM	04/03/15 10:25 PM	4,500	SEWER MANHOLE	61667	GROUND	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338375	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	4/7/15 9:30 AM	04/08/15 09:11 AM	4,500	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340550	WO# 2340665.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.

**APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	1011 ALTA CIR	4/7/15 9:36 AM	04/08/15 09:18 AM	1,500	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340548	WO# 2340670.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	4/7/15 9:37 AM	04/08/15 09:13 AM	1,500	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340547	WO# 2340661.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	4/7/15 10:41 AM	04/08/15 08:53 AM	4,500	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340551	WO# 2340602.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	10723 COPPER RIDGE DR	4/7/15 12:50 PM	04/07/15 02:30 PM	35,000	SEWER MANHOLE	108674	GROUND	HITE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340198	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	SITE FOUND DURING RAIN EVENT RECON- WILL MONITOR & EVALUATE FOR REPAIR.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	4/7/15 6:00 PM	04/07/15 07:30 PM	2,000	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340544	WO# 2340639.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	4/7/15 6:07 PM	04/07/15 07:35 PM	2,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340542	WO# 2340638.	LACK OF SYSTEM CAPACITY-HEAVY RAIN.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/7/15 6:56 PM	04/07/15 11:12 PM	123,042	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2340538	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	4/7/15 7:13 PM	04/08/15 01:45 AM	558,009	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340545	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	4/7/15 7:41 PM	04/07/15 10:45 PM	2,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340546	WO# 2340649.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7404 ARROWWOOD RD	4/7/15 11:25 PM	04/08/15 01:06 AM	1,010	SEWER MANHOLE	21628-W	DITCH	GOOSE CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340555	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	STATION HAULED TO PREVENT DISCHARGE.
BERRYTOWN	KY0036501	1203 HEAFER RD	4/8/15 4:40 AM	04/08/15 10:58 AM	5,220	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2340559	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	4/8/15 5:15 PM	04/10/15 02:05 PM	5,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2341382	WO# 2342126.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	4/8/15 8:25 PM	04/09/15 07:26 PM	574,686	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2341381	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	4/8/15 10:31 PM	04/09/15 06:30 AM	3,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2341367	WO#2341411.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	4/8/15 10:38 PM	04/09/15 06:30 AM	3,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2341369	WO# 2341412.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	4/9/15 1:01 PM	04/09/15 05:15 PM	2,500	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2341739	WO# 2341767.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	4/9/15 1:05 PM	04/09/15 05:12 PM	2,000	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2341734	WO# 2341764.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	4/9/15 1:06 PM	04/09/15 05:18 PM	4,500	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2341735	WO# 2341766.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	4/9/15 1:18 PM	04/09/15 05:02 PM	1,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2341733	WO# 2341762.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	4/9/15 9:40 PM	04/30/15 12:28 PM	1,807,000,000	SEWER TREATMENT PLANT	MSD0278	STREAM	OHIO RIVER	A TRANSFORMER EXPLODED ON THE NORTH FEED. THIS ELIMINATED ALL POWER TO THE PLANT.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2341530	MSD CREWS PUMPING AND VACTORING FLOODED AREAS.	POWER HAS BEEN RESTORED TO THE SOUTH FEED 04/09/2015 05:30 AM. SOME FLOW HAS BEEN DIVERTED TO THE DRG WQTC THROUGH THE NORTHERN DITCH
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/14/15 1:05 PM	04/14/15 03:23 PM	25,254	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2342988	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/19/15 8:05 PM	04/19/15 10:22 PM	24,216	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2344718	NO DEBRIS.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
MORRIS FORMAN	KY0022411	1258 ROYAL AVE	4/22/15 12:11 PM	04/22/15 03:31 PM	1,000	SEWER MANHOLE	CSO137	STREAM	SOUTH FORK BEARGRASS CREEK	POSSIBLE BREAK DOWN OF PIPE.	PUMPED OVERFLOW	DISDW DRY WEATHER DISCHARGE	2346433	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	WILL REQUIRE DIGGING ROOT CUTTER UP.
FLOYDS FORK	KY0102784	817 GILLILAND RD	4/24/15 2:50 PM	04/27/15 09:45 AM	68,100	SEWER MAIN	96911B-V	GROUND	LONG RUN	FORCE MAIN BREAK.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2347658	CLEAN UP WO#2351295.	SWITCH FORCE MAINS WHILE CONTRACTOR REPAIRS.
STARVIEW	KY0031712	423 BERMUDA WAY	4/26/15 10:10 AM	04/26/15 11:30 AM	200	SEWER MANHOLE	31122	GROUND	CHENOWETH RUN	RAG AND GREASE BLOCKAGE CAUSING DISCHARGE AT MANHOLE RATE 2.5 GPM REPORTED.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2347483	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	INVESTIGATING CAUSE OF BLOCKAGE.
STARVIEW	KY0031712	423 BERMUDA WAY	4/26/15 10:12 AM	04/26/15 11:30 AM	195	SEWER MANHOLE	31123	DITCH	CHENOWETH RUN, UPPER	RAG AND GREASE BLOCKAGE CAUSING DISCHARGE AT MANHOLE RATE 2.5 GPM REPORTED.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2347484	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	INVESTIGATING CAUSE OF BLOCKAGE.
STARVIEW	KY0031712	423 BERMUDA WAY	4/26/15 10:45 AM	04/26/15 11:30 AM	1,125	SEWER MANHOLE	31124	GROUND	CHENOWETH RUN, UPPER	RAG AND GREASE BLOCKAGE CAUSING DISCHARGE AT MANHOLE RATE 2.5 GPM REPORTED.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2347485	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	INVESTIGATING CAUSE OF BLOCKAGE.
DEREK R. GUTHRIE	KY0078956	6500 MOUNT WASHINGTON RD	4/26/15 7:50 PM	04/26/15 08:00 PM	750	SEWER LIFT STATION	MSD1147-PS	DITCH	PENNSYLVANIA RUN	CONTRACTOR WORKING AT PUMP STATION CONDUCTING A PUMP AROUND AND THE DISCHARGE HOSE ON THE CONTRACTORS PUMP HAD A HOLE IN	MECHANICAL FAILURE	DISDW DRY WEATHER DISCHARGE	2347523	MSD CONTRACTOR CLEANED AND SANITIZED AFFECTED AREA.	CONTRACTOR REPLACED FAILED DISCHARGE HOSE ON PUMP.
MORRIS FORMAN	KY0022411	6600 SEMINARY WOODS PL	4/29/15 10:40 AM	04/29/15 10:50 AM	500	SEWER LIFT STATION	MSD0123-PS	DITCH	GOOSE CREEK	THE GENERATOR DID NOT COME BACK ON AFTER AN LG&E POWER FAIL.	POWER OUTAGE (LG&E)	DISDW DRY WEATHER DISCHARGE	2349857	CLEAN UP WO#2349918.	CONTRACTOR TESTED & REPAIRED THE GENERATOR.
MORRIS FORMAN	KY0022411	1535 POPLAR LEVEL RD	5/7/15 4:15 PM	05/07/15 08:00 PM	4,200	SEWER MAIN	75014	STREAM	SOUTH FORK BEARGRASS CREEK	ROOTS IN THE MAIN.	ROOTS	DISDW DRY WEATHER DISCHARGE	2356068	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	ROOT CUT LINE #2356189.

APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	2501 ALEXANDER RD	5/11/15 3:13 PM	05/11/15 03:45 PM	1,500	SEWER MANHOLE	72267	GROUND	MIDDLE FORK BEARGRASS CREEK	WHILE DOING PREVENTATIVE MAINTENANCE ROOT CUTTING ON MAIN SEWER, MANHOLE DISCHARGED.	ROOTS	DISDW DRY WEATHER DISCHARGE	2358004	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	ROOT CUTTING MAIN SEWER TO GET TREE ROOTS OUT. ROOT CUT WORK ORDER# 2356423.
HITE CREEK	KY0022420	1001 HARRODS LANDING DR	5/29/15 1:00 PM	05/29/15 03:10 PM	910	SEWER SERVICE LINE	103681001	GROUND	HUNTING CREEK	UTILITY WORKER BROKE THE FORCE MAIN AS THEY WERE MAKING A REPAIR.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2365539	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	CONTRACTOR HAS REPAIRED THE FORCE MAIN.
MORRIS FORMAN	KY0022411	4107 LEE AVE	6/18/15 5:35 PM	06/18/15 07:24 PM	1,500	SEWER SERVICE LINE	KK14855239	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373900	WO# 2373918.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4119 LEE AVE	6/18/15 5:40 PM	06/18/15 07:26 PM	7,500	SEWER MANHOLE	104231	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373844	WO# 2373867.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4119 LEE AVE	6/18/15 5:41 PM	06/18/15 07:27 PM	1,000	SEWER MANHOLE	13943	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373845	WO# 2373870.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4108 LEE AVE	6/18/15 5:43 PM	06/18/15 07:28 PM	300	SEWER SERVICE LINE	KK14815019	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373847	WO# 2373872.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	6/18/15 5:45 PM	06/18/15 07:30 PM	3,500	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373848	WO# 2373878.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4103 LEE AVE	6/18/15 5:46 PM	06/18/15 07:32 PM	4,500	SEWER MANHOLE	104223	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373923	WO# 2373926.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	6/18/15 5:50 PM	06/18/15 07:43 PM	1,200	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373842	WO# 2373864.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	6/18/15 5:51 PM	06/18/15 07:44 PM	5,000	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373843	WO# 2373865.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	6/18/15 5:59 PM	06/18/15 08:11 PM	10,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373945	WO# 2373946.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	6/18/15 6:18 PM	06/18/15 08:15 PM	1,000	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373830	WO# 2373943.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	6/18/15 6:32 PM	06/18/15 08:07 PM	39,878	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2373849	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	6/18/15 7:35 PM	06/18/15 05:30 AM	3,500	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373831	WO# 2373932.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	6/18/15 7:35 PM	06/18/15 05:30 AM	3,500	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373839	WO# 2373935.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	6/18/15 8:01 PM	06/18/15 08:15 PM	1,223	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2373841	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1418 TREVILIAN WAY	6/20/15 8:45 AM	06/20/15 11:45 AM	2,500	SEWER MANHOLE	51594	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374355	DISCLN WO# 2374356.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1600 BELMAR DR	6/20/15 9:04 AM	06/20/15 11:23 AM	1,000	SEWER MANHOLE	13946	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374357	DISCLN WO# 2374358.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	6/20/15 9:12 AM	06/20/15 11:25 AM	1,000	SEWER MANHOLE	66349	GROUND	CAMP TAYLOR DITCH	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374351	DISCLN WO# 2374352.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3726 FINCASTLE RD	6/20/15 9:13 AM	06/20/15 11:26 AM	2,500	SEWER MANHOLE	08717	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374353	DISCLN WO# 2374354.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	6/20/15 9:14 AM	06/20/15 04:42 PM	682,245	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2374338	NO DEBRIS.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	11401 GRAND AVE	6/20/15 9:18 AM	06/20/15 11:30 AM	3,100	SEWER MANHOLE	28551	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374323	DISCLN WO# 2374360.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	6/20/15 9:20 AM	06/20/15 03:47 PM	18,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374320	DISCLN WO# 2374364.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	6/20/15 9:25 AM	06/20/15 03:58 PM	14,500	SEWER MANHOLE	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374317	DISCLN WO# 2374362.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	6/20/15 9:25 AM	06/20/15 03:58 PM	14,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374318	DISCLN WO# 2374363.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	6/20/15 9:30 AM	06/20/15 01:45 PM	475	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374322	DISCLN WO# 2374365.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	6/20/15 9:35 AM	06/20/15 04:02 PM	18,000	SEWER MANHOLE	72289	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374315	DISCLN WO# 2374361.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	3258 RUCKRIEGEL PKY	6/20/15 9:44 AM	06/20/15 11:11 AM	2,750	SEWER MANHOLE	28173	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374321	DISCLN WO# 2374359.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	6808 SANDSTONE BLVD	6/20/15 10:00 AM	06/20/15 10:45 AM	200	SEWER MANHOLE	31073	DITCH	FERN CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374367	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	6/20/15 10:00 AM	06/20/15 03:10 PM	439,691	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374325	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.

**APPENDIX B-1
UNAUTHORIZED DISCHARGES
TO WATERS OF UNITED STATES
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	6/20/15 12:00 PM	06/20/15 02:15 PM	3,300	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2374366	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	10304 CAVEN AVE	6/26/15 1:00 AM	06/26/15 02:00 PM	20,325	SEWER MANHOLE	27116	STREAM	MUD CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2376059	MSD CLEANED AND SANITIZED THE IMPACTED AREA.	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	6/26/15 4:01 AM	06/26/15 08:13 AM	39,579	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2375942	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.

APPENDIX B-2 - DISCHARGE WORK ORDERS-BYPASS

APPENDIX B-2
BYPASS EVENTS AT WQTC
JULY 1, 2014 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow (gal.)	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
KEN CARLA	KY0022497	8701 LYNNHALL CT	11/6/14 8:44 AM	11/06/14 09:51 AM	34	SEWER TREATMENT PLANT	MSD0208	STREAM	HARRODS CREEK	LEAKING OUT OF CHLORINE CONTACT TANK.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2263290	LIME WAS SPREAD; NO DEBRIS OBSERVED.	CONTRACTOR REPAIRED TANK.
BERRYTOWN	KY0036501	1203 HEAFER RD	3/4/15 9:40 AM	03/05/15 05:30 PM	191,000	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2319385	MSD CLEANED & SANITIZED THE AREA.	PLANT IS TO BE ELIMINATED IN 2015. SNOW ACCUMULATION OF APPROXIMATELY 12 INCHES OCCURRED AT THIS FACILITY AFTER BYPASS BEGAN.
BERRYTOWN	KY0036501	1203 HEAFER RD	3/10/15 3:30 PM	03/11/15 01:20 PM	65,500	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2323203	MSD CLEANED & SANITIZED THE AREA.	PLANT IS TO BE ELIMINATED IN 2015. DISINFECTED AND CLEANED BY MSD STAFF.
BERRYTOWN	KY0036501	1203 HEAFER RD	3/14/15 1:40 AM	03/15/15 12:15 PM	206,700	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2325355	MSD CLEANED & SANITIZED THE AREA.	PLANT IS TO BE ELIMINATED IN 2015.
CEDAR CREEK	KY0098540	8605 CEDAR CREEK RD	3/14/15 6:50 AM	03/14/15 08:00 AM	35,000	SEWER TREATMENT PLANT	MSD0289	GROUND	CEDAR CREEK	RAIN EVENT CAUSED LACK OF SYSTEM CAPACITY OF THE SAND FILTER SYSTEM.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2325349	MSD CLEANED & SANITIZED THE AREA.	MSD STAFF DIVERTED FLOW INTO THE #1 OXIDATION DITCH TO PROTECT THE UV EQUIPMENT AND MAINTAIN TERTIARY TREATMENT FOR THE MAJORITY OF PLANT FLOWS.
TIMBERLAKE	KY0043087	5504 TIMBER RIDGE DR	3/16/15 6:00 AM	03/20/15 02:00 PM	364,000	SEWER TREATMENT PLANT	MSD0293	GROUND	HARRODS CREEK	RAIN EVENT CAUSED RIVER TO RISE CAUSING CONTACT CHAMBER TO BE SUBMERGED UNDER WATER.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2325628	CONTRACTOR CLEANED CL2 TANK.	THE PLANT IS SCHEDULED TO BE ELIMINATED BEFORE JANUARY 1, 2016. CHLORINE CONTACT BASIN WAS CLEANED ON MARCH 24, 2015 AND PUT BACK IN SERVICE SAME DAY.
BERRYTOWN	KY0036501	1203 HEAFER RD	4/3/15 9:00 AM	04/04/15 10:20 AM	760,000	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	RAIN EVENT CAUSED A LACK OF SYSTEM CAPACITY AND CLARIFIERS OVERFLOWED.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2337674	MSD CLEANED & SANITIZED THE AREA.	THE SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP.
BERRYTOWN	KY0036501	1203 HEAFER RD	4/8/15 4:40 AM	04/08/15 10:58 AM	5,220	SEWER TREATMENT PLANT	MSD0209	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY DUE TO RAIN EVENT.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2340559	MSD CLEANED & SANITIZED THE AREA.	A SOLUTION FOR THIS LOCATION CAN BE FOUND IN THE IOAP.
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	4/9/15 9:40 PM	04/30/15 12:28 PM	1,807,000,000	SEWER TREATMENT PLANT	MSD0278	STREAM	OHIO RIVER	A TRANSFORMER EXPLODED ON THE NORTH FEED. THIS ELIMINATED ALL POWER TO THE PLANT.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2341530	MSD CREWS PUMPING AND VACTORING FLOODED AREAS.	POWER HAS BEEN RESTORED TO THE SOUTH FEED 04/09/2015 05:30 AM. SOME FLOW HAS BEEN DIVERTED TO THE DRG WQTC THROUGH THE NORTHERN DITCH PS.
STARVIEW	KY0031712	423 BERMUDA WAY	6/29/15 4:29 PM	06/29/15 05:54 PM	665	SEWER TREATMENT PLANT	MSD0247	STREAM	CHENOWETH RUN	LG&E POWER FAIL.	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2379495	MSD CLEANED & SANITIZED THE AREA.	INSTALLED GENERATOR UNTIL POWER RESTORED.

APPENDIX B-3 - DISCHARGE WORK ORDERS-BLENDING

APPENDIX B-3
BLENDING EVENTS AT JEFFERSONTOWN WQTC
JULY 1, 2014 THROUGH JUNE 30, 2015

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Facility Discharges To	Receiving Stream	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	8/22/14 8:44 PM	08/23/14 01:52 PM	117,106	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2219250	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	9/11/14 2:58 AM	09/11/14 01:01 PM	1,006,453	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2231197	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	10/14/14 10:32 AM	10/14/14 04:16 PM	320,016	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2250349	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	11/23/14 8:20 PM	11/23/14 09:08 PM	2,140	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2268282	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	12/6/14 12:20 AM	12/06/14 07:09 PM	2,110,538	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2273389	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	3/4/15 12:43 AM	03/05/15 10:50 PM	7,711,175	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2319250	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	3/10/15 8:55 AM	03/11/15 05:13 PM	4,893,106	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2322895	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	3/13/15 3:20 PM	03/15/15 05:59 PM	8,919,626	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2325293	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/2/15 4:50 PM	04/05/15 01:30 AM	12,588,944	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2337464	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/7/15 6:56 PM	04/07/15 11:12 PM	123,042	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2340538	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/14/15 1:05 PM	04/14/15 03:23 PM	25,254	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2342968	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	4/19/15 8:05 PM	04/19/15 10:22 PM	24,216	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2344718	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	6/18/15 6:32 PM	06/18/15 08:07 PM	39,878	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2373849	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	6/20/15 9:14 AM	06/20/15 04:42 PM	682,245	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2374338	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	6/26/15 4:01 AM	06/26/15 08:13 AM	39,579	SEWER TREATMENT PLANT	MSD0255	STREAM	CHENOWETH RUN	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	BLENDING AT JTOWN WQTC	DISREV RAIN EVENT DISCHARGE	2375942	NO CLEAN UP PERFORMED, PIPE DISCHARGE SUBMERGED.	TEMPORARY BLENDING HAS BEEN NEGOTIATED AT THIS LOCATION WHEN FLOW THROUGH THE PLANT HAS BEEN OPTIMIZED DURING WET WEATHER.



APPENDIX B-4 - DISCHARGE WORK ORDERS-GROUND



**APPENDIX B-4
OVERFLOWS TO GROUND
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	7404 ARROWWOOD RD	7/8/14 11:20 AM	07/08/14 11:25 AM	25	SEWER LIFT STATION	MSD0040-PS	PUMP FAILURE DUE TO CLOG.	MECHANICAL FAILURE	DISREV RAIN EVENT DISCHARGE	2191055	MSD CLEANED & SANITIZED THE AREA.	MAINTENANCE PULLED & CLEANED DEBRIS FROM PUMP.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	7/12/14 10:50 AM	07/12/14 11:47 AM	10	SEWER TREATMENT PLANT	MSD0255	B&H DRIVER LOADING SOILS IN TRUCK OVERLOADED VEHICLE.	MECHANICAL FAILURE	DISDW DRY WEATHER DISCHARGE	2193003	MSD CLEANED AND SANITIZED AREA.	INTSRUCTD B &H DRIVER ON CORRECT LOADING.
TIMBERLAKE	KY0043087	5504 TIMBER RIDGE DR	7/14/14 1:00 PM	07/14/14 01:30 PM	30	SEWER TREATMENT PLANT	MSD0293	DIGESTOR AT PLANT #1 IS LEAKING.	STRUCTURAL FAILURE	DISREV RAIN EVENT DISCHARGE	2193521	MSD CLEANED & SANITIZED THE AREA.	MSD WELDED & REPAIRED THE WALL.
TIMBERLAKE	KY0043087	5504 TIMBER RIDGE DR	8/20/14 7:00 AM	08/20/14 07:30 AM	750	SEWER TREATMENT PLANT	MSD0293	WALLS OF DIGESTORS LEAKING.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2218170	CONTRACTOR CLEANED & SANITIZED.	STATION BEING HAULED WHILE REPAIRS ARE BEING MADE.
TIMBERLAKE	KY0043087	5504 TIMBER RIDGE DR	8/20/14 7:00 AM	08/20/14 08:00 AM	180	SEWER TREATMENT PLANT	MSD0293	THE WALLS OF DIGESTER #2 LEAKING.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2218214	CONTRACTOR CLEANED & SANITIZED.	STATION BEING HAULED WHILE REPAIRS ARE BEING MADE.
TIMBERLAKE	KY0043087	5504 TIMBER RIDGE DR	8/20/14 7:00 AM	08/20/14 08:30 AM	180	SEWER TREATMENT PLANT	MSD0293	THE WALLS OF DIGESTER #3 LEAKING.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2218216	CONTRACTOR REPAIRED & SANITIZED.	STATION BEING HAULED WHILE REPAIRS ARE BEING MADE.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	11/11/14 7:35 AM	11/11/14 07:35 AM	50	SEWER TREATMENT PLANT	MSD0255	CONTRACTOR OVERFILLED TRUCK.	MECHANICAL FAILURE	DISDW DRY WEATHER DISCHARGE	2264869	CONTRACTOR CLEANED AND SANITIZED THE AREA.	COUNSELLED DRIVER ABOUT BEING MORE CAREFUL.
DEREK R. GUTHRIE	KY0078956	1113 PENILE RD	11/18/14 9:45 PM	11/18/14 09:45 PM	1	SEWER SERVICE LINE	105002200000A	BLOCKAGE ON MSD PORTION OF PIPE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2266720	CUSTOMER CLEANED UP IMPACTED AREA.	FLUSH THE MSD CLEAN OUT , NO FURTHER ACTION NEEDED.
MORRIS FORMAN	KY0022411	2630 PHOENIX HILL DR	12/11/14 2:16 PM	12/10/14 02:28 PM	60	SEWER LIFT STATION	MSD1044-PS	CONTRACTOR BROKE THROUGH THE OHIO RIVER FORCE MAIN CAUSING THE STATION TO BE SHUT DOWN RESULTING IN DISCHARGE.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2276092	MSD CLEANED & SANITIZED THE AREA.	CONTRACTOR REPAIRED THE OHIO RIVER FORCE MAIN.
HITE CREEK	KY0022420	6808 FAIRWAY VIEW CT	12/12/14 2:00 PM	12/12/14 03:00 PM	100	SEWER LIFT STATION	MSD1065-PS	BYPASS TO TAKE OUT LATERAL PUMP STATION.	UTILITY DAMAGED MSD ASSET	DISDW DRY WEATHER DISCHARGE	2279220	MSD CONTRACTOR (EASY CONSTRUCTION) WILL CLEAN & SANITIZED THE AREA.	MSD WILL MAKE REPAIR TO THE PUMP STATION.
MORRIS FORMAN	KY0022411	610 ZANE ST	12/12/14 4:55 PM	12/12/14 06:02 PM	1	SEWER SERVICE LINE	D13256089	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2279370	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	REFERRED TO SUPERVISOR FOR REPAIR.
HITE CREEK	KY0022420	5500 HITT RD	12/30/14 8:55 AM	12/30/14 09:00 AM	10	SEWER MANHOLE	102447A	DRAINING CLARIFIER CAUSED FOAM FROM PLANT MANHOLE.	MECHANICAL FAILURE	DISDW DRY WEATHER DISCHARGE	2288038	B&H CLEANED AND SANITIZED AREA.	OBSERVE MANHOLE WHILE DRAINING OPERATIONS.
HITE CREEK	KY0022420	5500 HITT RD	2/2/15 8:21 AM	02/02/15 08:21 AM	75	SEWER TREATMENT PLANT	MSD0202	ELECTRICIAL SWITCH PROBLEMS ON SOLIDS LOADING STATION.	ELECTRICAL PROBLEMS AT MSD	DISREV RAIN EVENT DISCHARGE	2304980	MSD CONTRACTOR CLEANED AND SANITIZED AREA.	MSD ELECTRICIAN MADE REPAIRS TO CONTROL SWITCH.
DEREK R. GUTHRIE	KY0078956	5123 POPLAR LEVEL RD	2/19/15 7:05 PM	02/19/15 08:06 PM	1	SEWER SERVICE LINE	PA08065089	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2314244	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	CUT ROOTS #2314259; DUG DOWN & REPLACED LINE #2314229.
MORRIS FORMAN	KY0022411	942 S 6TH ST	3/1/15 4:25 PM	03/01/15 05:25 PM	1	SEWER SERVICE LINE	D09965059	OBSTRUCTION IN MSD PORTION OF SERVICE LINE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2318098	MSD PERSONNEL CLEANED IMPACTED AREA.	FLUSHED OBSTRUCTION FROM LINE #2318088.
MORRIS FORMAN	KY0022411	2153 GOLDSMITH LN	3/13/15 7:10 PM	03/13/15 07:35 PM	3	SEWER MANHOLE	48859	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325318	MSD PERSONNEL CLEANED THE IMPACTED AREA.	REFERRED TO CREW FOR TV INSPECTION.
BERRYTOWN	KY0036501	1203 HEAFER RD	3/17/15 10:00 AM	03/17/15 11:00 AM	60	SEWER TREATMENT PLANT	MSD0209	DIGESTER LEAKING.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2326183	MSD CLEANED & SANITIZED THE AREA.	MSD EMPLOYEES WELDED THE TANK.
MORRIS FORMAN	KY0022411	1800 NIGHTINGALE RD	3/31/15 1:00 AM	03/31/15 06:00 AM	4,500	SEWER LIFT STATION	MSD0022-PS	HOLE IN DRESSER COUPLING LEAKING ONTO THE FLOOR INTO THE SUMP PUMP.	STRUCTURAL FAILURE	DISDW DRY WEATHER DISCHARGE	2332934	MSD REPAIRED THE LINE.	CONTRACTOR WILL REPAIR LINE.
JEFFERSONTOWN	KY0025194	3651 STONE LAKES DR	4/4/15 9:33 AM	04/04/15 09:35 AM	20	SEWER LIFT STATION	MSD1164-PS	STATION PUMPS TRIPPED.	ELECTRICAL PROBLEMS AT MSD	DISDW DRY WEATHER DISCHARGE	2338519	MSD CLEAANED AND SANATIZED AREA.	BREAKERS RESET AND STATION IS BACK IN SERVICE.
MORRIS FORMAN	KY0022411	3022 BEAUMONT RD	4/7/15 9:49 AM	04/07/15 09:49 AM	1	SEWER MANHOLE	17592	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2339890	MSD PERSONNEL WILL CLEAN IMPACTED AREA.	NO ADDITIONAL REPAIRS REQUIRED BY MSD.
MORRIS FORMAN	KY0022411	3030 LEMAN DR	4/7/15 9:54 AM	04/07/15 09:54 AM	1	SEWER SERVICE LINE	58721	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2339896	MSD PERSONNEL WILL CLEAN THE IMPACTED AREA.	NO ADDITIONAL REPAIRS REQUIRED BY MSD.

**APPENDIX B-4
OVERFLOWS TO GROUND
JULY 1, 2014 THROUGH JUNE 30, 2015**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
DEREK R. GUTHRIE	KY0078956	6317 HANSES DR	4/8/15 6:00 AM	04/08/15 10:26 AM	2	SEWER SERVICE LINE	063301020000A	CAPACITY ISSUE.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2341489	CREW CLEAN UP AROUND THE IMPACTED AREA.	NONE -CAPACITY ISSUE.
MORRIS FORMAN	KY0022411	5513 INNWOOD DR	4/18/15 4:30 PM	04/18/15 05:09 PM	1	SEWER SERVICE LINE	062N01020000A	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2344628	MSD PERSONNEL CLEANED THE IMPACTED AREA.	ROOT CUT LINE #2344626; FLUSHED TO OPEN #2344625.
MORRIS FORMAN	KY0022411	1309 S 16TH ST	5/7/15 8:25 PM	05/07/15 08:40 PM	1	SEWER SERVICE LINE	R03100349	OBSTRUCTION AT THE SHARED JOINT OF SERVICE LINE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2356105	THE CUSTOMER CLEANED THE IMPACTED AREA.	FLUSHED TO OPEN THE LINE #2357862.
MORRIS FORMAN	KY0022411	1215 ELLISON AVE	5/14/15 8:30 AM	05/14/15 10:30 AM	360	SEWER MANHOLE	CSO113	OBSTRUCTION IN CSO.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2359249	NONE NEEDED; DISCHARGE INSIDE SEWER.	FLUSHED AND OPEN CSO.
JEFFERSONTOWN	KY0025194	10725 OLD TAYLORSVILLE RD	5/18/15 11:35 AM	05/18/15 11:36 AM	20	SEWER TREATMENT PLANT	MSD0255	B&H DRIVER LOADING SOLIDS HAD A BROKEN DUMP VALVE ON HIS VEHICLE .	MECHANICAL FAILURE	DISDW DRY WEATHER DISCHARGE	2360099	B&H CLEANED AND SANITIZED AREA.	B&H REPLACED BROKEN DUMP VALVE.
MORRIS FORMAN	KY0022411	645 LYNN ST	5/24/15 5:35 PM	05/24/15 05:58 PM	1	SEWER SERVICE LINE	035L01060000A	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2361769	MSD PERSONNEL CLEANED THE IMPACTED AREA.	CREW DUG DOWN AND REPAIR THE PROPERTY SERVICE CONNECTION #2361765.
DEREK R. GUTHRIE	KY0078956	7808 MANSCLICK RD	5/28/15 1:00 AM	05/28/15 01:01 AM	20	SEWER LIFT STATION	MSD0143-PS	BROKE FORCE MAIN.	MECHANICAL FAILURE	DISDW DRY WEATHER DISCHARGE	2364716	PIPE DISCHARGE SUBMERGED- NO CLEAN UP.	CONTRACTOR REPAIRED FORCE MAIN.
MORRIS FORMAN	KY0022411	7013 HADLEY CT	6/12/15 11:35 AM	06/12/15 12:20 PM	1	SEWER SERVICE LINE	176500130000A	PRIVATE PROPERTY ISSUE AND OBSTRUCTION IN MSD PORTION HEAVY PAPER.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2372039	MSD WILL CLEAN IMPACTED AREA.	ADVISED TO CONTACT PLUMBER ON CUSTOMER PORTION MSD FLUSHED SERVICE LINE FROM MSD CLEANOUT #2372033.

APPENDIX B-5 - DISCHARGE WORK ORDERS-INTERIOR

**APPENDIX B-5
OVERFLOWS TO INTERIOR
JULY 1, 2012 THROUGH JUNE 30, 2013**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	3100 TALISMAN RD	7/28/14 3:00 PM	07/28/14 04:16 PM	1	SEWER SERVICE LINE	102144	ROOTS IN THE SHARED JOINT OF THE PROPERTY SERVICE CONNECTION.	ROOTS	DISDW DRY WEATHER DISCHARGE	2206520	CUSTOMER CLEANED THE IMPACTED AREA.	WORK ORDER 2206522; MSD ROOT CUT AND OPEN THEIR PORTION.
MORRIS FORMAN	KY0022411	3820 ILLINOIS AVE	7/28/14 10:50 PM	07/28/14 10:53 PM	1	SEWER SERVICE LINE	KK09656019	OBSTRUCTION IN THE MAIN SEWER.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2206544	CUSTOMER CLEANED IMPACTED AREA.	WORK ORDER 2206543; FLUSHED TO OPEN THE LINE.
DEREK R. GUTHRIE	KY0078956	4805 MID DR	9/18/14 11:15 AM	09/18/14 12:00 PM	1	SEWER SERVICE LINE	70388	OBSTRUCTION IN MAIN SEWER.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2233833	CUSTOMER CLEANED THE IMPACTED AREA.	WORK ORDER 2233817; FLUSHED MAIN SEWER.
DEREK R. GUTHRIE	KY0078956	4017 SLACK AVE	11/9/14 4:34 PM	11/09/14 05:34 PM	1	SEWER SERVICE LINE	PD07166019	OBSTRUCTION IN MSD PORTION OF SERVICE LINE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2264397	CUSTOMER CLEANED THE IMPACTED AREA.	FLUSHED TO REMOVE OBSTRUCTION WORK ORDER #2264398.
MORRIS FORMAN	KY0022411	2826 TAYLOR BLVD	11/12/14 1:15 PM	11/12/14 02:15 PM	1	SEWER SERVICE LINE	T07357019	GREASE IN MAIN SEWER.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2265383	CUSTOMER CLEANED THE IMPACTED AREA.	FLUSHED MAIN SEWER.
MORRIS FORMAN	KY0022411	5717 MORRISON AVE	11/23/14 12:24 PM	11/23/14 07:12 PM	5	SEWER SERVICE LINE	061A00620000A	ROOTS IN MSD PORTION OF SERVICE LINE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2268268	MSD CONTRACTOR CLEANED AND SANITIZED THE IMPACTED AREA.	ROOT CUT SERVICE LINE.
MORRIS FORMAN	KY0022411	1451 INDIANA AVE	11/24/14 4:30 PM	11/24/14 05:00 PM	1	SEWER SERVICE LINE	KK14749029	PRIVATE PROPERTY ISSUE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2268660	CUSTOMER CLEANED THE IMPACTED AREA.	ADVISED CUSTOMER TO CONTACT A PLUMBER.
MORRIS FORMAN	KY0022411	215 W COLLINS CT	11/24/14 5:07 PM	11/24/14 05:06 PM	1	SEWER SERVICE LINE	159955	PRIVATE PROPERTY ISSUE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2268655	CUSTOMER CLEAN UP THE IMPACTED AREA.	MINI CAM MSD CLEAN OUT , ADVISED CUSTOMER TO CALL PLUMBER.
MORRIS FORMAN	KY0022411	1265 LUCAS AVE	11/27/14 6:20 PM	11/27/14 06:30 PM	1	SEWER SERVICE LINE	62800	ROOTS.	ROOTS	DISDW DRY WEATHER DISCHARGE	2269631	CUSTOMER CLEAN UP THE IMPACTED AREA.	SLIPLINE REPAIR WILL BE MADE.
JEFFERSONTOWN	KY0025194	3323 DELL RD	12/1/14 11:00 AM	12/01/14 11:20 AM	1	SEWER SERVICE LINE	JT00952629	ROOTS IN MSD'S PORTION OF THE PROPERTY SERVICE CONNECTION.	OBSTRUCTION-NOT GREASE / ROOTS	DISREV RAIN EVENT DISCHARGE	2271187	CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO AREA SUPERVISOR TO MAKE THE NECESSARY REPAIRS DUG UP AND REMOVED THE ROOTS.INSTALLED A C/O.
MORRIS FORMAN	KY0022411	518 AUBURNDALE AVE	12/1/14 1:10 PM	12/01/14 01:45 PM	1	SEWER SERVICE LINE	060F00460000A	ROOTS IN MSD'S PORTION OF THE PROPERTY SERVICE CONNECTION.	ROOTS	DISREV RAIN EVENT DISCHARGE	2271349	CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO SUPERVISOR TO MAKE NEEDED REPAIRS.
DEREK R. GUTHRIE	KY0078956	7708 3RD STREET RD	12/3/14 9:00 AM	12/03/14 09:50 AM	1	SEWER SERVICE LINE	104401340000A	ROOTS AT THE SHARED JOINT OF THE PROPERTY SERVICE CONNECTION.	ROOTS	DISDW DRY WEATHER DISCHARGE	2271769	CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO SUPERVISOR TO MAKE NEEDED REPAIRS**CREW DUG DOWN AND REPAIR THE PROPERTY SERVICE CONNECTION.
MORRIS FORMAN	KY0022411	3022 KAYE LAWN DR	12/4/14 7:55 PM	12/11/14 08:34 PM	1	SEWER SERVICE LINE	BJ13774039	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2277222	THE CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO SUPERVISOR FOR REPAIR.
DEREK R. GUTHRIE	KY0078956	4017 CHEVIOT DR	12/9/14 9:32 PM	12/09/14 09:33 PM	10	SEWER SERVICE LINE	124000570000A	PRIVATE PROPERTY ISSUE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2274474	UNKNOWN AT THIS TIME.	ADVISED CUSTOMER TO CONTACT A PLUMBER.
MORRIS FORMAN	KY0022411	5306 TUPELO PASS	12/10/14 6:35 PM	12/10/14 07:31 PM	1	SEWER SERVICE LINE	177474	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2274786	THE CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO SUPERVISOR TO MAKE REPAIRS.
DEREK R. GUTHRIE	KY0078956	11612 CHASEWOOD CT	12/11/14 9:00 PM	12/11/14 09:21 PM	1	SEWER SERVICE LINE	PD18994029	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2277225	THE CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO SUPERVISOR FOR REPAIR.
MORRIS FORMAN	KY0022411	5903 CROFT CT	12/15/14 8:35 AM	12/15/14 09:14 AM	1	SEWER SERVICE LINE	158733	PRIVATE PROPERTY ISSUE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2279596	WATER HAS NOT RECEDED, ADVISED CUSTOMER TO CONTACT CUSTOMER RELATION WHEN WATER RECEDED.	ADVISED CUSTOMER TO CONTACT A PLUMBER.
MORRIS FORMAN	KY0022411	109 DAVENTRY LN	12/15/14 4:21 PM	12/15/14 04:21 PM	1	SEWER SERVICE LINE	169200020000A	BLOCKAGE ON MSD PORTION OF PIPE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2279852	CUSTOMER CLEANED THE IMPACTED AREA AT THIS TIME.	FLUSH AND MINI CAM MSD INSTALLED CLEAN OUT.
CEDAR CREEK	KY0098540	7307 STONEMILL CT	12/15/14 8:04 PM	12/15/14 08:04 PM	1	SEWER SERVICE LINE	BW06148049	PRIVATE PROPERTY ISSUES.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2279871	CUSTOMER IS RESPONSIBLE FOR CLEANING IMPACTED AREA.	REFERRED TO TVLIS.
MORRIS FORMAN	KY0022411	2236 WYNNEWOOD CIR	12/16/14 12:10 PM	12/16/14 03:00 PM	1	SEWER SERVICE LINE	164839	GREASE BLOCKAGE IN MAIN SEWER.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2280182	CUSTOMER CLEANED THE IMPACTED AREA.	FLUSHED MAIN SEWER.
MORRIS FORMAN	KY0022411	3012 PAMELA WAY	12/18/14 6:55 PM	12/18/14 07:36 PM	1	SEWER SERVICE LINE	091N01630000A	OBSTRUCTION IN MAIN SEWER.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2280711	THE CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO CREW FOR TV INSPECTION.
MORRIS FORMAN	KY0022411	213 NORBOURNE BLVD	12/20/14 7:45 PM	12/20/14 08:31 PM	3	SEWER SERVICE LINE	75775	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2281103	THE CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO SUPERVISOR TO MAKE NEEDED REPAIR.
DEREK R. GUTHRIE	KY0078956	6812 JOHN ADAMS WAY	12/23/14 1:47 AM	12/23/14 01:47 AM	1	SEWER SERVICE LINE	DD71369029	LOCATED GREASE IN SERVICE CONNECTION.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2281404	CUSTOMER CLEANED IMPACTED AREA.	ADVISED CUSTOMER TO CONTACT A PLUMBER.
MORRIS FORMAN	KY0022411	5005 MANSFIELD LN	12/24/14 5:57 PM	12/24/14 06:00 PM	1	SEWER SERVICE LINE	PA09021029	PRIVATE PROPERTY ISSUE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2281919	CUSTOMER CLEANED IMPACTED AREA.	ADVISED TO CONTACT PLUMBER.
MORRIS FORMAN	KY0022411	3208 ELLIS WAY	1/1/15 8:53 PM	01/01/15 09:25 PM	2	SEWER SERVICE LINE	30149	ROOTS IN MSDS PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2291112	CUSTOMER CLEANED IMPACTED AREA.	REFERRED TO AREA SUPERVISOR.
MORRIS FORMAN	KY0022411	4101 ALTON RD	1/6/15 1:30 PM	01/06/15 02:30 PM	1	SEWER SERVICE LINE	052200110000A	FURTHER INVESTIGATION REQUIRED.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2292143	UNKNOWN AT THIS TIME.	REFERRED TO SUPERVISOR TO MAKE NEEDED REPAIRS.

**APPENDIX B-5
OVERFLOWS TO INTERIOR
JULY 1, 2012 THROUGH JUNE 30, 2013**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	3525 MAYO DR	1/7/15 1:10 PM	01/07/15 01:57 PM	1	SEWER SERVICE LINE	087F02080000A	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2292405	THE CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO SUPERVISOR FOR REPAIR.
DEREK R. GUTHRIE	KY0078956	11018 NEPTUNE PL	1/7/15 1:15 PM	01/07/15 02:00 PM	1	SEWER SERVICE LINE	DD40033019	OBSTRUCTION IN MSD'S PORTION OF THE PROPERTY SERVICE CONNECTION.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2292435	CUSTOMER CLEANED THE IMPACTED AREA.	FLUSHED SERVICE CONNECTION- WORK ORDER #2292394.
DEREK R. GUTHRIE	KY0078956	3400 MILDRED DR	1/10/15 12:21 PM	01/10/15 12:22 PM	1	SEWER SERVICE LINE	70744	ROOT BLOCKAGE IN MAIN SEWER.	ROOTS	DISDW DRY WEATHER DISCHARGE	2293673	CUSTOMER CLEANED IMPACTED AREA.	CUT ROOTS #2293672.
DEREK R. GUTHRIE	KY0078956	2246 AMBOY DR	1/10/15 9:55 PM	01/10/15 10:50 PM	1	SEWER SERVICE LINE	10017	OBSTRUCTION IN MSD MAIN SEWER.	ROOTS	DISDW DRY WEATHER DISCHARGE	2293699	THE CUSTOMER CLEANED THE IMPACTED AREA.	ROOT CUT #2293844; FLUSH #2293698.
MORRIS FORMAN	KY0022411	2125 BELQUIN RD	1/12/15 10:00 AM	01/12/15 10:40 AM	1	SEWER SERVICE LINE	8249	GREASE OBSTRUCTION IN SERVICE CONNECTION.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2293907	CUSTOMER CLEANED THE IMPACTED AREA.	FLUSHED LINES #2293911; ADVISED CUSTOMER TO CONTACT A PLUMBER.
DEREK R. GUTHRIE	KY0078956	1113 HENNEPIN DR	1/17/15 1:46 PM	01/17/15 01:46 PM	1	SEWER SERVICE LINE	167326	ROOTS IN THE MAIN SEWER.	ROOTS	DISDW DRY WEATHER DISCHARGE	2298421	CUSTOMER CLEANED IMPACTED AREA.	ROOT CUT TO GET OPEN. REFER TO ROOT CUT WORK ORDER# 2298430.
MORRIS FORMAN	KY0022411	318 BROWNS LN	1/17/15 7:05 PM	01/17/15 07:31 PM	1	SEWER SERVICE LINE	131213	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2298454	THE CUSTOMER CLEANED THE IMPACTED AREA.	CUT ROOTS OUT OF LINE #2298451.
MORRIS FORMAN	KY0022411	3050 COMMERCE CENTER PL	1/23/15 7:30 AM	01/23/15 03:14 PM	30	SEWER SERVICE LINE	38813050	THE REAR DOOR ON THE VACTOR TRUCK WAS OPENED.	MECHANICAL FAILURE	DISDW DRY WEATHER DISCHARGE	2301074	MSD PERSONNEL CLEAN THE IMPACTED AREA.	THE REAR DOOR ON THE VACTOR TRUCK WAS CLOSED.
MORRIS FORMAN	KY0022411	2826 TAYLOR BLVD	1/23/15 4:49 PM	01/23/15 06:04 PM	1	SEWER SERVICE LINE	T07357019	BLOCKAGE ON MSD PORTION OF PIPE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2301104	CUSTOMER CLEANED IMPACTED AREA.	FLUSH MAIN SEWER , MSD PORTION IS CLEAR , NO FURTHER ACTION NEEDED #2301104.
DEREK R. GUTHRIE	KY0078956	4017 CHEVIOT DR	1/25/15 11:05 PM	01/25/15 11:37 PM	1	SEWER SERVICE LINE	124000570000A	ROOTS AT THE SHARED JOINT OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2301224	THE CUSTOMER CLEANED THE IMPACTED AREA.	REPAIRED LINE #2301222.
DEREK R. GUTHRIE	KY0078956	5304 IDLEWOOD LN	1/30/15 1:15 PM	01/30/15 03:12 PM	1	SEWER SERVICE LINE	BE09127269	ROOTS IN MSDS MAIN SEWER.	ROOTS	DISDW DRY WEATHER DISCHARGE	2304732	CUSTOMER CLEANED IMPACTED AREA.	REFERRED TO AREA SUPERVISOR FOR ROOT TREATMENT.
MORRIS FORMAN	KY0022411	3320 BARDSTOWN RD	2/5/15 11:00 AM	02/05/15 11:31 AM	1	SEWER SERVICE LINE	BU07332029	ROOTS IN MSD'S PORTION OF THE PROPERTY SERVICE CONNECTION.	ROOTS	DISDW DRY WEATHER DISCHARGE	2306354	CUSTOMER CLEANED IMPACTED AREA.	ROOT CUT TO GET OPEN, REFER TO WORK ORDER# 2312688.
MORRIS FORMAN	KY0022411	2741 BROWNSBORO RD	2/5/15 4:55 PM	02/05/15 06:23 PM	2	SEWER SERVICE LINE	G06657079	ROOTS IN SHARED JOINT.	ROOTS	DISDW DRY WEATHER DISCHARGE	2306508	CUSTOMER CLEANED IMPACTED AREA.	ROOT CUT #2309544; REPAIRED LINE #2306512.
DEREK R. GUTHRIE	KY0078956	4017 SLACK AVE	2/9/15 8:05 AM	02/09/15 08:53 AM	5	SEWER SERVICE LINE	PD07166019	ROOTS IN MAIN SEWER.	ROOTS	DISDW DRY WEATHER DISCHARGE	2307593	MSD CONTRACTOR CLEANED THE IMPACTED AREA.	ROOT CUT MAIN SEWER AND FLUSHED SERVICE CONNECTION #2307595.
DEREK R. GUTHRIE	KY0078956	11010 ALTSHELER PL	2/10/15 5:08 PM	02/10/15 05:43 PM	1	SEWER SERVICE LINE	PD17204089	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2309632	CUSTOMER CLEANED IMPACTED AREA.	FLUSHED LINES #2309637.
MORRIS FORMAN	KY0022411	411 ROBERTS AVE	2/14/15 4:45 PM	02/14/15 05:36 PM	1	SEWER SERVICE LINE	175201	OBSTRUCTION IN MSD PORTION OF SERVICE LINE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2313122	THE CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO CREW FOR TV INSPECTION #2313123.
MORRIS FORMAN	KY0022411	3811 BRECKENRIDGE LN	2/17/15 10:25 AM	02/17/15 11:10 AM	1	SEWER SERVICE LINE	11218	OBSTRUCTION IN MSD'S PORTION OF THE PROPERTY SERVICE CONNECTION.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2313341	CUSTOMER CLEANED THE IMPACTED AREA.	REMOVED OBSTRUCTION WITH CAMERA #2313340.
DEREK R. GUTHRIE	KY0078956	2231 PEASLEE RD	2/20/15 6:02 PM	02/20/15 07:57 PM	2	SEWER SERVICE LINE	108501050000A	ROOTS IN MSDS PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2314749	CUSTOMER CLEANED IMPACTED AREA.	ROOT CUT LINE #2314750.
MORRIS FORMAN	KY0022411	10007 TUPPENCE TRCE	2/23/15 10:20 AM	02/23/15 11:00 AM	1	SEWER SERVICE LINE	191901750000A	ROOTS AT THE SHARED JOINT OF THE PROPERTY SERVICE CONNECTION.	ROOTS	DISDW DRY WEATHER DISCHARGE	2315198	CUSTOMER CLEANED THE IMPACTED AREA.	REMOVED ROOTS & RESET C/O #2315199.
MORRIS FORMAN	KY0022411	1070 CECIL AVE	2/23/15 7:47 PM	02/23/15 07:48 PM	1	SEWER SERVICE LINE	18984	LOCATED BLOCKAGE ON MSD PORTION OF SERVICE CONNECTION.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2315361	CUSTOMER CLEANED IMPACTED AREA.	FLUSHED LINES TO CLEAR BLOCKAGE #2315360.
MORRIS FORMAN	KY0022411	109 DAVENTRY LN	2/24/15 2:10 PM	02/24/15 02:50 PM	1	SEWER SERVICE LINE	169200020000A	OBSTRUCTION IN MSD'S PORTION OF THE PROPERTY SERVICE CONNECTION.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2315608	CUSTOMER CLEANED THE IMPACTED AREA.	FLUSHED SERVICE CONNECTION AND MAIN SEWER #2315601.
MORRIS FORMAN	KY0022411	323 WINTON AVE	3/6/15 1:37 PM	03/06/15 01:38 PM	1	SEWER SERVICE LINE	072K01090000A	LOCATED BLOCKAGE ON MSD PORTION ON SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2322052	CUSTOMER CLEANED IMPACTED AREA.	MSD ROOT CUT MAIN SEWER TO REOPEN #2322054.
DEREK R. GUTHRIE	KY0078956	2324 STROTMAN RD	3/9/15 4:47 PM	03/09/15 05:32 PM	1	SEWER SERVICE LINE	100869	ROOTS IN TAP.	ROOTS	DISDW DRY WEATHER DISCHARGE	2322769	CUSTOMER CLEANED IMPACTED AREA.	ROOT CUT SERVICE LINE #2322776.
MORRIS FORMAN	KY0022411	2608 DRAYTON DR	3/10/15 7:28 PM	03/11/15 12:51 AM	5	SEWER SERVICE LINE	078L00800000A	ROOTS IN LINE.	ROOTS	DISREV RAIN EVENT DISCHARGE	2323223	CLEANING CREW.	ROOT CUT MAIN SEWER MH#73049 #2323826.
MORRIS FORMAN	KY0022411	3411 PRESTWOOD DR	3/13/15 9:20 PM	03/13/15 09:39 PM	1	SEWER SERVICE LINE	PA06363019	FURTHER INVESTIGATION REQUIRED.	OBSTRUCTION-NOT GREASE / ROOTS	DISREV RAIN EVENT DISCHARGE	2325383	THE CUSTOMER CLEANED THE IMPACTED AREA.	REFERRED TO CREW FOR TV INSPECTION.
DEREK R. GUTHRIE	KY0078956	8925 OLD SOUTH PARK RD	3/14/15 6:00 PM	03/14/15 06:10 PM	1	SEWER SERVICE LINE	PC07258029	LACK SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325493	CUSTOMER CLEANED THE IMPACTED AREA.	INVESTIGATION INDICATED THAT ADDITIONAL REPAIRS WERE NOT REQUIRED BY MSD.

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Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
MORRIS FORMAN	KY0022411	301 LOTIS WAY	3/14/15 6:05 PM	03/14/15 06:25 PM	5	SEWER SERVICE LINE	61906	ROOTS ON MSD PORTION.	ROOTS	DISDW DRY WEATHER DISCHARGE	2325510	THE CUSTOMER CLEANED THE IMPACTED AREA.	DUG DOWN, REMOVED ROOTS & REPLACED PIPE #2325530.
MORRIS FORMAN	KY0022411	4225 ST THOMAS AVE	3/14/15 6:14 PM	03/14/15 06:15 PM	1	SEWER SERVICE LINE	BJ14684069	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2325479	CUSTOMER CLEANED IMPACTED AREA.	NO REPAIRS NEEDED AT THIS TIME BY MSD.
MORRIS FORMAN	KY0022411	3000 SPENCER AVE	3/15/15 3:11 PM	03/15/15 04:44 PM	3	SEWER SERVICE LINE	046400420000A	ROOTS AT SHARED JOINT AND TWO WAY CLEANOUT.	ROOTS	DISDW DRY WEATHER DISCHARGE	2325563	CUSTOMER CLEANED IMPACTED AREA.	RODDED & ROOT CUT #2325595.
MORRIS FORMAN	KY0022411	2819 DELL BROOKE AVE	3/18/15 6:45 PM	03/18/15 07:32 PM	1	SEWER SERVICE LINE	082Z01100000A	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2327825	THE CUSTOMER CLEANED THE IMPACTED AREA.	ROOT CUT TO OPEN LINE #2327819.
MORRIS FORMAN	KY0022411	5304 E INDIAN TRL	3/18/15 11:55 PM	03/19/15 12:13 AM	1	SEWER SERVICE LINE	55908	ROOTS IN MSD'S PORTION OF THE PROPERTY SERVICE CONNECTION.	ROOTS	DISDW DRY WEATHER DISCHARGE	2327834	THE CUSTOMER CLEANED THE IMPACTED AREA.	ROOT CUT & FLUSHED MAIN #2328064.
MORRIS FORMAN	KY0022411	2300 CARLTON TER	3/27/15 11:04 AM	03/27/15 11:04 AM	1	SEWER SERVICE LINE	X03010019	OBSTRUCTION IN LINE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2330621	CUSTOMER CLEANED IMPACTED AREA.	FLUSHED TO OPEN LINE #2330641.
MORRIS FORMAN	KY0022411	1244 SPRINGDALE DR	4/1/15 9:45 PM	04/01/15 10:47 PM	1	SEWER SERVICE LINE	KK13390319	OBSTRUCTION IN MSD MAIN SEWER.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2333776	THE CUSTOMER CLEANED THE IMPACTED AREA.	FLUSHED DEBRIS FROM MAIN SEWER #2333778.
MORRIS FORMAN	KY0022411	200 N 46TH ST	4/2/15 4:15 PM	04/02/15 04:35 PM	1	SEWER SERVICE LINE	130515	LACK OF CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337535	WE ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEAN UP.	ADVISED TO CALL BACK IF PROBLEM STILL EXIST.
DEREK R. GUTHRIE	KY0078956	9818 MCCREA LN	4/3/15 11:03 AM	04/03/15 11:04 AM	1	SEWER SERVICE LINE	PD06400019	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337771	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	7109 DITTMAR DR	4/3/15 12:37 PM	04/03/15 12:38 PM	1	SEWER SERVICE LINE	177210	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337856	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	410 CLOVER LN	4/3/15 1:13 PM	04/03/15 01:15 PM	1	SEWER SERVICE LINE	033500540000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337898	CUSTOMER CLEANED THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	818 FLICKER RD	4/3/15 1:27 PM	04/03/15 01:28 PM	1	SEWER SERVICE LINE	169042	SYSTEM AT CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337917	CUSTOMER CLEANED THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	1238 BICKNELL AVE	4/3/15 1:42 PM	04/03/15 01:44 PM	1	SEWER SERVICE LINE	W11421039	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337933	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	4903 W BAHAMA CT	4/3/15 2:43 PM	04/03/15 02:44 PM	1	SEWER SERVICE LINE	PB18028029	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337982	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	301 LOTIS WAY	4/3/15 2:48 PM	04/03/15 02:49 PM	1	SEWER SERVICE LINE	61906	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2337987	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	8203 SIESTA WAY	4/3/15 3:12 PM	04/03/15 03:16 PM	1	SEWER SERVICE LINE	PC12116029	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338134	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	3446 HEATHERFIELD DR	4/3/15 3:41 PM	04/03/15 03:44 PM	1	SEWER SERVICE LINE	RR14552049	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338167	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	6801 MELON CT	4/3/15 3:54 PM	04/03/15 03:54 PM	1	SEWER SERVICE LINE	PB18321019	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2339346	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	2221 PEASLEE RD	4/3/15 4:19 PM	04/03/15 04:20 PM	1	SEWER SERVICE LINE	108501280000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338213	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	6200 OAKNOLL DR	4/3/15 4:22 PM	04/03/15 04:23 PM	1	SEWER SERVICE LINE	PA07300029	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338217	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
CEDAR CREEK	KY0098540	9602 MARY DELL LN	4/3/15 4:37 PM	04/03/15 04:38 PM	1	SEWER SERVICE LINE	BE09185439	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338228	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	5616 RIDGECREST RD	4/3/15 5:04 PM	04/03/15 05:06 PM	1	SEWER SERVICE LINE	PA09577039	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338242	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	3913 KURTZ AVE	4/3/15 5:23 PM	04/03/15 05:25 PM	1	SEWER SERVICE LINE	PD07230029	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338251	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	4311 DOHN AVE	4/3/15 5:36 PM	04/03/15 05:37 PM	1	SEWER SERVICE LINE	124804311	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338259	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	1244 SPRINGDALE DR	4/3/15 6:02 PM	04/03/15 06:03 PM	1	SEWER SERVICE LINE	KK13390319	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338277	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	5320 SOUTHDALE RD	4/3/15 6:03 PM	04/03/15 06:04 PM	1	SEWER SERVICE LINE	067J01520000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338278	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.

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Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
DEREK R. GUTHRIE	KY0078956	2302 CRUMS LN	4/3/15 6:07 PM	04/03/15 06:08 PM	1	SEWER SERVICE LINE	101504090000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338282	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	3733 AVON CT	4/3/15 6:14 PM	04/03/15 06:16 PM	1	SEWER SERVICE LINE	082D00280000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338286	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	8200 SMITHTON RD	4/3/15 6:16 PM	04/03/15 06:17 PM	1	SEWER SERVICE LINE	PC12239019	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338287	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	4101 GLEN VALLEY RD	4/3/15 6:21 PM	04/03/15 06:21 PM	1	SEWER SERVICE LINE	PA07316019	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338291	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	3729 ESSEX RD	4/3/15 6:25 PM	04/03/15 06:26 PM	1	SEWER SERVICE LINE	P4749	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338296	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	223 N HUBBARDS LN	4/3/15 6:35 PM	04/03/15 06:45 PM	10	SEWER SERVICE LINE	47003	LACK OF CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338374	WE ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEAN UP.	ADVISED TO CALL BACK IF WATER DOES NOT RECEDE.
MORRIS FORMAN	KY0022411	7803 GREENWAY DR	4/3/15 6:44 PM	04/03/15 06:45 PM	1	SEWER SERVICE LINE	181413	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338311	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	4803 MILE OF SUNSHINE DR	4/3/15 7:14 PM	04/03/15 07:15 PM	1	SEWER SERVICE LINE	PB18223019	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338335	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	112 BONNER AVE	4/3/15 7:24 PM	04/03/15 07:25 PM	1	SEWER SERVICE LINE	8273	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338349	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	908 FENLEY AVE	4/3/15 7:26 PM	04/03/15 07:27 PM	1	SEWER SERVICE LINE	HP14169019	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338352	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	3912 DELLAFAY DR	4/3/15 7:29 PM	04/03/15 07:30 PM	1	SEWER SERVICE LINE	PA07205039	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338355	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	2621 DRAYTON DR	4/3/15 7:48 PM	04/03/15 07:49 PM	1	SEWER SERVICE LINE	078L01060000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338380	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	216 RING RD	4/3/15 7:48 PM	04/03/15 07:49 PM	1	SEWER SERVICE LINE	88161	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338379	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	2537 HAMPSTEAD DR	4/3/15 8:01 PM	04/03/15 08:03 PM	1	SEWER SERVICE LINE	39304	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338400	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	5607 ARVIS DR	4/3/15 8:08 PM	04/03/15 08:09 PM	1	SEWER SERVICE LINE	136830	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338405	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	219 S HUBBARDS LN	4/3/15 8:11 PM	04/03/15 08:12 PM	1	SEWER SERVICE LINE	052300490000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338409	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	4333 ROCKWOOD DR	4/3/15 8:14 PM	04/03/15 08:15 PM	1	SEWER SERVICE LINE	089G00980000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338414	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	4811 MILE OF SUNSHINE DR	4/3/15 8:16 PM	04/03/15 08:17 PM	1	SEWER SERVICE LINE	PB18219049	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338417	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	2847 KLONDIKE LN	4/3/15 8:37 PM	04/03/15 08:37 PM	1	SEWER SERVICE LINE	091E03580000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338429	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	4501 ST RITA DR	4/3/15 8:44 PM	04/03/15 08:44 PM	1	SEWER SERVICE LINE	PC12373019	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338432	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	6802 PAPAYA CT	4/3/15 9:02 PM	04/03/15 09:02 PM	1	SEWER SERVICE LINE	PB18323019	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338443	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	4017 CHEVIOT DR	4/3/15 9:08 PM	04/03/15 09:09 PM	1	SEWER SERVICE LINE	124000570000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2338447	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
DEREK R. GUTHRIE	KY0078956	6812 PALM TREE DR	4/3/15 10:00 PM	04/03/15 11:00 PM	1	SEWER SERVICE LINE	PB18302049	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2339449	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	MSD PERSONNEL ADVISED THE CUSTOMER TO AVOID CONTACT WITH SEWAGE.
DEREK R. GUTHRIE	KY0078956	4801 SUNDAY DR	4/3/15 10:03 PM	04/03/15 10:03 PM	1	SEWER SERVICE LINE	PB18111049	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2339454	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	MSD PERSONNEL ADVISED THE CUSTOMER TO AVOID CONTACT WITH SEWAGE.
DEREK R. GUTHRIE	KY0078956	4807 MILE OF SUNSHINE DR	4/3/15 10:11 PM	04/03/15 10:11 PM	1	SEWER SERVICE LINE	PB18221019	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2339462	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	MSD PERSONNEL ADVISED THE CUSTOMER TO AVOID CONTACT WITH SEWAGE.
MORRIS FORMAN	KY0022411	1263 LUCAS AVE	4/4/15 2:10 PM	04/04/15 02:10 PM	1	SEWER SERVICE LINE	085K01310000A	BLOCKAGE LOCATED ON MSD PORTION OF SERVICE CONNECTION.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2338573	CUSTOMER CLEANED IMPACTED AREA.	FLUSHED LINE TO OPEN #2338568.

**APPENDIX B-5
OVERFLOWS TO INTERIOR
JULY 1, 2012 THROUGH JUNE 30, 2013**

Associated Wastewater Treatment Plant Name	Associated Treatment Plant KPDES #	Overflow Location	Overflow Start Date & Time	Overflow Stop Date & Time	Volume of Overflow	Source Asset Type	Source Asset ID	Cause of Overflow	Due To	Weather	WO #	Cleanup Efforts by MSD	Repair Efforts by MSD
DEREK R. GUTHRIE	KY0078956	5252 BARDSTOWN RD	4/4/15 6:14 PM	04/04/15 09:34 PM	1	SEWER SERVICE LINE	106565252	GREASE IN THE MAIN SEWER.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2338626	CUSTOMER CLEANED IMPACTED AREA.	FLUSHED TO GET OPEN. REFER TO FLUSH W/O# 2338718.
MORRIS FORMAN	KY0022411	2124 GLENWORTH AVE	4/4/15 11:07 PM	04/05/15 11:53 PM	1	SEWER SERVICE LINE	47477	POSSIBLE OBSTRUCTION ISSUE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2338645	CUSTOMER CLEANED IMPACTED AREA.	ADVISED TO CONTACT MSD FOR BACK WATER VALVE.
MORRIS FORMAN	KY0022411	2906 TREMONT DR	4/6/15 3:28 PM	04/06/15 03:29 PM	1	SEWER SERVICE LINE	Z27364039	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2339489	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	6403 SIX MILE LN	4/6/15 3:54 PM	04/06/15 03:55 PM	1	SEWER SERVICE LINE	091A01910000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2339515	ADVISED CUSTOMER THAT THEY ARE RESPONSIBLE FOR CLEANING THE IMPACTED AREA.	ADVISED CUSTOMER TO CALL BACK IF THE BACKUP CONTINUES.
MORRIS FORMAN	KY0022411	3022 BEAUMONT RD	4/7/15 9:46 AM	04/07/15 09:46 AM	1	SEWER SERVICE LINE	081F00550000A	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2339887	CUSTOMER CLEANED IMPACTED AREA.	NO ADDITIONAL REPAIRS REQUIRED BY MSD.
CEDAR CREEK	KY0098540	9602 MARY DELL LN	4/7/15 12:00 PM	04/07/15 12:46 PM	1	SEWER SERVICE LINE	BE09185439	FURTHER INVESTIGATION REQUIRED.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2340182	CUSTOMER CLEANED IMPACTED AREA.	REFERRED FOR TVLIS.
MORRIS FORMAN	KY0022411	2824 POMEROY DR	4/7/15 4:55 PM	04/07/15 05:19 PM	1	SEWER SERVICE LINE	091A01770000A	CAPACITY ISSUE DURING THE RAIN EVENT.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2340478	CUSTOMER WILL CLEAN IMPACTED AREA.	ADVISED CUSTOMER TO OBTAIN BACKWATER VALVE FROM PROGRAM.
MORRIS FORMAN	KY0022411	4803 SPRINGDALE CT	4/14/15 3:47 PM	04/14/15 04:50 PM	10	SEWER SERVICE LINE	EP34035019	HEAVY ROOTS IN LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2343052	CONTRACTOR CLEANED IMPACTED AREA.	ROOT CUT LINES #2343446.
MORRIS FORMAN	KY0022411	3100 DEIBEL CT	4/25/15 11:01 AM	04/25/15 11:02 AM	1	SEWER SERVICE LINE	27656	ROOTS IN MSD'S PORTION OF THE PROPERTY SERVICE CONNECTION.	ROOTS	DISDW DRY WEATHER DISCHARGE	2347425	SEWAGE AND WATER STILL ON FLOOR.	DUG DOWN, REPLACED PIPE & INSTALLED 2-WAY C/O #2347439.
MORRIS FORMAN	KY0022411	823 PALATKA RD	4/25/15 4:33 PM	04/25/15 04:34 PM	1	SEWER SERVICE LINE	80092	BLOCKAGE ON MSD PORTION OF SERVICE CONNECTION.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2347459	CUSTOMER CLEANED IMPACTED AREA.	NONE NEEDED AT THIS TIME FROM MSD.
MORRIS FORMAN	KY0022411	104 E FAIRMONT AVE	4/27/15 8:30 AM	04/27/15 09:30 AM	1	SEWER SERVICE LINE	055H00340000A	GREASE OBSTRUCTION IN MSD'S PORTION OF THE PROPERTY SERVICE CONNECTION.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2347698	CUSTOMER CLEANED THE IMPACTED AREA.	FLUSHED SERVICE CONNECTION #2347657.
MORRIS FORMAN	KY0022411	4909 GARDEN GREEN WAY	5/6/15 6:44 PM	05/06/15 07:09 PM	1	SEWER SERVICE LINE	165796	ROOTS IN SHARED JOINT.	ROOTS	DISDW DRY WEATHER DISCHARGE	2355292	MSD CLEANED IMPACTED AREA.	REPLACED PIPE & INSTALLED A 2-WAY C/O #2355319.
MORRIS FORMAN	KY0022411	933 SOUTHVIEW RD	5/6/15 11:51 PM	05/07/15 12:27 AM	1	SEWER SERVICE LINE	97752	ROOTS IN MSD'S PORTION OF PROPERTY SEWER CONNECTION.	ROOTS	DISDW DRY WEATHER DISCHARGE	2355329	CUSTOMER CLEANED IMPACTED AREA.	ROOT CUT LINE #2355390; REPLACED PIPE & INSTALLED A 2-WAY C/O #2355403.
HITE CREEK	KY0022420	4940 WINDING SPRING CIR	5/10/15 1:48 PM	05/10/15 01:49 PM	1	SEWER SERVICE LINE	172703790000A	LOCATED OBSTRUCTION IN MAIN SEWER.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2357435	CUSTOMER CLEAN ED IMPACTED AREA.	NONE NEEDED AT THIS TIME FROM MSD.
CEDAR CREEK	KY0098540	8706 WHARTON CT	5/13/15 11:40 PM	05/14/15 12:20 AM	1	SEWER SERVICE LINE	BW0727901	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2358969	THE CUSTOMER CLEANED THE IMPACTED AREA.	ROOT CUT LINE #2358967.
MORRIS FORMAN	KY0022411	1808 S 24TH ST	5/15/15 6:10 PM	05/15/15 07:02 PM	5	SEWER SERVICE LINE	040C00860000A	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2359759	MSD CONTRACTOR CLEANED THE IMPACTED AREA.	WE ROOT CUT MSD PORTION OF SERVICE LINE #2359757.
MORRIS FORMAN	KY0022411	5512 REFLECTION DR	5/18/15 2:15 PM	05/18/15 03:00 PM	1	SEWER SERVICE LINE	094900170000A	GREASE BLOCKAGE.	GREASE BLOCKAGE	DISDW DRY WEATHER DISCHARGE	2360228	CUSTOMER CLEANED THE IMPACTED AREA.	FLUSHED SERVICE CONNECTION #2360189.
CEDAR CREEK	KY0098540	8726 RUNNING FOX CIR	6/5/15 1:20 PM	06/05/15 02:00 PM	1	SEWER SERVICE LINE	BW0711605	ROOTS IN MSD'S PORTION OF THE PROPERTY SERVICE CONNECTION.	ROOTS	DISDW DRY WEATHER DISCHARGE	2368224	CUSTOMER CLEANED THE IMPACTED AREA.	ROOT CUT SERVICE CONNECTION #2368220.
MORRIS FORMAN	KY0022411	104 E BRECKINRIDGE ST	6/9/15 7:14 PM	06/09/15 07:19 PM	1	SEWER SERVICE LINE	7878	FURTHER INVESTIGATION REQUIRED.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2370740	CUSTOMER CLEANED IMPACTED AREA.	REFER TO CREW FOR TV INSPECTION #2370739.
MORRIS FORMAN	KY0022411	4530 MERIDALE AVE	6/23/15 2:30 PM	06/23/15 03:00 PM	1	SEWER SERVICE LINE	V09736029	BLOCKAGE ON MSD PORTION OF PIPE.	OBSTRUCTION-NOT GREASE / ROOTS	DISDW DRY WEATHER DISCHARGE	2375115	CUSTOMER CLEANED THE IMPACTED AREA.	DUG DOWN AND REPLACED PIPE #2375294.
DEREK R. GUTHRIE	KY0078956	10814 ONANDAGA CT	6/26/15 6:15 PM	06/26/15 06:42 PM	1	SEWER SERVICE LINE	PD17070029	ROOTS IN MSD PORTION OF SERVICE LINE.	ROOTS	DISDW DRY WEATHER DISCHARGE	2376585	THE CUSTOMER CLEANED THE IMPACTED AREA.	WE ROOT CUT MSD PORTION OF SERVICE LINE #2376574.

APPENDIX C – ANNUAL AVERAGE OVERFLOW VOLUME

Project Win - FY15 Annual Report
July 1, 2014 to June 30, 2015
Appendix C - Annual Average Overflow Volume

CSO	CSO Name	Associated Project	Boundary Drainage Area	Existing / Baseline Gauged Link	Initial Conditions		Current Conditions		Baseline Conditions		Preferred Model Gauged Link	LTCP	
					Total Volume = 6448 MG		Total Volume = 3637 MG		Total Volume = 3464 MG			Total Volume = 342 MG	
					Overflow Vol. (MG)	# of Overflows	Overflow Vol. (MG)	# of Overflows	Overflow Vol. (MG)	# of Overflows		Overflow Vol. (MG)	# of Overflows
015	SOUTHWESTERN PS	Paddy's Run Wet Weather Treatment Facility	7417.3	85205-T.w >> 50946A-Ta.2	2779.89	76	881.19	30	795.14	29	85205-T.w >> 50946A-Ta.2	115.37	7
016	MILES PARK BYPASS	SOR1/SOR2 Inline Storage	3.6	CSO016.w	39.04	32	132.65	34	122.22	33	CSO016.w	0.85	8
018	NIGHTINGALE PS	Nightingale PS Replacement		28176A.1	158.06	28	68.03	24	35.46	19	CSO018.s	0.00	0
019	34th STREET PS	Portland Wharf Storage Basin	1094.7	CSO019a.3	192.66	67	192.74	66	192.71	66	CSO019.w	4.51	4
020	BUCHANAN PS	Story Avenue and Main Street Storage Basin	64.1	CSO020.w	355.27	74	342.19	72	293.56	71	08789.3	12.43	3
022	FOURTH ST PS	CSO022	63.4	CSO022.w	4.53	16	5.86	17	4.52	16	CSO022.w	1.55	8
023	ORI @ 4th ST PS	13th Street and Rowan Street Storage Basin	15.2	12062-T.w	1.80	8	16.19	17	4.66	9	12062-T.1	3.96	6
027	CRD 7th & BROADWAY	CRD	8.5	CSO027.w	0.00	0	0.00	0	0.00	0	CSO027.w	0.00	0
028	CRD 6th & YORK	CRD	19.9	028D7A-T..	1.09	20	1.08	20	1.08	20	028D7A-T.2 + 028D7A-T.3	0.00	0
029	CRD 8th & YORK	CRD	0.0	CSO029.w	4.63	40	4.63	40	4.62	40	CSO029.w	0.06	2
031	CRD 8th & BRECKINRIDGE	CRD	9.1	CSO031.1	0.00	0	0.00	0	0.00	0	CSO031.1	0.00	0
034	CRD 4th & YORK	CRD	5.2	CSO034.w	3.01	39	2.99	39	2.99	39	CSO034.1 + CSO034.2	0.08	4
035	CRD 2nd & BROADWAY NO 1	CRD	16.0	CSO035.w	0.00	0	0.00	0	0.00	0	CSO035.w	0.01	0
036	CRD 3rd & BROADWAY	CRD	29.5	CSO036.w	0.21	7	0.21	7	0.21	7	CSO036.w + 08897-T.w	0.12	4
038	CRD 5th & BROADWAY	CRD	8.9	CSO038.w	0.11	5	0.09	4	0.11	5	CSO038.w	0.09	5
050	12th STREET	13th Street and Rowan Street Storage Basin	39.3	CSO050.w	19.59	55	26.98	55	22.46	55	CSO050a.2	1.83	1
051	11th STREET	13th Street and Rowan Street Storage Basin	5.8	CSO051.w	0.32	8	1.31	16	0.68	10	CSO051a.2	0.00	0
052	10th STREET	13th Street and Rowan Street Storage Basin	9.7	CSO052.w	2.46	21	4.46	26	3.23	24	CSO052a.2	0.00	0
053	8th STREET	13th Street and Rowan Street Storage Basin	34.8	CSO053.w	7.73	50	7.69	50	7.70	50	CSO053.w >> CSO150.1	0.00	0
054	7th STREET	13th Street and Rowan Street Storage Basin	3.8	CSO054.w	1.78	35	1.94	19	2.29	35	CSO054a.4	0.00	0
055	6th STREET	13th Street and Rowan Street Storage Basin	16.0	CSO055.w	4.88	17	10.88	27	6.81	21	75293-T.2	0.00	0
056	5th STREET	13th Street and Rowan Street Storage Basin	36.4	CSO056.w	4.33	24	5.58	27	4.65	24	CSO056a.2	0.00	0
057	FIRST STREET OVFL WEIR		76.0	057R1.c	0.00	0	0.00	0	0.00	0	057R1.c	0.01	0
058	PRESTON ST OVFL WEIR	13th Street and Rowan Street Storage Basin	121.3	CSO058.w	51.42	68	0.06	1	52.20	63	CSO058.1	1.68	8
062	LOGAN COMPANY		106.6	CSO062.w	100.36	69	92.08	69	71.93	66	CSO062.w	0.23	4
082	BGI AT BGC	Lexington Road and Payne Street Storage Basin	12.9	CSO082.1	19.16	50	17.54	50	15.78	46	CSO082-Over.1	0.00	0
083	BRENT ST & BROADWAY CONNECT	Lexington Road and Payne Street Storage Basin	30.5	CSO083a.2	0.47	7	0.46	7	0.46	7			
084	BRENT ST @ BGC	Lexington Road and Payne Street Storage Basin	146.3	CSO084.w	19.25	46	19.08	44	19.06	44	cso084b.2	0.00	0
086	PAYNE AT SPRING		3.3		0.00	0	0.00	0	0.00	0	CSO086.2	0.00	0
088	MELLWOOD AVE INT	Clifton Heights Storage Basin	2.3	CSO088.1	10.68	45	10.71	46	10.65	46	CSO088a.3	0.01	0
091	SCHILLER AVE OVFL	Logan Street and Breckinridge Street Storage Basin	14.2	CSO091.2	2.66	44	2.65	44	2.65	44	DIVERSION-E.2	0.00	0
092	ST CATHERINE @ BGC		10.3	CSO092.2	0.00	0	0.00	0	0.00	0	CSO092.2	0.00	0
093	SPRING STREET	CSO093 Sewer Separation	17.5	CSO093.1	0.02	1	0.02	1	0.02	1	CSO093.1	0.00	0
097	CANTONMENT SIPHON NO 2	Logan Street and Breckinridge Street Storage Basin		CSO097.1	17.67	50	13.04	45	11.32	45	CSO097.5	0.12	3
104	SW PKWY SEWER @ BROADWAY	Southwestern Parkway Storage Basin	68.5	CSO104.w	9.46	20	9.55	20	9.54	20		Eliminated	
105	WESTERN OUTFALL @ BROADWAY	Southwestern Parkway Storage Basin	1087.8	CSO105a.w	260.14	46	263.64	45	263.03	45	SWPky1.2	32.04	8
106	ROYAL - NEFF	Logan Street and Breckinridge Street Storage Basin	9.9	CSO106.w	0.28	10	0.28	10	0.28	10			
108	REG NO 1 - NEWBURG	CSO108 Dam Modification	507.5	CSO108.W	51.87	41	0.53	4	6.16	19	CSO108.1	3.48	8
109	REG NO 2 - DEER PARK	Logan Street and Breckinridge Street Storage Basin	101.0	CSO109.4	1.17	11	1.52	12	1.26	11	CSO109.4	0.89	8
110	REG NO 3 - GOSS AVE	Logan Street and Breckinridge Street Storage Basin	92.9	CSO110.w	20.03	47	17.37	44	16.36	44	CSO 110-Div.2	0.26	5
111	EMERSON STREET SEWER	Logan Street and Breckinridge Street Storage Basin	87.5	CSO111b.w	5.02	35	4.96	30	4.87	29	D-Str 111.2	0.62	4
113	ELLISON AVENUE SEWER	Logan Street and Breckinridge Street Storage Basin	67.2	CSO113.w	6.21	28	6.07	27	6.00	26	D-Str 113.2	0.00	3
117	REG NO 11 - DRY RUN	Logan Street and Breckinridge Street Storage Basin	73.2	CSO117a.W	86.38	60	85.51	59	85.16	59	D-Str 117.1	33.29	8
118	REG NO 15 - E BRDWW	Lexington Road and Payne Street Storage Basin	339.1	CSO118.W	117.52	60	116.77	60	116.33	60	08868.3	0.00	0
119	BRENT STREET SEWER	Lexington Road and Payne Street Storage Basin	4.5	CSO119.2	10.30	53	10.19	52	10.13	51	CSO119-wier.1	0.00	0
120	PHOENIX HILL SEWER	Lexington Road and Payne Street Storage Basin	15.4	CSO120.w	7.46	52	7.39	52	7.38	52	CSO120b.2	0.00	0
121	REG NO 18 - GREEN ST	Lexington Road and Payne Street Storage Basin	101.6	CSO121b.2	5.53	23	5.45	22	5.39	22	CSO121-Over.1	0.00	0
125	REG NO 24 - GRINSTEAD DR	I-64 and Grinstead Drive Storage Basin	359.3	CSO125.w	24.36	43	24.31	43	23.72	43	68334-CB.2	0.72	2
126	REG NO 26 - RAYMOND AVE	I-64 and Grinstead Drive Storage Basin	37.4	CSO126.W	3.45	20	3.31	20	1.39	11	CSO126.W	0.12	3
127	ETLEY AVENUE	I-64 and Grinstead Drive Storage Basin	216.0	CSO127.w	11.99	39	11.96	39	11.42	39	CSO127a.2	0.03	1

Project Win - FY15 Annual Report
July 1, 2014 to June 30, 2015
Appendix C - Annual Average Overflow Volume

CSO	CSO Name	Associated Project	Boundary Drainage Area	Existing / Baseline Gauged Link	Initial Conditions		Current Conditions		Baseline Conditions		Preferred Model Gauged Link	LTCP	
					Total Volume = 6448 MG		Total Volume = 3637 MG		Total Volume = 3464 MG			Total Volume = 342 MG	
					Overflow Vol. (MG)	# of Overflows	Overflow Vol. (MG)	# of Overflows	Overflow Vol. (MG)	# of Overflows		Overflow Vol. (MG)	# of Overflows
130	WEBSTER STREET	Story Avenue and Spring Street Storage Basin	16.0	CSO130.w	2.23	26	1.95	24	1.27	18	12834.1	0.02	0
131	REG NO 33 - MELWD & FRANKFORT	Clifton Heights Storage Basin	30.5	CSO131.2	1.71	16	1.69	16	1.69	16	CSO131.2 + CSO131.3	0.06	2
132	REG NO 35 - BROWNSBORO	Clifton Heights Storage Basin	674.0	CSO132.w	83.29	61	85.84	61	79.15	60	CSO132a.3 >> 40269.2	7.42	4
137	CALVARY CEMETARY	Logan Street and Breckinridge Street Storage Basin	72.2	CSO137.w	9.47	54	9.36	54	9.33	54			
140	LOCUST STREET	CSO140 Sewer Separation	77.9	CSO140.w	2.65	29	2.62	29	2.62	29	CSO140.w	0.00	0
141	BAXTER AVE @ BGC	Lexington Road and Payne Street Storage Basin	8.8	CSO141.2	0.66	20	0.66	20	0.66	20	CSO141.2	0.00	0
144	VANCE ST REGULATOR		11.6	CSO144.w	0.00	0	0.00	0	0.00	0	CSO144!!w	0.00	0
146	SNEADS BRANCH DIVERSION	Logan Street and Breckinridge Street Storage Basin	97.5	CSO146.w	37.64	40	37.40	40	37.29	40	D-Str 146.1	0.91	4
148	EASTERN PKWY DIVERSION	Logan Street and Breckinridge Street Storage Basin	26.2	CSO148.w	0.74	17	0.73	17	0.73	17	CSO148.w	0.00	0
149	DRY RUN DIVERSION	Logan Street and Breckinridge Street Storage Basin	417.9	CSO149.w	138.49	47	138.02	47	137.81	47	CSO149.w >> D-Str 149.1	23.91	7
150	8th ST @ COMMON PLACE	13th Street and Rowan Street Storage Basin	1.7	088308.w	0.80	10	2.01	21	1.23	16	088308.w >> CSO150.1	0.00	0
151	REG NO 5 - CASTLEWOOD	Logan Street and Breckinridge Street Storage Basin	245.4	CSO151.4	97.72	72	83.94	69	80.50	69	30437.1	0.05	2
152	REG NO 7 - SOUTHEASTERN	Logan Street and Breckinridge Street Storage Basin	242.3	CSO152.1	58.89	62	57.88	62	57.52	61	CSO152a.2	6.39	7
153	COOPER STREET	Lexington Road and Payne Street Storage Basin	41.2	CSO153.2	18.73	71	18.55	71	18.42	71	CSO153-Over.1	0.00	0
154	MELLWOOD @ SCHOEFFEL	Clifton Heights Storage Basin	34.7	CSO154.w	22.99	56	23.77	56	27.37	53	LineA_MH5.2	0.00	0
155	ROWAN ST @ 12th ST	13th Street and Rowan Street Storage Basin	4.9	CSO155.w	0.59	18	0.59	18	0.59	18	CSO155a.2	0.00	0
160	SEWER IN ALLEY SAN DIV	CSO160 Sewer Separation	2.3	CSO160.w	0.05	1	0.05	1	0.05	1	CSO160.w	0.00	0
161	MARKET ST SAN DIV		1.5	CSO161.w	0.00	0	0.00	0	0.00	0	CSO161.w	0.00	0
166	BEALS BRANCH SAN DIV	I-64 and Grinstead Drive Storage Basin	751.6	CSO166.w	52.47	46	52.39	46	48.31	44	68304-J.2	0.00	0
167	BROWNSBORO LAT NO 2	Clifton Heights Storage Basin	21.1	CSO167.w	0.47	11	0.49	11	0.45	10	CSO167.2 >> 40269.2	0.76	4
172	ADAMS STREET	Adams Street Storage Basin	10.3	CSO172.w	0.80	18	0.79	18	0.79	18			
178	CRD 9th & YORK "B"	CRD	39.3	CSO178.w	19.96	58	19.98	58	19.95	58	CSO178.w	0.34	7
179	KENTUCKY ST SEWER OVFL		223.3	CSO179.w	0.00	0	0.00	0	0.00	0	CSO179.w >> D-Str 149.1	0.00	0
181	CRD 2nd & BROADWAY NO 2	CRD	42.5	CSO181.w	3.82	42	3.81	42	3.81	42	CSO181.w	0.00	0
189	NORTHWESTERN SAN DIV	Southwestern Parkway Storage Basin	1186.4	CSO189.w	240.02	52	255.75	52	254.02	52	CSO189.2	23.63	8
190	SEVENTEENTH ST SAN DIV	18th and Northwestern Pky Storage Basin	142.4	CSO190.w	29.95	56	29.85	56	29.85	56	CSO190.w	0.27	7
191	ALGONQUIN PKWY SAN DIV	Paddy's Run Wet Weather Treatment Facility	334.4	CSO191.w >> 50946A-Ta.2	4.30	16	25.68	30	24.02	29	CSO191.w >> 50946A-Ta.2	13.15	7
193	CRD S 6th & KENTUCKY	CRD	17.8	CSO193.w	0.09	4	0.09	4	0.09	4	CSO193.w	0.10	4
195	CRD S 4th & OAK	CRD	5.7	CSO195.w	2.79	44	2.78	44	2.78	44	CSO195.w	0.01	0
196	CRD S 3rd & OAK	CRD	4.0	CSO196.w	0.04	1	0.04	1	0.04	1	CSO196.w	0.02	0
197	CRD S 3rd S OF OAK	CRD	3.7	CSO197.w	2.84	43	2.83	43	2.83	43	CSO197.w	0.07	4
198	CRD S 3rd & ORMSBY	CRD	3.6	CSO198.w	0.09	4	0.09	4	0.09	4	CSO198.w	0.05	2
199	CRD S 3rd N OF MAGNOLIA	CRD	2.0	CSO199.w	0.73	24	0.72	23	0.72	23	CSO199.w	0.04	1
200	CRD S 3rd & MAGNOLIA	CRD	7.6	CSO200.w	2.23	45	2.22	45	2.22	45	CSO200.w	0.00	0
201	CRD S 5th & KENTUCKY	CRD	10.0	CSO201.w	0.69	11	0.68	11	0.68	11	CSO201.w	0.44	7
202	CRD S ORMSBY W OF 3rd	CRD	5.9	CSO202.w	0.15	6	0.15	6	0.15	6	CSO202.w	0.04	1
203	CRD S 4th & ORMSBY	CRD	8.5	CSO203.w	0.02	0	0.02	0	0.02	0	CSO203.w	0.02	0
206	CHEROKEE PARK @ SPRING DR	CSO206 Sewer Separation	8.4	CSO206.w	29.03	70	0.37	8	28.98	70		0.00	0
207	2nd & JEFFERSON		2.1	CSO207.w	0.00	0	0.00	0	0.00	0	CSO207.w	0.00	0
208	12th & JEFFERSON		9.9	CSO208.w	0.74	21	0.16	5	0.74	21	CSO208a.2	0.28	8
210	45th STREET-GREENWOOD	SOR1/SOR2 Inline Storage	181.2	CSO210a.1	19.39	31	24.48	33	23.65	31	CSO210a.1	2.05	8
211	MAIN DIVERSION STRUCTURE	SOR1/SOR2 Inline Storage	3709.2	CSO211b.W	1090.44	62	308.42	25	297.84	25	CSO211b.W	40.70	8
142	SBR LOGAN ST @ ST CATHERINE		4.7	CSO142.w	0.00	0	0.00	0	0.00	0	CSO142.w	0.00	0
174	SBR GOSS & BOYLE		160.4	CSO174.w	14.11	40	14.10	40	14.10	40	CSO174.w	9.61	37
180	SBR ORMSBY AVE RELIEF		30.9	CSO180.w	0.04	1	0.04	1	0.04	1	CSO180.w	0.03	1
182	SBR SHELBY & BURNETT		172.1	CSO182.w	30.96	38	30.95	38	30.95	38	CSO182.w	26.46	36
183	SBR ALEXANDER & KESWICK		4.0	CSO183.3	0.00	0	0.00	0	0.00	0	CSO183.3	0.00	0
184	SBR FETTER & ALEXANDER		100.8	CSO184.w	0.31	7	0.31	7	0.31	7	CSO184.w	0.29	7
185	SBR SHELBY & KESWICK		163.9	CSO185.w	1.58	16	1.57	16	1.57	16	CSO185.w	1.60	16
186	SBR LOGAN & OAK		4.4	CSO186.w	0.00	0	0.00	0	0.00	0	CSO186.w	0.00	0
187	SBR SHELBY & CAMP		6.1	CSO187.w	0.00	0	0.00	0	0.00	0	CSO187.w	0.00	0
188	SBR SHELBY & CLAY		13.7	CSO188.w	0.00	0	0.00	0	0.00	0	CSO188.w	0.00	0
205	SBR MORGAN STREET RELIEF			CSO205.2	0.00	0	0.00	0	0.00	0	CSO205.2	0.00	0
		Snead's Branch Overflow Volume		71909B-AGa.w	46.13	38	8.68	10	8.08	9	71909B-AGa.w	3.28	4

APPENDIX D – CSO FLOW MONITORING DATA

There are known issues with the flow monitoring data quality.
MSD is currently working on resolving these issues.

CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO015	7/13/14 11:00 PM	7/14/14 1:00 AM	0.60	0.75	1,514,195.63	0.88	0.44	1 hr	CloudBurst	1,135,646.72
CSO015	7/26/14 10:00 PM	7/27/14 10:00 AM	0.01	1.10	2,283,345.42	1.13	0.51	12 hr	CloudBurst	2,511,679.96
CSO015	8/8/14 5:45 AM	8/8/14 11:45 AM	0.15	0.77	5,965,660.43	0.84	0.38	6 hr	CloudBurst	4,593,558.53
CSO015	8/11/14 7:00 PM	8/11/14 8:00 PM	0.17	0.32	1,817,922.53	1.81	0.18	6 hr	CloudBurst	581,735.21
CSO015	8/23/14 8:15 PM	8/24/14 12:30 AM	0.30	0.85	1,976,739.52	1.82	0.41	6 hr	CloudBurst	1,680,228.59
CSO015	8/30/14 3:15 PM	8/30/14 7:45 PM	0.18	0.71	400,676.15	1.84	0.42	1 hr	CloudBurst	284,480.07
CSO015	9/11/14 1:30 AM	9/11/14 10:30 AM	0.74	1.71	7,085,060.34	1.72	0.95	3 hr	Atlas14	12,115,453.19
CSO015	3/5/15 2:00 PM	3/5/15 3:15 PM	0.08	1.66	2,772,558.98	1.83	0.54	48 hr	Atlas	4,602,447.90
CSO015	3/10/15 11:30 AM	3/11/15 8:45 AM	0.50	1.12	8,132,334.08	2.77	0.50	12 hr	Atlas	9,108,214.17
CSO015	3/13/15 2:45 PM	3/14/15 3:30 AM	0.25	1.85	15,863,427.75	2.87	0.70	24 hr	Atlas	29,347,341.33
CSO015	3/14/15 1:45 PM	3/15/15 4:30 PM	0.04	1.85	3,910,363.12	2.97	0.70	24 hr	Atlas	7,234,171.78
CSO015	3/26/15 6:30 AM	3/26/15 7:15 AM	0.18	0.67	199,754.04	0.82	0.35	3 hr	Atlas	133,835.21
CSO015	4/2/15 12:00 PM	4/4/15 10:45 AM	0.19	6.20	11,681,620.77	6.32	36.46	6 hr	Cloudburst	72,426,048.78
CSO015	4/7/15 12:15 PM	4/8/15 4:15 PM	0.38	0.88	11,613,979.36	7.09	0.39	1 hr	Atlas	10,220,301.83
CSO015	4/8/15 6:45 PM	4/10/15 5:30 AM	0.05	0.08	537,948,580.10	7.51	0.04	6 hr	Atlas	43,035,886.41
CSO015	4/14/15 12:00 PM	4/14/15 7:30 PM	0.89	0.47	876,808.53	1.36	0.18	24 hr	Atlas	412,100.01
CSO015	4/19/15 2:30 PM	4/20/15 5:00 AM	0.53	0.85	2,523,442.90	1.49	0.36	12 hr	Atlas	2,144,926.47
CSO015	5/11/15 6:15 PM	5/11/15 6:15 PM	1.11	0.05	485,796.02	0.15	0.04	1 hr	Atlas	24,289.80
CSO015	6/17/15 5:15 AM	6/17/15 8:45 AM	0.03	0.67	8,991,421.56	0.68	0.36	3 hr	Atlas	6,024,252.45
CSO015	6/18/15 5:00 PM	6/18/15 9:00 PM	2.45	0.60	9,010,268.66	1.34	0.28	3 hr	Atlas	5,406,161.20
CSO015	6/20/15 4:30 AM	6/20/15 11:45 AM	0.67	1.09	2,458,475.52	2.53	0.43	12 hr	Atlas	2,679,738.32
CSO015	6/26/15 12:00 AM	6/26/15 4:15 AM	1.45	0.90	2,733,050.33	2.36	0.49	6 hr	Atlas	2,459,745.30
CSO015	6/26/15 5:15 PM	6/27/15 11:00 AM	0.31	1.12	2,209,919.75	3.39	0.60	1 hr	Atlas	2,475,110.12
CSO015 Count										23.00
CSO015 Total Volume (GAL)										220,637,353.33
CSO016	7/13/14 11:00 PM	7/14/14 1:00 AM	0.43	0.69	1,838,639.00	0.79	0.35	1 hr	CloudBurst	1,268,660.91
CSO016	7/26/14 10:00 PM	7/26/14 11:45 PM	2.48	1.02	1,285,289.20	0.54	0.47	12 hr	CloudBurst	1,310,994.99
CSO016	8/8/14 6:30 AM	8/8/14 10:00 AM	0.17	0.75	5,052,000.17	0.73	0.36	6 hr	CloudBurst	3,789,000.12
CSO016	8/10/14 4:30 AM	8/10/14 7:15 AM	0.26	0.72	3,436,013.32	1.64	0.63	1 hr	CloudBurst	2,473,929.59
CSO016	8/11/14 3:45 PM	8/11/14 6:00 PM	0.59	0.20	8,239,980.63	1.77	0.11	6 hr	CloudBurst	1,647,996.13
CSO016	8/17/14 11:15 AM	8/17/14 11:30 AM	0.15	0.50	10,838.46	0.97	0.26	3 hr	CloudBurst	5,419.23
CSO016	8/23/14 5:00 PM	8/24/14 1:00 AM	0.11	1.01	7,592,702.48	2.04	0.50	6 hr	CloudBurst	7,668,629.50
CSO016	8/27/14 6:30 PM	8/27/14 7:00 PM	0.14	0.23	402,712.65	1.52	0.19	1 hr	CloudBurst	92,623.91
CSO016	8/30/14 3:30 PM	8/30/14 6:45 PM	0.28	0.96	3,229,811.82	2.25	0.57	3 hr	CloudBurst	3,100,619.35
CSO016	9/2/14 10:00 AM	9/2/14 10:30 AM	0.08	0.34	61,878.64	1.66	0.21	3 hr	CloudBurst	21,038.74
CSO016	9/11/14 1:00 AM	9/11/14 8:30 AM	0.36	2.11	3,062,524.49	2.11	2.21	3 hr	Atlas14	6,461,926.67
CSO016	10/6/14 10:45 AM	10/6/14 11:45 AM	0.08	0.46	255,287.60	0.67	0.25	3 hr	Atlas14	117,432.29
CSO016	10/10/14 2:30 AM	10/10/14 5:45 AM	0.07	0.86	3,886,012.98	1.45	0.36	3 hr	CloudBurst	3,341,971.16
CSO016	10/13/14 6:00 AM	10/13/14 9:00 AM	0.15	0.49	3,695,813.64	1.99	0.32	3 hr	CloudBurst	1,810,948.68
CSO016	10/14/14 12:00 AM	10/14/14 12:30 PM	0.11	1.44	6,882,463.30	2.99	0.64	12 hr	CloudBurst	9,910,747.16
CSO016	11/23/14 5:45 PM	11/23/14 9:15 PM	0.09	0.92	2,516,068.35	1.25	0.43	6 hr	CloudBurst	2,314,782.88
CSO016	12/1/14 5:15 AM	12/1/14 6:45 AM	0.01	0.87	180,630.77	0.47	0.33	24 hr	CloudBurst	157,148.77
CSO016	12/6/14 12:15 AM	12/6/14 9:45 AM	0.33	0.72	12,261,445.45	1.59	0.23	48 hr	CloudBurst	8,828,240.73
CSO016	3/4/15 12:15 AM	3/4/15 5:15 PM	0.02	1.71	6,186,470.16	1.40	0.55	48 hr	Atlas	10,578,863.98
CSO016	3/10/15 10:30 AM	3/10/15 4:45 PM	0.14	1.09	5,986,338.10	2.79	0.49	12 hr	Atlas	6,525,108.53
CSO016	3/13/15 11:45 AM	3/14/15 6:30 AM	0.02	1.84	5,449,515.21	2.90	0.70	24 hr	Atlas	10,027,107.99
CSO016	3/26/15 6:30 AM	3/26/15 7:00 AM	0.31	0.52	17,043.57	0.66	0.24	3 hr	Atlas	8,862.66
CSO016	4/2/15 11:15 AM	4/3/15 7:00 PM	0.04	5.44	5,128,089.76	5.57	18.39	6 hr	Cloudburst	27,896,808.28
CSO016	4/7/15 9:15 AM	4/7/15 7:30 PM	0.14	0.89	3,929,206.27	6.34	0.37	12 hr	Atlas	3,496,993.58
CSO016	4/8/15 11:00 PM	4/11/15 10:30 AM	0.13	0.12	377,279,276.60	6.86	0.09	1 hr	Atlas	45,273,513.19
CSO016	4/13/15 9:00 PM	4/14/15 1:00 AM	0.52	0.55	3,714,882.96	1.62	0.21	24 hr	Atlas	2,043,185.63
CSO016	4/14/15 9:15 AM	4/14/15 3:30 PM	0.15	0.55	5,485,508.07	1.43	0.21	24 hr	Atlas	3,017,029.44
CSO016	4/19/15 8:45 AM	4/19/15 11:00 PM	0.06	0.81	13,317,847.16	1.43	0.33	12 hr	Atlas	10,787,456.20
CSO016	5/16/15 12:15 PM	5/16/15 3:45 PM	0.40	0.95	1,912,695.58	1.08	0.58	3 hr	Atlas	1,817,060.80
CSO016	6/17/15 5:45 AM	6/17/15 8:30 AM	0.71	0.63	3,933,085.27	0.65	0.34	3 hr	Atlas	2,477,843.72

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO016	6/18/15 5:30 PM	6/18/15 8:45 PM	0.26	0.62	6,389,228.18	1.30	0.36	1 hr	Atlas	3,961,321.47
CSO016	6/20/15 4:15 AM	6/20/15 11:00 AM	0.78	1.19	4,992,556.23	2.59	0.49	12 hr	Atlas	5,941,141.91
CSO016	6/26/15 12:45 AM	6/26/15 2:45 AM	0.02	0.77	920,440.07	2.31	0.42	6 hr	Atlas	708,738.86
CSO016	6/26/15 5:15 PM	6/27/15 2:00 AM	1.32	0.99	2,774,804.36	3.28	0.55	1 hr	Atlas	2,747,056.32
CSO016 Count										34.00
CSO016 Total Volume (GAL)										191,630,203.37
CSO018	7/13/14 10:00 PM	7/14/14 2:00 AM	0.15	0.75	6,111.11	1.45	0.41	3 hr	CloudBurst	4,583.33
CSO018	7/26/14 10:00 PM	7/27/14 12:30 AM	0.02	1.50	3,125.00	0.82	0.68	12 hr	CloudBurst	4,687.50
CSO018	8/22/14 9:00 PM	8/22/14 10:45 PM	0.25	0.45	2,546.30	1.08	0.32	1 hr	CloudBurst	1,145.83
CSO018	8/23/14 8:15 PM	8/23/14 8:30 PM	0.15	0.82	1,397.36	1.59	0.38	12 hr	CloudBurst	1,145.83
CSO018	8/27/14 5:00 PM	8/27/14 7:45 PM	0.18	0.84	37,326.39	2.12	0.65	1 hr	CloudBurst	31,354.17
CSO018	9/11/14 12:45 AM	9/11/14 8:45 AM	0.33	1.87	113,413.55	1.89	1.43	3 hr	Atlas14	212,083.33
CSO018	12/6/14 1:30 AM	12/6/14 12:15 PM	0.17	0.74	1,097,973.02	1.46	0.24	48 hr	CloudBurst	812,500.03
CSO018	3/4/15 12:45 AM	3/5/15 7:15 AM	0.10	1.75	1,884,656.63	1.84	0.57	48 hr	Atlas	3,298,149.10
CSO018	3/10/15 8:45 AM	3/11/15 5:45 PM	0.07	1.30	1,937,434.13	3.05	0.59	12 hr	Atlas	2,518,664.37
CSO018	3/13/15 12:30 PM	3/15/15 8:00 PM	0.01	1.68	2,251,265.73	2.98	0.63	24 hr	Atlas	3,782,126.43
CSO018	4/2/15 3:15 PM	4/5/15 9:45 AM	0.11	6.05	691,391.07	6.10	50.00	6 hr	Cloudburst	4,182,915.98
CSO018	4/7/15 9:30 AM	4/7/15 9:00 PM	0.33	0.68	182,070.85	6.74	0.30	1 hr	Atlas	123,808.18
CSO018	4/8/15 6:15 PM	4/8/15 10:45 PM	0.45	0.28	490,794.74	7.02	0.19	1 hr	Atlas	137,422.53
CSO018	4/9/15 11:45 AM	4/9/15 3:15 PM	1.27	0.59	212,772.78	7.16	0.51	1 hr	Atlas	125,535.94
CSO018	4/10/15 2:30 AM	4/10/15 3:00 AM	1.38	0.15	91,345.77	4.04	0.09	3 hr	Atlas	13,701.87
CSO018	6/18/15 5:00 PM	6/18/15 11:00 PM	2.31	1.37	59,212.19	2.19	0.79	3 hr	Atlas	81,120.69
CSO018	6/20/15 8:00 AM	6/20/15 11:30 AM	2.77	1.28	58,497.87	3.60	0.56	12 hr	Atlas	74,877.28
CSO018	6/26/15 12:15 AM	6/26/15 4:30 AM	0.48	0.65	14,705.63	2.24	0.35	6 hr	Atlas	9,558.66
CSO018	6/26/15 5:30 PM	6/27/15 1:30 AM	0.19	0.70	17,843.15	2.78	0.35	1 hr	Atlas	12,490.20
CSO018 Count										19.00
CSO018 Total Volume (GAL)										15,427,871.26
CSO019	7/1/14 7:45 PM	7/2/14 1:15 AM	0.66	0.49	3,146,062.77	0.54	0.33	1 hr	CloudBurst	1,541,570.76
CSO019	7/2/14 4:00 PM	7/2/14 8:15 PM	1.73	0.16	7,635,298.97	0.69	0.14	1 hr	CloudBurst	1,221,647.84
CSO019	7/7/14 8:15 PM	7/7/14 8:45 PM	1.63	0.01	20,239,408.84	0.66	0.01	6 hr	CloudBurst	202,394.09
CSO019	7/13/14 10:45 PM	7/14/14 9:00 AM	1.22	0.90	2,759,873.37	0.99	0.44	1 hr	CloudBurst	2,483,886.04
CSO019	7/14/14 7:00 PM	7/15/14 1:30 AM	1.92	0.30	14,532,441.40	1.29	0.19	3 hr	CloudBurst	4,359,732.42
CSO019	7/26/14 9:30 PM	7/27/14 3:15 PM	1.10	0.91	3,482,488.22	0.96	0.41	12 hr	CloudBurst	3,169,064.28
CSO019	8/8/14 5:45 AM	8/8/14 1:45 PM	1.06	0.58	3,347,052.29	0.67	0.28	6 hr	CloudBurst	1,941,290.33
CSO019	8/9/14 8:15 AM	8/9/14 10:00 AM	0.07	0.09	235,136.25	0.76	0.06	3 hr	CloudBurst	21,162.26
CSO019	8/10/14 3:30 AM	8/10/14 11:00 AM	0.31	0.65	9,665,750.49	1.40	0.54	1 hr	CloudBurst	6,282,737.82
CSO019	8/11/14 1:45 PM	8/11/14 7:45 PM	0.14	0.23	12,243,359.03	1.63	0.16	1 hr	CloudBurst	2,815,972.58
CSO019	8/16/14 11:30 PM	8/18/14 3:00 AM	0.18	0.82	1,666,599.55	1.70	0.31	24 hr	CloudBurst	1,366,611.63
CSO019	8/22/14 7:00 PM	8/22/14 11:00 PM	0.09	0.12	8,336,619.42	0.96	0.07	6 hr	CloudBurst	1,000,394.33
CSO019	8/23/14 3:30 PM	8/24/14 5:00 AM	0.19	1.20	5,027,243.34	2.16	0.56	12 hr	CloudBurst	6,032,692.01
CSO019	8/26/14 7:45 PM	8/26/14 11:15 PM	0.24	0.12	2,476,484.65	1.46	0.10	1 hr	CloudBurst	297,178.16
CSO019	8/27/14 5:30 PM	8/27/14 6:15 PM	0.58	0.03	5,384,949.82	1.47	0.03	1 hr	CloudBurst	161,548.49
CSO019	8/30/14 3:00 PM	8/31/14 11:30 AM	0.41	1.19	3,867,781.52	2.54	0.72	3 hr	CloudBurst	4,602,660.01
CSO019	9/2/14 6:30 AM	9/2/14 4:45 PM	0.34	0.72	2,549,863.27	2.06	0.46	3 hr	Atlas14	1,835,901.56
CSO019	9/11/14 12:15 AM	9/11/14 2:15 PM	0.66	1.65	8,645,488.74	1.65	0.93	3 hr	CloudBurst	14,265,056.42
CSO019	9/15/14 11:00 PM	9/16/14 12:00 AM	0.14	0.02	90,904.69	1.67	0.01	48 hr	CloudBurst	1,818.09
CSO019	10/3/14 4:45 AM	10/3/14 9:15 PM	0.23	0.37	112,505.23	0.37	0.14	3 hr	CloudBurst	41,626.94
CSO019	10/6/14 8:15 AM	10/6/14 4:30 PM	0.18	0.70	2,314,110.97	0.82	0.24	6 hr	CloudBurst	1,619,877.68
CSO019	10/7/14 11:30 AM	10/7/14 1:45 PM	0.02	0.70	488,996.77	1.07	0.24	6 hr	CloudBurst	342,297.74
CSO019	10/10/14 1:45 AM	10/11/14 6:15 AM	0.43	0.88	4,237,744.91	2.25	0.55	3 hr	CloudBurst	3,729,215.52
CSO019	10/13/14 4:15 AM	10/13/14 1:15 PM	0.27	0.52	4,831,035.59	2.42	0.33	1 hr	CloudBurst	2,512,138.51
CSO019	10/13/14 10:30 PM	10/14/14 9:15 PM	0.74	1.47	4,449,447.64	3.39	0.66	12 hr	CloudBurst	6,540,688.03
CSO019	10/15/14 1:00 PM	10/15/14 10:30 PM	0.33	0.17	630,409.83	3.36	0.08	12 hr	CloudBurst	107,169.67
CSO019	10/28/14 12:00 PM	10/28/14 2:45 PM	0.07	0.13	142,913.46	0.11	0.07	3 hr	CloudBurst	18,578.75
CSO019	10/31/14 8:30 PM	11/1/14 1:15 AM	0.31	0.18	88,844.73	0.31	0.07	24 hr	CloudBurst	15,992.05

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO019	11/4/14 10:30 PM	11/5/14 6:15 AM	0.25	0.11	63,614.50	0.30	0.05	12 hr	CloudBurst	6,997.60
CSO019	11/5/14 7:15 PM	11/5/14 9:00 PM	1.15	0.03	14,723.96	0.29	0.02	6 hr	Atlas	441.72
CSO019	11/16/14 8:45 PM	11/17/14 4:15 PM	0.17	0.38	969,829.39	0.42	0.14	24 hr	CloudBurst	368,535.17
CSO019	11/23/14 2:00 PM	11/24/14 8:15 AM	0.56	0.86	3,681,390.66	1.22	0.37	12 hr	CloudBurst	3,165,995.97
CSO019	12/1/14 1:15 AM	12/2/14 4:45 AM	0.15	0.82	4,072,848.34	0.87	0.31	24 hr	CloudBurst	3,339,735.64
CSO019	12/4/14 8:30 AM	12/7/14 3:00 AM	0.03	0.38	21,739,521.01	1.55	0.17	12 hr	CloudBurst	8,261,017.98
CSO019	12/16/14 3:00 AM	12/16/14 10:15 AM	0.85	0.15	489,419.87	-	0.11	3 hr	CloudBurst	73,412.98
CSO019	12/22/14 10:45 PM	12/23/14 9:00 AM	0.43	0.29	1,528,268.79	-	0.09	1 hr	CloudBurst	443,197.95
CSO019	12/23/14 8:00 PM	12/24/14 12:00 AM	0.58	0.01	3,583,275.18	-	0.05	1 hr	CloudBurst	35,832.75
CSO019	12/24/14 9:15 AM	12/25/14 1:30 AM	0.04	0.01	38,307,712.55	-	0.10	12 hr	Atlas	383,077.13
CSO019	12/27/14 8:15 AM	12/28/14 8:45 AM	0.69	0.36	818,612.26	-	0.14	1 hr	CloudBurst	294,700.41
CSO019	1/3/15 5:00 AM	1/4/15 12:15 PM	0.34	0.61	1,087,807.30	0.62	0.23	24 hr	Atlas	663,562.45
CSO019	1/12/15 12:15 AM	1/12/15 2:45 PM	0.09	0.19	360,982.40	0.22	0.07	24 hr	Atlas	68,586.66
CSO019	1/18/15 3:30 AM	1/18/15 4:30 AM	1.19	0.06	91,365.10	0.25	0.04	1 hr	Atlas	5,481.91
CSO019	1/25/15 4:30 PM	1/26/15 3:15 AM	0.38	0.16	330,547.58	0.23	0.07	12 hr	Atlas	52,887.61
CSO019	1/29/15 5:45 AM	1/29/15 6:30 AM	0.95	0.06	102,153.64	0.30	0.04	1 hr	Atlas	6,129.22
CSO019	2/1/15 11:45 AM	2/2/15 2:15 AM	0.40	0.38	1,706,159.57	0.61	0.19	3 hr	Atlas	648,340.64
CSO019	2/21/15 6:30 AM	2/22/15 4:00 AM	0.11	1.17	306,891.08	1.46	0.45	12 hr	Atlas	359,062.57
CSO019	3/1/15 4:45 PM	3/1/15 11:45 PM	0.20	0.09	649,249.88	0.19	0.03	24 hr	Atlas	58,432.49
CSO019	3/3/15 1:30 PM	3/4/15 5:30 PM	0.32	1.73	7,226,959.53	1.45	0.56	48 hr	Atlas	12,502,639.99
CSO019	3/5/15 8:30 AM	3/5/15 8:30 AM	0.07	1.73	821.52	1.92	0.56	48 hr	Atlas	1,421.23
CSO019	3/7/15 1:00 PM	3/7/15 6:15 PM	0.81	0.49	952,040.83	1.82	0.19	24 hr	Atlas	466,500.00
CSO019	3/10/15 10:45 AM	3/10/15 10:45 PM	0.76	0.88	7,412,597.46	2.60	0.39	12 hr	Atlas	6,523,085.77
CSO019	3/13/15 9:45 AM	3/14/15 7:00 PM	1.15	1.82	7,018,033.28	2.70	0.67	24 hr	Atlas	12,772,820.57
CSO019	3/24/15 8:00 PM	3/24/15 10:15 PM	2.77	0.16	102,994.40	0.32	0.10	1 hr	Atlas	16,479.10
CSO019	3/26/15 3:15 AM	3/26/15 7:00 PM	0.30	0.58	4,094,259.98	0.92	0.28	3 hr	Atlas	2,374,670.79
CSO019	4/2/15 10:15 AM	4/4/15 3:45 AM	0.43	4.19	12,907,020.42	4.32	5.65	24 hr	Cloudburst	54,080,415.56
CSO019	4/7/15 5:15 AM	4/8/15 8:15 PM	0.17	1.48	11,640,323.53	5.71	0.70	1 hr	Atlas	17,227,678.83
CSO019	4/9/15 11:30 AM	4/10/15 4:45 PM	0.68	0.50	6,329,142.93	6.38	0.42	1 hr	Atlas	3,164,571.47
CSO019	4/12/15 6:00 PM	4/14/15 4:00 PM	1.02	Discharge		3.24	Flood			11,437,404.50
CSO019	4/19/15 6:30 AM	4/20/15 9:00 AM	1.30	0.71	3,631,891.38	1.70	0.29	12 hr	Atlas	2,578,642.88
CSO019	4/25/15 5:30 AM	4/26/15 7:00 AM	0.60	0.43	949,375.08	1.24	0.17	1 hr	Atlas	408,231.28
CSO019	4/30/15 12:30 PM	4/30/15 2:15 PM	0.04	0.01	5,438,919.40	0.44	0.01	1 hr	Atlas	54,389.19
CSO019	5/16/15 11:45 AM	5/16/15 7:15 PM	0.45	1.14	3,628,265.23	1.32	0.62	3 hr	Atlas	4,136,222.36
CSO019	5/17/15 2:00 PM	5/17/15 5:15 PM	0.03	0.17	336,086.45	1.46	0.11	1 hr	Atlas	57,134.70
CSO019	5/25/15 6:45 AM	5/25/15 11:00 AM	0.60	0.24	1,345,339.37	0.27	0.12	6 hr	Atlas	322,881.45
CSO019	5/26/15 1:30 PM	5/26/15 3:45 PM	0.90	0.19	405,125.66	0.37	0.10	1 hr	Atlas	76,973.87
CSO019	6/17/15 4:45 AM	6/17/15 9:15 AM	0.29	0.53	4,819,758.88	0.54	0.30	3 hr	Atlas	2,554,472.21
CSO019	6/18/15 5:15 PM	6/18/15 11:00 PM	1.17	0.70	6,921,794.11	1.21	0.42	1 hr	Atlas	4,845,255.88
CSO019	6/20/15 12:15 AM	6/20/15 2:15 PM	0.01	1.02	6,428,561.73	2.34	0.43	12 hr	Atlas	6,557,132.97
CSO019	6/21/15 11:45 PM	6/22/15 9:30 AM	0.22	0.21	1,536,051.24	2.54	0.10	12 hr	Atlas	322,570.76
CSO019	6/25/15 11:30 PM	6/26/15 7:45 AM	0.50	0.49	2,006,375.61	1.82	0.25	6 hr	Atlas	983,124.05
CSO019	6/26/15 5:00 PM	6/27/15 8:45 AM	1.39	1.22	8,866,557.01	2.94	0.81	1 hr	Atlas	10,817,199.55
CSO019	6/29/15 1:30 PM	6/29/15 4:45 PM	0.09	0.10	8,367,801.09	1.81	0.05	3 hr	Atlas	836,780.11
CSO019 Count										72.00
CSO019 Total Volume (GAL)										241,885,031.88
CSO020	7/13/14 11:00 PM	7/14/14 12:15 AM	0.14	0.59	983,212.21	1.32	0.31	1 hr	CloudBurst	580,095.20
CSO020	7/14/14 9:00 PM	7/14/14 9:00 PM	0.25	0.44	22,927.53	1.62	0.31	1 hr	CloudBurst	10,088.11
CSO020	7/29/14 8:45 AM	7/29/14 9:00 AM	0.91	0.66	310,189.65	0.69	0.30	2 hr	Atlas14	204,725.17
CSO020	8/8/14 6:30 AM	8/8/14 9:00 AM	0.04	0.78	4,439,686.04	0.58	0.38	6 hr	CloudBurst	3,462,955.11
CSO020	8/10/14 4:45 AM	8/10/14 5:15 AM	0.08	0.64	164,612.86	1.51	0.52	1 hr	CloudBurst	105,352.23
CSO020	8/22/14 8:00 PM	8/22/14 8:30 PM	0.21	0.26	392,385.44	0.95	0.17	1 hr	CloudBurst	102,020.21
CSO020	8/23/14 8:15 PM	8/23/14 11:00 PM	0.47	0.52	4,689,967.99	1.45	0.27	3 hr	CloudBurst	2,438,783.36
CSO020	8/30/14 3:30 PM	8/30/14 4:30 PM	0.01	0.61	1,510,401.00	1.34	0.39	1 hr	CloudBurst	921,344.61
CSO020	9/11/14 1:00 AM	9/11/14 8:45 AM	0.39	1.92	7,136,025.73	1.92	1.47	3 hr	Atlas14	13,701,169.40

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO020	10/10/14 2:30 AM	10/10/14 4:00 AM	0.05	1.24	2,233,103.17	1.59	0.58	3 hr	CloudBurst	2,769,047.93
CSO020	10/13/14 6:15 AM	10/13/14 7:00 AM	0.01	0.42	340,135.42	2.12	0.27	3 hr	CloudBurst	142,856.88
CSO020	10/14/14 12:00 AM	10/14/14 11:45 AM	0.01	0.87	7,002,631.24	2.77	0.38	12 hr	CloudBurst	6,092,289.18
CSO020	11/23/14 5:45 PM	11/24/14 12:30 AM	0.10	0.70	10,896,364.33	1.09	0.32	12 hr	CloudBurst	7,627,455.03
CSO020	12/1/14 4:30 AM	12/1/14 5:45 AM	0.02	0.89	275,344.85	0.44	0.34	24 hr	CloudBurst	245,056.92
CSO020	12/5/14 9:30 PM	12/6/14 10:30 AM	0.02	0.67	24,248,693.77	1.56	0.22	48 hr	CloudBurst	16,246,624.82
CSO020	2/1/15 1:45 PM	2/1/15 2:45 PM	0.11	0.42	7,434,473.03	0.51	0.20	3 hr	Atlas	3,122,478.67
CSO020	2/21/15 3:45 PM	2/21/15 6:00 PM	0.04	1.18	143,017.95	1.39	0.46	12 hr	Atlas	168,761.19
CSO020	3/3/15 8:15 PM	3/6/15 10:00 PM	0.32	1.73	47,869,312.20	1.83	0.56	48 hr	Atlas	82,813,910.11
CSO020	3/7/15 1:45 PM	3/9/15 6:15 PM	0.06	Discharge		1.78	Snowmelt			291,320,059.70
CSO020	3/10/15 6:45 AM	3/15/15 4:00 PM	0.03	1.09	867,870,015.50	4.65	0.49	12 hr	Atlas	1,052,590,501.10
CSO020	3/26/15 6:00 AM	3/26/15 7:00 AM	0.49	0.41	640,163.92	0.60	0.17	12 hr	Atlas	262,467.21
CSO020	4/2/15 10:45 AM	4/5/15 11:45 AM	0.28	4.46	52,283,777.93	4.59	6.29	24 hr	Cloudburst	233,185,649.60
CSO020	4/7/15 9:15 AM	4/7/15 10:45 PM	0.05	0.97	68,817,630.23	5.43	0.47	1 hr	Atlas	66,753,101.33
CSO020	4/8/15 6:30 PM	4/8/15 10:30 PM	0.54	0.21	62,725,265.98	5.63	0.17	1 hr	Atlas	13,172,305.86
CSO020	4/9/15 11:30 AM	4/9/15 2:45 PM	0.04	0.12	75,186,245.97	5.47	0.10	1 hr	Atlas	9,022,349.52
CSO020	4/10/15 2:30 AM	4/10/15 5:45 AM	0.09	0.18	43,150,478.06	3.09	0.12	3 hr	Atlas	7,767,086.05
CSO020	4/13/15 8:45 PM	4/14/15 12:00 AM	3.07	0.42	25,890,344.70	1.60	0.16	24 hr	Atlas	10,873,944.78
CSO020	4/14/15 9:00 AM	4/14/15 3:00 PM	2.19	0.42	50,289,249.41	1.64	0.16	24 hr	Atlas	21,121,484.75
CSO020	4/19/15 8:00 AM	4/20/15 5:45 AM	5.39	0.65	58,908,552.91	1.21	0.28	12 hr	Atlas	38,290,559.39
CSO020	5/26/15 2:15 PM	5/26/15 3:15 PM	0.04	0.31	1,153,396.18	0.50	0.23	1 hr	Atlas	357,552.82
CSO020	6/17/15 5:30 AM	6/17/15 7:30 AM	3.04	0.64	2,523,025.33	0.67	0.36	3 hr	Atlas	1,614,736.21
CSO020	6/18/15 5:00 PM	6/18/15 10:00 PM	0.56	0.62	14,434,856.23	1.26	0.34	1 hr	Atlas	8,949,610.86
CSO020	6/20/15 2:00 AM	6/20/15 1:15 PM	0.17	0.87	17,833,569.35	2.22	0.38	12 hr	Atlas	15,515,205.34
CSO020	6/26/15 1:15 AM	6/26/15 1:30 AM	0.14	0.47	35,623.71	1.45	0.25	6 hr	Atlas	16,743.15
CSO020	6/26/15 5:15 PM	6/27/15 2:30 AM	0.14	1.05	7,140,308.55	2.61	0.55	1 hr	Atlas	7,497,323.98
CSO020 Count										35.00
CSO020 Total Volume (GAL)										1,919,065,695.79
CSO027	8/10/14 4:15 AM	8/10/14 4:15 AM	0.01	0.52	11,369.81	1.49	0.41	1 hr	CloudBurst	5,912.30
CSO027	4/3/15 1:45 AM	4/3/15 2:30 AM	0.01	5.47	2,529.13	3.50	15.85	6 hr	Cloudburst	13,834.36
CSO027	6/26/15 5:45 PM	6/26/15 5:45 PM	0.03	0.86	1,717.03	2.17	0.48	1 hr	Atlas	1,476.65
CSO027 Count										3.00
CSO027 Total Volume (GAL)										21,223.31
CSO028	7/7/14 7:30 PM	7/7/14 7:30 PM	0.01	0.47	1,506.52	0.77	0.41	1 hr	CloudBurst	708.06
CSO028	7/13/14 11:00 PM	7/13/14 11:00 PM	0.01	0.77	378.18	1.33	0.38	1 hr	CloudBurst	291.20
CSO028	7/26/14 9:45 PM	7/26/14 9:45 PM	0.05	1.06	15,873.63	0.41	0.49	12 hr	CloudBurst	16,826.05
CSO028	8/8/14 6:30 AM	8/8/14 6:30 AM	0.14	0.85	869.94	0.62	0.41	6 hr	CloudBurst	739.45
CSO028	8/22/14 7:15 PM	8/22/14 7:15 PM	0.01	0.47	994.02	1.18	0.37	1 hr	CloudBurst	467.19
CSO028	8/30/14 3:15 PM	8/30/14 3:15 PM	0.01	0.56	1,661.22	1.13	0.31	1 hr	CloudBurst	930.28
CSO028	9/11/14 1:00 AM	9/11/14 2:15 AM	0.01	1.91	1,262.84	1.60	1.33	3 hr	Atlas14	2,412.03
CSO028	4/3/15 12:15 AM	4/3/15 3:30 AM	0.01	5.47	3,777.31	3.90	15.85	6 hr	Cloudburst	20,661.86
CSO028	4/7/15 9:15 AM	4/7/15 9:30 AM	0.01	0.87	1,073.32	6.07	0.38	1 hr	Atlas	933.79
CSO028	6/18/15 5:15 PM	6/18/15 5:15 PM	0.01	1.55	2,445.44	1.29	0.50	48 hr	Atlas	3,790.44
CSO028	6/26/15 5:15 PM	6/26/15 5:15 PM	0.01	0.86	51,084.86	2.17	0.48	1 hr	Atlas	43,932.98
CSO028 Count										11.00
CSO028 Total Volume (GAL)										91,693.34
CSO029	7/7/14 7:30 PM	7/7/14 7:45 PM	0.70	0.47	92,521.48	0.79	0.41	1 hr	CloudBurst	43,485.09
CSO029	7/14/14 8:15 PM	7/14/14 8:15 PM	0.33	0.31	83,781.28	1.40	0.21	3 hr	Atlas14	25,972.20
CSO029	7/26/14 9:45 PM	7/26/14 10:00 PM	0.01	1.06	293,048.01	0.45	0.49	12 hr	CloudBurst	310,630.89
CSO029	8/8/14 6:00 AM	8/8/14 7:30 AM	0.01	0.85	24,592.76	0.66	0.41	6 hr	CloudBurst	20,903.84
CSO029	8/10/14 4:00 AM	8/10/14 4:45 AM	0.01	0.52	773,837.82	1.51	0.41	1 hr	CloudBurst	402,395.67
CSO029	8/17/14 9:45 AM	8/17/14 9:45 AM	0.01	0.73	2,980.74	0.86	0.28	24 hr	CloudBurst	2,175.94
CSO029	8/17/14 11:00 PM	8/17/14 11:15 PM	0.01	0.73	23,466.17	1.03	0.28	24 hr	CloudBurst	17,130.30
CSO029	8/22/14 7:15 PM	8/22/14 7:30 PM	0.01	0.47	44,738.56	1.18	0.37	1 hr	CloudBurst	21,027.13
CSO029	8/23/14 4:30 PM	8/23/14 8:15 PM	0.01	0.65	679,057.26	1.65	0.36	3 hr	CloudBurst	441,387.22

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO029	8/27/14 5:15 PM	8/27/14 5:15 PM	0.19	0.14	26,835.27	1.29	0.10	1 hr	CloudBurst	3,756.94
CSO029	8/30/14 3:15 PM	8/30/14 6:15 PM	0.01	0.56	567,629.10	1.27	0.31	1 hr	CloudBurst	317,872.29
CSO029	9/11/14 12:30 AM	9/11/14 2:30 AM	0.01	1.91	208,509.00	1.62	1.33	3 hr	Atlas14	398,252.18
CSO029	10/3/14 3:30 AM	10/3/14 3:30 AM	0.01	0.22	71,824.72	0.03	0.09	24 hr	CloudBurst	15,801.44
CSO029	10/6/14 9:45 AM	10/6/14 9:45 AM	0.01	0.50	13,950.85	0.42	0.20	1 hr	CloudBurst	6,975.43
CSO029	10/10/14 1:45 AM	10/10/14 3:00 AM	0.01	1.28	81,819.48	1.60	0.57	3 hr	CloudBurst	104,728.93
CSO029	10/13/14 11:30 PM	10/13/14 11:45 PM	0.06	1.06	12,496.90	2.45	0.47	12 hr	CloudBurst	13,246.72
CSO029	10/14/14 8:15 AM	10/14/14 8:15 AM	0.03	1.06	6,751.29	3.02	0.47	12 hr	CloudBurst	7,156.36
CSO029	11/23/14 5:30 PM	11/23/14 5:30 PM	0.01	0.68	32,407.09	0.70	0.28	12 hr	CloudBurst	22,036.82
CSO029	12/6/14 2:00 AM	12/6/14 3:00 AM	0.01	0.65	158,192.34	1.56	0.21	48 hr	CloudBurst	102,825.02
CSO029	3/10/15 11:00 AM	3/10/15 12:45 PM	0.01	1.26	63,655.17	2.88	0.57	12 hr	Atlas	80,205.51
CSO029	3/14/15 1:15 AM	3/14/15 3:45 AM	0.16	1.93	31,441.18	3.12	0.73	24 hr	Atlas	60,681.49
CSO029	3/26/15 4:30 AM	3/26/15 4:30 AM	0.01	0.54	13,787.37	0.58	0.23	3 hr	Atlas	7,445.18
CSO029	4/2/15 10:30 AM	4/2/15 3:15 PM	0.13	5.47	46,081.85	1.10	15.85	6 hr	Cloudburst	252,067.70
CSO029	4/3/15 12:15 AM	4/3/15 5:00 PM	0.08	5.47	1,831,816.08	5.50	15.85	6 hr	Cloudburst	10,020,033.98
CSO029	4/7/15 9:15 AM	4/7/15 5:15 PM	0.01	0.87	354,666.71	6.34	0.38	1 hr	Atlas	308,560.04
CSO029	4/9/15 11:30 AM	4/9/15 11:30 AM	0.01	0.10	105,308.02	6.06	0.09	1 hr	Atlas	10,530.80
CSO029	4/10/15 2:15 AM	4/10/15 2:30 AM	0.05	0.27	132,183.40	3.60	0.18	3 hr	Atlas	35,689.52
CSO029	5/16/15 11:45 AM	5/16/15 11:45 AM	0.01	0.50	32,887.46	0.42	0.29	3 hr	Atlas	16,443.73
CSO029	5/17/15 2:15 PM	5/17/15 2:15 PM	0.01	0.07	295,338.09	0.68	0.03	1 hr	Atlas	20,673.67
CSO029	5/26/15 2:00 PM	5/26/15 2:00 PM	0.01	0.21	55,315.97	0.41	0.14	1 hr	Atlas	11,616.35
CSO029	6/17/15 4:45 AM	6/17/15 5:00 AM	0.04	0.70	896.04	0.57	0.39	3 hr	Atlas	627.23
CSO029	6/18/15 5:15 PM	6/18/15 5:15 PM	0.07	1.55	132,405.05	1.29	0.50	48 hr	Atlas	205,227.83
CSO029	6/20/15 3:30 AM	6/20/15 8:00 AM	0.10	1.55	10,994.29	2.42	0.50	48 hr	Atlas	17,041.16
CSO029	6/26/15 12:00 AM	6/26/15 12:00 AM	0.01	0.53	7,328.03	1.42	0.28	6 hr	Atlas	3,883.85
CSO029	6/26/15 5:00 PM	6/26/15 5:15 PM	0.20	0.86	313,158.49	2.17	0.48	1 hr	Atlas	269,316.31
CSO029 Count										35.00
CSO029 Total Volume (GAL)										13,597,804.75
CSO031	7/27/14 7:00 AM	7/27/14 8:00 AM	1.01	1.06	17,191.30	1.01	0.49	12 hr	CloudBurst	18,222.78
CSO031	8/17/14 11:00 PM	8/17/14 11:30 PM	0.18	0.73	25,415.85	1.03	0.28	24 hr	CloudBurst	18,553.57
CSO031	8/20/14 4:00 PM	8/20/14 4:30 PM	0.03	0.03	219,751.38	0.76	0.03	1 hr	CloudBurst	6,592.54
CSO031	8/22/14 7:15 PM	8/22/14 7:30 PM	0.56	0.47	14,216.45	1.18	0.37	1 hr	CloudBurst	6,681.73
CSO031	8/23/14 3:45 PM	8/23/14 11:45 PM	0.35	0.65	271,754.24	1.88	0.36	3 hr	CloudBurst	176,640.26
CSO031	8/27/14 4:30 PM	8/27/14 5:30 PM	0.19	0.14	28,324.70	1.29	0.10	1 hr	CloudBurst	3,965.46
CSO031	8/30/14 3:15 PM	8/30/14 4:30 PM	0.29	0.56	101,741.60	1.20	0.31	1 hr	CloudBurst	56,975.29
CSO031	9/2/14 6:30 AM	9/2/14 9:45 AM	0.03	0.40	154,055.99	1.11	0.25	3 hr	Atlas14	61,622.40
CSO031	9/11/14 12:30 AM	9/11/14 9:15 PM	0.02	1.91	188,040.91	1.91	1.33	3 hr	Atlas14	359,158.14
CSO031	10/3/14 3:30 AM	10/3/14 3:30 AM	0.04	0.22	9,436.60	0.03	0.09	24 hr	CloudBurst	2,076.05
CSO031	10/3/14 2:45 PM	10/4/14 12:15 AM	0.02	0.22	2,473,733.82	0.23	0.09	24 hr	CloudBurst	544,221.44
CSO031	10/6/14 8:00 AM	10/6/14 10:15 AM	0.02	0.50	43,230.77	0.42	0.20	1 hr	CloudBurst	21,615.38
CSO031	10/7/14 1:15 AM	10/7/14 2:00 AM	0.01	0.50	13,295.67	0.48	0.20	1 hr	CloudBurst	6,647.83
CSO031	10/7/14 11:30 AM	10/7/14 12:45 PM	0.33	0.50	63,219.12	0.72	0.20	1 hr	CloudBurst	31,609.56
CSO031	10/10/14 2:00 AM	10/10/14 3:30 AM	0.04	1.28	28,391.42	1.62	0.57	3 hr	CloudBurst	36,341.02
CSO031	10/10/14 5:15 PM	10/11/14 7:45 AM	0.05	1.28	26,873.23	1.91	0.57	3 hr	CloudBurst	34,397.73
CSO031	10/13/14 4:30 AM	10/13/14 9:00 AM	0.14	0.52	140,175.92	2.33	0.34	3 hr	CloudBurst	72,891.48
CSO031	3/10/15 5:00 PM	3/11/15 11:45 AM	0.86	1.26	176,440.89	3.02	0.57	12 hr	Atlas	222,315.52
CSO031	4/2/15 9:45 AM	4/3/15 10:00 AM	0.01	5.47	86,124.18	4.99	15.85	6 hr	Cloudburst	471,099.27
CSO031	4/7/15 5:15 AM	4/7/15 9:30 AM	0.40	0.87	5,938.78	6.07	0.38	1 hr	Atlas	5,166.74
CSO031	6/17/15 6:00 AM	6/17/15 6:45 AM	0.09	0.70	13,790.18	0.81	0.39	3 hr	Atlas	9,653.13
CSO031	6/19/15 6:30 PM	6/20/15 8:00 AM	0.03	1.55	63,409.35	2.42	0.50	48 hr	Atlas	98,284.49
CSO031	6/21/15 11:15 PM	6/22/15 7:45 AM	0.05	0.24	30,539.28	2.59	0.11	3 hr	Atlas	7,329.43
CSO031	6/25/15 11:45 PM	6/26/15 4:15 AM	0.06	0.53	17,008.30	1.72	0.28	6 hr	Atlas	9,014.40

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO031	6/26/15 5:15 PM	6/27/15 12:15 AM	0.60	0.86	6,197.12	2.46	0.48	1 hr	Atlas	5,329.52
CSO031	6/29/15 1:30 PM	6/29/15 2:15 PM	0.19	0.26	71,333.25	1.64	0.18	1 hr	Atlas	18,546.65
CSO031	6/30/15 7:30 PM	6/30/15 8:00 PM	0.78	0.02	151,664.60	1.66	0.01	6 hr	Atlas	3,033.29
CSO031 Count										27.00
CSO031 Total Volume (GAL)										2,307,985.11
CSO034	7/7/14 7:30 PM	7/7/14 7:30 PM	0.01	0.47	97,297.32	0.77	0.41	1 hr	CloudBurst	45,729.74
CSO034	7/13/14 10:15 PM	7/13/14 10:15 PM	0.07	0.77	1,086.04	0.91	0.38	1 hr	CloudBurst	836.25
CSO034	7/26/14 9:45 PM	7/26/14 9:45 PM	0.01	1.06	82,175.74	0.41	0.49	12 hr	CloudBurst	87,106.28
CSO034	8/8/14 6:30 AM	8/8/14 6:30 AM	0.19	0.85	6,505.69	0.62	0.41	6 hr	CloudBurst	5,529.83
CSO034	8/10/14 4:30 AM	8/10/14 4:30 AM	0.09	0.52	5,588.08	1.50	0.41	1 hr	CloudBurst	2,905.80
CSO034	8/22/14 7:15 PM	8/22/14 7:15 PM	0.01	0.47	9,633.51	1.18	0.37	1 hr	CloudBurst	4,527.75
CSO034	8/23/14 8:00 PM	8/23/14 8:00 PM	0.01	0.65	36,665.24	1.57	0.36	3 hr	CloudBurst	23,832.41
CSO034	8/30/14 3:15 PM	8/30/14 3:15 PM	0.01	0.56	39,031.36	1.13	0.31	1 hr	CloudBurst	21,857.56
CSO034	9/11/14 12:30 AM	9/11/14 2:15 AM	0.01	1.91	19,518.28	1.60	1.33	3 hr	Atlas14	37,279.91
CSO034	10/10/14 2:45 AM	10/10/14 2:45 AM	0.01	1.28	22,082.35	1.58	0.57	3 hr	CloudBurst	28,265.41
CSO034	4/2/15 10:30 AM	4/2/15 3:00 PM	0.01	5.47	6,893.22	1.09	15.85	6 hr	Cloudburst	37,705.89
CSO034	4/3/15 12:15 AM	4/3/15 2:30 AM	0.01	5.47	14,188.64	3.50	15.85	6 hr	Cloudburst	77,611.87
CSO034	4/7/15 9:15 AM	4/7/15 9:30 AM	0.01	0.87	35,261.64	6.07	0.38	1 hr	Atlas	30,677.62
CSO034	6/18/15 5:00 PM	6/18/15 5:15 PM	0.01	1.55	19,282.97	1.29	0.50	48 hr	Atlas	29,888.60
CSO034	6/25/15 11:45 PM	6/25/15 11:45 PM	0.01	0.53	3,406.05	1.41	0.28	6 hr	Atlas	1,805.21
CSO034	6/26/15 5:00 PM	6/26/15 5:00 PM	0.01	0.86	178,332.61	2.12	0.48	1 hr	Atlas	153,366.05
CSO034 Count										16.00
CSO034 Total Volume (GAL)										588,926.19
CSO036	7/7/14 7:30 PM	7/7/14 7:45 PM	0.32	1.15	19,029.00	1.38	1.00	1 hr	CloudBurst	21,883.35
CSO036	7/13/14 10:30 PM	7/13/14 11:15 PM	0.01	0.93	48,078.02	2.32	0.49	1 hr	CloudBurst	44,712.56
CSO036	7/14/14 8:00 PM	7/14/14 8:30 PM	0.01	0.23	64,980.39	1.63	0.19	1 hr	CloudBurst	14,945.49
CSO036	7/26/14 9:45 PM	7/26/14 10:45 PM	0.01	1.17	74,966.44	0.56	0.54	12 hr	CloudBurst	87,710.73
CSO036	8/10/14 4:00 AM	8/10/14 4:45 AM	0.01	1.16	65,453.74	2.10	0.97	1 hr	CloudBurst	75,926.34
CSO036	8/11/14 3:30 PM	8/11/14 3:30 PM	0.01	0.48	28,646.53	2.56	0.40	1 hr	CloudBurst	13,750.33
CSO036	8/17/14 9:30 AM	8/17/14 10:30 AM	0.01	0.73	15,771.82	1.10	0.28	24 hr	CloudBurst	11,513.43
CSO036	8/17/14 11:00 PM	8/17/14 11:15 PM	0.01	0.73	25,908.22	1.21	0.28	24 hr	CloudBurst	18,913.00
CSO036	8/22/14 7:15 PM	8/22/14 7:30 PM	0.55	0.34	106,420.28	1.11	0.26	1 hr	CloudBurst	36,182.90
CSO036	8/23/14 3:45 PM	8/23/14 9:45 PM	0.01	0.62	163,512.72	1.71	0.30	3 hr	CloudBurst	101,377.89
CSO036	8/27/14 5:15 PM	8/27/14 5:15 PM	0.02	0.22	15,866.43	1.24	0.15	3 hr	Atlas14	3,490.61
CSO036	8/30/14 3:15 PM	8/30/14 4:00 PM	4.02	0.62	121,021.63	1.35	0.39	1 hr	CloudBurst	75,033.41
CSO036	9/11/14 12:30 AM	9/11/14 6:00 AM	0.60	1.78	61,024.23	1.71	0.99	3 hr	Atlas14	108,623.12
CSO036	10/3/14 3:30 AM	10/3/14 3:30 AM	0.01	0.24	3,618.19	0.05	0.09	24 hr	CloudBurst	868.36
CSO036	10/6/14 9:45 AM	10/6/14 9:45 AM	0.03	0.18	3,054.86	0.38	0.08	6 hr	CloudBurst	549.88
CSO036	10/10/14 1:45 AM	10/10/14 3:00 AM	0.02	1.20	40,740.12	1.45	0.54	3 hr	CloudBurst	48,888.14
CSO036	10/13/14 11:30 PM	10/14/14 8:15 AM	0.04	0.99	7,214.14	2.84	0.44	12 hr	CloudBurst	7,142.00
CSO036	11/23/14 5:30 PM	11/23/14 11:00 PM	0.03	0.64	41,588.02	0.99	0.27	12 hr	CloudBurst	26,616.33
CSO036	12/1/14 4:30 AM	12/1/14 4:30 AM	0.01	0.90	693.50	0.42	0.34	24 hr	CloudBurst	624.15
CSO036	12/6/14 2:15 AM	12/6/14 6:30 AM	0.04	0.66	36,885.81	1.56	0.21	48 hr	CloudBurst	24,344.64
CSO036	12/28/14 1:00 AM	12/28/14 1:00 AM	0.01	0.32	6,917.74	-	0.27	1 hr	CloudBurst	2,213.68
CSO036	1/29/15 5:15 AM	1/29/15 5:15 AM	0.01	0.04	68,750.26	0.24	0.03	3 hr	Atlas	2,750.01
CSO036	2/4/15 11:45 PM	2/5/15 4:45 PM	0.25	0.03	444,270.52	0.50	0.02	3 hr	Atlas	13,328.12
CSO036	2/6/15 1:30 AM	2/6/15 7:00 AM	0.01	Discharge		0.46	Snowmelt			4,867.16
CSO036	2/21/15 1:15 PM	2/21/15 2:15 PM	0.03	1.25	3,504.93	1.44	0.48	24 hr	Atlas	4,381.17
CSO036	3/10/15 10:45 AM	3/10/15 1:45 PM	0.23	1.34	28,036.33	3.01	0.61	12 hr	Atlas	37,568.69
CSO036	3/13/15 10:30 AM	3/14/15 3:45 AM	0.01	1.89	35,077.15	3.15	0.71	24 hr	Atlas	66,295.82
CSO036	3/26/15 4:15 AM	3/26/15 5:45 AM	0.01	0.55	16,681.14	0.65	0.23	3 hr	Atlas	9,174.63
CSO036	4/2/15 10:30 AM	4/2/15 3:15 PM	0.05	5.34	22,936.53	0.99	15.08	6 hr	Cloudburst	122,481.08
CSO036	4/3/15 12:00 AM	4/3/15 4:45 PM	0.36	5.34	50,538.55	5.35	15.08	6 hr	Cloudburst	269,875.88
CSO036	4/7/15 9:15 AM	4/7/15 5:00 PM	0.23	0.97	14,949.56	6.27	0.43	1 hr	Atlas	14,501.07
CSO036	4/8/15 6:00 PM	4/8/15 6:00 PM	0.01	0.16	6,425.00	6.47	0.09	3 hr	Atlas	1,028.00

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO036	4/10/15 2:00 AM	4/10/15 2:15 AM	0.18	0.22	34,355.44	3.86	0.15	3 hr	Atlas	7,558.20
CSO036	4/13/15 8:15 PM	4/13/15 8:30 PM	0.01	0.41	6,910.39	1.60	0.16	6 hr	Atlas	2,833.26
CSO036	5/16/15 11:45 AM	5/16/15 11:45 AM	0.01	0.41	10,166.82	0.33	0.23	3 hr	Atlas	4,168.40
CSO036	5/17/15 2:15 PM	5/17/15 2:15 PM	0.71	0.05	15,860.83	0.56	0.02	12 hr	Atlas	793.04
CSO036	5/26/15 2:00 PM	5/26/15 2:00 PM	0.23	0.28	1,048.96	0.53	0.21	1 hr	Atlas	293.71
CSO036	5/27/15 4:45 PM	5/27/15 4:45 PM	0.04	0.09	199,645.49	0.66	0.08	1 hr	Atlas	17,968.09
CSO036	6/1/15 4:45 AM	6/1/15 6:00 PM	0.13	0.10	1,712,096.34	0.72	0.05	6 hr	Atlas	171,209.63
CSO036	6/8/15 8:15 AM	6/8/15 8:15 AM	0.72	0.34	2,029.04	0.35	0.18	6 hr	Atlas	689.88
CSO036	6/17/15 5:00 AM	6/17/15 5:30 AM	0.06	0.55	42,733.92	0.48	0.30	3 hr	Atlas	23,503.66
CSO036	6/18/15 5:15 PM	6/22/15 5:45 PM	0.20	1.42	2,891,581.77	2.37	0.46	48 hr	Atlas	4,106,046.11
CSO036	6/26/15 5:00 PM	6/27/15 7:30 AM	0.70	0.90	1,493,939.54	2.39	0.49	1 hr	Atlas	1,344,545.59
CSO036 Count										43.00
CSO036 Total Volume (GAL)										6,951,171.50
CSO038	7/26/14 9:45 PM	7/26/14 9:45 PM	0.29	1.06	184,126.68	0.41	0.49	12 hr	CloudBurst	195,174.28
CSO038	7/27/14 6:45 AM	7/27/14 9:30 AM	0.21	1.06	68,546.36	1.10	0.49	12 hr	CloudBurst	72,659.15
CSO038	8/8/14 6:30 AM	8/8/14 7:00 AM	0.04	0.85	55,644.31	0.62	0.41	6 hr	CloudBurst	47,297.67
CSO038	8/10/14 4:30 AM	8/10/14 4:45 AM	0.17	0.52	214,071.61	1.51	0.41	1 hr	CloudBurst	111,317.24
CSO038	8/23/14 8:00 PM	8/23/14 8:15 PM	0.01	0.65	104,128.96	1.59	0.36	3 hr	CloudBurst	67,683.83
CSO038	9/11/14 12:30 AM	9/12/14 4:45 PM	2.20	1.91	772,668.67	1.91	1.33	3 hr	Atlas14	1,475,797.15
CSO038	10/6/14 7:45 AM	10/6/14 11:15 AM	0.01	0.50	179,558.32	0.43	0.20	1 hr	CloudBurst	89,779.16
CSO038	10/7/14 11:30 AM	10/7/14 12:15 PM	0.11	0.50	31,241.60	0.72	0.20	1 hr	CloudBurst	15,620.80
CSO038	10/10/14 2:15 AM	10/10/14 4:45 AM	0.02	1.28	90,627.30	1.63	0.57	3 hr	CloudBurst	116,002.94
CSO038	10/10/14 5:00 PM	10/11/14 3:30 PM	0.01	1.28	296,233.22	1.91	0.57	3 hr	CloudBurst	379,178.52
CSO038	10/13/14 4:45 AM	10/13/14 6:30 AM	0.01	0.52	39,616.39	2.32	0.34	3 hr	CloudBurst	20,600.52
CSO038	2/21/15 2:30 PM	2/22/15 6:15 PM	1.68	1.29	294,548.52	1.55	0.50	24 hr	Atlas	379,967.59
CSO038	3/4/15 12:30 AM	3/8/15 3:00 AM	0.15	1.79	6,502,099.31	1.89	0.58	48 hr	Atlas	11,638,757.77
CSO038	4/3/15 12:15 AM	4/3/15 12:15 AM	0.03	5.47	7,196.46	1.78	15.85	6 hr	Cloudburst	39,364.61
CSO038	4/7/15 5:15 AM	4/7/15 12:15 PM	0.10	0.87	63,216.19	6.09	0.38	1 hr	Atlas	54,998.08
CSO038	4/14/15 7:00 AM	4/14/15 12:00 PM	0.94	0.41	336,076.40	1.77	0.16	6 hr	Atlas	137,791.32
CSO038	6/18/15 5:15 PM	6/18/15 6:15 PM	0.07	1.55	87,461.27	1.40	0.50	48 hr	Atlas	135,564.98
CSO038	6/20/15 1:30 AM	6/20/15 5:30 AM	1.16	1.55	17,893.29	2.08	0.50	48 hr	Atlas	27,734.61
CSO038	6/22/15 6:45 AM	6/22/15 7:00 AM	4.10	0.24	45,595.31	2.57	0.11	3 hr	Atlas	10,942.88
CSO038	6/26/15 5:15 PM	6/28/15 10:00 PM	0.01	0.86	4,066,276.95	2.50	0.48	1 hr	Atlas	3,496,998.17
CSO038 Count										20.00
CSO038 Total Volume (GAL)										18,513,231.27
CSO050	7/1/14 8:00 PM	7/1/14 10:15 PM	0.07	0.31	19,879.37	0.36	0.20	3 hr	CloudBurst	6,162.60
CSO050	7/2/14 4:00 PM	7/2/14 4:30 PM	0.25	0.19	232,274.50	0.55	0.17	1 hr	CloudBurst	44,132.16
CSO050	7/7/14 7:30 PM	7/7/14 8:00 PM	0.49	0.26	601,790.87	0.76	0.23	1 hr	CloudBurst	156,465.63
CSO050	7/8/14 7:15 AM	7/8/14 7:15 AM	0.01	0.20	7,797.34	0.96	0.17	1 hr	CloudBurst	1,559.47
CSO050	7/13/14 10:45 PM	7/14/14 4:15 AM	0.01	0.83	319,427.63	1.15	0.40	1 hr	CloudBurst	265,124.94
CSO050	7/14/14 7:00 PM	7/14/14 8:30 PM	0.01	0.45	126,346.12	1.74	0.30	3 hr	CloudBurst	56,855.75
CSO050	7/26/14 9:30 PM	7/27/14 9:15 AM	0.01	1.15	252,922.14	1.23	0.52	12 hr	CloudBurst	290,860.46
CSO050	8/8/14 5:30 AM	8/8/14 10:45 AM	0.01	0.73	740,407.18	0.76	0.35	6 hr	CloudBurst	540,497.24
CSO050	8/10/14 3:30 AM	8/10/14 5:30 AM	0.11	0.49	1,059,477.48	1.33	0.34	1 hr	CloudBurst	519,143.97
CSO050	8/11/14 3:00 PM	8/11/14 3:45 PM	0.01	0.40	177,886.46	1.73	0.29	1 hr	CloudBurst	71,154.58
CSO050	8/17/14 12:15 AM	8/17/14 12:15 AM	0.06	0.70	1,081.80	1.16	0.27	24 hr	CloudBurst	757.26
CSO050	8/17/14 8:45 AM	8/17/14 10:30 AM	0.02	0.70	51,111.62	0.98	0.27	24 hr	CloudBurst	35,778.14
CSO050	8/17/14 11:00 PM	8/18/14 2:00 AM	0.01	0.70	67,846.19	1.10	0.27	24 hr	CloudBurst	47,492.33
CSO050	8/20/14 3:45 PM	8/20/14 3:45 PM	0.04	0.02	131,340.63	0.72	0.02	1 hr	CloudBurst	2,626.81
CSO050	8/22/14 7:00 PM	8/22/14 7:30 PM	0.05	0.24	979,481.97	0.91	0.17	1 hr	CloudBurst	235,075.67
CSO050	8/23/14 3:30 PM	8/24/14 12:00 AM	0.10	1.00	665,160.66	1.96	0.46	3 hr	CloudBurst	665,160.66
CSO050	8/26/14 7:45 PM	8/26/14 8:00 PM	0.11	0.11	89,549.63	1.36	0.10	1 hr	CloudBurst	9,850.46
CSO050	8/27/14 5:15 PM	8/27/14 5:30 PM	0.34	0.28	124,557.96	1.63	0.24	1 hr	CloudBurst	34,876.23
CSO050	8/30/14 3:00 PM	8/30/14 6:00 PM	0.04	0.92	275,230.71	2.22	0.61	1 hr	CloudBurst	253,212.25
CSO050	9/2/14 8:00 AM	9/2/14 3:45 PM	0.13	0.60	53,093.40	1.91	0.31	6 hr	CloudBurst	31,856.04

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO050	9/11/14 12:00 AM	9/11/14 8:15 AM	0.30	2.22	645,839.85	2.22	2.43	3 hr	Atlas14	1,433,764.46
CSO050	9/15/14 10:45 PM	9/15/14 10:45 PM	0.06	0.04	44,275.26	2.26	0.03	3 hr	CloudBurst	1,771.01
CSO050	10/3/14 3:30 AM	10/3/14 4:15 AM	0.09	0.28	27,673.03	0.09	0.11	24 hr	CloudBurst	7,748.45
CSO050	10/3/14 12:45 PM	10/3/14 7:15 PM	0.02	0.28	9,548.55	0.21	0.11	24 hr	CloudBurst	2,673.59
CSO050	10/6/14 7:45 AM	10/6/14 11:15 AM	0.02	0.55	248,481.48	0.58	0.18	48 hr	CloudBurst	136,664.81
CSO050	10/7/14 11:30 AM	10/7/14 12:00 PM	0.01	0.55	64,159.36	0.83	0.18	48 hr	CloudBurst	35,287.65
CSO050	10/10/14 1:45 AM	10/10/14 4:15 AM	0.23	1.00	509,454.41	1.52	0.44	3 hr	CloudBurst	509,454.41
CSO050	10/10/14 5:15 PM	10/10/14 9:30 PM	0.06	1.00	12,567.45	1.64	0.44	3 hr	CloudBurst	12,567.45
CSO050	10/13/14 4:15 AM	10/13/14 7:30 AM	0.49	0.37	272,114.49	1.93	0.23	3 hr	CloudBurst	100,682.36
CSO050	10/13/14 11:00 PM	10/14/14 11:45 AM	0.22	1.08	541,001.16	2.68	0.49	12 hr	CloudBurst	584,281.26
CSO050	10/28/14 1:00 PM	10/28/14 1:00 PM	0.08	0.16	11,161.98	0.13	0.09	3 hr	CloudBurst	1,785.92
CSO050	11/16/14 9:45 PM	11/17/14 3:00 AM	0.03	0.38	158,606.65	0.29	0.16	12 hr	CloudBurst	60,270.53
CSO050	11/23/14 1:45 PM	11/23/14 11:30 PM	0.01	0.60	300,070.09	0.97	0.26	12 hr	CloudBurst	180,042.06
CSO050	12/1/14 1:00 AM	12/1/14 4:15 PM	0.07	1.01	185,785.58	0.97	0.39	24 hr	CloudBurst	187,643.44
CSO050	12/4/14 7:15 PM	12/4/14 8:30 PM	0.13	0.64	9,365.22	1.32	0.21	48 hr	CloudBurst	5,993.74
CSO050	12/5/14 6:00 AM	12/5/14 11:15 AM	0.01	0.64	6,477.20	1.57	0.21	48 hr	CloudBurst	4,145.41
CSO050	12/5/14 7:45 PM	12/6/14 7:45 AM	0.02	0.64	1,717,921.12	1.65	0.21	48 hr	CloudBurst	1,099,469.52
CSO050	12/16/14 3:00 AM	12/16/14 5:15 AM	0.35	0.09	108,018.98	-	0.05	3 hr	CloudBurst	9,721.71
CSO050	12/22/14 10:15 PM	12/23/14 12:00 AM	0.01	0.22	173,224.57	-	0.14	3 hr	CloudBurst	38,109.41
CSO050	12/23/14 7:45 PM	12/23/14 8:30 PM	0.01	0.10	192,702.91	-	0.05	1 hr	CloudBurst	19,270.29
CSO050	12/24/14 12:15 PM	12/24/14 2:15 PM	0.13	0.19	224,948.30	-	0.17	3 hr	Atlas14	42,740.18
CSO050	12/27/14 4:45 PM	12/28/14 1:45 AM	0.32	0.32	125,626.17	-	0.27	1 hr	CloudBurst	40,200.37
CSO050	1/3/15 10:45 AM	1/3/15 3:15 PM	0.34	0.43	50,162.96	0.28	0.16	24 hr	Atlas	21,570.07
CSO050	1/4/15 12:45 AM	1/4/15 3:45 AM	0.01	0.43	43,218.56	0.44	0.16	24 hr	Atlas	18,583.98
CSO050	2/1/15 12:00 PM	2/1/15 6:45 PM	0.03	0.43	97,098.45	0.62	0.20	3 hr	Atlas	41,752.33
CSO050	2/21/15 1:30 PM	2/21/15 4:45 PM	0.27	1.24	9,628.89	1.51	0.49	12 hr	Atlas	11,939.82
CSO050	3/3/15 6:30 PM	3/4/15 4:30 PM	0.15	1.95	300,979.17	1.56	0.63	48 hr	Atlas	586,909.38
CSO050	3/10/15 6:45 AM	3/10/15 5:30 PM	0.02	1.11	1,015,897.85	3.06	0.50	12 hr	Atlas	1,127,646.61
CSO050	3/13/15 10:00 AM	3/14/15 9:30 AM	0.10	2.10	740,147.07	3.19	0.78	24 hr	Atlas	1,554,308.84
CSO050	3/24/15 7:45 PM	3/24/15 8:15 PM	0.18	0.15	50,263.75	0.31	0.09	1 hr	Atlas	7,539.56
CSO050	3/26/15 3:00 AM	3/26/15 6:15 AM	0.14	0.61	162,393.56	0.75	0.28	3 hr	Atlas	99,060.07
CSO050	4/2/15 9:30 AM	4/3/15 5:30 PM	0.53	4.74	786,760.74	4.90	7.98	24 hr	Cloudburst	3,729,245.89
CSO050	4/7/15 7:30 AM	4/7/15 8:45 PM	0.01	1.08	654,097.55	5.83	0.53	1 hr	Atlas	706,425.35
CSO050	4/8/15 3:45 PM	4/8/15 3:45 PM	0.22	0.05	19,741.67	5.87	0.03	1 hr	Atlas	987.08
CSO050	4/9/15 11:30 AM	4/10/15 10:30 AM	0.41	0.17	5,656,935.84	5.89	0.15	1 hr	Atlas	961,679.09
CSO050	4/13/15 8:15 PM	4/13/15 10:00 PM	0.64	0.78	44,833.91	1.88	0.30	24 hr	Atlas	34,970.45
CSO050	4/14/15 6:45 AM	4/14/15 12:45 PM	0.05	0.78	74,353.56	2.26	0.30	24 hr	Atlas	57,995.77
CSO050	4/19/15 6:45 AM	4/19/15 6:30 PM	0.22	0.67	206,536.88	1.51	0.28	12 hr	Atlas	138,379.71
CSO050	4/20/15 3:30 AM	4/20/15 3:30 AM	0.50	0.10	23,343.13	1.60	0.08	1 hr	Atlas	2,334.31
CSO050	4/25/15 9:00 AM	4/25/15 9:15 AM	0.09	0.30	46,168.44	0.97	0.12	24 hr	Atlas	13,850.53
CSO050	4/25/15 6:45 PM	4/25/15 6:45 PM	0.07	0.30	28,340.97	1.05	0.12	24 hr	Atlas	8,502.29
CSO050	4/30/15 12:45 PM	4/30/15 12:45 PM	0.03	0.14	55,020.98	0.44	0.11	1 hr	Atlas	7,702.94
CSO050	5/9/15 4:00 AM	5/9/15 4:00 AM	0.08	0.08	16,521.74	0.08	0.05	3 hr	Atlas	1,321.74
CSO050	5/16/15 11:15 AM	5/16/15 2:00 PM	0.38	0.70	298,538.97	0.81	0.41	3 hr	Atlas	208,977.28
CSO050	5/17/15 2:15 PM	5/17/15 2:15 PM	0.19	0.09	57,832.29	0.91	0.04	12 hr	Atlas	5,204.91
CSO050	5/25/15 7:00 AM	5/25/15 8:30 AM	0.13	0.30	35,022.08	0.27	0.14	12 hr	Atlas	10,506.62
CSO050	5/26/15 1:45 PM	5/26/15 2:15 PM	0.28	0.17	199,536.00	0.43	0.10	1 hr	Atlas	33,921.12
CSO050	5/27/15 1:45 PM	5/27/15 1:45 PM	0.14	0.09	1,199.31	0.56	0.08	1 hr	Atlas	107.94
CSO050	5/30/15 3:00 PM	5/30/15 4:00 PM	0.92	0.15	30,277.85	0.65	0.07	12 hr	Atlas	4,541.68
CSO050	6/8/15 7:00 AM	6/8/15 8:15 AM	0.45	0.16	255,910.10	0.23	0.10	3 hr	Atlas	40,945.62
CSO050	6/17/15 4:30 AM	6/17/15 7:00 AM	0.98	0.67	222,787.42	0.67	0.37	3 hr	Atlas	149,267.57
CSO050	6/18/15 5:00 PM	6/18/15 7:45 PM	0.02	0.76	352,735.30	1.41	0.43	1 hr	Atlas	268,078.83
CSO050	6/20/15 1:15 AM	6/20/15 9:30 AM	0.14	1.04	508,446.82	2.55	0.41	12 hr	Atlas	528,784.70
CSO050	6/22/15 5:45 AM	6/22/15 6:45 AM	1.33	0.23	54,537.23	2.76	0.11	3 hr	Atlas	12,543.56
CSO050	6/25/15 11:45 PM	6/26/15 2:45 AM	0.55	0.61	94,269.18	1.92	0.33	6 hr	Atlas	57,504.20

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO050	6/26/15 5:00 PM	6/27/15 12:15 AM	0.01	1.04	528,705.74	2.91	0.55	1 hr	Atlas	549,853.97
CSO050	6/29/15 1:15 PM	6/29/15 2:45 PM	0.96	0.22	171,203.75	1.87	0.12	1 hr	Atlas	37,664.83
CSO050 Count										77.00
CSO050 Total Volume (GAL)										18,823,539.31
CSO051	7/7/14 7:30 PM	7/7/14 7:30 PM	0.01	0.26	60,697.63	0.75	0.23	1 hr	CloudBurst	15,781.38
CSO051	7/13/14 10:45 PM	7/13/14 10:45 PM	0.04	0.83	23,925.46	0.89	0.40	1 hr	CloudBurst	19,858.13
CSO051	7/14/14 8:00 PM	7/14/14 8:00 PM	0.01	0.45	1,914.84	1.47	0.30	3 hr	CloudBurst	861.68
CSO051	7/26/14 9:45 PM	7/26/14 9:45 PM	0.01	1.15	10,883.32	0.56	0.52	12 hr	CloudBurst	12,515.81
CSO051	7/27/14 7:45 AM	7/27/14 7:45 AM	0.01	1.15	2,507.89	1.17	0.52	12 hr	CloudBurst	2,884.07
CSO051	8/8/14 6:15 AM	8/8/14 7:15 AM	0.01	0.73	32,852.50	0.53	0.35	6 hr	CloudBurst	23,982.32
CSO051	8/10/14 4:00 AM	8/10/14 4:30 AM	0.01	0.49	68,675.21	1.31	0.34	1 hr	CloudBurst	33,650.86
CSO051	8/11/14 3:15 PM	8/11/14 3:15 PM	0.01	0.40	21,495.96	1.73	0.29	1 hr	CloudBurst	8,598.39
CSO051	8/17/14 11:00 PM	8/17/14 11:00 PM	0.01	0.70	8,438.13	1.10	0.27	24 hr	CloudBurst	5,906.69
CSO051	8/22/14 7:15 PM	8/22/14 7:15 PM	0.05	0.24	329.43	0.91	0.17	1 hr	CloudBurst	79.06
CSO051	8/23/14 3:45 PM	8/23/14 8:00 PM	0.05	1.00	23,738.27	1.59	0.46	3 hr	CloudBurst	23,738.27
CSO051	8/27/14 5:15 PM	8/27/14 5:15 PM	0.02	0.28	16,130.21	1.63	0.24	1 hr	CloudBurst	4,516.46
CSO051	8/30/14 3:15 PM	8/30/14 4:00 PM	0.16	0.92	4,915.23	2.11	0.61	1 hr	CloudBurst	4,522.01
CSO051	9/2/14 8:15 AM	9/2/14 8:15 AM	0.02	0.60	2,213.56	1.59	0.31	6 hr	CloudBurst	1,328.14
CSO051	9/11/14 12:30 AM	9/11/14 2:45 AM	0.01	2.22	32,312.95	1.90	2.43	3 hr	Atlas14	71,734.75
CSO051	10/6/14 7:45 AM	10/6/14 7:45 AM	0.01	0.55	1,734.00	0.39	0.18	48 hr	CloudBurst	953.70
CSO051	10/10/14 1:45 AM	10/10/14 2:45 AM	0.01	1.00	24,939.69	1.44	0.44	3 hr	CloudBurst	24,939.69
CSO051	10/13/14 5:15 AM	10/13/14 5:15 AM	0.01	0.37	1,728.52	1.83	0.23	3 hr	CloudBurst	639.55
CSO051	10/13/14 11:30 PM	10/13/14 11:30 PM	0.01	1.08	4,401.02	1.94	0.49	12 hr	CloudBurst	4,753.10
CSO051	10/14/14 7:45 AM	10/14/14 9:15 AM	0.01	1.08	1,695.47	2.64	0.49	12 hr	CloudBurst	1,831.10
CSO051	11/23/14 5:30 PM	11/23/14 5:30 PM	0.04	0.60	3,416.93	0.68	0.26	12 hr	CloudBurst	2,050.16
CSO051	12/6/14 1:00 AM	12/6/14 3:00 AM	0.02	0.64	35,530.34	1.65	0.21	48 hr	CloudBurst	22,739.42
CSO051	3/10/15 11:00 AM	3/10/15 2:30 PM	0.01	1.11	41,030.08	3.04	0.50	12 hr	Atlas	45,543.38
CSO051	3/13/15 10:30 AM	3/13/15 10:30 AM	0.01	2.10	80.00	1.44	0.78	24 hr	Atlas	168.01
CSO051	3/14/15 1:00 AM	3/14/15 4:15 AM	0.01	2.10	4,127.50	3.14	0.78	24 hr	Atlas	8,667.74
CSO051	4/2/15 10:30 AM	4/2/15 3:00 PM	0.18	4.74	5,511.79	1.13	7.98	24 hr	Cloudburst	26,125.88
CSO051	4/3/15 12:15 AM	4/3/15 3:30 PM	0.01	4.74	77,985.90	4.73	7.98	24 hr	Cloudburst	369,653.18
CSO051	4/7/15 9:15 AM	4/7/15 5:00 PM	0.03	1.08	27,643.04	5.79	0.53	1 hr	Atlas	29,854.48
CSO051	4/9/15 11:30 AM	4/9/15 11:30 AM	0.01	0.17	28,942.83	5.64	0.15	1 hr	Atlas	4,920.28
CSO051	4/10/15 2:15 AM	4/10/15 3:15 AM	0.09	0.24	35,062.68	3.61	0.16	3 hr	Atlas	8,415.04
CSO051	4/13/15 8:45 PM	4/13/15 8:45 PM	0.01	0.78	799.76	1.86	0.30	24 hr	Atlas	623.81
CSO051	4/19/15 6:15 PM	4/19/15 6:15 PM	0.04	0.67	2,235.42	1.50	0.28	12 hr	Atlas	1,497.73
CSO051	4/30/15 12:45 PM	4/30/15 12:45 PM	0.01	0.14	51,587.28	0.44	0.11	1 hr	Atlas	7,222.22
CSO051	5/16/15 11:45 AM	5/16/15 12:00 PM	0.01	0.70	13,785.04	0.54	0.41	3 hr	Atlas	9,649.53
CSO051	5/17/15 2:15 PM	5/17/15 2:15 PM	0.06	0.09	8,271.41	0.91	0.04	12 hr	Atlas	744.43
CSO051	5/25/15 8:15 AM	5/25/15 8:15 AM	0.01	0.30	2,916.91	0.25	0.14	12 hr	Atlas	875.07
CSO051	5/26/15 2:00 PM	5/26/15 2:00 PM	0.08	0.17	32,323.77	0.43	0.10	1 hr	Atlas	5,495.04
CSO051	6/8/15 7:00 AM	6/8/15 8:15 AM	0.15	0.16	53,657.94	0.23	0.10	3 hr	Atlas	8,585.27
CSO051	6/17/15 4:45 AM	6/17/15 6:00 AM	0.01	0.67	17,395.18	0.61	0.37	3 hr	Atlas	11,654.77
CSO051	6/18/15 5:15 PM	6/18/15 5:45 PM	0.14	0.76	10,948.53	1.27	0.43	1 hr	Atlas	8,320.89
CSO051	6/20/15 1:30 AM	6/20/15 5:15 AM	0.19	1.04	12,916.07	2.23	0.41	12 hr	Atlas	13,432.71
CSO051	6/26/15 5:00 PM	6/26/15 5:30 PM	0.64	1.04	16,458.18	2.50	0.55	1 hr	Atlas	17,116.51
CSO051	6/29/15 1:45 PM	6/29/15 1:45 PM	0.32	0.22	6,957.29	1.87	0.12	1 hr	Atlas	1,530.60
CSO051 Count										43.00
CSO051 Total Volume (GAL)										867,961.32
CSO053	7/2/14 4:15 PM	7/2/14 4:30 PM	0.03	0.18	127,085.48	0.51	0.16	1 hr	CloudBurst	22,875.39
CSO053	7/7/14 7:30 PM	7/7/14 7:45 PM	0.01	0.31	804,058.23	0.78	0.27	1 hr	CloudBurst	249,258.05
CSO053	7/13/14 10:45 PM	7/13/14 11:15 PM	0.47	0.92	191,357.02	1.31	0.52	1 hr	CloudBurst	176,048.46
CSO053	7/14/14 8:00 PM	7/14/14 8:15 PM	0.01	0.46	75,994.13	1.76	0.30	3 hr	CloudBurst	34,957.30
CSO053	7/26/14 9:30 PM	7/26/14 10:45 PM	0.01	0.89	233,937.32	0.51	0.40	12 hr	CloudBurst	208,204.21
CSO053	7/27/14 7:00 AM	7/27/14 9:15 AM	0.01	0.89	74,381.38	0.96	0.40	12 hr	CloudBurst	66,199.43

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO053	8/8/14 5:45 AM	8/8/14 7:45 AM	0.07	0.79	522,653.18	0.59	0.38	6 hr	CloudBurst	412,896.01
CSO053	8/10/14 4:00 AM	8/10/14 4:45 AM	0.01	0.73	566,609.94	1.62	0.57	1 hr	CloudBurst	413,625.26
CSO053	8/11/14 3:15 PM	8/11/14 3:30 PM	0.01	0.33	168,252.26	1.94	0.23	1 hr	CloudBurst	55,523.25
CSO053	8/17/14 9:30 AM	8/17/14 10:15 AM	0.01	0.68	44,504.92	0.89	0.26	24 hr	CloudBurst	30,263.34
CSO053	8/17/14 11:00 PM	8/17/14 11:15 PM	0.05	0.68	57,313.99	1.01	0.26	24 hr	CloudBurst	38,973.51
CSO053	8/22/14 7:15 PM	8/22/14 7:15 PM	0.06	0.16	345,976.10	0.80	0.10	3 hr	CloudBurst	55,356.18
CSO053	8/23/14 3:45 PM	8/24/14 6:30 AM	0.02	0.83	412,370.50	1.68	0.43	3 hr	CloudBurst	342,267.52
CSO053	8/26/14 8:00 PM	8/26/14 8:00 PM	0.28	0.11	61,143.65	1.11	0.10	1 hr	CloudBurst	6,725.80
CSO053	8/27/14 5:15 PM	8/27/14 5:15 PM	0.01	0.11	784,063.49	1.21	0.08	1 hr	CloudBurst	86,246.98
CSO053	8/30/14 3:15 PM	8/30/14 4:00 PM	0.05	0.72	190,993.96	1.57	0.44	1 hr	CloudBurst	137,515.65
CSO053	9/2/14 8:15 AM	9/2/14 8:30 AM	0.29	0.49	30,864.69	1.21	0.25	3 hr	CloudBurst	15,123.70
CSO053	9/11/14 12:15 AM	9/11/14 6:00 AM	0.06	2.08	258,577.47	2.01	1.63	3 hr	Atlas14	537,841.14
CSO053	10/3/14 3:30 AM	10/3/14 3:30 AM	0.01	0.34	17,396.91	0.04	0.13	24 hr	CloudBurst	5,914.95
CSO053	10/6/14 7:45 AM	10/6/14 9:45 AM	0.01	0.35	218,881.58	0.64	0.18	3 hr	CloudBurst	76,608.55
CSO053	10/7/14 11:45 AM	10/7/14 12:00 PM	0.02	0.18	86,018.52	0.88	0.14	1 hr	CloudBurst	15,483.33
CSO053	10/10/14 1:45 AM	10/10/14 3:00 AM	0.01	1.18	308,188.33	1.69	0.54	3 hr	Atlas14	363,662.23
CSO053	10/10/14 9:15 PM	10/10/14 9:15 PM	0.05	1.18	349.59	1.70	0.54	3 hr	Atlas14	412.51
CSO053	10/13/14 4:15 AM	10/13/14 6:00 AM	0.09	0.33	173,995.56	2.02	0.21	3 hr	Atlas14	57,418.54
CSO053	10/13/14 11:00 PM	10/14/14 10:00 AM	0.08	1.07	136,838.57	2.76	0.48	12 hr	CloudBurst	146,417.26
CSO053	11/23/14 5:30 PM	11/23/14 11:00 PM	0.03	0.65	138,574.14	1.11	0.29	12 hr	CloudBurst	90,073.19
CSO053	12/1/14 2:15 AM	12/1/14 4:30 AM	0.01	1.02	9,306.94	0.40	0.39	24 hr	CloudBurst	9,493.08
CSO053	12/5/14 11:15 PM	12/6/14 6:00 AM	0.03	0.65	366,656.79	1.67	0.21	48 hr	CloudBurst	238,326.91
CSO053	12/22/14 10:30 PM	12/22/14 10:30 PM	0.01	0.22	59,611.12	-	0.14	3 hr	CloudBurst	13,114.45
CSO053	12/23/14 8:30 PM	12/23/14 8:30 PM	0.01	0.10	27,291.98	-	0.05	1 hr	CloudBurst	2,729.20
CSO053	12/24/14 1:30 PM	12/24/14 1:30 PM	0.61	0.19	15,924.89	-	0.17	3 hr	Atlas14	3,025.73
CSO053	12/28/14 1:00 AM	12/28/14 1:15 AM	0.01	0.32	28,114.29	-	0.27	1 hr	CloudBurst	8,996.57
CSO053	1/3/15 10:45 AM	1/3/15 4:30 PM	0.01	0.41	21,142.17	0.32	0.15	24 hr	Atlas	8,668.29
CSO053	2/1/15 1:00 PM	2/1/15 1:30 PM	0.03	0.43	1,630.38	0.50	0.21	3 hr	Atlas	701.06
CSO053	3/3/15 6:45 PM	3/4/15 12:45 PM	0.01	1.92	45,168.90	1.35	0.62	48 hr	Atlas	86,724.28
CSO053	3/10/15 7:00 AM	3/10/15 2:00 PM	0.24	1.15	169,272.40	3.05	0.52	12 hr	Atlas	194,663.26
CSO053	3/13/15 10:15 AM	3/14/15 4:00 AM	0.01	2.00	90,582.35	3.08	0.75	24 hr	Atlas	181,164.70
CSO053	3/24/15 8:00 PM	3/24/15 8:00 PM	0.08	0.14	3,290.33	0.32	0.09	1 hr	Atlas	460.65
CSO053	3/26/15 4:15 AM	3/26/15 6:00 AM	0.01	0.62	115,606.42	0.80	0.30	3 hr	Atlas	71,675.98
CSO053	4/2/15 9:45 AM	4/3/15 5:00 PM	0.05	4.94	295,079.42	5.10	9.44	24 hr	Cloudburst	1,457,692.35
CSO053	4/7/15 9:15 AM	4/7/15 5:15 PM	0.01	1.11	307,820.86	6.04	0.54	1 hr	Atlas	341,681.16
CSO053	4/9/15 11:30 AM	4/9/15 11:30 AM	0.07	0.26	181,689.45	5.99	0.23	1 hr	Atlas	47,239.26
CSO053	4/10/15 2:15 AM	4/10/15 2:45 AM	0.46	0.22	297,118.74	3.74	0.14	3 hr	Atlas	65,366.12
CSO053	4/13/15 8:15 PM	4/13/15 9:00 PM	0.23	0.66	42,051.10	1.88	0.25	24 hr	Atlas	27,753.73
CSO053	4/14/15 7:00 AM	4/14/15 7:00 AM	0.09	0.66	9,169.54	1.97	0.25	24 hr	Atlas	6,051.90
CSO053	4/19/15 7:00 AM	4/19/15 6:15 PM	0.28	0.68	66,744.92	1.40	0.28	12 hr	Atlas	45,386.55
CSO053	4/20/15 3:30 AM	4/20/15 3:30 AM	0.01	0.10	21,049.90	1.50	0.09	1 hr	Atlas	2,104.99
CSO053	4/25/15 9:00 AM	4/25/15 9:15 AM	0.01	0.17	41,202.70	0.98	0.08	12 hr	Atlas	7,004.46
CSO053	4/30/15 12:45 PM	4/30/15 12:45 PM	0.01	0.17	91,163.24	0.42	0.15	1 hr	Atlas	15,497.75
CSO053	5/16/15 11:30 AM	5/16/15 1:15 PM	0.01	0.60	193,881.98	0.61	0.35	3 hr	Atlas	116,329.19
CSO053	5/17/15 2:15 PM	5/17/15 2:15 PM	0.24	0.08	878,140.43	0.76	0.04	12 hr	Atlas	70,251.23
CSO053	5/25/15 8:15 AM	5/25/15 8:15 AM	0.02	0.28	34,714.36	0.24	0.13	12 hr	Atlas	9,720.02
CSO053	5/26/15 2:00 PM	5/26/15 2:00 PM	0.75	0.16	313,318.24	0.40	0.10	1 hr	Atlas	50,130.92
CSO053	6/8/15 7:00 AM	6/8/15 8:15 AM	0.29	0.18	403,635.27	0.23	0.11	3 hr	Atlas	72,654.35
CSO053	6/17/15 4:45 AM	6/17/15 6:15 AM	0.74	0.64	228,839.71	0.65	0.35	3 hr	Atlas	146,457.41
CSO053	6/18/15 5:15 PM	6/18/15 5:45 PM	0.01	0.67	274,633.77	1.19	0.38	1 hr	Atlas	184,004.63
CSO053	6/20/15 1:30 AM	6/20/15 8:15 AM	0.07	0.95	257,868.55	2.33	0.39	12 hr	Atlas	244,975.12
CSO053	6/22/15 6:00 AM	6/22/15 6:15 AM	1.30	0.24	4,006.42	2.51	0.11	3 hr	Atlas	961.54
CSO053	6/25/15 11:45 PM	6/26/15 1:00 AM	0.33	0.57	82,633.61	1.63	0.31	6 hr	Atlas	47,101.16
CSO053	6/26/15 5:00 PM	6/27/15 12:00 AM	0.01	1.05	311,800.23	2.79	0.54	1 hr	Atlas	327,390.24
CSO053	6/29/15 1:15 PM	6/29/15 2:45 PM	0.02	0.25	85,305.36	1.87	0.12	1 hr	Atlas	21,326.34

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO053 Count										61.00
CSO053 Total Volume (GAL)										7,772,716.29
CSO054	7/1/14 7:45 PM	7/1/14 10:30 PM	0.49	0.29	2,921.66	0.34	0.19	3 hr	Atlas14	847.28
CSO054	7/2/14 4:00 PM	7/2/14 4:45 PM	0.01	0.18	52,179.34	0.52	0.16	1 hr	CloudBurst	9,392.28
CSO054	7/7/14 7:30 PM	7/7/14 8:15 PM	0.02	0.31	106,102.59	0.78	0.27	1 hr	CloudBurst	32,891.80
CSO054	7/8/14 6:30 AM	7/8/14 7:30 AM	0.01	0.38	5,733.85	1.16	0.33	1 hr	CloudBurst	2,178.86
CSO054	7/13/14 10:45 PM	7/14/14 4:15 AM	0.05	0.92	56,631.64	1.48	0.52	1 hr	CloudBurst	52,101.11
CSO054	7/14/14 7:00 PM	7/14/14 8:45 PM	0.03	0.46	12,732.50	2.07	0.30	3 hr	CloudBurst	5,856.95
CSO054	7/26/14 9:30 PM	7/27/14 9:45 AM	0.01	0.89	38,278.47	0.96	0.40	12 hr	CloudBurst	34,067.84
CSO054	8/8/14 5:30 AM	8/8/14 11:00 AM	0.17	0.79	47,831.54	0.81	0.38	6 hr	CloudBurst	37,786.91
CSO054	8/10/14 3:45 AM	8/10/14 5:30 AM	0.04	0.73	50,296.34	1.62	0.57	1 hr	CloudBurst	36,716.33
CSO054	8/11/14 2:00 PM	8/11/14 4:00 PM	0.16	0.33	9,187.37	1.94	0.23	1 hr	CloudBurst	3,031.83
CSO054	8/16/14 11:15 PM	8/17/14 11:00 AM	0.03	0.68	6,350.81	1.63	0.26	24 hr	CloudBurst	4,318.55
CSO054	8/17/14 8:00 PM	8/18/14 12:00 AM	0.01	0.68	11,262.21	1.01	0.26	24 hr	CloudBurst	7,658.30
CSO054	8/20/14 3:45 PM	8/20/14 3:45 PM	0.10	0.01	34,314.58	0.69	0.01	6 hr	CloudBurst	343.15
CSO054	8/22/14 7:00 PM	8/22/14 7:45 PM	0.11	0.16	233,563.35	0.81	0.10	3 hr	CloudBurst	37,370.14
CSO054	8/23/14 3:30 PM	8/23/14 11:00 PM	0.01	0.83	71,003.61	1.67	0.43	3 hr	CloudBurst	58,933.00
CSO054	8/26/14 7:45 PM	8/26/14 8:30 PM	0.19	0.11	42,183.43	1.11	0.10	1 hr	CloudBurst	4,640.18
CSO054	8/27/14 5:00 PM	8/27/14 6:00 PM	0.39	0.11	55,251.99	1.21	0.08	1 hr	CloudBurst	6,077.72
CSO054	8/30/14 3:00 PM	8/30/14 6:30 PM	0.03	0.72	11,344.03	1.67	0.44	1 hr	CloudBurst	8,167.70
CSO054	9/2/14 6:30 AM	9/2/14 3:30 PM	0.20	0.49	9,813.65	1.43	0.25	3 hr	CloudBurst	4,808.69
CSO054	9/11/14 12:00 AM	9/11/14 8:30 AM	0.34	2.08	64,591.12	2.08	1.63	3 hr	Atlas14	134,349.52
CSO054	9/15/14 10:30 PM	9/15/14 10:45 PM	0.01	0.03	38,664.58	2.11	0.03	1 hr	CloudBurst	1,159.94
CSO054	9/21/14 6:15 AM	9/21/14 6:15 AM	0.06	0.02	25,718.75	0.04	0.01	48 hr	CloudBurst	514.38
CSO054	10/3/14 2:45 AM	10/3/14 8:15 PM	0.11	0.32	60,808.41	0.34	0.12	24 hr	Atlas	19,458.69
CSO054	10/6/14 6:30 AM	10/6/14 12:00 PM	0.03	0.35	86,989.95	0.66	0.18	3 hr	CloudBurst	30,446.48
CSO054	10/7/14 11:15 AM	10/7/14 12:30 PM	0.03	0.18	11,443.87	0.88	0.14	1 hr	CloudBurst	2,059.90
CSO054	10/10/14 1:45 AM	10/10/14 4:30 AM	0.04	1.18	44,547.48	1.72	0.54	3 hr	Atlas14	52,566.02
CSO054	10/10/14 5:00 PM	10/10/14 10:00 PM	0.23	1.18	833.74	1.81	0.54	3 hr	Atlas14	983.81
CSO054	10/13/14 4:15 AM	10/13/14 7:45 AM	0.07	0.33	15,845.86	2.05	0.21	3 hr	Atlas14	5,229.14
CSO054	10/13/14 11:00 PM	10/14/14 11:15 AM	0.51	1.07	16,422.15	2.77	0.48	12 hr	CloudBurst	17,571.70
CSO054	10/15/14 5:45 PM	10/15/14 5:45 PM	0.23	0.15	1,563.96	2.72	0.07	12 hr	CloudBurst	234.59
CSO054	10/20/14 6:45 AM	10/20/14 6:45 AM	0.07	0.07	1,992.86	1.30	0.06	1 hr	CloudBurst	139.50
CSO054	10/20/14 7:45 PM	10/20/14 7:45 PM	0.08	0.06	1,142.53	1.35	0.05	1 hr	CloudBurst	68.55
CSO054	10/28/14 12:00 PM	10/28/14 1:00 PM	0.49	0.12	749.83	0.11	0.07	6 hr	CloudBurst	89.98
CSO054	10/31/14 12:30 PM	10/31/14 12:30 PM	0.17	0.12	2,998.61	0.17	0.05	24 hr	CloudBurst	359.83
CSO054	11/5/14 6:45 PM	11/5/14 6:45 PM	0.01	0.01	8,272.92	0.26	0.01	6 hr	CloudBurst	82.73
CSO054	11/16/14 11:30 PM	11/17/14 4:00 AM	0.03	0.46	290.26	0.38	0.19	12 hr	CloudBurst	133.52
CSO054	11/23/14 1:45 PM	11/23/14 10:45 PM	0.31	0.65	9,419.07	1.10	0.29	12 hr	CloudBurst	6,122.40
CSO054	12/1/14 12:45 AM	12/1/14 5:00 PM	0.03	1.02	7,395.91	0.97	0.39	24 hr	CloudBurst	7,543.82
CSO054	12/5/14 5:45 AM	12/6/14 6:00 AM	0.04	0.65	55,708.91	1.67	0.21	48 hr	CloudBurst	36,210.79
CSO054	12/16/14 2:45 AM	12/16/14 5:45 AM	0.15	0.09	10,874.54	-	0.05	3 hr	Atlas	978.71
CSO054	12/22/14 10:15 PM	12/22/14 11:45 PM	0.38	0.22	6,331.77	-	0.14	3 hr	CloudBurst	1,392.99
CSO054	12/23/14 7:30 PM	12/23/14 8:15 PM	0.35	0.10	4,171.15	-	0.05	1 hr	CloudBurst	417.11
CSO054	12/24/14 1:15 PM	12/24/14 1:30 PM	0.01	0.19	2,511.46	-	0.17	3 hr	Atlas14	477.18
CSO054	12/27/14 4:45 PM	12/28/14 1:30 AM	0.01	0.32	24,562.34	-	0.27	1 hr	CloudBurst	7,859.95
CSO054	1/3/15 5:45 AM	1/3/15 1:15 PM	0.73	0.41	2,988.47	0.16	0.15	24 hr	Atlas	1,225.27
CSO054	1/4/15 12:45 AM	1/4/15 4:00 AM	0.23	0.41	510.62	0.42	0.15	24 hr	Atlas	209.35
CSO054	1/12/15 5:15 AM	1/12/15 5:15 AM	0.05	0.16	152.60	0.14	0.06	24 hr	Atlas	24.42
CSO054	1/18/15 3:00 AM	1/18/15 3:15 AM	0.11	0.07	2,463.99	0.23	0.06	1 hr	Atlas	172.48
CSO054	1/25/15 8:45 PM	1/25/15 9:30 PM	0.21	0.17	747.98	0.22	0.07	12 hr	Atlas	127.16
CSO054	1/29/15 5:00 AM	1/29/15 5:00 AM	0.15	0.04	3,100.00	0.27	0.03	1 hr	Atlas	124.00
CSO054	2/1/15 11:00 AM	2/1/15 5:30 PM	0.51	0.43	4,211.58	0.59	0.21	3 hr	Atlas	1,810.98
CSO054	3/3/15 6:15 PM	3/4/15 3:15 PM	0.01	1.92	6,667.06	1.47	0.62	48 hr	Atlas	12,800.76
CSO054	3/10/15 6:30 AM	3/10/15 2:30 PM	0.01	1.15	56,839.46	3.06	0.52	12 hr	Atlas	65,365.38

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO054	3/13/15 9:45 AM	3/14/15 9:30 AM	0.01	2.00	13,339.21	3.13	0.75	24 hr	Atlas	26,678.43
CSO054	3/19/15 6:45 PM	3/19/15 7:15 PM	0.04	0.20	2,475.31	2.17	0.08	12 hr	Atlas	495.06
CSO054	3/24/15 2:15 PM	3/24/15 8:00 PM	0.01	0.14	4,265.10	0.32	0.09	1 hr	Atlas	597.11
CSO054	3/26/15 3:00 AM	3/26/15 5:45 AM	0.01	0.62	1,656.47	0.79	0.30	3 hr	Atlas	1,027.01
CSO054	4/2/15 9:15 AM	4/3/15 4:45 PM	0.19	4.94	103,621.41	5.10	9.44	24 hr	Cloudburst	511,889.74
CSO054	4/7/15 4:15 AM	4/7/15 5:15 PM	0.38	1.11	58,435.96	6.04	0.54	1 hr	Atlas	64,863.91
CSO054	4/8/15 3:30 PM	4/8/15 3:30 PM	0.68	0.06	2,282.12	6.10	0.04	1 hr	Atlas	136.93
CSO054	4/9/15 11:30 AM	4/9/15 12:15 PM	1.01	0.26	1,858.41	5.99	0.23	1 hr	Atlas	483.19
CSO054	4/10/15 1:45 AM	4/10/15 3:00 AM	0.13	0.22	135,951.63	4.11	0.14	3 hr	Atlas	29,909.36
CSO054	4/13/15 7:45 PM	4/13/15 9:00 PM	0.06	0.66	2,270.33	1.88	0.25	24 hr	Atlas	1,498.42
CSO054	4/14/15 6:30 AM	4/14/15 11:30 AM	0.03	0.66	1,155.73	2.24	0.25	24 hr	Atlas	762.78
CSO054	4/19/15 6:15 AM	4/19/15 6:00 PM	0.01	0.68	6,360.68	1.39	0.28	12 hr	Atlas	4,325.26
CSO054	4/20/15 3:15 AM	4/20/15 3:15 AM	0.36	0.10	2,525.00	1.49	0.09	1 hr	Atlas	252.50
CSO054	4/25/15 8:45 AM	4/25/15 9:15 AM	0.31	0.17	4,308.39	0.98	0.08	12 hr	Atlas	732.43
CSO054	4/25/15 6:45 PM	4/25/15 6:45 PM	0.14	0.08	913.93	1.01	0.05	3 hr	Atlas	73.11
CSO054	4/30/15 12:30 PM	4/30/15 1:45 PM	0.01	0.17	18,386.27	0.42	0.15	1 hr	Atlas	3,125.67
CSO054	5/9/15 3:15 AM	5/9/15 4:00 AM	0.01	0.09	12,824.65	0.08	0.05	3 hr	Atlas	1,154.22
CSO054	5/11/15 5:30 PM	5/11/15 5:30 PM	0.03	0.06	22,666.49	0.15	0.05	1 hr	Atlas	1,359.99
CSO054	5/16/15 11:15 AM	5/16/15 3:15 PM	0.01	0.60	55,599.05	0.70	0.35	3 hr	Atlas	33,359.43
CSO054	5/17/15 2:00 PM	5/17/15 3:00 PM	0.27	0.08	169,962.75	0.76	0.04	12 hr	Atlas	13,597.02
CSO054	5/25/15 6:15 AM	5/25/15 10:00 AM	0.88	0.28	17,005.80	0.29	0.13	12 hr	Atlas	4,761.63
CSO054	5/26/15 2:00 PM	5/26/15 2:45 PM	0.33	0.16	12,961.65	0.40	0.10	1 hr	Atlas	2,073.86
CSO054	5/27/15 1:45 PM	5/27/15 2:00 PM	0.99	0.10	7,181.98	0.54	0.09	1 hr	Atlas	718.20
CSO054	6/8/15 7:00 AM	6/8/15 9:30 AM	0.02	0.18	39,237.04	0.25	0.11	3 hr	Atlas	7,062.67
CSO054	6/17/15 4:45 AM	6/17/15 7:30 AM	0.24	0.64	9,717.17	0.66	0.35	3 hr	Atlas	6,218.99
CSO054	6/17/15 5:15 PM	6/17/15 5:15 PM	0.11	0.07	599.26	0.72	0.05	1 hr	Atlas	41.95
CSO054	6/18/15 4:15 PM	6/18/15 8:45 PM	1.31	0.67	17,532.73	1.30	0.38	1 hr	Atlas	11,746.93
CSO054	6/20/15 12:30 AM	6/20/15 9:45 AM	0.54	0.95	29,436.44	2.35	0.39	12 hr	Atlas	27,964.62
CSO054	6/22/15 6:00 AM	6/22/15 6:45 AM	0.01	0.24	2,825.26	2.55	0.11	3 hr	Atlas	678.06
CSO054	6/25/15 11:45 PM	6/26/15 4:30 AM	0.03	0.57	6,015.55	1.85	0.31	6 hr	Atlas	3,428.86
CSO054	6/26/15 5:00 PM	6/27/15 1:15 AM	0.05	1.05	62,052.11	2.81	0.54	1 hr	Atlas	65,154.71
CSO054	6/29/15 3:45 AM	6/29/15 3:45 AM	0.05	0.25	6,564.67	1.81	0.12	1 hr	Atlas	1,641.17
CSO054	6/29/15 1:30 PM	6/29/15 3:00 PM	0.21	0.25	9,580.33	1.87	0.12	1 hr	Atlas	2,395.08
CSO054 Count										86.00
CSO054 Total Volume (GAL)										1,585,707.93
CSO055	7/7/14 7:30 PM	7/7/14 7:30 PM	0.04	0.31	107,046.13	0.76	0.27	1 hr	CloudBurst	33,184.30
CSO055	7/13/14 10:45 PM	7/13/14 10:45 PM	0.01	0.92	2,811.19	1.27	0.52	1 hr	CloudBurst	2,586.29
CSO055	7/26/14 9:45 PM	7/26/14 9:45 PM	0.15	0.89	57,897.86	0.36	0.40	12 hr	CloudBurst	51,529.09
CSO055	7/27/14 7:45 AM	7/27/14 7:45 AM	0.05	0.89	2,683.44	0.93	0.40	12 hr	CloudBurst	2,388.26
CSO055	8/8/14 6:00 AM	8/8/14 8:00 AM	0.10	0.79	71,018.70	0.59	0.38	6 hr	CloudBurst	56,104.78
CSO055	8/10/14 4:00 AM	8/10/14 4:30 AM	0.19	0.73	146,237.13	1.60	0.57	1 hr	CloudBurst	106,753.10
CSO055	8/11/14 3:15 PM	8/11/14 3:15 PM	0.01	0.33	20,097.10	1.94	0.23	1 hr	CloudBurst	6,632.04
CSO055	8/17/14 9:30 AM	8/17/14 9:30 AM	0.01	0.68	1,962.50	0.78	0.26	24 hr	CloudBurst	1,334.50
CSO055	8/17/14 11:00 PM	8/17/14 11:00 PM	0.01	0.68	53,706.08	1.01	0.26	24 hr	CloudBurst	36,520.14
CSO055	8/23/14 3:45 PM	8/23/14 10:00 PM	0.01	0.83	36,957.76	1.61	0.43	3 hr	CloudBurst	30,674.94
CSO055	8/27/14 5:15 PM	8/27/14 5:15 PM	0.01	0.11	12,278.69	1.21	0.08	1 hr	CloudBurst	1,350.66
CSO055	8/30/14 3:15 PM	8/30/14 4:15 PM	0.16	0.72	20,387.63	1.57	0.44	1 hr	CloudBurst	14,679.09
CSO055	9/11/14 12:30 AM	9/11/14 6:15 AM	0.01	2.08	49,756.31	2.02	1.63	3 hr	Atlas14	103,493.13
CSO055	10/6/14 9:30 AM	10/6/14 9:30 AM	0.01	0.35	4,168.78	0.63	0.18	3 hr	CloudBurst	1,459.07
CSO055	10/10/14 1:45 AM	10/10/14 3:15 AM	0.01	1.18	13,946.12	1.71	0.54	3 hr	Atlas14	16,456.42
CSO055	10/13/14 4:15 AM	10/13/14 4:15 AM	0.01	0.33	3,824.91	1.83	0.21	3 hr	Atlas14	1,262.22
CSO055	10/13/14 11:30 PM	10/13/14 11:30 PM	0.01	1.07	2,611.39	1.98	0.48	12 hr	CloudBurst	2,794.19
CSO055	10/14/14 8:15 AM	10/14/14 8:15 AM	0.08	1.07	822.72	2.66	0.48	12 hr	CloudBurst	880.31
CSO055	12/6/14 2:00 AM	12/6/14 3:00 AM	0.02	0.65	28,585.19	1.67	0.21	48 hr	CloudBurst	18,580.37
CSO055	12/22/14 10:30 PM	12/22/14 10:30 PM	0.01	0.22	5,178.08	-	0.14	3 hr	CloudBurst	1,139.18

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO055	3/4/15 2:30 AM	3/4/15 6:00 AM	0.01	1.92	12,146.59	0.90	0.62	48 hr	Atlas	23,321.46
CSO055	3/10/15 11:00 AM	3/10/15 12:15 PM	0.01	1.15	3,523.78	2.79	0.52	12 hr	Atlas	4,052.34
CSO055	3/14/15 1:15 AM	3/14/15 3:45 AM	0.26	2.00	445.66	3.07	0.75	24 hr	Atlas	891.32
CSO055	4/3/15 12:15 AM	4/3/15 4:45 AM	0.01	4.94	7,366.58	3.77	9.44	24 hr	Cloudburst	36,390.90
CSO055	4/7/15 9:15 AM	4/7/15 9:30 AM	0.04	1.11	4,177.92	5.69	0.54	1 hr	Atlas	4,637.49
CSO055	5/16/15 11:45 AM	5/16/15 11:45 AM	0.24	0.60	9,128.98	0.44	0.35	3 hr	Atlas	5,477.39
CSO055	5/17/15 2:15 PM	5/17/15 2:15 PM	0.01	0.08	115,765.10	0.76	0.04	12 hr	Atlas	9,261.21
CSO055	6/17/15 4:45 AM	6/17/15 4:45 AM	0.06	0.64	5,596.61	0.38	0.35	3 hr	Atlas	3,581.83
CSO055	6/18/15 5:15 PM	6/18/15 5:15 PM	0.01	0.67	17,134.87	1.07	0.38	1 hr	Atlas	11,480.37
CSO055	6/20/15 1:30 AM	6/20/15 5:15 AM	0.01	0.95	1,787.59	2.04	0.39	12 hr	Atlas	1,698.21
CSO055	6/26/15 5:15 PM	6/26/15 5:30 PM	0.01	1.05	10,220.03	2.38	0.54	1 hr	Atlas	10,731.03
CSO055 Count										31.00
CSO055 Total Volume (GAL)										601,325.63
CSO057	7/7/14 7:30 PM	7/7/14 7:30 PM	0.01	0.48	1,755.64	0.80	0.42	1 hr	CloudBurst	842.71
CSO057	7/13/14 10:45 PM	7/13/14 10:45 PM	0.05	0.74	4,899.62	1.26	0.37	1 hr	CloudBurst	3,625.72
CSO057	7/26/14 9:45 PM	7/26/14 9:45 PM	0.01	0.99	4,133.35	0.39	0.44	12 hr	CloudBurst	4,092.02
CSO057	8/8/14 5:45 AM	8/8/14 6:45 AM	0.18	0.80	8,827.25	0.54	0.35	6 hr	CloudBurst	7,061.80
CSO057	8/10/14 4:00 AM	8/10/14 4:15 AM	0.01	0.91	3,034.32	1.74	0.75	1 hr	CloudBurst	2,761.23
CSO057	8/11/14 3:15 PM	8/11/14 3:15 PM	0.01	0.43	1,278.88	2.19	0.36	1 hr	CloudBurst	549.92
CSO057	8/17/14 9:30 AM	8/17/14 9:30 AM	0.01	0.72	481.00	0.93	0.28	24 hr	CloudBurst	346.32
CSO057	8/23/14 7:45 PM	8/23/14 7:45 PM	0.01	0.73	9,612.91	1.38	0.38	3 hr	Atlas14	7,017.43
CSO057	8/27/14 2:45 PM	8/27/14 2:45 PM	0.01	0.12	7,000.43	1.20	0.08	3 hr	CloudBurst	840.05
CSO057	8/30/14 4:00 PM	8/30/14 4:00 PM	0.01	0.58	37.75	1.25	0.37	1 hr	CloudBurst	21.90
CSO057	9/11/14 1:00 AM	9/11/14 2:15 AM	0.01	1.88	3,656.82	1.58	1.27	3 hr	Atlas14	6,874.81
CSO057	10/7/14 11:45 AM	10/7/14 11:45 AM	0.01	0.25	285.79	0.71	0.21	1 hr	CloudBurst	71.45
CSO057	10/10/14 1:45 AM	10/10/14 2:45 AM	0.01	1.17	4,532.10	1.47	0.52	3 hr	CloudBurst	5,302.56
CSO057	10/13/14 11:30 PM	10/13/14 11:30 PM	0.01	1.01	16.96	2.16	0.45	12 hr	CloudBurst	17.12
CSO057	10/14/14 7:45 AM	10/14/14 7:45 AM	0.04	1.01	808.38	2.74	0.45	12 hr	CloudBurst	816.47
CSO057	12/6/14 1:45 AM	12/6/14 3:00 AM	0.01	0.69	10,348.64	1.57	0.22	48 hr	CloudBurst	7,140.56
CSO057	4/2/15 2:45 PM	4/2/15 3:00 PM	0.01	5.15	841.11	1.09	10.13	24 hr	Cloudburst	4,331.71
CSO057	4/3/15 12:15 AM	4/3/15 4:30 AM	0.01	5.15	1,223.97	3.90	10.13	24 hr	Cloudburst	6,303.43
CSO057	4/7/15 9:15 AM	4/7/15 9:15 AM	0.01	0.90	8,532.25	5.73	0.45	1 hr	Atlas	7,679.02
CSO057	4/10/15 2:15 AM	4/10/15 2:15 AM	0.01	0.21	16,843.20	3.37	0.13	3 hr	Atlas	3,537.07
CSO057	5/16/15 11:45 AM	5/16/15 11:45 AM	0.01	0.54	11.82	0.43	0.30	3 hr	Atlas	6.39
CSO057	5/26/15 2:00 PM	5/26/15 2:00 PM	0.05	0.16	779.88	0.40	0.10	1 hr	Atlas	124.78
CSO057	6/18/15 5:15 PM	6/18/15 5:15 PM	0.01	1.53	2,168.18	1.05	0.50	48 hr	Atlas	3,317.32
CSO057	6/25/15 11:45 PM	6/25/15 11:45 PM	0.04	0.50	684.33	1.48	0.26	6 hr	Atlas	342.17
CSO057	6/26/15 5:00 PM	6/26/15 5:00 PM	0.01	0.89	4,831.62	2.07	0.46	1 hr	Atlas	4,300.15
CSO057 Count										25.00
CSO057 Total Volume (GAL)										77,324.10
CSO058	7/2/14 4:15 PM	7/2/14 4:15 PM	0.01	0.06	2,110.07	0.25	0.04	3 hr	CloudBurst	126.60
CSO058	7/7/14 7:30 PM	7/7/14 7:30 PM	0.01	0.85	4,167.59	1.06	0.74	1 hr	CloudBurst	3,542.45
CSO058	7/13/14 11:00 PM	7/13/14 11:00 PM	0.01	0.99	6,432.00	2.09	0.48	3 hr	Atlas14	6,367.68
CSO058	7/14/14 8:00 PM	7/14/14 8:00 PM	0.01	0.25	2,363.29	1.77	0.18	1 hr	CloudBurst	590.82
CSO058	7/26/14 9:45 PM	7/26/14 10:15 PM	0.05	1.34	2,676.87	0.49	0.62	12 hr	CloudBurst	3,587.01
CSO058	7/27/14 7:00 AM	7/27/14 7:45 AM	0.05	1.34	459.72	1.27	0.62	12 hr	CloudBurst	616.03
CSO058	8/8/14 5:45 AM	8/8/14 7:30 AM	0.02	0.77	123,397.10	0.59	0.37	6 hr	CloudBurst	95,015.76
CSO058	8/10/14 4:00 AM	8/10/14 4:30 AM	0.27	0.89	4,638.99	1.77	0.73	1 hr	CloudBurst	4,128.70
CSO058	8/23/14 8:00 PM	8/23/14 8:00 PM	0.01	0.65	447.92	1.38	0.34	3 hr	CloudBurst	291.15
CSO058	8/30/14 4:00 PM	8/30/14 4:15 PM	0.29	0.58	66,962.02	1.17	0.35	1 hr	CloudBurst	38,837.97
CSO058	9/11/14 12:30 AM	9/11/14 6:15 AM	0.01	1.78	208,615.40	1.73	0.99	3 hr	CloudBurst	371,335.41
CSO058	10/6/14 7:45 AM	10/6/14 7:45 AM	0.01	0.18	243.34	0.35	0.08	6 hr	CloudBurst	43.80
CSO058	10/10/14 1:45 AM	10/10/14 3:15 AM	0.01	1.20	72,737.94	1.51	0.54	3 hr	CloudBurst	87,285.53
CSO058	10/13/14 4:15 AM	10/13/14 6:00 AM	0.01	0.44	1,102.60	2.05	0.28	3 hr	CloudBurst	485.15
CSO058	10/13/14 11:30 PM	10/13/14 11:30 PM	0.01	0.95	373.28	2.16	0.42	12 hr	CloudBurst	354.61

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO058	10/14/14 7:45 AM	10/14/14 8:30 AM	0.02	0.95	10,558.41	2.77	0.42	12 hr	CloudBurst	10,030.49
CSO058	11/23/14 5:30 PM	11/23/14 10:45 PM	0.03	0.70	431.38	1.05	0.30	12 hr	CloudBurst	301.97
CSO058	12/6/14 2:00 AM	12/6/14 3:15 AM	0.07	0.68	73,914.73	1.56	0.22	48 hr	CloudBurst	50,262.02
CSO058	2/21/15 3:15 PM	2/21/15 4:00 PM	0.02	1.28	163.88	1.52	0.49	24 hr	Atlas	209.76
CSO058	3/3/15 6:45 PM	3/4/15 5:15 PM	0.01	1.82	2,728.14	1.44	0.59	24 hr	Atlas	4,965.22
CSO058	3/10/15 6:45 AM	3/10/15 2:30 PM	0.01	1.19	11,794.21	2.99	0.54	12 hr	Atlas	14,035.12
CSO058	3/13/15 10:30 AM	3/14/15 4:15 AM	0.24	1.89	1,046.95	3.02	0.72	24 hr	Atlas	1,978.73
CSO058	3/26/15 4:15 AM	3/26/15 11:30 AM	0.01	0.51	9,782.58	0.74	0.21	3 hr	Atlas	4,989.11
CSO058	4/2/15 10:30 AM	4/2/15 3:15 PM	0.06	5.08	545.44	1.12	9.60	24 hr	Cloudburst	2,770.84
CSO058	4/3/15 12:15 AM	4/3/15 5:00 PM	0.07	5.08	4,212.07	5.10	9.60	24 hr	Cloudburst	21,397.30
CSO058	4/7/15 9:15 AM	4/7/15 5:45 PM	0.01	0.89	4,903.00	5.97	0.43	1 hr	Atlas	4,363.67
CSO058	4/9/15 11:30 AM	4/9/15 11:45 AM	0.03	0.11	6,922.82	5.81	0.10	1 hr	Atlas	761.51
CSO058	4/10/15 2:15 AM	4/10/15 2:30 AM	0.22	0.21	2,860.22	3.41	0.13	3 hr	Atlas	600.65
CSO058	4/13/15 8:45 PM	4/13/15 9:15 PM	0.05	0.40	2,502.50	1.53	0.15	24 hr	Atlas	1,001.00
CSO058	4/19/15 7:30 AM	4/19/15 2:30 PM	0.03	0.73	492.85	1.06	0.31	12 hr	Atlas	359.78
CSO058	4/30/15 12:45 PM	4/30/15 12:45 PM	0.94	0.19	1,704.93	0.39	0.17	1 hr	Atlas	323.94
CSO058	5/16/15 11:45 AM	5/16/15 11:45 AM	0.32	0.56	471.48	0.40	0.28	3 hr	Atlas	264.03
CSO058	5/17/15 2:15 PM	5/17/15 2:15 PM	0.74	0.04	5,589.58	0.64	0.02	12 hr	Atlas	223.58
CSO058	5/26/15 2:00 PM	5/26/15 2:00 PM	0.30	0.16	6,104.49	0.42	0.10	1 hr	Atlas	976.72
CSO058	6/8/15 7:00 AM	6/8/15 8:15 AM	0.20	0.25	1,257.17	0.29	0.13	6 hr	Atlas	314.29
CSO058	6/17/15 4:45 AM	6/17/15 6:00 AM	0.70	0.65	812.56	0.61	0.37	3 hr	Atlas	528.17
CSO058	6/18/15 5:15 PM	6/18/15 5:45 PM	0.35	1.48	3,789.57	1.14	0.48	48 hr	Atlas	5,608.56
CSO058	6/20/15 1:30 AM	6/20/15 8:00 AM	0.01	1.48	736.99	2.20	0.48	48 hr	Atlas	1,090.74
CSO058	6/25/15 11:45 PM	6/25/15 11:45 PM	0.01	0.50	2,483.21	1.45	0.26	6 hr	Atlas	1,241.60
CSO058	6/26/15 5:00 PM	6/27/15 12:00 AM	0.02	0.92	7,591.87	2.50	0.49	1 hr	Atlas	6,984.52
CSO058	6/29/15 1:45 PM	6/29/15 1:45 PM	0.29	0.24	389.58	1.65	0.14	1 hr	Atlas	93.50
CSO058 Count										41.00
CSO058 Total Volume (GAL)										748,285.50
CSO083	7/13/14 11:00 PM	7/13/14 11:00 PM	0.01	0.68	1,896.37	1.89	0.39	1 hr	CloudBurst	1,289.53
CSO083	7/26/14 9:30 PM	7/26/14 10:00 PM	0.01	1.22	133.03	0.50	0.56	12 hr	CloudBurst	162.30
CSO083	8/11/14 3:30 PM	8/11/14 3:30 PM	0.01	0.44	132,026.01	2.04	0.37	1 hr	CloudBurst	58,091.45
CSO083	8/22/14 7:15 PM	8/22/14 7:15 PM	0.01	0.45	181,642.29	1.18	0.35	1 hr	CloudBurst	81,739.03
CSO083	9/11/14 12:30 AM	9/11/14 2:15 AM	0.01	1.93	33,689.22	1.64	1.43	3 hr	Atlas14	65,020.19
CSO083	3/10/15 12:30 PM	3/10/15 12:30 PM	0.01	1.21	468.97	2.68	0.55	12 hr	Atlas	567.46
CSO083	4/2/15 3:15 PM	4/2/15 3:15 PM	0.02	4.71	4,426.87	0.88	8.02	6 hr	Cloudburst	20,850.56
CSO083	4/3/15 12:30 AM	4/3/15 11:15 AM	0.01	4.71	88,126.25	4.36	8.02	6 hr	Cloudburst	415,074.65
CSO083	4/7/15 5:00 PM	4/7/15 5:00 PM	0.01	0.86	12,578.88	5.55	0.39	1 hr	Atlas	10,817.83
CSO083	4/9/15 11:30 AM	4/9/15 11:30 AM	0.07	0.26	69,025.68	5.53	0.23	1 hr	Atlas	17,946.68
CSO083	5/17/15 2:15 PM	5/17/15 2:15 PM	0.01	0.08	300,300.00	0.50	0.05	1 hr	Atlas	24,024.00
CSO083	5/26/15 1:45 PM	5/26/15 2:00 PM	0.01	0.28	269,070.50	0.48	0.20	1 hr	Atlas	75,339.74
CSO083	6/17/15 4:45 AM	6/17/15 4:45 AM	0.45	0.54	4,145.91	0.33	0.29	3 hr	Atlas	2,238.79
CSO083	6/18/15 5:30 PM	6/18/15 5:30 PM	0.01	1.61	6,135.58	1.15	0.52	48 hr	Atlas	9,878.28
CSO083	6/26/15 12:00 AM	6/26/15 12:00 AM	0.01	0.50	3,250.29	1.52	0.27	6 hr	Atlas	1,625.15
CSO083	6/26/15 5:15 PM	6/26/15 5:15 PM	0.01	0.90	69,673.22	2.24	0.52	1 hr	Atlas	62,705.89
CSO083 Count										16.00
CSO083 Total Volume (GAL)										847,371.53
CSO084	8/23/14 8:00 PM	8/23/14 8:30 PM	0.03	0.55	2,900.30	1.53	0.25	3 hr	CloudBurst	1,595.17
CSO084	8/27/14 5:15 PM	8/27/14 5:30 PM	0.05	0.24	27,260.37	1.39	0.17	1 hr	CloudBurst	6,542.49
CSO084	8/30/14 3:45 PM	8/30/14 4:00 PM	0.29	0.50	3,999.71	1.18	0.30	1 hr	CloudBurst	1,999.85
CSO084	9/2/14 8:30 AM	9/3/14 1:45 AM	0.01	0.34	16,153.34	1.12	0.22	3 hr	CloudBurst	5,492.14
CSO084	9/11/14 1:45 AM	9/11/14 2:45 AM	0.01	1.93	1,883.76	1.67	1.43	3 hr	Atlas14	3,635.66
CSO084	10/7/14 12:00 PM	10/7/14 12:00 PM	0.02	0.18	4,856.89	0.82	0.16	1 hr	CloudBurst	874.24
CSO084	10/10/14 1:45 AM	10/10/14 2:30 AM	0.01	1.17	1,458.53	1.50	0.54	3 hr	CloudBurst	1,706.48
CSO084	10/14/14 8:00 AM	10/14/14 8:30 AM	0.01	0.96	753.20	2.71	0.43	12 hr	CloudBurst	723.07
CSO084	11/23/14 5:45 PM	11/23/14 5:45 PM	0.72	0.68	1,066.68	0.78	0.31	12 hr	CloudBurst	725.34

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO084	12/6/14 3:30 AM	12/6/14 6:15 AM	0.04	1.84	1,715.90	1.40	0.20	48 hr	CloudBurst	3,157.25
CSO084	12/16/14 5:15 AM	12/16/14 5:15 AM	0.01	0.09	9,023.26	-	0.05	3 hr	CloudBurst	812.09
CSO084	12/28/14 1:15 AM	12/28/14 2:45 PM	0.03	0.32	805,020.44	-	0.27	1 hr	CloudBurst	257,606.54
CSO084	3/3/15 11:30 PM	3/4/15 5:30 AM	0.02	1.67	4,248.43	0.79	0.54	48 hr	Atlas	7,094.88
CSO084	3/10/15 11:00 AM	3/10/15 2:15 PM	0.01	1.21	7,081.09	2.85	0.55	12 hr	Atlas	8,568.12
CSO084	3/13/15 10:45 AM	3/14/15 4:15 AM	0.11	1.72	5,087.70	2.87	0.65	24 hr	Atlas	8,750.84
CSO084	3/26/15 4:45 AM	3/26/15 4:45 AM	0.01	0.47	179.32	0.55	0.18	12 hr	Atlas	84.28
CSO084	4/2/15 11:00 AM	4/2/15 11:15 AM	0.56	4.71	567.07	0.49	8.02	6 hr	Cloudburst	2,670.91
CSO084	4/3/15 2:15 AM	4/3/15 6:30 PM	0.25	4.71	31,816.86	4.73	8.02	6 hr	Cloudburst	149,857.40
CSO084	4/7/15 4:45 PM	4/7/15 5:30 PM	0.14	0.86	1,679.76	5.58	0.39	1 hr	Atlas	1,444.59
CSO084	4/8/15 6:30 PM	4/8/15 6:30 PM	0.73	0.11	11,880.21	5.68	0.06	3 hr	Atlas	1,306.82
CSO084	4/9/15 12:00 PM	4/9/15 12:00 PM	0.01	0.26	4,747.68	5.60	0.23	1 hr	Atlas	1,234.40
CSO084	4/10/15 2:45 AM	4/10/15 2:45 AM	0.01	0.17	26.47	3.08	0.10	3 hr	Atlas	4.50
CSO084	4/13/15 8:30 PM	4/13/15 8:45 PM	0.68	0.37	5,663.94	1.48	0.15	6 hr	Atlas	2,095.66
CSO084	4/19/15 2:45 PM	4/19/15 2:45 PM	0.03	0.70	609.08	1.08	0.29	12 hr	Atlas	426.35
CSO084	5/27/15 1:45 PM	5/27/15 1:45 PM	0.01	0.10	9,148.75	0.63	0.09	1 hr	Atlas	914.88
CSO084	6/8/15 8:15 AM	6/8/15 8:30 AM	0.01	0.22	4,542.38	0.24	0.12	6 hr	Atlas	999.32
CSO084	6/17/15 5:15 AM	6/17/15 6:00 AM	0.01	0.54	6,936.42	0.54	0.29	3 hr	Atlas	3,745.67
CSO084	6/18/15 5:00 PM	6/18/15 6:15 PM	0.01	1.61	542.24	1.17	0.52	48 hr	Atlas	873.00
CSO084	6/20/15 1:30 AM	6/20/15 8:30 AM	0.01	1.61	3,806.20	2.30	0.52	48 hr	Atlas	6,127.98
CSO084	6/26/15 12:15 AM	6/26/15 12:15 AM	0.01	0.50	619.73	1.53	0.27	6 hr	Atlas	309.86
CSO084	6/26/15 5:30 PM	6/26/15 5:45 PM	0.01	0.90	3,503.28	2.26	0.52	1 hr	Atlas	3,152.95
CSO084 Count										31.00
CSO084 Total Volume (GAL)										484,532.72
CSO088	7/7/14 7:45 PM	7/7/14 8:00 PM	0.07	0.49	70,738.05	0.82	0.43	1 hr	CloudBurst	34,661.65
CSO088	7/13/14 11:00 PM	7/13/14 11:15 PM	0.09	0.62	39,799.14	1.24	0.28	1 hr	CloudBurst	24,675.47
CSO088	7/14/14 8:15 PM	7/14/14 8:30 PM	2.24	0.34	21,471.67	1.31	0.23	3 hr	Atlas14	7,300.37
CSO088	7/26/14 10:00 PM	7/26/14 10:15 PM	2.33	0.94	10,110.47	0.47	0.42	12 hr	CloudBurst	9,503.84
CSO088	7/27/14 7:15 AM	7/27/14 8:15 AM	0.08	0.94	16,042.17	0.93	0.42	12 hr	CloudBurst	15,079.64
CSO088	8/8/14 6:30 AM	8/8/14 7:45 AM	0.20	0.84	112,744.29	0.63	0.41	6 hr	CloudBurst	94,705.21
CSO088	8/10/14 4:15 AM	8/10/14 4:15 AM	0.92	0.53	7,856.87	1.41	0.44	1 hr	CloudBurst	4,164.14
CSO088	8/17/14 9:45 AM	8/17/14 9:45 AM	0.01	0.70	7,575.82	0.82	0.26	24 hr	CloudBurst	5,303.08
CSO088	8/22/14 7:15 PM	8/22/14 7:15 PM	0.01	0.31	13,410.62	0.95	0.21	1 hr	CloudBurst	4,157.29
CSO088	8/23/14 4:00 PM	8/23/14 8:30 PM	0.01	0.48	37,746.11	1.31	0.23	3 hr	Atlas14	18,118.13
CSO088	8/27/14 3:00 PM	8/27/14 3:00 PM	0.03	0.18	23,512.51	1.15	0.11	3 hr	CloudBurst	4,232.25
CSO088	8/30/14 3:30 PM	8/30/14 3:45 PM	0.29	0.55	64,598.36	1.21	0.34	1 hr	CloudBurst	35,529.10
CSO088	9/11/14 12:45 AM	9/11/14 2:30 AM	0.02	1.92	106,876.10	1.65	1.40	3 hr	Atlas14	205,202.11
CSO088	10/10/14 2:15 AM	10/10/14 3:15 AM	0.01	0.83	61,998.57	1.62	0.53	3 hr	CloudBurst	51,458.81
CSO088	10/13/14 11:45 PM	10/14/14 8:30 AM	0.01	0.95	12,802.97	2.63	0.43	12 hr	CloudBurst	12,162.83
CSO088	11/23/14 5:45 PM	11/23/14 5:45 PM	0.01	0.81	546.84	0.86	0.37	12 hr	CloudBurst	442.94
CSO088	12/6/14 2:15 AM	12/6/14 6:00 AM	0.01	0.65	72,057.12	1.51	0.21	48 hr	CloudBurst	46,837.13
CSO088	3/4/15 4:00 AM	3/4/15 5:30 AM	0.04	1.70	19,060.92	0.79	0.55	24 hr	Atlas	32,403.57
CSO088	3/6/15 7:45 AM	3/6/15 9:30 AM	0.05	Discharge		1.75	Snowmelt			11,422.59
CSO088	3/7/15 3:00 PM	3/7/15 5:15 PM	0.01	0.04	7,856.87	1.75	0.03	1 hr	Atlas	11,667.37
CSO088	3/10/15 7:15 AM	3/12/15 1:00 PM	0.01	1.09	351,593.96	2.79	0.49	12 hr	Atlas	383,237.42
CSO088	3/13/15 12:15 PM	3/15/15 8:15 PM	0.01	1.69	252,810.21	2.78	0.63	24 hr	Atlas	427,249.25
CSO088	3/20/15 12:00 AM	3/20/15 2:00 AM	0.19	0.19	859,066.47	1.88	0.07	12 hr	Atlas	163,222.63
CSO088	4/2/15 11:00 AM	4/2/15 3:45 PM	0.01	3.87	10,358.09	0.97	3.28	24 hr	Cloudburst	40,085.80
CSO088	4/3/15 12:30 AM	4/3/15 10:30 PM	0.01	3.87	586,454.10	3.89	3.28	24 hr	Cloudburst	2,269,577.36
CSO088	5/17/15 2:45 PM	5/17/15 2:45 PM	0.07	0.10	97,305.85	0.60	0.05	1 hr	Atlas	9,730.58
CSO088	5/26/15 2:15 PM	5/26/15 2:30 PM	0.04	0.41	41,186.10	0.61	0.31	1 hr	Atlas	16,886.30
CSO088	6/17/15 5:15 AM	6/17/15 5:30 AM	0.36	0.62	13,401.84	0.50	0.36	3 hr	Atlas	8,309.14

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO088	6/18/15 5:30 PM	6/18/15 6:15 PM	0.01	1.47	97,372.14	1.13	0.48	48 hr	Atlas	143,137.05
CSO088	6/20/15 2:00 AM	6/20/15 9:00 AM	0.16	1.47	39,790.93	2.19	0.48	48 hr	Atlas	58,492.67
CSO088	6/26/15 5:30 PM	6/26/15 6:00 PM	0.06	0.95	49,880.53	2.11	0.51	1 hr	Atlas	47,386.50
CSO088 Count										31.00
CSO088 Total Volume (GAL)										4,196,342.18
CSO091	7/2/14 4:15 PM	7/2/14 4:30 PM	0.01	0.11	9,377.18	0.36	0.10	1 hr	CloudBurst	1,031.49
CSO091	7/7/14 7:30 PM	7/7/14 7:30 PM	0.02	0.80	15,704.36	1.06	0.70	1 hr	CloudBurst	12,563.49
CSO091	7/13/14 10:15 PM	7/13/14 11:00 PM	0.01	0.76	31,400.00	1.81	0.40	3 hr	Atlas14	23,864.00
CSO091	7/14/14 8:00 PM	7/14/14 8:00 PM	0.02	0.13	10,676.28	1.32	0.10	1 hr	CloudBurst	1,387.92
CSO091	7/26/14 9:30 PM	7/26/14 9:45 PM	0.01	1.19	56,199.76	0.44	0.54	12 hr	CloudBurst	66,877.72
CSO091	7/27/14 6:30 AM	7/27/14 7:15 AM	0.01	1.19	2,968.06	0.98	0.54	12 hr	CloudBurst	3,531.99
CSO091	8/8/14 5:30 AM	8/8/14 7:15 AM	0.01	0.98	61,257.13	0.74	0.45	6 hr	CloudBurst	60,031.99
CSO091	8/10/14 3:45 AM	8/10/14 4:00 AM	0.02	0.41	5,001.02	1.37	0.34	1 hr	CloudBurst	2,050.42
CSO091	8/11/14 3:15 PM	8/11/14 3:30 PM	0.01	0.44	107,562.75	1.85	0.35	1 hr	CloudBurst	47,327.61
CSO091	8/17/14 9:30 AM	8/17/14 10:00 AM	0.01	0.71	1,586.46	1.02	0.27	24 hr	CloudBurst	1,126.39
CSO091	8/22/14 7:00 PM	8/22/14 7:15 PM	0.06	0.42	62,321.35	1.10	0.30	1 hr	CloudBurst	26,174.97
CSO091	8/23/14 3:45 PM	8/23/14 8:15 PM	0.06	0.59	25,489.96	1.54	0.27	12 hr	CloudBurst	15,039.08
CSO091	8/27/14 4:45 PM	8/27/14 5:15 PM	0.28	0.26	7,424.80	1.30	0.17	3 hr	Atlas14	1,930.45
CSO091	8/30/14 3:00 PM	8/30/14 3:15 PM	0.01	0.53	113,065.50	1.16	0.32	1 hr	CloudBurst	59,924.72
CSO091	9/2/14 8:15 AM	9/2/14 8:15 AM	0.31	0.36	2,340.28	1.03	0.22	3 hr	CloudBurst	842.50
CSO091	9/11/14 12:30 AM	9/11/14 5:45 AM	0.01	1.92	83,395.75	1.86	1.40	3 hr	Atlas14	160,119.83
CSO091	10/6/14 9:30 AM	10/6/14 9:30 AM	0.01	0.31	45,073.82	0.46	0.18	1 hr	CloudBurst	13,972.89
CSO091	10/7/14 11:45 AM	10/7/14 11:45 AM	0.01	0.16	11,313.02	0.67	0.14	1 hr	CloudBurst	1,810.08
CSO091	10/10/14 1:45 AM	10/10/14 2:45 AM	0.03	0.93	37,623.06	1.24	0.38	3 hr	CloudBurst	34,989.45
CSO091	10/13/14 5:00 AM	10/13/14 5:00 AM	0.01	0.42	6,434.42	1.69	0.27	3 hr	CloudBurst	2,702.46
CSO091	10/13/14 11:15 PM	10/14/14 8:15 AM	0.01	1.10	89,982.99	2.54	0.49	12 hr	CloudBurst	98,981.29
CSO091	11/23/14 5:15 PM	11/23/14 6:00 PM	0.03	0.71	7,460.61	0.88	0.34	6 hr	CloudBurst	5,297.03
CSO091	12/1/14 3:00 AM	12/1/14 4:30 AM	0.07	0.79	2,504.75	0.36	0.30	24 hr	CloudBurst	1,978.75
CSO091	12/5/14 11:00 PM	12/6/14 6:30 AM	0.01	0.69	20,850.71	1.48	0.22	48 hr	CloudBurst	14,386.99
CSO091	12/16/14 5:00 AM	12/16/14 5:00 AM	0.01	0.09	6,228.82	-	0.05	3 hr	CloudBurst	560.59
CSO091	12/28/14 12:45 AM	12/28/14 1:00 AM	0.02	0.32	4,714.36	-	0.27	1 hr	CloudBurst	1,508.59
CSO091	3/3/15 11:30 PM	3/4/15 5:15 AM	0.01	1.61	3,318.92	0.71	0.52	24 hr	Atlas	5,343.47
CSO091	3/10/15 10:45 AM	3/10/15 2:00 PM	0.19	1.26	17,381.52	2.83	0.57	12 hr	Atlas	21,900.72
CSO091	3/13/15 2:45 PM	3/13/15 2:45 PM	0.02	1.67	16.88	1.81	0.63	24 hr	Atlas	28.19
CSO091	3/14/15 12:30 AM	3/14/15 4:00 AM	0.01	1.67	4,815.21	2.87	0.63	24 hr	Atlas	8,041.41
CSO091	3/26/15 4:30 AM	3/26/15 4:45 AM	0.01	0.42	2,224.68	0.49	0.17	12 hr	Atlas	934.36
CSO091	4/2/15 10:45 AM	4/2/15 3:30 PM	0.22	5.12	21,219.30	0.97	13.81	6 hr	Cloudburst	108,642.80
CSO091	4/3/15 12:15 AM	4/3/15 5:00 PM	0.01	5.12	135,695.16	5.13	13.81	6 hr	Cloudburst	694,759.20
CSO091	4/7/15 9:15 AM	4/7/15 5:30 PM	0.01	0.78	60,664.70	5.91	0.33	12 hr	Atlas	47,318.47
CSO091	4/8/15 6:15 PM	4/8/15 6:30 PM	0.04	0.16	171,530.73	6.06	0.09	3 hr	Atlas	27,444.92
CSO091	4/9/15 11:30 AM	4/9/15 12:00 PM	0.01	0.25	65,636.83	5.95	0.22	1 hr	Atlas	16,409.21
CSO091	4/10/15 2:15 AM	4/10/15 2:30 AM	0.38	0.14	89,526.08	3.56	0.09	3 hr	Atlas	12,533.65
CSO091	4/13/15 8:30 PM	4/13/15 9:00 PM	0.03	0.38	15,200.93	1.41	0.16	6 hr	Atlas	5,776.35
CSO091	4/19/15 2:15 PM	4/19/15 2:30 PM	0.06	0.75	29,310.68	1.14	0.31	12 hr	Atlas	21,983.01
CSO091	4/25/15 9:15 AM	4/25/15 9:15 AM	0.31	0.12	929.86	0.94	0.06	6 hr	Atlas	111.58
CSO091	5/17/15 2:15 PM	5/17/15 2:30 PM	0.01	0.10	22,267.50	0.50	0.06	1 hr	Atlas	2,226.75
CSO091	5/26/15 1:45 PM	5/26/15 2:15 PM	0.01	0.24	267,644.93	0.42	0.16	1 hr	Atlas	64,234.78
CSO091	5/27/15 1:45 PM	5/27/15 1:45 PM	0.24	0.14	4,343.38	0.61	0.12	1 hr	Atlas	608.07
CSO091	6/8/15 8:30 AM	6/8/15 8:30 AM	0.14	0.32	50.78	0.32	0.19	3 hr	Atlas	16.25
CSO091	6/17/15 4:45 AM	6/17/15 6:15 AM	0.01	0.60	54,850.63	0.64	0.33	3 hr	Atlas	32,910.38
CSO091	6/18/15 4:15 PM	6/18/15 5:45 PM	0.15	1.84	62,842.60	1.54	0.60	48 hr	Atlas	115,630.38
CSO091	6/20/15 1:30 AM	6/20/15 8:15 AM	0.01	1.84	14,576.47	2.62	0.60	48 hr	Atlas	26,820.70
CSO091	6/26/15 12:00 AM	6/26/15 12:00 AM	0.20	0.62	54,825.64	1.59	0.34	6 hr	Atlas	33,991.89
CSO091	6/26/15 5:00 PM	6/27/15 12:30 AM	0.70	0.81	26,337.09	2.52	0.38	1 hr	Atlas	21,333.05
CSO091	6/29/15 1:30 PM	6/29/15 1:30 PM	0.34	0.18	9,458.56	1.60	0.11	1 hr	Atlas	1,702.54

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO091 Count										50.00
CSO091 Total Volume (GAL)										1,930,714.81
CSO092	7/2/14 4:15 PM	7/2/14 4:15 PM	0.16	0.11	21,378.50	0.34	0.10	1 hr	CloudBurst	2,351.64
CSO092	7/7/14 7:30 PM	7/7/14 7:30 PM	0.07	0.80	31,441.69	1.06	0.70	1 hr	CloudBurst	25,153.35
CSO092	7/13/14 10:15 PM	7/13/14 11:00 PM	0.02	0.76	23,722.61	1.81	0.40	3 hr	Atlas14	18,029.19
CSO092	7/14/14 8:00 PM	7/14/14 8:00 PM	0.02	0.13	1,276.28	1.32	0.10	1 hr	CloudBurst	165.92
CSO092	8/8/14 5:45 AM	8/8/14 7:45 AM	0.01	0.98	35,660.15	0.76	0.45	6 hr	CloudBurst	34,946.95
CSO092	8/10/14 3:45 AM	8/10/14 4:15 AM	0.07	0.41	7,536.81	1.45	0.34	1 hr	CloudBurst	3,090.09
CSO092	8/11/14 3:30 PM	8/11/14 3:30 PM	0.04	0.44	99,787.97	1.85	0.35	1 hr	CloudBurst	43,906.71
CSO092	8/17/14 9:30 AM	8/17/14 10:15 AM	0.06	0.71	9,544.53	1.04	0.27	24 hr	CloudBurst	6,776.61
CSO092	8/22/14 7:15 PM	8/22/14 7:15 PM	0.01	0.42	61,364.69	1.10	0.30	1 hr	CloudBurst	25,773.17
CSO092	8/23/14 8:00 PM	8/23/14 9:30 PM	0.30	0.59	24,552.38	1.63	0.27	12 hr	CloudBurst	14,485.91
CSO092	8/27/14 3:00 PM	8/27/14 5:30 PM	0.01	0.26	71,152.48	1.34	0.17	3 hr	Atlas14	18,499.65
CSO092	8/30/14 3:15 PM	8/30/14 3:15 PM	0.01	0.53	492,016.10	1.16	0.32	1 hr	CloudBurst	260,768.53
CSO092	9/2/14 8:15 AM	9/2/14 8:30 AM	0.32	0.36	53.30	1.06	0.22	3 hr	CloudBurst	19.19
CSO092	9/11/14 12:45 AM	9/11/14 6:00 AM	0.01	1.92	82,349.92	1.87	1.40	3 hr	Atlas14	158,111.85
CSO092	10/7/14 11:45 AM	10/7/14 12:00 PM	0.01	0.16	13,238.48	0.67	0.14	1 hr	CloudBurst	2,118.16
CSO092	10/10/14 1:45 AM	10/10/14 4:15 AM	0.01	0.93	35,256.05	1.27	0.38	3 hr	CloudBurst	32,788.12
CSO092	10/13/14 4:30 AM	10/13/14 7:00 AM	0.03	0.42	6,468.25	1.84	0.27	3 hr	CloudBurst	2,716.67
CSO092	10/13/14 11:30 PM	10/14/14 10:00 AM	0.01	1.10	29,549.75	2.64	0.49	12 hr	CloudBurst	32,504.72
CSO092	10/15/14 5:30 PM	10/15/14 7:45 PM	0.08	0.16	102.73	2.63	0.07	12 hr	CloudBurst	16.44
CSO092	10/20/14 8:00 PM	10/20/14 8:00 PM	0.02	0.04	290.36	1.36	0.03	3 hr	CloudBurst	11.61
CSO092	10/28/14 10:45 AM	10/28/14 10:45 AM	0.01	0.09	51.16	0.01	0.06	3 hr	CloudBurst	4.60
CSO092	11/23/14 2:30 PM	11/23/14 11:00 PM	0.03	0.71	8,082.41	1.10	0.34	6 hr	CloudBurst	5,738.51
CSO092	12/1/14 3:15 AM	12/1/14 3:00 PM	0.01	0.79	6,644.53	0.69	0.30	24 hr	CloudBurst	5,249.18
CSO092	12/5/14 4:30 AM	12/5/14 7:15 AM	0.06	0.69	170.91	1.23	0.22	48 hr	CloudBurst	117.93
CSO092	12/5/14 8:30 PM	12/6/14 7:15 AM	0.10	0.69	58,122.70	1.48	0.22	48 hr	CloudBurst	40,104.66
CSO092	12/16/14 5:15 AM	12/16/14 5:15 AM	0.01	0.12	5,644.53	-	0.07	1 hr	CloudBurst	677.34
CSO092	12/22/14 11:30 PM	12/23/14 12:15 AM	0.01	0.26	185.74	-	0.14	3 hr	CloudBurst	48.29
CSO092	12/23/14 8:00 PM	12/23/14 8:00 PM	0.22	0.12	1,313.19	-	0.08	1 hr	CloudBurst	157.58
CSO092	12/24/14 1:30 PM	12/24/14 1:30 PM	0.01	0.19	90.63	-	0.16	3 hr	CloudBurst	17.22
CSO092	12/27/14 5:15 PM	12/28/14 1:45 AM	0.10	0.32	5,619.20	-	0.30	1 hr	CloudBurst	1,798.15
CSO092	1/3/15 10:45 AM	1/3/15 10:45 AM	0.10	0.32	16.83	0.12	0.12	24 hr	Atlas	5.39
CSO092	1/4/15 3:15 AM	1/4/15 3:15 AM	0.44	0.32	1,045.15	0.32	0.12	24 hr	Atlas	334.45
CSO092	1/12/15 2:15 AM	1/12/15 11:30 AM	0.09	0.16	988.48	0.17	0.06	24 hr	Atlas	158.16
CSO092	2/1/15 1:00 PM	2/1/15 6:00 PM	0.01	0.37	377.90	0.50	0.17	12 hr	Atlas	139.82
CSO092	2/21/15 1:30 PM	2/21/15 7:45 PM	0.01	1.21	326.84	1.39	0.47	24 hr	Atlas	395.48
CSO092	3/3/15 6:45 PM	3/4/15 4:30 PM	0.35	1.61	13,376.73	1.22	0.52	24 hr	Atlas	21,536.54
CSO092	3/6/15 1:15 PM	3/6/15 5:00 PM	0.49	0.02	1,072.92	1.65	0.02	1 hr	Atlas	21.46
CSO092	3/10/15 6:45 AM	3/10/15 3:45 PM	0.11	1.26	65,906.00	2.87	0.57	12 hr	Atlas	83,041.56
CSO092	3/13/15 11:45 AM	3/14/15 5:45 AM	0.45	1.67	11,555.57	2.89	0.63	24 hr	Atlas	19,297.80
CSO092	3/24/15 8:00 PM	3/24/15 8:00 PM	0.01	0.10	381.25	0.27	0.05	1 hr	Atlas	38.13
CSO092	3/26/15 4:30 AM	3/26/15 6:15 AM	0.03	0.42	10,858.66	0.56	0.17	12 hr	Atlas	4,560.64
CSO092	4/2/15 9:45 AM	4/2/15 3:15 PM	0.01	5.12	4,960.10	0.99	13.81	6 hr	Cloudburst	25,395.70
CSO092	4/3/15 12:15 AM	4/3/15 5:15 PM	0.01	5.12	100,040.21	5.13	13.81	6 hr	Cloudburst	512,205.89
CSO092	4/7/15 9:15 AM	4/7/15 5:30 PM	0.35	0.78	27,793.33	5.91	0.33	12 hr	Atlas	21,678.80
CSO092	4/8/15 6:15 PM	4/8/15 6:15 PM	0.01	0.16	69,884.05	6.06	0.09	3 hr	Atlas	11,181.45
CSO092	4/9/15 11:30 AM	4/9/15 12:00 PM	0.01	0.25	26,513.46	5.95	0.22	1 hr	Atlas	6,628.37
CSO092	4/10/15 2:15 AM	4/10/15 3:00 AM	0.39	0.14	30,416.29	3.59	0.09	3 hr	Atlas	4,258.28
CSO092	4/13/15 8:30 PM	4/13/15 9:00 PM	0.21	0.38	3,944.49	1.41	0.16	6 hr	Atlas	1,498.91
CSO092	4/19/15 6:30 AM	4/19/15 2:15 PM	0.26	0.75	13,601.91	1.14	0.31	12 hr	Atlas	10,201.43
CSO092	4/25/15 9:15 AM	4/25/15 9:15 AM	0.91	0.12	5,107.29	0.94	0.06	6 hr	Atlas	612.88
CSO092	4/25/15 7:00 PM	4/25/15 7:00 PM	0.16	0.10	2,460.83	1.00	0.06	3 hr	Atlas	246.08
CSO092	5/9/15 3:15 AM	5/9/15 4:45 AM	0.38	0.11	1,440.06	0.11	0.06	3 hr	Atlas	158.41
CSO092	5/11/15 1:45 PM	5/11/15 5:30 PM	0.75	0.09	1,411.57	0.21	0.08	1 hr	Atlas	127.04

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO092	5/16/15 11:30 AM	5/16/15 1:15 PM	0.01	0.33	227.84	0.36	0.15	3 hr	Atlas	75.19
CSO092	5/25/15 6:15 AM	5/25/15 6:45 AM	0.07	0.23	818.25	0.13	0.11	12 hr	Atlas	188.20
CSO092	5/26/15 1:30 PM	5/26/15 2:00 PM	0.23	0.24	124,914.37	0.42	0.16	1 hr	Atlas	29,979.45
CSO092	5/27/15 1:30 PM	5/27/15 1:30 PM	0.71	0.14	7,246.13	0.59	0.12	1 hr	Atlas	1,014.46
CSO092	6/8/15 6:30 AM	6/8/15 8:15 AM	0.34	0.32	620.18	0.39	0.19	3 hr	Atlas	198.46
CSO092	6/17/15 4:30 AM	6/17/15 5:30 AM	0.01	0.60	62,207.57	0.53	0.33	3 hr	Atlas	37,324.54
CSO092	6/18/15 4:00 PM	6/18/15 5:30 PM	0.02	1.84	82,313.69	1.52	0.60	48 hr	Atlas	151,457.20
CSO092	6/19/15 1:00 PM	6/19/15 1:00 PM	0.03	1.84	497.08	1.74	0.60	48 hr	Atlas	914.63
CSO092	6/20/15 1:30 AM	6/20/15 8:45 AM	0.02	1.84	22,770.48	2.64	0.60	48 hr	Atlas	41,897.67
CSO092	6/22/15 5:45 AM	6/22/15 6:00 AM	0.32	0.22	526.23	2.72	0.10	12 hr	Atlas	115.77
CSO092	6/25/15 11:30 PM	6/25/15 11:45 PM	0.01	0.62	67,108.15	1.58	0.34	6 hr	Atlas	41,607.05
CSO092	6/26/15 5:00 PM	6/27/15 12:45 AM	0.01	0.81	32,210.52	2.55	0.38	1 hr	Atlas	26,090.52
CSO092	6/29/15 1:15 PM	6/29/15 1:30 PM	0.06	0.18	72,811.28	1.60	0.11	1 hr	Atlas	13,106.03
CSO092 Count										66.00
CSO092 Total Volume (GAL)										1,803,839.73
CSO093	5/16/15 11:45 AM	5/16/15 1:30 PM	0.07	0.34	6,442.59	0.40	0.19	3 hr	Atlas	2,190.48
CSO093	5/17/15 2:30 PM	5/17/15 2:30 PM	0.01	0.16	2,852.15	0.60	0.12	1 hr	Atlas	456.34
CSO093	5/25/15 7:15 AM	5/25/15 8:30 AM	0.05	0.27	2,034.61	0.23	0.12	12 hr	Atlas	549.34
CSO093	5/27/15 1:45 PM	5/27/15 1:45 PM	0.01	0.09	3,604.63	0.71	0.08	1 hr	Atlas	324.42
CSO093	5/30/15 4:15 PM	5/30/15 4:15 PM	0.01	0.04	19,035.42	0.73	0.03	1 hr	Atlas	761.42
CSO093	6/8/15 7:15 AM	6/8/15 7:30 AM	0.01	0.20	2,585.36	0.19	0.12	3 hr	Atlas	517.07
CSO093	6/17/15 5:30 AM	6/17/15 6:30 AM	0.04	0.65	8,908.88	0.69	0.37	3 hr	Atlas	5,790.77
CSO093	6/18/15 4:30 PM	6/18/15 5:45 PM	0.05	1.48	14,578.67	1.17	0.48	48 hr	Atlas	21,576.43
CSO093	6/20/15 4:00 AM	6/20/15 11:00 AM	0.29	1.48	1,017.96	2.23	0.48	48 hr	Atlas	1,506.58
CSO093	6/22/15 6:15 AM	6/22/15 6:30 AM	0.01	0.21	4,047.42	2.36	0.10	3 hr	Atlas	849.96
CSO093	6/26/15 1:15 AM	6/26/15 3:00 AM	0.07	0.45	1,192.75	1.57	0.24	6 hr	Atlas	536.74
CSO093	6/26/15 5:15 PM	6/27/15 1:00 AM	0.32	0.88	3,007.49	2.41	0.52	1 hr	Atlas	2,646.59
CSO093	6/29/15 3:45 AM	6/29/15 3:45 AM	0.01	0.34	506.46	1.54	0.19	1 hr	Atlas	172.20
CSO093	6/29/15 1:30 PM	6/29/15 2:45 PM	0.05	0.34	1,073.32	1.67	0.19	1 hr	Atlas	364.93
CSO093 Count										14.00
CSO093 Total Volume (GAL)										38,243.28
CSO097	7/13/14 10:30 PM	7/13/14 11:45 PM	0.10	0.73	25,542.24	1.58	0.39	3 hr	CloudBurst	18,645.83
CSO097	7/13/14 10:45 PM	7/14/14 12:00 AM	0.03	0.73	23,578.32	1.58	0.41	2 hr	Atlas14	17,212.18
CSO097	7/26/14 9:45 PM	7/27/14 9:45 AM	0.03	1.39	21,486.81	1.41	0.63	12 hr	Atlas14	29,866.67
CSO097	8/8/14 6:00 AM	8/8/14 8:30 AM	0.01	1.01	57,227.65	0.86	0.03	2 hr	Atlas14	57,799.92
CSO097	8/11/14 3:30 PM	8/11/14 4:30 PM	0.05	0.32	8,740.92	1.57	0.22	1 hr	Atlas14	2,797.09
CSO097	8/22/14 7:30 PM	8/22/14 7:30 PM	0.11	0.63	1,373.50	1.25	0.48	1 hr	Atlas14	865.30
CSO097	8/23/14 8:15 PM	8/23/14 9:30 PM	0.38	0.61	3,115.80	1.81	0.28	12 hr	Atlas14	1,900.64
CSO097	8/27/14 4:45 PM	8/27/14 6:15 PM	0.58	0.62	83,798.79	1.87	0.41	3 hr	Atlas14	51,955.25
CSO097	8/30/14 3:15 PM	8/30/14 4:30 PM	0.27	0.52	26,899.72	1.58	0.30	1 hr	Atlas14	13,987.85
CSO097	9/2/14 8:30 AM	9/2/14 8:45 AM	0.51	0.30	547.22	1.38	0.20	3 hr	Atlas14	164.17
CSO097	9/11/14 12:45 AM	9/11/14 10:00 AM	0.16	2.03	178,582.64	2.04	1.86	2 hr	Atlas14	362,522.76
CSO097	10/4/14 11:45 PM	10/5/14 8:00 AM	0.05	Discharge		0.25	Inconclusive Data			260,624.93
CSO097	10/10/14 3:00 AM	10/10/14 3:15 AM	0.05	0.82	5,462.40	1.01	0.36	3 hr	CloudBurst	4,479.17
CSO097	10/13/14 6:00 AM	10/13/14 6:00 AM	0.50	0.50	208.33	1.57	0.32	3 hr	CloudBurst	104.17
CSO097	10/13/14 11:30 PM	10/14/14 10:45 AM	0.10	1.21	11,880.17	2.72	0.55	12 hr	CloudBurst	14,375.00
CSO097	1/7/15 6:45 AM	1/8/15 10:30 AM	0.04	0.01	99,225,843.55	0.34	0.01	1 hr	Atlas	992,258.44
CSO097	2/1/15 1:30 PM	2/1/15 2:45 PM	0.01	0.36	30,147.51	0.42	0.17	12 hr	Atlas	10,853.10
CSO097	2/21/15 3:00 PM	2/21/15 7:15 PM	0.05	1.17	55,811.37	1.29	0.45	24 hr	Atlas	65,299.30
CSO097	3/3/15 7:15 PM	3/5/15 5:00 PM	0.06	1.63	648,909.83	1.72	0.53	48 hr	Atlas	1,057,723.03
CSO097	3/7/15 1:30 PM	3/7/15 9:00 PM	0.05	0.28	503,806.33	1.67	0.26	1 hr	Atlas	141,065.77
CSO097	3/8/15 1:45 PM	3/8/15 5:15 PM	0.01	Discharge		1.63	Snowmelt			14,054.59
CSO097	3/10/15 7:00 AM	3/12/15 12:15 AM	0.39	1.20	747,779.80	2.83	0.55	12 hr	Atlas	897,335.75
CSO097	3/13/15 10:45 AM	3/15/15 6:30 PM	0.34	1.59	893,978.74	2.79	0.60	24 hr	Atlas	1,421,426.19
CSO097	3/19/15 8:00 PM	3/19/15 9:15 PM	0.01	0.18	11,394.39	1.77	0.07	24 hr	Atlas	2,050.99

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO097	3/26/15 4:45 AM	3/26/15 7:45 AM	0.01	0.46	109,511.75	0.59	0.20	3 hr	Atlas	50,375.41
CSO097	4/2/15 10:45 AM	4/6/15 2:30 PM	0.47	5.54	680,451.57	5.68	28.12	6 hr	Cloudburst	3,769,701.67
CSO097	4/7/15 7:30 AM	4/10/15 11:30 PM	1.16	0.69	1,274,768.87	6.92	0.29	12 hr	Atlas	879,590.52
CSO097	4/13/15 8:30 PM	4/13/15 10:45 PM	0.05	0.49	91,854.55	1.49	0.19	6 hr	Atlas	45,008.73
CSO097	4/14/15 8:15 AM	4/14/15 1:00 PM	0.18	0.49	59,757.42	1.73	0.19	6 hr	Atlas	29,281.14
CSO097	4/19/15 2:00 PM	4/19/15 4:30 PM	1.91	0.72	89,450.20	1.25	0.31	12 hr	Atlas	64,404.14
CSO097	4/20/15 3:30 AM	4/20/15 4:15 AM	0.31	0.07	675.30	1.38	0.06	1 hr	Atlas	47.27
CSO097	5/11/15 6:00 PM	5/11/15 6:45 PM	0.15	0.14	5,943.15	0.30	0.12	1 hr	Atlas	832.04
CSO097	5/17/15 3:00 PM	5/17/15 3:15 PM	1.72	0.11	4,400.00	0.52	0.08	1 hr	Atlas	484.00
CSO097	5/26/15 2:00 PM	5/26/15 3:15 PM	2.32	0.25	52,804.71	0.47	0.15	1 hr	Atlas	13,201.18
CSO097	6/17/15 5:00 AM	6/17/15 7:45 AM	0.05	0.60	45,834.62	0.92	0.33	3 hr	Atlas	27,500.77
CSO097	6/18/15 4:15 PM	6/19/15 1:15 AM	0.13	2.28	141,614.22	2.06	0.74	48 hr	Atlas	322,880.42
CSO097	6/20/15 2:15 AM	6/20/15 4:15 PM	4.16	2.28	149,576.84	3.31	0.74	48 hr	Atlas	341,035.19
CSO097	6/26/15 12:00 AM	6/26/15 6:30 AM	3.67	0.63	295,208.84	2.10	0.34	6 hr	Atlas	185,981.57
CSO097	6/26/15 5:00 PM	6/27/15 5:15 AM	0.09	0.75	289,125.48	2.68	0.35	1 hr	Atlas	216,844.11
CSO097	6/29/15 1:30 PM	6/29/15 5:15 PM	0.20	0.14	359,713.10	1.52	0.10	1 hr	Atlas	50,359.83
CSO097 Count										40.00
CSO097 Total Volume (GAL)										11,436,896.08
CSO104	7/13/14 11:15 PM	7/13/14 11:45 PM	0.03	0.69	15,559.39	0.46	0.32	12 hr	CloudBurst	10,735.98
CSO104	7/26/14 9:45 PM	7/26/14 10:45 PM	0.42	1.04	37,387.15	0.65	0.48	12 hr	CloudBurst	38,882.64
CSO104	8/8/14 7:00 AM	8/8/14 7:00 AM	0.19	0.62	2,876.48	0.46	0.31	6 hr	CloudBurst	1,783.42
CSO104	8/10/14 4:45 AM	8/10/14 5:30 AM	0.52	1.14	29,741.21	1.92	0.98	1 hr	CloudBurst	33,904.98
CSO104	8/23/14 4:15 PM	8/23/14 9:30 PM	0.17	0.96	80,518.29	1.82	0.46	6 hr	CloudBurst	77,297.56
CSO104	8/30/14 3:15 PM	8/30/14 4:15 PM	0.40	1.27	56,478.16	2.24	0.80	1 hr	CloudBurst	71,727.26
CSO104	9/11/14 12:45 AM	9/11/14 3:15 AM	0.01	2.30	265,885.92	2.03	3.07	3 hr	Atlas14	611,537.61
CSO104	10/10/14 2:45 AM	10/10/14 3:30 AM	0.02	1.02	18,184.09	1.50	0.46	3 hr	Atlas14	18,547.77
CSO104	10/13/14 11:45 PM	10/14/14 12:00 AM	0.04	1.56	3,756.56	2.40	0.70	12 hr	CloudBurst	5,860.24
CSO104	12/6/14 2:15 AM	12/6/14 3:45 AM	0.01	0.75	62,735.05	1.66	0.24	48 hr	CloudBurst	47,051.29
CSO104	3/10/15 12:30 PM	3/10/15 2:00 PM	0.03	0.95	34,207.36	2.57	0.42	12 hr	Atlas	32,496.99
CSO104	3/14/15 3:45 AM	3/14/15 4:15 AM	0.22	1.91	3,701.19	2.79	0.72	24 hr	Atlas	7,069.27
CSO104	4/2/15 3:00 PM	4/2/15 4:00 PM	0.04	4.80	12,412.69	0.90	10.76	6 hr	Cloudburst	59,580.92
CSO104	4/3/15 12:15 AM	4/3/15 7:15 AM	0.10	4.80	364,889.11	4.38	10.76	6 hr	Cloudburst	1,751,467.72
CSO104	4/7/15 9:15 AM	4/7/15 10:30 AM	0.03	1.03	68,035.10	5.50	0.45	1 hr	Atlas	70,076.16
CSO104	5/16/15 11:45 AM	5/16/15 1:45 PM	0.01	0.94	50,392.63	0.98	0.50	3 hr	Atlas	47,369.07
CSO104	6/8/15 8:00 AM	6/8/15 8:45 AM	0.06	0.14	13,946.65	0.18	0.08	3 hr	Atlas	1,952.53
CSO104	6/17/15 5:15 AM	6/17/15 3:15 PM	0.06	0.66	9,166.00	0.67	0.37	3 hr	Atlas	6,049.56
CSO104	6/20/15 12:15 AM	6/20/15 4:45 AM	0.02	1.14	1,632.53	2.33	0.46	12 hr	Atlas	1,861.08
CSO104	6/21/15 9:15 PM	6/22/15 9:45 AM	0.04	0.25	387,428.10	2.96	0.11	12 hr	Atlas	96,857.02
CSO104	6/26/15 12:15 AM	6/26/15 4:15 AM	0.29	0.85	4,534.77	2.32	0.46	6 hr	Atlas	3,854.55
CSO104	6/26/15 5:00 PM	6/27/15 2:30 AM	0.05	0.89	311,157.06	3.13	0.50	1 hr	Atlas	276,929.78
CSO104	6/29/15 2:30 PM	6/29/15 2:45 PM	0.08	0.29	6,024.68	2.03	0.14	1 hr	Atlas	1,747.16
CSO104 Count										23.00
CSO104 Total Volume (GAL)										3,274,640.57
CSO105	7/1/14 7:30 PM	7/1/14 10:30 PM	0.13	0.60	495,119.48	0.62	0.38	3 hr	CloudBurst	297,071.69
CSO105	7/2/14 3:45 PM	7/2/14 4:30 PM	0.17	0.10	37,735.10	0.73	0.09	1 hr	CloudBurst	3,773.51
CSO105	7/7/14 7:15 PM	7/7/14 10:00 PM	0.56	0.03	80,395,374.17	0.73	0.03	1 hr	CloudBurst	2,411,861.23
CSO105	7/13/14 10:30 PM	7/14/14 4:45 AM	0.16	0.69	4,911,931.07	0.68	0.32	12 hr	CloudBurst	3,389,232.44
CSO105	7/14/14 8:00 PM	7/14/14 9:45 PM	0.09	0.42	1,066,867.40	1.17	0.30	1 hr	CloudBurst	448,084.31
CSO105	7/26/14 9:30 PM	7/27/14 10:15 AM	0.14	1.04	4,905,063.58	1.14	0.48	12 hr	CloudBurst	5,101,266.13
CSO105	8/8/14 5:15 AM	8/8/14 11:00 AM	0.01	0.62	6,930,839.63	0.67	0.31	6 hr	CloudBurst	4,297,120.57
CSO105	8/10/14 3:15 AM	8/10/14 7:15 AM	0.09	1.14	4,875,155.00	1.92	0.98	1 hr	CloudBurst	5,557,676.70
CSO105	8/11/14 2:45 PM	8/11/14 5:15 PM	0.14	0.15	11,665,332.53	2.04	0.10	1 hr	CloudBurst	1,749,799.88
CSO105	8/16/14 11:45 PM	8/17/14 12:15 AM	0.15	0.83	2,428.70	1.63	0.32	24 hr	CloudBurst	2,015.82
CSO105	8/17/14 8:45 AM	8/17/14 4:15 PM	0.13	0.83	1,131,399.25	0.97	0.32	24 hr	CloudBurst	939,061.38
CSO105	8/22/14 8:00 PM	8/22/14 9:00 PM	0.02	0.13	2,208,036.98	0.94	0.07	6 hr	CloudBurst	287,044.81

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO105	8/23/14 4:00 PM	8/24/14 12:00 AM	0.43	0.96	11,799,625.44	1.94	0.46	6 hr	CloudBurst	11,327,640.42
CSO105	8/30/14 3:00 PM	8/30/14 6:15 PM	0.19	1.27	4,631,354.50	2.38	0.80	1 hr	CloudBurst	5,881,820.21
CSO105	9/2/14 6:45 AM	9/2/14 10:30 AM	0.39	0.53	1,357,579.52	1.95	0.30	3 hr	CloudBurst	719,517.14
CSO105	9/11/14 12:00 AM	9/11/14 7:30 AM	0.45	2.30	7,340,317.39	2.29	3.07	3 hr	Atlas14	16,882,729.99
CSO105	10/3/14 12:45 PM	10/3/14 8:15 PM	0.13	0.22	26,949.15	0.22	0.09	24 hr	CloudBurst	5,928.81
CSO105	10/6/14 7:30 AM	10/6/14 7:00 PM	0.03	0.56	2,314,640.61	0.55	0.18	3 hr	CloudBurst	1,296,198.74
CSO105	10/7/14 11:15 AM	10/7/14 1:00 PM	0.11	0.56	13,505.32	0.77	0.18	3 hr	CloudBurst	7,562.98
CSO105	10/10/14 1:30 AM	10/10/14 5:30 AM	0.26	1.02	5,438,798.01	1.53	0.46	3 hr	Atlas14	5,547,573.97
CSO105	10/10/14 5:00 PM	10/11/14 3:00 AM	0.07	1.02	17,126.45	1.69	0.46	3 hr	Atlas14	17,468.98
CSO105	10/13/14 4:00 AM	10/13/14 8:45 AM	0.53	0.45	6,110,412.33	2.07	0.29	3 hr	CloudBurst	2,749,685.55
CSO105	10/13/14 10:15 PM	10/14/14 3:15 PM	0.24	1.56	5,636,261.19	3.29	0.70	12 hr	CloudBurst	8,792,567.45
CSO105	10/15/14 6:15 PM	10/15/14 7:00 PM	0.17	0.19	9,798.90	3.26	0.09	12 hr	CloudBurst	1,861.79
CSO105	10/28/14 11:45 AM	10/28/14 1:15 PM	0.10	0.09	24,050.58	0.09	0.06	3 hr	CloudBurst	2,164.55
CSO105	11/5/14 6:45 PM	11/5/14 7:00 PM	0.02	0.01	86,384.38	0.27	0.01	6 hr	CloudBurst	863.84
CSO105	11/16/14 9:30 PM	11/17/14 12:30 PM	0.31	0.41	71,374.47	0.43	0.15	24 hr	CloudBurst	29,263.53
CSO105	11/23/14 2:30 PM	11/24/14 12:00 AM	0.04	0.86	3,742,102.73	1.26	0.39	6 hr	CloudBurst	3,218,208.34
CSO105	12/1/14 1:15 AM	12/1/14 4:30 PM	0.33	0.91	619,245.52	0.88	0.35	24 hr	CloudBurst	563,513.42
CSO105	12/4/14 9:00 AM	12/6/14 8:45 AM	0.14	0.75	14,937,502.79	1.66	0.24	48 hr	CloudBurst	11,203,127.09
CSO105	12/16/14 3:00 AM	12/16/14 6:00 AM	0.16	0.15	46,353.19	-	0.11	3 hr	CloudBurst	6,952.98
CSO105	12/22/14 10:30 PM	12/22/14 11:45 PM	0.31	0.29	23,817.78	-	0.09	1 hr	CloudBurst	6,907.16
CSO105	12/23/14 7:45 PM	12/23/14 8:45 PM	0.31	0.01	359,741.67	-	0.05	1 hr	CloudBurst	3,597.42
CSO105	12/24/14 12:00 PM	12/24/14 2:30 PM	0.48	0.01	904,930.28	-	0.15	3 hr	CloudBurst	9,049.30
CSO105	12/27/14 8:45 AM	12/28/14 2:45 AM	0.07	0.36	110,247.65	-	0.14	1 hr	CloudBurst	39,689.15
CSO105	1/3/15 5:15 AM	1/4/15 4:30 AM	0.17	0.59	46,026.66	0.60	0.22	24 hr	Atlas	27,155.73
CSO105	1/12/15 12:30 AM	1/12/15 10:15 AM	0.42	0.17	81,837.99	0.20	0.07	24 hr	Atlas	13,912.46
CSO105	1/18/15 3:15 AM	1/18/15 4:00 AM	0.20	0.10	22,452.61	0.28	0.08	1 hr	Atlas	2,245.26
CSO105	1/25/15 4:30 PM	1/25/15 10:45 PM	0.71	0.17	14,699.08	0.22	0.07	12 hr	Atlas	2,498.84
CSO105	2/1/15 11:30 AM	2/1/15 7:30 PM	0.03	0.37	801,563.24	0.60	0.17	3 hr	Atlas	296,578.40
CSO105	2/21/15 3:45 AM	2/22/15 1:00 AM	0.06	1.35	45,328.51	1.68	0.54	12 hr	Atlas	61,193.49
CSO105	3/3/15 2:15 PM	3/4/15 6:30 PM	0.01	1.65	10,069,069.16	1.43	0.54	48 hr	Atlas	16,613,964.11
CSO105	3/5/15 2:30 PM	3/5/15 9:45 PM	0.63	1.65	8,684.74	1.82	0.54	48 hr	Atlas	14,329.82
CSO105	3/8/15 12:45 PM	3/12/15 1:30 PM	0.40	0.49	27,666,677.21	2.61	0.19	24 hr	Atlas	13,556,671.53
CSO105	3/13/15 1:00 AM	3/14/15 5:15 AM	0.64	1.86	6,932,132.12	2.80	0.72	24 hr	Atlas	12,893,765.75
CSO105	3/24/15 1:45 PM	3/24/15 10:30 PM	1.99	0.14	40,335.94	0.33	0.08	1 hr	Atlas	5,647.03
CSO105	3/26/15 3:15 AM	3/26/15 12:00 PM	0.13	0.51	4,106,169.67	0.80	0.25	3 hr	Atlas	2,094,146.53
CSO105	3/29/15 10:30 PM	3/29/15 10:30 PM	0.05	0.03	17,222.57	0.69	0.03	1 hr	Atlas	516.68
CSO105	4/2/15 9:15 AM	4/3/15 7:45 PM	0.04	4.80	13,745,629.76	4.95	10.76	6 hr	Cloudburst	65,979,022.85
CSO105	4/7/15 9:00 AM	4/7/15 7:45 PM	0.10	1.03	9,314,367.08	5.83	0.45	1 hr	Atlas	9,593,798.09
CSO105	4/8/15 3:45 PM	4/8/15 4:15 PM	0.75	0.05	27,151.46	5.87	0.03	1 hr	Atlas	1,357.57
CSO105	4/10/15 2:00 AM	4/10/15 5:00 AM	0.97	0.28	10,315,344.54	3.91	0.19	1 hr	Atlas	2,888,296.47
CSO105	4/13/15 7:00 PM	4/13/15 11:00 PM	0.41	0.87	1,844,198.78	2.04	0.33	24 hr	Atlas	1,604,452.94
CSO105	4/19/15 6:45 AM	4/19/15 8:15 PM	0.03	0.83	994,270.91	1.76	0.34	12 hr	Atlas	825,244.85
CSO105	5/16/15 11:30 AM	5/16/15 3:15 PM	0.26	0.94	5,372,964.41	1.02	0.50	3 hr	Atlas	5,050,586.55
CSO105	5/17/15 2:00 PM	5/17/15 4:15 PM	0.33	0.09	133,770.60	1.11	0.04	1 hr	Atlas	12,039.35
CSO105	5/25/15 6:15 AM	5/25/15 9:30 AM	0.89	0.30	29,460.45	0.32	0.15	6 hr	Atlas	8,838.14
CSO105	5/31/15 6:15 AM	5/31/15 6:30 AM	1.18	0.10	10,293.13	0.80	0.05	1 hr	Atlas	1,029.31
CSO105	6/1/15 7:15 AM	6/1/15 9:30 AM	0.30	0.16	31,656.19	0.81	0.09	3 hr	Atlas	5,064.99
CSO105	6/8/15 6:45 AM	6/8/15 10:00 AM	4.03	0.14	605,464.90	0.26	0.08	3 hr	Atlas	84,765.09
CSO105	6/17/15 4:45 AM	6/17/15 9:30 AM	1.18	0.66	5,003,290.74	0.67	0.37	3 hr	Atlas	3,302,171.89
CSO105	6/18/15 5:15 PM	6/18/15 8:15 PM	0.36	0.83	3,841,955.38	1.48	0.54	1 hr	Atlas	3,188,822.97
CSO105	6/19/15 5:45 PM	6/19/15 6:15 PM	0.36	1.14	2,522.92	1.71	0.46	12 hr	Atlas	2,876.13
CSO105	6/21/15 9:30 PM	6/22/15 7:45 AM	0.01	0.25	30,406.88	2.96	0.11	12 hr	Atlas	7,601.72
CSO105	6/25/15 11:45 PM	6/26/15 4:15 AM	1.44	0.85	1,218,428.62	2.33	0.46	6 hr	Atlas	1,035,664.32

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO105	6/26/15 5:00 PM	6/27/15 2:15 AM	0.45	0.89	10,472,217.37	3.13	0.50	1 hr	Atlas	9,320,273.46
CSO105	6/29/15 5:00 AM	6/29/15 3:45 PM	0.02	0.29	2,755,912.06	2.18	0.14	1 hr	Atlas	799,214.50
CSO105 Count										67.00
CSO105 Total Volume (GAL)										242,091,648.12
CSO106	7/2/14 4:15 PM	7/2/14 4:15 PM	0.01	0.16	1,531.90	0.35	0.14	1 hr	CloudBurst	245.10
CSO106	7/13/14 9:45 PM	7/13/14 11:15 PM	0.01	0.73	36,672.07	1.57	0.39	3 hr	CloudBurst	26,770.61
CSO106	7/26/14 9:30 PM	7/27/14 9:00 AM	0.01	1.39	13,502.36	1.41	0.63	12 hr	CloudBurst	18,768.28
CSO106	8/8/14 5:30 AM	8/8/14 7:45 AM	0.02	1.01	19,456.69	0.85	0.50	3 hr	Atlas14	19,651.26
CSO106	8/9/14 3:45 AM	8/9/14 3:45 AM	0.01	0.08	3,242.84	1.10	0.04	12 hr	CloudBurst	259.43
CSO106	8/11/14 3:15 PM	8/11/14 3:30 PM	0.01	0.32	14,170.31	1.57	0.22	1 hr	CloudBurst	4,534.50
CSO106	8/17/14 9:30 AM	8/17/14 10:00 AM	0.04	0.69	221.72	0.87	0.26	24 hr	CloudBurst	152.99
CSO106	8/22/14 7:00 PM	8/22/14 11:00 PM	0.06	0.63	18,524.69	1.33	0.48	1 hr	CloudBurst	11,670.55
CSO106	8/23/14 8:00 PM	8/23/14 8:00 PM	0.01	0.61	22,851.20	1.61	0.28	12 hr	CloudBurst	13,939.23
CSO106	8/27/14 3:00 PM	8/27/14 5:45 PM	0.30	0.62	11,958.92	1.87	0.40	3 hr	CloudBurst	7,414.53
CSO106	8/30/14 3:00 PM	8/30/14 3:45 PM	0.08	0.52	13,550.90	1.57	0.30	1 hr	CloudBurst	7,046.47
CSO106	9/2/14 8:15 AM	9/2/14 8:15 AM	0.41	0.30	31,125.52	1.33	0.20	3 hr	CloudBurst	9,337.66
CSO106	9/11/14 12:30 AM	9/11/14 9:45 AM	0.02	2.03	36,226.27	2.04	1.67	3 hr	Atlas14	73,539.33
CSO106	10/3/14 3:15 AM	10/3/14 4:00 AM	0.01	0.18	19,615.16	0.12	0.07	24 hr	CloudBurst	3,530.73
CSO106	10/6/14 7:45 AM	10/6/14 7:45 AM	0.06	0.14	3,853.27	0.27	0.05	48 hr	CloudBurst	539.46
CSO106	10/7/14 11:45 AM	10/7/14 11:45 AM	0.48	0.16	3,759.05	0.48	0.13	1 hr	CloudBurst	601.45
CSO106	10/10/14 1:45 AM	10/10/14 2:45 AM	0.09	0.82	10,463.52	1.01	0.36	3 hr	CloudBurst	8,580.08
CSO106	10/13/14 5:30 AM	10/13/14 5:30 AM	0.01	0.50	353.04	1.51	0.32	3 hr	CloudBurst	176.52
CSO106	10/13/14 11:15 PM	10/13/14 11:30 PM	0.01	1.21	18,942.11	1.86	0.55	12 hr	CloudBurst	22,919.95
CSO106	10/14/14 8:15 AM	10/14/14 8:15 AM	0.02	1.21	67.27	2.58	0.55	12 hr	CloudBurst	81.40
CSO106	10/31/14 5:45 PM	11/1/14 5:30 PM	0.17	0.17	106,758.65	0.27	0.06	48 hr	CloudBurst	18,148.97
CSO106	11/2/14 8:45 AM	11/2/14 6:30 PM	0.01	Discharge		0.27	DWO	Work Order # 2260454		11,467.13
CSO106	11/3/14 8:00 AM	11/3/14 12:15 PM	0.11	Discharge		0.27	DWO	Work Order # 2260454		2,129.84
CSO106	11/23/14 5:15 PM	11/23/14 6:00 PM	0.03	0.81	2,427.56	0.94	0.37	6 hr	CloudBurst	1,966.32
CSO106	12/1/14 4:15 AM	12/1/14 4:30 AM	0.01	0.73	917.52	0.29	0.28	24 hr	CloudBurst	669.79
CSO106	12/5/14 11:00 PM	12/6/14 8:45 AM	0.39	0.70	22,975.16	1.43	0.23	48 hr	CloudBurst	16,082.61
CSO106	12/22/14 11:15 PM	12/22/14 11:15 PM	0.03	0.26	1,461.02	-	0.14	3 hr	CloudBurst	379.86
CSO106	12/28/14 1:00 AM	12/28/14 1:00 AM	0.01	0.32	2,912.21	-	0.30	1 hr	CloudBurst	931.91
CSO106	1/3/15 10:30 AM	1/3/15 10:30 AM	0.01	0.32	559.24	0.12	0.12	24 hr	Atlas	178.96
CSO106	3/3/15 11:15 PM	3/4/15 12:45 PM	0.04	1.63	23,895.96	1.12	0.53	48 hr	Atlas	38,950.42
CSO106	3/4/15 9:45 PM	3/4/15 10:30 PM	0.01	1.63	234.56	1.52	0.53	48 hr	Atlas	382.33
CSO106	3/19/15 11:30 AM	3/19/15 2:30 PM	0.01	0.18	0.75	1.66	0.07	24 hr	Atlas	0.14
CSO106	3/24/15 4:15 PM	3/24/15 7:00 PM	0.01	0.10	863.54	0.21	0.05	1 hr	Atlas	86.35
CSO106	3/26/15 4:15 AM	3/26/15 4:30 AM	0.99	0.46	11,489.74	0.50	0.20	3 hr	Atlas	5,285.28
CSO106	4/2/15 10:30 AM	4/3/15 7:30 PM	0.41	5.54	120,044.44	5.68	28.12	6 hr	Cloudburst	665,046.18
CSO106	4/7/15 9:15 AM	4/8/15 9:30 PM	0.18	0.69	89,373.91	6.41	0.29	12 hr	Atlas	61,668.00
CSO106	4/9/15 11:30 AM	4/9/15 2:30 PM	0.03	0.36	31,638.83	6.39	0.31	1 hr	Atlas	11,389.98
CSO106	4/10/15 2:15 AM	4/10/15 2:15 AM	0.01	0.15	1,132.92	3.75	0.09	3 hr	Atlas	169.94
CSO106	4/19/15 2:00 PM	4/19/15 2:30 PM	0.41	0.72	32,830.19	1.25	0.31	12 hr	Atlas	23,637.74
CSO106	4/20/15 3:15 AM	4/20/15 3:15 AM	0.01	0.07	3,745.24	1.37	0.06	1 hr	Atlas	262.17
CSO106	4/25/15 6:45 PM	4/25/15 6:45 PM	0.01	0.05	23,150.21	0.92	0.03	3 hr	Atlas	1,157.51
CSO106	5/11/15 5:30 PM	5/11/15 5:30 PM	0.01	0.14	89,374.70	0.29	0.12	1 hr	Atlas	12,512.46
CSO106	5/17/15 2:15 PM	5/17/15 2:15 PM	0.56	0.11	7,022.06	0.51	0.08	1 hr	Atlas	772.43
CSO106	5/26/15 1:30 PM	5/26/15 2:00 PM	0.03	0.25	11,010.25	0.47	0.15	1 hr	Atlas	2,752.56
CSO106	5/27/15 1:30 PM	5/27/15 1:30 PM	0.13	0.27	3,390.78	0.79	0.23	1 hr	Atlas	915.51
CSO106	6/8/15 8:15 AM	6/8/15 8:15 AM	0.11	0.35	12,697.02	0.38	0.19	3 hr	Atlas	4,443.96
CSO106	6/17/15 4:30 AM	6/17/15 5:30 AM	0.01	0.60	26,682.76	0.78	0.33	3 hr	Atlas	16,009.66
CSO106	6/18/15 4:00 PM	6/18/15 5:30 PM	1.38	2.28	40,167.38	1.94	0.74	48 hr	Atlas	91,581.62
CSO106	6/19/15 2:45 AM	6/19/15 2:45 AM	1.51	2.28	28.84	2.07	0.74	48 hr	Atlas	65.75
CSO106	6/20/15 1:30 AM	6/20/15 8:45 AM	0.13	2.28	22,616.98	3.30	0.74	48 hr	Atlas	51,566.71
CSO106	6/25/15 11:45 PM	6/26/15 1:45 AM	0.01	0.63	13,917.56	1.94	0.34	6 hr	Atlas	8,768.06

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO106	6/26/15 5:00 PM	6/27/15 2:45 AM	0.02	0.75	32,945.90	2.68	0.35	1 hr	Atlas	24,709.43
CSO106	6/29/15 1:15 PM	6/29/15 1:45 PM	0.01	0.14	63,608.04	1.52	0.10	1 hr	Atlas	8,905.13
CSO106 Count										53.00
CSO106 Total Volume (GAL)										1,312,754.23
CSO108	7/13/14 10:15 PM	7/13/14 11:30 PM	0.01	1.04	140,336.73	1.31	0.65	1 hr	CloudBurst	145,950.20
CSO108	7/26/14 10:00 PM	7/26/14 10:30 PM	0.15	1.48	99,951.58	0.61	0.68	12 hr	CloudBurst	147,928.33
CSO108	8/11/14 3:45 PM	8/11/14 4:00 PM	0.22	0.24	388,826.17	1.38	0.13	6 hr	CloudBurst	93,318.28
CSO108	8/22/14 7:30 PM	8/22/14 7:45 PM	0.28	0.66	95,229.55	1.25	0.50	1 hr	CloudBurst	62,851.50
CSO108	8/23/14 8:15 PM	8/23/14 9:00 PM	0.04	0.89	94,295.76	1.97	0.41	12 hr	CloudBurst	83,923.23
CSO108	8/27/14 5:00 PM	8/27/14 5:45 PM	0.01	0.75	174,051.42	2.30	0.60	1 hr	CloudBurst	130,538.57
CSO108	9/2/14 8:45 AM	9/2/14 8:45 AM	0.01	0.32	47,726.72	1.36	0.21	3 hr	CloudBurst	15,272.55
CSO108	9/11/14 1:00 AM	9/11/14 8:15 AM	0.01	2.16	701,920.53	2.18	2.14	3 hr	Atlas14	1,516,148.34
CSO108	10/13/14 11:45 PM	10/14/14 12:00 AM	0.05	1.08	5,843.41	1.74	0.49	12 hr	CloudBurst	6,310.89
CSO108	12/6/14 3:15 AM	12/6/14 7:30 AM	0.02	1.90	79,794.50	1.41	0.18	48 hr	CloudBurst	151,609.54
CSO108	3/4/15 3:45 AM	3/4/15 8:00 PM	0.01	1.84	531,402.57	1.61	0.60	48 hr	Atlas	977,780.72
CSO108	3/10/15 11:00 AM	3/10/15 9:00 PM	0.01	1.37	669,603.56	3.20	0.62	12 hr	Atlas	917,356.88
CSO108	3/13/15 3:15 PM	3/14/15 6:15 PM	0.03	1.75	715,362.69	3.12	0.65	24 hr	Atlas	1,251,884.71
CSO108	4/2/15 11:00 AM	4/5/15 9:15 AM	0.03	6.12	10,779,915.53	6.25	46.87	6 hr	Cloudburst	65,973,083.03
CSO108	4/7/15 9:45 AM	4/7/15 6:00 PM	0.01	0.84	74,233.14	6.96	0.35	12 hr	Atlas	62,355.84
CSO108	4/8/15 6:15 PM	4/8/15 7:30 PM	0.30	0.36	140,035.77	7.33	0.26	1 hr	Atlas	50,412.88
CSO108	4/9/15 11:45 AM	4/9/15 12:45 PM	0.01	0.43	89,111.63	7.17	0.37	1 hr	Atlas	38,318.00
CSO108	4/20/15 7:45 PM	4/21/15 3:45 AM	0.18	0.10	186,388.02	1.37	0.08	1 hr	Atlas	18,638.80
CSO108	5/11/15 6:00 PM	5/11/15 6:15 PM	0.68	0.38	38,331.03	0.57	0.33	1 hr	Atlas	14,565.79
CSO108	5/12/15 5:45 AM	5/12/15 9:15 AM	0.42	0.38	21,874.78	0.57	0.33	1 hr	Atlas	8,312.42
CSO108	5/12/15 11:45 PM	5/13/15 5:00 AM	1.13	0.38	9,704.77	0.57	0.33	1 hr	Atlas	3,687.81
CSO108	6/18/15 4:30 PM	6/18/15 11:15 PM	2.93	3.00	1,204,352.26	2.38	0.99	3 hr	Atlas	3,613,056.78
CSO108	6/20/15 8:00 AM	6/20/15 9:00 AM	0.34	3.00	53,137.00	3.83	0.99	3 hr	Atlas	159,411.00
CSO108	6/26/15 12:15 AM	6/26/15 12:30 AM	0.05	0.71	92,776.73	2.08	0.38	6 hr	Atlas	65,871.48
CSO108	6/26/15 5:30 PM	6/26/15 5:45 PM	0.04	0.68	69,223.24	2.57	0.31	1 hr	Atlas	47,071.80
CSO108	6/29/15 2:00 PM	6/29/15 2:15 PM	0.33	0.23	229,844.14	1.62	0.17	1 hr	Atlas	52,864.15
CSO108 Count										26.00
CSO108 Total Volume (GAL)										75,608,523.53
CSO110	7/2/14 5:00 PM	7/2/14 5:00 PM	0.04	0.15	152,156.82	0.37	0.12	1 hr	CloudBurst	22,823.52
CSO110	7/13/14 10:00 PM	7/14/14 12:30 AM	0.09	0.70	1,264,641.00	1.61	0.37	3 hr	CloudBurst	885,248.70
CSO110	7/26/14 9:45 PM	7/27/14 10:30 AM	0.07	1.30	1,186,972.86	1.32	0.60	12 hr	CloudBurst	1,543,064.72
CSO110	8/8/14 6:15 AM	8/8/14 8:45 AM	0.02	1.02	1,081,963.59	0.81	0.47	6 hr	CloudBurst	1,103,602.87
CSO110	8/11/14 3:45 PM	8/11/14 4:45 PM	0.01	0.36	745,294.79	1.62	0.24	1 hr	CloudBurst	268,306.13
CSO110	8/17/14 10:15 AM	8/17/14 10:45 AM	0.03	0.71	160,992.07	0.96	0.26	24 hr	CloudBurst	114,304.37
CSO110	8/22/14 7:30 PM	8/22/14 8:15 PM	0.09	0.40	564,803.95	1.05	0.28	1 hr	CloudBurst	225,921.58
CSO110	8/23/14 4:00 PM	8/23/14 10:15 PM	0.33	0.63	464,061.61	1.71	0.29	12 hr	CloudBurst	292,358.81
CSO110	8/27/14 3:15 PM	8/27/14 6:45 PM	0.45	0.48	2,330,062.94	1.53	0.31	3 hr	CloudBurst	1,118,430.21
CSO110	8/30/14 3:30 PM	8/30/14 4:45 PM	0.19	0.45	800,935.70	1.42	0.24	1 hr	CloudBurst	360,421.07
CSO110	9/2/14 8:45 AM	9/2/14 9:45 AM	0.38	0.34	562,896.98	1.25	0.21	3 hr	Atlas14	191,384.97
CSO110	9/11/14 12:45 AM	9/11/14 9:30 AM	0.04	1.97	1,540,078.94	1.97	1.57	3 hr	Atlas14	3,033,955.51
CSO110	10/10/14 2:15 AM	10/10/14 3:45 AM	0.01	0.75	1,052,700.54	0.98	0.29	24 hr	CloudBurst	789,525.40
CSO110	10/13/14 5:45 AM	10/13/14 7:00 AM	0.10	0.42	555,821.20	1.48	0.27	3 hr	CloudBurst	233,444.90
CSO110	10/13/14 11:45 PM	10/14/14 10:45 AM	0.53	1.24	717,326.33	2.62	0.56	12 hr	CloudBurst	889,484.65
CSO110	11/23/14 5:45 PM	11/23/14 9:00 PM	0.10	0.81	638,878.20	1.15	0.38	6 hr	CloudBurst	517,491.34
CSO110	12/1/14 4:15 AM	12/1/14 6:00 AM	0.04	0.82	229,869.84	0.37	0.31	24 hr	CloudBurst	188,493.27
CSO110	12/5/14 11:15 PM	12/6/14 9:00 AM	0.02	0.67	2,670,030.48	1.49	0.22	48 hr	CloudBurst	1,788,920.42
CSO110	12/28/14 1:30 AM	12/28/14 2:30 AM	0.03	0.32	313,858.67	-	0.30	1 hr	CloudBurst	100,434.77
CSO110	2/1/15 2:00 PM	2/1/15 2:30 PM	0.26	0.36	31,784.49	0.42	0.17	12 hr	Atlas	11,442.42
CSO110	2/21/15 3:15 PM	2/21/15 6:15 PM	0.15	1.25	183,471.78	1.41	0.48	24 hr	Atlas	229,339.73
CSO110	3/3/15 7:45 PM	3/4/15 9:30 PM	0.05	1.62	2,190,725.29	1.47	0.53	48 hr	Atlas	3,548,974.97
CSO110	3/10/15 7:15 AM	3/11/15 1:45 AM	0.04	1.34	2,010,870.48	2.96	0.61	12 hr	Atlas	2,694,566.44

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO110	3/13/15 10:45 AM	3/14/15 10:00 PM	0.36	1.71	2,298,046.75	3.05	0.64	24 hr	Atlas	3,929,659.94
CSO110	3/26/15 4:45 AM	3/26/15 7:15 AM	0.06	0.43	572,080.34	0.57	0.18	12 hr	Atlas	245,994.55
CSO110	4/2/15 11:00 AM	4/5/15 3:45 AM	0.05	5.83	1,951,083.74	5.96	36.46	6 hr	Cloudburst	11,374,818.22
CSO110	4/7/15 8:00 AM	4/7/15 9:00 PM	0.46	0.74	1,198,540.55	6.58	0.31	12 hr	Atlas	886,920.01
CSO110	4/8/15 6:15 PM	4/8/15 8:30 PM	0.14	0.24	2,936,423.52	6.82	0.17	1 hr	Atlas	704,741.64
CSO110	4/9/15 11:45 AM	4/9/15 2:00 PM	0.07	0.23	2,189,470.76	6.64	0.20	1 hr	Atlas	503,578.27
CSO110	4/10/15 2:45 AM	4/10/15 4:15 AM	0.41	0.15	710,334.73	3.32	0.10	3 hr	Atlas	106,550.21
CSO110	4/13/15 9:00 PM	4/13/15 10:00 PM	0.04	0.45	199,114.07	1.47	0.18	6 hr	Atlas	89,601.33
CSO110	4/14/15 10:00 AM	4/14/15 12:15 PM	0.02	0.45	237,557.70	1.37	0.18	6 hr	Atlas	106,900.96
CSO110	4/19/15 2:15 PM	4/19/15 4:00 PM	0.13	0.75	504,981.36	1.22	0.32	12 hr	Atlas	378,736.02
CSO110	4/20/15 3:30 AM	4/20/15 4:00 AM	1.07	0.07	276,643.57	1.38	0.06	1 hr	Atlas	19,365.05
CSO110	5/17/15 2:30 PM	5/17/15 2:45 PM	0.77	0.17	660,663.51	0.59	0.12	1 hr	Atlas	112,312.80
CSO110	5/26/15 2:15 PM	5/26/15 3:00 PM	1.47	0.42	340,788.16	0.64	0.30	1 hr	Atlas	143,131.03
CSO110	6/17/15 5:00 AM	6/17/15 7:15 AM	0.10	0.70	776,845.72	1.04	0.37	3 hr	Atlas	543,792.01
CSO110	6/18/15 4:15 PM	6/19/15 12:15 AM	2.70	2.11	626,635.36	2.08	0.69	48 hr	Atlas	1,322,200.60
CSO110	6/20/15 2:00 AM	6/20/15 12:45 PM	0.54	2.11	394,895.28	3.28	0.69	48 hr	Atlas	833,229.04
CSO110	6/26/15 12:15 AM	6/26/15 4:45 AM	0.09	0.51	663,570.38	1.93	0.27	6 hr	Atlas	338,420.90
CSO110	6/26/15 5:15 PM	6/27/15 2:15 AM	0.09	0.77	956,217.90	2.48	0.37	1 hr	Atlas	736,287.78
CSO110	6/29/15 1:45 PM	6/29/15 2:45 PM	0.06	0.17	904,731.19	1.45	0.10	1 hr	Atlas	153,804.30
CSO110 Count										42.00
CSO110 Total Volume (GAL)										42,681,985.44
CSO111	7/13/14 10:00 PM	7/13/14 11:15 PM	0.05	0.70	33,717.71	1.59	0.37	3 hr	CloudBurst	23,602.40
CSO111	7/26/14 9:45 PM	7/26/14 10:15 PM	0.01	1.30	28,150.92	0.54	0.60	12 hr	CloudBurst	36,596.19
CSO111	7/27/14 6:45 AM	7/27/14 9:15 AM	0.01	1.30	8,659.82	1.32	0.60	12 hr	CloudBurst	11,257.77
CSO111	8/8/14 6:00 AM	8/8/14 7:30 AM	0.18	1.02	8,262.79	0.80	0.47	6 hr	CloudBurst	8,428.04
CSO111	8/11/14 3:30 PM	8/11/14 3:45 PM	0.01	0.36	96,529.78	1.62	0.24	1 hr	CloudBurst	34,750.72
CSO111	8/22/14 7:30 PM	8/22/14 7:30 PM	0.01	0.40	1,749.22	1.04	0.28	1 hr	CloudBurst	699.69
CSO111	8/23/14 8:15 PM	8/23/14 8:15 PM	0.01	0.63	1,970.17	1.46	0.29	12 hr	CloudBurst	1,241.21
CSO111	8/27/14 3:15 PM	8/27/14 5:30 PM	0.01	0.48	271,328.80	1.51	0.31	3 hr	CloudBurst	130,237.82
CSO111	8/30/14 3:15 PM	8/30/14 4:00 PM	0.01	0.45	181,280.15	1.40	0.24	1 hr	CloudBurst	81,576.07
CSO111	9/2/14 8:30 AM	9/2/14 8:30 AM	0.01	0.34	8,226.81	1.16	0.21	3 hr	Atlas14	2,797.11
CSO111	9/11/14 12:45 AM	9/11/14 6:15 AM	0.04	1.97	147,346.64	1.92	1.57	3 hr	Atlas14	290,272.88
CSO111	10/10/14 1:45 AM	10/10/14 3:00 AM	0.05	0.75	23,830.10	0.96	0.29	24 hr	CloudBurst	17,872.57
CSO111	10/13/14 11:30 PM	10/13/14 11:45 PM	0.02	1.24	5,837.16	1.75	0.56	12 hr	CloudBurst	7,238.07
CSO111	10/14/14 8:00 AM	10/14/14 8:15 AM	0.10	1.24	1,777.13	2.49	0.56	12 hr	CloudBurst	2,203.64
CSO111	12/6/14 2:45 AM	12/6/14 7:00 AM	0.06	1.90	10,037.47	1.49	0.18	48 hr	CloudBurst	19,071.19
CSO111	4/9/15 11:45 AM	4/9/15 12:00 PM	0.01	0.23	107,144.88	6.64	0.20	1 hr	Atlas	24,643.32
CSO111	4/19/15 2:15 PM	4/19/15 2:30 PM	0.01	0.75	29,317.69	1.22	0.32	12 hr	Atlas	21,988.27
CSO111	4/20/15 3:15 AM	4/20/15 3:15 AM	0.01	0.07	71,879.61	1.37	0.06	1 hr	Atlas	5,031.57
CSO111	5/17/15 2:15 PM	5/17/15 2:15 PM	0.09	0.17	37,019.92	0.59	0.12	1 hr	Atlas	6,293.39
CSO111	5/26/15 1:45 PM	5/26/15 2:00 PM	0.03	0.42	9,968.25	0.64	0.30	1 hr	Atlas	4,186.67
CSO111	6/18/15 6:00 PM	6/18/15 6:15 PM	0.01	2.11	1,788.00	2.01	0.69	48 hr	Atlas	3,772.69
CSO111	6/20/15 7:30 AM	6/20/15 8:30 AM	0.23	2.11	4,831.45	3.26	0.69	48 hr	Atlas	10,194.35
CSO111 Count										22.00
CSO111 Total Volume (GAL)										743,955.64
CSO113	7/2/14 4:30 PM	7/2/14 4:45 PM	0.07	0.11	57,210.13	0.37	0.10	1 hr	CloudBurst	6,293.11
CSO113	7/7/14 7:45 PM	7/7/14 7:45 PM	0.02	0.80	5,433.84	1.09	0.70	1 hr	CloudBurst	4,347.07
CSO113	7/13/14 10:30 PM	7/13/14 11:30 PM	0.06	0.76	65,780.17	1.83	0.40	3 hr	Atlas14	49,992.93
CSO113	7/14/14 8:30 PM	7/14/14 8:30 PM	0.03	0.13	9,812.66	1.32	0.10	1 hr	CloudBurst	1,275.65
CSO113	7/26/14 9:45 PM	7/27/14 9:30 AM	0.06	1.19	220,698.37	1.22	0.54	12 hr	CloudBurst	262,631.06
CSO113	8/8/14 6:00 AM	8/8/14 8:00 AM	0.04	0.98	152,483.89	0.76	0.45	6 hr	CloudBurst	149,434.21
CSO113	8/10/14 4:00 AM	8/10/14 4:15 AM	0.03	0.41	9,865.30	1.45	0.34	1 hr	CloudBurst	4,044.77
CSO113	8/11/14 3:30 PM	8/11/14 4:00 PM	0.01	0.44	382,688.12	1.85	0.35	1 hr	CloudBurst	168,382.77
CSO113	8/17/14 9:45 AM	8/17/14 10:30 AM	0.08	0.71	26,777.63	1.04	0.27	24 hr	CloudBurst	19,012.11
CSO113	8/22/14 7:15 PM	8/22/14 7:45 PM	0.11	0.42	216,121.79	1.10	0.30	1 hr	CloudBurst	90,771.15

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO113	8/23/14 8:15 PM	8/23/14 8:45 PM	0.02	0.59	34,224.63	1.50	0.27	12 hr	CloudBurst	20,192.53
CSO113	8/27/14 3:15 PM	8/27/14 5:30 PM	0.32	0.26	510,779.55	1.34	0.17	3 hr	Atlas14	132,802.68
CSO113	8/30/14 3:15 PM	8/30/14 4:15 PM	0.15	0.53	361,078.25	1.25	0.32	1 hr	CloudBurst	191,371.47
CSO113	9/2/14 8:30 AM	9/2/14 8:45 AM	0.43	0.36	32,759.20	1.09	0.22	3 hr	CloudBurst	11,793.31
CSO113	9/11/14 12:45 AM	9/11/14 6:15 AM	0.03	1.92	238,278.54	1.87	1.40	3 hr	Atlas14	457,494.79
CSO113	10/7/14 12:00 PM	10/7/14 12:15 PM	0.01	0.16	26,652.60	0.67	0.14	1 hr	CloudBurst	4,264.42
CSO113	10/10/14 1:45 AM	10/10/14 3:00 AM	0.01	0.93	61,769.79	1.26	0.38	3 hr	CloudBurst	57,445.90
CSO113	10/13/14 5:00 AM	10/13/14 6:00 AM	0.04	0.42	19,476.04	1.82	0.27	3 hr	CloudBurst	8,179.94
CSO113	10/13/14 11:30 PM	10/14/14 8:30 AM	0.01	1.10	72,433.21	2.54	0.49	12 hr	CloudBurst	79,676.53
CSO113	11/23/14 5:45 PM	11/23/14 7:45 PM	0.49	0.71	22,832.67	1.04	0.34	6 hr	CloudBurst	16,211.20
CSO113	12/1/14 4:00 AM	12/1/14 5:00 AM	0.08	0.79	19,590.07	0.39	0.30	24 hr	CloudBurst	15,476.16
CSO113	12/5/14 11:15 PM	12/6/14 7:00 AM	0.01	0.69	167,612.21	1.48	0.22	48 hr	CloudBurst	115,652.42
CSO113	12/28/14 1:15 AM	12/28/14 1:30 AM	0.02	0.32	12,935.29	-	0.30	1 hr	CloudBurst	4,139.29
CSO113	3/3/15 11:30 PM	3/4/15 1:00 PM	0.03	1.61	49,402.73	1.11	0.52	24 hr	Atlas	79,538.40
CSO113	3/10/15 7:15 AM	3/10/15 3:15 PM	0.02	1.26	64,644.22	2.86	0.57	12 hr	Atlas	81,451.72
CSO113	3/13/15 2:45 PM	3/14/15 5:15 AM	0.02	1.67	34,742.91	2.89	0.63	24 hr	Atlas	58,020.66
CSO113	3/26/15 4:30 AM	3/26/15 5:00 AM	0.09	0.42	18,023.88	0.49	0.17	12 hr	Atlas	7,570.03
CSO113	4/2/15 10:45 AM	4/2/15 4:00 PM	0.04	5.12	61,579.20	0.97	13.81	6 hr	Cloudburst	315,285.52
CSO113	4/3/15 12:15 AM	4/4/15 7:15 AM	0.01	5.12	784,972.00	5.14	13.81	6 hr	Cloudburst	4,019,056.64
CSO113	4/7/15 8:30 AM	4/7/15 7:00 PM	0.23	0.78	148,532.92	5.91	0.33	12 hr	Atlas	115,855.68
CSO113	4/8/15 6:15 PM	4/8/15 7:45 PM	0.01	0.16	196,269.59	6.06	0.09	3 hr	Atlas	31,403.13
CSO113	4/9/15 11:45 AM	4/9/15 1:30 PM	0.05	0.25	145,538.08	5.95	0.22	1 hr	Atlas	36,384.52
CSO113	4/10/15 2:30 AM	4/10/15 4:45 AM	0.04	0.14	153,645.76	3.40	0.09	3 hr	Atlas	21,510.41
CSO113	4/13/15 8:30 PM	4/13/15 10:15 PM	0.38	0.38	69,461.22	1.41	0.16	6 hr	Atlas	26,395.26
CSO113	4/14/15 7:30 AM	4/14/15 12:45 PM	0.08	0.38	90,190.96	1.62	0.16	6 hr	Atlas	34,272.56
CSO113	4/16/15 10:30 AM	4/16/15 11:15 AM	0.04	0.04	99,923.43	0.87	0.03	1 hr	Atlas	3,996.94
CSO113	4/19/15 6:30 AM	4/20/15 4:30 AM	0.32	0.75	233,079.76	1.29	0.31	12 hr	Atlas	174,809.82
CSO113	4/25/15 9:15 AM	4/25/15 10:30 AM	0.01	0.12	120,074.74	0.94	0.06	6 hr	Atlas	14,408.97
CSO113	4/25/15 7:00 PM	4/25/15 8:00 PM	0.56	0.10	147,562.71	1.01	0.06	3 hr	Atlas	14,756.27
CSO113	4/30/15 1:00 PM	4/30/15 1:30 PM	0.33	0.02	115,469.80	0.23	0.01	6 hr	Atlas	2,309.40
CSO113	5/9/15 3:30 AM	5/9/15 5:15 AM	0.60	0.11	33,185.23	0.11	0.06	3 hr	Atlas	3,650.37
CSO113	5/11/15 5:45 PM	5/11/15 6:15 PM	0.02	0.09	68,325.35	0.21	0.08	1 hr	Atlas	6,149.28
CSO113	5/16/15 12:45 PM	5/16/15 2:15 PM	0.22	0.33	27,777.24	0.40	0.15	3 hr	Atlas	9,166.49
CSO113	5/17/15 2:15 PM	5/17/15 3:00 PM	1.29	0.10	340,376.56	0.50	0.06	1 hr	Atlas	34,037.66
CSO113	5/25/15 7:00 AM	5/25/15 8:30 AM	0.44	0.23	21,077.76	0.19	0.11	12 hr	Atlas	4,847.89
CSO113	5/26/15 1:45 PM	5/26/15 2:45 PM	0.06	0.24	578,307.26	0.42	0.16	1 hr	Atlas	138,793.74
CSO113	5/27/15 1:45 PM	5/27/15 2:30 PM	0.07	0.14	98,764.51	0.62	0.12	1 hr	Atlas	13,827.03
CSO113	6/8/15 8:30 AM	6/8/15 8:30 AM	0.09	0.32	7,532.85	0.32	0.19	3 hr	Atlas	2,410.51
CSO113	6/17/15 4:45 AM	6/17/15 6:45 AM	0.07	0.60	44,407.22	0.68	0.33	3 hr	Atlas	26,644.33
CSO113	6/18/15 4:15 PM	6/18/15 7:00 PM	0.22	1.84	304,888.67	1.58	0.60	48 hr	Atlas	560,995.15
CSO113	6/19/15 1:15 PM	6/19/15 1:45 PM	0.03	1.84	3,512.30	1.74	0.60	48 hr	Atlas	6,462.62
CSO113	6/20/15 1:30 AM	6/20/15 9:15 AM	0.92	1.84	105,641.50	2.64	0.60	48 hr	Atlas	194,380.37
CSO113	6/25/15 11:45 PM	6/26/15 3:15 AM	0.05	0.62	237,160.86	1.82	0.34	6 hr	Atlas	147,039.73
CSO113	6/26/15 5:00 PM	6/27/15 3:15 AM	0.04	0.81	440,186.08	2.56	0.38	1 hr	Atlas	356,550.72
CSO113	6/29/15 1:30 PM	6/29/15 2:15 PM	0.02	0.18	370,477.10	1.60	0.11	1 hr	Atlas	66,685.88
CSO113 Count										55.00
CSO113 Total Volume (GAL)										8,479,553.19
CSO117	7/2/14 4:30 PM	7/2/14 5:30 PM	0.08	0.09	2,028,908.18	0.28	0.08	1 hr	CloudBurst	182,601.74
CSO117	7/7/14 7:45 PM	7/7/14 8:30 PM	0.33	1.10	399,987.60	1.33	0.96	1 hr	CloudBurst	439,986.36
CSO117	7/13/14 10:30 PM	7/14/14 12:30 AM	0.01	0.81	1,274,033.40	2.14	0.43	1 hr	CloudBurst	1,031,967.05
CSO117	7/14/14 8:15 PM	7/14/14 9:00 PM	0.08	0.19	1,573,510.37	1.43	0.17	1 hr	CloudBurst	298,966.97
CSO117	7/26/14 9:45 PM	7/27/14 10:30 AM	0.04	1.22	1,970,314.35	1.25	0.56	12 hr	CloudBurst	2,403,783.51
CSO117	8/8/14 6:00 AM	8/8/14 8:45 AM	0.09	0.87	2,218,318.16	0.64	0.40	6 hr	CloudBurst	1,929,936.80
CSO117	8/10/14 4:00 AM	8/10/14 5:15 AM	0.05	0.98	497,910.14	1.92	0.82	1 hr	CloudBurst	487,951.94
CSO117	8/11/14 3:30 PM	8/11/14 4:45 PM	0.01	0.46	1,847,897.03	2.36	0.38	1 hr	CloudBurst	850,032.64

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO117	8/17/14 9:45 AM	8/17/14 11:15 AM	0.07	0.72	768,041.41	1.09	0.27	24 hr	CloudBurst	552,989.82
CSO117	8/17/14 11:15 PM	8/18/14 12:00 AM	0.09	0.72	326,123.62	1.18	0.27	24 hr	CloudBurst	234,809.00
CSO117	8/22/14 7:15 PM	8/22/14 8:15 PM	0.29	0.38	1,509,523.47	1.14	0.30	1 hr	CloudBurst	573,618.92
CSO117	8/23/14 4:00 PM	8/23/14 10:30 PM	0.32	0.60	2,747,541.54	1.75	0.29	3 hr	CloudBurst	1,648,524.92
CSO117	8/27/14 3:15 PM	8/27/14 6:15 PM	0.03	0.24	2,008,212.17	1.40	0.16	3 hr	CloudBurst	481,970.92
CSO117	8/30/14 3:15 PM	8/30/14 5:00 PM	0.07	0.58	2,313,927.32	1.40	0.36	1 hr	CloudBurst	1,342,077.85
CSO117	9/2/14 8:45 AM	9/2/14 9:45 AM	0.36	0.39	412,633.00	1.30	0.25	3 hr	Atlas14	160,926.87
CSO117	9/11/14 12:45 AM	9/11/14 7:00 AM	0.03	1.88	1,647,764.53	1.85	1.30	3 hr	Atlas14	3,097,797.31
CSO117	10/3/14 3:45 AM	10/3/14 4:00 AM	0.04	0.24	80,169.62	0.07	0.09	24 hr	CloudBurst	19,240.71
CSO117	10/6/14 9:45 AM	10/6/14 10:30 AM	0.03	0.26	1,453,149.90	0.46	0.12	6 hr	CloudBurst	377,818.97
CSO117	10/7/14 12:15 PM	10/7/14 12:45 PM	0.08	0.20	461,816.94	0.71	0.17	1 hr	CloudBurst	92,363.39
CSO117	10/10/14 2:00 AM	10/10/14 4:00 AM	0.03	1.20	989,394.19	1.56	0.54	3 hr	CloudBurst	1,187,273.03
CSO117	10/13/14 4:45 AM	10/13/14 7:15 AM	0.53	0.49	1,410,694.93	2.18	0.32	3 hr	CloudBurst	691,240.51
CSO117	10/13/14 11:30 PM	10/14/14 10:45 AM	0.11	0.94	1,484,755.87	2.86	0.42	12 hr	CloudBurst	1,395,670.52
CSO117	11/23/14 5:30 PM	11/23/14 11:30 PM	0.05	0.64	1,562,396.79	1.00	0.27	12 hr	CloudBurst	999,933.94
CSO117	12/1/14 3:30 AM	12/1/14 6:15 AM	0.05	0.88	647,099.25	0.46	0.34	24 hr	CloudBurst	569,447.34
CSO117	12/1/14 3:15 PM	12/1/14 4:15 PM	0.06	0.88	57,429.79	0.81	0.34	24 hr	CloudBurst	50,538.22
CSO117	12/5/14 6:45 AM	12/5/14 7:15 AM	0.03	0.63	16,326.16	1.25	0.20	48 hr	CloudBurst	10,285.48
CSO117	12/5/14 9:00 PM	12/6/14 7:45 AM	0.04	0.63	4,396,298.24	1.51	0.20	48 hr	CloudBurst	2,769,667.89
CSO117	12/16/14 5:30 AM	12/16/14 6:00 AM	0.27	0.09	551,135.09	-	0.05	3 hr	CloudBurst	49,602.16
CSO117	12/23/14 12:00 AM	12/23/14 12:30 AM	0.13	0.22	271,848.22	-	0.14	3 hr	CloudBurst	59,806.61
CSO117	12/28/14 1:15 AM	12/28/14 2:15 AM	0.07	0.32	791,078.87	-	0.27	1 hr	CloudBurst	253,145.24
CSO117	1/4/15 4:15 AM	1/4/15 4:30 AM	0.04	0.33	36,115.75	0.34	0.12	24 hr	Atlas	11,918.20
CSO117	2/1/15 1:15 PM	2/1/15 2:30 PM	0.26	0.42	356,660.41	0.49	0.19	3 hr	Atlas	149,797.37
CSO117	2/21/15 2:45 PM	2/21/15 4:45 PM	0.01	1.23	151,099.08	1.47	0.47	24 hr	Atlas	185,851.87
CSO117	3/3/15 7:30 PM	3/4/15 5:15 PM	0.03	1.70	2,665,936.39	1.33	0.55	48 hr	Atlas	4,532,091.86
CSO117	3/7/15 3:15 PM	3/7/15 5:45 PM	0.02	0.04	3,235,692.33	1.75	0.03	1 hr	Atlas	129,427.69
CSO117	3/10/15 7:15 AM	3/10/15 6:00 PM	0.08	1.30	2,722,762.17	3.00	0.59	12 hr	Atlas	3,539,590.83
CSO117	3/13/15 10:30 AM	3/14/15 6:45 AM	0.10	1.85	2,135,318.50	3.11	0.70	24 hr	Atlas	3,950,339.22
CSO117	3/26/15 4:30 AM	3/26/15 7:00 AM	0.47	0.53	949,220.19	0.68	0.22	12 hr	Atlas	503,086.70
CSO117	4/2/15 10:45 AM	4/3/15 10:30 PM	0.25	5.14	5,416,610.40	5.29	12.54	6 hr	Cloudburst	27,841,377.45
CSO117	4/7/15 9:15 AM	4/7/15 6:45 PM	0.11	0.93	1,739,160.75	6.07	0.41	1 hr	Atlas	1,617,419.50
CSO117	4/8/15 6:15 PM	4/8/15 7:30 PM	0.04	0.14	2,946,020.78	6.20	0.09	3 hr	Atlas	412,442.91
CSO117	4/9/15 11:45 AM	4/9/15 1:00 PM	0.02	0.19	2,462,356.61	5.96	0.17	1 hr	Atlas	467,847.76
CSO117	4/10/15 2:30 AM	4/10/15 3:45 AM	0.45	0.20	2,072,408.07	3.45	0.13	3 hr	Atlas	414,481.61
CSO117	4/13/15 9:00 PM	4/13/15 9:45 PM	0.02	0.39	392,209.23	1.56	0.15	24 hr	Atlas	152,961.60
CSO117	4/14/15 10:15 AM	4/14/15 12:15 PM	0.02	0.39	201,207.15	1.22	0.15	24 hr	Atlas	78,470.79
CSO117	4/19/15 7:45 AM	4/19/15 3:45 PM	0.04	0.67	1,126,191.79	1.05	0.28	12 hr	Atlas	754,548.50
CSO117	4/25/15 9:30 AM	4/25/15 9:45 AM	0.01	0.10	200,061.90	0.87	0.05	6 hr	Atlas	20,006.19
CSO117	5/16/15 12:00 PM	5/16/15 2:00 PM	0.05	0.43	332,651.51	0.45	0.21	3 hr	Atlas	143,040.15
CSO117	5/17/15 2:15 PM	5/17/15 3:15 PM	0.08	0.06	4,740,584.76	0.53	0.03	12 hr	Atlas	284,435.09
CSO117	5/25/15 6:45 AM	5/25/15 9:00 AM	0.91	0.27	42,330.01	0.26	0.12	12 hr	Atlas	11,429.10
CSO117	5/26/15 1:45 PM	5/26/15 3:00 PM	0.10	0.27	506,852.47	0.49	0.19	1 hr	Atlas	136,850.17
CSO117	5/27/15 1:45 PM	5/27/15 2:00 PM	0.45	0.08	9,551.30	0.62	0.07	1 hr	Atlas	764.10
CSO117	6/8/15 7:30 AM	6/8/15 9:15 AM	0.84	0.30	627,339.75	0.35	0.16	3 hr	Atlas	188,201.92
CSO117	6/17/15 5:00 AM	6/17/15 7:15 AM	0.10	0.55	1,673,017.73	0.61	0.29	3 hr	Atlas	920,159.75
CSO117	6/18/15 4:15 PM	6/18/15 11:15 PM	1.49	1.48	1,594,885.01	1.22	0.48	48 hr	Atlas	2,360,429.82
CSO117	6/20/15 1:45 AM	6/20/15 9:30 AM	0.40	1.48	1,451,109.66	2.19	0.48	48 hr	Atlas	2,147,642.30
CSO117	6/22/15 6:30 AM	6/22/15 7:15 AM	0.05	0.21	298,399.34	2.33	0.10	3 hr	Atlas	62,663.86
CSO117	6/26/15 12:00 AM	6/26/15 1:45 AM	0.05	0.44	1,205,288.75	1.47	0.23	6 hr	Atlas	530,327.05
CSO117	6/26/15 5:00 PM	6/27/15 1:45 AM	0.05	0.89	1,612,007.02	2.41	0.49	1 hr	Atlas	1,434,686.25
CSO117	6/29/15 1:45 PM	6/29/15 2:30 PM	0.03	0.19	1,189,767.91	1.52	0.10	1 hr	Atlas	226,055.90
CSO117 Count										60.00
CSO117 Total Volume (GAL)										77,452,322.13
CSO118	7/1/14 8:00 PM	7/1/14 8:00 PM	0.04	0.13	1,082.53	0.11	0.08	3 hr	CloudBurst	140.73

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO118	7/2/14 4:15 PM	7/2/14 5:00 PM	0.05	0.08	801,810.73	0.29	0.07	1 hr	CloudBurst	64,144.86
CSO118	7/7/14 7:30 PM	7/7/14 8:30 PM	0.06	1.04	991,539.79	1.25	0.90	1 hr	CloudBurst	1,031,201.38
CSO118	7/8/14 7:15 AM	7/8/14 7:15 AM	0.07	0.36	313.45	1.61	0.30	1 hr	CloudBurst	112.84
CSO118	7/13/14 10:00 PM	7/14/14 4:15 AM	0.22	0.68	1,995,636.78	2.02	0.39	1 hr	CloudBurst	1,357,033.01
CSO118	7/14/14 8:00 PM	7/14/14 9:00 PM	0.01	0.10	6,931,995.14	1.14	0.09	1 hr	CloudBurst	693,199.51
CSO118	7/26/14 9:45 PM	7/27/14 10:15 AM	0.50	1.22	2,710,671.31	1.25	0.56	12 hr	CloudBurst	3,307,018.99
CSO118	8/8/14 3:45 AM	8/8/14 10:45 AM	0.01	0.90	3,770,050.37	0.90	0.44	6 hr	CloudBurst	3,393,045.33
CSO118	8/9/14 4:00 AM	8/9/14 4:00 AM	0.03	0.05	1,031.25	0.95	0.04	2 hr	Atlas14	51.56
CSO118	8/10/14 3:45 AM	8/10/14 5:15 AM	0.01	0.62	1,823,564.96	1.61	0.50	1 hr	CloudBurst	1,130,610.27
CSO118	8/11/14 3:30 PM	8/11/14 4:15 PM	0.02	0.44	1,676,653.36	2.04	0.37	1 hr	CloudBurst	737,727.48
CSO118	8/17/14 12:00 AM	8/17/14 12:15 AM	0.01	0.70	438.69	1.38	0.27	24 hr	CloudBurst	307.08
CSO118	8/17/14 9:00 AM	8/17/14 11:00 AM	0.01	0.70	806,815.85	1.06	0.27	24 hr	CloudBurst	564,771.09
CSO118	8/17/14 11:00 PM	8/17/14 11:45 PM	0.08	0.70	124,460.19	1.15	0.27	24 hr	CloudBurst	87,122.13
CSO118	8/20/14 4:00 PM	8/20/14 4:00 PM	0.03	0.08	1,554.95	0.79	0.07	1 hr	CloudBurst	124.40
CSO118	8/22/14 7:15 PM	8/22/14 8:00 PM	0.09	0.45	2,432,823.66	1.18	0.35	1 hr	CloudBurst	1,094,770.65
CSO118	8/23/14 3:45 PM	8/23/14 10:15 PM	0.05	0.55	2,938,493.94	1.74	0.25	3 hr	CloudBurst	1,616,171.66
CSO118	8/26/14 8:00 PM	8/26/14 8:00 PM	0.01	0.15	1,060.76	1.23	0.13	1 hr	CloudBurst	159.11
CSO118	8/27/14 3:00 PM	8/27/14 6:00 PM	0.01	0.24	2,421,025.90	1.47	0.17	1 hr	CloudBurst	581,046.22
CSO118	8/30/14 3:15 PM	8/31/14 1:00 AM	0.07	0.50	5,413,046.82	1.40	0.30	1 hr	CloudBurst	2,706,523.41
CSO118	9/2/14 8:15 AM	9/2/14 9:15 AM	0.10	0.34	195,338.21	1.22	0.22	3 hr	CloudBurst	66,414.99
CSO118	9/11/14 12:15 AM	9/11/14 6:30 AM	0.01	1.93	2,891,025.17	1.88	1.43	3 hr	Atlas14	5,579,678.57
CSO118	9/15/14 10:45 PM	9/15/14 10:45 PM	0.04	0.03	2,835.07	1.96	0.03	1 hr	CloudBurst	85.05
CSO118	10/3/14 3:30 AM	10/3/14 4:15 AM	0.01	0.25	138,274.94	0.09	0.10	1 hr	CloudBurst	34,568.74
CSO118	10/3/14 7:15 PM	10/3/14 8:15 PM	0.03	0.25	2,736.96	0.26	0.10	1 hr	CloudBurst	684.24
CSO118	10/6/14 7:45 AM	10/6/14 11:00 AM	0.04	0.39	1,546,191.52	0.60	0.23	1 hr	CloudBurst	603,014.69
CSO118	10/7/14 11:30 AM	10/7/14 12:30 PM	0.01	0.18	920,679.07	0.82	0.16	1 hr	CloudBurst	165,722.23
CSO118	10/10/14 1:45 AM	10/10/14 3:45 AM	0.26	1.17	1,833,464.67	1.66	0.54	3 hr	CloudBurst	2,145,153.66
CSO118	10/10/14 5:15 PM	10/10/14 9:00 PM	0.04	1.17	1,080.09	1.85	0.54	3 hr	CloudBurst	1,263.71
CSO118	10/13/14 4:30 AM	10/13/14 7:00 AM	0.52	0.48	1,600,177.81	2.22	0.30	3 hr	CloudBurst	768,085.35
CSO118	10/13/14 11:30 PM	10/14/14 10:30 AM	0.29	0.96	1,971,789.96	2.81	0.43	12 hr	CloudBurst	1,892,918.37
CSO118	10/20/14 7:15 AM	10/20/14 7:15 AM	0.01	0.05	2,810.00	1.19	0.04	1 hr	CloudBurst	140.50
CSO118	10/20/14 8:00 PM	10/20/14 8:00 PM	0.06	0.08	11,758.20	1.26	0.07	1 hr	CloudBurst	940.66
CSO118	10/28/14 1:00 PM	10/28/14 1:00 PM	0.03	0.12	5,103.04	0.11	0.07	6 hr	CloudBurst	612.36
CSO118	11/23/14 5:30 PM	11/23/14 11:30 PM	0.01	0.68	1,970,563.21	1.05	0.31	12 hr	CloudBurst	1,339,982.98
CSO118	11/24/14 11:30 AM	11/24/14 11:30 AM	0.08	0.02	1,830.73	0.74	0.02	1 hr	CloudBurst	36.61
CSO118	12/1/14 3:45 AM	12/1/14 4:15 PM	0.03	0.81	263,260.34	0.76	0.31	24 hr	CloudBurst	213,240.88
CSO118	12/4/14 2:30 PM	12/5/14 6:15 AM	0.01	0.59	2,120.37	1.18	0.19	48 hr	CloudBurst	1,251.02
CSO118	12/5/14 8:30 PM	12/6/14 7:30 AM	0.03	0.59	5,506,053.73	1.40	0.19	48 hr	CloudBurst	3,248,571.70
CSO118	12/16/14 5:00 AM	12/16/14 5:45 AM	0.27	0.09	265,411.84	-	0.05	3 hr	CloudBurst	23,887.07
CSO118	12/22/14 10:30 PM	12/23/14 12:15 AM	0.01	0.22	9,458.10	-	0.14	3 hr	CloudBurst	2,080.78
CSO118	12/23/14 8:00 PM	12/23/14 8:15 PM	0.13	0.10	4,101.15	-	0.05	1 hr	CloudBurst	410.11
CSO118	12/24/14 12:45 PM	12/24/14 2:15 PM	0.41	0.19	3,376.15	-	0.17	3 hr	Atlas14	641.47
CSO118	12/27/14 5:00 PM	12/28/14 2:00 AM	0.04	0.32	620,750.15	-	0.27	1 hr	CloudBurst	198,640.05
CSO118	1/3/15 5:45 AM	1/4/15 4:00 AM	0.26	0.33	6,268.18	0.34	0.12	24 hr	Atlas	2,068.50
CSO118	2/1/15 12:00 PM	2/1/15 6:00 PM	0.01	0.39	163,271.20	0.51	0.18	3 hr	Atlas	63,675.77
CSO118	2/21/15 3:30 AM	2/21/15 3:45 PM	0.03	1.20	8,207.85	1.44	0.46	24 hr	Atlas	9,849.42
CSO118	3/3/15 6:45 PM	3/4/15 5:00 PM	0.04	1.67	2,568,713.93	1.31	0.54	48 hr	Atlas	4,289,752.26
CSO118	3/7/15 1:15 PM	3/7/15 7:00 PM	0.14	0.04	16,122,349.24	1.72	0.03	1 hr	Atlas	644,893.96
CSO118	3/10/15 6:45 AM	3/10/15 3:30 PM	0.04	1.21	5,313,570.21	2.88	0.55	12 hr	Atlas	6,429,419.96
CSO118	3/13/15 10:00 AM	3/14/15 5:45 PM	0.08	1.72	6,328,524.45	2.93	0.65	24 hr	Atlas	10,885,062.05
CSO118	3/19/15 7:00 PM	3/19/15 7:45 PM	0.16	0.19	1,920.83	1.90	0.08	6 hr	Atlas	364.96
CSO118	3/24/15 2:45 PM	3/24/15 8:30 PM	0.10	0.12	6,300.69	0.29	0.06	1 hr	Atlas	756.08
CSO118	3/26/15 4:15 AM	3/26/15 6:45 AM	0.46	0.47	1,248,699.63	0.62	0.18	12 hr	Atlas	586,888.83
CSO118	3/26/15 3:15 PM	3/26/15 4:00 PM	0.01	0.47	657.03	0.72	0.18	12 hr	Atlas	308.80
CSO118	4/2/15 9:30 AM	4/3/15 5:15 PM	0.01	4.71	4,007,118.35	4.87	8.02	6 hr	Cloudburst	18,873,527.41

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO118	4/7/15 9:15 AM	4/7/15 7:15 PM	0.01	0.86	5,075,066.18	5.58	0.39	1 hr	Atlas	4,364,556.91
CSO118	4/8/15 6:15 PM	4/8/15 7:15 PM	0.25	0.11	3,398,915.96	5.68	0.06	3 hr	Atlas	373,880.76
CSO118	4/9/15 11:30 AM	4/9/15 12:45 PM	0.01	0.26	2,865,853.99	5.60	0.23	1 hr	Atlas	745,122.04
CSO118	4/10/15 2:15 AM	4/10/15 3:45 AM	0.52	0.17	4,968,041.34	3.42	0.10	3 hr	Atlas	844,567.03
CSO118	4/13/15 8:15 PM	4/13/15 10:00 PM	0.66	0.37	1,325,761.64	1.48	0.15	6 hr	Atlas	490,531.81
CSO118	4/14/15 7:15 AM	4/14/15 12:30 PM	0.46	0.37	619,133.08	1.68	0.15	6 hr	Atlas	229,079.24
CSO118	4/16/15 10:15 AM	4/16/15 10:15 AM	0.03	0.04	1,852.86	0.88	0.03	1 hr	Atlas	74.11
CSO118	4/19/15 6:30 AM	4/19/15 6:30 PM	0.07	0.70	1,287,771.97	1.15	0.29	12 hr	Atlas	901,440.38
CSO118	4/20/15 3:30 AM	4/20/15 3:30 AM	0.01	0.07	3,621.13	1.21	0.06	1 hr	Atlas	253.48
CSO118	4/25/15 9:00 AM	4/25/15 9:45 AM	0.06	0.21	42,764.29	0.90	0.08	24 hr	Atlas	8,980.50
CSO118	4/25/15 7:00 PM	4/25/15 7:00 PM	0.38	0.21	1,281.25	0.96	0.08	24 hr	Atlas	269.06
CSO118	4/30/15 1:00 PM	4/30/15 1:30 PM	0.93	0.09	7,174.07	0.30	0.08	1 hr	Atlas	645.67
CSO118	5/9/15 3:30 AM	5/9/15 3:30 AM	0.25	0.09	3,523.26	0.06	0.05	3 hr	Atlas	317.09
CSO118	5/11/15 5:45 PM	5/11/15 5:45 PM	0.51	0.07	3,159.23	0.16	0.06	1 hr	Atlas	221.15
CSO118	5/16/15 11:45 AM	5/16/15 1:45 PM	0.93	0.37	897,720.11	0.39	0.17	3 hr	Atlas	332,156.44
CSO118	5/17/15 2:15 PM	5/17/15 3:00 PM	0.24	0.08	5,915,364.87	0.50	0.05	1 hr	Atlas	473,229.19
CSO118	5/25/15 6:30 AM	5/25/15 8:45 AM	0.36	0.25	59,883.94	0.22	0.11	12 hr	Atlas	14,970.98
CSO118	5/26/15 1:45 PM	5/26/15 3:00 PM	1.32	0.28	2,583,195.91	0.48	0.20	1 hr	Atlas	723,294.85
CSO118	5/27/15 1:45 PM	5/27/15 1:45 PM	0.03	0.10	11,707.60	0.63	0.09	1 hr	Atlas	1,170.76
CSO118	5/30/15 4:15 PM	5/30/15 4:15 PM	0.24	0.10	4,948.75	0.71	0.07	1 hr	Atlas	494.88
CSO118	6/8/15 7:15 AM	6/8/15 9:00 AM	0.10	0.22	2,145,119.12	0.29	0.12	6 hr	Atlas	471,926.21
CSO118	6/17/15 4:45 AM	6/17/15 7:15 AM	0.03	0.54	2,934,892.92	0.61	0.29	3 hr	Atlas	1,584,842.17
CSO118	6/17/15 5:15 PM	6/17/15 5:15 PM	1.32	0.09	2,104.05	0.69	0.07	1 hr	Atlas	189.36
CSO118	6/18/15 4:15 PM	6/18/15 5:15 PM	0.42	1.61	434,595.62	1.07	0.52	48 hr	Atlas	699,698.95
CSO118 Count										80.00
CSO118 Total Volume (GAL)										88,701,788.54
CSO120	7/2/14 4:30 PM	7/2/14 4:30 PM	0.02	0.12	115,568.23	0.40	0.10	1 hr	CloudBurst	13,868.19
CSO120	7/7/14 7:30 PM	7/7/14 7:45 PM	0.03	0.62	149,747.84	0.95	0.54	1 hr	CloudBurst	92,843.66
CSO120	7/13/14 10:30 PM	7/13/14 11:00 PM	0.02	0.69	177,646.97	1.50	0.34	1 hr	CloudBurst	122,576.41
CSO120	7/14/14 8:15 PM	7/14/14 8:15 PM	0.02	0.30	327,414.01	1.41	0.20	3 hr	CloudBurst	98,224.20
CSO120	7/26/14 9:45 AM	7/26/14 10:15 PM	0.01	0.97	185,090.40	0.49	0.43	12 hr	CloudBurst	179,537.68
CSO120	7/27/14 6:45 AM	7/27/14 8:00 AM	0.01	0.97	118,139.31	0.96	0.43	12 hr	CloudBurst	114,595.13
CSO120	8/8/14 6:00 AM	8/8/14 7:30 AM	0.01	0.87	283,643.18	0.66	0.42	6 hr	CloudBurst	246,769.57
CSO120	8/10/14 4:00 AM	8/10/14 4:15 AM	0.02	0.78	42,724.96	1.74	0.65	1 hr	CloudBurst	33,325.47
CSO120	8/11/14 3:30 PM	8/11/14 3:30 PM	0.01	0.35	373,945.67	2.10	0.30	1 hr	CloudBurst	130,880.98
CSO120	8/17/14 9:30 AM	8/17/14 10:15 AM	0.01	0.72	99,967.93	0.95	0.27	24 hr	CloudBurst	71,976.91
CSO120	8/22/14 7:15 PM	8/22/14 7:15 PM	0.06	0.22	507,102.10	0.94	0.13	3 hr	CloudBurst	111,562.46
CSO120	8/23/14 8:00 PM	8/23/14 8:30 PM	0.07	0.52	180,909.60	1.28	0.26	3 hr	CloudBurst	94,072.99
CSO120	8/27/14 3:00 PM	8/27/14 3:00 PM	0.28	0.12	321,719.27	1.01	0.09	1 hr	CloudBurst	38,606.31
CSO120	8/30/14 3:15 PM	8/30/14 3:30 PM	0.01	0.54	223,183.54	1.03	0.31	1 hr	CloudBurst	120,519.11
CSO120	9/11/14 12:45 AM	9/11/14 6:00 AM	0.28	1.86	192,281.85	1.81	1.23	3 hr	Atlas14	357,644.23
CSO120	10/6/14 9:45 AM	10/6/14 9:45 AM	0.01	0.22	621,544.32	0.42	0.09	12 hr	CloudBurst	136,739.75
CSO120	10/7/14 12:00 PM	10/7/14 12:00 PM	0.01	0.22	64,644.65	0.70	0.18	1 hr	CloudBurst	14,221.82
CSO120	10/10/14 2:00 AM	10/10/14 3:00 AM	0.02	1.19	130,846.52	1.50	0.55	1 hr	CloudBurst	155,707.36
CSO120	10/13/14 4:30 AM	10/13/14 6:00 AM	0.01	0.42	74,248.87	2.03	0.27	3 hr	CloudBurst	31,184.53
CSO120	10/13/14 11:30 PM	10/13/14 11:45 PM	0.02	0.88	190,243.21	2.14	0.39	12 hr	CloudBurst	167,414.02
CSO120	10/14/14 8:00 AM	10/14/14 8:15 AM	0.05	0.88	113,072.32	2.65	0.39	12 hr	CloudBurst	99,503.64
CSO120	11/23/14 5:30 PM	11/23/14 7:30 PM	0.06	0.74	89,889.67	1.00	0.32	12 hr	CloudBurst	66,518.36
CSO120	12/1/14 3:15 AM	12/1/14 3:15 AM	0.01	0.87	362.13	0.22	0.33	24 hr	CloudBurst	315.05
CSO120	12/5/14 11:15 PM	12/6/14 6:45 AM	0.01	0.64	414,108.88	1.51	0.21	48 hr	CloudBurst	265,029.68
CSO120	12/16/14 5:15 AM	12/16/14 5:15 AM	0.03	0.09	49,651.04	-	0.05	3 hr	CloudBurst	4,468.59
CSO120	12/28/14 1:00 AM	12/28/14 1:15 AM	0.01	0.32	106,598.34	-	0.27	1 hr	CloudBurst	34,111.47
CSO120	3/3/15 11:30 PM	3/4/15 12:45 PM	0.02	1.76	123,291.39	1.24	0.57	24 hr	Atlas	216,992.84
CSO120	3/10/15 7:15 AM	3/10/15 3:45 PM	0.01	1.13	583,835.95	2.89	0.51	12 hr	Atlas	659,734.62
CSO120	3/13/15 10:45 AM	3/14/15 6:15 AM	0.01	1.81	233,100.07	2.91	0.68	24 hr	Atlas	421,911.13

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO120	3/26/15 4:30 AM	3/26/15 6:00 AM	0.22	0.48	142,610.53	0.62	0.19	3 hr	Atlas	68,453.06
CSO120	4/2/15 10:45 AM	4/2/15 3:15 PM	0.01	4.76	35,326.76	1.07	7.33	6 hr	Cloudburst	168,155.36
CSO120	4/3/15 12:15 AM	4/3/15 11:15 PM	0.01	4.76	320,809.88	4.79	7.33	6 hr	Cloudburst	1,527,055.01
CSO120	4/7/15 9:15 AM	4/7/15 5:45 PM	0.04	0.92	451,114.93	5.68	0.46	1 hr	Atlas	415,025.74
CSO120	4/8/15 6:15 PM	4/8/15 6:15 PM	0.06	0.28	281,254.41	5.96	0.21	1 hr	Atlas	78,751.23
CSO120	4/9/15 11:30 AM	4/9/15 12:00 PM	0.01	0.18	417,316.22	5.71	0.16	1 hr	Atlas	75,116.92
CSO120	4/10/15 2:15 AM	4/10/15 3:00 AM	0.01	0.19	355,607.71	3.47	0.12	3 hr	Atlas	67,565.46
CSO120	4/13/15 8:45 PM	4/13/15 9:15 PM	0.08	0.37	117,640.56	1.66	0.15	6 hr	Atlas	43,527.01
CSO120	4/19/15 2:15 PM	4/19/15 2:45 PM	0.01	0.76	121,277.22	1.10	0.32	12 hr	Atlas	92,170.68
CSO120	4/25/15 9:15 AM	4/25/15 9:15 AM	0.31	0.13	137,964.74	0.99	0.06	12 hr	Atlas	17,935.42
CSO120	5/16/15 11:45 AM	5/16/15 11:45 AM	0.01	0.46	7,079.69	0.33	0.23	3 hr	Atlas	3,256.66
CSO120	5/17/15 2:30 PM	5/17/15 2:30 PM	0.01	0.08	393,957.96	0.58	0.05	1 hr	Atlas	31,516.64
CSO120	5/26/15 1:45 PM	5/26/15 2:15 PM	0.55	0.23	232,509.91	0.49	0.17	1 hr	Atlas	53,477.28
CSO120	5/27/15 1:45 PM	5/27/15 1:45 PM	0.35	0.13	150,228.05	0.65	0.11	1 hr	Atlas	19,529.65
CSO120	6/8/15 8:30 AM	6/8/15 8:30 AM	0.81	0.22	589.96	0.24	0.13	3 hr	Atlas	129.79
CSO120	6/17/15 4:45 AM	6/17/15 6:15 AM	0.06	0.63	306,035.62	0.67	0.36	3 hr	Atlas	192,802.44
CSO120	6/18/15 4:15 PM	6/18/15 6:00 PM	0.19	1.38	129,054.59	1.11	0.45	48 hr	Atlas	178,095.33
CSO120	6/20/15 1:45 AM	6/20/15 8:30 AM	0.96	1.38	243,582.64	2.13	0.45	48 hr	Atlas	336,144.05
CSO120	6/26/15 12:00 AM	6/26/15 12:00 AM	0.35	0.49	208,529.34	1.39	0.26	6 hr	Atlas	102,179.38
CSO120	6/26/15 5:15 PM	6/27/15 12:00 AM	0.01	0.93	140,843.68	2.45	0.53	1 hr	Atlas	130,984.62
CSO120 Count										49.00
CSO120 Total Volume (GAL)										7,702,727.91
CSO121	7/2/14 4:15 PM	7/2/14 4:15 PM	0.73	0.12	45,032.55	0.38	0.10	1 hr	CloudBurst	5,403.91
CSO121	7/7/14 7:30 PM	7/7/14 7:45 PM	0.49	0.62	230,979.67	0.95	0.54	1 hr	CloudBurst	143,207.39
CSO121	7/13/14 10:45 PM	7/13/14 10:45 PM	0.01	0.69	198,405.07	1.48	0.34	1 hr	CloudBurst	136,899.50
CSO121	7/14/14 8:15 PM	7/14/14 8:15 PM	0.01	0.30	136,136.81	1.41	0.20	3 hr	CloudBurst	40,841.04
CSO121	7/26/14 9:30 PM	7/26/14 10:45 PM	0.01	0.97	63,355.91	0.56	0.43	12 hr	CloudBurst	61,455.23
CSO121	7/27/14 7:15 AM	7/27/14 9:15 AM	0.02	0.97	33,860.14	1.01	0.43	12 hr	CloudBurst	32,844.33
CSO121	8/8/14 5:45 AM	8/8/14 7:30 AM	0.02	0.87	188,519.93	0.66	0.42	6 hr	CloudBurst	164,012.34
CSO121	8/10/14 4:15 AM	8/10/14 4:15 AM	0.33	0.78	21,614.03	1.74	0.65	1 hr	CloudBurst	16,858.95
CSO121	8/11/14 3:15 PM	8/11/14 3:30 PM	0.01	0.35	64,201.85	2.10	0.30	1 hr	CloudBurst	22,470.65
CSO121	8/17/14 9:30 AM	8/17/14 9:45 AM	0.01	0.72	40,400.88	0.89	0.27	24 hr	CloudBurst	29,088.64
CSO121	8/22/14 7:15 PM	8/22/14 7:15 PM	0.01	0.22	429,489.84	0.94	0.13	3 hr	CloudBurst	94,487.77
CSO121	8/23/14 8:15 PM	8/23/14 8:15 PM	0.05	0.52	109,695.15	1.27	0.26	3 hr	CloudBurst	57,041.48
CSO121	8/27/14 3:00 PM	8/27/14 3:00 PM	0.02	0.12	236,164.32	1.01	0.09	1 hr	CloudBurst	28,339.72
CSO121	8/30/14 3:00 PM	8/30/14 4:00 PM	0.32	0.54	424,225.32	1.12	0.31	1 hr	CloudBurst	229,081.67
CSO121	9/2/14 8:15 AM	9/2/14 8:15 AM	0.01	0.40	34,277.58	1.00	0.25	3 hr	Atlas14	13,711.03
CSO121	9/11/14 1:00 AM	9/11/14 6:00 AM	0.29	1.86	90,177.31	1.81	1.23	3 hr	Atlas14	167,729.79
CSO121	10/6/14 9:30 AM	10/6/14 9:45 AM	0.01	0.22	258,156.81	0.42	0.09	12 hr	CloudBurst	56,794.50
CSO121	10/7/14 11:45 AM	10/7/14 11:45 AM	0.01	0.22	84,913.35	0.70	0.18	1 hr	CloudBurst	18,680.94
CSO121	10/10/14 1:45 AM	10/10/14 2:15 AM	0.01	1.19	18,622.21	1.10	0.55	1 hr	CloudBurst	22,160.43
CSO121	10/13/14 4:15 AM	10/13/14 4:30 AM	0.01	0.42	140,206.63	1.78	0.27	3 hr	CloudBurst	58,886.78
CSO121	10/13/14 11:15 PM	10/13/14 11:45 PM	0.05	0.88	38,445.87	2.14	0.39	12 hr	CloudBurst	33,832.36
CSO121	10/14/14 8:00 AM	10/14/14 8:15 AM	0.08	0.88	42,063.96	2.65	0.39	12 hr	CloudBurst	37,016.29
CSO121	11/5/14 12:15 AM	11/5/14 12:15 AM	0.07	0.10	9,756.56	0.23	0.05	3 hr	CloudBurst	975.66
CSO121	11/23/14 1:30 PM	11/23/14 7:00 PM	0.01	0.74	53,126.42	0.97	0.32	12 hr	CloudBurst	39,313.55
CSO121	12/6/14 1:45 AM	12/6/14 6:00 AM	0.01	0.64	277,836.49	1.51	0.21	48 hr	CloudBurst	177,815.35
CSO121	12/28/14 1:00 AM	12/28/14 1:00 AM	0.01	0.32	56,495.94	-	0.27	1 hr	CloudBurst	18,078.70
CSO121	1/3/15 11:45 AM	1/3/15 11:45 AM	0.01	0.36	1,853.18	0.13	0.13	24 hr	Atlas	667.15
CSO121	2/21/15 5:00 AM	2/21/15 5:15 PM	0.01	1.24	720.81	1.53	0.48	24 hr	Atlas	893.80
CSO121	3/3/15 10:45 PM	3/4/15 7:15 AM	0.01	1.76	17,021.54	0.91	0.57	24 hr	Atlas	29,957.92
CSO121	3/10/15 4:30 AM	3/11/15 12:45 AM	0.04	1.13	823,543.10	2.89	0.51	12 hr	Atlas	930,603.70
CSO121	3/13/15 10:30 AM	3/15/15 7:15 PM	0.01	1.81	811,667.78	2.94	0.68	24 hr	Atlas	1,469,118.69
CSO121	3/19/15 8:30 PM	3/20/15 7:45 AM	0.21	0.20	3,923.23	2.01	0.08	12 hr	Atlas	784.65
CSO121	3/24/15 2:15 PM	3/24/15 2:15 PM	0.01	0.12	203.39	0.22	0.07	1 hr	Atlas	24.41

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO121	3/26/15 4:00 AM	3/26/15 6:00 AM	0.01	0.48	35,254.46	0.62	0.19	3 hr	Atlas	16,922.14
CSO121	3/26/15 3:30 PM	3/26/15 3:45 PM	0.02	0.48	543.36	0.74	0.19	3 hr	Atlas	260.81
CSO121	4/2/15 9:15 AM	4/2/15 3:30 PM	0.01	4.76	34,693.32	1.09	7.33	6 hr	Cloudburst	165,140.20
CSO121	4/3/15 12:00 AM	4/3/15 5:30 PM	0.02	4.76	483,304.30	4.79	7.33	6 hr	Cloudburst	2,300,528.47
CSO121	4/7/15 7:30 AM	4/7/15 7:15 PM	0.01	0.92	77,626.56	5.68	0.46	1 hr	Atlas	71,416.44
CSO121	4/8/15 6:00 PM	4/8/15 6:15 PM	0.01	0.28	38,339.21	5.96	0.21	1 hr	Atlas	10,734.98
CSO121	4/9/15 12:00 PM	4/9/15 12:00 PM	0.23	0.18	76,238.95	5.71	0.16	1 hr	Atlas	13,723.01
CSO121	4/10/15 2:15 AM	4/10/15 2:30 AM	0.18	0.19	353,363.49	3.44	0.12	3 hr	Atlas	67,139.06
CSO121	4/13/15 8:30 PM	4/13/15 9:00 PM	0.01	0.37	31,526.91	1.66	0.15	6 hr	Atlas	11,664.96
CSO121	4/14/15 7:15 AM	4/14/15 7:45 AM	0.01	0.37	352.22	1.69	0.15	6 hr	Atlas	130.32
CSO121	4/19/15 6:45 AM	4/19/15 2:45 PM	0.51	0.76	72,252.48	1.10	0.32	12 hr	Atlas	54,911.88
CSO121	5/16/15 11:45 AM	5/16/15 11:45 AM	0.35	0.46	12,483.63	0.33	0.23	3 hr	Atlas	5,742.47
CSO121	5/17/15 2:15 PM	5/17/15 2:15 PM	0.84	0.08	81,532.29	0.58	0.05	1 hr	Atlas	6,522.58
CSO121	6/8/15 8:15 AM	6/8/15 8:15 AM	2.36	0.22	135,201.89	0.24	0.13	3 hr	Atlas	29,744.42
CSO121	6/17/15 4:45 AM	6/17/15 6:00 AM	0.47	0.63	6,272.52	0.61	0.36	3 hr	Atlas	3,951.69
CSO121	6/18/15 5:15 PM	6/18/15 5:45 PM	0.01	1.38	49,928.73	1.10	0.45	48 hr	Atlas	68,901.65
CSO121	6/20/15 12:30 AM	6/20/15 8:15 AM	0.08	1.38	137,614.67	2.12	0.45	48 hr	Atlas	189,908.24
CSO121	6/25/15 11:45 PM	6/26/15 12:00 AM	0.01	0.49	50,814.65	1.40	0.26	6 hr	Atlas	24,899.18
CSO121	6/26/15 5:00 PM	6/27/15 12:00 AM	0.26	0.93	277,921.05	2.45	0.53	1 hr	Atlas	258,466.58
CSO121 Count										52.00
CSO121 Total Volume (GAL)										7,439,787.38
CSO125	7/2/14 4:30 PM	7/2/14 4:45 PM	1.74	0.20	848,702.71	0.59	0.17	1 hr	CloudBurst	169,740.54
CSO125	7/7/14 7:45 PM	7/7/14 8:00 PM	0.36	0.76	178,126.45	1.13	0.66	1 hr	CloudBurst	135,376.11
CSO125	7/13/14 11:00 PM	7/13/14 11:15 PM	0.02	0.51	92,345.09	1.41	0.24	3 hr	CloudBurst	47,096.00
CSO125	7/14/14 8:30 PM	7/14/14 8:30 PM	0.02	0.20	185,508.75	1.02	0.13	3 hr	CloudBurst	37,101.75
CSO125	7/26/14 9:45 PM	7/26/14 10:15 PM	0.03	1.12	160,618.08	0.56	0.50	12 hr	CloudBurst	179,892.25
CSO125	7/27/14 7:15 AM	7/27/14 8:00 AM	0.01	1.12	98,173.10	1.09	0.50	12 hr	CloudBurst	109,953.87
CSO125	8/8/14 6:00 AM	8/8/14 7:45 AM	0.35	1.08	59,082.99	0.84	0.55	6 hr	CloudBurst	63,809.63
CSO125	8/10/14 4:15 AM	8/10/14 4:30 AM	0.01	0.27	240,211.85	1.43	0.23	1 hr	CloudBurst	64,857.20
CSO125	8/11/14 3:30 PM	8/11/14 3:45 PM	0.01	0.28	193,073.21	1.70	0.23	1 hr	CloudBurst	54,060.50
CSO125	8/17/14 8:15 PM	8/17/14 8:15 PM	0.02	0.73	5,068.56	1.00	0.28	24 hr	CloudBurst	3,700.05
CSO125	8/22/14 7:00 PM	8/22/14 7:30 PM	0.01	0.39	789,999.64	1.00	0.25	3 hr	Atlas14	308,099.86
CSO125	8/23/14 4:00 PM	8/23/14 9:45 PM	0.03	0.73	1,098,576.45	1.79	0.35	6 hr	CloudBurst	801,960.81
CSO125	8/27/14 4:45 PM	8/27/14 5:30 PM	0.04	0.42	1,023,225.07	1.57	0.27	3 hr	CloudBurst	429,754.53
CSO125	8/30/14 3:30 PM	8/30/14 4:00 PM	0.16	0.42	455,092.87	1.44	0.22	1 hr	CloudBurst	191,139.01
CSO125	9/2/14 8:30 AM	9/2/14 8:45 AM	1.68	0.37	455,778.61	1.16	0.23	3 hr	CloudBurst	168,638.09
CSO125	9/11/14 12:45 AM	9/11/14 7:00 AM	0.31	1.90	930,653.16	1.86	1.30	3 hr	Atlas14	1,768,241.01
CSO125	9/28/14 7:45 PM	9/28/14 8:00 PM	0.33	0.15	1,772,724.45	0.15	0.13	1 hr	CloudBurst	265,908.67
CSO125	10/6/14 9:45 AM	10/6/14 10:00 AM	0.01	0.37	212,391.90	0.56	0.19	3 hr	CloudBurst	78,585.00
CSO125	10/7/14 12:00 PM	10/7/14 12:00 PM	0.01	0.18	322,468.36	0.79	0.15	1 hr	CloudBurst	58,044.30
CSO125	10/10/14 2:00 AM	10/10/14 3:15 AM	0.01	1.06	515,099.37	1.58	0.52	3 hr	Atlas14	546,005.34
CSO125	10/13/14 5:30 AM	10/13/14 6:30 AM	0.01	0.50	198,424.40	2.12	0.32	3 hr	CloudBurst	99,212.20
CSO125	10/13/14 11:30 PM	10/14/14 10:30 AM	0.02	1.19	588,063.88	2.95	0.54	12 hr	CloudBurst	699,796.02
CSO125	11/23/14 5:30 PM	11/23/14 7:45 PM	0.03	0.77	322,396.15	1.05	0.35	6 hr	CloudBurst	248,245.03
CSO125	12/1/14 3:30 AM	12/1/14 3:30 AM	0.07	0.76	20,336.57	0.22	0.29	24 hr	CloudBurst	15,455.79
CSO125	12/5/14 11:15 PM	12/6/14 7:15 AM	0.01	0.64	2,741,930.21	1.40	0.21	48 hr	CloudBurst	1,754,835.33
CSO125	12/28/14 1:15 AM	12/28/14 1:30 AM	0.01	0.32	131,413.90	-	0.27	1 hr	CloudBurst	42,052.45
CSO125	3/3/15 11:30 PM	3/4/15 5:00 PM	0.01	1.66	1,214,252.16	1.31	0.54	24 hr	Atlas	2,015,658.58
CSO125	3/10/15 7:15 AM	3/10/15 8:30 PM	0.02	1.08	2,499,504.09	2.74	0.49	12 hr	Atlas	2,699,464.42
CSO125	3/13/15 10:45 AM	3/14/15 12:45 PM	0.24	1.50	1,626,024.86	2.59	0.56	24 hr	Atlas	2,439,037.30
CSO125	3/26/15 4:30 AM	3/26/15 5:00 AM	0.03	0.40	378,775.26	0.47	0.17	12 hr	Atlas	151,510.10
CSO125	4/2/15 10:45 AM	4/4/15 4:30 AM	0.02	4.31	13,298,290.67	4.46	4.56	24 hr	Cloudburst	57,315,632.78
CSO125	4/7/15 9:30 AM	4/7/15 6:15 PM	0.01	0.77	1,484,862.78	5.08	0.37	1 hr	Atlas	1,143,344.34
CSO125	4/8/15 6:15 PM	4/8/15 6:45 PM	0.26	0.12	2,266,611.25	5.21	0.08	1 hr	Atlas	271,993.35
CSO125	4/9/15 11:45 AM	4/9/15 12:15 PM	0.01	0.26	1,113,473.53	5.11	0.22	1 hr	Atlas	289,503.12

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO125	4/10/15 2:30 AM	4/10/15 3:15 AM	0.01	0.14	789,059.58	2.92	0.09	3 hr	Atlas	110,468.34
CSO125	4/13/15 9:15 PM	4/13/15 9:30 PM	0.01	0.12	1,393,892.70	1.41	0.07	3 hr	Atlas	167,267.12
CSO125	4/19/15 6:45 AM	4/19/15 3:15 PM	0.05	0.83	611,521.37	1.25	0.33	12 hr	Atlas	507,562.74
CSO125	4/25/15 7:15 PM	4/25/15 7:15 PM	0.04	0.15	195,219.93	1.17	0.10	1 hr	Atlas	29,282.99
CSO125	5/11/15 6:00 PM	5/11/15 6:00 PM	0.46	0.07	365,598.49	0.22	0.06	1 hr	Atlas	25,591.89
CSO125	5/26/15 2:00 PM	5/26/15 2:30 PM	0.09	0.36	506,842.95	0.63	0.23	1 hr	Atlas	182,463.46
CSO125	5/27/15 2:00 PM	5/27/15 2:00 PM	0.01	0.09	534,246.09	0.82	0.08	1 hr	Atlas	48,082.15
CSO125	6/5/15 12:45 AM	6/5/15 1:30 AM	0.33	Discharge		0.17	Water Main Break			46,575.66
CSO125	6/17/15 5:00 AM	6/17/15 6:00 AM	0.01	0.61	112,136.59	0.63	0.35	3 hr	Atlas	68,403.32
CSO125	6/18/15 2:00 AM	6/18/15 5:45 AM	0.73	0.06	60,823,262.70	0.74	0.04	1 hr	Atlas	3,649,395.76
CSO125	6/18/15 4:30 PM	6/20/15 8:45 AM	0.55	1.94	579,197.56	2.67	0.63	48 hr	Atlas	1,123,643.28
CSO125	6/26/15 12:00 AM	6/26/15 7:30 AM	1.08	0.38	124,143.56	1.77	0.21	6 hr	Atlas	47,174.55
CSO125	6/26/15 5:15 PM	6/27/15 1:15 AM	0.02	0.70	516,323.29	2.34	0.35	1 hr	Atlas	361,426.30
CSO125 Count										47.00
CSO125 Total Volume (GAL)										81,035,042.89
CSO126	7/7/14 7:30 PM	7/7/14 7:30 PM	0.01	0.76	38,943.53	1.05	0.66	1 hr	CloudBurst	29,597.08
CSO126	7/26/14 9:45 PM	7/26/14 9:45 PM	0.03	1.12	16,770.16	0.48	0.50	12 hr	CloudBurst	18,782.58
CSO126	7/27/14 7:45 AM	7/28/14 3:30 PM	0.01	1.12	101,498.18	1.09	0.50	12 hr	CloudBurst	113,677.96
CSO126	8/22/14 7:00 PM	8/23/14 2:15 AM	0.05	0.39	138,902.91	1.12	0.25	3 hr	Atlas14	54,172.14
CSO126	8/23/14 8:00 PM	8/23/14 8:15 PM	0.17	0.73	60,880.79	1.53	0.35	6 hr	CloudBurst	44,442.98
CSO126	8/27/14 5:15 PM	8/27/14 8:15 PM	1.85	0.42	55,653.40	1.58	0.27	3 hr	CloudBurst	23,374.43
CSO126	8/30/14 5:15 PM	8/31/14 2:15 PM	2.77	0.42	968,342.55	1.43	0.22	1 hr	CloudBurst	406,703.87
CSO126	9/11/14 1:00 AM	9/11/14 11:30 AM	0.78	1.90	663,269.22	1.90	1.30	3 hr	Atlas14	1,260,211.52
CSO126	12/6/14 2:45 AM	12/6/14 7:00 AM	0.01	1.84	234,988.90	1.40	0.20	48 hr	CloudBurst	432,379.57
CSO126	3/4/15 3:30 AM	3/4/15 1:15 PM	0.01	1.66	305,455.61	1.18	0.54	24 hr	Atlas	507,056.31
CSO126	3/10/15 10:45 AM	3/11/15 2:00 AM	1.32	1.08	4,902,387.08	2.73	0.49	12 hr	Atlas	5,294,578.05
CSO126	3/13/15 10:45 AM	3/14/15 9:15 PM	0.30	1.50	7,039,486.23	2.59	0.56	24 hr	Atlas	10,559,229.35
CSO126	4/2/15 3:00 PM	4/2/15 4:00 PM	0.01	4.31	50,119.72	1.14	4.56	24 hr	Cloudburst	216,015.99
CSO126	4/3/15 12:15 AM	4/5/15 11:15 AM	0.13	4.31	18,424,921.14	4.35	4.56	24 hr	Cloudburst	79,411,410.11
CSO126	4/7/15 9:30 AM	4/7/15 6:15 PM	0.88	0.77	111,911.34	5.08	0.37	1 hr	Atlas	86,171.73
CSO126	4/9/15 12:00 PM	4/9/15 12:15 PM	0.44	0.26	27,365.26	5.11	0.22	1 hr	Atlas	7,114.97
CSO126	4/19/15 2:15 PM	4/19/15 3:00 PM	0.18	0.83	17,539.77	1.25	0.33	12 hr	Atlas	14,558.01
CSO126	5/17/15 2:15 PM	5/17/15 2:15 PM	0.41	0.11	201,806.25	0.54	0.08	1 hr	Atlas	22,198.69
CSO126	6/18/15 3:00 AM	6/18/15 4:15 AM	0.64	0.06	484,873.81	0.74	0.04	1 hr	Atlas	29,092.43
CSO126	6/18/15 5:15 PM	6/18/15 9:15 PM	1.44	1.94	239,698.60	1.45	0.63	48 hr	Atlas	465,015.28
CSO126	6/20/15 8:15 AM	6/22/15 4:45 AM	0.04	1.94	1,316,622.90	2.73	0.63	48 hr	Atlas	2,554,248.42
CSO126	6/26/15 12:45 AM	6/28/15 7:15 PM	2.46	0.38	3,032,160.60	2.47	0.21	6 hr	Atlas	1,152,221.03
CSO126	6/29/15 4:00 PM	6/30/15 10:45 AM	0.36	0.18	1,177,462.67	1.26	0.10	1 hr	Atlas	211,943.28
CSO126 Count										23.00
CSO126 Total Volume (GAL)										102,914,195.78
CSO127	7/2/14 4:15 PM	7/2/14 5:00 PM	0.45	0.22	158,046.94	0.49	0.19	1 hr	CloudBurst	34,770.33
CSO127	7/7/14 7:30 PM	7/7/14 7:45 PM	0.01	0.75	64,610.48	1.14	0.65	1 hr	CloudBurst	48,457.86
CSO127	7/13/14 10:00 PM	7/13/14 11:30 PM	0.01	0.63	117,894.06	1.52	0.32	3 hr	CloudBurst	74,273.26
CSO127	7/14/14 8:15 PM	7/14/14 8:30 PM	0.01	0.09	368,656.72	1.01	0.07	1 hr	CloudBurst	33,179.10
CSO127	7/26/14 9:45 PM	7/27/14 8:15 AM	0.01	1.24	1,315,691.59	1.19	0.55	12 hr	CloudBurst	1,631,457.58
CSO127	8/8/14 5:45 AM	8/8/14 8:00 AM	0.01	1.05	235,836.45	0.84	0.54	6 hr	CloudBurst	247,628.27
CSO127	8/9/14 4:00 AM	8/9/14 4:15 AM	0.01	0.06	473,604.87	1.11	0.03	12 hr	CloudBurst	28,416.29
CSO127	8/10/14 4:00 AM	8/10/14 4:30 AM	0.07	0.17	791,501.20	1.31	0.15	1 hr	CloudBurst	134,555.20
CSO127	8/11/14 3:30 PM	8/11/14 4:00 PM	0.03	0.35	755,727.43	1.64	0.29	1 hr	CloudBurst	264,504.60
CSO127	8/17/14 12:30 AM	8/17/14 12:45 AM	0.02	0.70	1,968.35	0.85	0.26	24 hr	CloudBurst	1,377.84
CSO127	8/17/14 9:30 AM	8/17/14 10:45 AM	0.01	0.70	93,879.31	0.95	0.26	24 hr	CloudBurst	65,715.52
CSO127	8/17/14 8:00 PM	8/17/14 8:15 PM	0.01	0.70	29,854.46	1.04	0.26	24 hr	CloudBurst	20,898.12
CSO127	8/22/14 7:00 PM	8/23/14 2:30 AM	0.10	0.53	1,467,350.77	1.25	0.36	1 hr	CloudBurst	777,695.91
CSO127	8/23/14 3:30 PM	8/23/14 10:00 PM	0.40	0.75	622,832.03	1.95	0.38	3 hr	CloudBurst	467,124.03
CSO127	8/27/14 2:45 PM	8/27/14 5:45 PM	0.01	0.42	3,181,136.57	1.74	0.28	3 hr	CloudBurst	1,336,077.36

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO127	8/30/14 3:15 PM	8/30/14 4:15 PM	0.07	0.55	1,331,109.61	1.53	0.30	1 hr	CloudBurst	732,110.29
CSO127	9/2/14 8:15 AM	9/2/14 9:00 AM	0.35	0.33	328,604.47	1.29	0.21	3 hr	CloudBurst	108,439.47
CSO127	9/11/14 12:30 AM	9/11/14 7:15 AM	0.03	2.01	1,532,230.12	1.99	1.63	3 hr	Atlas14	3,079,782.55
CSO127	10/3/14 4:15 AM	10/3/14 4:30 AM	0.03	0.18	24,968.35	0.18	0.07	3 hr	CloudBurst	4,494.30
CSO127	10/3/14 7:30 PM	10/3/14 7:30 PM	0.01	0.18	711.63	0.26	0.07	3 hr	CloudBurst	128.09
CSO127	10/6/14 8:00 AM	10/6/14 10:00 AM	0.06	0.19	157,535.80	0.33	0.09	6 hr	CloudBurst	29,931.80
CSO127	10/7/14 11:45 AM	10/7/14 12:15 PM	0.01	0.17	760,503.30	0.55	0.14	1 hr	CloudBurst	129,285.56
CSO127	10/10/14 5:30 PM	10/10/14 9:30 PM	0.44	1.15	15,394.39	1.61	0.57	3 hr	CloudBurst	17,703.55
CSO127	10/13/14 4:45 AM	10/13/14 6:45 AM	0.09	0.50	694,542.81	2.03	0.32	3 hr	CloudBurst	347,271.40
CSO127	10/13/14 11:30 PM	10/14/14 10:30 AM	0.01	1.26	541,453.65	3.09	0.56	12 hr	CloudBurst	682,231.60
CSO127	11/23/14 2:45 PM	11/23/14 8:15 PM	0.02	0.79	506,998.36	1.07	0.36	6 hr	CloudBurst	400,528.70
CSO127	12/1/14 3:30 AM	12/1/14 5:45 AM	0.02	0.71	192,398.08	0.37	0.27	24 hr	CloudBurst	136,602.64
CSO127	12/1/14 2:45 PM	12/1/14 3:30 PM	0.01	0.71	36,160.84	0.64	0.27	24 hr	CloudBurst	25,674.19
CSO127	12/5/14 4:45 AM	12/5/14 7:00 AM	0.05	0.64	52,676.39	1.18	0.21	48 hr	CloudBurst	33,712.89
CSO127	12/5/14 8:45 PM	12/6/14 7:45 AM	0.01	0.64	1,501,801.10	1.35	0.21	48 hr	CloudBurst	961,152.71
CSO127	12/16/14 5:30 AM	12/16/14 5:45 AM	0.31	0.09	64,789.46	-	0.05	3 hr	CloudBurst	5,831.05
CSO127	12/22/14 11:00 PM	12/23/14 12:15 AM	0.27	0.22	117,803.38	-	0.14	3 hr	CloudBurst	25,916.74
CSO127	12/23/14 8:15 PM	12/23/14 8:30 PM	0.13	0.10	108,553.64	-	0.05	1 hr	CloudBurst	10,855.36
CSO127	12/24/14 1:45 PM	12/24/14 2:00 PM	0.04	0.19	52,922.92	-	0.17	3 hr	Atlas14	10,055.35
CSO127	12/28/14 1:15 AM	12/28/14 2:00 AM	0.03	0.32	466,111.69	-	0.27	1 hr	CloudBurst	149,155.74
CSO127	1/3/15 11:00 AM	1/3/15 11:15 AM	0.28	0.45	90,696.02	0.16	0.17	24 hr	Atlas	40,813.21
CSO127	1/4/15 3:45 AM	1/4/15 4:00 AM	0.01	0.45	3,147.89	0.46	0.17	24 hr	Atlas	1,416.55
CSO127	2/1/15 1:00 PM	2/1/15 6:15 PM	0.01	0.37	122,961.32	0.49	0.17	12 hr	Atlas	45,495.69
CSO127	2/21/15 2:15 PM	2/21/15 3:45 PM	0.08	1.07	10,654.69	1.19	0.41	24 hr	Atlas	11,400.52
CSO127	3/3/15 7:00 PM	3/4/15 6:00 PM	0.02	1.67	544,315.64	1.35	0.54	48 hr	Atlas	909,007.12
CSO127	3/7/15 3:30 PM	3/7/15 5:15 PM	0.17	0.04	285,814.09	1.71	0.03	1 hr	Atlas	11,432.56
CSO127	3/10/15 7:00 AM	3/10/15 9:15 PM	0.08	1.09	1,037,845.07	2.76	0.50	12 hr	Atlas	1,131,251.13
CSO127	3/13/15 8:45 AM	3/14/15 1:00 PM	0.46	1.55	928,955.25	2.64	0.58	24 hr	Atlas	1,439,880.64
CSO127	3/26/15 4:45 AM	3/26/15 6:30 AM	0.23	0.42	94,499.84	0.56	0.17	3 hr	Atlas	39,689.93
CSO127	4/2/15 10:00 AM	4/4/15 4:15 AM	0.09	4.73	3,750,384.98	4.87	7.44	6 hr	Cloudburst	17,739,320.94
CSO127	4/7/15 9:15 AM	4/7/15 6:15 PM	0.03	0.73	167,231.26	5.47	0.33	1 hr	Atlas	122,078.82
CSO127	4/8/15 6:15 PM	4/8/15 7:00 PM	0.09	0.15	1,299,446.84	5.61	0.08	6 hr	Atlas	194,917.03
CSO127	4/9/15 11:45 AM	4/9/15 12:30 PM	0.46	0.28	210,757.62	5.52	0.24	1 hr	Atlas	59,012.13
CSO127	4/10/15 2:30 AM	4/10/15 3:30 AM	0.01	0.13	771,180.33	3.04	0.09	3 hr	Atlas	100,253.44
CSO127	4/13/15 8:45 PM	4/13/15 9:30 PM	0.05	0.49	165,984.33	1.39	0.20	6 hr	Atlas	81,332.32
CSO127	4/14/15 10:15 AM	4/14/15 12:00 PM	0.01	0.49	28,587.54	1.27	0.20	6 hr	Atlas	14,007.90
CSO127	4/19/15 8:00 AM	4/19/15 6:45 PM	0.01	0.94	232,394.47	1.39	0.36	24 hr	Atlas	218,450.80
CSO127	4/20/15 3:30 AM	4/20/15 3:45 AM	0.03	0.94	67,627.63	1.51	0.36	24 hr	Atlas	63,569.98
CSO127	4/25/15 9:30 AM	4/25/15 9:30 AM	0.01	0.19	24,544.85	1.05	0.07	24 hr	Atlas	4,663.52
CSO127	4/25/15 7:00 PM	4/25/15 7:15 PM	0.01	0.19	180,153.46	1.11	0.07	24 hr	Atlas	34,229.16
CSO127	5/11/15 5:45 PM	5/11/15 6:00 PM	0.22	0.10	1,684,544.27	0.26	0.09	1 hr	Atlas	168,454.43
CSO127	5/16/15 1:15 PM	5/16/15 1:30 PM	0.06	0.36	4,481.77	0.41	0.15	3 hr	Atlas	1,613.44
CSO127	5/17/15 2:30 PM	5/17/15 2:45 PM	0.96	0.15	827,191.49	0.60	0.10	1 hr	Atlas	124,078.72
CSO127	5/25/15 7:00 AM	5/25/15 8:45 AM	0.07	0.32	55,929.82	0.25	0.15	12 hr	Atlas	17,897.54
CSO127	5/26/15 1:45 PM	5/26/15 2:30 PM	0.59	0.36	330,485.99	0.57	0.22	1 hr	Atlas	118,974.96
CSO127	5/27/15 1:45 PM	5/27/15 2:15 PM	1.18	0.07	1,614,244.61	0.75	0.06	1 hr	Atlas	112,997.12
CSO127	6/8/15 8:30 AM	6/8/15 8:45 AM	0.07	0.19	431,003.13	0.22	0.10	6 hr	Atlas	81,890.60
CSO127	6/13/15 2:45 PM	6/13/15 2:45 PM	1.76	0.14	26,856.99	0.33	0.12	1 hr	Atlas	3,759.98
CSO127	6/18/15 4:15 PM	6/18/15 6:45 PM	0.38	2.15	817,447.63	1.76	0.70	48 hr	Atlas	1,757,512.42
CSO127	6/20/15 1:45 AM	6/20/15 11:15 AM	0.03	2.15	193,669.35	3.09	0.70	48 hr	Atlas	416,389.09
CSO127	6/22/15 6:30 AM	6/22/15 6:45 AM	0.03	0.18	98,791.14	3.10	0.08	12 hr	Atlas	17,782.41
CSO127	6/26/15 12:00 AM	6/26/15 1:45 AM	0.04	0.46	1,308,332.33	1.73	0.25	6 hr	Atlas	601,832.87

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO127	6/26/15 5:00 PM	6/27/15 1:30 AM	0.03	0.77	1,437,315.78	2.51	0.41	1 hr	Atlas	1,106,733.15
CSO127	6/29/15 1:30 PM	6/29/15 2:15 PM	0.07	0.20	678,086.80	1.41	0.12	1 hr	Atlas	135,617.36
CSO127 Count										69.00
CSO127 Total Volume (GAL)										38,984,752.74
CSO130	7/2/14 4:15 PM	7/2/14 5:30 PM	0.02	0.13	37,948.08	0.42	0.10	1 hr	CloudBurst	4,933.25
CSO130	7/7/14 7:45 PM	7/7/14 7:45 PM	0.04	0.49	10,873.21	0.82	0.43	1 hr	CloudBurst	5,327.88
CSO130	7/13/14 10:30 PM	7/13/14 11:45 PM	0.35	0.62	27,521.52	1.24	0.28	1 hr	CloudBurst	17,063.34
CSO130	7/14/14 8:15 PM	7/14/14 8:15 PM	0.92	0.34	20,022.76	1.31	0.23	3 hr	Atlas14	6,807.74
CSO130	7/26/14 9:45 PM	7/28/14 4:15 PM	0.24	0.94	1,529,106.36	0.97	0.42	12 hr	CloudBurst	1,437,359.98
CSO130	8/8/14 6:00 AM	8/8/14 8:45 AM	0.02	0.84	125,051.24	0.63	0.41	6 hr	CloudBurst	105,043.04
CSO130	8/10/14 4:15 AM	8/10/14 5:00 AM	0.04	0.53	16,470.44	1.46	0.44	1 hr	CloudBurst	8,729.33
CSO130	8/11/14 3:30 PM	8/11/14 4:00 PM	0.26	0.30	93,079.96	1.75	0.21	1 hr	CloudBurst	27,923.99
CSO130	8/17/14 9:45 AM	8/17/14 9:45 AM	0.03	0.70	5,630.27	0.82	0.26	24 hr	CloudBurst	3,941.19
CSO130	8/22/14 7:15 PM	8/22/14 7:30 PM	0.36	0.31	110,845.02	0.95	0.21	1 hr	CloudBurst	34,361.96
CSO130	8/23/14 2:15 PM	8/24/14 1:30 PM	0.01	0.48	1,292,776.37	1.46	0.23	3 hr	Atlas14	620,532.66
CSO130	8/26/14 9:00 PM	8/26/14 10:45 PM	0.01	0.22	944,608.13	1.02	0.19	1 hr	CloudBurst	207,813.79
CSO130	8/27/14 3:00 PM	8/27/14 3:00 PM	1.58	0.18	17,856.02	1.15	0.11	3 hr	CloudBurst	3,214.08
CSO130	8/30/14 10:30 AM	8/30/14 10:45 AM	0.01	0.55	1,598,740.13	1.27	0.34	1 hr	Atlas14	877,708.33
CSO130	9/2/14 8:30 AM	9/2/14 8:30 AM	0.01	0.42	26.54	1.24	0.26	3 hr	CloudBurst	11.15
CSO130	9/11/14 12:30 AM	9/11/14 11:45 AM	0.01	1.92	412,598.52	1.92	1.40	3 hr	Atlas14	792,189.16
CSO130	9/21/14 6:30 AM	9/21/14 6:30 AM	0.01	0.01	137,463.54	0.03	0.01	6 hr	CloudBurst	1,374.64
CSO130	10/3/14 3:30 AM	10/3/14 4:30 AM	0.05	0.23	24,322.87	0.10	0.09	24 hr	CloudBurst	5,594.26
CSO130	10/6/14 8:00 AM	10/6/14 10:00 AM	0.01	0.38	27,228.04	0.55	0.20	1 hr	CloudBurst	10,346.66
CSO130	10/7/14 11:45 AM	10/7/14 12:15 PM	0.05	0.23	24,315.63	0.83	0.18	1 hr	CloudBurst	5,592.59
CSO130	10/10/14 2:00 AM	10/10/14 3:45 AM	0.01	0.83	138,409.01	1.64	0.53	3 hr	CloudBurst	114,879.48
CSO130	10/10/14 9:15 PM	10/10/14 9:15 PM	1.77	0.27	26,332.10	1.69	0.12	12 hr	CloudBurst	7,109.67
CSO130	10/13/14 4:30 AM	10/13/14 6:15 AM	0.11	0.41	42,825.36	2.11	0.26	3 hr	CloudBurst	17,558.40
CSO130	10/13/14 11:30 PM	10/14/14 12:00 PM	0.03	0.95	210,416.48	2.71	0.43	12 hr	CloudBurst	199,895.66
CSO130	10/20/14 8:00 PM	10/20/14 8:00 PM	0.02	0.03	42,440.63	1.21	0.03	1 hr	CloudBurst	1,273.22
CSO130	10/31/14 8:15 PM	10/31/14 9:15 PM	0.01	0.17	14,762.99	0.27	0.06	48 hr	CloudBurst	2,509.71
CSO130	11/4/14 10:45 PM	11/5/14 4:30 AM	0.01	0.11	20,447.44	0.28	0.05	12 hr	CloudBurst	2,249.22
CSO130	11/5/14 6:45 PM	11/5/14 7:15 PM	0.97	0.01	271,738.55	0.29	0.01	6 hr	CloudBurst	2,717.39
CSO130	11/11/14 6:00 PM	11/11/14 7:00 PM	0.07	0.05	130,148.96	0.15	0.02	48 hr	CloudBurst	6,507.45
CSO130	11/16/14 6:45 PM	11/17/14 12:30 AM	0.01	0.16	357,642.52	0.19	0.14	6 hr	CloudBurst	57,222.80
CSO130	11/23/14 1:30 PM	11/23/14 7:30 PM	0.01	0.81	15,249.26	1.07	0.37	12 hr	CloudBurst	12,351.90
CSO130	12/1/14 1:00 AM	12/1/14 3:00 PM	0.01	0.86	17,069.62	0.74	0.33	24 hr	CloudBurst	14,679.87
CSO130	12/4/14 8:30 AM	12/5/14 6:45 AM	0.47	0.65	22,865.13	1.28	0.21	48 hr	CloudBurst	14,862.33
CSO130	12/5/14 5:30 PM	12/6/14 2:00 AM	0.01	0.65	11,316.27	1.51	0.21	48 hr	CloudBurst	7,355.57
CSO130	12/16/14 5:00 AM	12/16/14 5:00 AM	0.04	0.09	35,146.76	-	0.05	3 hr	CloudBurst	3,163.21
CSO130	12/22/14 10:15 PM	12/23/14 12:00 AM	0.08	0.22	19,296.59	-	0.14	3 hr	CloudBurst	4,245.25
CSO130	12/23/14 7:45 PM	12/23/14 8:15 PM	0.02	0.10	16,391.56	-	0.05	1 hr	CloudBurst	1,639.16
CSO130	12/24/14 12:30 PM	12/24/14 1:30 PM	0.07	0.19	7,271.98	-	0.17	3 hr	Atlas14	1,381.68
CSO130	12/27/14 5:00 PM	12/28/14 1:30 AM	0.01	0.32	16,635.29	-	0.27	1 hr	CloudBurst	5,323.29
CSO130	1/3/15 5:15 AM	1/4/15 3:15 AM	0.07	0.34	13,930.42	0.33	0.13	24 hr	Atlas	4,736.34
CSO130	1/11/15 11:45 PM	1/12/15 5:30 AM	0.52	0.16	25,380.67	0.14	0.06	24 hr	Atlas	4,060.91
CSO130	1/18/15 3:15 AM	1/18/15 3:45 AM	0.01	0.07	29,108.63	0.23	0.06	1 hr	Atlas	2,037.60
CSO130	1/23/15 7:00 PM	1/23/15 8:00 PM	0.04	0.08	5,058.59	0.15	0.05	3 hr	Atlas	404.69
CSO130	1/25/15 4:00 PM	1/25/15 10:15 PM	0.24	0.15	6,541.32	0.23	0.07	12 hr	Atlas	981.20
CSO130	1/29/15 5:15 AM	1/29/15 6:00 AM	0.02	0.03	27,917.01	0.26	0.02	3 hr	Atlas	837.51
CSO130	2/1/15 11:15 AM	2/1/15 8:00 PM	0.04	0.39	30,859.80	0.59	0.18	3 hr	Atlas	12,035.32
CSO130	2/14/15 1:45 PM	2/14/15 1:45 PM	0.24	0.04	1,629.43	0.05	0.03	3 hr	Atlas	65.18
CSO130	2/19/15 2:00 PM	2/19/15 2:00 PM	0.25	Discharge		0.24	Snowmelt			934.43
CSO130	2/21/15 3:15 AM	2/22/15 5:15 PM	0.58	1.15	58,969.43	1.39	0.44	12 hr	Atlas	67,814.85
CSO130	4/2/15 3:00 PM	4/2/15 3:00 PM	0.93	3.87	22,199.84	0.90	3.28	24 hr	Cloudburst	85,913.40
CSO130	4/3/15 12:15 AM	4/3/15 12:15 AM	0.35	3.87	11,283.39	1.58	3.28	24 hr	Cloudburst	43,666.73

There are known issues with the flow monitoring data quality.
MSD is currently working on resolving these issues.

CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO130	6/18/15 5:15 PM	6/18/15 5:15 PM	0.01	1.47	54,580.38	1.04	0.48	48 hr	Atlas	80,233.16
CSO130	6/26/15 5:15 PM	6/26/15 5:15 PM	0.07	0.95	41,106.89	2.06	0.51	1 hr	Atlas	39,051.54
CSO130 Count										53.00
CSO130 Total Volume (GAL)										4,995,567.12
CSO132	7/2/14 4:45 PM	7/2/14 5:00 PM	2.60	0.15	381,398.86	0.53	0.12	1 hr	CloudBurst	57,209.83
CSO132	7/7/14 7:30 PM	7/7/14 8:15 PM	0.14	0.74	1,245,600.44	1.09	0.64	1 hr	CloudBurst	921,744.33
CSO132	7/13/14 11:15 PM	7/13/14 11:30 PM	0.13	0.59	55,053.90	1.43	0.27	3 hr	CloudBurst	32,481.80
CSO132	7/14/14 7:30 PM	7/14/14 8:45 PM	0.02	0.30	1,515,154.34	1.36	0.20	3 hr	CloudBurst	454,546.30
CSO132	7/26/14 9:45 PM	7/27/14 9:45 AM	0.02	0.98	717,391.08	1.01	0.44	12 hr	CloudBurst	703,043.26
CSO132	8/8/14 6:00 AM	8/8/14 8:15 AM	0.01	0.89	1,013,609.80	0.65	0.44	6 hr	CloudBurst	902,112.72
CSO132	8/10/14 4:15 AM	8/10/14 4:45 AM	0.02	0.44	1,437,951.04	1.40	0.37	1 hr	CloudBurst	632,698.46
CSO132	8/11/14 3:30 PM	8/11/14 4:00 PM	0.01	0.22	1,748,242.86	1.61	0.16	1 hr	CloudBurst	384,613.43
CSO132	8/17/14 12:45 AM	8/17/14 12:45 AM	0.03	0.66	70,161.88	0.96	0.25	24 hr	CloudBurst	46,306.84
CSO132	8/17/14 9:45 AM	8/17/14 10:45 AM	0.02	0.66	653,743.35	0.77	0.25	24 hr	CloudBurst	431,470.61
CSO132	8/22/14 7:30 PM	8/22/14 7:45 PM	0.01	0.45	172,663.60	1.04	0.32	1 hr	CloudBurst	77,698.62
CSO132	8/23/14 4:15 PM	8/23/14 10:15 PM	0.09	0.49	210,655.78	1.57	0.25	3 hr	Atlas14	103,221.33
CSO132	8/27/14 3:00 PM	8/27/14 5:30 PM	0.16	0.21	918,074.10	1.21	0.13	3 hr	Atlas14	192,795.56
CSO132	8/30/14 3:45 PM	8/30/14 4:30 PM	0.75	0.51	404,753.76	1.06	0.31	1 hr	CloudBurst	206,424.42
CSO132	9/2/14 9:00 AM	9/2/14 9:30 AM	0.13	0.40	20,766.69	1.16	0.25	3 hr	Atlas14	8,306.68
CSO132	9/11/14 12:45 AM	9/11/14 7:00 AM	0.35	1.95	843,732.76	1.91	1.57	3 hr	Atlas14	1,645,278.89
CSO132	9/28/14 8:00 PM	9/28/14 8:15 PM	0.01	0.07	285,104.17	0.07	0.06	1 hr	CloudBurst	19,957.29
CSO132	10/6/14 9:30 AM	10/6/14 10:15 AM	0.01	0.45	269,598.48	0.63	0.28	1 hr	CloudBurst	121,319.32
CSO132	10/10/14 2:00 AM	10/10/14 3:45 AM	0.03	1.02	444,617.65	1.65	0.48	3 hr	CloudBurst	453,510.01
CSO132	10/10/14 9:30 PM	10/10/14 9:45 PM	0.01	1.02	13,961.28	1.69	0.48	3 hr	CloudBurst	14,240.51
CSO132	10/13/14 4:45 AM	10/13/14 7:00 AM	0.05	0.46	139,516.42	2.16	0.29	3 hr	CloudBurst	64,177.55
CSO132	10/14/14 12:15 AM	10/14/14 11:15 AM	0.50	1.04	299,505.38	2.77	0.47	12 hr	CloudBurst	311,485.60
CSO132	11/23/14 5:45 PM	11/23/14 8:30 PM	0.09	0.85	323,304.50	1.12	0.39	6 hr	CloudBurst	274,808.83
CSO132	12/1/14 2:30 AM	12/1/14 5:00 AM	0.02	0.80	121,350.30	0.38	0.31	24 hr	CloudBurst	97,080.24
CSO132	12/1/14 2:45 PM	12/1/14 4:15 PM	0.02	0.80	86,766.14	0.74	0.31	24 hr	CloudBurst	69,412.91
CSO132	12/5/14 6:15 AM	12/5/14 6:45 AM	0.01	0.65	29,048.29	1.21	0.21	48 hr	CloudBurst	18,881.39
CSO132	12/5/14 8:45 PM	12/6/14 10:30 AM	0.04	0.65	735,605.20	1.45	0.21	48 hr	CloudBurst	478,143.38
CSO132	12/16/14 5:15 AM	12/16/14 5:30 AM	0.01	0.09	409,718.05	-	0.05	3 hr	CloudBurst	36,874.62
CSO132	12/22/14 11:45 PM	12/23/14 12:00 AM	0.25	0.22	76,877.96	-	0.14	3 hr	CloudBurst	16,913.15
CSO132	12/24/14 1:45 PM	12/24/14 2:15 PM	0.10	0.19	3,245.72	-	0.17	3 hr	Atlas14	616.69
CSO132	12/28/14 1:45 AM	12/28/14 2:00 AM	0.03	0.32	34,290.04	-	0.27	1 hr	CloudBurst	10,972.81
CSO132	1/3/15 11:00 AM	1/3/15 11:00 AM	0.02	0.38	31,026.73	0.11	0.14	24 hr	Atlas	11,790.16
CSO132	1/4/15 3:45 AM	1/4/15 4:00 AM	0.26	0.38	4,379.61	0.39	0.14	24 hr	Atlas	1,664.25
CSO132	2/1/15 1:15 PM	2/1/15 6:00 PM	0.01	0.38	120,691.15	0.51	0.17	12 hr	Atlas	45,862.64
CSO132	2/21/15 2:15 PM	2/21/15 5:15 PM	0.03	1.09	271,887.27	1.27	0.42	12 hr	Atlas	296,357.12
CSO132	3/3/15 7:00 PM	3/5/15 8:45 PM	0.07	1.67	120,759,942.18	1.78	0.55	24 hr	Atlas	201,669,103.45
CSO132	3/24/15 8:30 PM	3/24/15 8:30 PM	0.01	0.12	243,928.39	0.28	0.06	1 hr	Atlas	29,271.41
CSO132	3/26/15 4:30 AM	3/26/15 6:45 AM	0.09	0.40	1,344,788.95	0.56	0.17	12 hr	Atlas	537,915.58
CSO132	4/2/15 10:00 AM	4/5/15 12:45 PM	0.46	4.03	4,922,101.82	4.18	3.72	24 hr	Cloudburst	19,836,070.33
CSO132	4/6/15 7:30 AM	4/8/15 10:00 PM	0.11	0.01	792,273,746.60	4.99	0.01	1 hr	Atlas	7,922,737.47
CSO132	4/9/15 11:30 AM	4/9/15 2:45 PM	0.10	0.15	2,759,116.89	4.80	0.12	1 hr	Atlas	413,867.53
CSO132	4/10/15 2:15 AM	4/10/15 5:15 AM	0.06	0.16	2,125,139.85	2.92	0.11	3 hr	Atlas	340,022.38
CSO132	4/25/15 9:15 AM	4/25/15 9:45 AM	0.02	0.12	803,970.60	0.91	0.05	12 hr	Atlas	96,476.47
CSO132	4/25/15 7:00 PM	4/25/15 7:30 PM	0.57	0.25	614,506.12	1.12	0.18	1 hr	Atlas	153,626.53
CSO132	5/16/15 1:30 PM	5/16/15 1:30 PM	0.01	0.36	4,076.42	0.41	0.21	3 hr	Atlas	1,467.51
CSO132	5/17/15 2:15 PM	5/17/15 2:45 PM	0.01	0.08	9,906,677.58	0.53	0.05	1 hr	Atlas	792,534.21
CSO132	5/25/15 7:00 AM	5/25/15 7:15 AM	0.02	0.28	265,829.15	0.20	0.13	3 hr	Atlas	74,432.16
CSO132	5/26/15 1:45 PM	5/26/15 2:30 PM	0.01	0.50	4,118,010.75	0.74	0.39	1 hr	Atlas	2,059,005.38
CSO132	5/27/15 1:45 PM	5/27/15 2:15 PM	0.01	0.08	4,850,415.96	0.87	0.07	1 hr	Atlas	388,033.28
CSO132	6/8/15 8:30 AM	6/8/15 8:45 AM	0.01	0.24	237,649.08	0.24	0.14	3 hr	Atlas	57,035.78
CSO132	6/17/15 4:45 AM	6/17/15 7:00 AM	0.20	0.68	3,125,325.49	0.72	0.39	3 hr	Atlas	2,125,221.33

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO132	6/18/15 4:30 PM	6/18/15 8:15 PM	0.13	1.42	3,371,292.12	1.20	0.46	48 hr	Atlas	4,787,234.81
CSO132	6/19/15 5:45 PM	6/20/15 11:45 AM	2.07	1.42	4,007,883.77	2.20	0.46	48 hr	Atlas	5,691,194.96
CSO132	6/26/15 12:00 AM	6/26/15 3:00 AM	0.01	0.36	1,352,928.22	1.51	0.19	6 hr	Atlas	487,054.16
CSO132	6/26/15 5:00 PM	6/27/15 1:30 AM	0.09	0.84	3,256,963.70	2.30	0.47	1 hr	Atlas	2,735,849.51
CSO132	6/29/15 2:00 PM	6/29/15 2:00 PM	3.11	0.15	49,331.74	1.35	0.08	1 hr	Atlas	7,399.76
CSO132 Count										56.00
CSO132 Total Volume (GAL)										259,349,575.51
CSO137	7/2/14 4:30 PM	7/2/14 4:30 PM	0.01	0.16	27,662.89	0.38	0.14	1 hr	CloudBurst	4,426.06
CSO137	7/7/14 7:45 PM	7/7/14 7:45 PM	0.01	0.62	2,733.35	0.95	0.54	1 hr	CloudBurst	1,694.68
CSO137	7/13/14 10:00 PM	7/13/14 11:00 PM	0.01	0.73	61,186.96	1.56	0.39	3 hr	CloudBurst	44,666.48
CSO137	7/26/14 9:45 PM	7/26/14 10:00 PM	0.05	1.39	30,137.87	0.54	0.63	12 hr	CloudBurst	41,891.64
CSO137	7/27/14 6:45 AM	7/27/14 9:15 AM	0.05	1.39	54,076.89	1.41	0.63	12 hr	CloudBurst	75,166.87
CSO137	8/9/14 4:00 AM	8/9/14 4:00 AM	0.01	0.08	211,011.08	1.10	0.04	12 hr	CloudBurst	16,880.89
CSO137	8/10/14 4:00 AM	8/10/14 4:15 AM	0.01	0.18	22,413.31	1.31	0.15	1 hr	CloudBurst	4,034.40
CSO137	8/11/14 3:30 PM	8/11/14 3:45 PM	0.06	0.32	84,541.24	1.57	0.22	1 hr	CloudBurst	27,053.20
CSO137	8/17/14 9:45 AM	8/17/14 10:15 AM	0.06	0.69	7,070.27	0.89	0.26	24 hr	CloudBurst	4,878.49
CSO137	8/17/14 8:00 PM	8/17/14 8:00 PM	0.28	0.69	3,378.96	0.99	0.26	24 hr	CloudBurst	2,331.48
CSO137	8/20/14 4:00 PM	8/20/14 4:00 PM	0.28	0.01	857,330.27	0.70	0.01	6 hr	CloudBurst	8,573.30
CSO137	8/22/14 7:15 PM	8/22/14 7:15 PM	0.32	0.63	9,579.75	1.25	0.48	1 hr	CloudBurst	6,035.24
CSO137	8/23/14 8:15 PM	8/24/14 7:30 AM	0.32	0.61	142,734.38	1.89	0.28	12 hr	CloudBurst	87,067.97
CSO137	8/27/14 3:00 PM	8/27/14 5:30 PM	0.33	0.62	255,062.18	1.87	0.40	3 hr	CloudBurst	158,138.55
CSO137	8/30/14 3:15 PM	8/30/14 4:00 PM	0.33	0.52	167,351.74	1.56	0.30	1 hr	CloudBurst	87,022.91
CSO137	9/2/14 8:30 AM	9/2/14 8:45 AM	0.01	0.30	131,313.44	1.38	0.20	3 hr	CloudBurst	39,394.03
CSO137	9/11/14 12:45 AM	9/12/14 2:15 AM	0.01	2.03	267,788.13	2.04	1.67	3 hr	Atlas14	543,609.90
CSO137	10/6/14 8:00 AM	10/6/14 8:00 AM	0.01	0.14	13,653.57	0.27	0.05	48 hr	CloudBurst	1,911.50
CSO137	10/7/14 12:00 PM	10/7/14 12:00 PM	0.01	0.16	208,657.62	0.48	0.13	1 hr	CloudBurst	33,385.22
CSO137	10/10/14 2:00 AM	10/10/14 3:15 AM	0.04	0.82	152,420.70	1.02	0.36	3 hr	CloudBurst	124,984.98
CSO137	10/13/14 5:15 AM	10/13/14 6:00 AM	0.01	0.50	21,506.19	1.57	0.32	3 hr	CloudBurst	10,753.09
CSO137	10/13/14 11:30 PM	10/14/14 10:15 AM	0.10	1.21	100,225.50	2.71	0.55	12 hr	CloudBurst	121,272.85
CSO137	12/1/14 3:15 AM	12/1/14 4:45 AM	0.01	0.73	20,047.92	0.31	0.28	24 hr	CloudBurst	14,634.98
CSO137	12/5/14 6:15 AM	12/5/14 6:30 AM	0.01	0.70	1,935.21	1.23	0.23	48 hr	CloudBurst	1,354.65
CSO137	12/5/14 8:45 PM	12/7/14 6:00 PM	0.01	0.70	1,885,320.85	1.43	0.23	48 hr	CloudBurst	1,319,724.60
CSO137	12/16/14 9:30 AM	12/16/14 11:15 AM	0.02	0.12	93,113.55	-	0.07	1 hr	CloudBurst	11,173.63
CSO137	12/28/14 1:15 AM	12/28/14 1:15 AM	0.01	0.32	24,060.42	-	0.30	1 hr	CloudBurst	7,699.33
CSO137	1/3/15 10:45 AM	1/3/15 11:00 AM	0.01	0.32	16,747.30	0.12	0.12	24 hr	Atlas	5,359.14
CSO137	2/1/15 1:15 PM	2/1/15 1:30 PM	0.01	0.36	2,490.31	0.40	0.17	12 hr	Atlas	896.51
CSO137	2/21/15 3:30 AM	2/21/15 3:30 AM	0.47	1.17	353.81	0.57	0.45	24 hr	Atlas	413.96
CSO137	2/21/15 2:45 PM	2/21/15 2:45 PM	0.10	1.17	768.66	1.25	0.45	24 hr	Atlas	899.33
CSO137	3/3/15 7:00 PM	3/4/15 1:00 PM	0.03	1.63	188,021.13	1.13	0.53	48 hr	Atlas	306,474.45
CSO137	3/10/15 7:00 AM	3/10/15 2:45 PM	0.01	1.20	394,708.36	2.83	0.55	12 hr	Atlas	473,650.03
CSO137	3/13/15 8:30 AM	3/14/15 5:45 AM	1.06	1.59	188,896.19	2.75	0.60	24 hr	Atlas	300,344.95
CSO137	3/26/15 4:30 AM	3/26/15 5:00 AM	0.01	0.46	123,244.02	0.52	0.20	3 hr	Atlas	56,692.25
CSO137	4/7/15 9:30 AM	4/7/15 7:45 PM	0.01	0.69	480,218.48	6.24	0.29	12 hr	Atlas	331,350.75

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO137	4/7/15 9:30 AM	4/7/15 7:45 PM	0.05	0.69	480,218.48	6.24	0.29	12 hr	Atlas	331,350.75
CSO137	4/9/15 11:45 AM	4/9/15 5:00 PM	0.03	0.36	173,131.66	6.39	0.31	1 hr	Atlas	62,327.40
CSO137	4/13/15 8:45 PM	4/14/15 9:15 PM	0.45	0.49	616,677.17	1.86	0.19	6 hr	Atlas	302,171.81
CSO137	4/16/15 10:30 AM	4/16/15 10:30 AM	0.06	0.05	17,986.67	1.10	0.04	1 hr	Atlas	899.33
CSO137	4/19/15 6:45 AM	4/19/15 6:45 PM	0.01	0.72	392,568.66	1.31	0.31	12 hr	Atlas	282,649.44
CSO137	4/20/15 3:30 AM	4/20/15 4:30 AM	1.89	0.07	393,267.00	1.38	0.06	1 hr	Atlas	27,528.69
CSO137	4/25/15 7:00 PM	4/25/15 7:15 PM	0.07	0.05	231,909.17	0.93	0.03	3 hr	Atlas	11,595.46
CSO137	4/25/15 7:00 PM	4/25/15 7:15 PM	0.01	0.05	231,909.17	0.93	0.03	3 hr	Atlas	11,595.46
CSO137	5/11/15 5:45 PM	5/11/15 5:45 PM	0.01	0.14	294,154.46	0.30	0.12	1 hr	Atlas	41,181.63
CSO137	5/11/15 5:45 PM	5/11/15 5:45 PM	0.01	0.14	294,154.46	0.30	0.12	1 hr	Atlas	41,181.63
CSO137	5/17/15 2:30 PM	5/17/15 2:30 PM	0.01	0.11	76,974.15	0.52	0.08	1 hr	Atlas	8,467.16
CSO137	5/17/15 2:30 PM	5/17/15 2:30 PM	0.01	0.11	76,974.15	0.52	0.08	1 hr	Atlas	8,467.16
CSO137	5/26/15 2:15 PM	5/26/15 2:15 PM	0.75	0.25	16,476.63	0.47	0.15	1 hr	Atlas	4,119.16
CSO137	5/26/15 2:15 PM	5/26/15 2:15 PM	0.32	0.25	16,476.63	0.47	0.15	1 hr	Atlas	4,119.16
CSO137	5/27/15 1:45 PM	5/27/15 1:45 PM	0.89	0.27	49,087.34	0.81	0.23	1 hr	Atlas	13,253.58
CSO137	5/27/15 1:45 PM	5/27/15 1:45 PM	0.02	0.27	49,087.34	0.81	0.23	1 hr	Atlas	13,253.58
CSO137	6/8/15 8:30 AM	6/8/15 8:30 AM	0.43	0.35	8,512.41	0.36	0.19	3 hr	Atlas	2,979.34
CSO137	6/8/15 8:30 AM	6/8/15 8:30 AM	0.43	0.35	8,512.41	0.36	0.19	3 hr	Atlas	2,979.34
CSO137	6/17/15 5:00 AM	6/17/15 6:15 AM	0.22	0.60	199,853.74	0.89	0.33	3 hr	Atlas	119,912.25
CSO137	6/17/15 5:00 AM	6/17/15 6:15 AM	1.02	0.60	199,853.74	0.89	0.33	3 hr	Atlas	119,912.25
CSO137	6/17/15 5:15 PM	6/17/15 5:15 PM	0.01	0.11	8,811.65	1.03	0.10	1 hr	Atlas	969.28
CSO137	6/17/15 5:15 PM	6/17/15 5:15 PM	0.50	0.11	8,811.65	1.03	0.10	1 hr	Atlas	969.28
CSO137	6/18/15 4:15 PM	6/18/15 5:45 PM	0.04	2.28	54,595.93	1.96	0.74	48 hr	Atlas	124,478.71
CSO137	6/18/15 4:15 PM	6/18/15 5:45 PM	0.01	2.28	54,595.93	1.96	0.74	48 hr	Atlas	124,478.71
CSO137	6/20/15 1:45 AM	6/20/15 8:30 AM	0.01	2.28	56,182.05	3.29	0.74	48 hr	Atlas	128,095.07
CSO137	6/20/15 1:45 AM	6/20/15 8:30 AM	0.01	2.28	56,182.05	3.29	0.74	48 hr	Atlas	128,095.07
CSO137	6/26/15 12:00 AM	6/26/15 7:45 AM	0.01	0.63	78,164.93	2.10	0.34	6 hr	Atlas	49,243.91
CSO137	6/26/15 12:00 AM	6/26/15 7:45 AM	0.01	0.63	78,164.93	2.10	0.34	6 hr	Atlas	49,243.91
CSO137	6/26/15 5:15 PM	6/27/15 1:15 AM	0.01	0.75	66,057.04	2.68	0.35	1 hr	Atlas	49,542.78
CSO137	6/26/15 5:15 PM	6/27/15 1:15 AM	0.01	0.75	66,057.04	2.68	0.35	1 hr	Atlas	49,542.78
CSO137	6/29/15 1:30 PM	6/29/15 1:45 PM	0.01	0.14	610,937.72	1.52	0.10	1 hr	Atlas	85,531.28
CSO137	6/29/15 1:30 PM	6/29/15 1:45 PM	0.01	0.14	610,937.72	1.52	0.10	1 hr	Atlas	85,531.28
CSO137 Count										68.00
CSO137 Total Volume (GAL)										6,561,508.90
CSO140	7/7/14 7:45 PM	7/7/14 7:45 PM	0.38	0.66	155,457.03	1.00	0.23	1 hr	CloudBurst	102,601.64
CSO140	7/13/14 11:00 PM	7/13/14 11:00 PM	0.01	0.65	200,340.41	1.46	0.35	12 hr	CloudBurst	130,221.27
CSO140	7/14/14 8:15 PM	7/14/14 8:30 PM	0.03	0.27	177,914.20	1.28	0.34	3 hr	CloudBurst	48,036.83
CSO140	7/26/14 9:45 PM	7/26/14 10:00 PM	0.01	1.02	92,807.67	0.45	0.65	12 hr	CloudBurst	94,663.82
CSO140	7/27/14 7:00 AM	7/27/14 8:00 AM	0.01	1.02	55,634.64	1.00	0.65	12 hr	CloudBurst	56,747.33
CSO140	8/8/14 6:00 AM	8/8/14 7:30 AM	0.02	0.97	163,197.82	0.72	0.50	3 hr	CloudBurst	158,301.89
CSO140	8/10/14 4:15 AM	8/10/14 4:15 AM	0.01	0.50	91,377.84	1.52	0.25	1 hr	CloudBurst	45,688.92
CSO140	8/11/14 3:30 PM	8/11/14 3:30 PM	0.01	0.30	504,980.78	1.83	0.27	1 hr	CloudBurst	151,494.23
CSO140	8/17/14 9:45 AM	8/17/14 9:45 AM	0.01	0.71	23,010.53	0.84	0.22	24 hr	CloudBurst	16,337.48
CSO140	8/22/14 7:15 PM	8/22/14 7:15 PM	0.05	0.27	521,661.00	0.96	0.71	1 hr	CloudBurst	140,848.47

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO140	8/23/14 4:00 PM	8/23/14 8:30 PM	0.10	0.55	109,026.13	1.38	0.35	3 hr	CloudBurst	59,964.37
CSO140	8/27/14 2:45 PM	8/27/14 5:15 PM	0.01	0.20	155,636.62	1.20	0.47	1 hr	CloudBurst	31,127.32
CSO140	8/30/14 3:15 PM	8/30/14 4:00 PM	0.41	0.61	357,763.39	1.33	0.71	1 hr	CloudBurst	218,235.67
CSO140	9/2/14 8:30 AM	9/2/14 8:30 AM	0.01	0.36	6,816.00	1.18	0.19	1 hr	CloudBurst	2,453.76
CSO140	9/11/14 12:45 AM	9/11/14 2:45 PM	0.29	1.92	415,228.71	1.92	7.86	3 hr	Atlas14	797,239.13
CSO140	10/6/14 9:45 AM	10/6/14 9:45 AM	0.01	0.31	141,011.69	0.48	0.17	1 hr	CloudBurst	43,713.63
CSO140	10/7/14 12:00 PM	10/7/14 12:00 PM	0.01	0.21	51,851.44	0.75	0.17	1 hr	CloudBurst	10,888.80
CSO140	10/10/14 2:15 AM	10/10/14 3:00 AM	0.01	1.09	78,582.65	1.48	0.49	3 hr	CloudBurst	85,655.09
CSO140	10/13/14 11:30 PM	10/14/14 12:00 AM	0.01	1.08	75,860.65	2.02	0.49	12 hr	CloudBurst	81,929.50
CSO140	10/14/14 8:15 AM	10/14/14 10:00 AM	0.04	1.08	42,435.85	2.78	0.49	12 hr	CloudBurst	45,830.72
CSO140	10/20/14 8:00 PM	10/20/14 8:00 PM	0.06	0.04	123,410.69	1.35	0.03	3 hr	CloudBurst	4,936.43
CSO140	11/23/14 2:30 PM	11/23/14 5:45 PM	0.01	0.85	236,734.37	0.89	0.38	6 hr	CloudBurst	201,224.21
CSO140	12/6/14 2:45 AM	12/6/14 10:30 AM	0.01	1.84	441,070.70	1.45	0.20	48 hr	CloudBurst	811,570.09
CSO140	12/28/14 1:00 AM	12/28/14 1:00 AM	0.01	0.32	25,949.51	-	0.27	1 hr	CloudBurst	8,303.84
CSO140	3/3/15 11:15 PM	3/4/15 12:45 PM	0.01	1.67	163,078.50	1.18	0.54	24 hr	Atlas	272,341.09
CSO140	3/7/15 3:45 PM	3/7/15 5:30 PM	0.19	0.04	875,056.84	1.72	0.03	1 hr	Atlas	35,002.27
CSO140	3/10/15 9:30 AM	3/10/15 11:00 PM	0.10	1.10	729,977.70	2.77	0.50	12 hr	Atlas	802,975.47
CSO140	3/13/15 10:30 AM	3/14/15 4:30 AM	0.03	1.63	799,565.87	2.68	0.61	24 hr	Atlas	1,303,292.37
CSO140	3/26/15 4:30 AM	3/26/15 4:30 AM	0.01	0.45	27,040.00	0.51	0.18	12 hr	Atlas	12,168.00
CSO140	4/2/15 10:45 AM	4/3/15 11:45 PM	0.58	4.42	790,360.92	4.55	5.24	24 hr	Cloudburst	3,493,395.26
CSO140	4/7/15 9:15 AM	4/7/15 6:15 PM	0.01	0.86	506,256.87	5.29	0.42	1 hr	Atlas	435,380.91
CSO140	4/8/15 6:15 PM	4/8/15 6:15 PM	0.01	0.15	122,512.50	5.43	0.10	1 hr	Atlas	18,376.88
CSO140	4/9/15 11:30 AM	4/9/15 12:15 PM	0.03	0.29	742,340.62	5.37	0.25	1 hr	Atlas	215,278.78
CSO140	4/10/15 2:15 AM	4/10/15 2:30 AM	0.02	0.16	105,279.82	3.17	0.11	3 hr	Atlas	16,844.77
CSO140	4/13/15 8:45 PM	4/13/15 9:00 PM	0.07	0.38	38,718.50	1.56	0.15	6 hr	Atlas	14,713.03
CSO140	4/19/15 2:15 PM	4/19/15 2:45 PM	0.01	0.78	110,352.02	1.16	0.33	12 hr	Atlas	86,074.57
CSO140	5/17/15 2:15 PM	5/17/15 2:30 PM	0.14	0.16	846,622.36	0.60	0.12	1 hr	Atlas	135,459.58
CSO140	5/26/15 1:45 PM	5/26/15 2:00 PM	0.32	0.36	224,401.05	0.57	0.26	1 hr	Atlas	80,784.38
CSO140	6/8/15 8:15 AM	6/8/15 8:15 AM	0.01	0.20	146,735.42	0.21	0.12	3 hr	Atlas	29,347.08
CSO140	6/17/15 4:45 AM	6/17/15 6:00 AM	0.56	0.65	97,309.56	0.62	0.37	3 hr	Atlas	63,251.22
CSO140	6/18/15 4:15 PM	6/18/15 6:45 PM	0.07	1.48	375,424.16	1.20	0.48	48 hr	Atlas	555,627.76
CSO140	6/19/15 1:00 PM	6/19/15 1:15 PM	0.56	1.48	6,933.55	1.36	0.48	48 hr	Atlas	10,261.66
CSO140	6/20/15 1:30 AM	6/20/15 11:15 AM	0.75	1.48	225,749.76	2.23	0.48	48 hr	Atlas	334,109.65
CSO140	6/26/15 12:00 AM	6/26/15 12:00 AM	0.01	0.45	7,827.62	1.39	0.24	6 hr	Atlas	3,522.43
CSO140	6/26/15 5:00 PM	6/27/15 12:00 AM	1.54	0.88	263,865.07	2.36	0.52	1 hr	Atlas	232,201.26
CSO140 Count										45.00
CSO140 Total Volume (GAL)										11,498,422.84

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO141	7/1/14 10:15 PM	7/1/14 10:15 PM	0.88	0.21	2,030.36	0.26	0.13	3 hr	Atlas14	426.38
CSO141	7/2/14 4:30 PM	7/2/14 5:00 PM	0.25	0.12	37,765.71	0.40	0.10	1 hr	CloudBurst	4,531.89
CSO141	7/7/14 7:30 PM	7/7/14 7:45 PM	0.53	0.62	42,542.94	0.95	0.54	1 hr	CloudBurst	26,376.62
CSO141	7/8/14 7:00 AM	7/8/14 7:30 AM	1.56	0.42	3,427.38	1.37	0.37	1 hr	CloudBurst	1,439.50
CSO141	7/13/14 10:15 PM	7/14/14 8:45 AM	0.27	0.69	27,186.87	1.71	0.34	1 hr	CloudBurst	18,758.94
CSO141	7/14/14 6:30 PM	7/14/14 9:30 PM	0.08	0.30	37,097.33	2.03	0.22	2 hr	Atlas14	11,129.20
CSO141	7/26/14 9:45 PM	7/27/14 12:45 PM	0.05	0.97	44,164.96	1.01	0.43	12 hr	CloudBurst	42,840.01
CSO141	8/8/14 4:00 AM	8/8/14 12:45 PM	0.05	0.87	24,112.89	0.91	0.42	6 hr	CloudBurst	20,978.21
CSO141	8/9/14 4:00 AM	8/9/14 7:00 AM	0.21	0.07	35,687.64	0.98	0.05	1 hr	CloudBurst	2,498.13
CSO141	8/10/14 3:45 AM	8/10/14 4:30 AM	0.08	0.78	15,787.83	1.75	0.65	1 hr	CloudBurst	12,314.51
CSO141	8/11/14 3:30 PM	8/11/14 3:45 PM	0.34	0.35	27,821.16	2.10	0.30	1 hr	CloudBurst	9,737.41
CSO141	8/16/14 10:15 PM	8/17/14 8:15 PM	0.35	0.72	30,582.22	1.84	0.27	24 hr	CloudBurst	22,019.20
CSO141	8/22/14 7:15 PM	8/23/14 12:30 AM	0.01	0.22	75,611.27	1.00	0.13	3 hr	CloudBurst	16,634.48
CSO141	8/23/14 3:45 PM	8/23/14 9:45 PM	0.33	0.52	20,620.31	1.47	0.26	3 hr	CloudBurst	10,722.56
CSO141	8/26/14 8:00 PM	8/26/14 8:15 PM	0.02	0.11	19,193.84	0.91	0.10	1 hr	CloudBurst	2,111.32
CSO141	8/27/14 3:00 PM	8/28/14 2:15 AM	0.01	0.12	109,346.62	1.03	0.09	1 hr	CloudBurst	13,121.59
CSO141	8/30/14 3:15 PM	8/30/14 5:30 PM	0.08	0.54	31,065.93	1.19	0.31	1 hr	CloudBurst	16,775.60
CSO141	8/31/14 3:45 AM	8/31/14 5:00 AM	0.22	0.54	7,525.93	0.76	0.31	1 hr	CloudBurst	4,064.00
CSO141	9/2/14 7:00 AM	9/2/14 9:30 AM	0.08	0.40	13,889.51	1.14	0.25	3 hr	Atlas14	5,555.80
CSO141	9/2/14 7:15 PM	9/2/14 7:15 PM	0.01	0.40	10,659.95	1.17	0.25	3 hr	Atlas14	4,263.98
CSO141	9/11/14 12:15 AM	9/11/14 9:45 PM	0.47	1.86	72,167.50	1.86	1.23	3 hr	Atlas14	134,231.55
CSO141	9/21/14 7:45 AM	9/21/14 10:15 PM	8.78	0.01	7,217,499.26	0.03	0.01	6 hr	CloudBurst	72,174.99
CSO141	10/3/14 3:30 AM	10/3/14 5:00 AM	0.01	0.26	15,294.99	0.11	0.10	24 hr	CloudBurst	3,976.70
CSO141	10/3/14 7:15 PM	10/3/14 8:15 PM	0.02	0.26	9,209.37	0.26	0.10	24 hr	CloudBurst	2,394.44
CSO141	10/6/14 7:45 AM	10/6/14 11:15 AM	0.01	0.22	74,618.28	0.44	0.09	12 hr	CloudBurst	16,416.02
CSO141	10/10/14 1:45 AM	10/10/14 3:00 AM	0.02	1.19	7,299.27	1.51	0.55	1 hr	CloudBurst	8,686.14
CSO141	10/10/14 9:15 PM	10/10/14 9:30 PM	0.44	1.19	434.47	1.61	0.55	1 hr	CloudBurst	517.02
CSO141	10/13/14 6:00 AM	10/13/14 6:00 AM	0.13	0.42	28.52	2.03	0.27	3 hr	CloudBurst	11.98
CSO141	10/13/14 11:30 PM	10/13/14 11:30 PM	0.63	0.88	3,648.51	2.10	0.39	12 hr	CloudBurst	3,210.69
CSO141	10/14/14 7:45 AM	10/14/14 8:15 AM	0.36	0.88	6,095.40	2.65	0.39	12 hr	CloudBurst	5,363.95
CSO141	10/20/14 8:00 PM	10/20/14 8:00 PM	0.13	0.04	677.34	1.14	0.03	3 hr	CloudBurst	27.09
CSO141	10/28/14 10:45 AM	10/28/14 6:30 PM	0.03	0.13	128,613.58	0.12	0.07	6 hr	CloudBurst	16,719.77
CSO141	10/31/14 8:15 PM	10/31/14 8:15 PM	0.01	0.16	6,704.69	0.26	0.06	24 hr	CloudBurst	1,072.75
CSO141	11/5/14 6:45 PM	11/6/14 1:30 AM	0.92	0.01	51,496.87	0.27	0.01	6 hr	CloudBurst	514.97
CSO141	11/23/14 1:45 PM	11/23/14 11:30 PM	0.22	0.74	173,953.05	1.09	0.32	12 hr	CloudBurst	128,725.26
CSO141	12/6/14 2:30 AM	12/6/14 6:45 AM	0.25	1.84	5,550.14	1.51	0.20	48 hr	CloudBurst	10,212.25
CSO141	12/16/14 5:00 AM	12/16/14 9:15 AM	0.01	0.09	286,130.78	-	0.05	3 hr	CloudBurst	25,751.77
CSO141	12/23/14 4:15 PM	12/23/14 11:00 PM	0.47	0.10	171,186.56	-	0.03	3 hr	Atlas	17,118.66
CSO141	12/24/14 8:45 AM	12/24/14 9:30 AM	0.09	0.19	24,718.31	-	0.17	3 hr	Atlas14	4,696.48
CSO141	12/24/14 6:15 PM	12/25/14 12:30 AM	0.05	0.19	99,495.52	-	0.17	3 hr	Atlas14	18,904.15
CSO141	12/28/14 1:00 AM	12/28/14 1:30 AM	0.10	0.32	2,326.56	-	0.27	1 hr	CloudBurst	744.50
CSO141	1/4/15 12:30 AM	1/4/15 3:45 AM	0.01	0.36	1,759.64	0.37	0.13	24 hr	Atlas	633.47
CSO141	2/1/15 11:45 AM	2/1/15 7:15 PM	0.90	0.39	7,401.20	0.58	0.19	3 hr	Atlas	2,886.47
CSO141	2/21/15 4:15 AM	2/21/15 4:15 PM	0.60	1.24	28,327.17	1.52	0.48	24 hr	Atlas	35,125.70

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO141	2/22/15 12:15 PM	2/22/15 2:45 PM	0.06	0.02	220,120.84	1.48	0.02	1 hr	Atlas	4,402.42
CSO141	3/3/15 8:15 AM	3/4/15 7:00 PM	0.04	1.76	85,896.53	1.51	0.68	24 hr	Atlas	151,177.89
CSO141	3/5/15 3:45 AM	3/5/15 3:45 PM	0.15	1.76	3,683.39	1.87	0.57	24 hr	Atlas	6,482.77
CSO141	3/7/15 10:30 AM	3/7/15 8:00 PM	0.05	0.04	1,360,131.05	1.82	0.03	1 hr	Atlas	54,405.24
CSO141	3/9/15 9:30 AM	3/10/15 7:00 PM	0.01	1.11	74,493.56	2.89	0.51	12 hr	Atlas	82,687.85
CSO141	3/13/15 8:30 AM	3/14/15 12:45 PM	0.01	1.81	60,721.73	2.94	0.68	24 hr	Atlas	109,906.32
CSO141	3/19/15 8:15 AM	3/20/15 5:15 AM	0.01	0.20	115,044.90	2.01	0.08	12 hr	Atlas	23,008.98
CSO141	3/24/15 2:15 PM	3/24/15 8:15 PM	0.02	0.12	51,698.52	0.31	0.07	1 hr	Atlas	6,203.82
CSO141	3/26/15 3:00 AM	3/26/15 3:45 PM	0.01	0.48	59,327.89	0.79	0.19	3 hr	Atlas	28,477.39
CSO141	4/2/15 9:15 AM	4/3/15 10:45 PM	0.32	4.76	165,249.62	4.92	7.33	6 hr	Cloudburst	786,588.19
CSO141	4/7/15 4:30 PM	4/7/15 11:00 PM	0.01	0.92	18,193.62	5.68	0.46	1 hr	Atlas	16,738.13
CSO141	4/9/15 11:30 AM	4/9/15 1:30 PM	0.28	0.18	14,573.44	5.71	0.16	1 hr	Atlas	2,623.22
CSO141	4/10/15 1:45 AM	4/10/15 3:00 AM	0.41	0.19	48,573.36	3.92	0.12	3 hr	Atlas	9,228.94
CSO141	4/13/15 7:45 PM	4/13/15 9:00 PM	0.18	0.37	14,868.19	1.66	0.15	6 hr	Atlas	5,501.23
CSO141	4/14/15 6:45 AM	4/14/15 11:45 AM	0.18	0.37	41,071.68	1.87	0.15	6 hr	Atlas	15,196.52
CSO141	4/16/15 9:45 AM	4/16/15 11:45 AM	0.28	0.04	83,984.37	0.83	0.03	1 hr	Atlas	3,359.37
CSO141	4/19/15 8:45 AM	4/19/15 5:00 PM	0.03	0.76	24,242.54	1.14	0.32	12 hr	Atlas	18,424.33
CSO141	5/16/15 11:30 AM	5/16/15 8:00 PM	0.26	0.46	20,108.33	0.52	0.23	3 hr	Atlas	9,249.83
CSO141	5/17/15 2:15 PM	5/17/15 2:30 PM	0.02	0.08	3,760.55	0.58	0.05	1 hr	Atlas	300.84
CSO141	5/25/15 6:15 AM	5/25/15 2:15 PM	0.14	0.29	19,281.50	0.34	0.13	12 hr	Atlas	5,591.64
CSO141	5/26/15 1:45 PM	5/26/15 2:15 PM	0.31	0.23	10,195.52	0.49	0.17	1 hr	Atlas	2,344.97
CSO141	5/27/15 1:30 PM	5/27/15 1:45 PM	0.50	0.13	19,397.27	0.65	0.11	1 hr	Atlas	2,521.65
CSO141	6/1/15 7:30 AM	6/1/15 9:30 AM	0.10	0.11	24,799.14	0.66	0.05	6 hr	Atlas	2,727.91
CSO141	6/17/15 3:00 AM	6/17/15 8:15 AM	1.45	0.63	30,596.64	0.70	0.36	3 hr	Atlas	19,275.89
CSO141	6/18/15 4:00 PM	6/18/15 6:00 PM	0.50	1.38	44,375.47	1.11	0.45	48 hr	Atlas	61,238.15
CSO141	6/19/15 1:00 PM	6/19/15 1:15 PM	0.40	1.38	45.39	1.30	0.45	48 hr	Atlas	62.64
CSO141	6/20/15 1:15 AM	6/20/15 12:30 PM	0.90	1.38	13,109.83	2.14	0.45	48 hr	Atlas	18,091.56
CSO141	6/22/15 5:15 AM	7/1/15 12:00 AM	1.18	0.22	12,146,644.22	4.05	0.10	12 hr	Atlas	2,672,261.73
CSO141 Count										72.00
CSO141 Total Volume (GAL)										4,874,495.50
CSO144	7/7/14 7:30 PM	7/7/14 7:30 PM	0.32	0.71	1,990.61	0.99	0.62	1 hr	CloudBurst	1,413.33
CSO144	7/13/14 10:45 PM	7/13/14 10:45 PM	0.01	0.58	2,604.40	1.45	0.28	3 hr	CloudBurst	1,510.55
CSO144	7/26/14 9:45 PM	7/26/14 9:45 PM	0.01	1.11	496.62	0.44	0.49	12 hr	CloudBurst	551.25
CSO144	8/10/14 4:00 AM	8/10/14 4:00 AM	0.01	0.35	27.41	1.36	0.29	1 hr	CloudBurst	9.59
CSO144	8/22/14 7:00 PM	8/22/14 7:00 PM	0.01	0.31	5,075.13	0.95	0.20	3 hr	CloudBurst	1,573.29
CSO144	8/23/14 8:00 PM	8/23/14 8:00 PM	0.01	0.54	749.48	1.29	0.26	3 hr	CloudBurst	404.72
CSO144	8/27/14 5:00 PM	8/27/14 5:00 PM	0.01	0.35	644.17	1.26	0.23	3 hr	Atlas14	225.46
CSO144	8/30/14 3:15 PM	8/30/14 3:15 PM	0.04	0.56	654.30	1.32	0.34	1 hr	CloudBurst	366.41
CSO144	9/11/14 12:30 AM	9/11/14 2:15 AM	0.01	1.94	1,761.97	1.66	1.50	3 hr	Atlas14	3,418.22
CSO144	10/6/14 9:30 AM	10/6/14 9:30 AM	0.01	0.33	194.67	0.49	0.17	3 hr	Atlas14	64.24
CSO144	12/6/14 2:30 AM	12/6/14 2:30 AM	0.01	0.64	125.65	1.42	0.21	48 hr	CloudBurst	80.42
CSO144	4/2/15 10:30 AM	4/2/15 3:00 PM	0.01	4.17	541.43	1.22	4.00	24 hr	Cloudburst	2,257.77
CSO144	4/3/15 12:15 AM	4/3/15 9:00 PM	0.01	4.17	6,921.42	4.21	4.00	24 hr	Cloudburst	28,862.30
CSO144	4/7/15 9:15 AM	4/7/15 5:00 PM	0.01	0.74	5,876.63	4.88	0.33	1 hr	Atlas	4,348.71

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO144	4/8/15 6:00 PM	4/8/15 6:00 PM	0.01	0.12	149.22	5.02	0.09	1 hr	Atlas	17.91
CSO144	4/9/15 11:30 AM	4/9/15 11:30 AM	0.01	0.28	2,561.53	4.84	0.24	1 hr	Atlas	717.23
CSO144	4/13/15 9:00 PM	4/13/15 9:00 PM	0.01	0.11	2.08	1.40	0.07	3 hr	Atlas	0.23
CSO144	4/19/15 2:00 PM	4/19/15 2:15 PM	0.07	0.82	1,151.47	1.20	0.34	12 hr	Atlas	944.21
CSO144	5/17/15 2:15 PM	5/17/15 2:15 PM	0.01	0.14	9,288.24	0.54	0.10	1 hr	Atlas	1,300.35
CSO144	6/17/15 4:45 AM	6/17/15 4:45 AM	0.01	0.62	42.56	0.44	0.36	3 hr	Atlas	26.39
CSO144	6/18/15 4:15 PM	6/18/15 5:15 PM	0.19	1.63	2,169.81	1.15	0.53	48 hr	Atlas	3,536.79
CSO144	6/26/15 5:00 PM	6/26/15 5:00 PM	0.86	0.78	2,307.37	1.87	0.41	1 hr	Atlas	1,799.75
CSO144 Count										22.00
CSO144 Total Volume (GAL)										53,429.11
CSO146	7/2/14 4:15 PM	7/2/14 5:15 PM	0.02	0.08	2,239,646.10	0.28	0.07	1 hr	CloudBurst	179,171.69
CSO146	7/7/14 7:30 PM	7/7/14 7:45 PM	0.01	1.01	175,156.99	1.25	0.88	1 hr	CloudBurst	176,908.56
CSO146	7/13/14 10:00 PM	7/14/14 12:00 AM	0.01	0.70	1,394,443.56	2.09	0.35	3 hr	CloudBurst	976,110.49
CSO146	7/14/14 8:15 PM	7/14/14 8:15 PM	0.02	0.08	128,206.51	1.33	0.07	1 hr	CloudBurst	10,256.52
CSO146	7/26/14 9:30 PM	7/27/14 9:45 AM	0.03	1.43	1,304,916.29	1.47	0.66	12 hr	CloudBurst	1,866,030.29
CSO146	8/8/14 5:45 AM	8/8/14 8:15 AM	0.01	0.90	1,372,660.16	0.73	0.43	6 hr	CloudBurst	1,235,394.15
CSO146	8/9/14 4:00 AM	8/9/14 4:15 AM	0.04	0.07	336,494.20	0.97	0.04	6 hr	CloudBurst	23,554.59
CSO146	8/10/14 4:00 AM	8/10/14 4:30 AM	0.01	0.71	49,547.81	1.74	0.58	1 hr	CloudBurst	35,178.95
CSO146	8/11/14 3:15 PM	8/11/14 4:15 PM	0.01	0.51	1,845,369.24	2.20	0.40	1 hr	CloudBurst	941,138.31
CSO146	8/17/14 12:15 AM	8/17/14 1:00 AM	0.01	0.72	46,579.41	1.54	0.27	24 hr	CloudBurst	33,537.18
CSO146	8/17/14 9:30 AM	8/17/14 11:30 AM	0.09	0.72	532,541.64	1.15	0.27	24 hr	CloudBurst	383,429.98
CSO146	8/17/14 11:15 PM	8/17/14 11:30 PM	0.11	0.72	30,694.10	1.23	0.27	24 hr	CloudBurst	22,099.75
CSO146	8/22/14 7:15 PM	8/22/14 8:00 PM	0.01	0.35	1,470,062.31	1.05	0.26	1 hr	CloudBurst	514,521.81
CSO146	8/23/14 4:00 PM	8/23/14 10:15 PM	0.33	0.59	1,222,711.56	1.65	0.28	3 hr	CloudBurst	721,399.82
CSO146	8/27/14 3:00 PM	8/27/14 6:00 PM	0.02	0.27	3,011,384.13	1.33	0.18	3 hr	CloudBurst	813,073.72
CSO146	8/30/14 3:15 PM	8/30/14 4:30 PM	0.14	0.60	1,828,491.17	1.41	0.38	1 hr	CloudBurst	1,097,094.70
CSO146	9/2/14 8:15 AM	9/2/14 9:30 AM	0.36	0.40	512,990.53	1.32	0.24	3 hr	CloudBurst	205,196.21
CSO146	9/11/14 12:30 AM	9/11/14 6:45 AM	0.03	1.90	1,961,212.67	1.85	1.33	3 hr	Atlas14	3,726,304.08
CSO146	10/6/14 9:45 AM	10/6/14 9:45 AM	0.04	0.37	97,009.65	0.56	0.22	1 hr	CloudBurst	35,893.57
CSO146	10/7/14 12:00 PM	10/7/14 12:30 PM	0.01	0.17	583,525.29	0.78	0.14	1 hr	CloudBurst	99,199.30
CSO146	10/10/14 1:45 AM	10/10/14 3:30 AM	0.08	1.09	757,898.25	1.51	0.47	3 hr	CloudBurst	826,109.09
CSO146	10/10/14 5:45 PM	10/10/14 6:00 PM	0.01	1.09	30,447.97	1.60	0.47	3 hr	CloudBurst	33,188.28
CSO146	10/13/14 5:00 AM	10/13/14 7:00 AM	0.51	0.42	789,833.72	2.05	0.26	3 hr	CloudBurst	331,730.16
CSO146	10/13/14 11:30 PM	10/14/14 10:30 AM	0.10	1.00	1,155,937.89	2.70	0.45	12 hr	CloudBurst	1,155,937.89
CSO146	11/23/14 5:30 PM	11/23/14 8:15 PM	0.01	0.66	678,056.94	1.01	0.31	6 hr	CloudBurst	447,517.58
CSO146	12/1/14 3:30 AM	12/1/14 5:45 AM	0.02	0.88	226,164.13	0.46	0.34	24 hr	CloudBurst	199,024.43
CSO146	12/1/14 3:00 PM	12/1/14 3:30 PM	0.04	0.88	43,578.21	0.79	0.34	24 hr	CloudBurst	38,348.82
CSO146	12/5/14 6:30 AM	12/5/14 7:00 AM	0.03	0.63	103,278.51	1.27	0.20	48 hr	CloudBurst	65,065.46
CSO146	12/5/14 8:45 PM	12/6/14 7:30 AM	0.08	0.63	2,578,790.88	1.51	0.20	48 hr	CloudBurst	1,624,638.25
CSO146	12/16/14 5:30 AM	12/16/14 5:30 AM	0.01	0.09	85,293.98	-	0.05	3 hr	CloudBurst	7,676.46
CSO146	12/23/14 12:00 AM	12/23/14 12:15 AM	0.03	0.22	55,182.20	-	0.14	3 hr	CloudBurst	12,140.08
CSO146	12/28/14 1:15 AM	12/28/14 2:00 AM	0.26	0.32	277,302.34	-	0.27	1 hr	CloudBurst	88,736.75
CSO146	2/1/15 1:00 PM	2/1/15 6:00 PM	0.13	0.38	325,212.64	0.52	0.17	12 hr	Atlas	123,580.80
CSO146	2/21/15 1:45 PM	2/21/15 5:30 PM	0.05	1.24	204,001.32	1.45	0.48	24 hr	Atlas	252,961.63
CSO146	3/3/15 7:15 PM	3/4/15 6:00 PM	0.05	1.66	1,397,788.15	1.33	0.54	48 hr	Atlas	2,320,328.33
CSO146	3/7/15 2:00 PM	3/7/15 6:00 PM	0.26	0.04	7,108,255.07	1.71	0.03	1 hr	Atlas	284,330.20
CSO146	3/10/15 7:00 AM	3/10/15 7:15 PM	0.01	1.31	3,073,226.62	2.97	0.59	12 hr	Atlas	4,025,926.88
CSO146	3/13/15 10:30 AM	3/14/15 12:15 PM	0.02	1.84	3,390,908.55	3.15	0.69	24 hr	Atlas	6,239,271.73
CSO146	3/26/15 4:30 AM	3/26/15 6:45 AM	0.07	0.42	1,381,255.93	0.57	0.17	12 hr	Atlas	580,127.49
CSO146	4/2/15 10:30 AM	4/3/15 11:00 PM	0.01	5.36	4,170,752.44	5.50	20.93	6 hr	Cloudburst	22,355,233.09
CSO146	4/7/15 9:15 AM	4/7/15 6:45 PM	0.08	0.84	816,579.55	6.20	0.36	12 hr	Atlas	685,926.82
CSO146	4/8/15 6:30 PM	4/8/15 7:30 PM	0.46	0.16	842,052.62	6.36	0.09	3 hr	Atlas	134,728.42
CSO146	4/9/15 11:30 AM	4/9/15 1:00 PM	0.11	0.22	534,228.11	6.11	0.19	1 hr	Atlas	117,530.18
CSO146	4/10/15 2:30 AM	4/10/15 3:45 AM	0.09	0.17	679,777.28	3.49	0.11	3 hr	Atlas	115,562.14
CSO146	4/13/15 8:45 PM	4/13/15 9:45 PM	0.02	0.37	181,615.57	1.47	0.15	6 hr	Atlas	67,197.76

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO146	4/14/15 10:00 AM	4/14/15 12:15 PM	0.02	0.37	243,009.30	1.23	0.15	6 hr	Atlas	89,913.44
CSO146	4/19/15 7:15 AM	4/19/15 6:45 PM	0.45	0.71	527,942.75	1.17	0.30	12 hr	Atlas	374,839.35
CSO146	4/20/15 3:30 AM	4/20/15 4:00 AM	0.01	0.07	1,290,330.70	1.23	0.05	1 hr	Atlas	90,323.15
CSO146	4/25/15 9:30 AM	4/25/15 9:45 AM	0.01	0.12	89,310.94	0.92	0.06	6 hr	Atlas	10,717.31
CSO146	5/11/15 6:00 PM	5/11/15 6:15 PM	0.03	0.08	232,486.34	0.19	0.07	1 hr	Atlas	18,598.91
CSO146	5/16/15 1:15 PM	5/16/15 1:45 PM	0.21	0.39	71,371.93	0.43	0.19	3 hr	Atlas	27,835.05
CSO146	5/17/15 2:15 PM	5/17/15 3:00 PM	0.16	0.12	1,377,486.59	0.58	0.09	1 hr	Atlas	165,298.39
CSO146	5/25/15 7:15 AM	5/25/15 7:15 AM	0.95	0.24	26,125.95	0.14	0.11	12 hr	Atlas	6,270.23
CSO146	5/26/15 1:45 PM	5/26/15 2:45 PM	0.17	0.35	1,285,129.18	0.54	0.26	1 hr	Atlas	449,795.21
CSO146	5/27/15 1:45 PM	5/27/15 2:00 PM	0.51	0.09	918,399.94	0.68	0.08	1 hr	Atlas	82,656.00
CSO146	6/8/15 8:30 AM	6/8/15 8:45 AM	1.07	0.26	75,585.91	0.28	0.16	3 hr	Atlas	19,652.34
CSO146	6/13/15 2:45 PM	6/13/15 2:45 PM	0.09	0.12	65,804.94	0.38	0.10	1 hr	Atlas	7,896.59
CSO146	6/17/15 4:45 AM	6/17/15 7:00 AM	1.52	0.58	1,205,240.02	0.71	0.31	3 hr	Atlas	699,039.21
CSO146	6/18/15 4:15 PM	6/18/15 7:00 PM	0.40	1.82	1,674,617.83	1.69	0.59	48 hr	Atlas	3,047,804.46
CSO146	6/19/15 1:30 PM	6/19/15 1:30 PM	0.04	1.82	7,306.37	1.86	0.59	48 hr	Atlas	13,297.59
CSO146	6/20/15 1:30 AM	6/20/15 9:30 AM	0.06	1.82	1,411,069.79	2.74	0.59	48 hr	Atlas	2,568,147.02
CSO146	6/22/15 6:30 AM	6/22/15 7:00 AM	0.05	0.24	321,881.88	2.83	0.11	3 hr	Atlas	77,251.65
CSO146	6/25/15 11:45 PM	6/26/15 3:00 AM	0.04	0.59	2,057,402.73	1.77	0.32	6 hr	Atlas	1,213,867.61
CSO146	6/26/15 5:00 PM	6/27/15 1:45 AM	0.09	0.89	2,769,421.90	2.60	0.50	1 hr	Atlas	2,464,785.49
CSO146	6/29/15 1:30 PM	6/29/15 2:15 PM	0.48	0.19	2,553,318.30	1.65	0.11	1 hr	Atlas	485,130.48
CSO146 Count										65.00
CSO146 Total Volume (GAL)										67,141,431.89
CSO148	7/2/14 4:15 PM	7/2/14 4:15 PM	0.29	0.16	320,853.56	0.35	0.14	1 hr	CloudBurst	51,336.57
CSO148	7/7/14 7:30 PM	7/7/14 7:45 PM	0.01	0.62	1,374.31	0.95	0.54	1 hr	CloudBurst	852.07
CSO148	7/13/14 10:00 PM	7/13/14 11:00 PM	0.01	0.73	65,926.34	1.56	0.39	3 hr	CloudBurst	48,126.22
CSO148	7/14/14 8:15 PM	7/14/14 8:15 PM	0.01	0.07	6,697.32	1.18	0.06	1 hr	CloudBurst	468.81
CSO148	7/26/14 9:45 PM	7/26/14 10:15 PM	0.01	1.39	50,845.91	0.59	0.63	12 hr	CloudBurst	70,675.82
CSO148	7/27/14 6:45 AM	7/27/14 9:15 AM	0.01	1.39	37,986.10	1.41	0.63	12 hr	CloudBurst	52,800.68
CSO148	8/8/14 5:30 AM	8/8/14 7:45 AM	0.01	1.01	85,644.39	0.85	0.50	3 hr	Atlas14	86,500.84
CSO148	8/9/14 4:00 AM	8/9/14 4:00 AM	0.05	0.08	20,445.83	1.10	0.04	12 hr	CloudBurst	1,635.67
CSO148	8/10/14 4:00 AM	8/10/14 4:00 AM	0.02	0.18	597.05	1.30	0.15	1 hr	CloudBurst	107.47
CSO148	8/11/14 3:30 PM	8/11/14 3:30 PM	0.01	0.32	158,907.42	1.57	0.22	1 hr	CloudBurst	50,850.38
CSO148	8/17/14 9:30 AM	8/17/14 10:15 AM	0.01	0.69	4,108.64	0.89	0.26	24 hr	CloudBurst	2,834.96
CSO148	8/22/14 7:15 PM	8/22/14 7:30 PM	0.01	0.63	179,285.21	1.25	0.48	1 hr	CloudBurst	112,949.69
CSO148	8/23/14 4:45 PM	8/23/14 8:15 PM	0.06	0.61	47,060.52	1.68	0.28	12 hr	CloudBurst	28,706.92
CSO148	8/27/14 3:15 PM	8/27/14 5:15 PM	0.06	0.62	157,145.35	1.87	0.40	3 hr	CloudBurst	97,430.11
CSO148	8/30/14 3:15 PM	8/30/14 3:45 PM	0.29	0.52	187,131.30	1.56	0.30	1 hr	CloudBurst	97,308.28
CSO148	9/2/14 8:15 AM	9/2/14 8:30 AM	0.01	0.30	137,494.04	1.36	0.20	3 hr	CloudBurst	41,248.21
CSO148	9/11/14 12:30 AM	9/11/14 6:00 AM	0.34	2.03	122,213.16	2.00	1.67	3 hr	Atlas14	248,092.71
CSO148	9/28/14 7:00 PM	9/28/14 7:00 PM	0.01	0.07	26,334.82	0.03	0.06	1 hr	CloudBurst	1,843.44
CSO148	10/3/14 3:30 AM	10/3/14 4:15 AM	0.01	0.18	4,843.34	0.13	0.07	24 hr	CloudBurst	871.80
CSO148	10/6/14 8:00 AM	10/6/14 11:00 AM	0.01	0.14	126,728.94	0.29	0.05	48 hr	CloudBurst	17,742.05
CSO148	10/7/14 11:45 AM	10/7/14 12:00 PM	0.04	0.16	28,363.02	0.48	0.13	1 hr	CloudBurst	4,538.08
CSO148	10/10/14 1:45 AM	10/10/14 3:00 AM	0.01	0.82	154,989.20	1.02	0.36	3 hr	CloudBurst	127,091.14
CSO148	10/13/14 4:30 AM	10/13/14 6:30 AM	0.02	0.50	29,797.05	1.60	0.32	3 hr	CloudBurst	14,898.52
CSO148	10/13/14 11:30 PM	10/14/14 10:00 AM	0.10	1.21	53,630.13	2.71	0.55	12 hr	CloudBurst	64,892.46
CSO148	11/23/14 2:30 PM	11/23/14 7:45 PM	0.09	0.81	40,837.97	1.13	0.37	6 hr	CloudBurst	33,078.75
CSO148	12/1/14 3:15 AM	12/1/14 4:45 AM	0.01	0.73	15,999.90	0.31	0.28	24 hr	CloudBurst	11,679.93
CSO148	12/1/14 2:30 PM	12/1/14 3:00 PM	0.01	0.73	852.64	0.63	0.28	24 hr	CloudBurst	622.43
CSO148	12/5/14 4:30 AM	12/5/14 6:30 AM	0.01	0.70	7,168.21	1.23	0.23	48 hr	CloudBurst	5,017.75
CSO148	12/5/14 5:30 PM	12/6/14 6:45 AM	0.03	0.70	134,828.10	1.43	0.23	48 hr	CloudBurst	94,379.67
CSO148	12/16/14 5:15 AM	12/16/14 5:15 AM	0.01	0.12	22,116.93	-	0.07	1 hr	CloudBurst	2,654.03
CSO148	12/22/14 10:30 PM	12/22/14 11:45 PM	0.15	0.26	19,289.66	-	0.14	3 hr	CloudBurst	5,015.31
CSO148	12/23/14 8:00 PM	12/23/14 8:00 PM	0.08	0.12	14,709.38	-	0.08	1 hr	CloudBurst	1,765.13
CSO148	12/24/14 1:30 PM	12/24/14 1:30 PM	0.02	0.19	3,157.51	-	0.16	3 hr	CloudBurst	599.93

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO148	12/28/14 1:00 AM	12/28/14 1:30 AM	0.01	0.32	27,349.61	-	0.30	1 hr	CloudBurst	8,751.88
CSO148	1/3/15 10:30 AM	1/3/15 3:00 PM	0.23	0.32	11,519.83	0.19	0.12	24 hr	Atlas	3,686.34
CSO148	2/1/15 1:00 PM	2/1/15 5:45 PM	0.01	0.36	14,144.41	0.47	0.17	12 hr	Atlas	5,091.99
CSO148	2/21/15 2:15 PM	2/21/15 3:30 PM	0.03	1.17	2,736.62	1.27	0.45	24 hr	Atlas	3,201.84
CSO148	3/3/15 6:45 PM	3/4/15 3:00 PM	0.13	1.63	61,892.66	1.20	0.53	48 hr	Atlas	100,885.03
CSO148	3/10/15 6:45 AM	3/10/15 2:30 PM	0.01	1.20	134,708.92	2.83	0.55	12 hr	Atlas	161,650.71
CSO148	3/13/15 8:30 AM	3/14/15 4:45 AM	0.05	1.59	55,284.31	2.74	0.60	24 hr	Atlas	87,902.05
CSO148	3/26/15 4:15 AM	3/26/15 6:15 AM	0.08	0.46	44,705.97	0.58	0.20	3 hr	Atlas	20,564.75
CSO148	4/2/15 9:45 AM	4/2/15 3:30 PM	0.44	5.54	21,514.27	0.92	28.12	6 hr	Cloudburst	119,189.05
CSO148	4/3/15 12:15 AM	4/3/15 5:15 PM	0.22	5.54	218,210.75	5.53	28.12	6 hr	Cloudburst	1,208,887.57
CSO148	4/7/15 9:15 AM	4/7/15 5:30 PM	0.06	0.69	133,655.80	6.23	0.29	12 hr	Atlas	92,222.50
CSO148	4/8/15 6:00 PM	4/8/15 6:30 PM	0.02	0.17	212,118.96	6.41	0.11	1 hr	Atlas	36,060.22
CSO148	4/9/15 11:30 AM	4/9/15 12:00 PM	0.08	0.36	48,318.98	6.39	0.31	1 hr	Atlas	17,394.83
CSO148	4/10/15 2:30 AM	4/10/15 2:30 AM	0.55	0.15	12,728.19	3.43	0.09	3 hr	Atlas	1,909.23
CSO148	4/13/15 9:00 PM	4/13/15 9:00 PM	0.01	0.49	7,876.64	1.49	0.19	6 hr	Atlas	3,859.55
CSO148	4/14/15 11:45 AM	4/14/15 11:45 AM	0.05	0.49	349.28	1.45	0.19	6 hr	Atlas	171.15
CSO148	4/19/15 7:30 AM	4/19/15 2:30 PM	0.01	0.72	78,322.94	1.25	0.31	12 hr	Atlas	56,392.51
CSO148	4/20/15 3:15 AM	4/20/15 3:15 AM	0.01	0.07	315,791.52	1.37	0.06	1 hr	Atlas	22,105.41
CSO148	4/25/15 9:15 AM	4/25/15 9:15 AM	0.02	0.10	5,464.79	0.91	0.05	6 hr	Atlas	546.48
CSO148	4/25/15 7:00 PM	4/25/15 7:00 PM	0.19	0.05	2,634.79	0.92	0.03	3 hr	Atlas	131.74
CSO148	5/11/15 5:30 PM	5/11/15 5:45 PM	0.20	0.14	14,740.40	0.30	0.12	1 hr	Atlas	2,063.66
CSO148	5/16/15 12:45 PM	5/16/15 12:45 PM	0.05	0.29	323.20	0.34	0.13	3 hr	Atlas	93.73
CSO148	5/17/15 2:15 PM	5/17/15 2:30 PM	0.84	0.11	233,224.80	0.52	0.08	1 hr	Atlas	25,654.73
CSO148	5/25/15 7:00 AM	5/25/15 8:15 AM	0.32	0.30	7,122.40	0.22	0.14	12 hr	Atlas	2,136.72
CSO148	5/26/15 1:45 PM	5/26/15 2:15 PM	0.84	0.25	105,434.35	0.47	0.15	1 hr	Atlas	26,358.59
CSO148	5/27/15 1:45 PM	5/27/15 1:45 PM	0.08	0.27	4,074.07	0.81	0.23	1 hr	Atlas	1,100.00
CSO148	6/8/15 8:15 AM	6/8/15 8:30 AM	0.24	0.35	33,663.60	0.38	0.19	3 hr	Atlas	11,782.26
CSO148	6/13/15 2:15 PM	6/13/15 2:15 PM	0.71	0.31	10,088.00	0.66	0.27	1 hr	Atlas	3,127.28
CSO148	6/17/15 4:45 AM	6/17/15 6:15 AM	0.34	0.60	74,257.16	0.89	0.33	3 hr	Atlas	44,554.30
CSO148	6/18/15 4:15 PM	6/18/15 5:45 PM	0.02	2.28	27,260.31	1.96	0.74	48 hr	Atlas	62,153.50
CSO148	6/20/15 1:30 AM	6/20/15 8:30 AM	0.02	2.28	44,051.96	3.29	0.74	48 hr	Atlas	100,438.47
CSO148	6/25/15 11:45 PM	6/26/15 12:00 AM	0.01	0.63	63,792.40	1.84	0.34	6 hr	Atlas	40,189.21
CSO148	6/26/15 5:00 PM	6/27/15 1:15 AM	0.01	0.75	134,017.11	2.68	0.35	1 hr	Atlas	100,512.83
CSO148	6/29/15 1:30 PM	6/29/15 1:45 PM	0.01	0.14	215,763.24	1.52	0.10	1 hr	Atlas	30,206.85
CSO148 Count										67.00
CSO148 Total Volume (GAL)										3,779,592.79
CSO149	7/2/14 4:30 PM	7/2/14 5:15 PM	0.04	0.08	754,394.27	0.28	0.07	1 hr	CloudBurst	60,351.54
CSO149	7/7/14 7:30 PM	7/7/14 8:15 PM	0.02	1.01	273,320.34	1.25	0.88	1 hr	CloudBurst	276,053.54
CSO149	7/13/14 10:15 PM	7/14/14 12:00 AM	0.01	0.70	683,445.57	2.09	0.35	3 hr	CloudBurst	478,411.90
CSO149	7/14/14 8:15 PM	7/14/14 8:45 PM	0.08	0.08	1,082,405.94	1.33	0.07	1 hr	CloudBurst	86,592.48
CSO149	7/26/14 9:45 PM	7/27/14 10:00 AM	0.03	1.43	1,021,857.95	1.47	0.66	12 hr	CloudBurst	1,461,256.87
CSO149	8/8/14 5:45 AM	8/8/14 8:15 AM	0.05	0.90	1,277,388.81	0.73	0.43	6 hr	CloudBurst	1,149,649.93
CSO149	8/10/14 4:00 AM	8/10/14 5:00 AM	0.03	0.71	321,215.61	1.74	0.58	1 hr	CloudBurst	228,063.08
CSO149	8/11/14 3:30 PM	8/11/14 4:30 PM	0.01	0.51	2,426,777.13	2.20	0.40	1 hr	CloudBurst	1,237,656.34
CSO149	8/17/14 9:30 AM	8/17/14 11:00 AM	0.07	0.72	133,413.33	1.14	0.27	24 hr	CloudBurst	96,057.60
CSO149	8/17/14 11:15 PM	8/17/14 11:45 PM	0.09	0.72	61,153.30	1.23	0.27	24 hr	CloudBurst	44,030.37
CSO149	8/22/14 7:15 PM	8/22/14 8:00 PM	0.34	0.35	227,415.85	1.05	0.26	1 hr	CloudBurst	79,595.55
CSO149	8/23/14 4:00 PM	8/23/14 10:15 PM	0.34	0.59	1,628,929.00	1.65	0.28	3 hr	CloudBurst	961,068.11
CSO149	8/27/14 3:15 PM	8/27/14 6:00 PM	0.02	0.27	1,661,571.44	1.32	0.18	3 hr	CloudBurst	448,624.29
CSO149	8/30/14 3:15 PM	8/30/14 4:30 PM	0.25	0.60	1,733,979.99	1.41	0.38	1 hr	CloudBurst	1,040,388.00
CSO149	9/2/14 8:30 AM	9/2/14 9:30 AM	0.35	0.40	102,401.14	1.32	0.24	3 hr	CloudBurst	40,960.46
CSO149	9/11/14 12:45 AM	9/11/14 1:15 AM	0.03	1.90	971,022.61	1.24	1.33	3 hr	Atlas14	1,844,942.96
CSO149	4/3/15 6:30 PM	4/3/15 6:45 PM	0.03	5.36	1,167.20	5.38	20.93	6 hr	Cloudburst	6,256.19
CSO149	5/16/15 11:45 AM	5/16/15 1:45 PM	0.03	0.39	541,980.44	0.43	0.19	3 hr	Atlas	211,372.37
CSO149	5/17/15 2:15 PM	5/17/15 3:00 PM	0.07	0.12	4,897,285.64	0.58	0.09	1 hr	Atlas	587,674.28

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO149	5/25/15 7:15 AM	5/25/15 8:30 AM	0.02	0.24	17,337.32	0.21	0.11	12 hr	Atlas	4,160.96
CSO149	5/26/15 2:00 PM	5/26/15 2:45 PM	0.51	0.35	2,031,894.57	0.54	0.26	1 hr	Atlas	711,163.10
CSO149	5/27/15 2:00 PM	5/27/15 2:00 PM	0.10	0.09	71,277.54	0.68	0.08	1 hr	Atlas	6,414.98
CSO149	6/8/15 7:15 AM	6/8/15 9:00 AM	0.04	0.26	511,337.92	0.33	0.16	3 hr	Atlas	132,947.86
CSO149	6/17/15 4:45 AM	6/17/15 7:00 AM	0.04	0.58	2,675,354.21	0.71	0.31	3 hr	Atlas	1,551,705.44
CSO149	6/18/15 4:15 PM	6/19/15 12:30 AM	0.06	1.82	3,039,853.71	1.75	0.59	48 hr	Atlas	5,532,533.76
CSO149	6/20/15 1:30 AM	6/20/15 9:45 AM	0.02	1.82	1,510,895.10	2.74	0.59	48 hr	Atlas	2,749,829.08
CSO149	6/22/15 6:15 AM	6/22/15 6:45 AM	0.03	0.24	96,439.20	2.82	0.11	3 hr	Atlas	23,145.41
CSO149	6/26/15 12:00 AM	6/26/15 6:00 AM	0.26	0.59	2,359,263.10	1.82	0.32	6 hr	Atlas	1,391,965.23
CSO149	6/26/15 5:00 PM	6/27/15 1:30 AM	0.11	0.89	2,422,064.19	2.60	0.50	1 hr	Atlas	2,155,637.13
CSO149	6/29/15 1:30 PM	6/29/15 2:15 PM	0.05	0.19	5,065,701.76	1.65	0.11	1 hr	Atlas	962,483.33
CSO149 Count										30.00
CSO149 Total Volume (GAL)										25,560,992.10
CSO150	7/7/14 7:30 PM	7/7/14 7:30 PM	0.04	0.31	6,769.25	0.76	0.27	1 hr	CloudBurst	2,098.47
CSO150	7/13/14 10:45 PM	7/13/14 10:45 PM	0.72	0.92	1,403.66	1.27	0.52	1 hr	CloudBurst	1,291.36
CSO150	7/26/14 9:30 PM	7/26/14 9:45 PM	0.41	0.89	12,906.96	0.36	0.40	12 hr	CloudBurst	11,487.20
CSO150	8/8/14 6:30 AM	8/8/14 8:15 AM	0.24	0.79	128,925.91	0.59	0.38	6 hr	CloudBurst	101,851.47
CSO150	8/10/14 4:00 AM	8/10/14 4:30 AM	0.23	0.73	47,298.23	1.60	0.57	1 hr	CloudBurst	34,527.71
CSO150	8/18/14 2:15 PM	8/18/14 4:15 PM	0.06	0.03	492,602.33	0.96	0.24	1 hr	Atlas14	13,792.87
CSO150	8/22/14 7:00 PM	8/22/14 7:00 PM	0.03	0.16	11,251.63	0.80	0.10	3 hr	CloudBurst	1,800.26
CSO150	8/23/14 7:45 PM	8/23/14 11:00 PM	0.09	0.83	135,785.70	1.62	0.43	3 hr	CloudBurst	112,702.13
CSO150	8/27/14 5:00 PM	8/27/14 5:00 PM	0.06	0.11	49,836.36	1.21	0.08	1 hr	CloudBurst	5,482.00
CSO150	8/30/14 3:00 PM	8/30/14 5:30 PM	0.17	0.72	63,498.84	1.67	0.44	1 hr	CloudBurst	45,719.16
CSO150	9/11/14 12:30 AM	9/11/14 8:00 AM	0.07	2.08	103,407.57	2.08	1.63	3 hr	Atlas14	215,087.74
CSO150	10/10/14 2:45 AM	10/10/14 4:00 AM	0.01	1.18	62,677.53	1.72	0.54	3 hr	Atlas14	73,959.49
CSO150	10/14/14 8:00 AM	10/14/14 11:00 AM	0.01	1.07	145,042.29	2.77	0.48	12 hr	CloudBurst	155,195.25
CSO150	12/6/14 1:45 AM	12/6/14 7:15 AM	0.01	0.65	335,451.63	1.67	0.21	48 hr	CloudBurst	218,043.56
CSO150	3/4/15 2:30 AM	3/4/15 7:30 AM	0.07	1.92	46,489.44	1.03	0.62	48 hr	Atlas	89,259.73
CSO150	3/10/15 10:30 AM	3/10/15 5:30 PM	0.02	1.15	316,378.57	3.06	0.52	12 hr	Atlas	363,835.36
CSO150	3/13/15 1:00 PM	3/14/15 7:00 AM	0.08	2.00	285,345.67	3.10	0.75	24 hr	Atlas	570,691.34
CSO150	4/2/15 3:00 PM	4/2/15 4:00 PM	0.01	4.94	2,407.22	1.01	9.44	24 hr	Cloudburst	11,891.68
CSO150	4/3/15 12:15 AM	4/3/15 5:30 PM	0.14	4.94	144,860.79	4.97	9.44	24 hr	Cloudburst	715,612.29
CSO150	4/7/15 9:15 AM	4/7/15 7:00 PM	0.01	1.11	153,775.93	6.05	0.54	1 hr	Atlas	170,691.28
CSO150	4/9/15 11:30 AM	4/9/15 5:15 PM	0.10	0.26	820,010.84	5.99	0.23	1 hr	Atlas	213,202.82
CSO150	4/10/15 2:30 AM	4/10/15 8:00 AM	0.31	0.22	1,267,782.80	3.53	0.14	3 hr	Atlas	278,912.22
CSO150	4/14/15 11:00 AM	4/14/15 12:30 PM	0.05	0.66	8,380.75	1.49	0.25	24 hr	Atlas	5,531.29
CSO150	4/19/15 2:30 PM	4/19/15 3:15 PM	0.13	0.68	34,459.68	1.21	0.28	12 hr	Atlas	23,432.58
CSO150	6/17/15 4:45 AM	6/17/15 7:00 AM	0.23	0.64	4,260.89	0.66	0.35	3 hr	Atlas	2,726.97
CSO150	6/18/15 5:15 PM	6/18/15 6:45 PM	0.21	0.67	58,408.55	1.21	0.38	1 hr	Atlas	39,133.73
CSO150	6/20/15 5:15 AM	6/20/15 9:15 AM	0.29	0.95	127,632.57	2.35	0.39	12 hr	Atlas	121,250.94
CSO150	6/26/15 5:00 PM	6/26/15 6:45 PM	0.75	1.05	32,228.73	2.40	0.54	1 hr	Atlas	33,840.17
CSO150 Count										28.00
CSO150 Total Volume (GAL)										3,633,051.06
CSO151	9/11/14 1:15 AM	9/11/14 10:15 AM	0.08	1.88	782,983.77	1.88	1.30	3 hr	Atlas14	1,472,009.49
CSO151	10/3/14 3:45 AM	10/3/14 4:30 AM	0.38	0.20	103,384.71	0.15	0.09	1 hr	CloudBurst	20,676.94
CSO151	10/3/14 7:30 PM	10/3/14 8:30 PM	0.03	0.20	20,417.52	0.29	0.09	1 hr	CloudBurst	4,083.50
CSO151	10/6/14 8:15 AM	10/6/14 10:00 AM	0.04	0.12	306,690.67	0.28	0.05	24 hr	CloudBurst	36,802.88
CSO151	10/7/14 12:00 PM	10/7/14 1:00 PM	0.07	0.16	474,045.19	0.49	0.14	1 hr	CloudBurst	75,847.23
CSO151	10/10/14 2:00 AM	10/10/14 4:30 AM	0.04	0.82	402,452.08	1.01	0.34	3 hr	CloudBurst	330,010.70
CSO151	10/10/14 5:30 PM	10/10/14 10:00 PM	0.10	0.82	58,266.76	1.21	0.34	3 hr	CloudBurst	47,778.74
CSO151	10/13/14 4:45 AM	10/13/14 8:00 AM	0.19	0.47	639,700.55	1.58	0.30	3 hr	CloudBurst	300,659.26
CSO151	10/13/14 11:45 PM	10/14/14 11:45 AM	0.14	1.13	663,074.47	2.60	0.50	12 hr	CloudBurst	749,274.16
CSO151	10/15/14 5:15 PM	10/15/14 7:00 PM	0.50	0.17	72,512.59	2.59	0.08	12 hr	CloudBurst	12,327.14
CSO151	10/20/14 7:30 AM	10/20/14 7:30 AM	0.07	0.06	12,049.51	1.37	0.04	3 hr	CloudBurst	722.97
CSO151	11/16/14 10:30 PM	11/16/14 10:30 PM	0.01	0.32	2,025.71	0.14	0.13	12 hr	CloudBurst	648.23

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO151	11/23/14 2:45 PM	11/23/14 11:45 PM	0.01	0.80	651,052.01	1.14	0.38	6 hr	CloudBurst	520,841.61
CSO151	12/1/14 3:15 AM	12/1/14 5:00 PM	0.38	0.72	619,772.19	0.68	0.27	24 hr	CloudBurst	446,235.97
CSO151	12/4/14 8:15 PM	12/6/14 4:15 PM	0.57	0.69	2,230,851.83	1.41	0.22	48 hr	CloudBurst	1,539,287.77
CSO151	12/16/14 5:30 AM	12/16/14 6:15 AM	1.83	0.12	107,310.03	-	0.07	1 hr	CloudBurst	12,877.20
CSO151	12/22/14 11:00 PM	12/23/14 1:00 AM	0.03	0.26	161,472.66	-	0.14	3 hr	CloudBurst	41,982.89
CSO151	12/23/14 8:15 PM	12/23/14 8:45 PM	0.08	0.12	108,442.76	-	0.08	1 hr	CloudBurst	13,013.13
CSO151	12/24/14 1:45 PM	12/24/14 3:30 PM	0.02	0.19	252,538.11	-	0.16	3 hr	CloudBurst	47,982.24
CSO151	12/28/14 1:15 AM	12/28/14 2:45 AM	0.07	0.32	339,894.31	-	0.30	1 hr	CloudBurst	108,766.18
CSO151	1/3/15 11:30 AM	1/3/15 3:30 PM	0.06	0.33	1,910.55	0.19	0.12	24 hr	Atlas	630.48
CSO151	1/4/15 3:45 AM	1/4/15 4:45 AM	0.17	0.33	50,210.13	0.34	0.12	24 hr	Atlas	16,569.34
CSO151	2/1/15 12:45 PM	2/1/15 8:00 PM	0.04	0.37	287,875.55	0.53	0.17	12 hr	Atlas	106,513.95
CSO151	2/21/15 12:45 PM	2/21/15 8:45 PM	0.30	1.16	172,743.14	1.32	0.45	24 hr	Atlas	200,382.04
CSO151	3/3/15 7:00 PM	3/6/15 6:45 PM	0.33	1.62	1,968,277.11	1.71	0.53	24 hr	Atlas	3,188,608.92
CSO151	3/7/15 12:15 PM	3/8/15 7:15 PM	2.99	0.28	1,537,304.41	1.66	0.26	1 hr	Atlas	430,445.23
CSO151	3/10/15 5:30 AM	3/12/15 5:45 AM	1.29	1.20	1,604,882.32	2.82	0.55	12 hr	Atlas	1,925,858.78
CSO151	3/13/15 8:45 AM	3/16/15 11:15 PM	2.01	1.55	1,970,782.67	2.75	0.58	24 hr	Atlas	3,054,713.13
CSO151	3/19/15 7:15 PM	3/19/15 11:00 PM	3.60	0.17	163,565.88	1.72	0.07	6 hr	Atlas	27,806.20
CSO151	3/24/15 8:30 PM	3/24/15 8:45 PM	0.16	0.10	47,793.02	0.25	0.05	1 hr	Atlas	4,779.30
CSO151	3/26/15 4:45 AM	3/26/15 4:30 PM	0.01	0.42	410,359.21	0.69	0.17	12 hr	Atlas	172,350.87
CSO151	4/2/15 10:15 AM	4/11/15 9:45 PM	0.49	5.00	4,059,490.14	6.54	12.80	6 hr	Cloudburst	20,297,450.72
CSO151	4/13/15 7:30 PM	4/13/15 11:00 PM	9.48	0.43	401,447.80	1.48	0.17	6 hr	Atlas	172,622.56
CSO151	4/14/15 7:30 AM	4/14/15 1:45 PM	0.15	0.43	670,635.52	1.72	0.17	6 hr	Atlas	288,373.27
CSO151	4/16/15 10:30 AM	4/16/15 11:00 AM	0.26	0.04	224,766.22	1.04	0.03	1 hr	Atlas	8,990.65
CSO151	4/19/15 7:00 AM	4/20/15 4:45 AM	0.02	0.81	515,593.99	1.43	0.34	12 hr	Atlas	417,631.14
CSO151	4/25/15 9:30 AM	4/25/15 10:30 AM	0.91	0.12	266,859.00	1.03	0.06	6 hr	Atlas	32,023.08
CSO151	4/25/15 7:15 PM	4/25/15 7:30 PM	0.04	0.15	200,013.50	1.14	0.10	1 hr	Atlas	30,002.03
CSO151	5/9/15 5:15 AM	5/9/15 5:30 AM	0.01	0.12	58,343.28	0.12	0.07	3 hr	Atlas	7,001.19
CSO151	5/11/15 6:00 PM	5/11/15 6:45 PM	0.01	0.09	533,684.27	0.21	0.08	1 hr	Atlas	48,031.58
CSO151	5/16/15 1:00 PM	5/16/15 2:45 PM	0.03	0.24	128,228.12	0.38	0.13	3 hr	Atlas	30,774.75
CSO151	5/17/15 2:30 PM	5/17/15 3:30 PM	0.07	0.12	499,956.02	0.49	0.08	1 hr	Atlas	59,994.72
CSO151	5/25/15 6:45 AM	5/25/15 9:45 AM	0.04	0.26	169,794.10	0.24	0.12	12 hr	Atlas	44,146.47
CSO151	5/26/15 2:00 PM	5/26/15 3:30 PM	0.13	0.25	478,425.40	0.44	0.16	1 hr	Atlas	119,606.35
CSO151	5/27/15 2:00 PM	5/27/15 2:45 PM	0.06	0.22	192,239.01	0.73	0.19	1 hr	Atlas	42,292.58
CSO151	6/8/15 7:30 AM	6/8/15 9:30 AM	0.03	0.26	109,718.70	0.32	0.14	3 hr	Atlas	28,526.86
CSO151	6/13/15 2:45 PM	6/13/15 3:00 PM	0.08	0.12	228,305.54	0.38	0.10	1 hr	Atlas	27,396.66
CSO151	6/17/15 5:00 AM	6/17/15 8:00 AM	0.01	0.56	646,625.66	0.68	0.31	3 hr	Atlas	362,110.37
CSO151	6/17/15 5:30 PM	6/17/15 5:45 PM	0.13	0.09	105,185.57	0.77	0.08	1 hr	Atlas	9,466.70
CSO151	6/18/15 4:30 PM	6/19/15 12:15 AM	0.01	2.08	442,221.78	1.67	0.68	48 hr	Atlas	919,821.30
CSO151	6/20/15 1:45 AM	6/20/15 3:45 PM	0.32	2.08	384,524.64	2.85	0.68	48 hr	Atlas	799,811.24
CSO151	6/22/15 6:30 AM	6/22/15 7:45 AM	0.58	0.21	227,676.25	2.94	0.10	12 hr	Atlas	47,812.01
CSO151	6/26/15 12:00 AM	6/26/15 5:30 AM	0.05	0.55	485,220.36	1.95	0.30	6 hr	Atlas	266,871.20
CSO151	6/26/15 5:15 PM	6/27/15 4:30 AM	0.23	0.81	628,901.90	2.62	0.38	1 hr	Atlas	509,410.54
CSO151	6/29/15 1:45 PM	6/29/15 3:45 PM	0.47	0.20	386,021.57	1.56	0.12	1 hr	Atlas	77,204.31
CSO151 Count										55.00
CSO151 Total Volume (GAL)										39,557,858.77
CSO152	7/2/14 4:45 PM	7/2/14 5:15 PM	0.02	0.11	597,191.21	0.37	0.10	1 hr	CloudBurst	65,691.03
CSO152	7/7/14 8:00 PM	7/7/14 8:15 PM	0.01	0.80	64,119.96	1.09	0.70	1 hr	CloudBurst	51,295.97
CSO152	7/13/14 10:15 PM	7/14/14 12:15 AM	0.01	0.76	206,885.41	1.83	0.40	3 hr	Atlas14	157,232.91
CSO152	7/14/14 8:30 PM	7/14/14 8:45 PM	0.04	0.13	416,739.84	1.32	0.10	1 hr	CloudBurst	54,176.18
CSO152	7/26/14 10:00 PM	7/27/14 9:45 AM	0.02	1.19	459,867.21	1.22	0.54	12 hr	CloudBurst	547,241.98
CSO152	8/8/14 6:00 AM	8/8/14 8:15 AM	0.07	0.98	339,603.52	0.76	0.45	6 hr	CloudBurst	332,811.45
CSO152	8/9/14 4:15 AM	8/9/14 4:15 AM	0.04	0.06	76,453.98	1.01	0.03	12 hr	CloudBurst	4,587.24
CSO152	8/10/14 4:00 AM	8/10/14 4:45 AM	0.02	0.41	132,672.07	1.45	0.34	1 hr	CloudBurst	54,395.55
CSO152	8/11/14 3:30 PM	8/11/14 4:15 PM	0.01	0.44	188,430.43	1.85	0.35	1 hr	CloudBurst	82,909.39
CSO152	8/17/14 12:45 AM	8/17/14 12:45 AM	0.10	0.71	230.49	1.16	0.27	24 hr	CloudBurst	163.65

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO152	8/17/14 9:45 AM	8/17/14 10:30 AM	0.13	0.71	127,284.85	1.04	0.27	24 hr	CloudBurst	90,372.24
CSO152	8/22/14 7:45 PM	8/22/14 8:00 PM	0.01	0.42	86,323.15	1.11	0.30	1 hr	CloudBurst	36,255.72
CSO152	8/23/14 4:00 PM	8/23/14 10:15 PM	0.34	0.59	247,987.73	1.72	0.27	12 hr	CloudBurst	146,312.76
CSO152	8/27/14 3:15 PM	8/27/14 5:45 PM	0.03	0.26	584,050.52	1.35	0.17	3 hr	Atlas14	151,853.14
CSO152	8/30/14 3:30 PM	8/30/14 4:30 PM	0.14	0.53	420,989.46	1.23	0.32	1 hr	CloudBurst	223,124.42
CSO152	9/2/14 8:30 AM	9/2/14 9:30 AM	0.36	0.36	213,456.88	1.16	0.22	3 hr	CloudBurst	76,844.48
CSO152	9/11/14 12:45 AM	9/11/14 7:00 AM	0.03	1.92	135,129.54	1.88	1.40	3 hr	Atlas14	259,448.72
CSO152	10/3/14 7:30 PM	10/3/14 7:30 PM	0.02	0.19	65,895.78	0.18	0.07	3 hr	CloudBurst	12,520.20
CSO152	10/6/14 10:00 AM	10/6/14 10:15 AM	0.01	0.31	84,815.80	0.46	0.18	1 hr	CloudBurst	26,292.90
CSO152	10/7/14 12:00 PM	10/7/14 12:30 PM	0.08	0.16	116,193.05	0.67	0.14	1 hr	CloudBurst	18,590.89
CSO152	10/10/14 2:45 AM	10/10/14 3:45 AM	0.01	0.93	174,645.53	1.27	0.38	3 hr	CloudBurst	162,420.34
CSO152	10/10/14 5:45 PM	10/10/14 9:45 PM	0.49	0.93	21,305.03	1.51	0.38	3 hr	CloudBurst	19,813.68
CSO152	10/13/14 4:45 AM	10/13/14 7:15 AM	0.09	0.42	510,411.53	1.85	0.27	3 hr	CloudBurst	214,372.84
CSO152	10/13/14 11:45 PM	10/14/14 10:45 AM	0.01	1.10	457,651.87	2.65	0.49	12 hr	CloudBurst	503,417.06
CSO152	11/23/14 2:45 PM	11/23/14 8:45 PM	0.03	0.71	663,010.02	1.05	0.34	6 hr	CloudBurst	470,737.11
CSO152	12/1/14 3:30 AM	12/1/14 6:00 AM	0.03	0.79	493,110.19	0.40	0.30	24 hr	CloudBurst	389,557.05
CSO152	12/1/14 3:00 PM	12/1/14 4:15 PM	0.01	0.79	87,970.38	0.73	0.30	24 hr	CloudBurst	69,496.60
CSO152	12/5/14 5:00 AM	12/5/14 7:15 AM	0.03	0.69	166,866.94	1.23	0.22	48 hr	CloudBurst	115,138.19
CSO152	12/5/14 8:45 PM	12/6/14 7:45 AM	0.01	0.69	1,928,575.90	1.48	0.22	48 hr	CloudBurst	1,330,717.37
CSO152	12/16/14 5:30 AM	12/16/14 5:45 AM	0.26	0.12	799,964.30	-	0.07	1 hr	CloudBurst	95,995.72
CSO152	12/22/14 11:45 PM	12/23/14 12:30 AM	0.10	0.26	567,092.20	-	0.14	3 hr	CloudBurst	147,443.97
CSO152	12/23/14 8:30 PM	12/23/14 8:30 PM	0.04	0.12	48,723.23	-	0.08	1 hr	CloudBurst	5,846.79
CSO152	12/24/14 1:45 PM	12/24/14 2:45 PM	0.04	0.19	285,709.58	-	0.16	3 hr	CloudBurst	54,284.82
CSO152	12/28/14 1:15 AM	12/28/14 2:15 AM	0.26	0.32	307,437.26	-	0.30	1 hr	CloudBurst	98,379.92
CSO152	1/3/15 11:00 AM	1/3/15 11:15 AM	0.01	0.32	32,259.99	0.12	0.12	24 hr	Atlas	10,323.20
CSO152	1/4/15 3:45 AM	1/4/15 4:15 AM	0.01	0.32	72,023.66	0.33	0.12	24 hr	Atlas	23,047.57
CSO152	2/1/15 1:15 PM	2/1/15 6:15 PM	0.02	0.37	871,828.41	0.51	0.17	12 hr	Atlas	322,576.51
CSO152	2/21/15 1:45 PM	2/21/15 6:15 PM	0.04	1.21	613,275.89	1.39	0.47	24 hr	Atlas	742,063.83
CSO152	3/3/15 7:00 PM	3/4/15 6:15 PM	0.17	1.61	1,662,540.81	1.31	0.52	24 hr	Atlas	2,676,690.70
CSO152	3/7/15 2:15 PM	3/7/15 6:15 PM	0.10	0.28	608,337.42	1.65	0.26	1 hr	Atlas	170,334.47
CSO152	3/10/15 7:00 AM	3/10/15 7:15 PM	0.46	1.26	1,370,910.98	2.87	0.57	12 hr	Atlas	1,727,347.83
CSO152	3/13/15 9:00 AM	3/14/15 12:30 PM	0.25	1.67	913,052.21	2.93	0.63	24 hr	Atlas	1,524,797.18
CSO152	3/19/15 8:00 PM	3/19/15 8:15 PM	0.10	0.19	51,277.30	1.84	0.07	24 hr	Atlas	9,742.69
CSO152	3/24/15 8:30 PM	3/24/15 8:30 PM	0.05	0.10	77,451.66	0.27	0.05	1 hr	Atlas	7,745.17
CSO152	3/26/15 4:45 AM	3/26/15 7:00 AM	0.09	0.42	607,351.48	0.57	0.17	12 hr	Atlas	255,087.62
CSO152	4/2/15 10:15 AM	4/4/15 2:45 AM	0.46	5.12	2,799,821.17	5.26	13.81	6 hr	Cloudburst	14,335,084.37
CSO152	4/7/15 8:00 AM	4/7/15 6:45 PM	0.01	0.78	561,718.57	5.91	0.33	12 hr	Atlas	438,140.49
CSO152	4/8/15 6:45 PM	4/8/15 7:30 PM	0.03	0.16	659,789.06	6.06	0.09	3 hr	Atlas	105,566.25
CSO152	4/9/15 11:45 AM	4/9/15 1:00 PM	0.01	0.25	643,956.47	5.95	0.22	1 hr	Atlas	160,989.12
CSO152	4/10/15 2:30 AM	4/10/15 4:00 AM	0.04	0.14	1,122,133.48	3.40	0.09	3 hr	Atlas	157,098.69
CSO152	4/13/15 8:45 PM	4/13/15 10:00 PM	0.04	0.38	673,936.57	1.41	0.16	6 hr	Atlas	256,095.90
CSO152	4/14/15 7:45 AM	4/14/15 12:30 PM	0.01	0.38	336,095.41	1.61	0.16	6 hr	Atlas	127,716.26
CSO152	4/19/15 7:00 AM	4/19/15 7:00 PM	0.02	0.75	363,943.57	1.23	0.31	12 hr	Atlas	272,957.67
CSO152	4/20/15 3:30 AM	4/20/15 4:15 AM	0.21	0.06	1,722,890.96	1.29	0.04	1 hr	Atlas	103,373.46
CSO152	4/25/15 9:30 AM	4/25/15 10:00 AM	0.19	0.12	499,246.77	0.94	0.06	6 hr	Atlas	59,909.61
CSO152	4/25/15 7:15 PM	4/25/15 7:30 PM	0.97	0.10	411,333.42	1.00	0.06	3 hr	Atlas	41,133.34
CSO152	5/11/15 6:00 PM	5/11/15 6:15 PM	0.17	0.09	493,612.63	0.21	0.08	1 hr	Atlas	44,425.14
CSO152	5/16/15 1:15 PM	5/16/15 2:15 PM	0.51	0.33	184,132.09	0.40	0.15	3 hr	Atlas	60,763.59
CSO152	5/17/15 2:45 PM	5/17/15 3:15 PM	1.15	0.10	747,762.82	0.50	0.06	1 hr	Atlas	74,776.28
CSO152	5/25/15 7:15 AM	5/25/15 9:00 AM	0.01	0.23	379,005.34	0.22	0.11	12 hr	Atlas	87,171.23
CSO152	5/26/15 2:00 PM	5/26/15 3:00 PM	0.01	0.24	898,624.84	0.42	0.16	1 hr	Atlas	215,669.96
CSO152	5/27/15 2:00 PM	5/27/15 2:30 PM	0.09	0.14	569,392.17	0.62	0.12	1 hr	Atlas	79,714.90
CSO152	6/8/15 8:45 AM	6/8/15 9:00 AM	1.69	0.32	238,914.13	0.33	0.19	3 hr	Atlas	76,452.52
CSO152	6/17/15 5:00 AM	6/17/15 7:30 AM	0.45	0.60	623,661.12	0.68	0.33	3 hr	Atlas	374,196.67
CSO152	6/18/15 4:30 PM	6/18/15 7:30 PM	0.03	1.84	793,484.76	1.62	0.60	48 hr	Atlas	1,460,011.96

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO152	6/19/15 1:30 PM	6/19/15 1:45 PM	0.05	1.84	12,311.02	1.74	0.60	48 hr	Atlas	22,652.27
CSO152	6/20/15 1:45 AM	6/20/15 10:00 AM	0.06	1.84	574,052.11	2.64	0.60	48 hr	Atlas	1,056,255.88
CSO152	6/22/15 6:30 AM	6/22/15 7:15 AM	0.05	0.22	291,763.63	2.78	0.10	12 hr	Atlas	64,188.00
CSO152	6/26/15 12:15 AM	6/26/15 3:30 AM	0.20	0.62	462,243.56	1.82	0.34	6 hr	Atlas	286,591.01
CSO152	6/26/15 5:15 PM	6/27/15 2:00 AM	0.50	0.81	1,222,891.04	2.56	0.38	1 hr	Atlas	990,541.75
CSO152	6/29/15 1:45 PM	6/29/15 2:30 PM	0.03	0.18	1,463,080.95	1.61	0.11	1 hr	Atlas	263,354.57
CSO152 Count										71.00
CSO152 Total Volume (GAL)										34,754,329.93
CSO153	7/2/14 4:15 PM	7/2/14 4:30 PM	0.01	0.12	92,649.74	0.40	0.10	1 hr	CloudBurst	11,117.97
CSO153	7/7/14 7:30 PM	7/7/14 7:45 PM	0.06	0.62	388,485.33	0.95	0.54	1 hr	CloudBurst	240,860.91
CSO153	7/13/14 10:30 PM	7/13/14 11:15 PM	0.01	0.69	77,943.86	1.50	0.34	1 hr	CloudBurst	53,781.27
CSO153	7/14/14 8:00 PM	7/14/14 8:30 PM	0.05	0.30	369,972.92	1.41	0.20	3 hr	CloudBurst	110,991.87
CSO153	7/26/14 9:45 PM	7/27/14 5:45 PM	0.02	0.97	1,328,319.75	1.01	0.43	12 hr	CloudBurst	1,288,470.16
CSO153	8/8/14 5:45 AM	8/8/14 8:00 AM	0.01	0.87	332,457.40	0.67	0.42	6 hr	CloudBurst	289,237.94
CSO153	8/10/14 4:00 AM	8/10/14 4:15 AM	0.01	0.78	70,126.62	1.74	0.65	1 hr	CloudBurst	54,698.77
CSO153	8/11/14 3:30 PM	8/11/14 3:45 PM	0.05	0.35	259,336.82	2.10	0.30	1 hr	CloudBurst	90,767.89
CSO153	8/17/14 9:30 AM	8/17/14 10:30 AM	0.08	0.72	99,247.70	0.96	0.27	24 hr	CloudBurst	71,458.34
CSO153	8/22/14 7:15 PM	8/22/14 7:15 PM	0.06	0.22	307,504.12	0.94	0.13	3 hr	CloudBurst	67,650.91
CSO153	8/23/14 4:00 PM	8/23/14 10:00 PM	0.39	0.52	255,156.61	1.48	0.26	3 hr	CloudBurst	132,681.44
CSO153	8/27/14 3:00 PM	8/27/14 3:00 PM	0.01	0.12	62,235.68	1.01	0.09	1 hr	CloudBurst	7,468.28
CSO153	8/30/14 3:15 PM	8/30/14 4:15 PM	0.01	0.54	498,686.91	1.12	0.31	1 hr	CloudBurst	269,290.93
CSO153	9/2/14 8:30 AM	9/2/14 8:45 AM	0.34	0.40	29,591.02	1.07	0.25	3 hr	Atlas14	11,836.41
CSO153	9/11/14 12:45 AM	9/11/14 2:30 AM	0.01	1.86	800,800.77	1.59	1.23	3 hr	Atlas14	1,489,489.43
CSO153	10/3/14 4:15 AM	10/3/14 4:15 AM	0.01	0.26	34,965.99	0.09	0.10	24 hr	CloudBurst	9,091.16
CSO153	10/6/14 9:45 AM	10/6/14 10:00 AM	0.01	0.22	410,571.25	0.42	0.09	12 hr	CloudBurst	90,325.67
CSO153	10/7/14 11:45 AM	10/7/14 12:00 PM	0.03	0.22	129,281.91	0.70	0.18	1 hr	CloudBurst	28,442.02
CSO153	10/10/14 2:00 AM	10/10/14 3:30 AM	0.02	1.19	155,953.09	1.53	0.55	1 hr	CloudBurst	185,584.18
CSO153	10/10/14 9:15 PM	10/10/14 9:15 PM	0.83	1.19	2,762.79	1.60	0.55	1 hr	CloudBurst	3,287.72
CSO153	10/13/14 4:30 AM	10/13/14 6:30 AM	0.09	0.42	211,385.38	2.05	0.27	3 hr	CloudBurst	88,781.86
CSO153	10/13/14 11:30 PM	10/14/14 10:30 AM	0.01	0.88	324,148.31	2.73	0.39	12 hr	CloudBurst	285,250.51
CSO153	10/20/14 8:00 PM	10/20/14 8:00 PM	0.01	0.04	303,413.04	1.14	0.03	3 hr	CloudBurst	12,136.52
CSO153	10/28/14 1:15 PM	10/28/14 1:15 PM	0.04	0.13	93,099.52	0.11	0.07	6 hr	CloudBurst	12,102.94
CSO153	11/23/14 5:15 PM	11/23/14 8:00 PM	0.01	0.74	198,086.53	1.01	0.32	12 hr	CloudBurst	146,584.03
CSO153	12/1/14 3:15 AM	12/1/14 4:30 AM	0.25	0.87	33,396.68	0.36	0.33	24 hr	CloudBurst	29,055.12
CSO153	12/5/14 6:00 AM	12/5/14 6:00 AM	0.01	0.64	4,092.89	1.26	0.21	48 hr	CloudBurst	2,619.45
CSO153	12/5/14 8:30 PM	12/6/14 6:00 AM	0.04	0.64	662,075.88	1.51	0.21	48 hr	CloudBurst	423,728.56
CSO153	12/16/14 5:00 AM	12/16/14 5:00 AM	0.01	0.09	166,386.69	-	0.05	3 hr	CloudBurst	14,974.80
CSO153	12/22/14 11:30 PM	12/22/14 11:45 PM	0.07	0.22	46,436.13	-	0.14	3 hr	CloudBurst	10,215.95
CSO153	12/24/14 1:15 PM	12/24/14 1:15 PM	0.01	0.19	24,313.98	-	0.17	3 hr	Atlas14	4,619.66
CSO153	12/28/14 12:45 AM	12/28/14 1:30 AM	0.01	0.32	125,056.90	-	0.27	1 hr	CloudBurst	40,018.21
CSO153	2/1/15 12:45 PM	2/1/15 2:30 PM	0.01	0.39	126,381.79	0.47	0.19	3 hr	Atlas	49,288.90
CSO153	2/21/15 2:45 PM	2/21/15 2:45 PM	0.06	1.24	1,751.00	1.44	0.48	24 hr	Atlas	2,171.24
CSO153	3/3/15 6:45 PM	3/4/15 3:00 PM	0.01	1.76	436,609.64	1.32	0.57	24 hr	Atlas	768,432.96
CSO153	3/7/15 2:15 PM	3/7/15 2:15 PM	0.08	0.04	215,500.79	1.82	0.03	1 hr	Atlas	8,620.03
CSO153	3/10/15 6:45 AM	3/10/15 1:45 PM	0.46	1.13	726,409.22	2.85	0.51	12 hr	Atlas	820,842.42
CSO153	3/13/15 9:45 AM	3/14/15 3:45 AM	0.01	1.81	446,966.56	2.88	0.68	24 hr	Atlas	809,009.47
CSO153	3/24/15 8:00 PM	3/24/15 8:00 PM	0.01	0.12	56,979.25	0.31	0.07	1 hr	Atlas	6,837.51
CSO153	3/26/15 4:15 AM	3/26/15 6:15 AM	0.11	0.48	268,155.97	0.63	0.19	3 hr	Atlas	128,714.87
CSO153	4/2/15 9:45 AM	4/3/15 5:00 PM	0.05	4.76	664,086.07	4.91	7.33	6 hr	Cloudburst	3,161,049.70
CSO153	4/7/15 9:15 AM	4/7/15 5:30 PM	0.01	0.92	651,142.31	5.68	0.46	1 hr	Atlas	599,050.93
CSO153	4/8/15 6:00 PM	4/8/15 9:15 PM	0.40	0.28	525,319.57	5.96	0.21	1 hr	Atlas	147,089.48
CSO153	4/9/15 11:30 AM	4/9/15 1:45 PM	0.01	0.18	1,161,968.05	5.71	0.16	1 hr	Atlas	209,154.25
CSO153	4/10/15 2:15 AM	4/10/15 4:15 AM	0.01	0.19	736,830.72	3.48	0.12	3 hr	Atlas	139,997.84
CSO153	4/13/15 8:45 PM	4/13/15 9:00 PM	0.01	0.37	227,982.81	1.66	0.15	6 hr	Atlas	84,353.64
CSO153	4/19/15 2:00 PM	4/19/15 2:15 PM	0.03	0.76	172,359.59	1.10	0.32	12 hr	Atlas	130,993.29

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO153	4/20/15 3:15 AM	4/20/15 3:15 AM	0.07	0.07	116,935.57	1.28	0.06	1 hr	Atlas	8,185.49
CSO153	4/25/15 9:00 AM	4/25/15 9:15 AM	0.01	0.13	79,484.38	0.99	0.06	12 hr	Atlas	10,332.97
CSO153	5/16/15 11:45 AM	5/16/15 1:15 PM	0.84	0.46	62,020.81	0.44	0.23	3 hr	Atlas	28,529.57
CSO153	5/17/15 2:15 PM	5/17/15 2:30 PM	0.01	0.08	1,505,388.35	0.58	0.05	1 hr	Atlas	120,431.07
CSO153	5/25/15 7:00 AM	5/25/15 8:15 AM	0.29	0.29	41,715.88	0.25	0.13	12 hr	Atlas	12,097.60
CSO153	5/26/15 1:45 PM	5/26/15 2:15 PM	0.75	0.23	815,656.79	0.49	0.17	1 hr	Atlas	187,601.06
CSO153	5/27/15 1:45 PM	5/27/15 1:45 PM	0.01	0.13	17,632.93	0.65	0.11	1 hr	Atlas	2,292.28
CSO153	5/30/15 4:00 PM	5/30/15 4:00 PM	0.08	0.04	244,173.44	0.66	0.02	3 hr	Atlas	9,766.94
CSO153	6/8/15 7:00 AM	6/8/15 8:15 AM	1.30	0.22	261,766.33	0.27	0.13	3 hr	Atlas	57,588.59
CSO153	6/17/15 4:45 AM	6/17/15 6:45 AM	0.34	0.63	238,531.17	0.69	0.36	3 hr	Atlas	150,274.64
CSO153	6/18/15 4:15 PM	6/18/15 5:45 PM	0.14	1.38	281,009.75	1.10	0.45	48 hr	Atlas	387,793.46
CSO153	6/20/15 1:30 AM	6/20/15 10:45 AM	0.09	1.38	286,521.91	2.14	0.45	48 hr	Atlas	395,400.24
CSO153	6/22/15 6:15 AM	6/22/15 6:15 AM	0.08	0.22	23,811.79	2.26	0.10	12 hr	Atlas	5,238.59
CSO153	6/26/15 12:00 AM	6/26/15 12:00 AM	0.01	0.49	85,298.24	1.39	0.26	6 hr	Atlas	41,796.14
CSO153	6/26/15 5:00 PM	6/27/15 1:15 AM	0.01	0.93	457,450.30	2.49	0.53	1 hr	Atlas	425,428.78
CSO153	6/29/15 1:45 PM	6/29/15 1:45 PM	0.01	0.31	38,667.78	1.72	0.17	1 hr	Atlas	11,987.01
CSO153 Count										63.00
CSO153 Total Volume (GAL)										14,496,971.80
CSO154	7/7/14 7:45 PM	7/7/14 7:45 PM	0.04	0.74	47,597.64	1.09	0.64	1 hr	CloudBurst	35,222.25
CSO154	7/13/14 11:00 PM	7/13/14 11:00 PM	0.01	0.59	338.61	1.42	0.27	3 hr	CloudBurst	199.78
CSO154	7/26/14 10:00 PM	7/27/14 10:15 AM	0.01	0.98	78,015.34	1.01	0.44	12 hr	CloudBurst	76,455.03
CSO154	8/8/14 7:00 AM	8/8/14 8:00 AM	0.44	0.89	73,066.88	0.65	0.44	6 hr	CloudBurst	65,029.53
CSO154	8/10/14 4:15 AM	8/10/14 4:15 AM	0.01	0.44	17,535.23	1.36	0.37	1 hr	CloudBurst	7,715.50
CSO154	8/22/14 7:00 PM	8/23/14 2:45 AM	0.29	0.45	272,782.51	1.12	0.32	1 hr	CloudBurst	122,752.13
CSO154	8/23/14 8:30 PM	8/23/14 8:30 PM	0.05	0.49	1,839.80	1.35	0.25	3 hr	Atlas14	901.50
CSO154	8/30/14 3:30 PM	8/30/14 3:30 PM	0.19	0.51	324,695.99	1.02	0.31	1 hr	CloudBurst	165,594.95
CSO154	9/11/14 12:45 AM	9/11/14 10:45 AM	0.03	1.95	378,129.21	1.95	1.57	3 hr	Atlas14	737,351.95
CSO154	10/6/14 9:45 AM	10/6/14 9:45 AM	0.01	0.45	4,186.76	0.63	0.28	1 hr	CloudBurst	1,884.04
CSO154	10/10/14 2:15 AM	10/10/14 3:15 AM	0.01	1.02	64,720.71	1.64	0.48	3 hr	CloudBurst	66,015.13
CSO154	10/14/14 8:30 AM	10/14/14 8:30 AM	0.51	1.04	519.94	2.65	0.47	12 hr	CloudBurst	540.74
CSO154	10/15/14 9:00 AM	10/15/14 9:00 AM	0.04	0.17	9.25	2.55	0.08	3 hr	CloudBurst	1.57
CSO154	12/6/14 2:00 AM	12/6/14 12:30 PM	0.01	0.65	579,049.28	1.45	0.21	48 hr	CloudBurst	376,382.04
CSO154	5/26/15 2:00 PM	5/26/15 2:15 PM	0.32	0.50	16,508.90	0.74	0.39	1 hr	Atlas	8,254.45
CSO154	6/18/15 5:15 PM	6/19/15 12:15 AM	0.01	1.42	231,722.99	1.21	0.46	48 hr	Atlas	329,046.64
CSO154	6/20/15 7:45 AM	6/20/15 9:00 AM	0.01	1.42	22,026.88	2.20	0.46	48 hr	Atlas	31,278.17
CSO154	6/22/15 4:00 PM	6/22/15 8:30 PM	0.42	0.17	124,533.16	2.35	0.09	3 hr	Atlas	21,170.64
CSO154	6/26/15 5:15 PM	6/26/15 6:00 PM	0.01	0.84	183,489.59	2.03	0.47	1 hr	Atlas	154,131.25
CSO154 Count										19.00
CSO154 Total Volume (GAL)										2,199,927.29
CSO155	7/2/14 4:00 PM	7/2/14 4:15 PM	0.64	0.19	40,537.39	0.54	0.17	1 hr	CloudBurst	7,702.10
CSO155	7/7/14 7:15 PM	7/7/14 7:30 PM	0.32	0.26	11,768.67	0.75	0.23	1 hr	CloudBurst	3,059.85
CSO155	7/13/14 10:45 PM	7/13/14 10:45 PM	0.01	0.83	3,188.57	0.89	0.40	1 hr	CloudBurst	2,646.51
CSO155	7/14/14 7:45 PM	7/14/14 8:00 PM	0.01	0.45	7,007.52	1.47	0.30	3 hr	CloudBurst	3,153.39
CSO155	7/26/14 9:30 PM	7/26/14 9:45 PM	0.01	1.15	9,724.85	0.56	0.52	12 hr	CloudBurst	11,183.58
CSO155	7/27/14 7:00 AM	7/27/14 7:30 AM	0.23	1.15	740.94	1.17	0.52	12 hr	CloudBurst	852.08
CSO155	8/8/14 5:30 AM	8/8/14 6:45 AM	0.01	0.73	40,848.54	0.52	0.35	6 hr	CloudBurst	29,819.43
CSO155	8/10/14 3:45 AM	8/10/14 4:30 AM	0.01	0.49	163,589.05	1.31	0.34	1 hr	CloudBurst	80,158.63
CSO155	8/11/14 3:00 PM	8/11/14 3:00 PM	0.01	0.40	26,362.19	1.72	0.29	1 hr	CloudBurst	10,544.88
CSO155	8/17/14 9:30 AM	8/17/14 9:30 AM	0.01	0.70	1,180.61	0.86	0.27	24 hr	CloudBurst	826.43
CSO155	8/17/14 11:00 PM	8/17/14 11:00 PM	0.01	0.70	4,359.08	1.10	0.27	24 hr	CloudBurst	3,051.35
CSO155	8/22/14 7:00 PM	8/22/14 7:00 PM	0.05	0.24	39,700.70	0.91	0.17	1 hr	CloudBurst	9,528.17
CSO155	8/23/14 3:30 PM	8/23/14 8:00 PM	0.02	1.00	19,919.17	1.59	0.46	3 hr	CloudBurst	19,919.17
CSO155	8/26/14 7:45 PM	8/26/14 7:45 PM	0.16	0.11	1,845.17	1.36	0.10	1 hr	CloudBurst	202.97
CSO155	8/27/14 5:00 PM	8/27/14 5:00 PM	0.01	0.28	15,290.33	1.63	0.24	1 hr	CloudBurst	4,281.29
CSO155	8/30/14 3:00 PM	8/30/14 3:00 PM	0.28	0.92	5,383.32	1.93	0.61	1 hr	CloudBurst	4,952.66

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO155	9/11/14 12:15 AM	9/11/14 5:45 AM	0.01	2.22	40,186.42	2.14	2.43	3 hr	Atlas14	89,213.85
CSO155	10/6/14 7:45 AM	10/6/14 9:45 AM	0.01	0.55	2,393.26	0.54	0.18	48 hr	CloudBurst	1,316.29
CSO155	10/10/14 1:45 AM	10/10/14 3:00 AM	0.01	1.00	13,342.20	1.49	0.44	3 hr	CloudBurst	13,342.20
CSO155	10/13/14 4:30 AM	10/13/14 5:15 AM	0.01	0.37	1,128.24	1.83	0.23	3 hr	CloudBurst	417.45
CSO155	10/13/14 11:30 PM	10/14/14 8:15 AM	0.01	1.08	14,845.67	2.57	0.49	12 hr	CloudBurst	16,033.32
CSO155	11/23/14 5:30 PM	11/23/14 6:15 PM	0.01	0.60	1,630.38	0.78	0.26	12 hr	CloudBurst	978.23
CSO155	12/6/14 1:00 AM	12/6/14 3:00 AM	0.02	0.64	38,043.70	1.65	0.21	48 hr	CloudBurst	24,347.97
CSO155	3/4/15 12:00 AM	3/4/15 5:00 AM	0.05	1.95	763.74	0.89	0.63	48 hr	Atlas	1,489.30
CSO155	3/10/15 11:00 AM	3/10/15 1:15 PM	0.03	1.11	11,771.60	2.97	0.50	12 hr	Atlas	13,066.48
CSO155	3/14/15 1:00 AM	3/14/15 3:45 AM	0.01	2.10	2,793.05	3.13	0.78	24 hr	Atlas	5,865.40
CSO155	3/26/15 4:15 AM	3/26/15 5:45 AM	0.01	0.61	9,233.68	0.74	0.28	3 hr	Atlas	5,632.54
CSO155	4/2/15 10:30 AM	4/2/15 3:00 PM	0.01	4.74	8,332.23	1.13	7.98	24 hr	Cloudburst	39,494.78
CSO155	4/3/15 12:15 AM	4/3/15 3:30 PM	0.01	4.74	41,697.35	4.73	7.98	24 hr	Cloudburst	197,645.44
CSO155	4/7/15 9:15 AM	4/7/15 5:00 PM	0.19	1.08	61,494.94	5.79	0.53	1 hr	Atlas	66,414.53
CSO155	4/9/15 11:30 AM	4/9/15 11:30 AM	0.01	0.17	30,659.13	5.64	0.15	1 hr	Atlas	5,212.05
CSO155	4/10/15 2:15 AM	4/10/15 2:15 AM	0.01	0.24	44,214.97	3.57	0.16	3 hr	Atlas	10,611.59
CSO155	4/13/15 8:45 PM	4/13/15 8:45 PM	0.01	0.78	232.95	1.86	0.30	24 hr	Atlas	181.70
CSO155	4/19/15 12:45 PM	4/19/15 6:15 PM	0.23	0.67	3,750.09	1.50	0.28	12 hr	Atlas	2,512.56
CSO155	4/30/15 12:45 PM	4/30/15 12:45 PM	0.08	0.14	137.80	0.44	0.11	1 hr	Atlas	19.29
CSO155	5/16/15 11:45 AM	5/16/15 12:00 PM	0.05	0.70	22,159.17	0.54	0.41	3 hr	Atlas	15,511.42
CSO155	5/25/15 8:15 AM	5/25/15 8:15 AM	0.03	0.30	2,549.34	0.25	0.14	12 hr	Atlas	764.80
CSO155	5/26/15 2:00 PM	5/26/15 2:00 PM	0.36	0.17	31,077.45	0.43	0.10	1 hr	Atlas	5,283.17
CSO155	6/8/15 7:00 AM	6/8/15 7:00 AM	0.03	0.16	32,845.18	0.19	0.10	3 hr	Atlas	5,255.23
CSO155	6/17/15 4:45 AM	6/17/15 6:00 AM	0.08	0.67	11,382.70	0.61	0.37	3 hr	Atlas	7,626.41
CSO155	6/18/15 5:15 PM	6/18/15 5:45 PM	0.21	0.76	26,204.59	1.27	0.43	1 hr	Atlas	19,915.49
CSO155	6/20/15 1:30 AM	6/20/15 5:15 AM	0.09	1.04	14,818.49	2.23	0.41	12 hr	Atlas	15,411.23
CSO155	6/25/15 11:45 PM	6/25/15 11:45 PM	0.11	0.61	3,260.45	1.66	0.33	6 hr	Atlas	1,988.88
CSO155	6/26/15 5:00 PM	6/26/15 11:45 PM	0.06	1.04	24,374.41	2.90	0.55	1 hr	Atlas	25,349.38
CSO155	6/29/15 1:45 PM	6/29/15 1:45 PM	0.19	0.22	1,985.98	1.87	0.12	1 hr	Atlas	436.92
CSO155 Count										45.00
CSO155 Total Volume (GAL)										783,220.39
CSO160	7/1/14 9:45 PM	7/1/14 10:30 PM	1.02	0.22	2,178.50	0.24	0.14	3 hr	CloudBurst	479.27
CSO160	7/2/14 4:15 PM	7/2/14 5:00 PM	0.04	0.12	2,178.56	0.37	0.10	1 hr	CloudBurst	261.43
CSO160	7/7/14 7:30 PM	7/7/14 7:45 PM	0.01	0.48	18,720.07	0.82	0.42	1 hr	CloudBurst	8,985.64
CSO160	7/8/14 6:30 AM	7/8/14 7:30 AM	0.23	0.32	2,908.63	1.14	0.28	1 hr	CloudBurst	930.76
CSO160	7/13/14 10:15 PM	7/14/14 5:00 AM	0.72	0.74	6,832.67	1.48	0.37	1 hr	CloudBurst	5,056.18
CSO160	7/14/14 7:15 PM	7/14/14 8:30 PM	0.52	0.35	945.45	1.82	0.23	3 hr	CloudBurst	330.91
CSO160	7/26/14 9:30 PM	7/27/14 9:30 AM	0.01	0.99	7,073.54	1.02	0.44	12 hr	CloudBurst	7,002.80
CSO160	8/8/14 5:45 AM	8/8/14 11:00 AM	0.01	0.80	7,234.35	0.76	0.35	6 hr	CloudBurst	5,787.48
CSO160	8/10/14 4:15 AM	8/10/14 4:45 AM	0.01	0.91	1,718.14	1.77	0.75	1 hr	CloudBurst	1,563.51
CSO160	8/11/14 3:30 PM	8/11/14 3:30 PM	0.06	0.43	286.07	2.19	0.36	1 hr	CloudBurst	123.01
CSO160	8/17/14 12:00 AM	8/17/14 12:00 AM	0.01	0.72	1,437.27	1.66	0.28	24 hr	CloudBurst	1,034.83
CSO160	8/17/14 9:45 AM	8/17/14 9:45 AM	0.08	0.72	252.09	0.98	0.28	24 hr	CloudBurst	181.50
CSO160	8/17/14 11:30 PM	8/17/14 11:45 PM	0.01	0.72	976.79	1.15	0.28	24 hr	CloudBurst	703.29
CSO160	8/22/14 7:45 PM	8/22/14 7:45 PM	0.01	0.29	531.65	1.01	0.22	1 hr	CloudBurst	154.18
CSO160	8/23/14 4:15 AM	8/23/14 4:15 AM	0.01	0.29	568.09	1.05	0.22	1 hr	CloudBurst	164.75
CSO160	8/23/14 4:00 PM	8/23/14 9:00 PM	0.05	0.73	2,616.12	1.61	0.38	3 hr	Atlas14	1,909.77
CSO160	8/27/14 3:15 PM	8/27/14 3:30 PM	0.01	0.12	1,418.01	1.20	0.08	3 hr	CloudBurst	170.16
CSO160	8/30/14 3:30 PM	8/30/14 4:15 PM	0.01	0.58	1,690.04	1.29	0.37	1 hr	CloudBurst	980.23
CSO160	9/2/14 8:30 AM	9/2/14 9:30 AM	0.01	0.45	7,797.58	1.09	0.22	3 hr	CloudBurst	3,508.91
CSO160	9/11/14 12:45 AM	9/11/14 6:15 AM	0.01	1.88	839.90	1.82	1.27	3 hr	Atlas14	1,579.01
CSO160	10/3/14 7:30 PM	10/4/14 4:15 AM	0.03	0.25	6,282.80	0.26	0.10	24 hr	CloudBurst	1,570.70
CSO160	10/6/14 7:00 AM	10/6/14 10:00 AM	0.03	0.21	11,038.03	0.40	0.09	6 hr	CloudBurst	2,317.99
CSO160	10/7/14 12:15 PM	10/7/14 12:30 PM	0.01	0.25	6,463.62	0.71	0.21	1 hr	CloudBurst	1,615.90
CSO160	10/10/14 2:00 AM	10/10/14 3:30 AM	0.04	1.17	3,188.07	1.52	0.52	3 hr	CloudBurst	3,730.04

There are known issues with the flow monitoring data quality.
MSD is currently working on resolving these issues.

CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO160	10/10/14 6:00 PM	10/10/14 10:15 PM	0.28	1.17	1,469.99	1.75	0.52	3 hr	CloudBurst	1,719.89
CSO160	10/13/14 4:30 AM	10/13/14 7:00 AM	0.05	0.44	16,255.30	2.08	0.28	3 hr	CloudBurst	7,152.33
CSO160	10/13/14 11:15 PM	10/14/14 10:30 AM	0.50	1.01	8,246.59	2.90	0.45	12 hr	CloudBurst	8,329.05
CSO160	10/28/14 1:15 PM	10/28/14 1:15 PM	0.22	0.15	7,599.82	0.14	0.09	3 hr	CloudBurst	1,139.97
CSO160	11/16/14 10:15 PM	11/17/14 2:00 AM	0.02	0.37	3,541.80	0.24	0.15	12 hr	CloudBurst	1,310.47
CSO160	11/23/14 5:45 PM	11/23/14 11:00 PM	0.01	0.72	789.97	1.06	0.31	12 hr	CloudBurst	568.78
CSO160	12/1/14 4:15 AM	12/1/14 4:45 PM	0.01	0.88	9,614.51	0.84	0.34	24 hr	CloudBurst	8,460.77
CSO160	12/4/14 2:30 PM	12/4/14 9:15 PM	0.01	0.69	8,677.69	1.23	0.22	48 hr	CloudBurst	5,987.61
CSO160	12/5/14 6:15 AM	12/5/14 12:00 PM	0.01	0.69	3,532.51	1.49	0.22	48 hr	CloudBurst	2,437.43
CSO160	12/5/14 9:00 PM	12/6/14 7:00 AM	0.01	0.69	5,385.62	1.57	0.22	48 hr	CloudBurst	3,716.08
CSO160	12/22/14 10:45 PM	12/23/14 12:00 AM	0.01	0.22	7,952.23	-	0.14	3 hr	CloudBurst	1,749.49
CSO160	1/4/15 4:15 AM	1/4/15 4:15 AM	0.21	0.36	3,080.23	0.37	0.13	24 hr	Atlas	1,108.88
CSO160	1/29/15 5:30 AM	1/29/15 5:30 AM	0.01	0.05	8,321.47	0.26	0.03	3 hr	Atlas	416.07
CSO160	2/1/15 11:30 AM	2/1/15 7:15 PM	0.03	0.42	4,306.43	0.62	0.19	3 hr	Atlas	1,808.70
CSO160	2/21/15 5:00 AM	2/21/15 9:15 PM	0.04	1.30	6,204.42	1.61	0.50	12 hr	Atlas	8,065.75
CSO160	3/3/15 5:45 PM	3/4/15 5:45 PM	0.23	1.81	3,993.42	1.47	0.59	24 hr	Atlas	7,228.09
CSO160	3/10/15 5:15 AM	3/10/15 4:00 PM	0.36	1.22	7,407.00	3.03	0.55	12 hr	Atlas	9,036.54
CSO160	3/13/15 9:30 AM	3/14/15 10:00 AM	0.13	1.90	11,149.53	3.12	0.72	24 hr	Atlas	21,184.10
CSO160	3/19/15 7:00 PM	3/19/15 8:00 PM	0.01	0.20	3,738.54	2.09	0.08	12 hr	Atlas	747.71
CSO160	3/26/15 4:45 AM	3/26/15 4:45 AM	0.06	0.52	475.09	0.63	0.22	3 hr	Atlas	247.05
CSO160	4/2/15 9:45 AM	4/2/15 3:15 PM	0.18	5.15	466.21	1.17	10.13	24 hr	Cloudburst	2,401.00
CSO160	4/3/15 12:30 AM	4/3/15 5:45 PM	0.10	5.15	1,949.04	5.17	10.13	24 hr	Cloudburst	10,037.55
CSO160	4/7/15 4:45 AM	4/7/15 5:15 PM	0.47	0.90	5,595.12	6.04	0.45	1 hr	Atlas	5,035.61
CSO160	4/9/15 11:45 AM	4/9/15 11:45 AM	0.01	0.10	5,146.39	5.80	0.08	1 hr	Atlas	514.64
CSO160	4/10/15 2:30 AM	4/10/15 2:30 AM	0.16	0.21	1,428.20	3.33	0.13	3 hr	Atlas	299.92
CSO160	4/13/15 9:00 PM	4/13/15 9:15 PM	0.22	0.43	1,506.38	1.49	0.17	24 hr	Atlas	647.74
CSO160	4/19/15 1:00 PM	4/19/15 2:30 PM	0.52	0.71	447.78	1.06	0.30	12 hr	Atlas	317.93
CSO160	4/20/15 3:45 AM	4/20/15 4:00 AM	0.28	0.07	13,087.91	1.29	0.05	1 hr	Atlas	916.15
CSO160	5/16/15 12:00 PM	5/16/15 2:00 PM	0.24	0.54	2,783.65	0.61	0.30	3 hr	Atlas	1,503.17
CSO160	5/17/15 2:30 PM	5/17/15 2:30 PM	0.42	0.04	4,270.36	0.69	0.03	1 hr	Atlas	170.81
CSO160	5/26/15 2:15 PM	5/26/15 2:15 PM	0.05	0.16	4,069.10	0.40	0.10	1 hr	Atlas	651.06
CSO160	6/8/15 8:30 AM	6/8/15 8:30 AM	0.01	0.24	1,285.91	0.25	0.13	6 hr	Atlas	308.62
CSO160	6/17/15 5:00 AM	6/17/15 6:15 AM	0.01	0.67	476.37	0.66	0.39	3 hr	Atlas	319.17
CSO160	6/18/15 5:30 PM	6/18/15 5:30 PM	0.32	1.53	696.94	1.16	0.50	48 hr	Atlas	1,066.32
CSO160	6/20/15 1:45 AM	6/20/15 1:45 AM	0.68	1.53	180.52	1.66	0.50	48 hr	Atlas	276.20
CSO160	6/26/15 5:30 PM	6/26/15 5:30 PM	1.00	0.89	364.02	2.10	0.46	1 hr	Atlas	323.98
CSO160	6/29/15 2:00 PM	6/29/15 2:00 PM	0.45	0.22	727.77	1.60	0.12	1 hr	Atlas	160.11
CSO160 Count										61.00
CSO160 Total Volume (GAL)										167,506.96
CSO161	7/13/14 10:45 PM	7/13/14 10:45 PM	0.01	0.74	1,153.22	1.26	0.37	1 hr	CloudBurst	853.39
CSO161	7/26/14 9:30 PM	7/26/14 9:30 PM	0.01	0.99	7,119.99	0.30	0.44	12 hr	CloudBurst	7,048.79
CSO161	8/8/14 6:15 AM	8/8/14 6:15 AM	0.01	0.80	426.72	0.50	0.35	6 hr	CloudBurst	341.38
CSO161	8/10/14 3:45 AM	8/10/14 4:15 AM	0.01	0.91	6,143.76	1.74	0.75	1 hr	CloudBurst	5,590.82
CSO161	8/22/14 7:00 PM	8/22/14 7:00 PM	0.01	0.29	10,880.42	1.00	0.22	1 hr	CloudBurst	3,155.32
CSO161	8/23/14 7:45 PM	8/23/14 7:45 PM	0.16	0.73	11,033.90	1.38	0.38	3 hr	Atlas14	8,054.75
CSO161	8/30/14 3:00 PM	8/30/14 3:00 PM	0.01	0.58	24,974.43	1.30	0.37	1 hr	CloudBurst	14,485.17
CSO161	9/11/14 12:30 AM	9/11/14 2:00 AM	0.01	1.88	5,102.35	1.52	1.27	3 hr	Atlas14	9,592.42
CSO161	12/5/14 11:15 PM	12/6/14 6:15 AM	0.01	0.69	22,107.05	1.57	0.22	48 hr	CloudBurst	15,253.87
CSO161	12/16/14 5:15 AM	12/16/14 5:15 AM	0.01	0.09	15,071.99	-	0.05	3 hr	CloudBurst	1,356.48
CSO161	12/22/14 10:30 PM	12/23/14 12:00 AM	0.01	0.22	17,769.27	-	0.14	3 hr	CloudBurst	3,909.24
CSO161	12/23/14 8:00 PM	12/23/14 8:45 PM	0.02	0.10	25,517.19	-	0.05	1 hr	CloudBurst	2,551.72
CSO161	12/24/14 12:30 PM	12/24/14 1:45 PM	0.01	0.19	8,376.04	-	0.17	3 hr	Atlas14	1,591.45
CSO161	12/27/14 5:00 PM	12/28/14 1:45 AM	0.01	0.32	15,792.91	-	0.27	1 hr	CloudBurst	5,053.73
CSO161	1/3/15 11:00 AM	1/3/15 3:30 PM	0.01	0.36	14,815.45	0.24	0.13	24 hr	Atlas	5,333.56
CSO161	1/4/15 3:15 AM	1/4/15 4:00 AM	0.06	0.36	1,880.09	0.37	0.13	24 hr	Atlas	676.83

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO161	4/2/15 3:00 PM	4/2/15 3:00 PM	0.29	5.15	101.69	1.05	10.13	24 hr	Cloudburst	523.69
CSO161	4/3/15 12:15 AM	4/3/15 2:15 AM	0.01	5.15	3,692.79	3.14	10.13	24 hr	Cloudburst	19,017.85
CSO161	4/7/15 9:15 AM	4/7/15 9:15 AM	0.06	0.90	2,434.29	5.73	0.45	1 hr	Atlas	2,190.86
CSO161	5/16/15 11:45 AM	5/16/15 11:45 AM	0.03	0.54	1,476.79	0.43	0.30	3 hr	Atlas	797.47
CSO161	5/17/15 2:15 PM	5/17/15 2:15 PM	0.05	0.04	164,372.40	0.69	0.03	1 hr	Atlas	6,574.90
CSO161	6/17/15 4:45 AM	6/17/15 4:45 AM	0.36	0.67	4,733.88	0.38	0.39	3 hr	Atlas	3,171.70
CSO161	6/18/15 5:15 PM	6/18/15 5:15 PM	0.19	1.53	12,272.18	1.05	0.50	48 hr	Atlas	18,776.44
CSO161	6/20/15 1:30 AM	6/20/15 5:15 AM	0.03	1.53	1,879.81	1.93	0.50	48 hr	Atlas	2,876.10
CSO161	6/26/15 5:15 PM	6/26/15 5:15 PM	0.01	0.89	5,024.95	2.12	0.46	1 hr	Atlas	4,472.21
CSO161	6/29/15 1:45 PM	6/29/15 1:45 PM	0.08	0.22	2,911.41	1.60	0.12	1 hr	Atlas	640.51
CSO161 Count										26.00
CSO161 Total Volume (GAL)										143,890.64
CSO166	7/13/14 11:15 PM	7/13/14 11:45 PM	0.06	0.63	443,332.73	1.52	0.32	3 hr	CloudBurst	279,299.62
CSO166	7/26/14 10:00 PM	7/27/14 8:45 AM	0.11	1.24	1,316,730.24	1.20	0.55	12 hr	CloudBurst	1,632,745.49
CSO166	8/8/14 6:30 AM	8/8/14 8:30 AM	0.02	1.05	531,895.99	0.84	0.54	6 hr	CloudBurst	558,490.78
CSO166	8/10/14 4:30 AM	8/10/14 5:00 AM	0.26	0.17	457,735.03	1.31	0.15	1 hr	CloudBurst	77,814.96
CSO166	8/11/14 3:30 PM	8/11/14 4:15 PM	0.03	0.35	214,570.48	1.64	0.29	1 hr	CloudBurst	75,099.67
CSO166	8/17/14 8:15 PM	8/17/14 9:00 PM	0.38	0.70	463,225.69	1.04	0.26	24 hr	CloudBurst	324,257.98
CSO166	8/22/14 7:00 PM	8/22/14 7:00 PM	0.01	0.53	4,282.67	1.13	0.36	1 hr	CloudBurst	2,269.81
CSO166	11/23/14 6:00 PM	11/23/14 8:30 PM	0.02	0.79	855,601.06	1.06	0.36	6 hr	CloudBurst	675,924.84
CSO166	12/1/14 3:45 AM	12/1/14 4:15 AM	0.45	0.71	112,199.57	0.30	0.27	24 hr	CloudBurst	79,661.69
CSO166	12/5/14 11:30 PM	12/6/14 11:30 AM	0.08	0.64	6,996,046.93	1.35	0.21	48 hr	CloudBurst	4,477,470.03
CSO166	12/28/14 1:30 AM	12/28/14 2:00 AM	0.02	0.32	142,424.54	-	0.27	1 hr	CloudBurst	45,575.85
CSO166	3/3/15 11:30 PM	3/5/15 1:15 AM	0.03	1.67	3,441,193.50	1.65	0.54	48 hr	Atlas	5,746,793.15
CSO166	3/7/15 4:30 PM	3/7/15 4:45 PM	0.03	0.04	50,293.22	1.71	0.03	1 hr	Atlas	2,011.73
CSO166	3/10/15 7:15 AM	3/11/15 10:30 AM	0.01	1.09	6,607,890.00	2.76	0.50	12 hr	Atlas	7,202,600.11
CSO166	3/13/15 10:30 AM	3/15/15 2:30 PM	0.10	1.55	10,883,783.21	2.64	0.58	24 hr	Atlas	16,869,863.98
CSO166	3/26/15 5:00 AM	3/26/15 5:30 AM	0.02	0.42	876,111.50	0.49	0.17	3 hr	Atlas	367,966.83
CSO166	4/2/15 10:30 AM	4/5/15 5:15 AM	0.50	4.73	14,253,945.11	4.86	7.44	6 hr	Cloudburst	67,421,160.36
CSO166	4/7/15 9:30 AM	4/7/15 8:30 PM	0.02	0.73	4,459,327.01	5.47	0.33	1 hr	Atlas	3,255,308.72
CSO166	4/8/15 6:30 PM	4/8/15 7:30 PM	1.07	0.15	3,190,912.22	5.61	0.08	6 hr	Atlas	478,636.83
CSO166	4/9/15 12:00 PM	4/9/15 1:00 PM	0.01	0.28	3,579,331.21	5.52	0.24	1 hr	Atlas	1,002,212.74
CSO166	4/10/15 2:45 AM	4/10/15 3:45 AM	1.14	0.13	1,571,314.57	2.82	0.09	3 hr	Atlas	204,270.89
CSO166	4/13/15 9:15 PM	4/13/15 9:45 PM	2.17	0.49	187,365.43	1.39	0.20	6 hr	Atlas	91,809.06
CSO166	4/19/15 2:15 PM	4/19/15 4:00 PM	0.02	0.94	975,163.84	1.18	0.36	24 hr	Atlas	916,654.01
CSO166	4/25/15 7:30 PM	4/25/15 7:45 PM	2.78	0.19	137,050.76	1.12	0.07	24 hr	Atlas	26,039.65
CSO166	5/11/15 6:00 PM	5/11/15 6:30 PM	0.46	0.10	3,747,717.28	0.26	0.09	1 hr	Atlas	374,771.73
CSO166	5/26/15 2:00 PM	5/26/15 2:45 PM	0.04	0.36	1,299,086.45	0.57	0.22	1 hr	Atlas	467,671.12
CSO166	6/13/15 2:45 PM	6/13/15 3:00 PM	0.04	0.14	2,191,895.42	0.33	0.12	1 hr	Atlas	306,865.36
CSO166	6/17/15 5:15 AM	6/17/15 6:45 AM	0.04	0.71	1,350,464.42	0.86	0.42	3 hr	Atlas	958,829.74
CSO166	6/18/15 4:30 PM	6/18/15 7:15 PM	0.02	2.15	1,305,760.22	1.80	0.70	48 hr	Atlas	2,807,384.47
CSO166	6/19/15 5:45 PM	6/19/15 6:15 PM	0.07	2.15	87,319.18	2.03	0.70	48 hr	Atlas	187,736.24
CSO166	6/20/15 4:00 AM	6/20/15 10:15 AM	0.01	2.15	1,300,166.65	3.09	0.70	48 hr	Atlas	2,795,358.30
CSO166	6/26/15 12:00 AM	6/26/15 12:45 AM	0.02	0.46	1,152,983.18	1.68	0.25	6 hr	Atlas	530,372.26
CSO166	6/26/15 5:00 PM	6/27/15 2:00 AM	0.03	0.77	4,518,018.27	2.51	0.41	1 hr	Atlas	3,478,874.07

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO166	6/29/15 2:15 PM	6/29/15 2:30 PM	0.01	0.20	124,425.36	1.43	0.12	1 hr	Atlas	24,885.07
CSO166 Count										34.00
CSO166 Total Volume (GAL)										123,746,687.14
CSO167	7/2/14 4:30 PM	7/2/14 5:00 PM	2.99	0.15	450,219.86	0.53	0.12	1 hr	CloudBurst	67,532.98
CSO167	7/7/14 7:30 PM	7/7/14 8:15 PM	0.50	0.74	183,157.84	1.09	0.64	1 hr	CloudBurst	135,536.80
CSO167	7/13/14 11:00 PM	7/13/14 11:30 PM	0.04	0.59	170,079.88	1.43	0.27	3 hr	CloudBurst	100,347.13
CSO167	7/14/14 7:30 PM	7/14/14 8:45 PM	0.05	0.30	385,317.16	1.36	0.20	3 hr	CloudBurst	115,595.15
CSO167	7/26/14 9:45 PM	7/27/14 8:30 AM	0.06	0.98	386,938.66	0.97	0.44	12 hr	CloudBurst	379,199.88
CSO167	8/8/14 6:00 AM	8/8/14 8:15 AM	0.01	0.89	375,421.08	0.65	0.44	6 hr	CloudBurst	334,124.76
CSO167	8/10/14 4:00 AM	8/10/14 4:45 AM	0.01	0.44	281,672.13	1.40	0.37	1 hr	CloudBurst	123,935.74
CSO167	8/11/14 3:30 PM	8/11/14 4:00 PM	0.02	0.22	414,542.75	1.61	0.16	1 hr	CloudBurst	91,199.41
CSO167	8/17/14 12:45 AM	8/17/14 12:45 AM	0.01	0.66	10,705.74	0.96	0.25	24 hr	CloudBurst	7,065.79
CSO167	8/17/14 9:30 AM	8/17/14 10:45 AM	0.03	0.66	79,168.24	0.77	0.25	24 hr	CloudBurst	52,251.04
CSO167	8/22/14 7:00 PM	8/22/14 7:45 PM	0.02	0.45	451,953.72	1.04	0.32	1 hr	CloudBurst	203,379.17
CSO167	8/23/14 3:45 PM	8/23/14 10:00 PM	0.01	0.49	648,710.85	1.57	0.25	3 hr	Atlas14	317,868.32
CSO167	8/27/14 2:45 PM	8/27/14 5:30 PM	0.08	0.21	638,633.44	1.21	0.13	3 hr	Atlas14	134,113.02
CSO167	8/30/14 3:15 PM	8/30/14 4:30 PM	0.09	0.51	521,011.35	1.14	0.31	1 hr	CloudBurst	265,715.79
CSO167	9/2/14 8:30 AM	9/2/14 9:00 AM	0.73	0.40	174,083.12	1.15	0.25	3 hr	Atlas14	69,633.25
CSO167	9/11/14 12:30 AM	9/11/14 6:45 AM	0.01	1.95	446,526.30	1.91	1.57	3 hr	Atlas14	870,726.29
CSO167	9/28/14 7:45 PM	9/28/14 8:15 PM	0.34	0.07	1,013,397.23	0.07	0.06	1 hr	CloudBurst	70,937.81
CSO167	10/6/14 9:45 AM	10/6/14 10:15 AM	0.02	0.45	257,301.50	0.63	0.28	1 hr	CloudBurst	115,785.68
CSO167	10/7/14 11:45 AM	10/7/14 12:15 PM	0.03	0.22	214,493.07	0.90	0.18	1 hr	CloudBurst	47,188.48
CSO167	10/10/14 2:00 AM	10/10/14 3:30 AM	0.02	1.02	311,787.20	1.65	0.48	3 hr	CloudBurst	318,022.94
CSO167	10/10/14 9:30 PM	10/10/14 9:30 PM	0.05	1.02	575.17	1.69	0.48	3 hr	CloudBurst	586.68
CSO167	10/13/14 5:00 AM	10/13/14 6:45 AM	0.45	0.46	141,343.45	2.16	0.29	3 hr	CloudBurst	65,017.99
CSO167	10/13/14 11:30 PM	10/14/14 10:45 AM	0.09	1.04	277,743.01	2.77	0.47	12 hr	CloudBurst	288,852.73
CSO167	11/17/14 4:15 AM	11/17/14 4:15 AM	0.03	0.34	653.49	0.28	0.13	12 hr	CloudBurst	222.19
CSO167	11/23/14 5:30 PM	11/23/14 8:15 PM	0.02	0.85	195,380.50	1.12	0.39	6 hr	CloudBurst	166,073.42
CSO167	12/1/14 2:45 AM	12/1/14 5:00 AM	0.01	0.80	24,875.42	0.38	0.31	24 hr	CloudBurst	19,900.33
CSO167	12/1/14 3:00 PM	12/1/14 4:00 PM	0.05	0.80	2,642.64	0.74	0.31	24 hr	CloudBurst	2,114.11
CSO167	12/5/14 8:45 PM	12/6/14 8:15 AM	0.03	0.65	1,083,988.96	1.45	0.21	48 hr	CloudBurst	704,592.83
CSO167	12/16/14 5:15 AM	12/16/14 5:30 AM	0.26	0.09	273,486.22	-	0.05	3 hr	CloudBurst	24,613.76
CSO167	12/23/14 12:00 AM	12/23/14 12:00 AM	0.11	0.22	4,932.15	-	0.14	3 hr	CloudBurst	1,085.07
CSO167	12/28/14 1:00 AM	12/28/14 1:45 AM	0.05	0.32	122,979.44	-	0.27	1 hr	CloudBurst	39,353.42
CSO167	1/3/15 11:00 AM	1/3/15 11:00 AM	0.02	0.38	2,478.48	0.11	0.14	24 hr	Atlas	941.82
CSO167	2/1/15 1:15 PM	2/1/15 1:45 PM	0.26	0.38	17,230.21	0.43	0.17	12 hr	Atlas	6,547.48
CSO167	2/21/15 2:45 PM	2/21/15 3:45 PM	0.02	1.09	4,633.68	1.27	0.42	12 hr	Atlas	5,050.71
CSO167	3/3/15 7:00 PM	3/4/15 8:30 PM	0.02	1.67	609,612.01	1.52	0.55	24 hr	Atlas	1,018,052.06
CSO167	3/10/15 6:15 AM	3/20/15 1:30 PM	0.02	1.06	6,333,407.10	4.51	0.48	12 hr	Atlas	6,713,411.52
CSO167	3/24/15 8:30 PM	3/24/15 8:30 PM	0.06	0.12	4,924.57	0.28	0.06	1 hr	Atlas	590.95
CSO167	3/26/15 4:30 AM	3/26/15 6:30 AM	0.01	0.40	270,492.59	0.55	0.17	12 hr	Atlas	108,197.03
CSO167	4/2/15 10:30 AM	4/5/15 10:15 AM	0.07	4.03	1,162,179.97	4.16	3.72	24 hr	Cloudburst	4,683,585.29
CSO167	4/7/15 9:15 AM	4/7/15 9:15 PM	0.47	0.78	699,475.82	4.82	0.37	1 hr	Atlas	545,591.14
CSO167	4/8/15 6:15 PM	4/8/15 7:15 PM	0.01	0.17	514,245.58	4.99	0.14	1 hr	Atlas	87,421.75
CSO167	4/9/15 11:30 AM	4/9/15 12:45 PM	0.11	0.15	859,262.51	4.79	0.12	1 hr	Atlas	128,889.38

There are known issues with the flow monitoring data quality.
MSD is currently working on resolving these issues.

CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO167	4/10/15 2:15 AM	4/10/15 3:45 AM	0.09	0.16	651,310.99	2.92	0.11	3 hr	Atlas	104,209.76
CSO167	4/25/15 9:30 AM	4/25/15 9:45 AM	0.04	0.12	94,499.66	0.91	0.05	12 hr	Atlas	11,339.96
CSO167	4/25/15 7:15 PM	4/25/15 7:30 PM	0.48	0.25	94,315.66	1.12	0.18	1 hr	Atlas	23,578.92
CSO167	5/17/15 2:30 PM	5/17/15 3:00 PM	0.01	0.08	1,628,891.36	0.53	0.05	1 hr	Atlas	130,311.31
CSO167	5/25/15 7:15 AM	5/25/15 7:30 AM	0.01	0.28	24,060.64	0.20	0.13	3 hr	Atlas	6,736.98
CSO167	5/26/15 2:00 PM	5/26/15 2:45 PM	0.03	0.50	251,691.00	0.74	0.39	1 hr	Atlas	125,845.50
CSO167	5/27/15 1:45 PM	5/27/15 2:15 PM	0.01	0.08	248,608.90	0.87	0.07	1 hr	Atlas	19,888.71
CSO167	6/8/15 8:30 AM	6/8/15 8:45 AM	0.02	0.24	112,920.61	0.24	0.14	3 hr	Atlas	27,100.95
CSO167	6/17/15 5:00 AM	6/17/15 7:00 AM	0.04	0.68	429,087.52	0.72	0.39	3 hr	Atlas	291,779.51
CSO167	6/18/15 4:30 PM	6/18/15 6:45 PM	1.06	1.42	315,459.44	1.15	0.46	48 hr	Atlas	447,952.41
CSO167	6/19/15 5:45 PM	6/20/15 11:15 AM	10.30	1.42	371,661.54	2.20	0.46	48 hr	Atlas	527,759.39
CSO167	6/26/15 12:15 AM	6/26/15 12:30 AM	0.01	0.36	123,881.51	1.32	0.19	6 hr	Atlas	44,597.34
CSO167	6/26/15 5:15 PM	6/27/15 1:30 AM	0.08	0.84	505,113.46	2.30	0.47	1 hr	Atlas	424,295.31
CSO167 Count										55.00
CSO167 Total Volume (GAL)										20,616,247.09
CSO174	7/2/14 4:30 PM	7/2/14 4:30 PM	0.14	0.08	225,161.72	0.27	0.07	1 hr	CloudBurst	18,012.94
CSO174	7/13/14 10:00 PM	7/13/14 11:15 PM	0.11	0.70	662,719.32	2.06	0.35	3 hr	CloudBurst	463,903.52
CSO174	7/26/14 9:45 PM	7/27/14 9:30 AM	0.01	1.43	465,220.10	1.47	0.66	12 hr	CloudBurst	665,264.75
CSO174	8/8/14 5:45 AM	8/8/14 7:30 AM	0.21	0.90	418,014.46	0.73	0.43	6 hr	CloudBurst	376,213.01
CSO174	8/10/14 4:00 AM	8/10/14 4:00 AM	0.64	0.71	3,777.67	1.54	0.58	1 hr	CloudBurst	2,682.15
CSO174	8/11/14 3:30 PM	8/11/14 3:45 PM	0.34	0.51	1,161,228.66	2.20	0.40	1 hr	CloudBurst	592,226.62
CSO174	8/17/14 9:45 AM	8/17/14 10:15 AM	0.01	0.72	25,365.42	1.12	0.27	24 hr	CloudBurst	18,263.10
CSO174	8/22/14 7:15 PM	8/22/14 7:30 PM	0.02	0.35	276,222.43	1.05	0.26	1 hr	CloudBurst	96,677.85
CSO174	8/23/14 4:45 PM	8/23/14 8:30 PM	0.01	0.59	462,423.98	1.49	0.28	3 hr	CloudBurst	272,830.15
CSO174	8/27/14 4:45 PM	8/27/14 5:15 PM	0.01	0.27	1,428,729.74	1.29	0.18	3 hr	CloudBurst	385,757.03
CSO174	8/30/14 3:15 PM	8/30/14 3:30 PM	0.01	0.60	395,003.65	1.35	0.38	1 hr	CloudBurst	237,002.19
CSO174	9/2/14 8:30 AM	9/2/14 8:30 AM	0.02	0.40	101,198.94	1.22	0.24	3 hr	CloudBurst	40,479.57
CSO174	9/11/14 12:45 AM	9/11/14 6:15 AM	0.01	1.90	1,319,978.55	1.85	1.33	3 hr	Atlas14	2,507,959.24
CSO174	10/10/14 1:45 AM	10/10/14 3:00 AM	0.01	1.09	194,005.61	1.50	0.47	3 hr	CloudBurst	211,466.11
CSO174	10/13/14 11:30 PM	10/13/14 11:45 PM	0.05	1.00	137,604.28	1.99	0.45	12 hr	CloudBurst	137,604.28
CSO174	10/14/14 8:00 AM	10/14/14 8:30 AM	0.49	1.00	90,956.09	2.60	0.45	12 hr	CloudBurst	90,956.09
CSO174	11/23/14 5:45 PM	11/23/14 5:45 PM	0.07	0.66	13,051.75	0.82	0.31	6 hr	CloudBurst	8,614.16
CSO174	12/6/14 2:45 AM	12/6/14 5:45 AM	0.01	1.90	123,954.26	1.51	0.18	48 hr	CloudBurst	235,513.10
CSO174	3/3/15 11:30 PM	3/4/15 5:15 AM	0.01	1.66	13,901.10	0.73	0.54	48 hr	Atlas	23,075.83
CSO174	3/10/15 10:45 AM	3/10/15 2:00 PM	0.02	1.31	627,970.01	2.94	0.59	12 hr	Atlas	822,640.72
CSO174	3/14/15 1:15 AM	3/14/15 4:00 AM	0.01	1.84	99,386.33	3.09	0.69	24 hr	Atlas	182,870.84
CSO174	3/26/15 4:30 AM	3/26/15 4:45 AM	0.16	0.42	143,594.55	0.49	0.17	12 hr	Atlas	60,309.71
CSO174	4/2/15 10:30 AM	4/2/15 3:30 PM	0.02	5.36	148,803.12	0.94	20.93	6 hr	Cloudburst	797,584.70
CSO174	4/3/15 12:15 AM	4/3/15 3:30 PM	0.01	5.36	2,036,158.94	5.24	20.93	6 hr	Cloudburst	10,913,811.91
CSO174	4/7/15 9:15 AM	4/7/15 5:30 PM	0.01	0.84	527,268.91	6.19	0.36	12 hr	Atlas	442,905.89
CSO174	4/8/15 6:00 PM	4/8/15 6:15 PM	0.23	0.16	1,506,823.25	6.36	0.09	3 hr	Atlas	241,091.72
CSO174	4/9/15 11:30 AM	4/9/15 12:00 PM	0.05	0.22	683,787.04	6.11	0.19	1 hr	Atlas	150,433.15
CSO174	4/19/15 2:15 PM	4/19/15 2:30 PM	0.01	0.71	317,514.77	1.10	0.30	12 hr	Atlas	225,435.49
CSO174	4/20/15 3:30 AM	4/20/15 3:30 AM	0.02	0.07	16,271.73	1.23	0.05	1 hr	Atlas	1,139.02
CSO174	5/17/15 2:15 PM	5/17/15 2:30 PM	0.01	0.12	1,242,058.78	0.58	0.09	1 hr	Atlas	149,047.05
CSO174	5/26/15 1:45 PM	5/26/15 2:15 PM	0.13	0.35	589,981.12	0.54	0.26	1 hr	Atlas	206,493.39
CSO174	5/27/15 1:45 PM	5/27/15 1:45 PM	0.24	0.09	324,286.35	0.68	0.08	1 hr	Atlas	29,185.77
CSO174 Count										32.00
CSO174 Total Volume (GAL)										20,607,451.06
CSO179	7/26/14 9:45 PM	7/26/14 10:00 PM	0.78	1.43	25,666.54	0.56	0.66	12 hr	CloudBurst	36,703.16
CSO179	8/30/14 3:15 PM	8/30/14 3:15 PM	0.01	0.60	71,123.14	1.34	0.38	1 hr	CloudBurst	42,673.89
CSO179	9/11/14 1:15 AM	9/11/14 1:15 AM	0.01	1.90	32,360.82	1.24	1.33	3 hr	Atlas14	61,485.55
CSO179	4/2/15 10:00 AM	4/2/15 3:15 PM	0.01	5.36	903.83	0.96	20.93	6 hr	Cloudburst	4,844.54
CSO179	4/3/15 12:30 AM	4/3/15 7:15 PM	0.01	5.36	491,107.43	5.38	20.93	6 hr	Cloudburst	2,632,335.85
CSO179	6/18/15 5:15 PM	6/18/15 5:30 PM	0.01	1.82	56,933.63	1.63	0.59	48 hr	Atlas	103,619.20

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO179	6/26/15 5:15 PM	6/26/15 5:15 PM	0.22	0.89	8,935.88	2.24	0.50	1 hr	Atlas	7,952.94
CSO179 Count										7.00
CSO179 Total Volume (GAL)										2,889,615.13
CSO180	7/13/14 10:45 PM	7/13/14 10:45 PM	0.01	0.70	96,166.34	2.04	0.35	3 hr	CloudBurst	67,316.44
CSO180	7/26/14 9:30 PM	7/26/14 9:45 PM	0.01	1.43	138,845.47	0.53	0.66	12 hr	CloudBurst	198,549.03
CSO180	8/11/14 3:15 PM	8/11/14 3:15 PM	0.07	0.51	243,434.10	2.20	0.40	1 hr	CloudBurst	124,151.39
CSO180	8/22/14 7:15 PM	8/22/14 7:15 PM	0.27	0.35	35,852.05	1.05	0.26	1 hr	CloudBurst	12,548.22
CSO180	8/27/14 4:45 PM	8/27/14 4:45 PM	0.01	0.27	47,841.63	1.22	0.18	3 hr	CloudBurst	12,917.24
CSO180	8/30/14 3:15 PM	8/30/14 3:15 PM	0.01	0.60	150,297.14	1.34	0.38	1 hr	CloudBurst	90,178.28
CSO180	9/11/14 12:30 AM	9/11/14 1:15 AM	0.01	1.90	131,329.07	1.24	1.33	3 hr	Atlas14	249,525.23
CSO180	10/10/14 1:45 AM	10/10/14 2:45 AM	0.01	1.09	13,740.88	1.47	0.47	3 hr	CloudBurst	14,977.56
CSO180	11/23/14 5:30 PM	11/23/14 5:30 PM	0.01	0.66	6,597.92	0.78	0.31	6 hr	CloudBurst	4,354.63
CSO180	12/1/14 4:30 AM	12/1/14 4:30 AM	0.01	0.88	67.31	0.41	0.34	24 hr	CloudBurst	59.23
CSO180	12/6/14 2:30 AM	12/6/14 3:15 AM	0.01	0.63	36,421.78	1.51	0.20	48 hr	CloudBurst	22,945.72
CSO180	3/10/15 10:45 AM	3/10/15 1:15 PM	0.01	1.31	47,673.70	2.89	0.59	12 hr	Atlas	62,452.55
CSO180	3/14/15 1:00 AM	3/14/15 3:45 AM	0.01	1.84	3,439.02	3.08	0.69	24 hr	Atlas	6,327.79
CSO180	3/26/15 4:15 AM	3/26/15 4:15 AM	0.03	0.42	30,083.31	0.44	0.17	12 hr	Atlas	12,634.99
CSO180	4/2/15 10:30 AM	4/2/15 3:15 PM	0.04	5.36	65,669.58	0.94	20.93	6 hr	Cloudburst	351,988.93
CSO180	4/3/15 12:15 AM	4/3/15 3:30 PM	0.01	5.36	368,642.81	5.24	20.93	6 hr	Cloudburst	1,975,925.47
CSO180	4/7/15 9:15 AM	4/7/15 5:00 PM	0.01	0.84	145,720.09	6.16	0.36	12 hr	Atlas	122,404.88
CSO180	4/8/15 6:00 PM	4/8/15 6:15 PM	0.03	0.16	239,189.13	6.36	0.09	3 hr	Atlas	38,270.26
CSO180	4/9/15 11:30 AM	4/9/15 11:30 AM	0.10	0.22	78,866.62	6.05	0.19	1 hr	Atlas	17,350.66
CSO180	4/10/15 2:15 AM	4/10/15 2:15 AM	0.11	0.17	33,371.94	3.70	0.11	3 hr	Atlas	5,673.23
CSO180	4/19/15 2:15 PM	4/19/15 2:15 PM	0.01	0.71	7,872.59	1.09	0.30	12 hr	Atlas	5,589.54
CSO180	5/17/15 2:15 PM	5/17/15 2:15 PM	0.20	0.12	273,874.74	0.58	0.09	1 hr	Atlas	32,864.97
CSO180	5/26/15 2:00 PM	5/26/15 2:00 PM	0.64	0.35	141,571.61	0.54	0.26	1 hr	Atlas	49,550.06
CSO180	6/8/15 8:15 AM	6/8/15 8:15 AM	0.32	0.26	46,350.48	0.29	0.16	3 hr	Atlas	12,051.13
CSO180	6/17/15 4:45 AM	6/17/15 5:00 AM	0.01	0.58	72,319.20	0.49	0.31	3 hr	Atlas	41,945.14
CSO180	6/18/15 4:00 PM	6/18/15 5:45 PM	0.01	1.82	375,783.62	1.64	0.59	48 hr	Atlas	683,926.19
CSO180	6/20/15 1:30 AM	6/20/15 8:00 AM	0.01	1.82	28,439.00	2.71	0.59	48 hr	Atlas	51,758.98
CSO180	6/25/15 11:45 PM	6/26/15 12:00 AM	0.01	0.59	134,723.21	1.53	0.32	6 hr	Atlas	79,486.70
CSO180	6/26/15 5:00 PM	6/26/15 5:15 PM	0.01	0.89	138,396.80	2.24	0.50	1 hr	Atlas	123,173.16
CSO180	6/29/15 1:15 PM	6/29/15 1:15 PM	0.01	0.19	221,905.26	1.62	0.11	1 hr	Atlas	42,162.00
CSO180 Count										30.00
CSO180 Total Volume (GAL)										4,513,059.57
CSO181	7/26/14 9:45 PM	7/26/14 10:00 PM	0.20	1.17	122,028.40	0.43	0.54	12 hr	CloudBurst	142,773.22
CSO181	8/8/14 6:30 AM	8/8/14 6:45 AM	0.46	0.86	124,019.69	0.58	0.39	6 hr	CloudBurst	106,656.93
CSO181	8/10/14 4:30 AM	8/10/14 4:30 AM	0.32	1.16	129,309.54	2.10	0.97	1 hr	CloudBurst	149,999.06
CSO181	8/11/14 3:30 PM	8/11/14 3:30 PM	0.01	0.48	132.03	2.56	0.40	1 hr	CloudBurst	63.38
CSO181	8/22/14 7:15 PM	8/22/14 7:30 PM	0.01	0.34	325,796.30	1.11	0.26	1 hr	CloudBurst	110,770.74
CSO181	8/23/14 8:00 PM	8/23/14 8:15 PM	0.01	0.62	185,273.00	1.49	0.30	3 hr	CloudBurst	114,869.26
CSO181	8/30/14 3:15 PM	8/30/14 3:30 PM	0.01	0.62	312,740.03	1.30	0.39	1 hr	CloudBurst	193,898.82
CSO181	9/11/14 12:45 AM	9/11/14 2:30 AM	0.02	1.78	100,306.50	1.51	0.99	3 hr	Atlas14	178,545.57
CSO181	10/6/14 9:45 AM	10/6/14 9:45 AM	0.01	0.18	73,218.06	0.38	0.08	6 hr	CloudBurst	13,179.25
CSO181	10/10/14 2:15 AM	10/10/14 3:00 AM	0.01	1.20	159,918.69	1.45	0.54	3 hr	CloudBurst	191,902.43
CSO181	3/10/15 12:45 PM	3/10/15 12:45 PM	0.01	1.34	138.86	2.89	0.61	12 hr	Atlas	186.08
CSO181	3/14/15 11:45 AM	3/18/15 5:00 PM	0.01	1.89	70,438.74	3.23	0.71	24 hr	Atlas	133,129.22
CSO181	4/2/15 10:45 AM	4/2/15 3:30 PM	0.01	5.34	68,187.95	0.99	15.08	6 hr	Cloudburst	364,123.68
CSO181	4/3/15 12:30 AM	4/3/15 11:30 AM	0.01	5.34	202,223.28	4.91	15.08	6 hr	Cloudburst	1,079,872.32
CSO181	4/7/15 9:30 AM	4/7/15 5:15 PM	0.01	0.97	277,122.76	6.30	0.43	1 hr	Atlas	268,809.07
CSO181	5/17/15 2:30 PM	5/17/15 2:30 PM	0.07	0.05	93,329.53	0.56	0.02	12 hr	Atlas	4,666.48
CSO181	5/26/15 2:15 PM	5/26/15 2:15 PM	0.01	0.28	734.23	0.53	0.21	1 hr	Atlas	205.58
CSO181	6/18/15 5:45 PM	6/18/15 5:45 PM	0.03	1.42	26,431.60	1.10	0.46	48 hr	Atlas	37,532.88
CSO181	6/26/15 12:15 AM	6/26/15 12:15 AM	0.01	0.43	2,632.87	1.34	0.23	6 hr	Atlas	1,132.13
CSO181	6/26/15 5:15 PM	6/26/15 5:45 PM	4.22	0.90	341,446.07	2.06	0.49	1 hr	Atlas	307,301.46

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO181 Count										20.00
CSO181 Total Volume (GAL)										3,399,617.56
CSO182	7/1/14 10:30 PM	7/1/14 10:30 PM	0.01	0.18	645.31	0.21	0.11	3 hr	CloudBurst	116.16
CSO182	7/2/14 4:30 PM	7/2/14 5:00 PM	0.01	0.11	143,128.16	0.32	0.09	1 hr	CloudBurst	15,744.10
CSO182	7/13/14 10:00 PM	7/13/14 11:45 PM	0.03	0.64	264,270.18	1.59	0.33	3 hr	CloudBurst	169,132.91
CSO182	7/26/14 10:00 PM	7/27/14 9:45 AM	1.01	1.32	90,537.36	1.34	0.61	12 hr	CloudBurst	119,509.31
CSO182	8/8/14 5:30 AM	8/8/14 8:15 AM	0.05	1.00	20,335.58	0.80	0.46	6 hr	CloudBurst	20,335.58
CSO182	8/9/14 3:45 AM	8/9/14 4:15 AM	0.21	0.07	89,865.03	1.02	0.04	6 hr	CloudBurst	6,290.55
CSO182	8/10/14 4:15 AM	8/10/14 4:15 AM	0.18	0.44	20,319.22	1.51	0.37	1 hr	CloudBurst	8,940.46
CSO182	8/11/14 3:15 PM	8/11/14 4:00 PM	0.98	0.42	63,111.67	1.85	0.30	1 hr	CloudBurst	26,506.90
CSO182	8/17/14 12:30 AM	8/17/14 12:45 AM	0.18	0.71	15,715.01	1.16	0.27	24 hr	CloudBurst	11,157.66
CSO182	8/17/14 9:30 AM	8/17/14 10:45 AM	0.60	0.71	26,938.03	1.03	0.27	24 hr	CloudBurst	19,126.00
CSO182	8/17/14 8:45 PM	8/17/14 11:15 PM	1.22	0.71	22,870.25	1.14	0.27	24 hr	CloudBurst	16,237.87
CSO182	8/22/14 7:15 PM	8/22/14 7:45 PM	0.02	0.24	42,078.13	0.90	0.16	1 hr	CloudBurst	10,098.75
CSO182	8/23/14 4:15 PM	8/23/14 10:15 PM	0.01	0.72	249,737.84	1.64	0.34	6 hr	CloudBurst	179,811.25
CSO182	8/27/14 3:30 PM	8/27/14 6:00 PM	0.01	0.30	245,722.31	1.29	0.19	3 hr	CloudBurst	73,716.69
CSO182	8/30/14 3:45 PM	8/30/14 4:15 PM	0.06	0.58	66,472.31	1.39	0.37	1 hr	CloudBurst	38,553.94
CSO182	9/2/14 7:15 AM	9/3/14 12:00 AM	0.01	0.36	170,889.22	1.26	0.22	3 hr	CloudBurst	61,520.12
CSO182	9/11/14 12:30 AM	9/11/14 6:45 AM	0.58	1.99	532,944.77	1.94	1.57	3 hr	Atlas14	1,060,560.10
CSO182	10/6/14 8:00 AM	10/6/14 8:15 AM	0.01	0.13	165,573.48	0.30	0.05	3 hr	CloudBurst	21,524.55
CSO182	10/7/14 12:15 PM	10/7/14 12:15 PM	0.02	0.17	74,840.50	0.51	0.14	1 hr	CloudBurst	12,722.89
CSO182	10/10/14 2:30 AM	10/10/14 3:15 AM	0.07	1.06	10,855.77	1.24	0.50	1 hr	CloudBurst	11,507.11
CSO182	10/10/14 5:30 PM	10/10/14 5:45 PM	0.49	1.06	12,979.93	1.37	0.50	1 hr	CloudBurst	13,758.73
CSO182	10/13/14 4:45 AM	10/13/14 6:45 AM	0.11	0.40	102,322.51	1.75	0.26	3 hr	CloudBurst	40,929.01
CSO182	10/14/14 12:15 AM	10/14/14 10:30 AM	0.02	1.12	75,284.95	2.77	0.50	12 hr	CloudBurst	84,319.15
CSO182	10/31/14 7:00 AM	11/1/14 7:15 AM	0.01	0.14	3,887,758.91	0.28	0.05	48 hr	CloudBurst	544,286.25
CSO182	11/13/14 7:45 AM	11/13/14 7:45 AM	0.03	Discharge		0.08	Snowmelt			6,047.42
CSO182	11/15/14 7:15 AM	11/15/14 8:15 AM	0.01	Discharge		0.06	Snowmelt			108,682.08
CSO182	11/16/14 12:15 AM	11/16/14 9:45 PM	0.05	Discharge		0.15	Snowmelt			1,051,227.61
CSO182	11/23/14 2:45 PM	11/23/14 8:15 PM	0.10	0.79	122,684.57	1.15	0.36	6 hr	CloudBurst	96,920.81
CSO182	12/1/14 3:15 AM	12/1/14 5:30 AM	0.02	0.85	25,494.22	0.43	0.33	24 hr	CloudBurst	21,670.09
CSO182	12/1/14 2:45 PM	12/1/14 3:45 PM	0.25	0.85	47,516.57	0.78	0.33	24 hr	CloudBurst	40,389.08
CSO182	12/5/14 4:45 AM	12/5/14 7:00 AM	0.10	0.64	91,608.39	1.29	0.21	48 hr	CloudBurst	58,629.37
CSO182	12/5/14 8:30 PM	12/6/14 7:45 AM	0.02	0.64	371,296.71	1.49	0.21	48 hr	CloudBurst	237,629.90
CSO182	12/16/14 5:30 AM	12/16/14 5:30 AM	0.70	0.12	55,527.51	-	0.07	1 hr	CloudBurst	6,663.30
CSO182	12/22/14 10:45 PM	12/23/14 12:15 AM	0.26	0.26	57,568.43	-	0.14	3 hr	CloudBurst	14,967.79
CSO182	12/23/14 8:15 PM	12/23/14 8:15 PM	0.01	0.12	32,382.38	-	0.08	1 hr	CloudBurst	3,885.89
CSO182	12/24/14 1:30 PM	12/24/14 1:45 PM	0.01	0.19	31,949.56	-	0.16	3 hr	CloudBurst	6,070.42
CSO182	12/28/14 1:00 AM	12/28/14 1:45 AM	0.03	0.32	42,755.28	-	0.30	1 hr	CloudBurst	13,681.69
CSO182	1/3/15 10:45 AM	1/4/15 11:00 AM	0.01	0.30	2,082,533.64	0.31	0.11	24 hr	Atlas	624,760.09
CSO182	1/12/15 2:15 AM	1/12/15 3:30 AM	0.08	0.17	134,841.18	0.14	0.07	24 hr	Atlas	22,923.00
CSO182	2/1/15 1:00 PM	2/1/15 6:00 PM	0.43	0.37	62,405.32	0.50	0.17	12 hr	Atlas	23,089.97
CSO182	2/21/15 1:30 PM	2/21/15 5:45 PM	1.01	1.29	48,231.65	1.50	0.50	24 hr	Atlas	62,218.82
CSO182	3/3/15 7:15 PM	3/4/15 6:45 PM	0.01	1.62	150,341.59	1.33	0.53	48 hr	Atlas	243,553.37
CSO182	3/7/15 1:30 PM	3/7/15 5:45 PM	0.04	0.28	175,842.71	1.67	0.26	1 hr	Atlas	49,235.96
CSO182	3/10/15 7:00 AM	3/10/15 9:30 PM	0.90	1.37	158,173.02	2.99	0.62	12 hr	Atlas	216,697.03
CSO182	3/13/15 10:15 AM	3/14/15 3:30 PM	0.23	1.76	178,619.59	3.13	0.66	24 hr	Atlas	314,370.49
CSO182	3/19/15 7:45 PM	3/19/15 8:15 PM	0.09	0.19	3,355.59	1.94	0.07	12 hr	Atlas	637.56
CSO182	3/24/15 8:30 PM	3/24/15 8:30 PM	0.04	0.09	1,392.13	0.26	0.04	1 hr	Atlas	125.29
CSO182	3/25/15 4:45 AM	3/25/15 4:45 AM	0.09	0.09	75.58	0.28	0.04	1 hr	Atlas	6.80
CSO182	3/26/15 5:15 AM	3/26/15 6:45 AM	0.47	0.43	63,411.34	0.56	0.18	12 hr	Atlas	27,266.88
CSO182	3/26/15 3:45 PM	3/26/15 4:00 PM	0.01	0.43	4,507.85	0.64	0.18	12 hr	Atlas	1,938.38
CSO182	4/2/15 10:15 AM	4/3/15 12:15 AM	0.06	5.66	6,719.53	1.66	27.08	6 hr	Cloudburst	38,032.53
CSO182 Count										51.00
CSO182 Total Volume (GAL)										5,857,727.65

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO183	8/27/14 4:45 PM	8/27/14 4:45 PM	0.01	0.38	11,425.68	1.37	0.27	1 hr	CloudBurst	4,341.76
CSO183	9/11/14 12:30 AM	9/11/14 12:30 AM	0.09	2.01	102.98	0.47	1.60	3 hr	Atlas14	206.99
CSO183	4/2/15 3:00 PM	4/2/15 3:00 PM	0.01	5.98	408.76	0.75	45.83	6 hr	Cloudburst	2,444.39
CSO183	4/3/15 12:15 AM	4/3/15 2:30 AM	0.01	5.98	3,981.50	3.76	45.83	6 hr	Cloudburst	23,809.35
CSO183 Count										4.00
CSO183 Total Volume (GAL)										30,802.49
CSO184	7/13/14 10:00 PM	7/13/14 11:00 PM	0.42	0.62	114,216.76	1.79	0.33	3 hr	CloudBurst	70,814.39
CSO184	7/26/14 9:45 PM	7/27/14 9:15 AM	0.32	1.34	111,918.31	1.36	0.62	12 hr	CloudBurst	149,970.53
CSO184	8/8/14 6:15 AM	8/8/14 6:30 AM	0.01	1.09	16,074.13	0.82	0.55	6 hr	CloudBurst	17,520.80
CSO184	8/11/14 3:30 PM	8/11/14 3:45 PM	0.01	0.38	93,975.99	1.74	0.21	6 hr	CloudBurst	35,710.88
CSO184	8/23/14 4:45 PM	8/23/14 8:15 PM	0.01	0.80	26,754.78	1.53	0.39	6 hr	CloudBurst	21,403.82
CSO184	8/27/14 5:00 PM	8/27/14 5:15 PM	0.01	0.38	486,356.19	1.42	0.27	1 hr	CloudBurst	184,815.35
CSO184	8/30/14 3:15 PM	8/30/14 3:15 PM	0.01	0.44	211,898.10	1.45	0.22	3 hr	CloudBurst	93,235.16
CSO184	9/2/14 8:30 AM	9/2/14 8:30 AM	0.01	0.35	9,400.51	1.11	0.22	3 hr	CloudBurst	3,290.18
CSO184	9/11/14 12:45 AM	9/11/14 2:30 AM	0.01	2.01	113,009.73	1.71	1.60	3 hr	Atlas14	227,149.55
CSO184	10/10/14 3:00 AM	10/10/14 3:00 AM	0.04	1.02	3,870.19	1.21	0.46	3 hr	CloudBurst	3,947.59
CSO184	10/13/14 11:30 PM	10/13/14 11:45 PM	0.48	1.33	4,323.50	2.07	0.61	12 hr	CloudBurst	5,750.26
CSO184	12/6/14 3:15 AM	12/6/14 3:15 AM	0.01	1.90	714.14	1.56	0.18	48 hr	CloudBurst	1,356.88
CSO184	1/24/15 8:00 AM	1/24/15 10:30 AM	0.01	Discharge		0.15	Snowmelt			30,730.37
CSO184	1/25/15 2:15 PM	1/25/15 2:15 PM	0.15	0.12	18,948.96	0.09	0.05	12 hr	Atlas	2,273.88
CSO184	1/26/15 3:30 AM	1/26/15 10:45 AM	0.01	0.12	85,381.68	0.19	0.05	12 hr	Atlas	10,245.80
CSO184	1/29/15 5:15 AM	1/29/15 11:30 AM	0.01	0.05	1,689,852.39	0.25	0.04	1 hr	Atlas	84,492.62
CSO184	2/19/15 8:15 AM	2/19/15 12:00 PM	0.01	Discharge		0.22	Water Main Break			9,202.03
CSO184	3/10/15 12:00 PM	3/10/15 12:45 PM	0.07	1.27	12,110.38	2.76	0.58	12 hr	Atlas	15,380.19
CSO184	3/26/15 11:00 PM	3/26/15 11:00 PM	0.01	0.43	796.32	0.51	0.18	12 hr	Atlas	342.42
CSO184	4/2/15 10:45 AM	4/2/15 3:30 PM	0.01	5.98	22,922.19	0.82	45.83	6 hr	Cloudburst	137,074.69
CSO184	4/3/15 12:30 AM	4/3/15 10:30 AM	0.01	5.98	223,532.15	5.32	45.83	6 hr	Cloudburst	1,336,722.24
CSO184	4/7/15 9:30 AM	4/7/15 5:15 PM	0.10	0.69	60,632.79	6.68	0.32	1 hr	Atlas	41,836.62
CSO184	4/8/15 6:15 PM	4/8/15 6:30 PM	0.01	0.25	254,144.46	6.93	0.17	1 hr	Atlas	63,536.11
CSO184	4/9/15 11:45 AM	4/9/15 12:00 PM	0.30	0.31	143,965.69	6.87	0.27	1 hr	Atlas	44,629.36
CSO184	4/19/15 2:15 PM	4/19/15 2:30 PM	0.26	0.77	23,917.25	1.19	0.32	12 hr	Atlas	18,416.28
CSO184	5/26/15 2:15 PM	5/26/15 2:15 PM	0.16	0.49	2,646.45	0.73	0.35	1 hr	Atlas	1,296.76
CSO184	5/27/15 1:45 PM	5/27/15 1:45 PM	0.03	0.09	81,768.98	0.91	0.08	1 hr	Atlas	7,359.21
CSO184	6/17/15 5:00 AM	6/17/15 5:00 AM	0.01	0.70	7,491.62	0.76	0.35	3 hr	Atlas	5,244.14
CSO184	6/18/15 4:15 PM	6/18/15 4:15 PM	0.20	1.95	9,463.81	1.35	0.63	48 hr	Atlas	18,454.44
CSO184 Count										29.00
CSO184 Total Volume (GAL)										2,642,202.56
CSO185	7/2/14 4:30 PM	7/2/14 4:30 PM	0.20	0.11	4,985.61	0.34	0.10	1 hr	CloudBurst	548.42
CSO185	7/13/14 10:00 PM	7/13/14 11:30 PM	0.64	0.62	435,768.03	1.80	0.33	3 hr	CloudBurst	270,176.18
CSO185	7/26/14 9:45 PM	7/26/14 10:00 PM	0.33	1.34	78,163.09	0.50	0.62	12 hr	CloudBurst	104,738.54
CSO185	7/27/14 6:15 AM	7/27/14 9:15 AM	0.01	1.34	31,866.50	1.36	0.62	12 hr	CloudBurst	42,701.11
CSO185	8/8/14 6:15 AM	8/8/14 7:45 AM	0.01	1.09	143,709.79	0.94	0.55	6 hr	CloudBurst	156,643.67
CSO185	8/10/14 10:45 AM	8/10/14 12:30 PM	0.01	0.25	8,619.33	1.51	0.21	1 hr	CloudBurst	2,154.83
CSO185	8/11/14 3:30 PM	8/11/14 4:15 PM	0.01	0.38	713,581.02	1.74	0.21	6 hr	CloudBurst	271,160.79
CSO185	8/12/14 8:45 AM	8/12/14 9:15 AM	0.01	0.12	9,663.40	1.89	0.06	12 hr	Atlas14	1,169.27
CSO185	8/22/14 7:30 PM	8/22/14 7:30 PM	0.01	0.21	39,533.53	0.90	0.14	3 hr	CloudBurst	8,302.04
CSO185	8/23/14 4:00 PM	8/23/14 8:15 PM	0.01	0.80	111,589.54	1.53	0.39	6 hr	CloudBurst	89,271.63
CSO185	8/27/14 3:15 PM	8/27/14 6:15 PM	0.01	0.38	905,580.90	1.45	0.27	1 hr	CloudBurst	344,120.74
CSO185	8/30/14 3:15 PM	8/30/14 3:30 PM	0.01	0.44	303,241.68	1.46	0.22	3 hr	CloudBurst	133,426.34
CSO185	9/2/14 8:30 AM	9/2/14 8:30 AM	0.03	0.35	55,506.16	1.11	0.22	3 hr	CloudBurst	19,427.16
CSO185	9/11/14 12:00 AM	9/11/14 9:00 PM	0.01	2.01	652,813.77	2.01	1.60	3 hr	Atlas14	1,312,155.68
CSO185	10/10/14 3:00 AM	10/10/14 3:00 AM	0.01	1.02	19,094.03	1.21	0.46	3 hr	CloudBurst	19,475.91
CSO185	10/13/14 11:30 PM	10/13/14 11:45 PM	0.06	1.33	17,051.37	2.07	0.61	12 hr	CloudBurst	22,678.32
CSO185	10/14/14 8:00 AM	10/14/14 8:15 AM	0.01	1.33	7,596.46	2.89	0.61	12 hr	CloudBurst	10,103.29
CSO185	12/6/14 3:15 AM	12/6/14 3:15 AM	0.13	1.90	4,048.14	1.56	0.18	48 hr	CloudBurst	7,691.47

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO185	12/27/14 10:30 AM	12/27/14 4:30 PM	0.06	0.01	3,568,383.68	-	0.05	12hr	Atlas	35,683.84
CSO185	1/3/15 3:00 PM	1/3/15 10:30 PM	0.07	0.34	36,386.09	0.29	0.12	24 hr	Atlas	12,371.27
CSO185	3/10/15 11:00 AM	3/10/15 1:30 PM	0.03	1.27	42,872.06	2.86	0.58	12 hr	Atlas	54,447.51
CSO185	3/14/15 3:45 AM	3/14/15 4:45 AM	0.02	1.70	2,667.05	2.91	0.64	24 hr	Atlas	4,533.99
CSO185	3/19/15 8:30 PM	3/20/15 11:30 AM	0.01	0.19	2,364.80	1.88	0.07	12 hr	Atlas	928.78
CSO185	3/26/15 4:30 AM	3/26/15 4:30 AM	0.18	0.43	23,587.33	0.47	0.18	12 hr	Atlas	10,142.55
CSO185	4/2/15 10:45 AM	4/2/15 3:30 PM	0.13	5.98	35,795.52	0.82	45.83	6 hr	Cloudburst	214,057.23
CSO185	4/3/15 12:30 AM	4/3/15 3:45 PM	0.01	5.98	387,337.91	5.84	45.83	6 hr	Cloudburst	2,316,280.69
CSO185	4/7/15 9:30 AM	4/7/15 5:30 PM	0.01	0.69	113,046.49	6.69	0.32	1 hr	Atlas	78,002.08
CSO185	4/8/15 6:15 PM	4/8/15 6:30 PM	0.88	0.25	441,957.96	6.93	0.17	1 hr	Atlas	110,489.49
CSO185	4/9/15 11:45 AM	4/9/15 12:00 PM	0.01	0.31	226,814.18	6.87	0.27	1 hr	Atlas	70,312.39
CSO185	4/19/15 2:15 PM	4/19/15 2:30 PM	0.01	0.77	62,921.83	1.19	0.32	12 hr	Atlas	48,449.81
CSO185	4/20/15 3:30 AM	4/20/15 3:30 AM	0.01	0.14	11,794.12	1.49	0.12	1 hr	Atlas	1,651.18
CSO185	5/11/15 5:45 PM	5/11/15 5:45 PM	0.01	0.12	45,856.69	0.24	0.10	1 hr	Atlas	5,502.80
CSO185	5/17/15 2:30 PM	5/17/15 2:30 PM	0.25	0.16	43,818.56	0.57	0.11	1 hr	Atlas	7,010.97
CSO185	5/26/15 2:00 PM	5/26/15 2:15 PM	0.31	0.49	15,869.09	0.73	0.35	1 hr	Atlas	7,775.85
CSO185	5/27/15 1:45 PM	5/27/15 1:45 PM	0.10	0.09	193,063.30	0.91	0.08	1 hr	Atlas	17,375.70
CSO185	6/13/15 2:30 PM	6/13/15 2:30 PM	0.04	0.30	6,415.87	0.64	0.26	1 hr	Atlas	1,924.76
CSO185	6/17/15 5:00 AM	6/17/15 5:45 AM	0.63	0.70	25,725.53	0.89	0.35	3 hr	Atlas	18,007.87
CSO185	6/18/15 4:15 PM	6/18/15 4:15 PM	0.01	1.95	25,183.51	1.35	0.63	48 hr	Atlas	49,107.84
CSO185 Count										38.00
CSO185 Total Volume (GAL)										5,880,001.98
CSO188	4/2/15 3:00 PM	4/2/15 3:00 PM	0.01	5.36	1,465.49	0.86	20.93	6 hr	Cloudburst	7,855.04
CSO188	4/3/15 2:30 AM	4/3/15 2:30 AM	0.01	5.36	310.27	3.47	20.93	6 hr	Cloudburst	1,663.05
CSO188	6/18/15 5:00 PM	6/18/15 5:00 PM	0.01	1.82	27,180.76	1.35	0.59	48 hr	Atlas	49,468.99
CSO188 Count										3.00
CSO188 Total Volume (GAL)										58,987.08
CSO189	7/1/14 8:00 PM	7/1/14 9:00 PM	0.92	0.60	1,219,731.26	0.45	0.38	3 hr	CloudBurst	731,838.76
CSO189	7/2/14 4:30 PM	7/2/14 5:00 PM	0.09	0.10	1,971,990.60	0.73	0.09	1 hr	CloudBurst	197,199.06
CSO189	7/13/14 10:45 PM	7/14/14 12:30 AM	1.28	0.69	3,986,547.19	0.48	0.32	12 hr	CloudBurst	2,750,717.56
CSO189	7/14/14 7:15 PM	7/14/14 9:15 PM	0.40	0.42	2,310,278.98	1.18	0.30	1 hr	CloudBurst	970,317.17
CSO189	7/26/14 9:45 PM	7/26/14 11:15 PM	0.04	1.04	1,953,754.17	0.69	0.48	12 hr	CloudBurst	2,031,904.33
CSO189	7/27/14 7:30 AM	7/27/14 8:00 AM	0.08	1.04	9,130.80	1.05	0.48	12 hr	CloudBurst	9,496.03
CSO189	8/8/14 6:15 AM	8/8/14 8:00 AM	0.45	0.62	2,074,404.16	0.48	0.31	6 hr	CloudBurst	1,286,130.58
CSO189	8/10/14 3:45 AM	8/10/14 5:45 AM	0.25	1.14	2,118,100.82	1.92	0.98	1 hr	CloudBurst	2,414,634.94
CSO189	8/11/14 2:30 PM	8/11/14 4:15 PM	0.11	0.15	10,242,266.68	2.04	0.10	1 hr	CloudBurst	1,536,340.00
CSO189	8/17/14 10:00 AM	8/17/14 10:45 AM	0.08	0.83	337,652.26	0.86	0.32	24 hr	CloudBurst	280,251.38
CSO189	8/22/14 7:30 PM	8/22/14 8:00 PM	0.06	0.13	1,098,075.66	0.91	0.07	6 hr	CloudBurst	142,749.84
CSO189	8/23/14 4:30 PM	8/23/14 10:45 PM	0.31	0.96	6,099,545.68	1.91	0.46	6 hr	CloudBurst	5,855,563.86
CSO189	8/30/14 3:15 PM	8/30/14 5:15 PM	0.05	1.27	4,044,878.73	2.35	0.80	1 hr	CloudBurst	5,136,995.99
CSO189	9/2/14 8:15 AM	9/2/14 9:45 AM	0.32	0.53	1,924,513.18	1.95	0.30	3 hr	CloudBurst	1,019,991.99
CSO189	9/11/14 12:30 AM	9/11/14 6:30 AM	0.02	2.30	7,465,243.44	2.24	3.07	3 hr	Atlas14	17,170,059.90
CSO189	10/6/14 10:00 AM	10/6/14 10:30 AM	0.04	0.56	430,728.02	0.51	0.18	3 hr	CloudBurst	241,207.69
CSO189	10/10/14 2:00 AM	10/10/14 4:15 AM	0.02	1.02	3,686,415.23	1.51	0.46	3 hr	Atlas14	3,760,143.53
CSO189	10/13/14 4:30 AM	10/13/14 7:00 AM	0.07	0.45	4,990,068.48	2.07	0.29	3 hr	CloudBurst	2,245,530.81
CSO189	10/13/14 11:15 PM	10/14/14 11:00 AM	0.08	1.56	4,460,025.36	3.28	0.70	12 hr	CloudBurst	6,957,639.56
CSO189	11/23/14 5:30 PM	11/23/14 8:30 PM	0.06	0.86	2,991,008.27	1.19	0.39	6 hr	CloudBurst	2,572,267.11
CSO189	12/6/14 12:00 AM	12/6/14 7:45 AM	0.02	0.75	13,215,188.36	1.66	0.24	48 hr	CloudBurst	9,911,391.27
CSO189	3/3/15 11:45 PM	3/4/15 6:00 PM	0.07	1.65	7,435,122.54	1.40	0.54	48 hr	Atlas	12,267,952.19
CSO189	3/7/15 5:00 AM	3/7/15 5:00 AM	0.08	Discharge		1.74	Snowmelt			60,057.84
CSO189	3/10/15 11:15 AM	3/10/15 6:00 PM	0.07	0.95	9,481,120.80	2.60	0.42	12 hr	Atlas	9,007,064.76
CSO189	3/13/15 10:45 AM	3/14/15 8:45 AM	0.03	1.91	6,815,378.77	2.81	0.72	24 hr	Atlas	13,017,373.45
CSO189	3/26/15 4:30 AM	3/26/15 6:45 AM	0.02	0.51	2,243,140.59	0.74	0.25	3 hr	Atlas	1,144,001.70
CSO189	4/2/15 10:45 AM	4/3/15 5:30 PM	0.26	4.80	15,980,441.14	4.93	10.76	6 hr	Cloudburst	76,706,117.46
CSO189	4/7/15 9:15 AM	4/7/15 6:45 PM	0.08	1.03	12,581,588.19	5.83	0.45	1 hr	Atlas	12,959,035.84

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO189	4/9/15 11:45 AM	4/9/15 12:45 PM	0.06	0.25	3,926,597.51	5.91	0.21	1 hr	Atlas	981,649.38
CSO189	4/10/15 2:15 AM	4/10/15 4:15 AM	0.25	0.28	11,218,167.86	3.61	0.19	1 hr	Atlas	3,141,087.00
CSO189	4/13/15 8:30 PM	4/14/15 7:15 AM	0.02	0.87	1,370,727.94	2.19	0.33	24 hr	Atlas	1,192,533.30
CSO189	4/19/15 1:15 PM	4/19/15 7:15 PM	0.09	0.83	472,163.04	1.76	0.34	12 hr	Atlas	391,895.32
CSO189	5/16/15 11:45 AM	5/16/15 2:30 PM	0.10	0.94	4,870,783.66	1.01	0.50	3 hr	Atlas	4,578,536.64
CSO189	6/17/15 5:15 AM	6/17/15 7:15 AM	0.49	0.66	2,775,702.20	0.67	0.37	3 hr	Atlas	1,831,963.45
CSO189	6/18/15 5:15 PM	6/18/15 6:45 PM	0.13	0.83	5,132,505.71	1.38	0.54	1 hr	Atlas	4,259,979.74
CSO189	6/20/15 1:45 AM	6/20/15 9:15 AM	0.32	1.14	3,795,818.96	2.72	0.46	12 hr	Atlas	4,327,233.61
CSO189	6/26/15 12:15 AM	6/26/15 1:30 AM	0.76	0.85	401,120.51	2.17	0.46	6 hr	Atlas	340,952.43
CSO189	6/26/15 5:00 PM	6/27/15 12:45 AM	0.01	0.89	10,909,112.62	3.13	0.50	1 hr	Atlas	9,709,110.23
CSO189	6/29/15 2:00 PM	6/29/15 2:30 PM	0.28	0.29	1,273,192.20	2.03	0.14	1 hr	Atlas	369,225.74
CSO189 Count										39.00
CSO189 Total Volume (GAL)										223,508,141.43
CSO190	5/17/15 2:15 PM	5/17/15 2:30 PM	0.01	0.09	27,608.45	0.91	0.04	12 hr	Atlas	2,484.76
CSO190	5/25/15 8:15 AM	5/25/15 9:15 AM	0.04	0.30	38,913.63	0.32	0.14	12 hr	Atlas	11,674.09
CSO190	5/26/15 1:30 PM	5/26/15 2:30 PM	0.04	0.17	856,489.57	0.43	0.10	1 hr	Atlas	145,603.23
CSO190	6/17/15 4:45 AM	6/17/15 6:30 AM	0.07	0.67	665,004.93	0.67	0.37	3 hr	Atlas	445,553.30
CSO190	6/18/15 5:15 PM	6/18/15 6:15 PM	0.04	0.76	724,821.71	1.27	0.43	1 hr	Atlas	550,864.50
CSO190	6/20/15 1:30 AM	6/20/15 8:30 AM	0.29	1.04	754,044.08	2.53	0.41	12 hr	Atlas	784,205.85
CSO190	6/22/15 6:00 AM	6/22/15 6:30 AM	0.02	0.23	2,301.49	2.74	0.11	3 hr	Atlas	529.34
CSO190	6/25/15 11:45 PM	6/26/15 1:30 AM	0.07	0.61	153,790.60	1.79	0.33	6 hr	Atlas	93,812.27
CSO190	6/26/15 5:00 PM	6/27/15 12:15 AM	0.30	1.04	1,384,182.31	2.91	0.55	1 hr	Atlas	1,439,549.60
CSO190	6/29/15 1:45 PM	6/29/15 2:00 PM	0.01	0.22	420,182.29	1.87	0.12	1 hr	Atlas	92,440.10
CSO190 Count										10.00
CSO190 Total Volume (GAL)										3,566,717.04
CSO191	7/13/14 11:00 PM	7/13/14 11:00 PM	0.01	0.75	20,610.38	0.85	0.44	1 hr	CloudBurst	15,457.78
CSO191	7/27/14 9:15 AM	7/27/14 9:15 AM	0.71	1.10	22,967.11	1.13	0.51	12 hr	CloudBurst	25,263.82
CSO191	8/8/14 6:00 AM	8/8/14 6:30 AM	0.01	0.77	75,032.13	0.56	0.38	6 hr	CloudBurst	57,774.74
CSO191	8/23/14 8:15 PM	8/23/14 8:15 PM	0.01	0.85	12,535.55	1.40	0.41	6 hr	CloudBurst	10,655.22
CSO191	8/30/14 3:15 PM	8/30/14 3:30 PM	0.11	0.71	62,321.21	1.65	0.42	1 hr	CloudBurst	44,248.06
CSO191	9/11/14 2:15 AM	9/11/14 2:45 AM	0.02	1.71	262,277.03	1.46	0.95	3 hr	Atlas14	448,493.73
CSO191	4/2/15 3:15 PM	4/2/15 3:15 PM	0.01	6.20	33,209.48	0.99	36.46	6 hr	Cloudburst	205,898.80
CSO191	4/3/15 12:15 AM	4/3/15 5:15 PM	0.01	6.20	733,885.59	6.25	36.46	6 hr	Cloudburst	4,550,090.68
CSO191	4/7/15 5:00 PM	4/7/15 5:15 PM	0.02	0.88	106,436.47	7.08	0.39	1 hr	Atlas	93,664.09
CSO191	6/18/15 5:45 PM	6/18/15 5:45 PM	0.01	0.60	28,021.91	1.26	0.28	3 hr	Atlas	16,813.14
CSO191	6/20/15 5:00 AM	6/20/15 7:45 AM	0.01	1.09	50,794.36	2.49	0.43	12 hr	Atlas	55,365.85
CSO191	6/26/15 5:15 PM	6/26/15 5:45 PM	0.02	1.12	404,962.23	2.96	0.60	1 hr	Atlas	453,557.69
CSO191 Count										12.00
CSO191 Total Volume (GAL)										5,977,283.60
CSO193	7/7/14 7:30 PM	7/7/14 7:30 PM	0.01	0.47	3,800.42	0.77	0.41	1 hr	CloudBurst	1,786.20
CSO193	7/13/14 11:00 PM	7/13/14 11:00 PM	0.01	0.77	3,657.87	1.33	0.38	1 hr	CloudBurst	2,816.56
CSO193	7/26/14 9:45 PM	7/26/14 9:45 PM	0.19	1.06	12,999.04	0.41	0.49	12 hr	CloudBurst	13,778.98
CSO193	8/8/14 6:30 AM	8/8/14 6:45 AM	0.18	0.85	4,968.90	0.62	0.41	6 hr	CloudBurst	4,223.56
CSO193	8/10/14 4:00 AM	8/10/14 4:30 AM	0.32	0.52	13,943.19	1.50	0.41	1 hr	CloudBurst	7,250.46
CSO193	8/11/14 3:30 PM	8/11/14 3:30 PM	0.01	0.30	1,542.19	1.78	0.23	1 hr	CloudBurst	462.66
CSO193	8/22/14 7:15 PM	8/22/14 7:15 PM	0.01	0.47	3,247.81	1.18	0.37	1 hr	CloudBurst	1,526.47
CSO193	8/23/14 4:30 PM	8/23/14 8:15 PM	0.01	0.65	9,907.26	1.65	0.36	3 hr	CloudBurst	6,439.72
CSO193	8/30/14 3:15 PM	8/30/14 3:15 PM	0.01	0.56	2,957.37	1.13	0.31	1 hr	CloudBurst	1,656.13
CSO193	9/11/14 12:45 AM	9/11/14 2:15 AM	0.01	1.91	13,628.89	1.60	1.33	3 hr	Atlas14	26,031.18
CSO193	10/10/14 2:15 AM	10/10/14 3:00 AM	0.01	1.28	4,531.44	1.60	0.57	3 hr	CloudBurst	5,800.24
CSO193	12/5/14 11:15 PM	12/5/14 11:15 PM	0.01	0.65	785.48	1.56	0.21	48 hr	CloudBurst	510.56
CSO193	3/4/15 2:15 AM	3/4/15 2:15 AM	0.01	1.79	412.83	0.51	0.58	48 hr	Atlas	738.96
CSO193	3/10/15 12:15 PM	3/10/15 12:30 PM	0.01	1.26	1,170.35	2.83	0.57	12 hr	Atlas	1,474.65
CSO193	4/2/15 10:30 AM	4/2/15 3:00 PM	0.02	5.47	1,224.87	1.09	15.85	6 hr	Cloudburst	6,700.05
CSO193	4/3/15 12:15 AM	4/3/15 4:30 AM	0.01	5.47	6,977.42	4.16	15.85	6 hr	Cloudburst	38,166.47

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO193	4/7/15 9:15 AM	4/7/15 5:00 PM	0.01	0.87	18,971.71	6.31	0.38	1 hr	Atlas	16,505.39
CSO193	4/9/15 11:30 AM	4/9/15 11:30 AM	0.16	0.10	1,058.02	6.06	0.09	1 hr	Atlas	105.80
CSO193	5/26/15 2:00 PM	5/26/15 2:00 PM	0.01	0.21	7,618.25	0.41	0.14	1 hr	Atlas	1,599.83
CSO193	6/17/15 4:45 AM	6/17/15 4:45 AM	0.06	0.70	2,453.74	0.52	0.39	3 hr	Atlas	1,717.61
CSO193	6/18/15 5:15 PM	6/18/15 5:15 PM	0.03	1.55	13,785.42	1.29	0.50	48 hr	Atlas	21,367.41
CSO193	6/26/15 5:00 PM	6/26/15 5:15 PM	0.01	0.86	11,599.36	2.17	0.48	1 hr	Atlas	9,975.45
CSO193 Count										22.00
CSO193 Total Volume (GAL)										170,634.32
CSO196	7/7/14 7:30 PM	7/7/14 7:45 PM	0.27	0.56	46,325.17	0.85	0.49	1 hr	CloudBurst	25,942.09
CSO196	7/13/14 11:00 PM	7/13/14 11:00 PM	0.01	0.78	20,619.04	1.43	0.39	3 hr	CloudBurst	16,082.85
CSO196	7/14/14 8:15 PM	7/14/14 8:15 PM	0.01	0.18	12,047.16	1.26	0.14	1 hr	CloudBurst	2,168.49
CSO196	9/11/14 12:45 AM	9/11/14 2:30 AM	0.01	1.83	63,087.77	1.53	1.03	3 hr	Atlas14	115,450.62
CSO196	10/3/14 3:30 AM	10/3/14 3:30 AM	0.01	0.25	1,947.13	0.11	0.10	24 hr	CloudBurst	486.78
CSO196	10/6/14 9:45 AM	10/6/14 9:45 AM	0.01	0.20	38,372.60	0.40	0.08	24 hr	CloudBurst	7,674.52
CSO196	10/10/14 1:45 AM	10/10/14 3:00 AM	0.01	1.26	14,859.50	1.52	0.57	3 hr	CloudBurst	18,722.97
CSO196	10/13/14 5:15 AM	10/13/14 7:15 AM	0.07	0.51	2,241.54	2.18	0.33	3 hr	CloudBurst	1,143.19
CSO196	10/13/14 11:30 PM	10/13/14 11:45 PM	0.01	1.03	5,499.98	2.32	0.46	12 hr	CloudBurst	5,664.98
CSO196	10/14/14 8:15 AM	10/14/14 8:15 AM	0.01	1.03	845.96	2.92	0.46	12 hr	CloudBurst	871.34
CSO196	11/23/14 5:30 PM	11/23/14 5:30 PM	0.05	0.63	2,935.00	0.75	0.28	12 hr	CloudBurst	1,849.05
CSO196	11/24/14 10:00 AM	11/24/14 10:00 AM	0.08	0.01	32,742.71	0.67	0.01	6 hr	CloudBurst	327.43
CSO196	12/1/14 5:00 AM	12/1/14 7:30 AM	0.01	0.95	1,653.22	0.57	0.36	24 hr	CloudBurst	1,570.56
CSO196	12/6/14 2:45 AM	12/6/14 4:00 AM	0.01	1.84	6,332.04	1.55	0.20	48 hr	CloudBurst	11,650.95
CSO196	3/10/15 11:00 AM	3/10/15 12:45 PM	0.01	1.30	13,986.38	2.86	0.59	12 hr	Atlas	18,182.30
CSO196	3/14/15 1:15 AM	3/14/15 3:45 AM	0.01	1.96	1,257.65	3.20	0.74	24 hr	Atlas	2,465.00
CSO196	3/26/15 4:30 AM	3/26/15 4:30 AM	0.10	0.49	1,445.05	0.50	0.20	12 hr	Atlas	708.07
CSO196	4/2/15 10:45 AM	4/2/15 3:15 PM	0.05	5.52	5,350.46	1.02	20.17	6 hr	Cloudburst	29,534.52
CSO196	4/3/15 12:15 AM	4/3/15 5:00 PM	0.07	5.52	63,957.74	5.52	20.17	6 hr	Cloudburst	353,046.73
CSO196	4/7/15 9:30 AM	4/7/15 5:15 PM	0.10	0.83	22,774.42	6.34	0.37	1 hr	Atlas	18,902.77
CSO196	4/8/15 6:15 PM	4/8/15 6:30 PM	0.01	0.10	58,741.04	6.45	0.05	6 hr	Atlas	5,874.10
CSO196	4/9/15 11:30 AM	4/9/15 12:00 PM	0.19	0.33	23,471.02	6.09	0.13	24 hr	Atlas	7,745.44
CSO196	4/10/15 2:30 AM	4/10/15 2:30 AM	0.70	0.33	11,940.03	3.44	0.13	24 hr	Atlas	3,940.21
CSO196	4/19/15 2:30 PM	4/19/15 2:30 PM	0.32	0.60	1,235.92	1.00	0.25	12 hr	Atlas	741.55
CSO196	5/16/15 11:45 AM	5/16/15 11:45 AM	0.01	0.50	8,838.50	0.38	0.24	3 hr	Atlas	4,419.25
CSO196	5/17/15 2:15 PM	5/17/15 2:15 PM	0.02	0.08	179,725.78	0.63	0.04	1 hr	Atlas	14,378.06
CSO196	5/26/15 2:00 PM	5/26/15 2:00 PM	0.01	0.28	12,101.97	0.51	0.20	1 hr	Atlas	3,388.55
CSO196	6/17/15 4:45 AM	6/17/15 5:00 AM	0.01	0.63	6,647.65	0.48	0.34	3 hr	Atlas	4,188.02
CSO196	6/18/15 5:15 PM	6/18/15 5:45 PM	0.01	1.75	11,502.39	1.68	0.57	48 hr	Atlas	20,129.18
CSO196	6/20/15 1:30 AM	6/20/15 8:00 AM	0.01	1.75	6,366.23	2.65	0.57	48 hr	Atlas	11,140.90
CSO196	6/26/15 12:00 AM	6/26/15 12:00 AM	0.01	0.53	13,208.82	1.40	0.29	6 hr	Atlas	7,000.68
CSO196	6/26/15 5:15 PM	6/26/15 5:30 PM	0.01	0.93	36,765.79	2.19	0.52	1 hr	Atlas	34,192.19
CSO196	6/29/15 1:30 PM	6/29/15 1:30 PM	0.02	0.28	1,937.39	1.73	0.21	1 hr	Atlas	542.47
CSO196 Count										33.00
CSO196 Total Volume (GAL)										750,125.81
CSO199	7/7/14 7:30 PM	7/7/14 7:30 PM	1.21	0.56	2,746.73	0.83	0.49	1 hr	CloudBurst	1,538.17
CSO199	7/13/14 11:00 PM	7/13/14 11:00 PM	0.32	0.78	2,540.20	1.43	0.39	3 hr	CloudBurst	1,981.35
CSO199	7/26/14 9:45 PM	7/26/14 10:00 PM	0.01	1.16	13,971.40	0.46	0.53	12 hr	CloudBurst	16,206.82
CSO199	8/8/14 5:45 AM	8/8/14 6:45 AM	0.01	0.86	15,966.40	0.63	0.41	6 hr	CloudBurst	13,731.10
CSO199	8/10/14 4:00 AM	8/10/14 4:00 AM	0.01	0.61	1,304.92	1.50	0.50	1 hr	CloudBurst	796.00
CSO199	8/11/14 3:30 PM	8/11/14 3:30 PM	0.01	0.34	20,836.21	1.91	0.26	1 hr	CloudBurst	7,084.31
CSO199	8/17/14 9:30 AM	8/17/14 9:45 AM	0.01	0.73	4,845.11	0.90	0.28	24 hr	CloudBurst	3,536.93
CSO199	8/17/14 11:00 PM	8/17/14 11:00 PM	0.04	0.73	7,735.50	1.07	0.28	24 hr	CloudBurst	5,646.92
CSO199	8/23/14 4:30 PM	8/23/14 8:15 PM	0.98	0.71	31,628.81	1.58	0.37	3 hr	CloudBurst	22,456.46
CSO199	8/27/14 5:00 PM	8/27/14 5:00 PM	0.50	0.20	4,080.57	1.24	0.16	1 hr	CloudBurst	816.11
CSO199	8/30/14 2:45 PM	8/30/14 3:15 PM	0.01	0.56	39,678.95	1.25	0.33	1 hr	CloudBurst	22,220.21
CSO199	8/31/14 7:45 PM	8/31/14 7:45 PM	0.01	0.56	13,933.93	0.79	0.03	3 hr	Atlas14	7,803.00

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO199	9/11/14 12:45 AM	9/11/14 2:30 AM	0.01	1.83	22,327.06	1.53	1.03	3 hr	Atlas14	40,858.51
CSO199	10/6/14 9:45 AM	10/6/14 9:45 AM	0.01	0.20	5,595.00	0.40	0.08	24 hr	CloudBurst	1,119.00
CSO199	10/10/14 1:45 AM	10/10/14 2:15 AM	0.01	1.26	4,071.97	1.15	0.57	3 hr	CloudBurst	5,130.69
CSO199	10/13/14 11:30 PM	10/13/14 11:45 PM	0.01	1.03	2,200.75	2.32	0.46	12 hr	CloudBurst	2,266.77
CSO199	10/14/14 8:15 AM	10/14/14 8:15 AM	0.04	1.03	510.68	2.92	0.46	12 hr	CloudBurst	526.00
CSO199	11/19/14 7:45 PM	11/19/14 7:45 PM	0.01	0.16	49,107.42	0.43	0.14	1 hr	Atlas	7,857.19
CSO199	12/6/14 3:00 AM	12/6/14 3:15 AM	0.01	1.90	1,138.04	1.55	0.18	48 hr	CloudBurst	2,162.28
CSO199	1/15/15 8:00 PM	1/15/15 8:00 PM	0.01	0.01	927,973.95	0.17	0.01	1 hr	Atlas	9,279.74
CSO199	3/10/15 11:00 AM	3/10/15 12:45 PM	0.01	1.30	4,497.22	2.86	0.59	12 hr	Atlas	5,846.39
CSO199	3/14/15 1:15 AM	3/14/15 4:00 AM	0.16	1.96	835.51	3.20	0.74	24 hr	Atlas	1,637.60
CSO199	3/26/15 4:30 AM	3/26/15 4:30 AM	0.01	0.49	1,013.46	0.50	0.20	12 hr	Atlas	496.59
CSO199	4/2/15 10:45 AM	4/3/15 3:45 PM	0.02	5.52	27,324.85	5.51	20.17	6 hr	Cloudburst	150,833.19
CSO199	4/7/15 9:30 AM	4/7/15 5:15 PM	0.01	0.83	9,939.03	6.34	0.37	1 hr	Atlas	8,249.40
CSO199	4/8/15 6:15 PM	4/8/15 6:15 PM	0.07	0.10	36,331.67	6.45	0.05	6 hr	Atlas	3,633.17
CSO199	4/10/15 2:30 AM	4/10/15 2:30 AM	0.01	0.33	2,638.48	3.44	0.13	24 hr	Atlas	870.70
CSO199	4/19/15 2:30 PM	4/19/15 2:30 PM	0.02	0.60	2,925.85	1.00	0.25	12 hr	Atlas	1,755.51
CSO199	5/17/15 2:15 PM	5/17/15 2:15 PM	0.01	0.08	99,033.86	0.63	0.04	1 hr	Atlas	7,922.71
CSO199	5/26/15 2:00 PM	5/26/15 2:15 PM	0.01	0.28	11,967.52	0.51	0.20	1 hr	Atlas	3,350.91
CSO199	6/17/15 4:45 AM	6/17/15 5:45 AM	0.01	0.63	10,470.27	0.60	0.34	3 hr	Atlas	6,596.27
CSO199	6/18/15 5:15 PM	6/19/15 4:45 PM	0.01	1.75	1,044,881.70	1.86	0.57	48 hr	Atlas	1,828,542.98
CSO199	6/20/15 8:30 PM	6/21/15 8:30 AM	0.01	1.19	9,437.68	2.60	0.51	12 hr	Atlas	11,230.83
CSO199	6/26/15 12:00 AM	6/26/15 12:00 AM	0.07	0.53	4,306.66	1.40	0.29	6 hr	Atlas	2,282.53
CSO199	6/26/15 5:15 PM	6/26/15 5:15 PM	0.11	0.93	2,359.26	2.16	0.52	1 hr	Atlas	2,194.11
CSO199	6/29/15 1:30 PM	6/29/15 1:30 PM	0.01	0.28	2,021.84	1.73	0.21	1 hr	Atlas	566.11
CSO199 Count										36.00
CSO199 Total Volume (GAL)										2,209,026.57
CSO200	7/7/14 7:30 PM	7/7/14 7:30 PM	0.01	0.56	2,140.64	0.83	0.49	1 hr	CloudBurst	1,198.76
CSO200	7/13/14 10:45 PM	7/13/14 11:00 PM	0.01	0.78	2,544.14	1.43	0.39	3 hr	CloudBurst	1,984.43
CSO200	7/26/14 9:45 PM	7/26/14 9:45 PM	0.01	1.16	10,935.76	0.42	0.53	12 hr	CloudBurst	12,685.48
CSO200	8/8/14 6:00 AM	8/8/14 7:15 AM	0.01	0.86	6,450.01	0.68	0.41	6 hr	CloudBurst	5,547.01
CSO200	8/10/14 4:15 AM	8/10/14 4:15 AM	0.01	0.61	218.02	1.61	0.50	1 hr	CloudBurst	132.99
CSO200	8/11/14 3:15 PM	8/11/14 3:30 PM	0.01	0.34	66,888.26	1.91	0.26	1 hr	CloudBurst	22,742.01
CSO200	8/17/14 9:30 AM	8/17/14 9:30 AM	0.04	0.73	530.68	0.84	0.28	24 hr	CloudBurst	387.40
CSO200	8/17/14 11:00 PM	8/17/14 11:00 PM	0.19	0.73	1,820.33	1.07	0.28	24 hr	CloudBurst	1,328.84
CSO200	8/23/14 4:30 PM	8/23/14 8:15 PM	0.01	0.71	82,205.31	1.58	0.37	3 hr	CloudBurst	58,365.77
CSO200	8/30/14 3:15 PM	8/30/14 4:00 PM	0.02	0.56	30,624.94	1.32	0.33	1 hr	CloudBurst	17,149.97
CSO200	9/11/14 12:30 AM	9/11/14 2:30 AM	0.01	1.83	28,562.19	1.53	1.03	3 hr	Atlas14	52,268.81
CSO200	10/6/14 9:45 AM	10/6/14 9:45 AM	0.01	0.20	733.70	0.40	0.08	24 hr	CloudBurst	146.74
CSO200	10/10/14 1:45 AM	10/10/14 3:00 AM	0.01	1.26	3,461.31	1.52	0.57	3 hr	CloudBurst	4,361.25
CSO200	10/13/14 11:30 PM	10/13/14 11:30 PM	0.01	1.03	248.89	2.28	0.46	12 hr	CloudBurst	256.35
CSO200	11/23/14 5:30 PM	11/23/14 6:00 PM	0.05	0.63	223.61	0.82	0.28	12 hr	CloudBurst	140.88
CSO200	12/6/14 2:30 AM	12/6/14 12:00 PM	0.01	1.90	4,056.30	1.55	0.18	48 hr	CloudBurst	7,706.97
CSO200	3/10/15 10:45 AM	3/10/15 12:30 PM	0.01	1.30	4,262.01	2.80	0.59	12 hr	Atlas	5,540.61
CSO200	3/14/15 1:00 AM	3/14/15 1:00 AM	0.01	1.96	50.76	2.77	0.74	24 hr	Atlas	99.49
CSO200	3/26/15 4:15 AM	3/26/15 4:30 AM	0.01	0.49	640.43	0.50	0.20	12 hr	Atlas	313.81
CSO200	4/2/15 10:30 AM	4/2/15 3:15 PM	0.16	5.52	14,576.00	1.03	20.17	6 hr	Cloudburst	80,459.54
CSO200	4/3/15 12:15 AM	4/3/15 3:30 PM	0.03	5.52	95,025.91	5.39	20.17	6 hr	Cloudburst	524,543.05
CSO200	4/7/15 9:15 AM	4/7/15 5:00 PM	0.08	0.83	33,428.70	6.31	0.37	1 hr	Atlas	27,745.82
CSO200	4/8/15 6:00 PM	4/8/15 6:15 PM	0.01	0.10	38,683.75	6.45	0.05	6 hr	Atlas	3,868.38
CSO200	4/9/15 11:30 AM	4/9/15 11:45 AM	0.05	0.33	579.83	6.09	0.13	24 hr	Atlas	191.34
CSO200	4/10/15 2:15 AM	4/10/15 2:15 AM	0.01	0.33	1,082.58	3.58	0.13	24 hr	Atlas	357.25
CSO200	4/10/15 10:45 AM	4/10/15 10:45 AM	0.02	0.33	1,309.97	1.78	0.13	24 hr	Atlas	432.29
CSO200	4/19/15 2:15 PM	4/19/15 2:30 PM	0.40	0.60	598.32	1.00	0.25	12 hr	Atlas	358.99
CSO200	5/17/15 2:15 PM	5/17/15 2:15 PM	0.07	0.08	4,126.30	0.63	0.04	1 hr	Atlas	330.10
CSO200	5/26/15 2:00 PM	5/26/15 2:00 PM	0.01	0.28	2,288.99	0.51	0.20	1 hr	Atlas	640.92

There are known issues with the flow monitoring data quality.
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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO200	6/8/15 8:15 AM	6/8/15 8:15 AM	0.01	0.22	797.06	0.24	0.13	3 hr	Atlas	175.35
CSO200	6/17/15 4:45 AM	6/17/15 5:00 AM	0.20	0.63	4,279.94	0.48	0.34	3 hr	Atlas	2,696.36
CSO200	6/18/15 5:00 PM	6/18/15 6:00 PM	0.64	1.75	74,325.85	1.69	0.57	48 hr	Atlas	130,070.23
CSO200	6/20/15 3:15 AM	6/20/15 7:45 AM	0.32	1.75	128.11	2.63	0.57	48 hr	Atlas	224.19
CSO200	6/25/15 11:45 PM	6/26/15 12:00 AM	0.01	0.53	41,955.11	1.40	0.29	6 hr	Atlas	22,236.21
CSO200	6/26/15 5:00 PM	6/26/15 5:30 PM	0.01	0.93	29,699.01	2.19	0.52	1 hr	Atlas	27,620.07
CSO200	6/29/15 1:15 PM	6/29/15 1:15 PM	0.01	0.28	4,061.05	1.65	0.21	1 hr	Atlas	1,137.09
CSO200 Count										36.00
CSO200 Total Volume (GAL)										1,015,444.75
CSO202	7/7/14 7:30 PM	7/7/14 7:30 PM	0.01	0.56	27,735.47	0.83	0.49	1 hr	CloudBurst	15,531.86
CSO202	7/26/14 9:45 PM	7/26/14 9:45 PM	0.01	1.16	10,879.00	0.42	0.53	12 hr	CloudBurst	12,619.64
CSO202	8/8/14 5:45 AM	8/8/14 7:15 AM	0.01	0.86	10,304.50	0.68	0.41	6 hr	CloudBurst	8,861.87
CSO202	8/11/14 3:30 PM	8/11/14 3:30 PM	0.01	0.34	12,746.23	1.91	0.26	1 hr	CloudBurst	4,333.72
CSO202	8/17/14 9:30 AM	8/17/14 9:30 AM	0.01	0.73	2,593.24	0.84	0.28	24 hr	CloudBurst	1,893.06
CSO202	8/17/14 11:00 PM	8/17/14 11:00 PM	0.01	0.73	5,193.64	1.07	0.28	24 hr	CloudBurst	3,791.35
CSO202	8/22/14 7:15 PM	8/22/14 7:15 PM	0.05	0.33	9,131.85	1.04	0.25	1 hr	CloudBurst	3,013.51
CSO202	8/23/14 4:30 PM	8/23/14 8:15 PM	0.01	0.71	35,801.59	1.58	0.37	3 hr	CloudBurst	25,419.13
CSO202	8/30/14 3:15 PM	8/30/14 3:15 PM	0.01	0.56	10,744.61	1.25	0.33	1 hr	CloudBurst	6,016.98
CSO202	9/11/14 12:30 AM	9/11/14 2:15 AM	0.01	1.83	9,954.69	1.52	1.03	3 hr	Atlas14	18,217.08
CSO202	10/10/14 1:45 AM	10/10/14 1:45 AM	0.01	1.26	775.41	0.93	0.57	3 hr	CloudBurst	977.01
CSO202	3/10/15 12:15 PM	3/10/15 12:15 PM	0.01	1.30	1,380.87	2.76	0.59	12 hr	Atlas	1,795.14
CSO202	3/26/15 4:15 AM	3/26/15 4:15 AM	0.06	0.49	1,345.26	0.45	0.20	12 hr	Atlas	659.18
CSO202	4/2/15 10:30 AM	4/2/15 3:15 PM	0.01	5.52	5,828.40	1.03	20.17	6 hr	Cloudburst	32,172.78
CSO202	4/3/15 12:15 AM	4/3/15 4:30 AM	0.01	5.52	13,457.46	4.14	20.17	6 hr	Cloudburst	74,285.18
CSO202	4/3/15 3:30 PM	4/3/15 3:30 PM	0.01	5.52	249.20	5.39	20.17	6 hr	Cloudburst	1,375.58
CSO202	4/7/15 9:15 AM	4/7/15 5:00 PM	0.01	0.83	20,956.75	6.31	0.37	1 hr	Atlas	17,394.10
CSO202	4/9/15 11:30 AM	4/9/15 11:30 AM	0.16	0.33	1,589.43	6.06	0.13	24 hr	Atlas	524.51
CSO202	5/16/15 11:30 AM	5/16/15 11:30 AM	0.01	0.50	3,022.60	0.35	0.24	3 hr	Atlas	1,511.30
CSO202	5/17/15 2:15 PM	5/17/15 2:15 PM	0.07	0.08	24,366.93	0.63	0.04	1 hr	Atlas	1,949.35
CSO202	5/26/15 2:00 PM	5/26/15 2:00 PM	0.01	0.28	13,990.14	0.51	0.20	1 hr	Atlas	3,917.24
CSO202	6/8/15 8:15 AM	6/8/15 8:15 AM	0.01	0.22	3,058.66	0.24	0.13	3 hr	Atlas	672.91
CSO202	6/17/15 4:45 AM	6/17/15 4:45 AM	0.01	0.63	4,146.83	0.43	0.34	3 hr	Atlas	2,612.50
CSO202	6/18/15 4:00 PM	6/18/15 5:15 PM	0.20	1.75	14,933.70	1.50	0.57	48 hr	Atlas	26,133.97
CSO202	6/25/15 11:45 PM	6/25/15 11:45 PM	0.18	0.53	15,821.88	1.39	0.29	6 hr	Atlas	8,385.59
CSO202	6/26/15 5:00 PM	6/26/15 5:00 PM	0.01	0.93	14,911.55	2.08	0.52	1 hr	Atlas	13,867.74
CSO202	6/29/15 1:15 PM	6/29/15 1:15 PM	0.32	0.28	5,843.94	1.65	0.21	1 hr	Atlas	1,636.30
CSO202 Count										27.00
CSO202 Total Volume (GAL)										289,568.61
CSO203	7/2/14 5:00 PM	7/3/14 2:30 AM	0.13	0.10	179,119.27	0.32	0.09	1 hr	CloudBurst	17,911.93
CSO203	7/7/14 7:30 PM	7/7/14 9:30 PM	0.01	0.56	33,968.49	0.85	0.49	1 hr	CloudBurst	19,022.35
CSO203	7/8/14 8:30 AM	7/8/14 11:00 AM	0.01	0.30	12,091.74	1.15	0.26	1 hr	CloudBurst	3,627.52
CSO203	7/13/14 10:30 PM	7/15/14 2:15 AM	0.01	0.78	61,451.99	1.82	0.39	3 hr	CloudBurst	47,932.55
CSO203	7/26/14 9:45 PM	7/27/14 11:30 AM	0.01	1.16	95,391.72	1.19	0.53	12 hr	CloudBurst	110,654.39
CSO203	8/8/14 5:45 AM	8/8/14 4:00 PM	0.01	0.86	95,367.39	0.93	0.41	6 hr	CloudBurst	82,015.96
CSO203	8/10/14 4:15 AM	8/10/14 4:30 AM	0.01	0.61	5,061.25	1.61	0.50	1 hr	CloudBurst	3,087.36
CSO203	8/11/14 3:15 PM	8/11/14 3:30 PM	0.02	0.34	13,153.31	1.91	0.26	1 hr	CloudBurst	4,472.13
CSO203	8/23/14 4:30 PM	8/24/14 11:00 AM	0.34	0.71	150,351.03	1.79	0.37	3 hr	CloudBurst	106,749.23
CSO203	8/27/14 5:15 PM	8/28/14 9:15 AM	0.01	0.20	143,194.58	1.27	0.16	1 hr	CloudBurst	28,638.92
CSO203	8/30/14 3:15 PM	8/31/14 10:45 AM	0.98	0.56	125,840.77	1.50	0.33	1 hr	CloudBurst	70,470.83
CSO203	9/11/14 12:45 AM	9/12/14 3:15 AM	0.48	1.83	87,369.18	1.83	1.03	3 hr	Atlas14	159,885.60
CSO203	10/6/14 7:45 AM	10/7/14 2:30 AM	0.40	0.20	315,621.56	0.45	0.08	24 hr	CloudBurst	63,124.31
CSO203	10/7/14 11:45 AM	10/7/14 12:30 PM	0.08	0.20	12,473.96	0.64	0.16	1 hr	CloudBurst	2,494.79
CSO203	10/10/14 1:45 AM	10/10/14 7:30 AM	0.10	1.26	27,072.66	1.56	0.57	3 hr	CloudBurst	34,111.55
CSO203	10/10/14 9:00 PM	10/11/14 8:15 AM	1.16	1.26	4,971.53	1.66	0.57	3 hr	CloudBurst	6,264.12
CSO203	10/13/14 4:15 AM	10/13/14 10:15 AM	0.57	0.51	29,714.99	2.18	0.33	3 hr	CloudBurst	15,154.65

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO203	3/10/15 12:30 PM	3/10/15 12:30 PM	0.43	1.30	2,308.68	2.80	0.59	12 hr	Atlas	3,001.28
CSO203	4/2/15 3:00 PM	4/2/15 3:15 PM	0.01	5.52	10,397.33	0.94	20.17	6 hr	Cloudburst	57,393.25
CSO203	4/3/15 12:15 AM	4/3/15 3:15 AM	0.01	5.52	31,125.71	3.79	20.17	6 hr	Cloudburst	171,813.93
CSO203	4/7/15 9:30 AM	4/7/15 9:30 AM	0.77	0.83	5,584.34	6.08	0.37	1 hr	Atlas	4,635.00
CSO203	4/8/15 6:15 PM	4/8/15 6:15 PM	0.67	0.10	14,815.63	6.45	0.05	6 hr	Atlas	1,481.56
CSO203	4/9/15 11:30 AM	4/9/15 11:30 AM	0.81	0.33	6,563.95	6.06	0.13	24 hr	Atlas	2,166.10
CSO203	5/17/15 2:15 PM	5/17/15 2:15 PM	1.10	0.08	209,837.50	0.63	0.04	1 hr	Atlas	16,787.00
CSO203	5/26/15 2:00 PM	5/26/15 2:00 PM	0.78	0.28	6,556.18	0.51	0.20	1 hr	Atlas	1,835.73
CSO203	6/17/15 4:45 AM	6/17/15 4:45 AM	0.03	0.63	921.64	0.43	0.34	3 hr	Atlas	580.64
CSO203	6/18/15 5:15 PM	6/18/15 5:45 PM	0.24	1.75	5,249.04	1.68	0.57	48 hr	Atlas	9,185.82
CSO203	6/20/15 11:15 AM	6/20/15 7:30 PM	0.47	1.75	4,931.55	2.68	0.57	48 hr	Atlas	8,630.22
CSO203	6/26/15 12:00 AM	6/26/15 12:00 AM	0.25	0.53	5,771.86	1.40	0.29	6 hr	Atlas	3,059.08
CSO203	6/26/15 5:15 PM	6/27/15 4:45 PM	0.01	0.93	289,935.73	2.53	0.52	1 hr	Atlas	269,640.23
CSO203	6/29/15 3:15 PM	6/30/15 2:45 AM	0.01	0.28	40,039.92	1.74	0.21	1 hr	Atlas	11,211.18
CSO203 Count										31.00
CSO203 Total Volume (GAL)										1,337,039.23
CSO205	8/11/14 3:15 PM	8/11/14 3:15 PM	0.01	0.42	3,905.95	1.84	0.30	1 hr	CloudBurst	1,640.50
CSO205	8/23/14 4:30 PM	8/23/14 8:00 PM	0.01	0.72	2,371.89	1.46	0.34	6 hr	CloudBurst	1,707.76
CSO205	8/27/14 3:00 PM	8/27/14 4:45 PM	0.01	0.30	7,153.44	1.22	0.19	3 hr	CloudBurst	2,146.03
CSO205	8/30/14 3:00 PM	8/30/14 3:00 PM	0.01	0.58	2,871.08	1.41	0.37	1 hr	CloudBurst	1,665.23
CSO205	9/2/14 8:15 AM	9/2/14 8:15 AM	0.14	0.36	1,511.14	1.11	0.22	3 hr	CloudBurst	544.01
CSO205	9/11/14 12:30 AM	9/11/14 2:15 AM	0.01	1.99	2,418.44	1.68	1.57	3 hr	Atlas14	4,812.70
CSO205	10/10/14 1:45 AM	10/10/14 1:45 AM	0.01	1.06	191.35	0.78	0.50	1 hr	CloudBurst	202.83
CSO205	10/13/14 11:30 PM	10/13/14 11:30 PM	0.15	1.12	190.33	1.93	0.50	12 hr	CloudBurst	213.17
CSO205	12/6/14 3:00 AM	12/6/14 3:00 AM	0.07	1.90	104.13	1.49	0.18	48 hr	CloudBurst	197.85
CSO205	3/10/15 12:30 PM	3/10/15 12:30 PM	0.01	1.37	115.63	2.78	0.62	12 hr	Atlas	158.42
CSO205	4/2/15 3:15 PM	4/2/15 3:15 PM	0.01	5.66	31.62	0.90	27.08	6 hr	Cloudburst	178.95
CSO205	4/3/15 12:15 AM	4/3/15 3:30 PM	0.07	5.66	2,488.10	5.56	27.08	6 hr	Cloudburst	14,082.66
CSO205	5/17/15 2:15 PM	5/17/15 2:15 PM	0.01	0.15	3,160.69	0.60	0.10	1 hr	Atlas	474.10
CSO205	5/26/15 1:45 PM	5/26/15 2:00 PM	0.01	0.46	1,600.97	0.67	0.35	1 hr	Atlas	736.45
CSO205	6/17/15 4:45 AM	6/17/15 4:45 AM	0.01	0.74	386.63	0.70	0.39	3 hr	Atlas	286.10
CSO205	6/18/15 5:00 PM	6/18/15 5:15 PM	0.01	1.97	2,884.21	1.78	0.64	48 hr	Atlas	5,681.90
CSO205	6/20/15 4:45 AM	6/20/15 8:00 AM	0.01	1.97	381.04	3.16	0.64	48 hr	Atlas	750.66
CSO205	6/26/15 5:15 PM	6/26/15 5:15 PM	0.64	0.78	264.22	2.25	0.41	1 hr	Atlas	206.09
CSO205 Count										18.00
CSO205 Total Volume (GAL)										35,685.41
CSO206	7/1/14 10:15 PM	7/1/14 10:45 PM	0.91	0.16	352,241.43	0.24	0.26	3 hr	CloudBurst	56,358.63
CSO206	7/2/14 4:15 PM	7/2/14 5:15 PM	0.06	0.20	891,266.68	0.44	0.73	1 hr	CloudBurst	178,253.34
CSO206	7/7/14 7:45 PM	7/7/14 8:15 PM	0.02	0.61	174,060.56	0.97	0.21	1 hr	CloudBurst	106,176.94
CSO206	7/13/14 10:00 PM	7/14/14 4:30 AM	0.24	0.70	2,567,339.80	1.56	0.30	1 hr	CloudBurst	1,797,137.86
CSO206	7/14/14 7:00 PM	7/14/14 8:45 PM	1.60	0.06	1,534,790.58	1.66	0.08	24 hr	Atlas14	92,087.44
CSO206	7/26/14 9:45 PM	7/27/14 9:45 AM	0.09	1.35	1,714,880.97	1.36	0.56	12 hr	CloudBurst	2,315,089.31
CSO206	8/8/14 5:45 AM	8/8/14 11:15 AM	0.01	1.03	578,697.72	1.00	0.58	3 hr	CloudBurst	596,058.66
CSO206	8/9/14 4:00 AM	8/9/14 4:30 AM	0.01	0.07	1,592,114.16	1.07	0.03	12 hr	CloudBurst	111,447.99
CSO206	8/10/14 4:00 AM	8/10/14 4:30 AM	0.20	0.09	850,664.02	1.19	0.28	1 hr	CloudBurst	76,559.76
CSO206	8/11/14 3:30 PM	8/11/14 4:15 PM	0.02	0.38	1,093,254.13	1.53	0.22	1 hr	CloudBurst	415,436.57
CSO206	8/16/14 11:45 PM	8/17/14 1:00 AM	0.01	0.68	261,897.67	0.77	0.26	24 hr	CloudBurst	178,090.41
CSO206	8/17/14 9:45 AM	8/17/14 11:00 AM	0.01	0.68	415,003.61	0.96	0.26	24 hr	CloudBurst	282,202.46
CSO206	8/17/14 8:30 PM	8/17/14 9:00 PM	0.01	0.68	44,004.82	1.05	0.26	24 hr	CloudBurst	29,923.28
CSO206	8/20/14 4:00 PM	8/20/14 4:30 PM	0.01	0.03	2,704,019.64	0.71	0.01	6 hr	CloudBurst	81,120.59
CSO206	8/22/14 7:15 PM	8/22/14 8:00 PM	0.06	0.58	5,034,449.34	1.17	0.92	1 hr	CloudBurst	2,919,980.62
CSO206	8/23/14 3:30 PM	8/23/14 10:15 PM	0.01	0.77	5,506,723.36	2.01	0.54	6 hr	CloudBurst	4,240,176.99
CSO206	8/27/14 4:45 PM	8/27/14 5:45 PM	0.04	0.59	2,051,531.56	1.94	0.75	3 hr	Atlas14	1,210,403.62
CSO206	8/30/14 3:15 PM	8/30/14 4:00 PM	0.06	0.41	126,416.63	1.54	0.09	3 hr	CloudBurst	51,830.82
CSO206	9/2/14 8:15 AM	9/2/14 9:45 AM	0.58	0.41	861,491.02	1.40	0.27	3 hr	CloudBurst	353,211.32

There are known issues with the flow monitoring data quality.
MSD is currently working on resolving these issues.

CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO206	9/11/14 12:30 AM	9/11/14 6:45 AM	0.11	1.66	1,030,616.21	1.62	4.57	3 hr	Atlas14	1,710,822.91
CSO206	10/3/14 7:15 PM	10/3/14 8:45 PM	0.02	0.18	130,802.89	0.34	0.07	3 hr	CloudBurst	23,544.52
CSO206	10/6/14 8:00 AM	10/6/14 8:15 AM	0.04	0.15	95,054.38	0.27	0.06	24 hr	CloudBurst	14,258.16
CSO206	10/7/14 11:45 AM	10/7/14 12:15 PM	0.02	0.16	147,791.82	0.50	0.13	1 hr	CloudBurst	23,646.69
CSO206	10/10/14 2:30 AM	10/10/14 3:15 AM	0.27	0.90	170,829.70	1.13	0.42	3 hr	Atlas14	153,746.73
CSO206	10/10/14 5:15 PM	10/10/14 5:45 PM	0.07	0.90	19,503.48	1.22	0.42	3 hr	Atlas14	17,553.14
CSO206	10/13/14 4:45 AM	10/13/14 6:45 AM	0.50	0.51	137,623.62	1.73	0.32	3 hr	CloudBurst	70,188.04
CSO206	10/13/14 11:45 PM	10/14/14 10:30 AM	0.23	1.35	106,259.70	2.94	0.61	12 hr	CloudBurst	143,450.59
CSO206	11/23/14 5:45 PM	11/23/14 8:15 PM	0.02	0.83	103,396.92	1.13	0.39	6 hr	CloudBurst	85,819.44
CSO206	12/1/14 3:00 AM	12/1/14 5:00 AM	0.02	0.72	93,195.79	0.35	0.28	24 hr	CloudBurst	67,100.97
CSO206	12/1/14 2:30 PM	12/1/14 3:15 PM	0.03	0.72	22,178.83	0.65	0.28	24 hr	CloudBurst	15,968.76
CSO206	12/5/14 6:15 AM	12/5/14 6:45 AM	0.05	0.68	35,615.79	1.23	0.22	48 hr	CloudBurst	24,218.74
CSO206	12/5/14 11:15 PM	12/6/14 6:45 AM	0.05	0.68	353,320.79	1.40	0.22	48 hr	CloudBurst	240,258.14
CSO206	12/22/14 10:30 PM	12/23/14 12:00 AM	0.02	0.26	29,398.36	-	0.14	3 hr	CloudBurst	7,643.57
CSO206	12/23/14 8:15 PM	12/23/14 8:15 PM	0.02	0.12	45,160.59	-	0.08	1 hr	CloudBurst	5,419.27
CSO206	12/24/14 1:30 PM	12/24/14 1:45 PM	0.03	0.19	94,338.26	-	0.16	3 hr	CloudBurst	17,924.27
CSO206	12/28/14 1:15 AM	12/28/14 1:30 AM	0.28	0.32	34,041.86	-	0.30	1 hr	CloudBurst	10,893.40
CSO206	1/3/15 10:45 AM	1/3/15 11:00 AM	0.04	0.45	22,424.21	0.20	0.17	24 hr	Atlas	10,090.90
CSO206	1/4/15 3:30 AM	1/4/15 4:00 AM	0.03	0.45	32,336.20	0.46	0.17	24 hr	Atlas	14,551.29
CSO206	2/1/15 12:15 PM	2/1/15 6:00 PM	0.06	0.38	132,002.39	0.49	0.17	12 hr	Atlas	50,160.91
CSO206	2/21/15 1:30 PM	2/21/15 4:45 PM	0.26	1.08	59,564.92	1.18	0.42	24 hr	Atlas	64,330.11
CSO206	3/3/15 6:45 PM	3/4/15 5:00 PM	0.06	1.70	454,737.14	1.34	0.55	24 hr	Atlas	773,053.13
CSO206	3/7/15 2:30 PM	3/7/15 4:45 PM	0.01	0.04	1,369,827.89	1.74	0.03	1 hr	Atlas	54,793.11
CSO206	3/10/15 6:45 AM	3/10/15 3:15 PM	0.02	1.17	218,052.70	2.87	0.53	12 hr	Atlas	255,121.66
CSO206	3/13/15 8:30 AM	3/14/15 6:15 AM	0.03	1.55	316,288.32	2.69	0.58	24 hr	Atlas	490,246.90
CSO206	3/26/15 5:00 AM	3/26/15 6:30 AM	0.02	0.42	71,525.20	0.55	0.18	3 hr	Atlas	30,040.58
CSO206	3/26/15 3:30 PM	3/26/15 4:00 PM	0.08	0.42	33,435.94	0.63	0.18	3 hr	Atlas	14,043.09
CSO206	4/2/15 10:00 AM	4/2/15 3:45 PM	0.45	5.22	36,593.88	1.08	14.07	6 hr	Cloudburst	191,020.06
CSO206	4/3/15 12:15 AM	4/4/15 2:45 PM	0.10	5.22	2,814,131.44	5.25	14.07	6 hr	Cloudburst	14,689,766.09
CSO206	4/7/15 7:30 AM	4/7/15 9:45 AM	0.08	0.64	347,019.11	5.65	0.27	12 hr	Atlas	222,092.23
CSO206	4/8/15 6:00 PM	4/8/15 6:00 PM	0.03	0.14	1,683,800.22	5.99	0.08	3 hr	Atlas	235,732.03
CSO206	4/9/15 11:45 AM	4/9/15 11:45 AM	0.02	0.40	191,796.78	6.01	0.35	1 hr	Atlas	76,718.71
CSO206	4/14/15 7:30 AM	4/14/15 12:15 PM	0.31	0.54	480,436.68	1.75	0.21	24 hr	Atlas	259,435.81
CSO206	4/16/15 10:15 AM	4/16/15 10:45 AM	0.06	0.07	554,935.25	1.18	0.05	1 hr	Atlas	38,845.47
CSO206	4/25/15 9:15 AM	4/25/15 9:15 AM	0.01	0.10	64,786.15	1.00	0.05	6 hr	Atlas	6,478.62
CSO206	4/25/15 7:15 PM	4/25/15 7:15 PM	0.01	0.05	73,017.50	1.02	0.03	3 hr	Atlas	3,650.88
CSO206	5/9/15 3:45 AM	5/9/15 3:45 AM	0.01	0.16	22,230.53	0.08	0.10	3 hr	Atlas	3,556.89
CSO206	5/16/15 12:45 PM	5/16/15 1:00 PM	0.01	0.34	23,340.01	0.39	0.14	3 hr	Atlas	7,935.60
CSO206	5/25/15 6:45 AM	5/25/15 8:15 AM	0.02	0.31	42,917.64	0.23	0.14	12 hr	Atlas	13,304.47
CSO206	6/1/15 8:45 AM	6/1/15 8:45 AM	0.24	0.16	17,252.08	0.73	0.09	6 hr	Atlas	2,760.33
CSO206	6/17/15 5:45 AM	6/17/15 6:45 AM	0.14	0.64	29,221.74	0.90	0.36	3 hr	Atlas	18,701.92
CSO206	6/18/15 5:00 PM	6/18/15 6:30 PM	0.93	2.34	820,901.32	1.85	0.76	48 hr	Atlas	1,920,909.10
CSO206	6/19/15 9:00 PM	6/20/15 11:00 AM	0.09	2.34	67,707.98	3.35	0.76	48 hr	Atlas	158,436.68
CSO206	6/25/15 11:45 PM	6/26/15 2:30 AM	0.35	0.59	347,769.50	2.13	0.31	6 hr	Atlas	205,184.01
CSO206 Count										63.00
CSO206 Total Volume (GAL)										37,534,964.51
CSO207	7/1/14 7:45 PM	7/2/14 8:15 AM	0.38	0.22	27,084.47	0.26	0.14	3 hr	CloudBurst	5,958.58
CSO207	7/2/14 5:30 PM	7/3/14 12:45 AM	0.82	0.12	19,873.26	0.37	0.10	1 hr	CloudBurst	2,384.79
CSO207	7/7/14 7:15 PM	7/8/14 12:30 PM	1.58	0.48	47,795.96	1.14	0.42	1 hr	CloudBurst	22,942.06
CSO207	7/13/14 11:30 PM	7/15/14 3:00 PM	1.21	0.74	31,092.20	1.89	0.37	1 hr	CloudBurst	23,008.23
CSO207	7/18/14 9:45 PM	7/18/14 11:30 PM	0.67	0.01	122,137.50	1.10	0.01	6 hr	CloudBurst	1,221.38
CSO207	7/23/14 11:30 AM	7/23/14 12:00 PM	1.32	0.03	4,909.72	0.04	0.03	1 hr	CloudBurst	147.29
CSO207	7/26/14 9:15 PM	7/28/14 9:45 AM	0.15	0.99	76,945.06	1.03	0.44	12 hr	CloudBurst	76,175.61
CSO207	8/8/14 4:15 AM	8/8/14 2:15 PM	1.26	0.80	28,919.99	0.80	0.35	6 hr	CloudBurst	23,135.99
CSO207	8/9/14 4:30 AM	8/9/14 1:45 PM	0.79	0.09	46,118.94	0.86	0.04	1 hr	Atlas14	13,481.17

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO207	8/10/14 3:30 AM	8/10/14 10:00 AM	0.42	0.91	61,109.87	1.77	0.75	1 hr	CloudBurst	55,609.98
CSO207	8/11/14 3:30 PM	8/12/14 10:00 AM	0.40	0.43	6,732.39	2.20	0.36	1 hr	CloudBurst	2,894.93
CSO207	8/16/14 6:30 PM	8/18/14 11:30 AM	0.94	0.72	62,246.91	2.06	0.28	24 hr	CloudBurst	44,817.77
CSO207	8/20/14 3:30 PM	8/20/14 5:45 PM	1.19	0.04	37,654.43	0.76	0.03	3 hr	CloudBurst	1,506.18
CSO207	8/22/14 7:00 PM	8/24/14 10:45 AM	0.79	0.29	224,529.17	1.78	0.22	1 hr	CloudBurst	65,113.46
CSO207	8/26/14 8:45 PM	8/28/14 11:15 AM	0.34	0.06	131,204.51	1.24	0.05	1 hr	CloudBurst	7,872.27
CSO207	8/30/14 3:00 PM	8/31/14 2:30 PM	0.41	0.58	82,957.54	1.49	0.37	1 hr	CloudBurst	48,115.37
CSO207	9/2/14 6:15 AM	9/3/14 8:15 AM	0.01	0.45	14,208.12	1.21	0.22	3 hr	CloudBurst	6,393.66
CSO207	9/10/14 10:45 PM	9/12/14 12:45 AM	0.31	1.88	36,648.91	1.88	1.27	3 hr	Atlas14	68,899.95
CSO207	9/15/14 10:30 PM	9/16/14 4:30 AM	0.46	0.07	191,130.66	1.95	0.06	1 hr	CloudBurst	13,379.15
CSO207	9/21/14 6:45 AM	9/21/14 9:00 AM	0.23	0.02	25,277.60	0.09	0.02	1 hr	CloudBurst	505.55
CSO207	10/6/14 7:00 AM	10/8/14 11:30 PM	0.52	0.21	168,607.14	0.71	0.09	6 hr	CloudBurst	35,407.50
CSO207	10/10/14 1:30 AM	10/11/14 12:15 PM	0.30	1.17	34,002.27	1.89	0.52	3 hr	CloudBurst	39,782.66
CSO207	10/11/14 9:45 PM	10/12/14 9:15 AM	0.72	0.01	25,395.83	1.66	0.01	6 hr	CloudBurst	253.96
CSO207	10/13/14 4:00 AM	10/16/14 12:15 PM	1.65	0.44	223,583.89	3.28	0.28	3 hr	CloudBurst	98,376.91
CSO207	10/20/14 7:30 AM	10/21/14 1:45 PM	0.07	0.08	185,571.76	1.30	0.06	1 hr	CloudBurst	14,845.74
CSO207	10/28/14 10:30 AM	10/28/14 10:00 PM	0.02	0.15	38,679.17	0.15	0.09	3 hr	CloudBurst	5,801.87
CSO207	10/31/14 4:00 AM	11/1/14 1:30 PM	1.52	0.17	226,051.16	0.32	0.06	48 hr	CloudBurst	38,428.70
CSO207	11/4/14 8:45 PM	11/6/14 10:30 PM	0.42	0.12	290,983.69	0.31	0.06	12 hr	CloudBurst	34,918.04
CSO207	11/11/14 4:15 PM	11/12/14 3:00 AM	0.39	0.07	736,295.84	0.20	0.03	24 hr	CloudBurst	51,540.71
CSO207	11/16/14 7:30 PM	11/17/14 11:45 PM	0.27	0.16	1,247,673.80	0.45	0.14	6 hr	CloudBurst	199,627.81
CSO207	11/19/14 12:30 PM	11/20/14 2:00 AM	0.77	0.12	318,201.82	0.38	0.10	1 hr	Atlas	38,184.22
CSO207	11/22/14 5:00 AM	11/22/14 10:15 PM	1.71	0.01	9,405,838.73	0.39	0.01	6 hr	CloudBurst	94,058.39
CSO207	11/23/14 5:15 PM	11/24/14 2:00 PM	0.09	0.72	94,080.46	1.10	0.31	12 hr	CloudBurst	67,737.93
CSO207	12/1/14 1:45 AM	12/2/14 1:00 PM	1.66	0.88	87,675.38	0.93	0.34	24 hr	CloudBurst	77,154.33
CSO207	12/4/14 8:15 AM	12/6/14 6:30 PM	1.60	0.69	164,804.61	1.57	0.22	48 hr	Atlas	113,715.18
CSO207	12/16/14 3:15 AM	12/16/14 3:30 PM	0.98	0.09	186,793.31	-	0.05	3 hr	CloudBurst	16,811.40
CSO207	12/22/14 11:15 PM	12/25/14 2:45 PM	1.08	0.22	465,920.64	-	0.14	3 hr	CloudBurst	102,502.54
CSO207	12/27/14 8:00 AM	12/28/14 8:00 PM	1.08	0.32	166,621.10	-	0.27	1 hr	CloudBurst	53,318.75
CSO207	1/2/15 4:00 AM	1/2/15 3:30 PM	0.25	0.01	657,916.76	0.01	0.01	1 hr	Atlas	6,579.17
CSO207	1/2/15 11:45 PM	1/4/15 9:45 AM	0.09	0.36	212,882.47	0.37	0.13	24 hr	Atlas	76,637.69
CSO207	1/11/15 5:00 PM	1/13/15 1:00 PM	2.69	0.16	470,464.73	0.17	0.06	24 hr	Atlas	75,274.36
CSO207	1/18/15 3:15 AM	1/18/15 1:45 PM	1.45	0.10	166,298.03	0.26	0.09	1 hr	Atlas	16,629.80
CSO207	1/25/15 1:00 PM	1/26/15 5:15 AM	0.48	0.16	316,246.56	0.22	0.07	12 hr	Atlas	50,599.45
CSO207	1/29/15 5:00 AM	1/29/15 2:00 PM	3.34	0.05	633,919.60	0.27	0.03	3 hr	Atlas	31,695.98
CSO207	2/1/15 11:15 AM	2/2/15 7:00 AM	1.26	0.42	106,494.87	0.63	0.19	3 hr	Atlas	44,727.84
CSO207	3/13/15 8:45 AM	3/14/15 10:45 PM	0.48	1.90	58,017.66	3.12	0.72	24 hr	Atlas	110,233.55
CSO207	3/19/15 8:00 AM	3/20/15 1:00 PM	1.40	0.20	214,821.26	2.10	0.08	12 hr	Atlas	42,964.25
CSO207	3/24/15 2:00 PM	3/25/15 6:00 AM	2.07	0.14	144,205.21	0.34	0.09	1 hr	Atlas	20,188.73
CSO207	3/26/15 4:00 AM	3/27/15 11:45 AM	0.45	0.52	50,758.09	0.86	0.22	3 hr	Atlas	26,394.21
CSO207	3/29/15 11:00 PM	3/30/15 2:30 AM	1.18	0.01	459,162.52	0.68	0.01	1 hr	Atlas	4,591.63
CSO207	4/2/15 9:45 AM	4/3/15 4:00 PM	0.56	5.15	43,564.75	5.23	10.13	24 hr	Cloudburst	224,358.48
CSO207	4/7/15 4:30 AM	4/7/15 11:30 PM	0.72	0.90	46,118.94	6.05	0.45	1 hr	Atlas	41,507.04
CSO207	4/8/15 4:30 PM	4/9/15 2:30 AM	0.86	0.17	8,893.44	6.22	0.13	1 hr	Atlas	1,511.89
CSO207	4/9/15 1:00 PM	4/9/15 10:30 PM	1.47	0.10	7,281.35	5.81	0.08	1 hr	Atlas	728.14
CSO207	5/17/15 2:30 PM	5/18/15 1:00 PM	2.43	0.04	21,117.71	0.75	0.03	1 hr	Atlas	844.71
CSO207	5/26/15 2:15 PM	5/27/15 6:45 PM	0.51	0.16	10,965.69	0.55	0.10	1 hr	Atlas	1,754.51
CSO207	5/30/15 4:15 PM	5/31/15 11:15 AM	2.65	0.07	24,691.67	0.61	0.03	1 hr	Atlas	1,728.42
CSO207	6/1/15 5:45 AM	6/1/15 2:00 PM	1.50	0.11	15,857.48	0.68	0.05	6 hr	Atlas	1,744.32
CSO207	6/8/15 5:30 AM	6/8/15 3:15 PM	0.48	0.24	28,864.97	0.34	0.13	6 hr	Atlas	6,927.59
CSO207	6/13/15 2:30 PM	6/13/15 2:30 PM	1.92	0.02	953.65	0.26	0.02	1 hr	Atlas	19.07

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CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO207	6/17/15 3:45 AM	6/17/15 11:15 AM	1.83	0.67	776.55	0.69	0.39	3 hr	Atlas	520.29
CSO207	6/18/15 4:15 PM	6/19/15 3:15 AM	0.44	1.53	7,207.43	1.31	0.50	48 hr	Atlas	11,027.36
CSO207	6/26/15 7:00 PM	6/27/15 12:30 AM	0.68	0.89	4,953.28	2.44	0.46	1 hr	Atlas	4,408.42
CSO207 Count										63.00
CSO207 Total Volume (GAL)										2,369,626.92
CSO208	7/1/14 9:45 PM	7/1/14 10:15 PM	0.20	0.22	2,118.42	0.26	0.14	3 hr	CloudBurst	466.05
CSO208	7/2/14 4:00 PM	7/2/14 4:15 PM	0.49	0.10	10,653.65	0.36	0.09	1 hr	CloudBurst	1,065.36
CSO208	7/7/14 7:30 PM	7/7/14 7:30 PM	0.01	0.40	25,671.56	0.71	0.35	1 hr	CloudBurst	10,268.63
CSO208	7/13/14 10:30 PM	7/14/14 4:00 AM	0.02	0.74	44,878.63	1.36	0.38	1 hr	CloudBurst	33,210.19
CSO208	7/14/14 7:00 PM	7/14/14 8:15 PM	0.01	0.26	5,019.59	1.73	0.18	1 hr	CloudBurst	1,305.09
CSO208	7/26/14 9:30 PM	7/26/14 10:15 PM	0.01	0.81	41,919.83	0.44	0.37	12 hr	CloudBurst	33,955.06
CSO208	7/27/14 6:45 AM	7/27/14 7:45 AM	0.10	0.81	599.11	0.82	0.37	12 hr	CloudBurst	485.28
CSO208	8/8/14 5:15 AM	8/8/14 7:30 AM	0.01	0.82	49,859.58	0.63	0.39	6 hr	CloudBurst	40,884.86
CSO208	8/10/14 3:45 AM	8/10/14 4:45 AM	0.08	0.48	131,494.92	1.40	0.35	1 hr	CloudBurst	63,117.56
CSO208	8/11/14 3:00 PM	8/11/14 3:15 PM	0.01	0.33	5,329.42	1.72	0.27	1 hr	CloudBurst	1,758.71
CSO208	8/17/14 9:30 AM	8/17/14 10:15 AM	0.01	0.69	1,201.03	0.91	0.27	24 hr	CloudBurst	828.71
CSO208	8/17/14 11:00 PM	8/17/14 11:00 PM	0.01	0.69	569.67	1.02	0.27	24 hr	CloudBurst	393.07
CSO208	8/22/14 7:00 PM	8/22/14 7:00 PM	0.06	0.48	67,724.87	1.12	0.37	1 hr	CloudBurst	32,507.94
CSO208	8/23/14 3:30 PM	8/23/14 9:30 PM	0.08	0.94	54,939.75	2.03	0.50	3 hr	CloudBurst	51,643.37
CSO208	8/26/14 7:45 PM	8/26/14 8:00 PM	0.01	0.07	4,441.96	1.51	0.06	1 hr	CloudBurst	310.94
CSO208	8/27/14 5:00 PM	8/27/14 5:15 PM	0.03	0.18	3,017.65	1.67	0.15	1 hr	CloudBurst	543.18
CSO208	8/30/14 3:00 PM	8/30/14 4:00 PM	0.28	0.76	38,969.19	1.72	0.44	1 hr	CloudBurst	29,616.58
CSO208	9/2/14 8:15 AM	9/2/14 3:30 PM	0.01	0.48	3,235.72	1.49	0.28	3 hr	CloudBurst	1,553.15
CSO208	9/11/14 12:00 AM	9/11/14 5:45 AM	0.05	1.92	50,092.88	1.83	1.10	3 hr	Atlas14	96,178.32
CSO208	9/15/14 10:30 PM	9/15/14 10:30 PM	0.29	0.08	15,665.89	2.00	0.07	1 hr	CloudBurst	1,253.27
CSO208	9/21/14 6:15 AM	9/21/14 6:15 AM	0.01	0.04	17,419.01	0.12	0.03	3 hr	CloudBurst	696.76
CSO208	10/3/14 3:15 AM	10/3/14 4:00 AM	0.02	0.27	798.03	0.07	0.10	24 hr	CloudBurst	215.47
CSO208	10/3/14 12:45 PM	10/3/14 7:00 PM	0.01	0.27	1,474.19	0.21	0.10	24 hr	CloudBurst	398.03
CSO208	10/6/14 6:30 AM	10/6/14 9:30 AM	0.01	0.40	39,388.49	0.61	0.20	3 hr	CloudBurst	15,755.40
CSO208	10/7/14 11:15 AM	10/7/14 11:45 AM	0.23	0.16	3,434.11	0.83	0.12	1 hr	CloudBurst	549.46
CSO208	10/10/14 1:45 AM	10/10/14 3:15 AM	0.05	0.67	61,429.68	1.46	0.40	3 hr	Atlas14	41,157.89
CSO208	10/10/14 5:00 PM	10/10/14 9:15 PM	0.03	0.31	1,839.45	1.62	0.14	12 hr	CloudBurst	570.23
CSO208	10/13/14 4:15 AM	10/13/14 6:30 AM	0.04	0.42	14,811.31	1.95	0.26	3 hr	CloudBurst	6,220.75
CSO208	10/13/14 11:15 PM	10/14/14 10:00 AM	0.09	1.11	17,734.91	2.69	0.50	12 hr	CloudBurst	19,685.75
CSO208	11/16/14 9:45 PM	11/17/14 12:45 AM	0.04	0.35	23,267.86	0.19	0.14	12 hr	CloudBurst	8,143.75
CSO208	11/23/14 1:45 PM	11/24/14 2:45 AM	0.01	0.54	54,607.87	0.89	0.24	12 hr	CloudBurst	29,488.25
CSO208	12/1/14 12:45 AM	12/1/14 4:15 PM	0.03	0.94	18,399.60	0.88	0.36	24 hr	CloudBurst	17,295.62
CSO208	12/4/14 9:15 AM	12/4/14 9:00 PM	0.01	0.63	16,696.30	1.23	0.20	48 hr	CloudBurst	10,518.67
CSO208	12/5/14 5:30 AM	12/6/14 6:45 AM	0.01	0.63	80,020.72	1.57	0.20	48 hr	CloudBurst	50,413.05
CSO208	12/16/14 5:00 AM	12/16/14 5:15 AM	0.25	0.09	1,428.82	-	0.05	3 hr	CloudBurst	128.59
CSO208	12/22/14 10:15 PM	12/22/14 11:45 PM	0.01	0.22	10,332.53	-	0.14	3 hr	CloudBurst	2,273.16
CSO208	12/23/14 7:30 PM	12/23/14 8:30 PM	0.01	0.10	6,319.38	-	0.05	1 hr	CloudBurst	631.94
CSO208	12/24/14 12:00 PM	12/24/14 2:30 PM	0.04	0.19	13,222.48	-	0.17	3 hr	Atlas14	2,512.27
CSO208	12/27/14 4:45 PM	12/28/14 1:45 AM	0.30	0.32	5,991.86	-	0.27	1 hr	CloudBurst	1,917.40
CSO208	1/3/15 5:45 AM	1/3/15 3:00 PM	0.24	0.40	967.27	0.25	0.15	24 hr	Atlas	386.91
CSO208	1/4/15 12:45 AM	1/4/15 3:45 AM	0.01	0.40	2,900.18	0.41	0.15	24 hr	Atlas	1,160.07
CSO208	1/18/15 3:00 AM	1/18/15 3:15 AM	0.01	0.07	5,920.98	0.24	0.05	1 hr	Atlas	414.47
CSO208	1/29/15 5:00 AM	1/29/15 5:00 AM	0.03	0.04	230.47	0.28	0.03	3 hr	Atlas	9.22
CSO208	2/1/15 11:00 AM	2/1/15 7:15 PM	0.26	0.41	41,010.75	0.61	0.19	12 hr	Atlas	16,814.41
CSO208	2/21/15 3:15 AM	2/21/15 7:15 PM	0.13	1.26	22,665.69	1.56	0.48	24 hr	Atlas	28,558.77
CSO208	3/3/15 6:15 PM	3/4/15 5:45 PM	0.02	1.88	30,172.27	1.54	0.61	48 hr	Atlas	56,723.88
CSO208	3/5/15 2:15 PM	3/5/15 6:15 PM	0.06	1.88	7,750.51	2.01	0.61	48 hr	Atlas	14,570.97
CSO208	3/10/15 4:45 AM	3/10/15 3:15 PM	0.18	1.16	23,579.09	3.03	0.52	12 hr	Atlas	27,351.74
CSO208	3/13/15 9:45 AM	3/14/15 4:00 AM	0.09	1.98	12,846.07	3.07	0.75	24 hr	Atlas	25,435.21
CSO208	3/24/15 7:45 PM	3/24/15 8:15 PM	0.45	0.15	14,072.50	0.31	0.09	1 hr	Atlas	2,110.88

There are known issues with the flow monitoring data quality.
MSD is currently working on resolving these issues.

CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO208	3/26/15 3:00 AM	3/26/15 6:00 AM	0.13	0.67	8,605.25	0.83	0.32	3 hr	Atlas	5,765.52
CSO208	3/26/15 3:00 PM	3/26/15 3:00 PM	0.54	0.67	19.37	0.91	0.32	3 hr	Atlas	12.98
CSO208	4/2/15 9:30 AM	4/3/15 4:45 PM	0.65	5.04	50,195.98	5.20	10.00	24 hr	Cloudburst	252,987.76
CSO208	4/7/15 9:00 AM	4/7/15 5:15 PM	0.49	0.86	58,309.46	5.89	0.36	12 hr	Atlas	50,146.14
CSO208	4/9/15 11:15 AM	4/9/15 11:30 AM	1.05	0.12	3,462.93	5.69	0.10	1 hr	Atlas	415.55
CSO208	4/10/15 2:00 AM	4/10/15 2:45 AM	0.01	0.23	133,057.52	3.66	0.15	3 hr	Atlas	30,603.23
CSO208	4/13/15 7:45 PM	4/13/15 9:00 PM	0.06	0.58	2,160.08	1.49	0.22	24 hr	Atlas	1,252.84
CSO208	4/14/15 6:45 AM	4/14/15 11:30 AM	0.04	0.58	1,863.61	1.81	0.22	24 hr	Atlas	1,080.90
CSO208	4/19/15 6:30 AM	4/19/15 6:15 PM	0.10	0.57	3,585.14	1.22	0.24	12 hr	Atlas	2,043.53
CSO208	4/20/15 3:15 AM	4/20/15 3:30 AM	0.38	0.08	5,447.79	1.29	0.06	1 hr	Atlas	435.82
CSO208	4/25/15 8:45 AM	4/25/15 9:15 AM	0.39	0.14	2,842.04	0.82	0.07	6 hr	Atlas	397.89
CSO208	4/25/15 6:45 PM	4/25/15 6:45 PM	0.13	0.20	121.98	0.97	0.13	3 hr	Atlas	24.40
CSO208	5/9/15 3:15 AM	5/9/15 3:15 AM	0.01	0.08	782.03	0.06	0.04	1 hr	Atlas	62.56
CSO208	5/16/15 11:30 AM	5/16/15 2:00 PM	0.01	0.79	35,561.62	0.78	0.41	3 hr	Atlas	28,093.68
CSO208	5/17/15 2:00 PM	5/17/15 2:15 PM	0.34	0.12	4,490.19	0.89	0.06	12 hr	Atlas	538.82
CSO208	5/25/15 6:15 AM	5/25/15 8:15 AM	0.67	0.32	1,498.70	0.25	0.15	12 hr	Atlas	479.58
CSO208	5/26/15 1:30 PM	5/26/15 1:30 PM	0.98	0.23	545.92	0.39	0.16	1 hr	Atlas	125.56
CSO208	5/31/15 6:30 AM	5/31/15 6:30 AM	0.17	0.13	473.72	0.79	0.06	3 hr	Atlas	61.58
CSO208	6/1/15 8:00 AM	6/1/15 8:00 AM	0.44	0.12	910.50	0.68	0.07	3 hr	Atlas	109.26
CSO208	6/8/15 6:45 AM	6/8/15 8:15 AM	0.76	0.22	5,047.73	0.29	0.13	3 hr	Atlas	1,110.50
CSO208	6/17/15 4:30 AM	6/17/15 6:30 AM	0.02	0.63	11,101.80	0.63	0.34	3 hr	Atlas	6,994.14
CSO208	6/17/15 5:00 PM	6/17/15 5:00 PM	0.13	0.07	11,402.08	0.71	0.06	1 hr	Atlas	798.15
CSO208	6/18/15 5:00 PM	6/18/15 5:45 PM	0.01	0.56	19,873.34	1.07	0.29	3 hr	Atlas	11,129.07
CSO208	6/20/15 1:15 AM	6/20/15 8:00 AM	1.30	0.83	27,034.48	2.07	0.37	12 hr	Atlas	22,438.62
CSO208	6/22/15 5:45 AM	6/22/15 5:45 AM	0.34	0.24	2,550.91	2.23	0.11	12 hr	Atlas	612.22
CSO208	6/25/15 11:30 PM	6/26/15 12:45 AM	0.01	0.64	2,687.30	1.56	0.33	6 hr	Atlas	1,719.88
CSO208	6/26/15 5:00 PM	6/27/15 12:00 AM	0.03	1.09	46,765.18	2.77	0.57	1 hr	Atlas	50,974.05
CSO208	6/29/15 1:15 PM	6/29/15 1:30 PM	0.05	0.26	5,793.99	1.98	0.17	1 hr	Atlas	1,506.44
CSO208 Count										78.00
CSO208 Total Volume (GAL)										1,255,374.93
CSO210	7/1/14 7:45 PM	7/1/14 7:45 PM	0.46	0.46	3,869.77	0.31	0.29	3 hr	CloudBurst	1,780.09
CSO210	7/7/14 7:15 PM	7/7/14 7:30 PM	0.10	0.24	271,571.32	0.89	0.21	1 hr	CloudBurst	65,177.12
CSO210	7/13/14 10:45 PM	7/14/14 1:00 AM	(0.25)	0.69	46,413.13	0.79	0.35	1 hr	CloudBurst	32,025.06
CSO210	7/26/14 9:30 PM	7/27/14 12:00 AM	0.15	1.02	176,485.78	0.55	0.47	12 hr	CloudBurst	180,015.50
CSO210	7/27/14 9:15 AM	7/27/14 9:15 AM	0.31	1.02	10,922.43	1.07	0.47	12 hr	CloudBurst	11,140.88
CSO210	8/8/14 6:45 AM	8/8/14 10:15 AM	0.61	0.75	109,496.71	0.78	0.36	6 hr	CloudBurst	82,122.53
CSO210	8/10/14 4:45 AM	8/10/14 7:00 AM	0.17	0.72	25,862.75	1.64	0.63	1 hr	CloudBurst	18,621.18
CSO210	8/11/14 4:15 PM	8/11/14 6:00 PM	0.39	0.20	162,337.87	1.77	0.11	6 hr	CloudBurst	32,467.57
CSO210	8/17/14 10:45 AM	8/17/14 12:00 PM	0.28	0.50	37,560.31	1.00	0.26	3 hr	CloudBurst	18,780.16
CSO210	8/23/14 5:30 PM	8/24/14 12:15 AM	0.33	1.01	333,602.17	2.03	0.50	6 hr	CloudBurst	336,938.19
CSO210	8/30/14 3:15 PM	8/30/14 7:00 PM	0.11	0.96	135,022.39	2.26	0.57	3 hr	CloudBurst	129,621.49
CSO210	9/2/14 9:45 AM	9/2/14 10:45 AM	0.40	0.34	50,079.23	1.66	0.21	3 hr	CloudBurst	17,026.94
CSO210	9/11/14 1:15 AM	9/11/14 8:45 AM	0.09	2.11	391,060.59	2.11	2.21	3 hr	Atlas14	825,137.85
CSO210	10/13/14 4:30 AM	10/13/14 9:15 AM	0.01	0.49	248,473.12	2.00	0.32	3 hr	CloudBurst	121,751.83
CSO210	10/13/14 11:30 PM	10/14/14 12:45 PM	0.01	1.44	403,631.83	2.99	0.64	12 hr	CloudBurst	581,229.84
CSO210	11/23/14 6:30 PM	11/23/14 9:45 PM	0.09	0.92	122,465.59	1.24	0.43	6 hr	CloudBurst	112,668.35
CSO210	12/1/14 5:00 AM	12/1/14 7:45 AM	0.10	0.87	75,366.58	0.50	0.33	24 hr	CloudBurst	65,568.93
CSO210	12/6/14 12:15 AM	12/6/14 10:00 AM	0.01	0.72	762,716.05	1.59	0.23	48 hr	CloudBurst	549,155.55
CSO210	2/21/15 4:00 PM	2/21/15 6:00 PM	0.15	1.34	31,830.88	1.61	0.52	12 hr	Atlas	42,653.38
CSO210	3/4/15 12:00 AM	3/4/15 6:15 PM	0.09	1.71	834,118.70	1.46	0.55	48 hr	Atlas	1,426,342.98
CSO210	3/7/15 5:00 PM	3/7/15 5:00 PM	0.07	0.49	3,572.81	1.79	0.19	24 hr	Atlas	1,750.68
CSO210	3/10/15 9:30 AM	3/10/15 5:45 PM	0.05	1.09	914,616.25	2.80	0.49	12 hr	Atlas	996,931.72
CSO210	3/13/15 11:30 AM	3/14/15 7:00 AM	0.28	1.84	603,040.64	2.90	0.70	24 hr	Atlas	1,109,594.77
CSO210	3/26/15 5:30 AM	3/26/15 8:00 AM	0.16	0.52	164,051.66	0.66	0.24	3 hr	Atlas	85,306.86
CSO210	4/2/15 11:15 AM	4/3/15 7:45 PM	0.04	5.44	1,829,300.90	5.57	18.39	6 hr	Cloudburst	9,951,396.92

There are known issues with the flow monitoring data quality.
MSD is currently working on resolving these issues.

CSO	Start Date-Time	End Date-Time	Duration (days)	Rain Total (Inch)	Volume per Inch	Antecedent Rain	Frequency (yrs)	Period	Standard	Overflow Volume (Gal)
CSO210	4/7/15 9:00 AM	4/7/15 8:00 PM	0.31	0.89	490,240.80	6.34	0.37	12 hr	Atlas	436,314.31
CSO210	4/9/15 10:45 AM	4/9/15 1:15 PM	0.20	0.08	436,935.14	6.19	0.06	1 hr	Atlas	34,954.81
CSO210	4/10/15 2:15 PM	4/10/15 8:15 AM	0.55	0.08	6,077,673.60	5.79	0.06	1 hr	Atlas	486,213.89
CSO210	4/13/15 8:45 PM	4/14/15 12:15 AM	0.14	0.55	112,406.56	1.62	0.21	24 hr	Atlas	61,823.61
CSO210	4/14/15 8:45 AM	4/14/15 4:15 PM	0.11	0.55	264,487.18	1.78	0.21	24 hr	Atlas	145,467.95
CSO210	4/19/15 8:45 AM	4/19/15 11:30 PM	0.41	0.81	278,746.48	1.43	0.33	12 hr	Atlas	225,784.65
CSO210	5/16/15 12:15 PM	5/16/15 4:15 PM	0.08	0.95	88,716.09	1.08	0.58	3 hr	Atlas	84,280.29
CSO210	6/17/15 6:15 AM	6/17/15 3:30 PM	0.76	0.63	100,229.50	0.65	0.34	3 hr	Atlas	63,144.59
CSO210	6/18/15 2:15 PM	6/18/15 9:00 PM	0.01	0.62	573,773.63	1.30	0.36	1 hr	Atlas	355,739.65
CSO210	6/20/15 3:15 AM	6/20/15 11:15 AM	0.34	1.19	271,931.42	2.59	0.49	12 hr	Atlas	323,598.38
CSO210	6/26/15 12:45 AM	6/26/15 3:30 AM	0.81	0.77	388,309.57	2.33	0.42	6 hr	Atlas	298,998.37
CSO210	6/26/15 5:00 PM	6/27/15 2:30 AM	0.10	0.99	783,307.43	3.28	0.55	1 hr	Atlas	775,474.36
CSO210	6/29/15 1:30 PM	6/29/15 3:45 PM	1.35	0.35	54,613.87	2.11	0.26	1 hr	Atlas	19,114.86
CSO210 Count										38.00
CSO210 Total Volume (GAL)										20,106,116.06
CSO211	7/13/14 11:00 PM	7/13/14 11:45 PM	0.01	0.69	6,723,558.94	0.78	0.35	1 hr	CloudBurst	4,639,255.67
CSO211	7/26/14 10:00 PM	7/26/14 10:30 PM	0.01	1.02	4,293,182.20	0.46	0.47	12 hr	CloudBurst	4,379,045.84
CSO211	8/8/14 6:30 AM	8/8/14 6:30 AM	0.28	0.75	1,708,945.00	0.55	0.36	6 hr	CloudBurst	1,281,708.75
CSO211	8/10/14 4:30 AM	8/10/14 4:45 AM	0.09	0.72	4,959,460.85	1.64	0.63	1 hr	CloudBurst	3,570,811.81
CSO211	8/11/14 3:45 PM	8/11/14 4:00 PM	0.17	0.20	5,994,929.18	1.75	0.11	6 hr	CloudBurst	1,198,985.84
CSO211	8/23/14 5:00 PM	8/23/14 11:45 PM	0.67	1.01	5,074,625.83	2.04	0.50	6 hr	CloudBurst	5,125,372.09
CSO211	8/30/14 3:30 PM	8/30/14 5:45 PM	0.33	0.96	13,542,642.57	2.24	0.57	3 hr	CloudBurst	13,000,936.87
CSO211	9/11/14 1:00 AM	9/11/14 5:00 AM	0.25	2.11	16,868,740.26	1.98	2.21	3 hr	Atlas14	35,593,041.95
CSO211	3/4/15 12:30 AM	3/4/15 4:30 PM	0.03	1.71	2,147,454.13	1.38	0.55	48 hr	Atlas	3,672,146.57
CSO211	3/10/15 11:00 AM	3/10/15 7:00 PM	0.02	1.09	7,660,044.93	2.79	0.49	12 hr	Atlas	8,349,448.97
CSO211	4/3/15 12:45 AM	4/3/15 6:45 AM	0.01	5.44	9,735,740.06	4.73	18.39	6 hr	Cloudburst	52,962,425.90
CSO211 Count										11.00
CSO211 Total Volume (GAL)										133,773,180.27
Grand Count										3,284.00
Grand Total Volume (GAL)										4,564,049,770.95

APPENDIX E – ACRONYMS

Appendix E - Acronyms for Project WIN Annual Report

AAOV	Average Annual Overflow Volume
ASB	Aeration Services Building
BAP	Blockage Abatement Program
BGC	Beargrass Creek
BMP	Best Management Practices
BOD	Biological Oxygen Demand
BUD	Before "U" Dig
CCP	Composite Correction Plan
CD	Consent Decree
CDS	Continuous Deflection Separator
CFR	Code of Federal Regulations
CMF	Central Maintenance Facility
CMOM	Capacity Management Operations and Maintenance
CPE	Comprehensive Performance Evaluations
CSO	Combined Sewer Overflow
CSOFT	Software Name
CSS	Combined Sewer System
CSSA	Continuing Sewer System Assessment
DAFT	Dissolved Air Flotation Thickener
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
DWO	Dry Weather Overflow
eB	Enterprise Bridge (Enterprise Informatics scanning software for document management)
EGIS	Emergency Geographic Information System
EPA	Environmental Protection Agency
ERPI	Emergency Response Pretreatment Inspectors
ERT	Emergency Response Team
FCN	Field Correction Notice
FEMA	Federal Emergency Management Agency
FM	Force Main
FOG	Fats, Oil & Grease
FPS	Flood Pump Station
FSE	Food Service Establishment
FY	Fiscal Year
GCE	Grease Control Equipment
GIS	Geographic Information System
GLPM	Gravity Line Preventive Maintenance
GPD	Gallons per Day
HMI	Human Machine Interface

Appendix E - Acronyms for Project WIN Annual Report

HR	Human Resources
I&FP	Infrastructure & Flood Protection (MSD Division)
ICA	Interceptor Condition Assessment
ID	Identification
I&I	Inflow and Infiltration
IMS	Information Management System
IOAP	Integrated Overflow Abatement Plan
ISSDP	Interim Sanitary Sewer Discharge Plan
IT	Information Technology
IWD	Industrial Waste Department
JCPS	Jefferson County Public Schools
KDEP	Kentucky Department of Environmental Protection
KPDES	Kentucky Pollutant Discharge Elimination System
KY	Kentucky
LIMS	Laboratory Information Management System
LMDPHW	Louisville Metro Department of Public Health and Wellness
LMPD	Louisville Metro Police Department
LTC	Long Term Control
LTCP	Long Term Control Plan
LOJIC	Louisville and Jefferson County Information Consortium
MDS	Main Diversion Structure
MEB	Main Equipment Building
MG	Million Gallons
MGD	Million Gallons Per Day
MH	Manhole
MOA	Memorandum of Agreement
MOR	Monthly Operating Report
MOU	Memorandum of Understanding
MSD	Metropolitan Sewer District (Louisville and Jefferson County)
NACWA	National Association of Clean Water Agencies
NDD	Non-Domestic Dischargers
NMC	Nine Minimum Controls
NOV	Notice of Violation
NPR	National Public Radio
MC	Mission Critical Equipment
ORD	Office of Research and Development
ORSANCO	Ohio River Valley Water Sanitation Commission
PACP	Pipeline Assessment and Certification Program
PCCM	Post Construction Compliance Monitoring
PM	Preventive Maintenance

Appendix E - Acronyms for Project WIN Annual Report

POC	Pollutants of Concern
PS	Pump Station
PSC	Property Service Connection
QA/QC	Quality Assurance/Quality Control
RDII	Rainfall-Derived Infiltration and Inflow
RTC	Real Time Control
S&F	Solids and Floatables
SAP	Software Name
SCADA	Supervisory Control And Data Acquisition
SCAP	System Capacity Assurance Plan
SEP	Supplemental Environmental Projects
SIU	Significant Industrial User
SOP	Standard Operating Procedure
SORP	Sewer Overflow Response Protocol
SSDP	Sanitary Sewer Discharge Plan
SSES	Sanitary Sewer Evaluation Study
SSO	Sanitary Sewer Overflow
SSOP	Sanitary Sewer Overflow Plan
SWOR2	Southwestern Outfall Relief - Phase 2
SWPS	Southwestern Pump Station
TM	Technical Memorandum
TMDL	Total Maximum Daily Load
TV	Television
UDR	Unusual Discharge Request
UIM	Utility Information Management
UK	University of Kentucky
UofL	University of Louisville
USACE	U.S. Army Corps of Engineers
USGS	United States Geological Survey
WDR	Wastewater Discharge Regulators
WIN	Waterway Improvements Now
WQTC	Water Quality Treatment Center
WW	Wet Weather
WWT	Wet Weather Team

APPENDIX F – MAY 1, 2015, LETTER TO RESIDENTS



*Louisville and Jefferson County Metropolitan Sewer District
700 West Liberty Street
Louisville, Kentucky 40203-1911
502-540-6000
LouisvilleMSD.org*

April 18, 2015

Dear Louisville Metro Resident:

Throughout MSD's service area, there are hundreds of points where a combination of wastewater and rainwater may discharge onto streets and into local waterways when it rains. These sewer overflow locations act as relief when the sanitary system becomes overwhelmed with rainwater.

MSD's Project WIN (Waterway Improvements Now) defines a plan to rehabilitate our aging sewer system and reduce the number of overflows that send raw, untreated sewage into our local waterways during rain events. We recently passed the halfway point of this \$850 million, 19-year program. We are committed to complete the plan by 2024.

You have received this letter because you live near Beargrass Creek, the Ohio River or one of their tributaries. This makes it more likely for you to come in contact with polluted water from one of these overflows. As MSD continues its work to reduce sewer overflows, we must caution you to stay out of these waterways during—and for 48-hours after—a rain event.

The enclosed flyer provides important information related to easy steps that you can take to protect your health and safety should you come in contact with sewage-polluted water. It is important to keep children and pets out of these waterways during and following a rain event.

MSD seeks to be a good steward of our ratepayer's dollars and we are committed to providing clean, safe waterways for our community. We continually collect water-quality data, and seek ways to improve our creeks, streams and the Ohio River, both for recreational use as well as fish and wildlife habitats.

Please call 502-587-0603 or visit us online at www.msprojectwin.org for more information about Project WIN, and become a part of the WINning team.

Together we can achieve clean, safe waterways for a healthy and vibrant community.

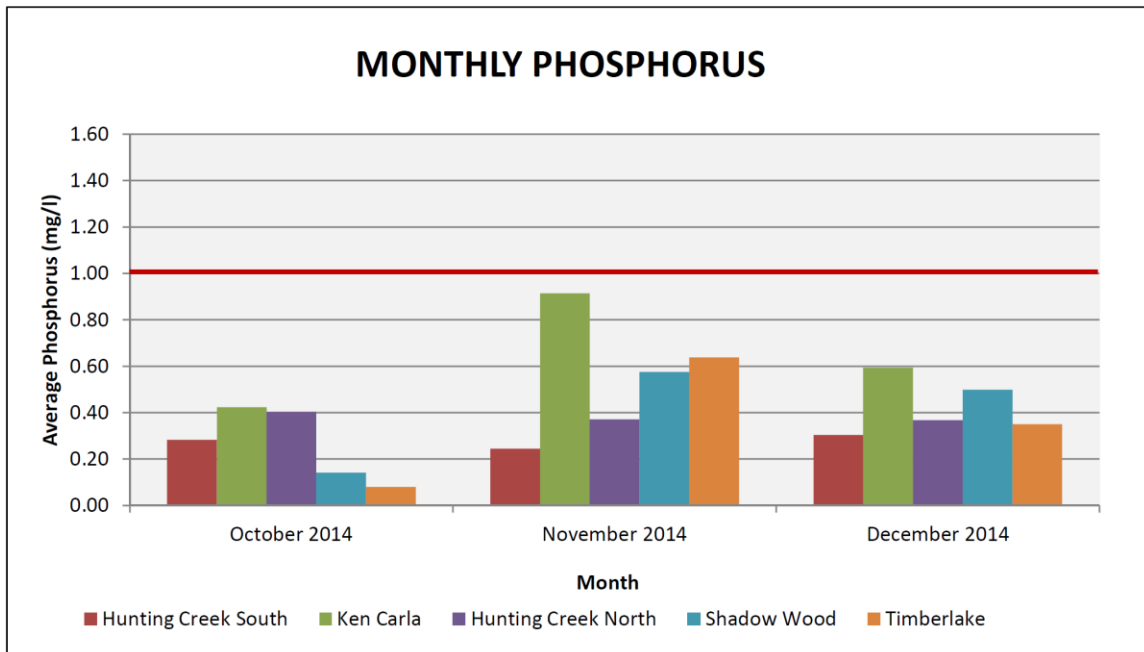
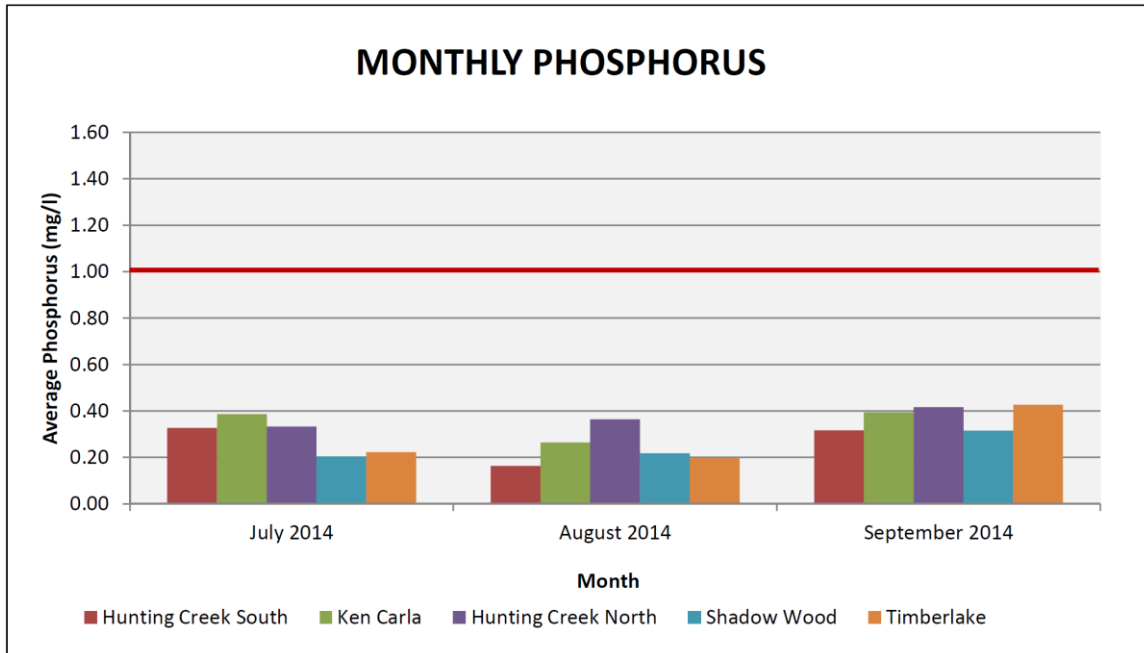
Sincerely,

A handwritten signature in black ink that reads "Greg C. Heitzman". The signature is written in a cursive style.

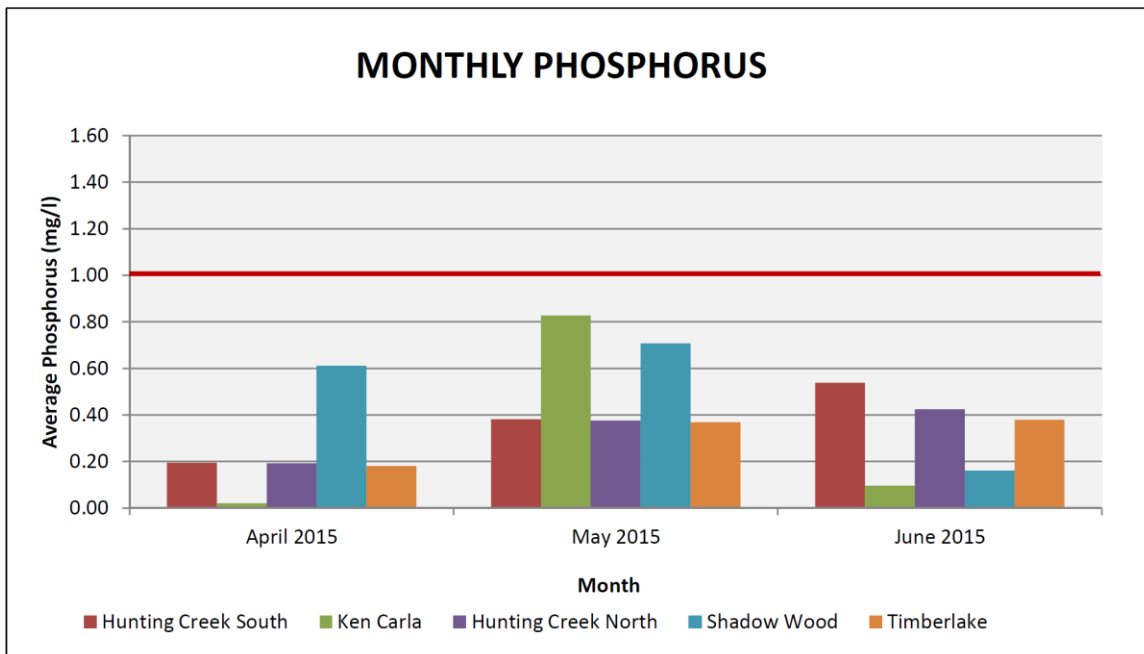
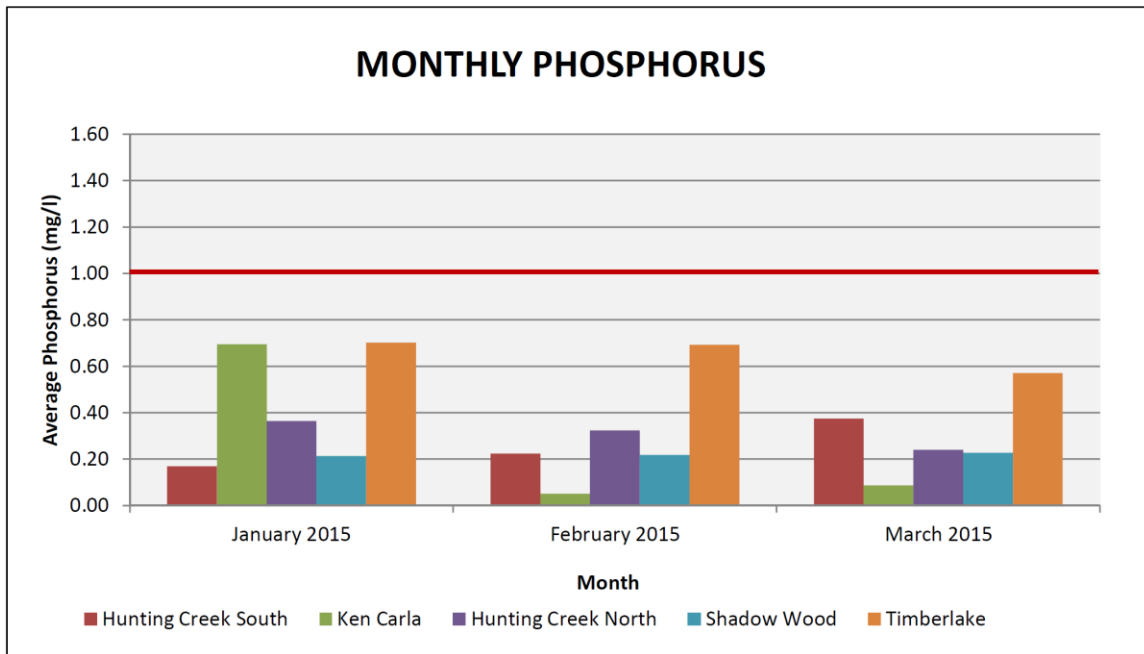
Greg C. Heitzman
Executive Director

APPENDIX G – PHOSPHORUS MONITORING DATA

Appendix G -
FY 15 Phosphorus Data



Appendix G -
FY 15 Phosphorus Data



APPENDIX H – ORGANIZATIONAL CHART



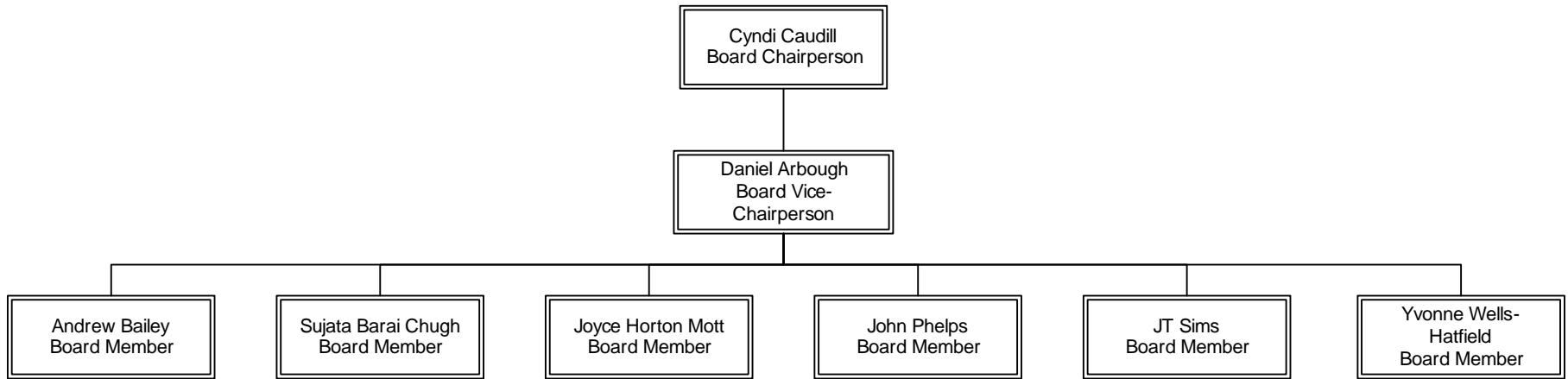
Louisville and Jefferson County
Metropolitan Sewer District

Organizational Chart
Effective 10/10/15

Organizational Summary

	<u>Total</u> <u>Positions</u>	<u>Current</u> <u>Actual</u>	<u>Vacant</u> <u>(Budgeted)</u>	<u>New/</u> <u>Unbudgeted</u> <u>(Vacant)</u>	<u>Exempt</u>	<u>Non-</u> <u>Exempt</u>	<u>Unit</u>	<u>Net</u> <u>Overbudget</u>
Executive Offices Division								
Executive Offices	4	4	0	0	3	1	0	0
Customer Relations	24	21	3	0	4	20	0	0
Legal Division	9	7	2	0	6	3	0	0
Human Resources Division	25	18	7	0	15	10	0	0
Information Technology Division	34	27	7	0	29	5	0	0
Finance Division	29	25	3	1	13	16	0	1
Engineering Division								
Engineering Admin, Regulatory & GIS	20.5	17	3.5	0	12	8.5	0	1
Engineering Technical Services	39	27	12	0	24	15	0	0
Development & Stormwater Services	37.5	31	6.5	0	18	19.5	0	0
Operations Division								
Administration	2	2	0	0	1	1	0	0
Treatment Facilities	90	82	8	0	17	15	58	0
Treatment Facilities (Maintenance)	38	33	5	0	5	0	33	0
Collections System	81	73	8	0	12	22	47	0
Collections System (Sanitary)	72	69	3	0	8	2	62	0
Drainage and Flood Protection	97	95	2	0	9	4	84	0
Support Services	51	51	0	0	9	26	16	0
Performance Metrics	16	10	6	0	8	8	0	0
DISTRICT TOTAL	669	592	76	1	193	176	300	2

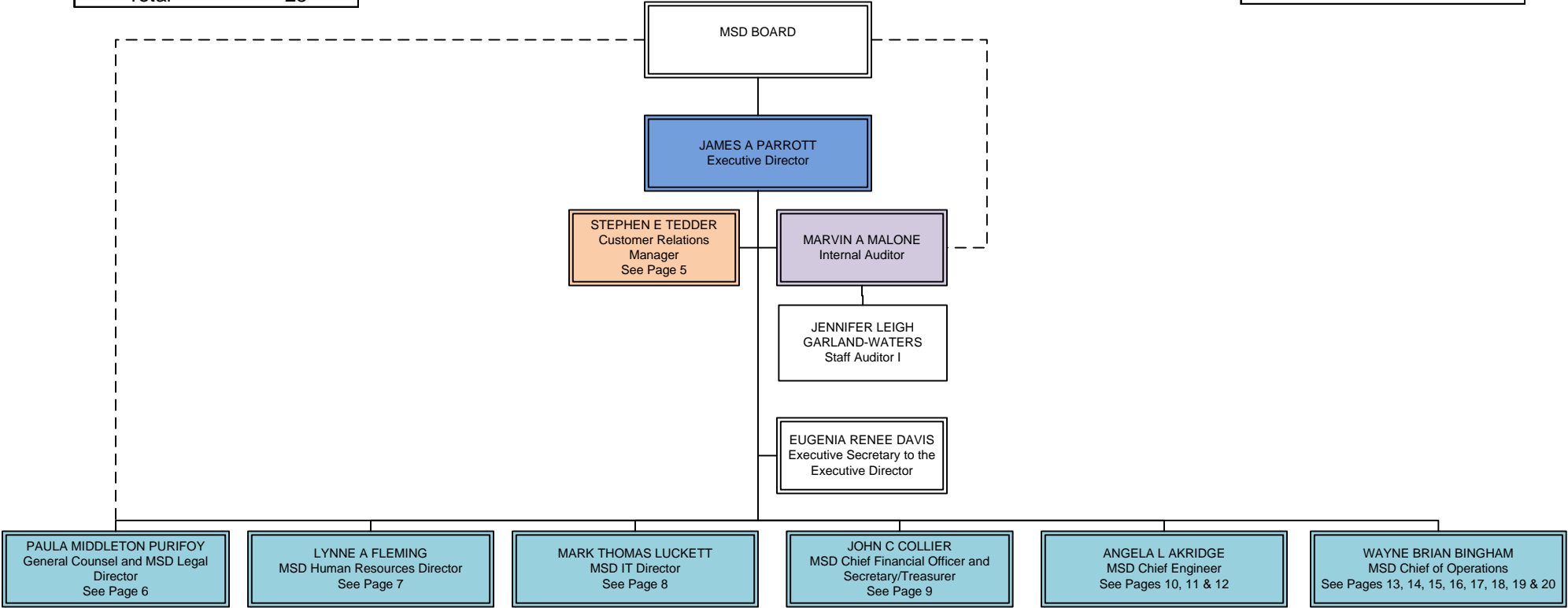
Board Members



Executive Offices Division Executive Offices

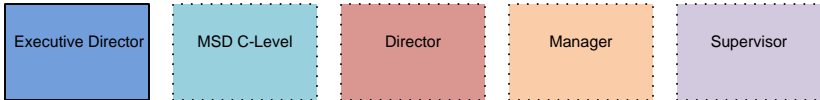
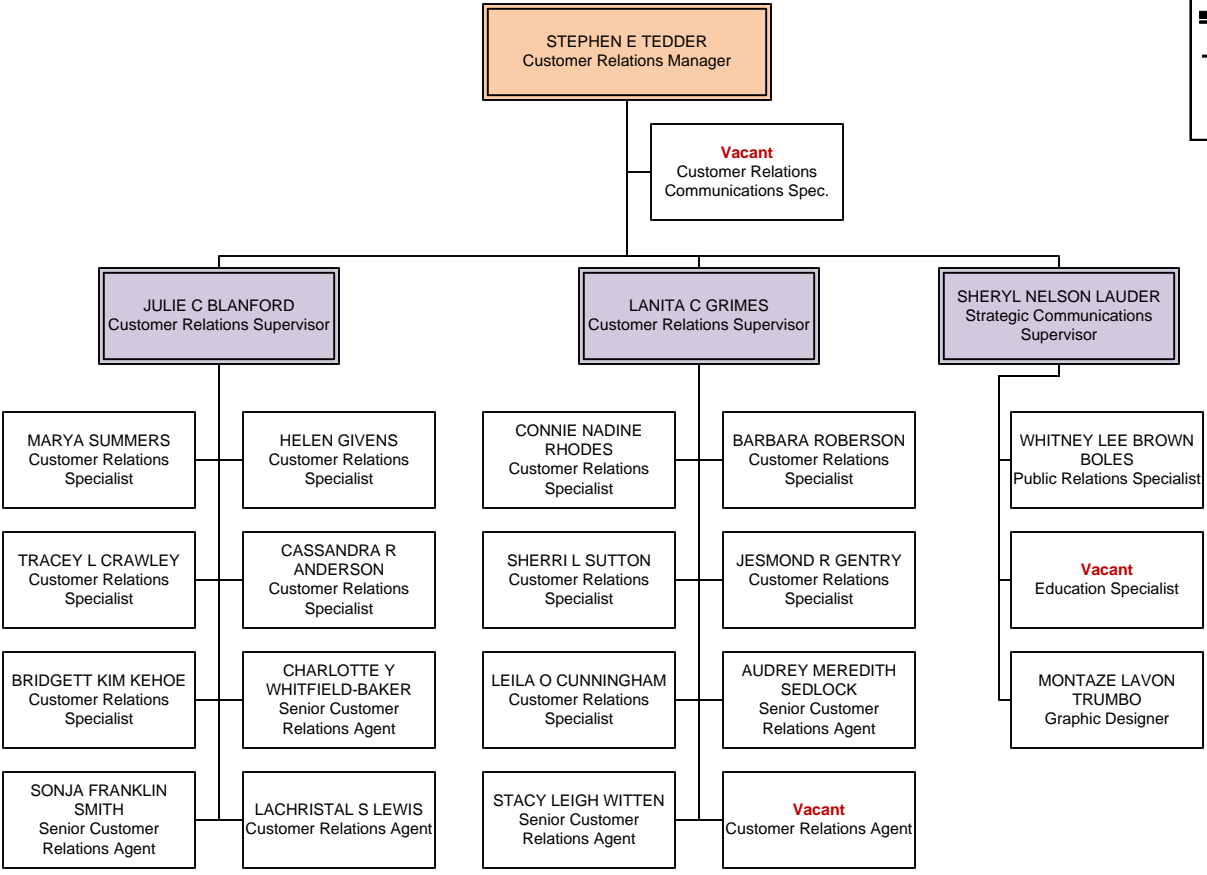
DIVISION BUDGET STATUS	
Actual	24
Vacant	<u>4</u>
Authorized	28
█ Exempt	7
— Non-Exempt	21
Unit	<u>0</u>
Total	28

BUDGET STATUS	
Actual	4
Vacant	<u>0</u>
Authorized	4
█ Exempt	3
— Non-Exempt	1
Unit	<u>0</u>
Total	4



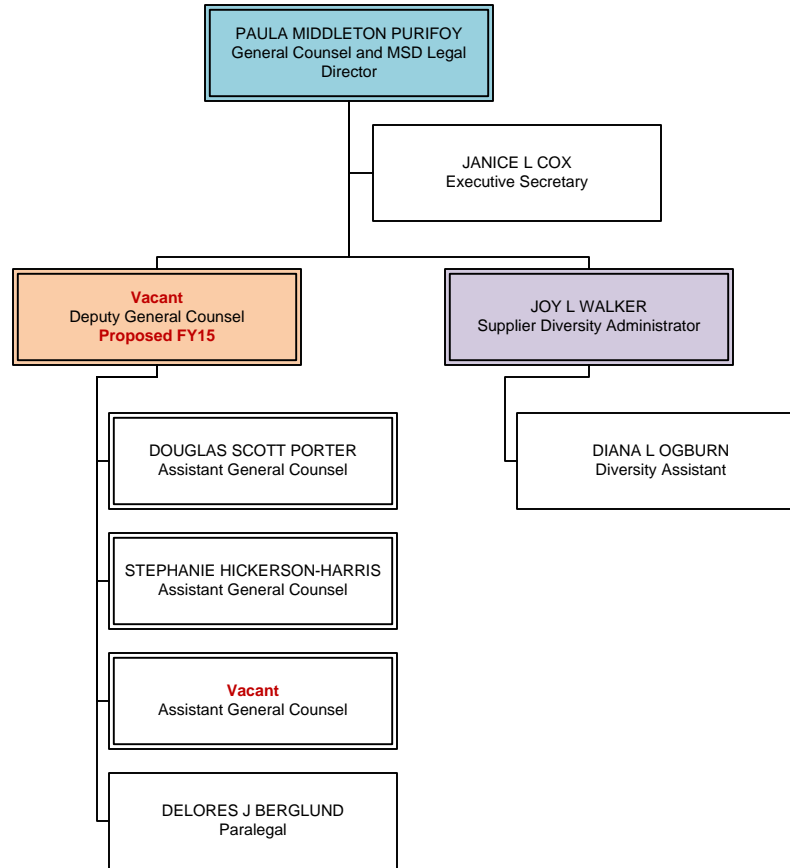
Executive Offices Division Customer Relations

BUDGET STATUS	
Actual	21
Vacant	<u>3</u>
Authorized	24
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█ Exempt	4
— Non-Exempt	20
Unit	<u>0</u>
Total	24



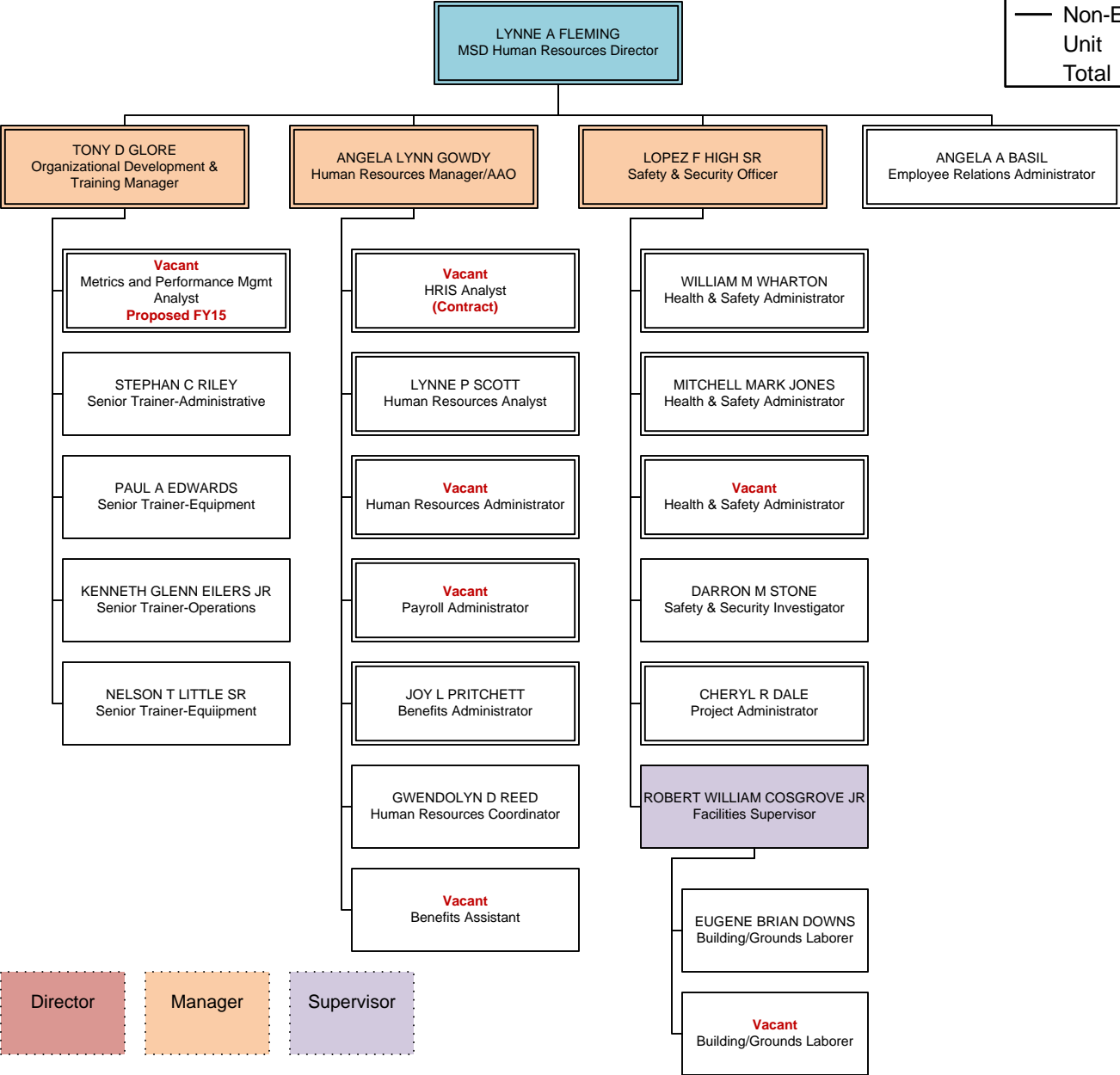
Legal Division

BUDGET STATUS	
Actual	7
Vacant	<u>2</u>
Authorized	9
█ Exempt	6
— Non-Exempt	3
Unit	<u>0</u>
Total	9



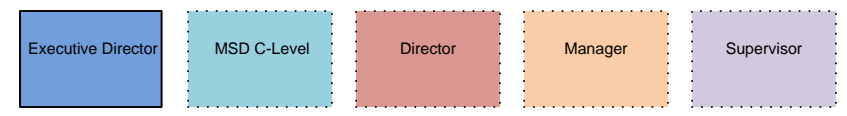
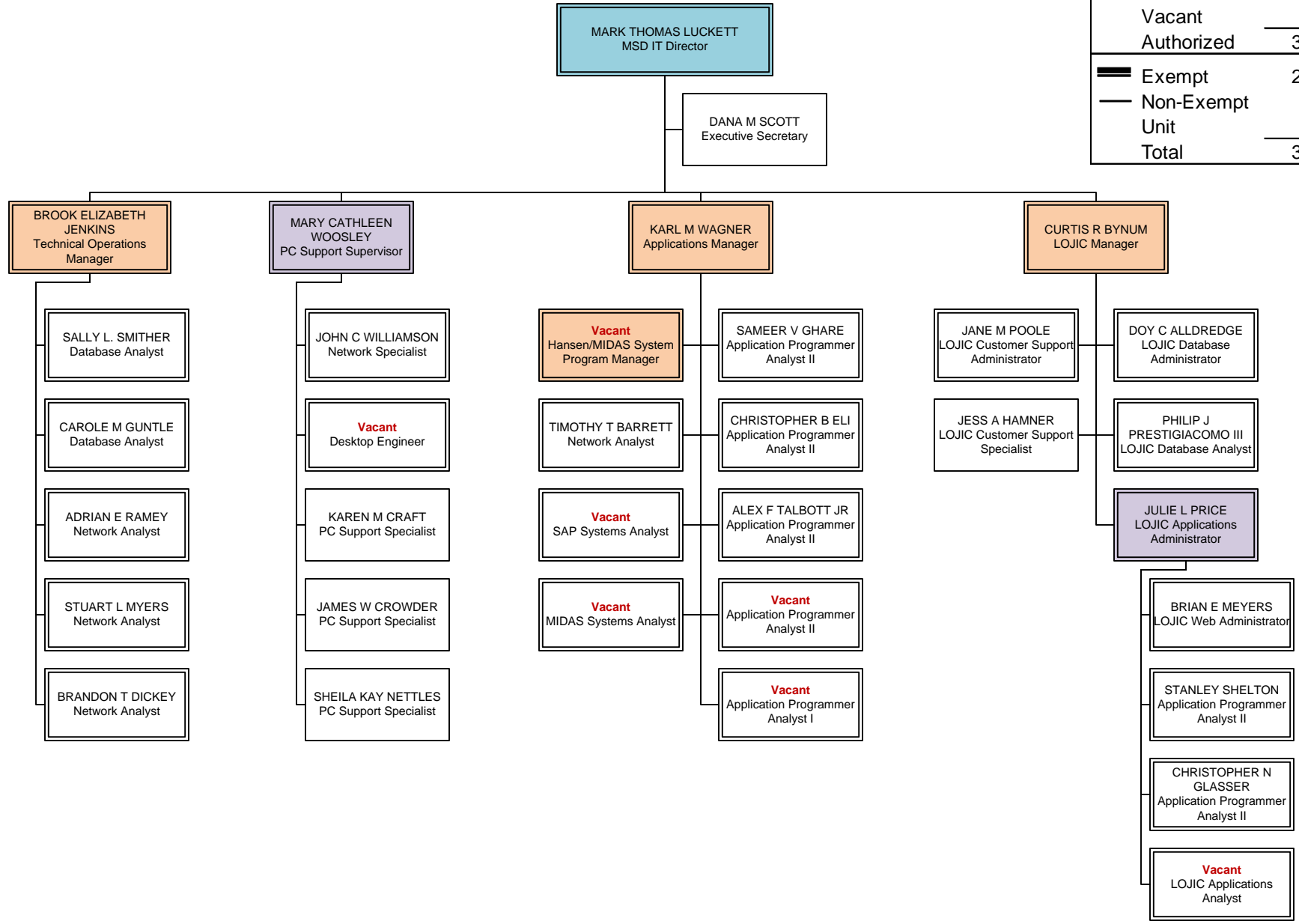
Human Resources Division

BUDGET STATUS	
Actual	18.0
Vacant	<u>7.0</u>
Authorized	25.0
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■ Exempt	15.0
— Non-Exempt	10.0
Unit	<u>0.0</u>
Total	25.0



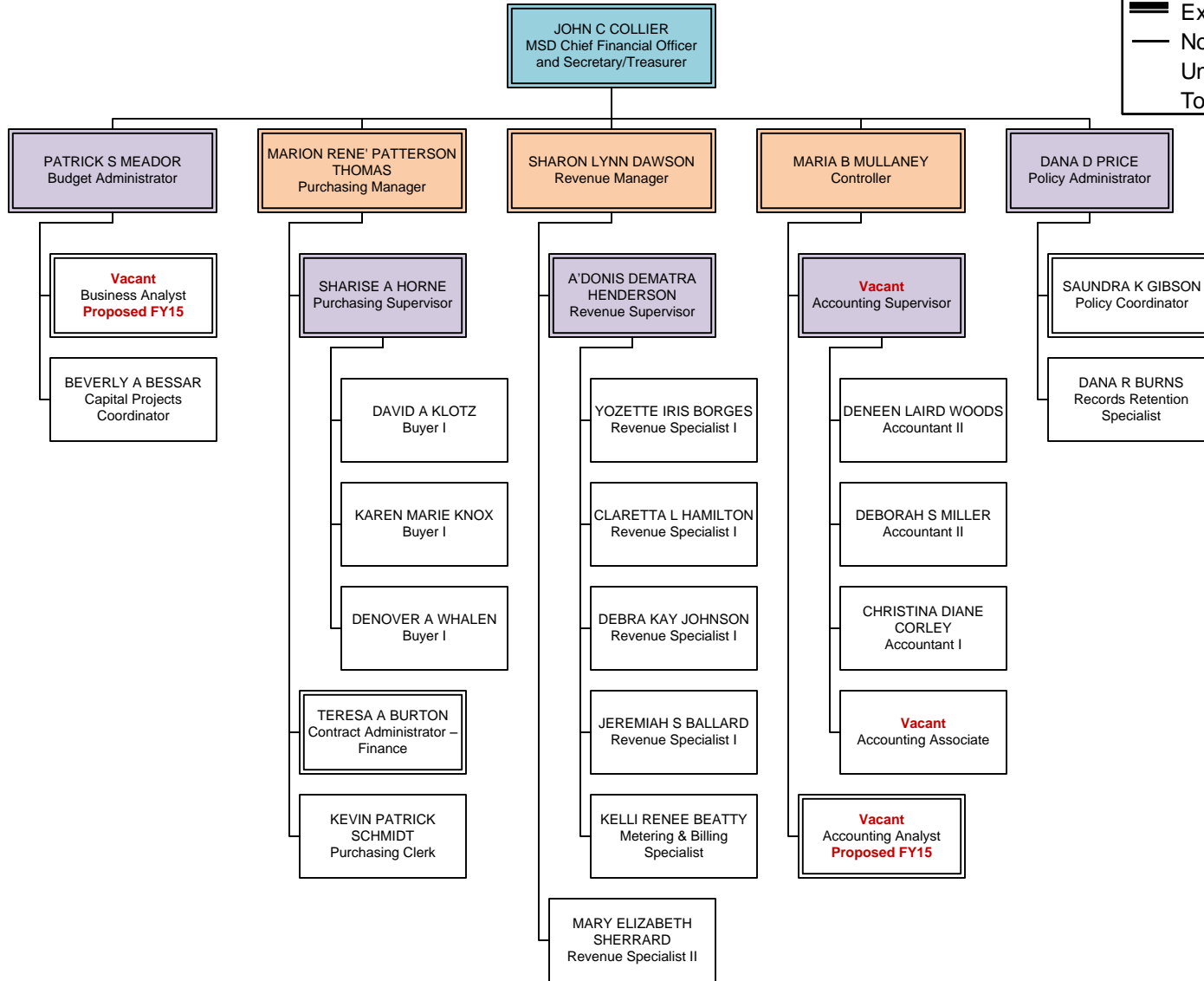
Information Technology Division

BUDGET STATUS	
Actual	27
Vacant	7
Authorized	34
<hr/>	
■ Exempt	29
— Non-Exempt	5
Unit	0
Total	34



Finance Division

BUDGET STATUS	
Actual	25
Vacant	<u>4</u>
Authorized	29
<hr/>	
█ Exempt	13
— Non-Exempt	16
Unit	<u>0</u>
Total	29

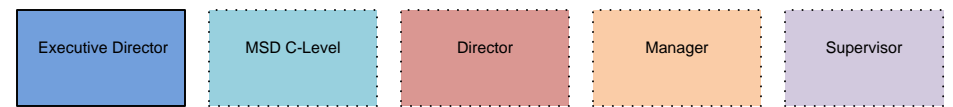
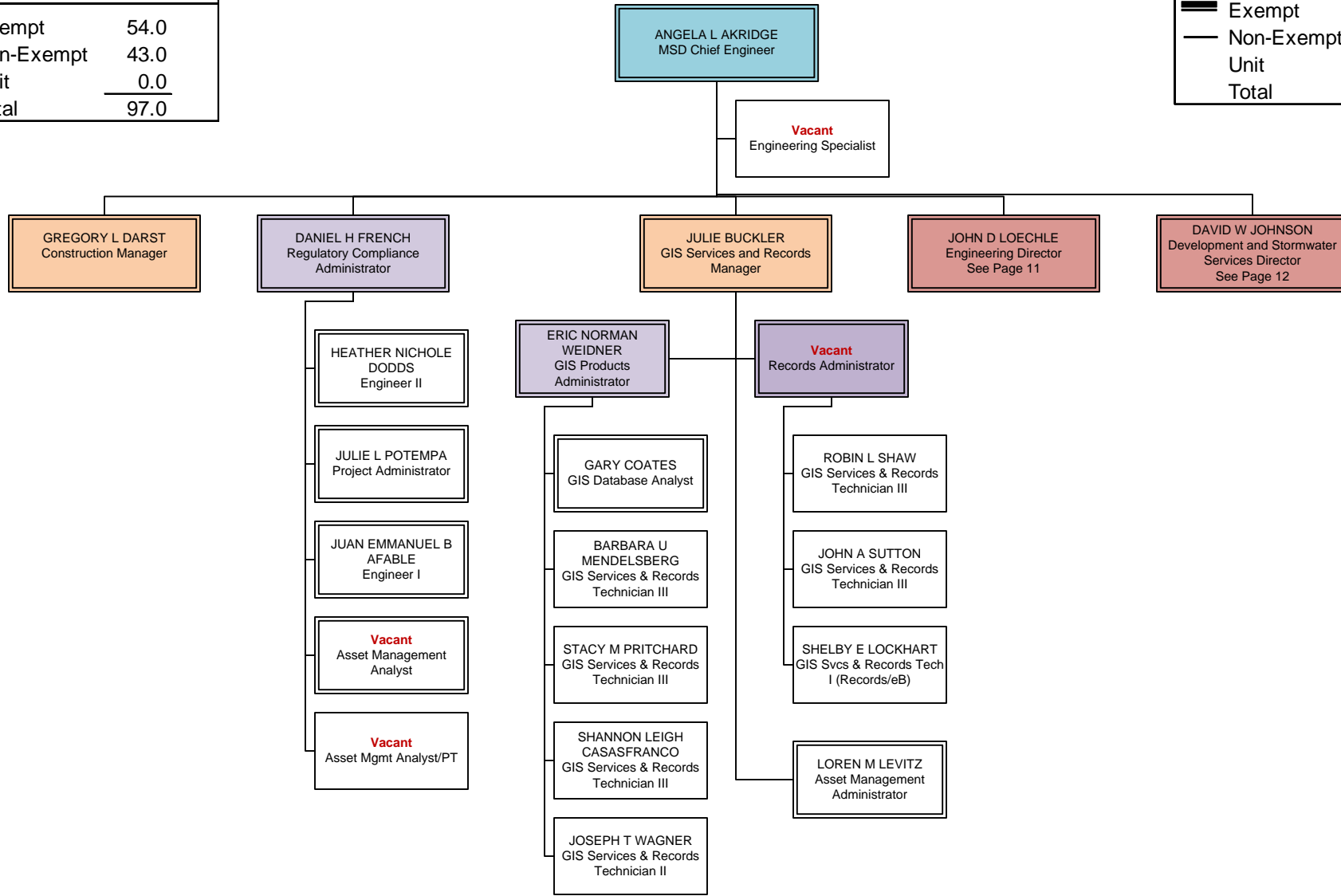


Engineering Division

Engineering Admin, Regulatory and GIS

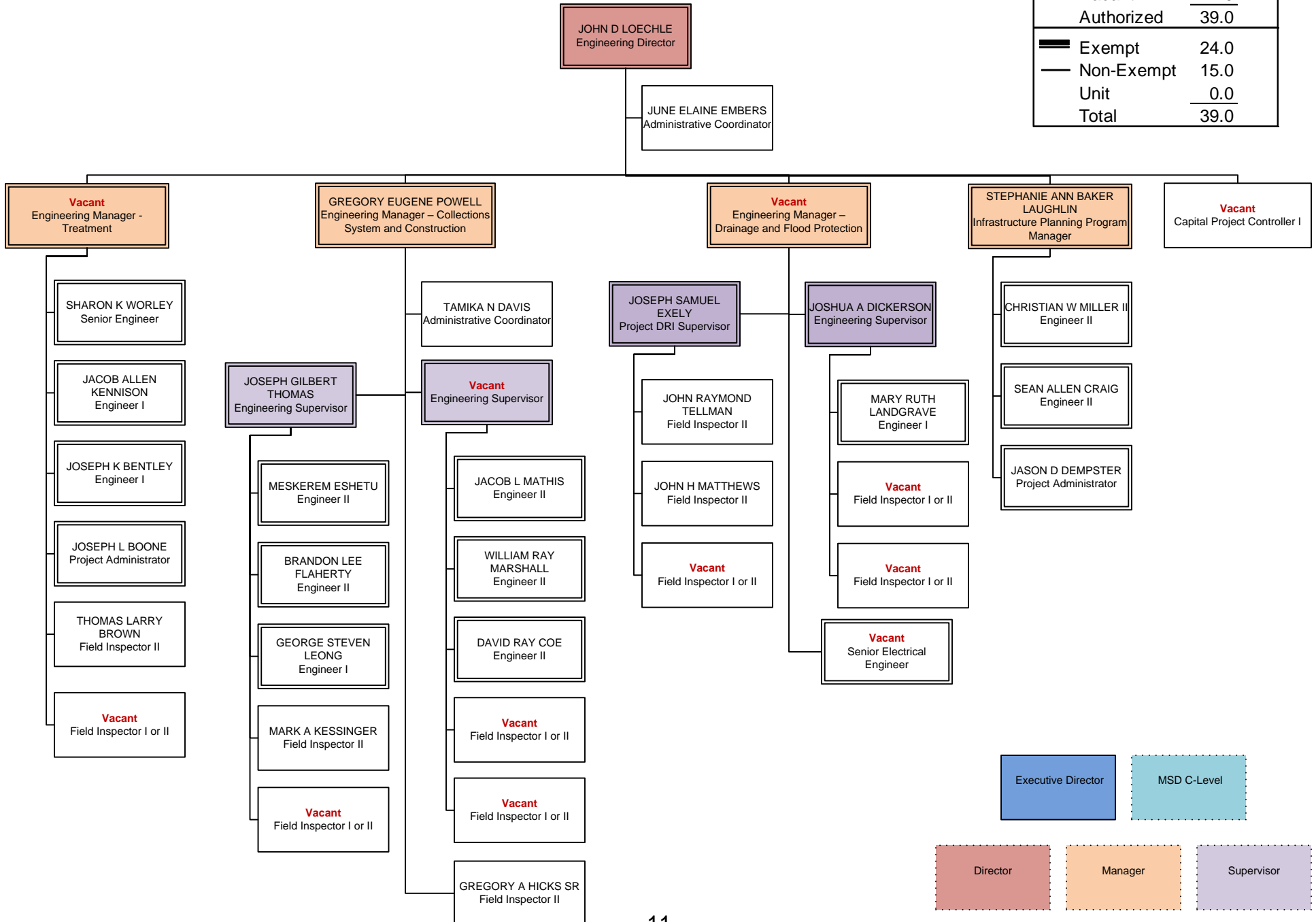
DIVISION BUDGET STATUS	
Actual	75.0
Vacant	<u>22.0</u>
Authorized	97.0
<hr/>	
█ Exempt	54.0
— Non-Exempt	43.0
Unit	<u>0.0</u>
Total	97.0

BUDGET STATUS	
Actual	17.0
Vacant	<u>3.5</u>
Authorized	20.5
<hr/>	
█ Exempt	12.0
— Non-Exempt	8.5
Unit	<u>0.0</u>
Total	20.5



Engineering Division Engineering Technical Services

BUDGET STATUS	
Actual	27.0
Vacant	12.0
Authorized	39.0
<hr/>	
Exempt	24.0
Non-Exempt	15.0
Unit	0.0
Total	39.0



Engineering Division Development & Stormwater Svcs

BUDGET STATUS	
Actual	31.0
Vacant	<u>6.5</u>
Authorized	37.5
█ Exempt	18.0
— Non-Exempt	19.5
Unit	<u>0.0</u>
Total	37.5

DAVID W JOHNSON
 Development and Stormwater Services
 Director

KIM MICHELLE ROBINSON
 Administrative Coordinator

WESLEY C SYDNOR
 MS4 Program Manager

ROBERT E STAUBLE
 Construction Inspection Manager

WILLIAM JOSEPH ASHBY
 Development Review Manager

LORI A RAFFERTY
 Floodplain and CRS Administrator

JORDAN ANTHONY BASHAM
 Engineer I

ERIN BAKER WAGONER
 Project Administrator

Vacant
 Engineering Technician V

Vacant
 Inspection Supervisor

PATRICK TEETER
 Inspection Supervisor

GARNETT BRADLEY SELCH
 Development Review Supervisor

Vacant
 Plumbing Modification Supervisor

SHARLIE A KHAN
 Project Administrator

LESTER L WURZEL
 Field Inspector II

MICHAEL RAYMOND HARRETT
 Field Inspector II

GLEN COOPER II
 Field Inspector II

Vacant
 Field Inspector II

SCOTT THOMAS DOSS
 Field Inspector I

RONALD HENDERSON
 Field Inspector II

JERRY EUGENE BOND JR
 Field Inspector II

STEVEN THOMAS BLANFORD
 Field Inspector II

TYLER A SMITH
 Field Inspector II

Vacant
 Field Inspector I or II

BRIAN E BRADLEY
 Engineer II

DAVID J MULLOY
 Engineer I

JAMES P BOBBITT
 Development Specialist III

LISA ACREE HARDLEY
 Development Specialist II

CAROLYN M FUST
 Development Specialist II

PEGGY LYNN NOBLE
 Pretreatment Inspector

JOSEPH A KELLY
 Engineering Technician IV

PATRICK M BARRY
 Project Administrator

VIKKI LEANN HUELSMAN
 Plumbing Modification Program Specialist

HORACE GAITHER JR
 Plumbing Modification Program Technician

Vacant
 Plumbing Modification Program Technician

Vacant
 Plumbing Modification Program Technician/PT

JOHN R SELCH
 Development Technician

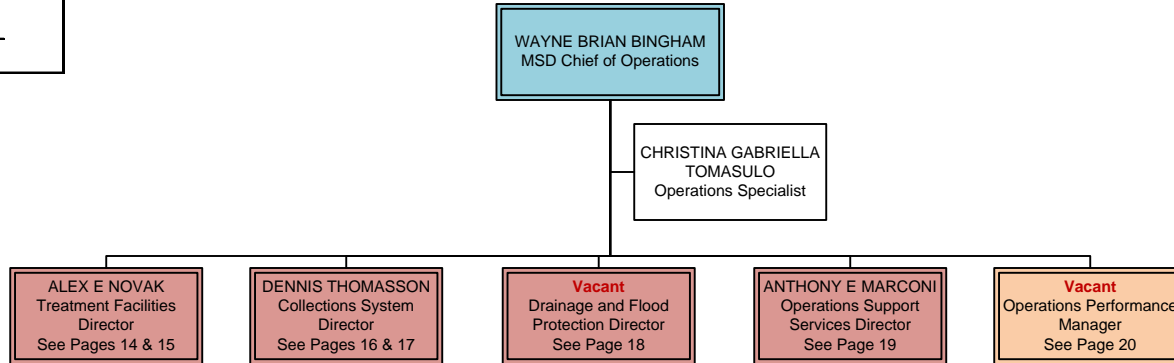
ANGELA MARIE SANCHEZ
 Development Technician



Operations Division Administration

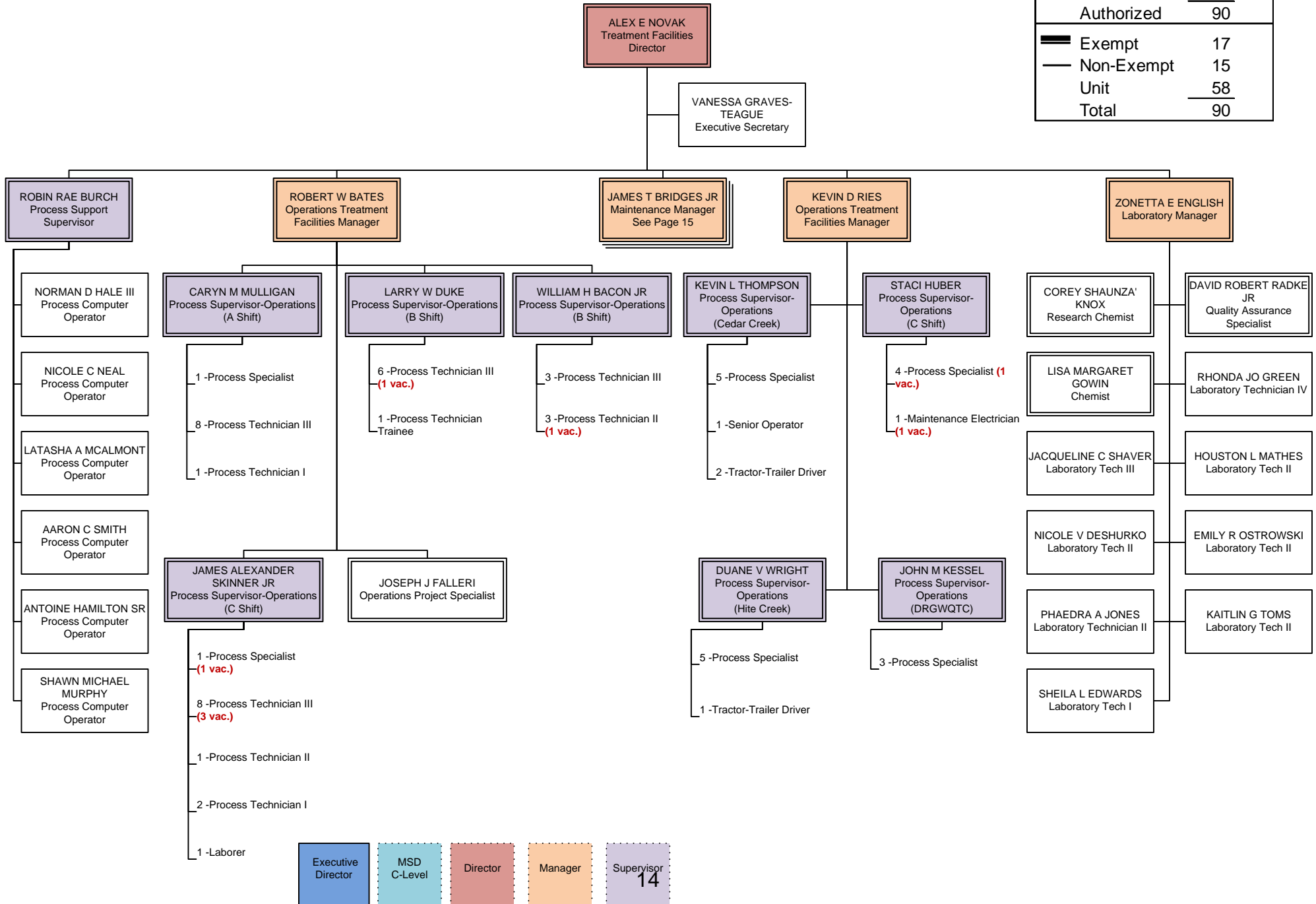
DIVISION BUDGET STATUS	
Actual	415
Vacant	<u>32</u>
Authorized	447
<hr/>	
█ Exempt	69
— Non-Exempt	78
Unit	<u>300</u>
Total	447

BUDGET STATUS	
Actual	2
Vacant	<u>0</u>
Authorized	2
<hr/>	
█ Exempt	1
— Non-Exempt	1
Unit	<u>0</u>
Total	2



Operations Division Treatment Facilities

BUDGET STATUS	
Actual	82
Vacant	8
Authorized	90
<hr/>	
■ Exempt	17
— Non-Exempt	15
Unit	58
Total	90

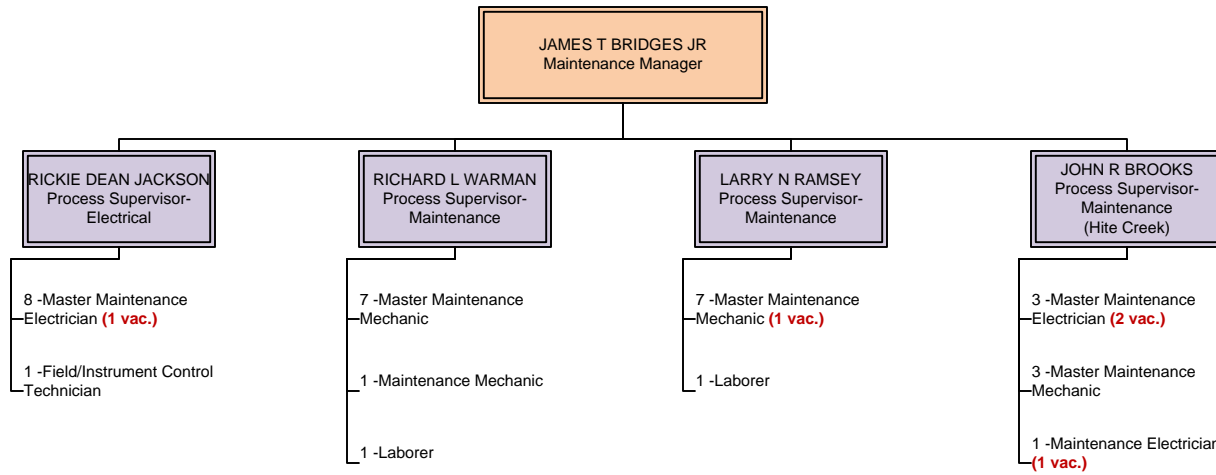


Executive Director	MSD C-Level	Director	Manager	Supervisor
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14

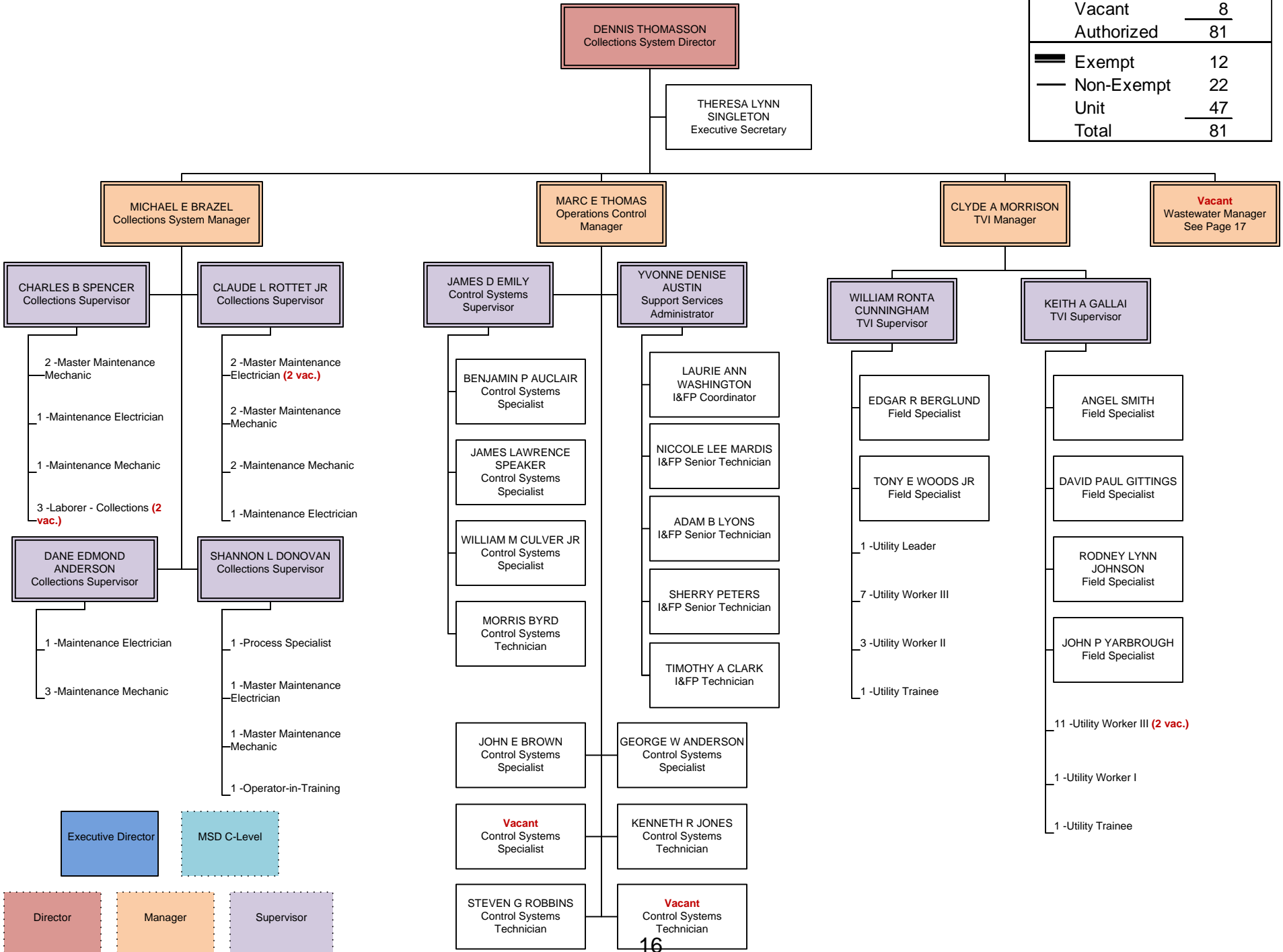
Operations Division Treatment Facilities (Maintenance)

BUDGET STATUS	
Actual	33
Vacant	<u>5</u>
Authorized	38
█ Exempt	5
— Non-Exempt	0
Unit	<u>33</u>
Total	38



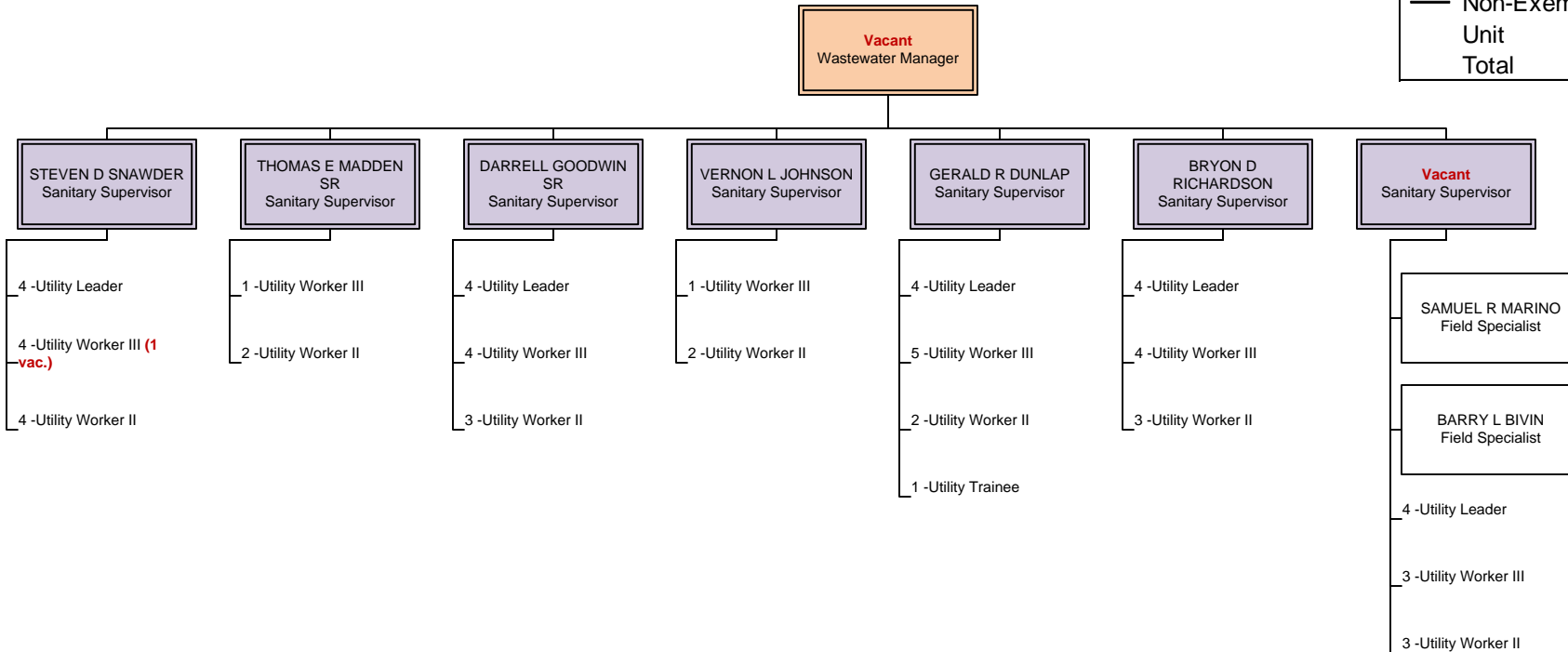
Operations Division Collections System

BUDGET STATUS	
Actual	73
Vacant	8
Authorized	81
█ Exempt	12
— Non-Exempt	22
Unit	47
Total	81



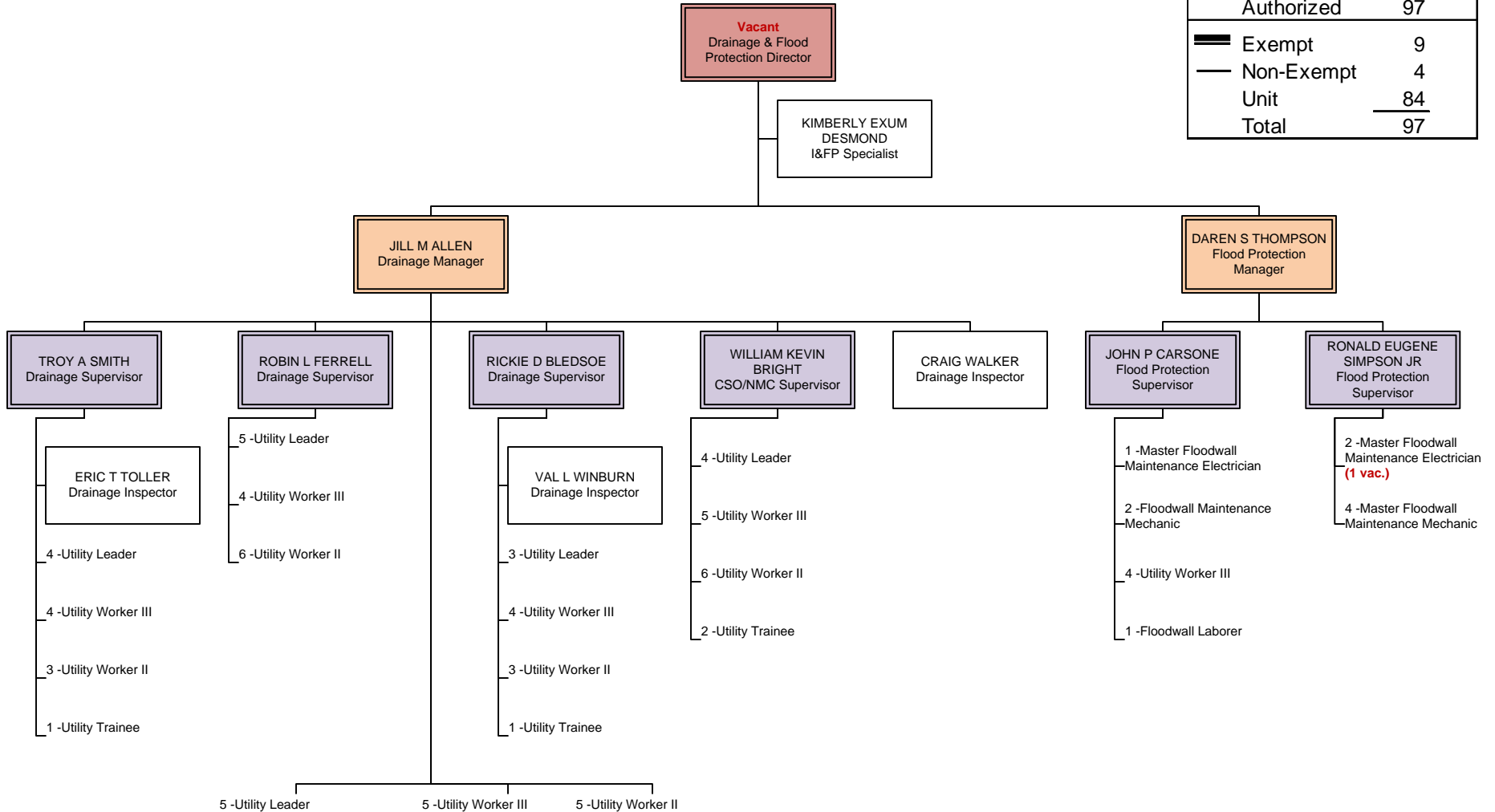
Operations Division Collections System (Sanitary)

BUDGET STATUS	
Actual	69
Vacant	<u>3</u>
Authorized	72
<hr/>	
█ Exempt	8
— Non-Exempt	2
Unit	<u>62</u>
Total	72



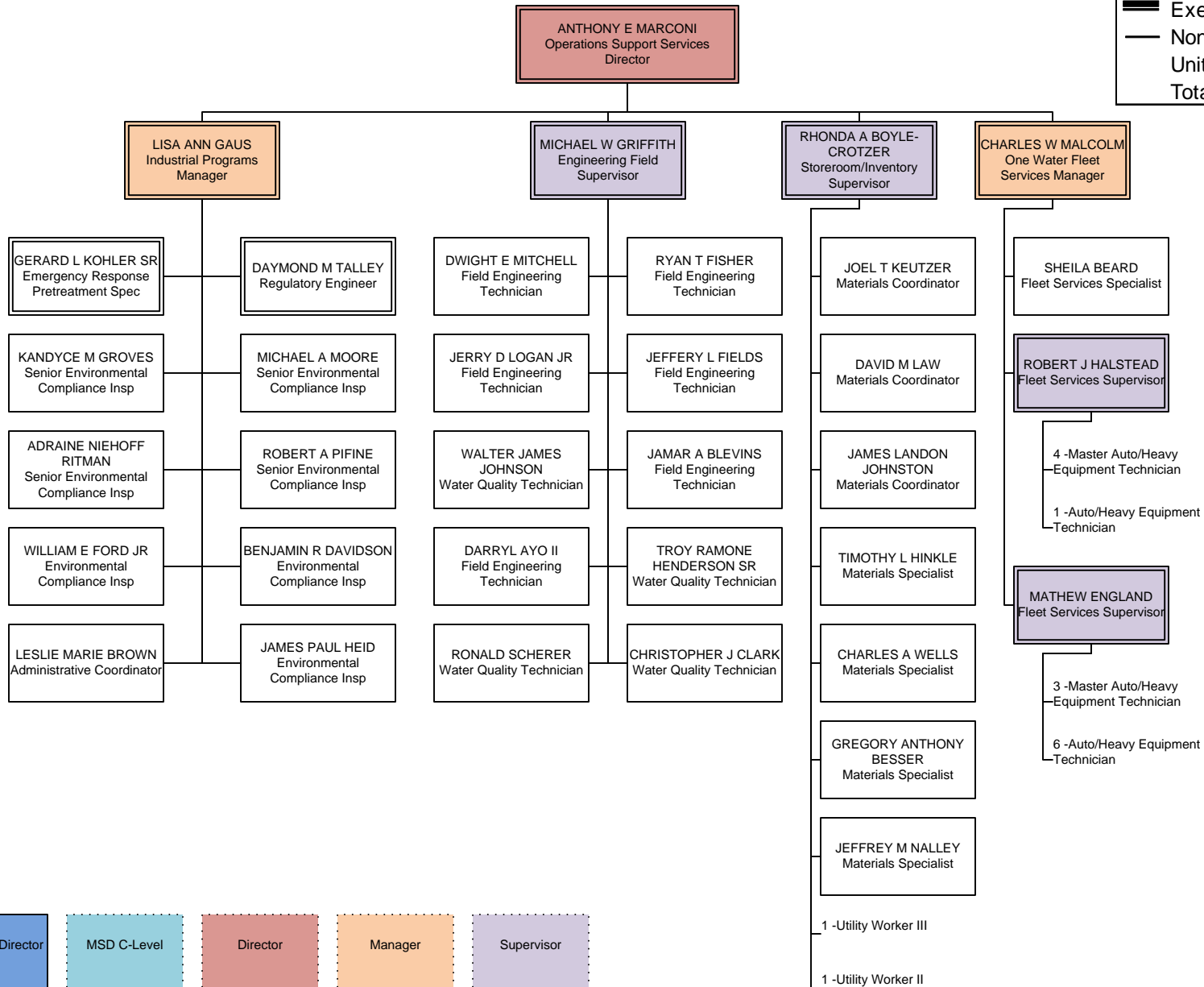
Operations Division Drainage and Flood Protection

BUDGET STATUS	
Actual	95
Vacant	<u>2</u>
Authorized	97
<hr/>	
Exempt	9
Non-Exempt	4
Unit	<u>84</u>
Total	97

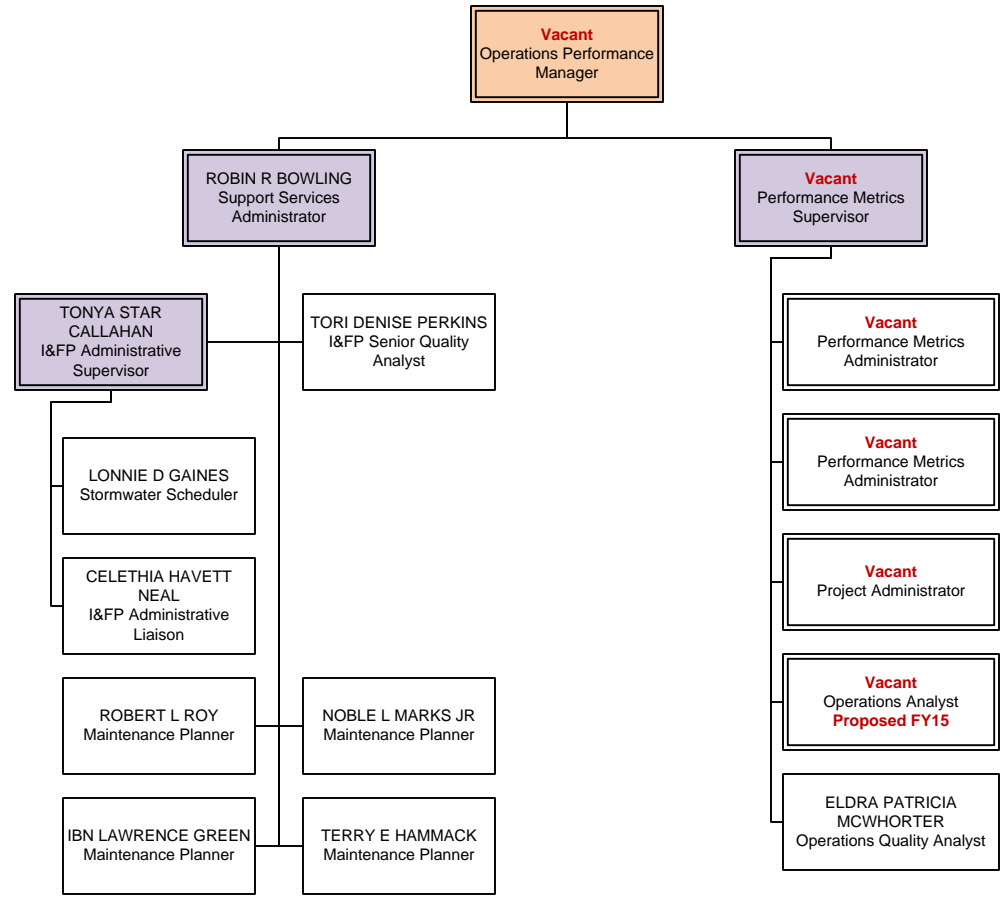


Operations Division Support Services

BUDGET STATUS	
Actual	51
Vacant	0
Authorized	51
Exempt	9
Non-Exempt	26
Unit	16
Total	51

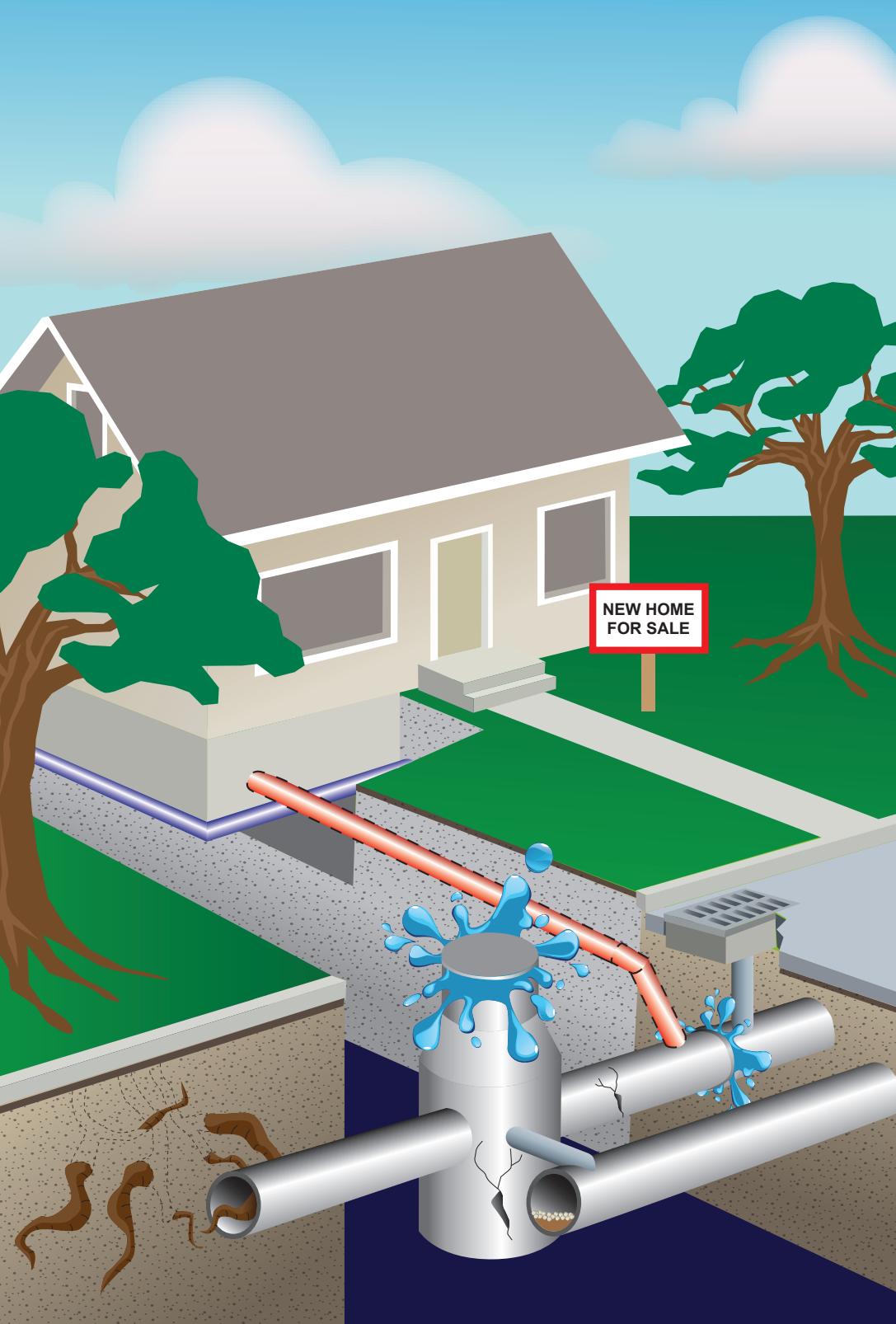


Operations Division Performance Metrics



BUDGET STATUS	
Actual	10
Vacant	6
Authorized	<u>16</u>
<hr/>	
Exempt	8
Non-Exempt	8
Unit	0
Total	<u>16</u>





**CONTINUOUS
SEWER SYSTEM
ASSESSMENT
AND BLOCKAGE
ABATEMENT PROGRAM**

FISCAL YEAR 2015
ANNUAL REPORT

Table of Contents

1. Program Background.....	3
2. CSSA Program Inspection & Rehabilitation	7
3. Blockage Abatement Program	14

Acronyms and Abbreviations

AAM	Advanced Asset Management
ACD	Amended Consent Decree
BAP	Blockage Abatement Program
CCTV	Closed-Circuit Television
CMOM	Capacity, Management, Operation and Maintenance
CSO	Combined Sewer Overflow
CSS	Combined Sewer System
CSSA	Continuing Sewer System Assessment
DISDW	Sewer Discharge during Dry Weather
DISREV	Rain Event related Sewer Discharge
GIS	Geographical Information System
GLPM	Gravity Line Preventive Maintenance
ICA	Interceptor Condition Assessment
IOAP	Integrated Overflow Abatement Plan
IT	Information Technology
IFP	Infrastructure and Flood Protection Division
I/I	Inflow and Infiltration
LOJIC	Louisville Jefferson County Information Consortium
LTCP	Long-Term Control Plan

MSD	Louisville and Jefferson County Metropolitan Sewer District
NMC	Nine Minimum Controls
QA/QC	Quality Assurance/Quality Control
PACP	Pipeline Assessment Certification Program
PM	Preventive Maintenance
PSC	Property Service Connection
RS	Regulatory Services
SCAP	System Capacity Assurance Plan
SMFTVI	Sewer Main Formula-based Television Inspection
SOP	Standard Operating Procedure
SSDP	Sanitary Sewer Discharge Plan
SORP	Sewer Overflow Response Plan
SSES	Sanitary Sewer Evaluation Study
SSO	Sanitary Sewer Overflow
TISCIT	Total Integrated Sonar and CCTV Inspection Technology
TM	Technical Memorandum
USI	Underground Sewers for Inspection (Walkable)

1. Program Background

The Louisville and Jefferson County Metropolitan Sewer District (MSD) is responsible for the operation and maintenance of the sewer system within the public right-of-way and dedicated easements in Jefferson County, Kentucky, in addition to small areas in several of the surrounding counties. The sanitary sewer collection system includes over 3,200 miles of sewers ranging from 6 inches to 27.5 feet in diameter, built between the late 1800's and present day. The construction materials consist of brick, clay, polyvinyl chloride (PVC), clay pipe, vitrified clay pipe (VCP) and reinforced concrete pipe (RCP). There are over 75,000 combined and separate sanitary manholes in the system constructed of reinforced concrete and brick materials. MSD also operates and maintains the following assets:

- 67,857 catch basins and yard drains
- 266 sanitary pump stations
- 16 flood pump stations
- 6 regional water quality treatment centers (WQTCs)
- 15 small WQTCs

MSD is currently conducting an intensive sewer condition evaluation to comply with its federal Consent Decree as well as the Capacity, Management, Operations and Maintenance (CMOM) and Nine Minimum Control (NMC) programs. The Continuous Sewer System Assessment (CSSA) program and Blockage Abatement Program (BAP) addresses certain aspects of Paragraph 24c. "CMOM (Capacity, Management, Operation and Maintenance) Programs Self-Assessment" and Paragraph 24a. "Nine Minimum Controls (NMC)" from the Amended Consent Decree (ACD).

The primary objective of evaluating infrastructure assets is to develop and implement maintenance and rehabilitation recommendations that reduce sewer overflows and improve the capacity, structural integrity and functionality of existing assets. This annual report summarizes the CSSA and BAP accomplishments for Fiscal Year (FY) 2015 (July 1, 2014 – June 30, 2015) along with anticipated actions for FY16. This summary will focus on two specific areas:

1. Sewer system inspection and rehabilitation; and
2. Sewer preventive maintenance (Blockage Abatement Program).

The CSSA and BAP programs require a defined approach to prioritize, perform, and track the inspection, cleaning, rehabilitation, replacement, and maintenance of sewer assets on a consistent and prioritized cycle. The two programs are also intended to achieve compliance with NMC 1 and 2, which require the proper operation, regular maintenance, and maximum use of MSD's combined sewer system.

Since initiating this CMOM and NMC program in 2008, MSD has spent over thirteen million dollars and inspected approximately 80% of the combined and separate sewer system. Figure 1 shows when and where inspection has been completed. Table 1 shows when and how much has been spent on inspection and cleaning activities.

Figure 1 - Completed Inspection Areas

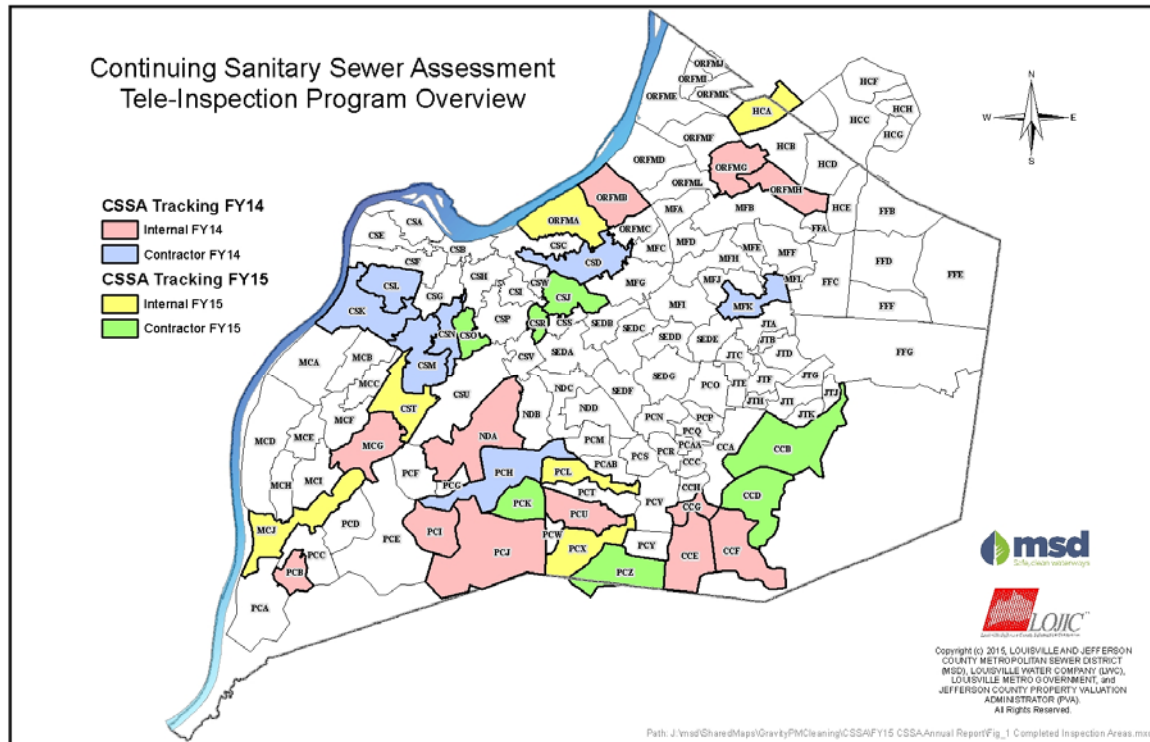


Table 1 - Inspection Summary

Fiscal Year	I&FP Internal Cleaning (SF)	I&FP Internal TVing (SMFTVI)	I&FP Contractor Cleaning and TVing (Capital Budget)	Total I&FP (Internal + Contractor) Cleaning and TVing
FY09	\$ 227,276	\$ 63,070	\$ -	\$ 290,346
FY10	\$ 122,712	\$ 317,329	\$ 1,976,449	\$ 2,416,490
FY11	\$ 140,961	\$ 266,960	\$ 1,950,969	\$ 2,358,890
FY12	\$ 111,079	\$ 392,764	\$ 2,035,149	\$ 2,538,992
FY13	\$ 115,042	\$ 286,303	\$ 1,993,993	\$ 2,395,338
FY14	\$ 353,794	\$ 543,514	\$ 937,500	\$ 1,834,808
FY15	\$ 80,183	\$ 211,870	\$ 937,500	\$ 1,229,552
TOTAL	\$ 1,151,047	\$ 2,081,809	\$ 9,831,560	\$ 13,064,416

The CSSA program is an asset management program with the purpose of determining the functional and structural state of MSD’s existing sewer assets, both combined and separate, and taking action to maintain or restore sewer capacity. Under this effort, all possible sewer mains will be inspected based on risk and other programmatic obligations. The inspection data is captured in a standardized format allowing for the comparison of various segment conditions, which facilitates remedial action prioritization.

The BAP, a subsidiary program to the CSSA, encompasses sewer lines identified through the CSSA inspection and data analysis as having recurring maintenance needs due to root blockages, sedimentation, or oil and grease deposits. This program tracks the segments with operational defects, sets up recurring work orders, assigns work to available resources, tracks progress and documents the work performed. In the past, this program has been referred to as the Gravity Line Preventive Maintenance (GLPM) program.

Sewer infrastructure conditions are being assessed using a variety of desktop and field inspection techniques which include, but are not limited to, closed circuit television (CCTV), smoke testing, dye testing, visual manhole inspection, private property inspection and wet weather inspection.

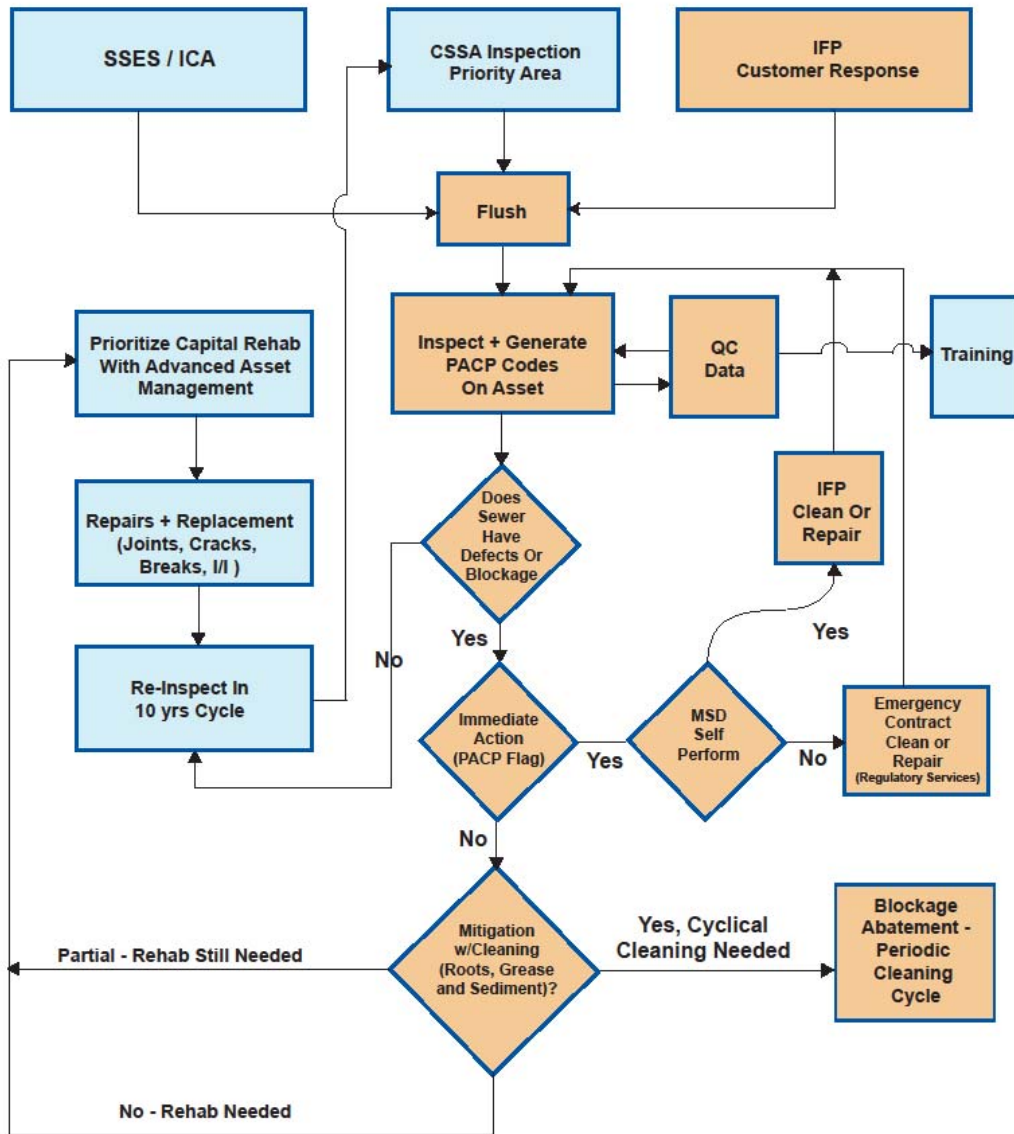
Once inspection of a study area is complete, inspection data are evaluated through a pipe condition assessment process and appropriate maintenance and rehabilitation actions are taken. The inspection and rehabilitation activities are carried out under MSD's CSSA program, while recurring maintenance activities are addressed by the BAP. The process work flow for the two programs are outlined in the work flow diagram in Figure 2.

Previous annual reports for FY08, FY09, FY10, FY11, FY12, FY13 and FY14 describe the general programmatic structure in more detail and can be referenced in the Project WIN Annual Reports posted here: <http://www.msdpjprojectwin.org/Library.aspx> under Consent Decree Reporting and included as an appendix to the Project WIN Annual Report.

Figure 2 - CSSA and BAP Process Work Flow

MSD Continuing Sewer System Assessment and Gravity Line Preventive Maintenance CMOM

WORK FLOW AND DECISION FRAMEWORK



- = Activities
- = CSSA
- = Decision Point
- = BAP



CLEAN, GREEN, GROWING COMMUNITY



2. CSSA Program Inspection & Rehabilitation

MSD developed a 3-pronged approach to gather asset inspection data. Using operational knowledge and various program drivers, MSD staff identified specific areas for the following:

1. Sanitary Sewer Evaluation Studies (SSESs) that include CCTV, smoke and dye testing and manhole inspection.
2. Interceptor Condition Assessments (ICAs) for CCTV on large interceptors for CCTV condition assessment. This effort requires higher tech equipment and brighter lighting sources.
3. CCTV assessment on select SCAP basins, generally looking at line segments 6" to 48" in diameter. Inspection of sewers in these areas that began in FY11 were continued in FY15 (see Figure 3). A map depicting projected inspection areas for FY15 is shown in Figure 4. The areas are marked draft as projections are adjusted throughout the year for various reasons.

The following activities were completed during FY15:

- Assigned 304 miles of sanitary sewers in prioritized areas.
- Utilized standard Pipeline Assessment and Certification Program (PACP) coding protocols and employed a standard QA/QC process to ensure deliverables meet a consistent and acceptable standard.
- Continued to consolidate internal and external CCTV videos and field inspection pictures.
- Worked with MSD IT department in order to develop a plan for integrating CCTV videos with Hansen 8 and eB.
- Completed two SSES involving CCTV, manhole inspection, smoke testing and private property inspection.
- Performed CCTV inspection on an additional 11 miles of collection system sewers.
- Completed assessments of 22 inspection areas and generated recommendation packages.
- Utilized the Neztex software to communicate with the Hansen system to facilitate data transfer for PACP TV inspections from the Hansen asset management system to remote inspection software and back.
- Utilized a standard data QA/QC methodology to ensure data consistency.

Figure 3 - Inspection Areas Complete in FY15

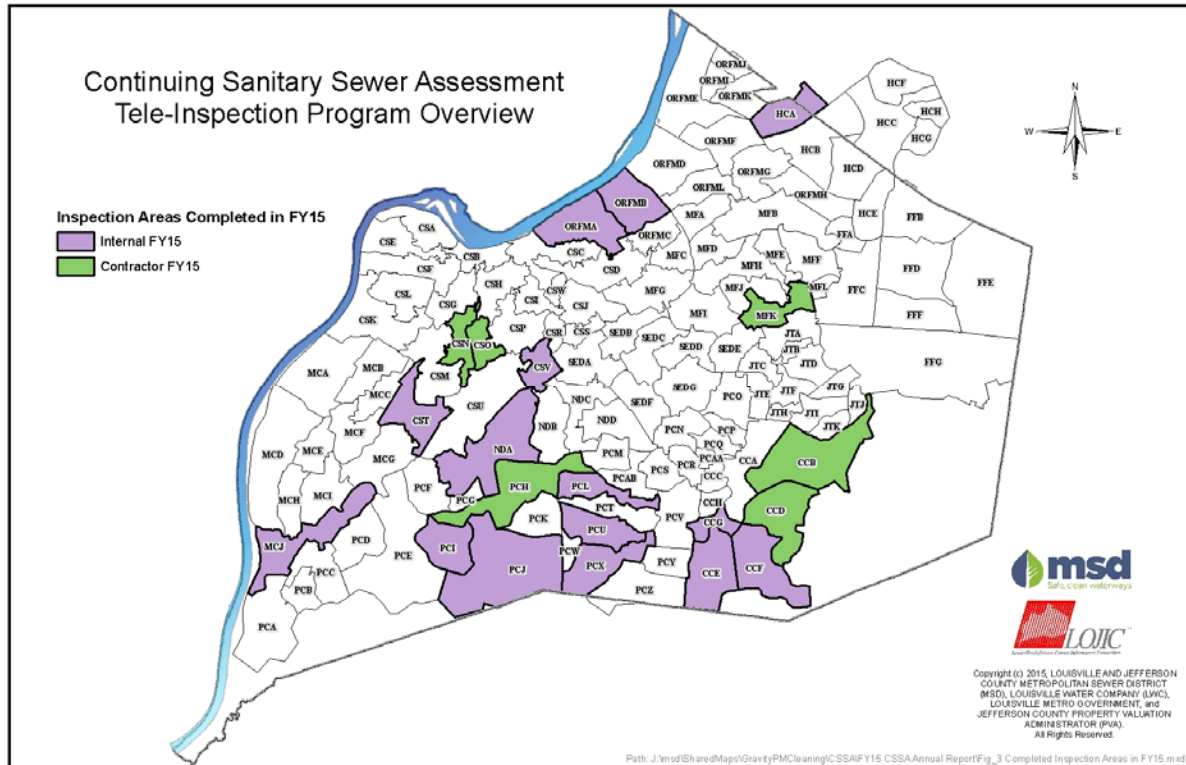
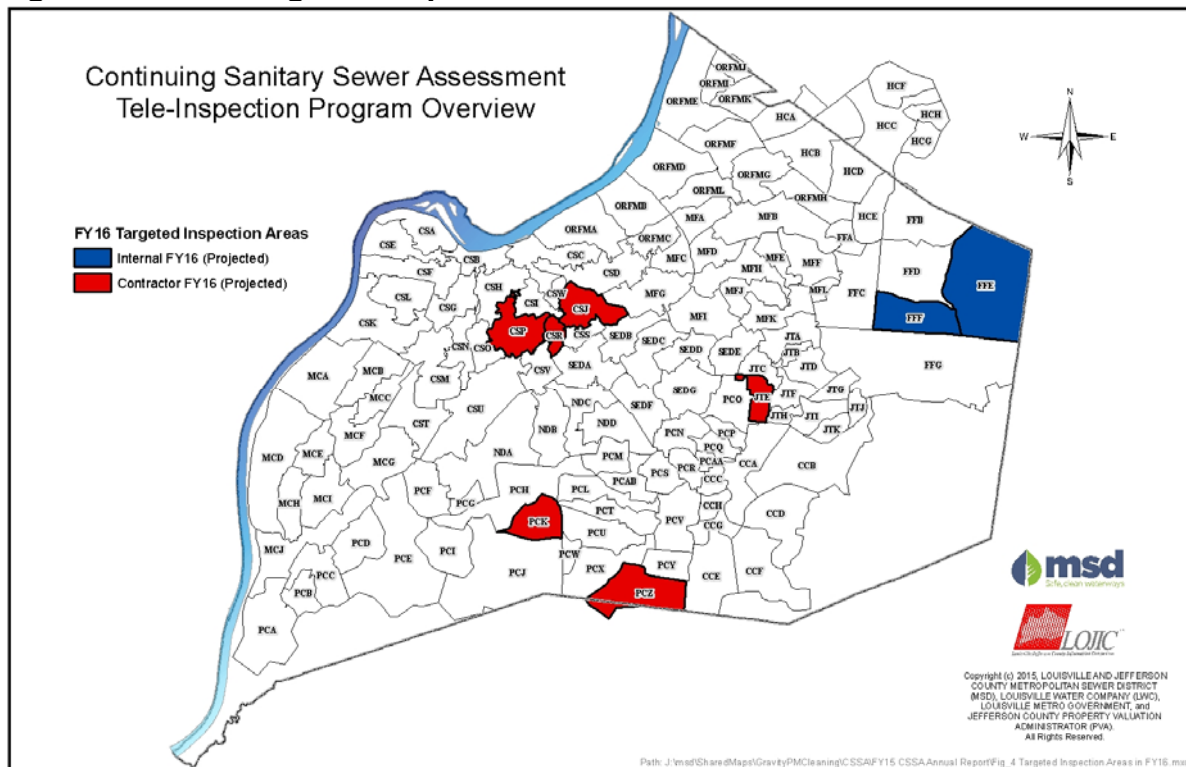


Figure 4 - FY16 Targeted Inspection Areas



Sanitary Sewer Evaluation Studies (SSES)

Sub-basins were selected for SSES projects to identify the cause of specific sewer overflows, capacity and performance, or Inflow and Infiltration (I/I) problems. Two SSES areas were identified in FY14 and completed in FY15 for a total of 531.7 miles of sewer. Each SSES project included:

- CCTV;
- Manhole Inspections;
- Smoke Testing;
- Private Property Inspections; and
- Wet Weather Inspections.

Specific data exchange protocols were utilized and data is being captured in MSD’s Hansen asset management system, once fully approved as a final product. See Table 2 for SSES studies completed during FY15. All final reports and rehabilitation recommendations for these areas were submitted to MSD during FY15.

Table 2 - Completed Study Areas

Project	Linear Feet	Miles	Number of Manholes	Project Selection Criteria
Goose Creek	28,517	5.4	1,098	Integrated Overflow Abatement Plan Project Related
Nightingale	2,779,058	526.3	12,719	Integrated Overflow Abatement Plan Project Related
TOTAL	2,807,575	531.7	13,817	

Beginning in FY16, MSD will begin to utilize existing teleinspection data gathered through the CSSA program in conjunction with contracted manhole inspections to generate rehabilitation recommendations, in order to maximize the benefit of the CSSA program.

Interceptor Condition Assessments

As of FY15, MSD has completed all planned Interceptor Condition Assessments. Future efforts will focus on rehabilitation of defects found under the previous assessments and are currently in the planning stage.

MSD plans to complete inspections of Large Diameter and Interceptor/Trunk Sewers through future contracts that will allow CCTV, Sonar, and TISCIT inspections.

Collection System Sewer Assessments

During the reporting period, the division of labor related to the assessment of MSD’s collection system using internal and external resources, based on pipe diameter and internal resource availability, was transitioned from Operations to Engineering. In FY15, MSD crews inspected 155.2 miles of sewer while contractors inspected 123.0 miles as outlined in Table 3. Through

these combined efforts, MSD inspected over 278 miles of sewer in FY15 and has averaged 429 miles of sewer per year, well ahead of the 320 mile/year pace needed to inspect the 3,200 mile system as committed to in the CMOM Self-Assessment.

Two IFP field specialists are primarily dedicated to CSSA CCTV work, with the remaining 4 field specialists dedicated to customer request response and maintenance crew support. An off-shift crew continues to provide additional resources in the department. Each CSSA CCTV truck is coupled with a flusher or combination vacuum cleaner truck when resources allow, so that cleaning is a more timely and responsive aspect of their condition assessment activities.

Sub-basin inspections that were completed or nearing completion during FY15, as a part of the Collection System Sewer Assessment, are summarized in Table 3 and FY16 projected areas in Table 4.

Table 3 - Completed Collection System Assessment Areas

Sub-Basin	Linear Feet	Miles	Internal / Contracted
Cedar Creek Area (CCB, CCD)	247,140	46.8	Contracted
Cedar Creek Area (CCE, CCF, CCG)	30,524	5.8	Internal
Combined Sewer Area (CSN, CSO)	84,132	15.9	Contracted
Combined Sewer Area (CSO, CST, CSV)	168,401	31.9	Internal
Hite Creek Area (HCA)	93,012	17.6	Internal
Middle Fork Area (MFK)	131,627	24.9	Contracted
Mill Creek Area (MCJ)	173,942	32.9	Internal
Northern Ditch Area (NDA)	54,922	10.4	Internal
Ohio River Force Main Area (ORFMA, ORFMB)	126,805	24.0	Internal
Pond Creek Area (PCI, PCJ, PCL, PCU)	171,751	32.5	Internal
Pond Creek Area (PCH, PCX)	170,199	32.2	Contracted
Shively Interceptor Annual Assessment	16,416	3.1	Contracted

Sub-Basin	Linear Feet	Miles	Internal / Contracted
Total Assigned [Internal Crews]	819,357	155.2	Internal Crews completed, on average, 89% of assigned linear footage
Total Assigned [Contracted Crews]	649,514	123.0	Contractor Crews completed, on average, 96% of assigned linear footage
Total Assigned	1,468,871	278.2	

Table 4 - Projected Collection System Assessment Areas

Sub-Basin	Linear Feet	Miles	Internal / Contracted
Combined Sewer Area P (CSP)	224,460	42.5	Contracted
Floyds Fork Area E (FFE)	226,833	43.0	Internal
Floyds Fork Area F (FFF)	120,222	22.8	Internal
J-Town Area E (JTE)	98,384	18.6	Contracted
Combined Sewer Area J (CSJ)	160,950	30.5	Contracted
Combined Sewer Area R (CSR)	34,807	6.6	Contracted
Pond Creek Area K (PCK)	50,821	9.6	Contracted
Pond Creek Area Z (PCZ)	127,888	24.2	Contracted
Total Assigned [Internal Crews]	347,055	65.7	Internal and contracted crews have a goal to complete 85% of the assigned lines and 85% of the assigned footage
Total Assigned [Contracted Crews]	697,310	132.1	
Total Assigned	1,044,365	197.8	

MSD follows the National Association of Sewer Service Companies (NASSCO) PACP Quality Control Standards for QA/QC of all inspection deliverables, whether part of an SSES project, ICA or collection system assessment. Each year MSD employees involved with inspection activities or rehabilitation efforts are either trained or recertified in PACP. The total number of MSD employees currently certified in PACP is 19.

To proactively address current and upcoming infrastructure issues, a detailed decision framework has been developed including inspection, assessment, prioritization, mapping, and remediation activities (including maintenance and/or rehabilitation).

Decision Framework

For the sewer assessment program, the decision framework steps are to inspect, evaluate, report and implement in a continuous cycle, as illustrated in Figure 2.

- Inspection is conducting manhole and pipe surveys of field conditions to document defects according to standardized PACP methods.
- Evaluation is reviewing the field surveys for major defects, and recommending remediation activities, if needed.
- Reporting is presenting recommended activities in a report with cost estimates, maps and a description of the required remediation effort.
- Implementation is carrying the recommendations through construction. The implementation step includes producing bid documents and tracking remediation activities.



Figure 5 - Cast in place pipe is installed to rehabilitate long stretches of dilapidated sewer mains

Assessment Results

The assessment process does not conclude with implementation, but with defining an inspection cycle to continue to monitor and assess the infrastructure. A findings report is developed for each study area including a summary of the area and issues present, rehabilitation or remediation and maintenance recommendations, cost estimates, maps, bid documents, and a determination of the future inspection interval. The findings report provides the foundation and guidance for future maintenance and rehabilitation activities including cost estimates and mapping of repairs and locations. This information is utilized to determine what repairs will be completed as rehabilitation projects and what maintenance activities will be diverted to the BAP.

Rehabilitation activities are selected and prioritized through the evaluation processes. Utilizing the recommendations, projects are bid and rehabilitation work is completed. During FY15, a total of eight projects were completed. Table 5 summarizes FY15 rehabilitation project areas, linear feet of pipe and estimated costs associated with the rehabilitation projects. An example of the type of work performed in FY15 is shown in Figure 5.

In FY16, MSD will continue to assess inspection areas and generate maintenance and rehabilitation recommendations for focus areas. Rehabilitation projects are prioritized based on SSO frequency, basement backups, hauling operations and other operational issues. Table 6 summarizes work ongoing from FY15 and planned work to begin FY16.

Table 5 - Completed Rehabilitation Projects

Rehabilitation Area	Pipe (LF)	Pipe (Miles)	Manholes	Estimated Costs
Berrytown	1,420	0.3	45	\$ 59,254
Camp Taylor Prestonia	16,843	3.2	35	\$ 658,102
Goose Creek	9,490	1.8	120	\$ 383,627
Hillridge	9,654	1.8	19	\$ 288,657
Meadow Stream	1,579	0.3	804	\$ 679,124
Prospect	26,543	5.0	361	\$ 1,316,389
Rosa Terrace	7,358	1.4	43	\$ 216,265
Starview	2,631	0.5	42	\$ 95,691
TOTAL	75,518	14.3	1,469	\$ 3,697,108

Table 6 - Active and Projected Rehabilitation Projects

Rehabilitation Area	Pipe (LF)	Pipe (Miles)	Manholes	Estimated Costs
Admiral Pump Station Sewershed	23,247	4.4	280	\$ 1,105,804
McNeely Lake WQTC Sewershed	3,671	0.7	36	\$ 168,052
Mt Washington Rd Pump Station Sewershed	4,250	0.8	56	\$ 205,896
Middletown Phase II	547	0.1	-	\$ 24,342
River Road Interceptor	4,104	0.8	5	\$ 400,365
Middle Fork Area (MFF)	-	-	19	\$ 9,975
Lea Ann Way West Quads 1 & 2	11,050	2.1	83	\$ 904,734
Lea Ann Way West Quad 3	14,397	2.7	301	\$ 635,462
Lea Ann Way West Quad 4	12,571	2.4	578	\$ 573,778
Southeast Diversion Area (SEDC, SEDD, SEDG)	85,695	16.2	949	\$ 4,005,886
Silver Heights	-	-	70	\$ 108,010
Yorktown	-	-	89	\$ 165,930
Hillridge Phase II	-	-	31	\$ 65,320
Prospect Phase IB	6,181	1.2	-	\$232,406
TOTAL	165,713	31.4	2497	\$8,605,959

3. Blockage Abatement Program

Overview

MSD is currently refining the procedures and protocols of its BAP, which initiates routine maintenance on those sewer lines exhibiting operational or maintenance related defect conditions as they are found through the Continuous Sewer System Assessment (CSSA) inspection program.

This program is a refinement of the gravity line preventive maintenance that MSD has implemented over the years. Maintenance activities related to this program include re-inspection, flushing and vacuum cleaning, root cutting, chemical root treatment, chemical grease treatment, and long-term rehabilitation assessment. Consistent, periodic preventive maintenance of the sewer system to maximize asset life and minimize overflows, property damage and health risks is the primary goal of the program.

MSD currently performs condition-driven maintenance activities on portions of the sewer system, along with a large amount of reactive maintenance and rehabilitation due to customer service calls and field review. As the 3,200-mile system is inspected through the CSSA program, MSD will use the BAP to expand its condition-driven maintenance to address those sewers demonstrating a need to be in the program. This program expansion requires planning and resources to execute effectively. Over time, the segments in the program will be reviewed to determine if the maintenance need can be remediated to eliminate the recurring maintenance activity.

FY15 Activities

MSD continued a Chemical Grease Treatment program developed in FY13 for sanitary lines. Chemical grease treatment allows MSD to clean a sewer with a substantial amount of Grease buildup and flush it down stream. The chemical product MSD uses is a grease liquefier that liquefies grease in sewer lines on contact and allows it to wash downstream without re-coagulating. It is non-corrosive, biodegradable, non-acidic, and is treatment plant friendly. A 1% solution of grease liquefier is mixed within the water of a Jetter Truck. MSD completed several pilot areas that allowed crews to become familiar with using a product and helped engineers gain a better understanding of when and where to use product. Completed FY15 BAP activities are summarized in Table 7.

The following activities related to BAP accomplishments occurred during the FY15 reporting period:

- Performed chemical root treatment on 446,024 LF (2,065 line segments) of Separate Sanitary Sewer.
- Performed sewer flushing and cleaning on 754,264 LF (4,397 line segments) of Separate Sanitary Sewer and 86,386 LF (489) of Combined Sewer.
- Performed root cutting on 103,066 LF (499 line segments) of Separate Sanitary Sewer and 9,622 LF (47) of Combined Sewer.

Table 7 - Completed BAP Activities

Activity	Linear Feet	Miles
Flushing	840,650	159.2
Vacuum Cleaning	818	0.2
Root Cutting	112,688	21.3
Chemical Root Treatment	446,024	84.5
Chemical Grease Treatment	847	0.2
TOTAL	1,401,026	265.3

Anticipated FY16 Activities

In FY16, data collection will continue on the pilot grease treatment dosing areas. Once a statistically acceptable data set is collected, a study will be performed to determine the next steps for grease treatment and target areas including staffing and equipment needs.

An aggressive approach will be taken to continue maintenance activity implementation and programmatic effectiveness and refinement. Sewers currently maintained within the program will remain and sewer lines identified as needing recurring maintenance through proactive condition assessment will be incorporated as needed. The sewers requiring intensive maintenance will be placed on a priority list for replacement and correction to minimize future maintenance. MSD will focus on reviewing reported overflows caused by blockages, grease, or roots to actively re-inspect and maintain lines to keep the overflows from recurring. Projected BAP activities are summarized in Table 8.

Table 8 - Projected BAP Activities

Activity	Linear Feet	Miles
Flushing	971,259	184.0
Vacuum Cleaning	3,000	0.6
Root Cutting	73,106	13.8
Chemical Root Treatment	400,000	75.8
Chemical Grease Treatment	5,000	0.9
TOTAL	1,452,365	275.1

Quarterly reports will continue to include project-specific progress on inspection, maintenance and rehabilitation efforts. Annual reports will continue to include programmatic updates on progress, refinements, and upcoming efforts.

Critical Sewers

Critical infrastructure is defined as combined and sanitary sewers that would have a significant negative impact to the community due to failure or may be considered highly susceptible to pipe degradation and failure due to I/I or other environmental factors.

MSD has several initiatives to assist in determining sewers that will qualify as critical. As a starting point for the program, MSD conducted an in house GIS analysis to identify large diameter sewers that are old, in the floodplain and have significant defects based on data

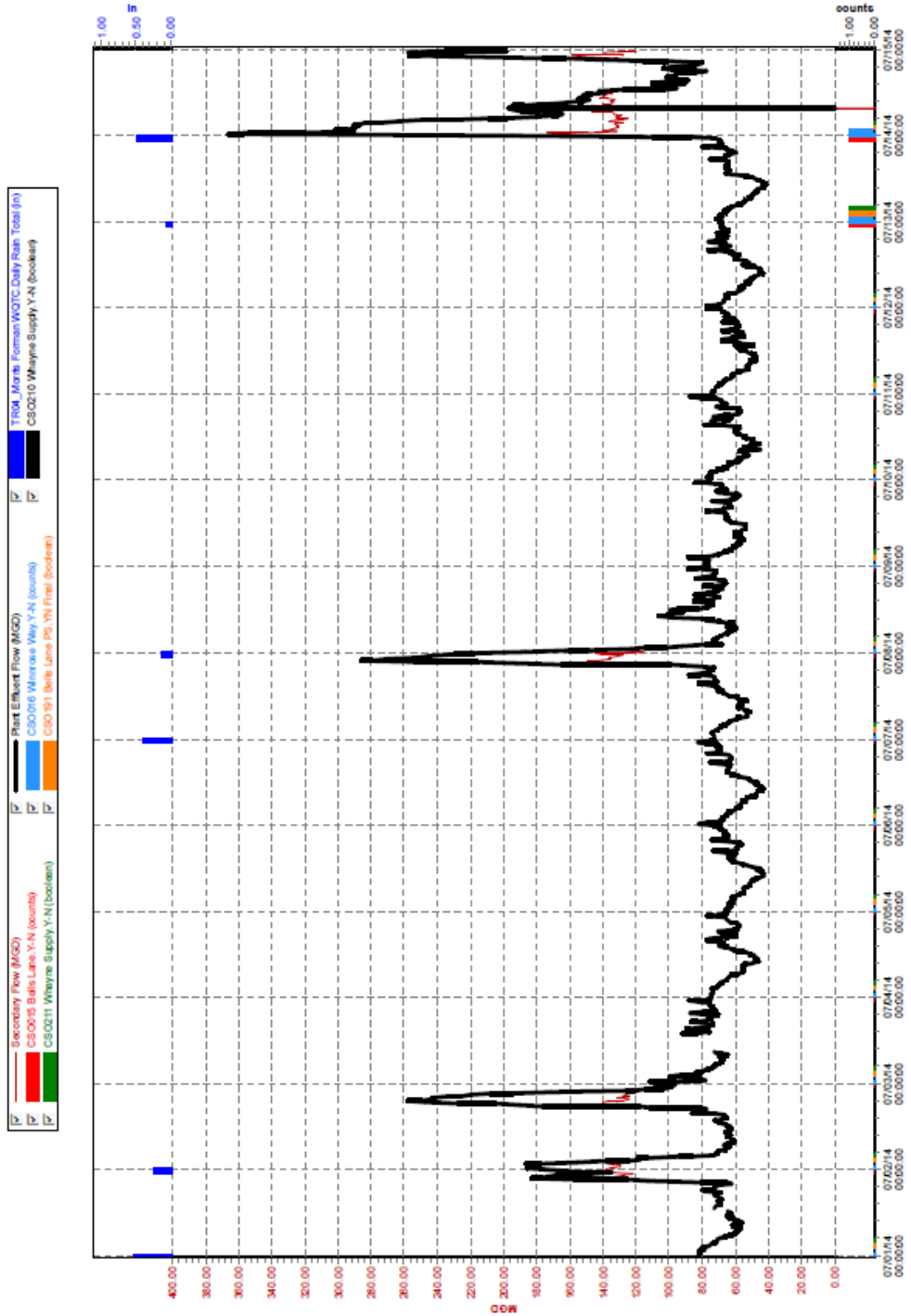
collected with the inspection programs. This analysis also identified sewers where MSD has recurring maintenance activities.

As a result of this analysis, MSD is re-evaluating the approach of the Blockage Abatement Program. This new approach will allow MSD to look at how MSD Maintenance crews prioritize maintenance activities such as root cutting, chemical root control, flushing, vacuum cleaning and grease control along with other cleaning activities. In FY15, MSD will enhance the program to tighten criteria for maintenance, frequency and a definitive criteria for prioritizing rehabilitation for eliminating the need for the recurring maintenance and sewer backups.

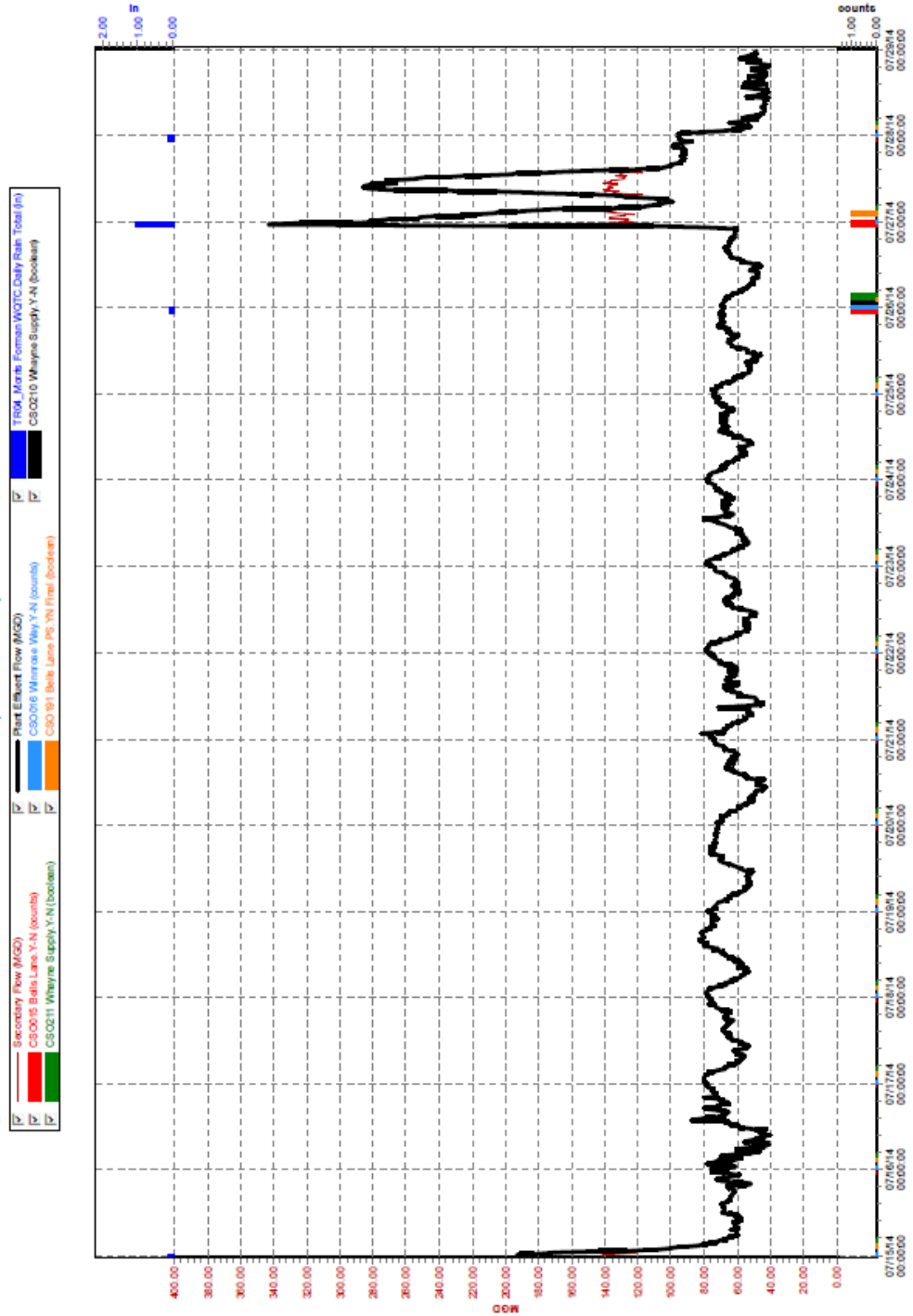
The third tool that MSD will learn more about in the coming year is the Advanced Asset Module now available in the Hansen 8 information management system. As part of the migration from Hansen 7 to Hansen 8 (which is now complete), MSD developed failure curves and decision models for many variables related to sewer life cycle. The Advanced Asset Module should assist with identifying and prioritizing areas for rehabilitation and further investigation on a regular basis.

APPENDIX J – MORRIS FORMAN WQTC FY15 CHARTS

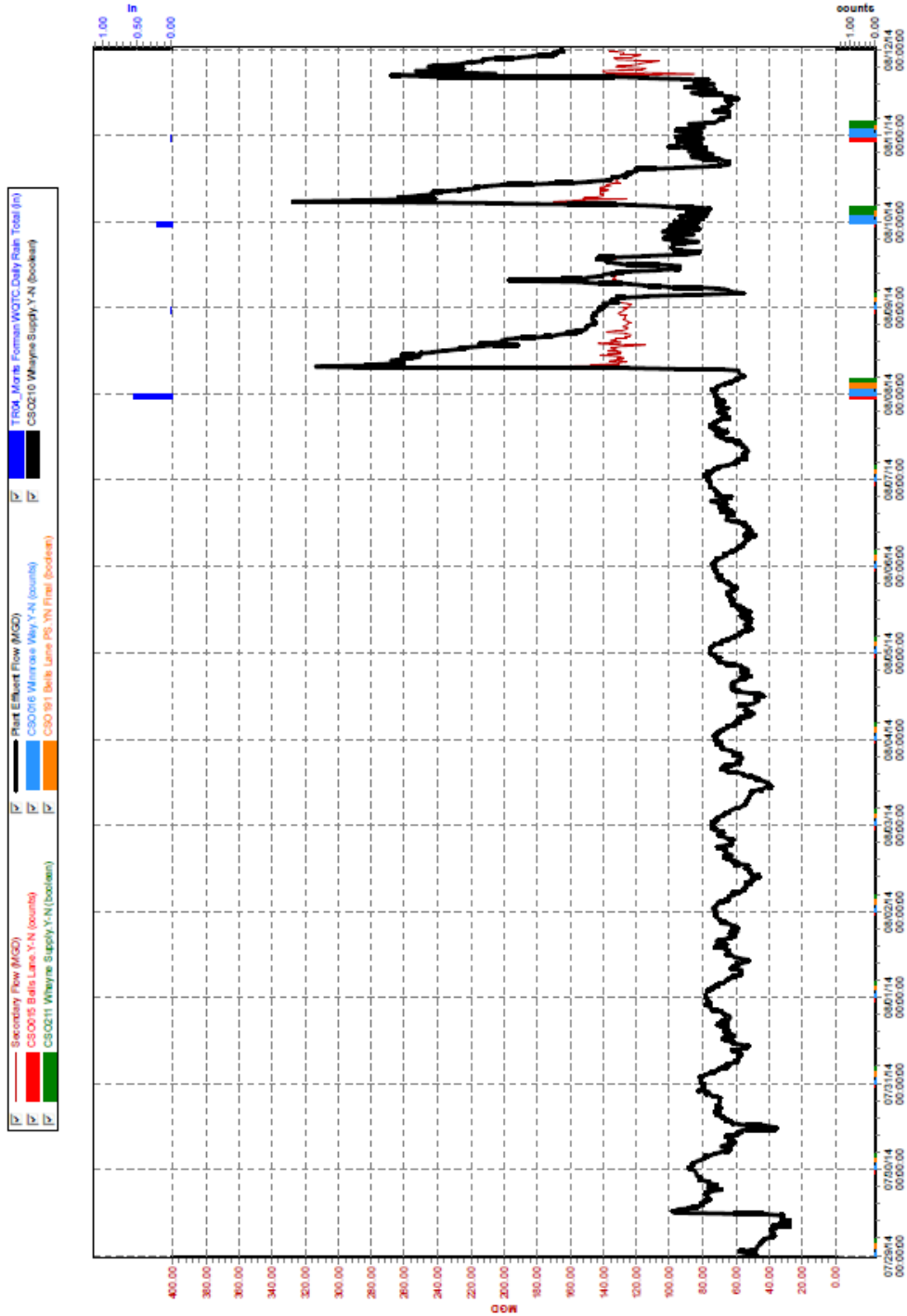
Morris Forman WQTC - Bypass vs. Large CSOs
(07/01/14 to 07/15/14)



Morris Forman WQTC - Bypass vs. Large CSOs
(07/15/14 to 07/23/14)

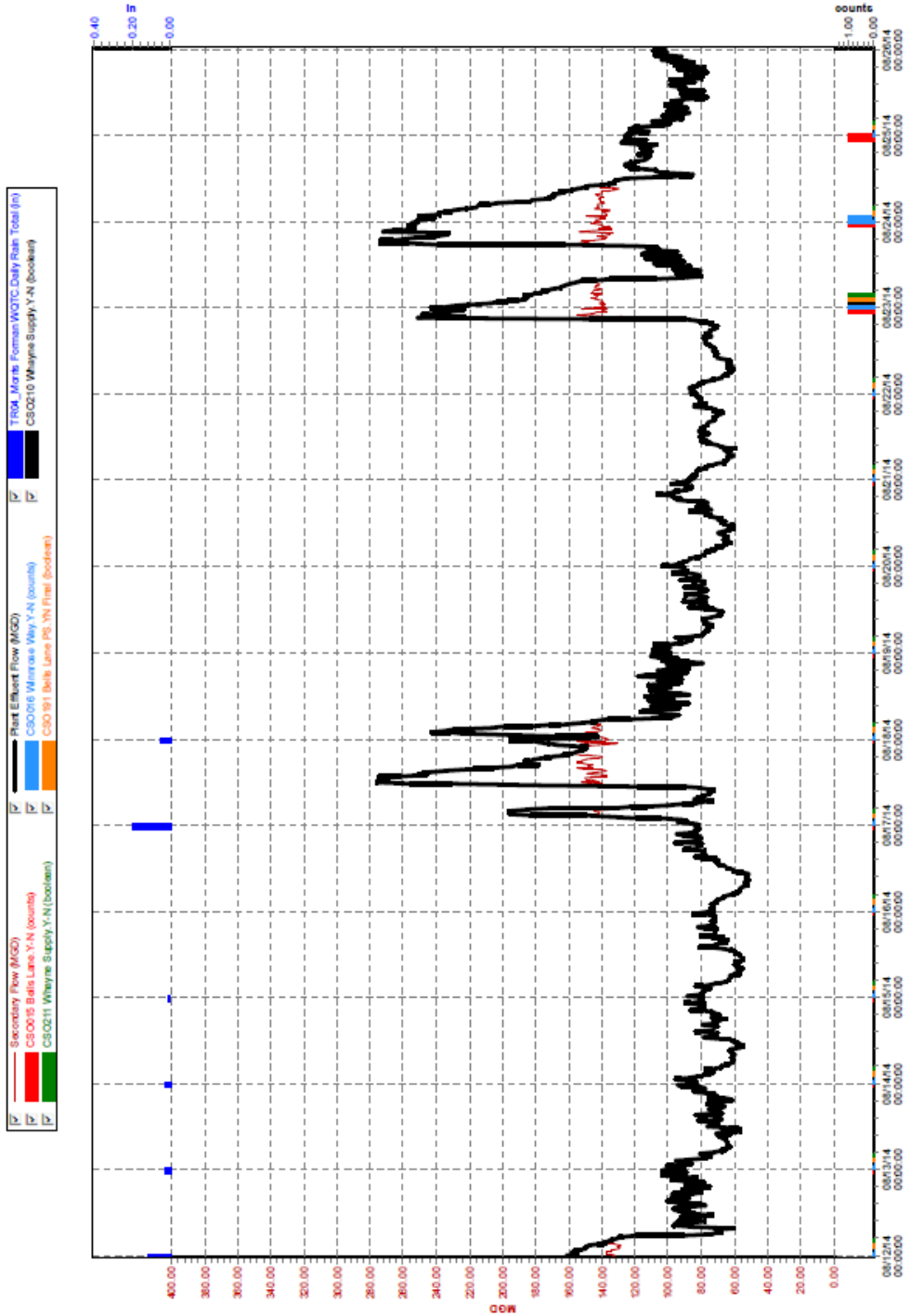


Morris Forman WQTC - Bypass vs. Large CSOs
(07/29/14 to 08/12/14)



Morris Forman WQTC - Bypass vs. Large CSOs

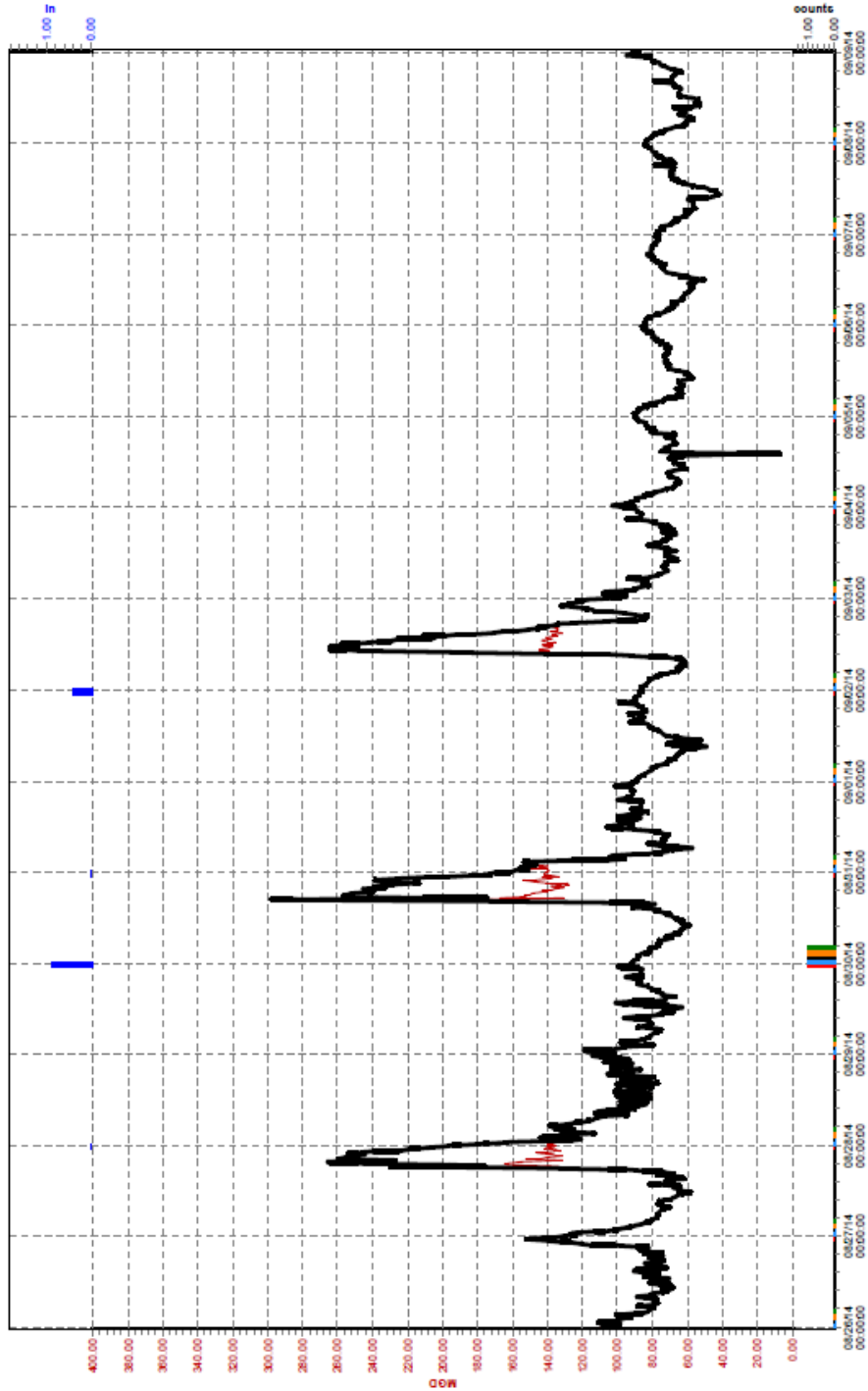
(08/12/14 to 08/28/14)



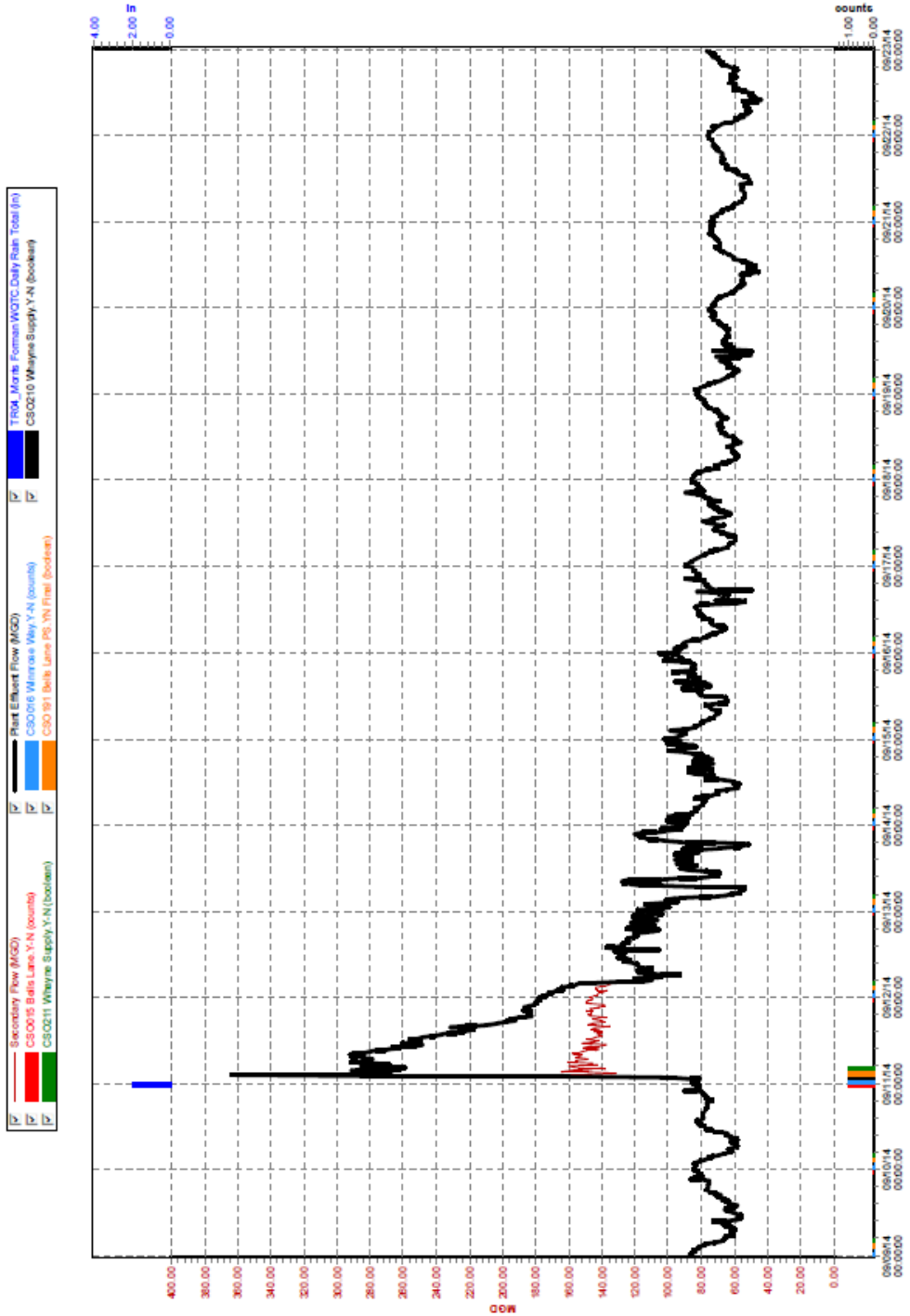
Morris Forman WQTC - Bypass vs. Large CSOs

(08/26/14 to 09/09/14)

- Secondary Flow (MGD)
- CSO016 Ball Lake Y-N (counts)
- CSO011 Wayne Supply Y-N (bookies)
- Plant Effluent Flow (MGD)
- CSO016 Winona Way Y-N (counts)
- CSO 091 Belle Lake IS Y-N (Free Bookies)
- Total Morris Forman WQTC Daily Rain Total (in)
- CSO010 Wayne Supply Y-N (bookies)



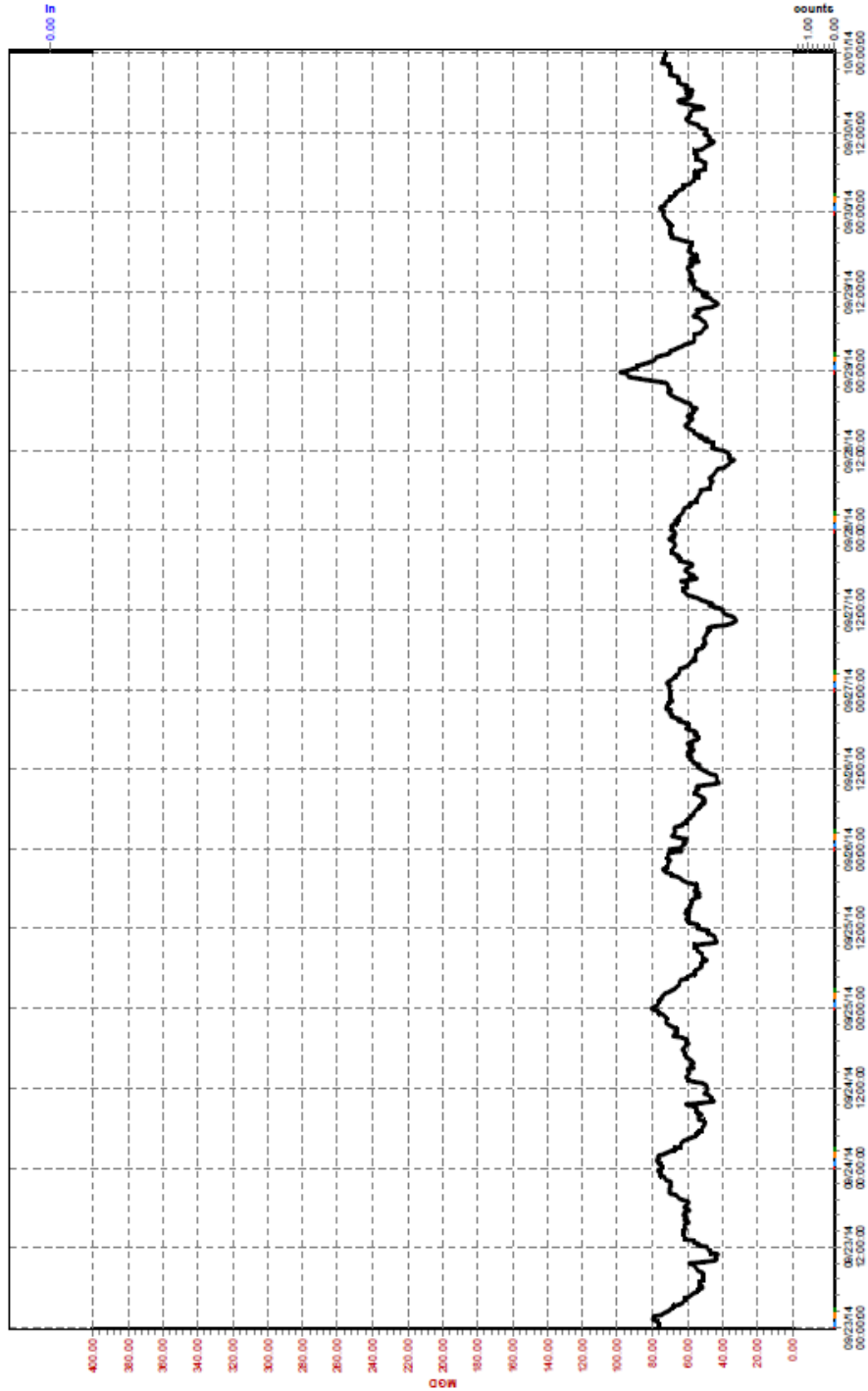
Morris Forman WQTC - Bypass vs. Large CSOs
(09/09/14 to 09/23/14)



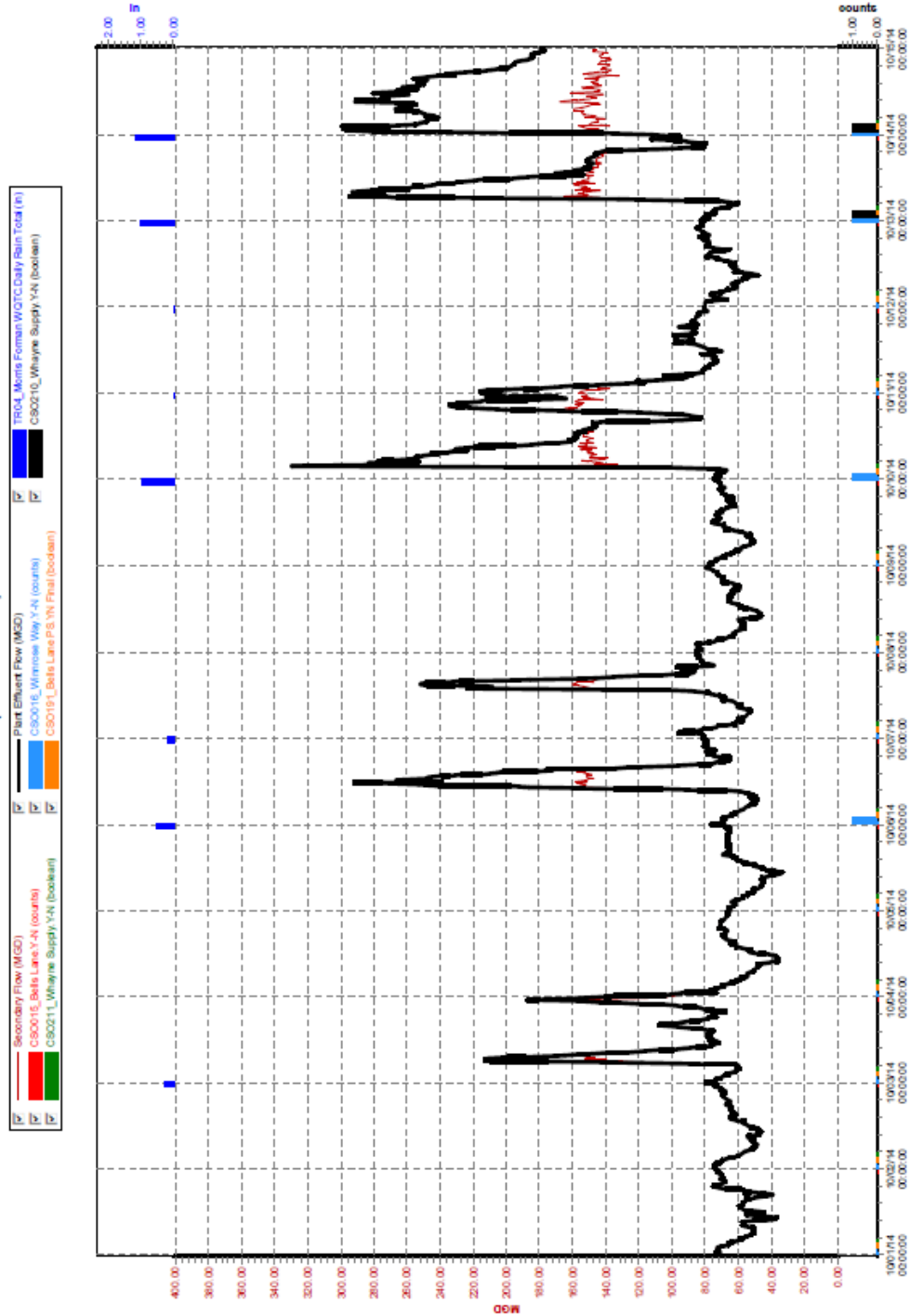
Morris Forman WQTC - Bypass vs. Large CSOs

(09/23/14 to 10/01/14)

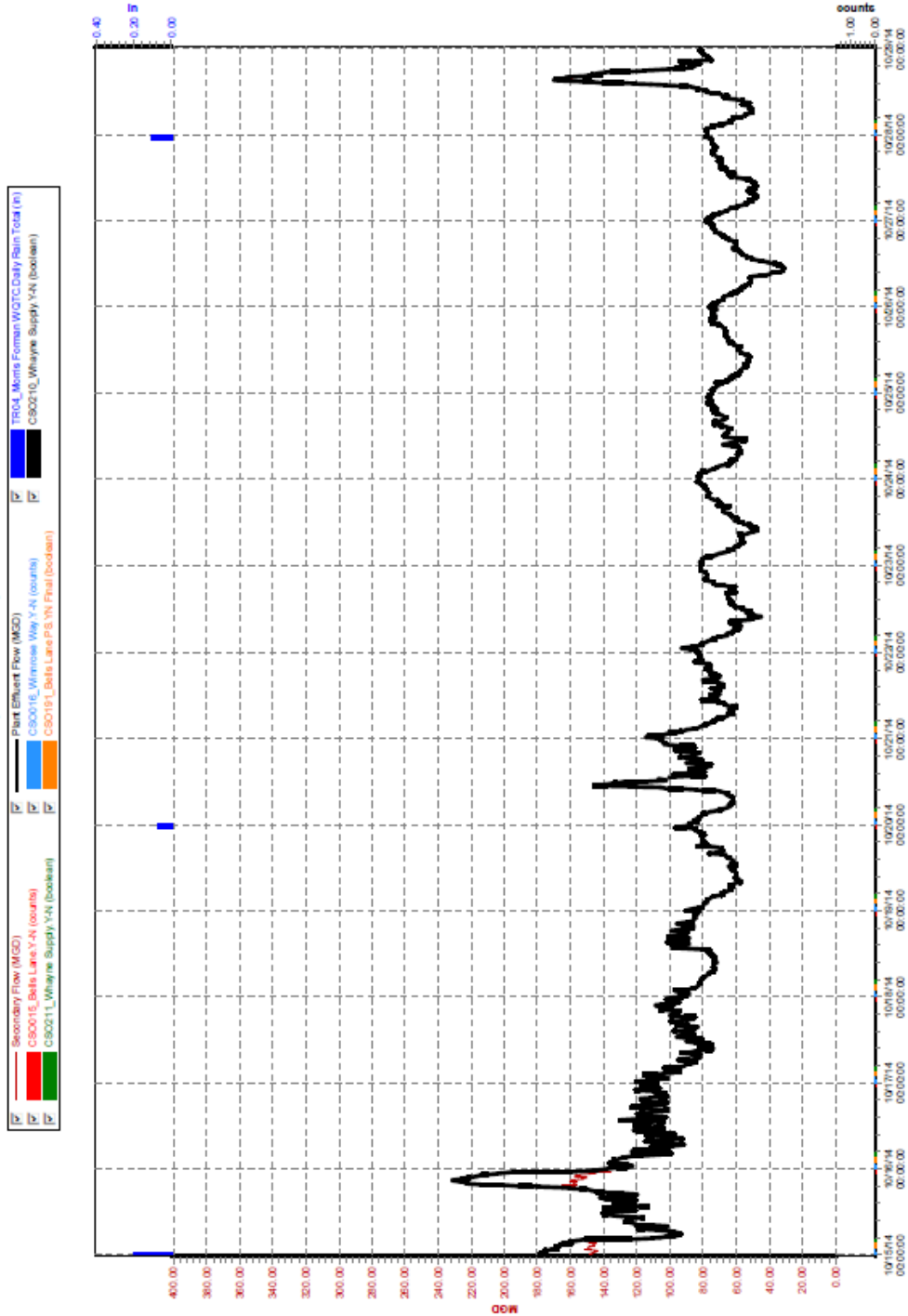
- Secondary Flow (MGD)
- CSO015 Ball Lake Y-N (counts)
- CSO011 Wayne Supply Y-N (bookies)
- Plant Effluent Flow (MGD)
- CSO016 Winona Way Y-N (counts)
- CSO 091 Ball Lake PS Y-N (Flow Bookies)
- Total Morris Forman WQTC Daily Rain Total (in)
- CSO010 Wayne Supply Y-N (bookies)



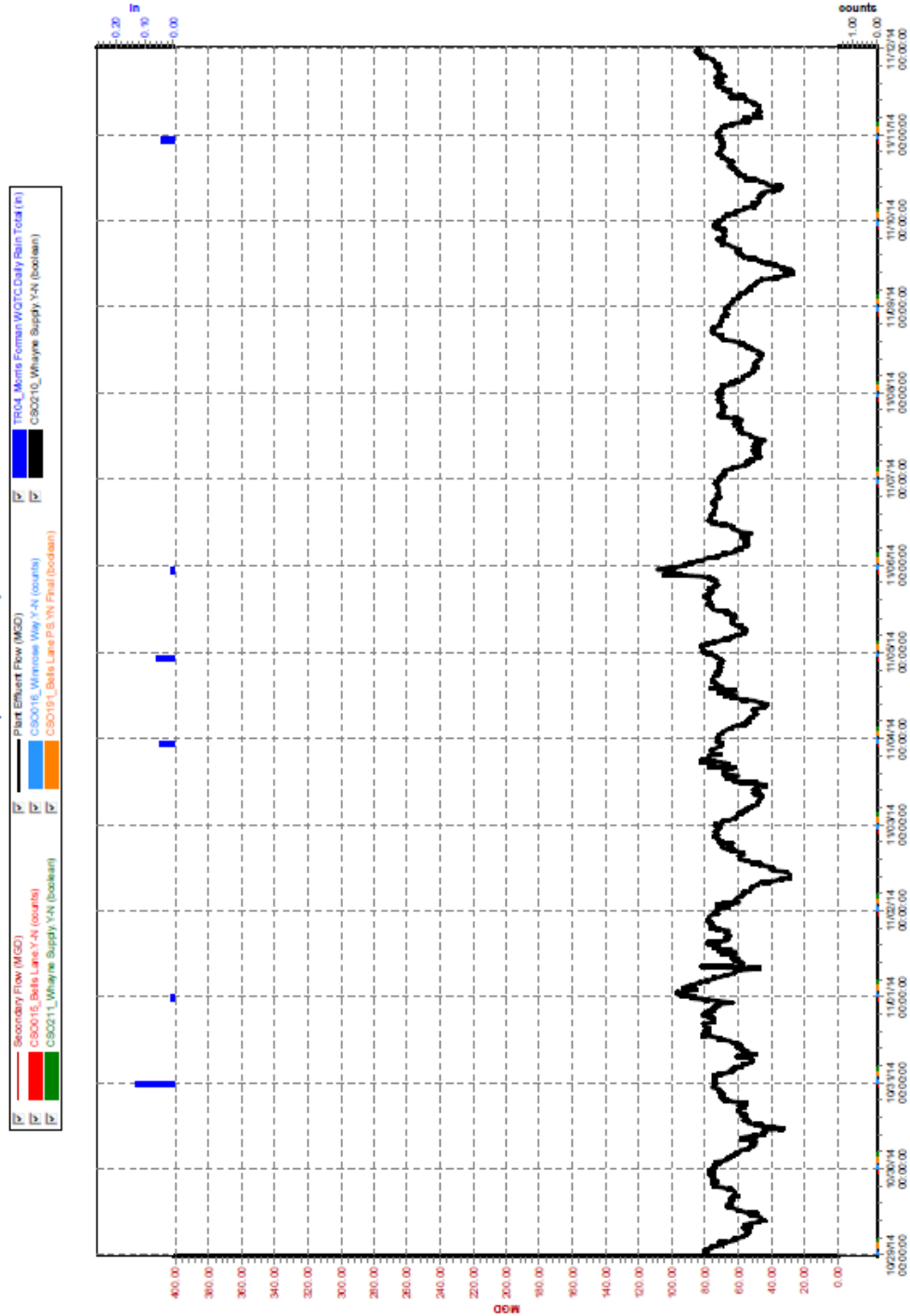
Morris Forman WQTC - Bypass vs. Large CSOs
(10/01/14 to 10/15/14)



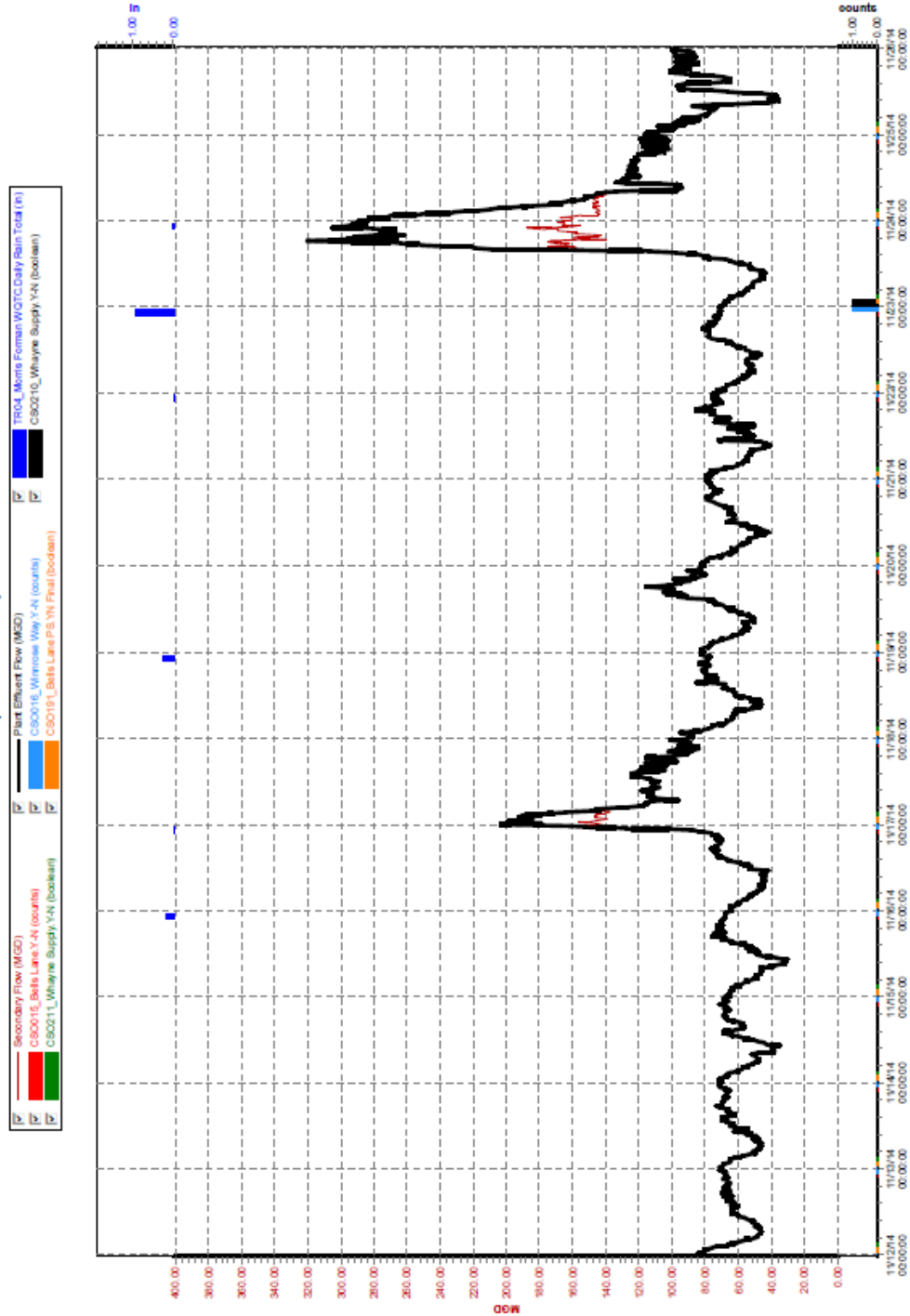
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(10/15/14 to 10/29/14)



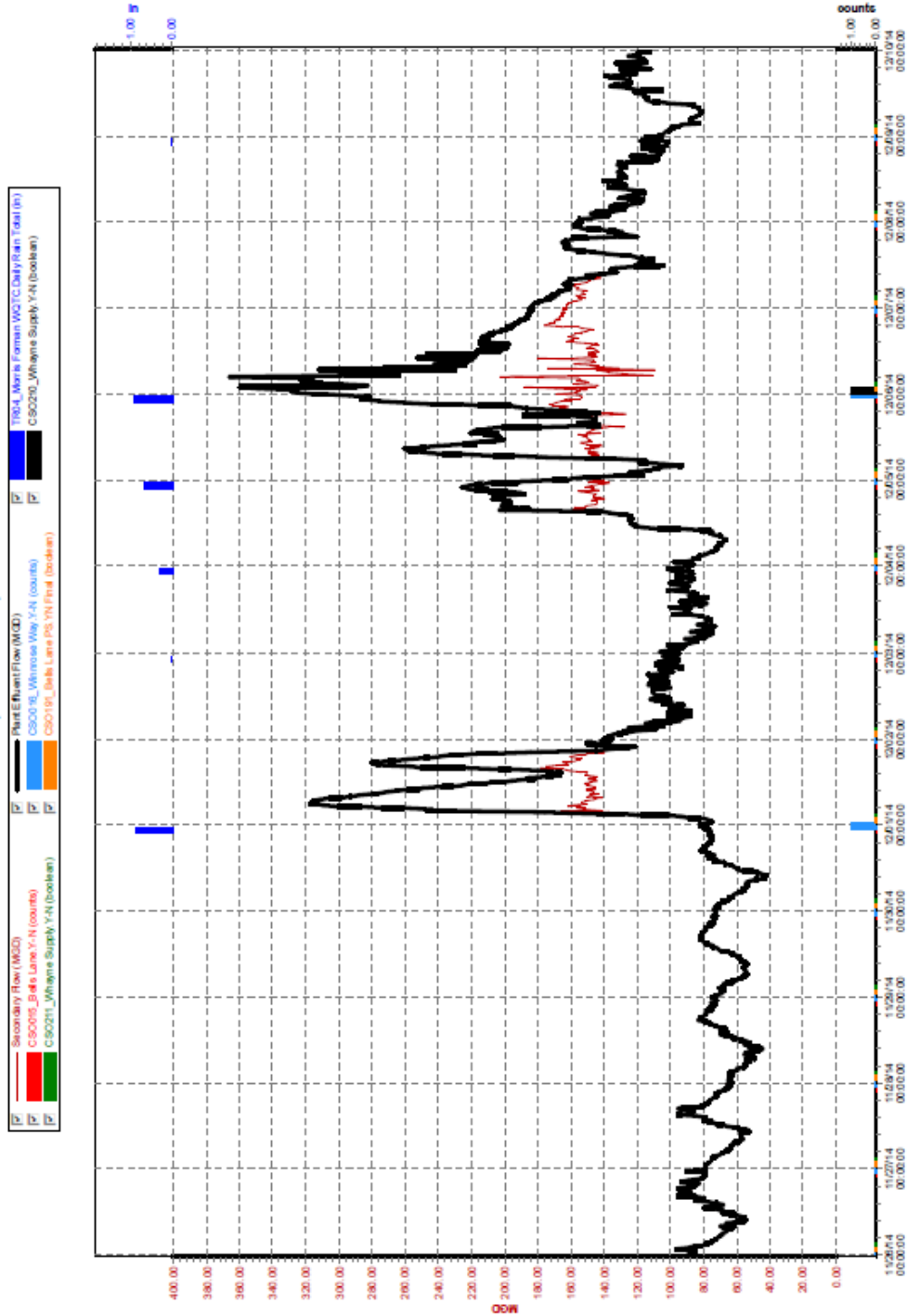
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(10/29/14 to 11/12/14)



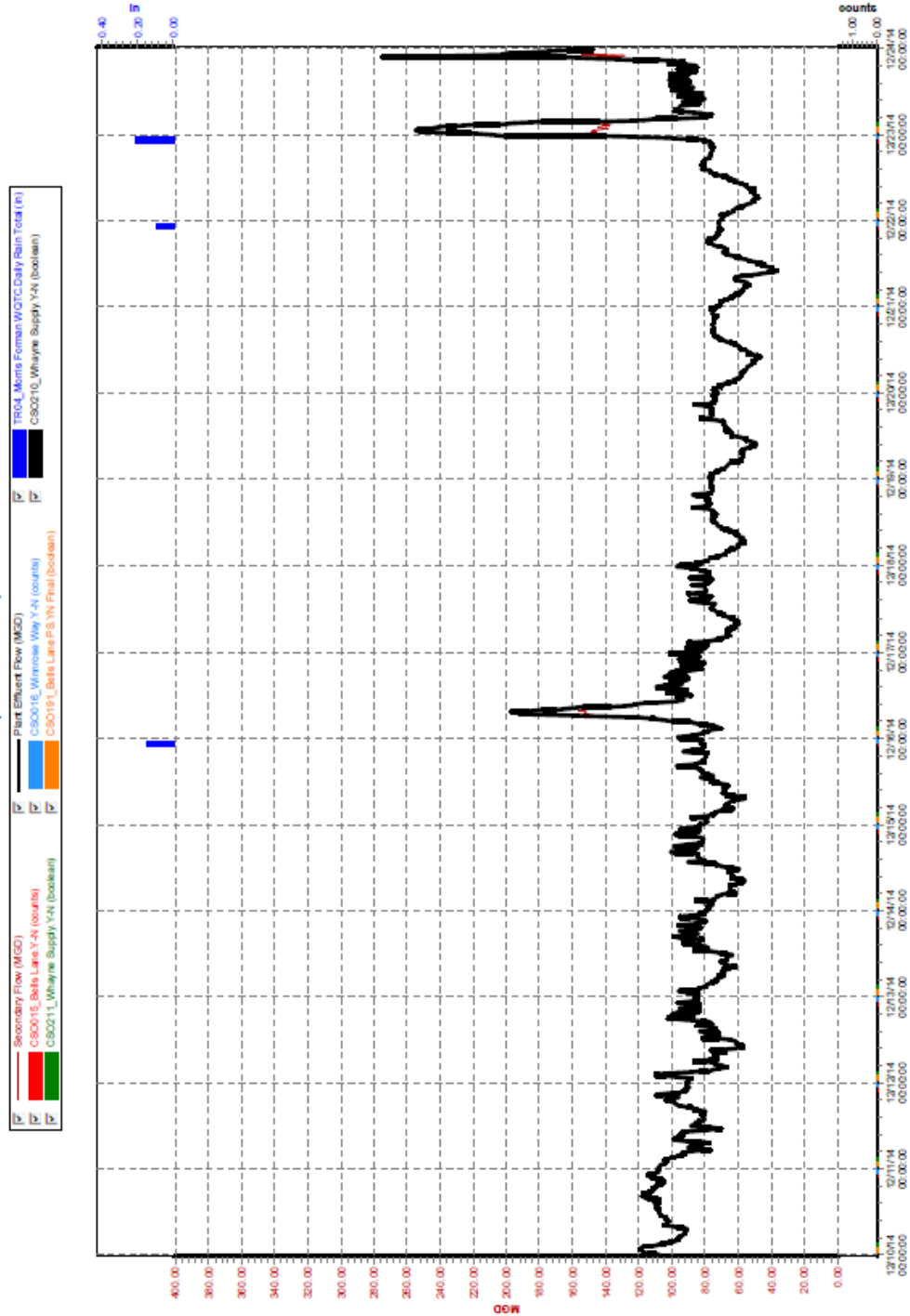
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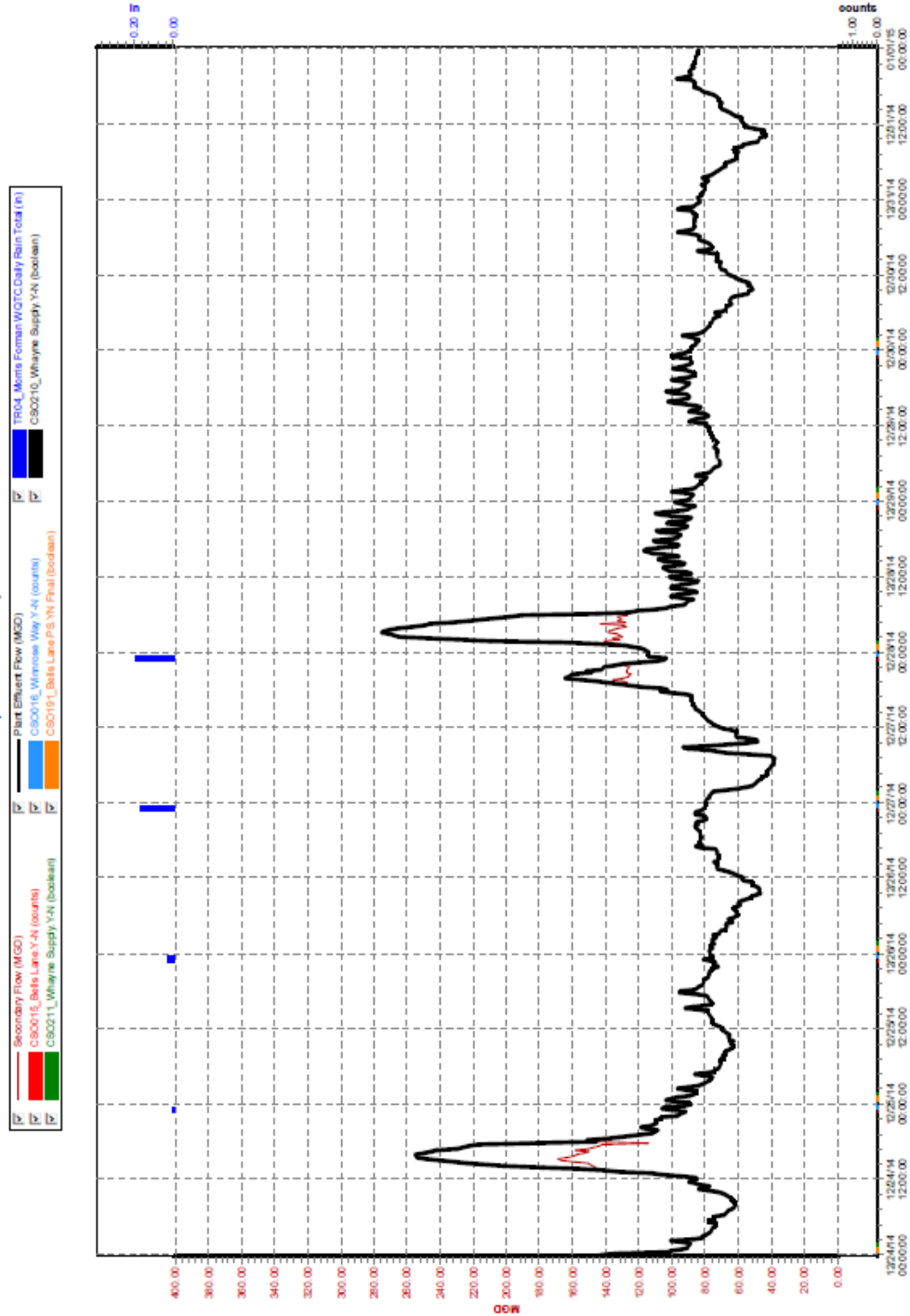
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(11/28/14 to 12/18/14)



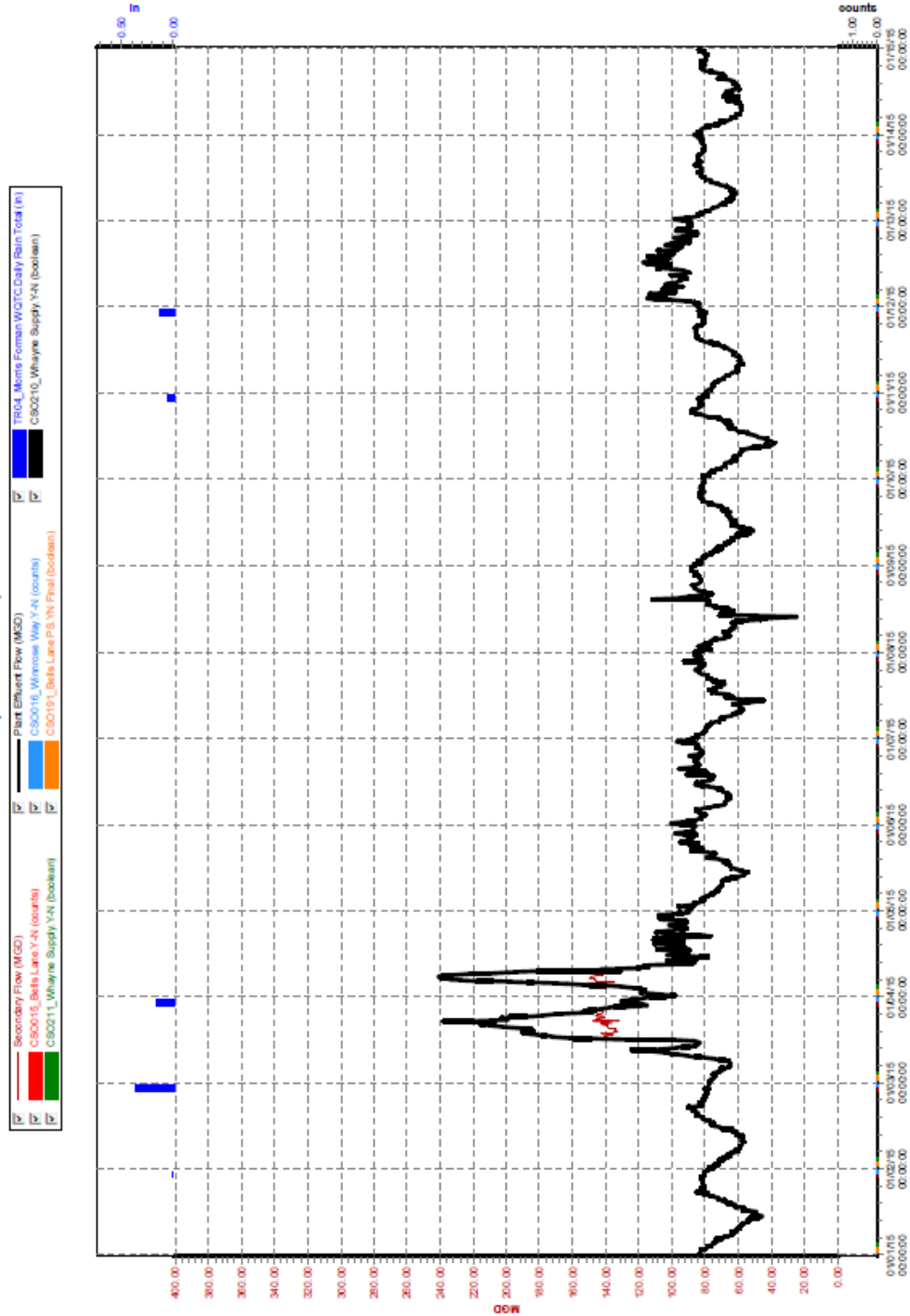
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(12/10/14 to 12/24/14)



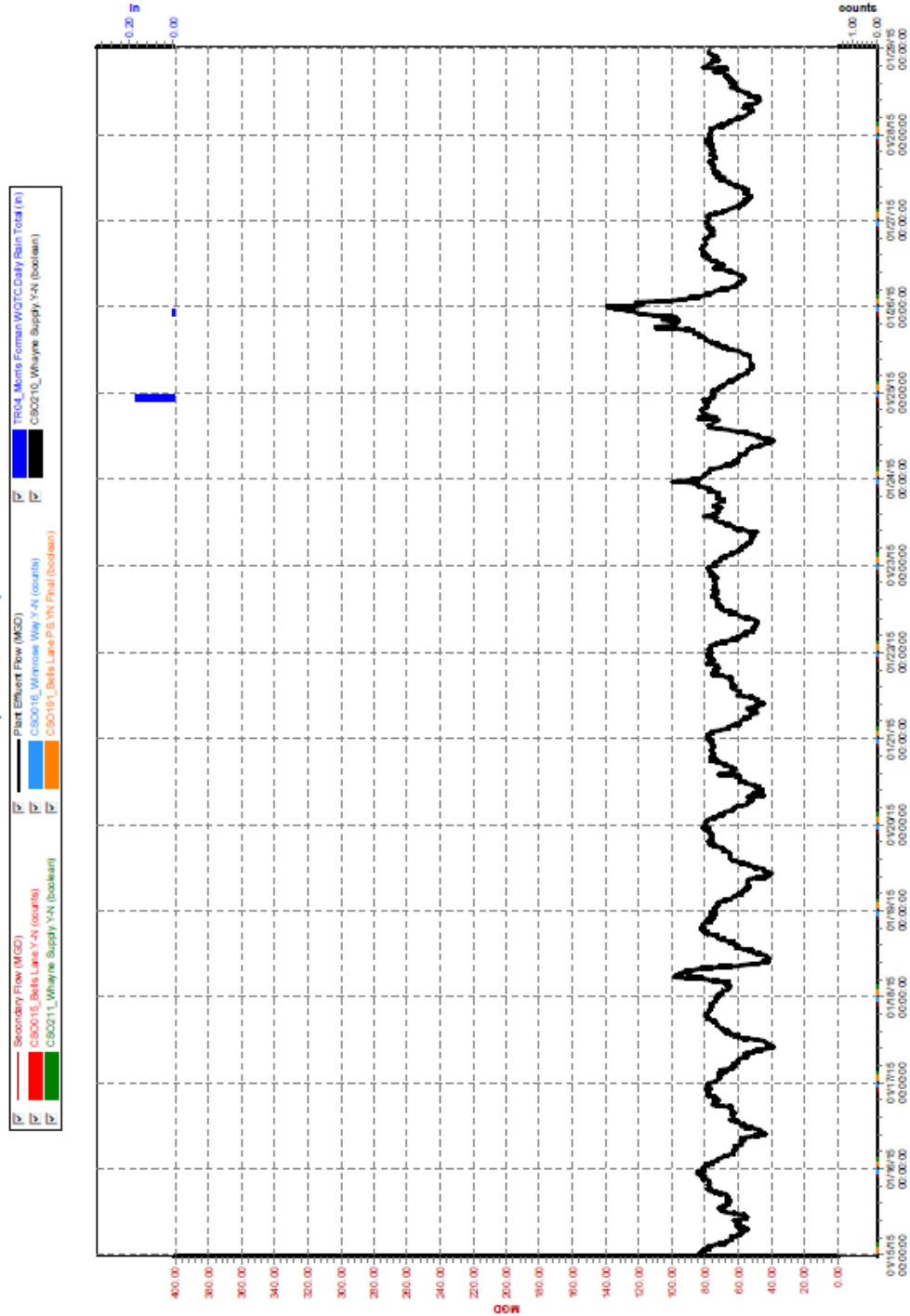
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(1/25/14 to 01/01/15)



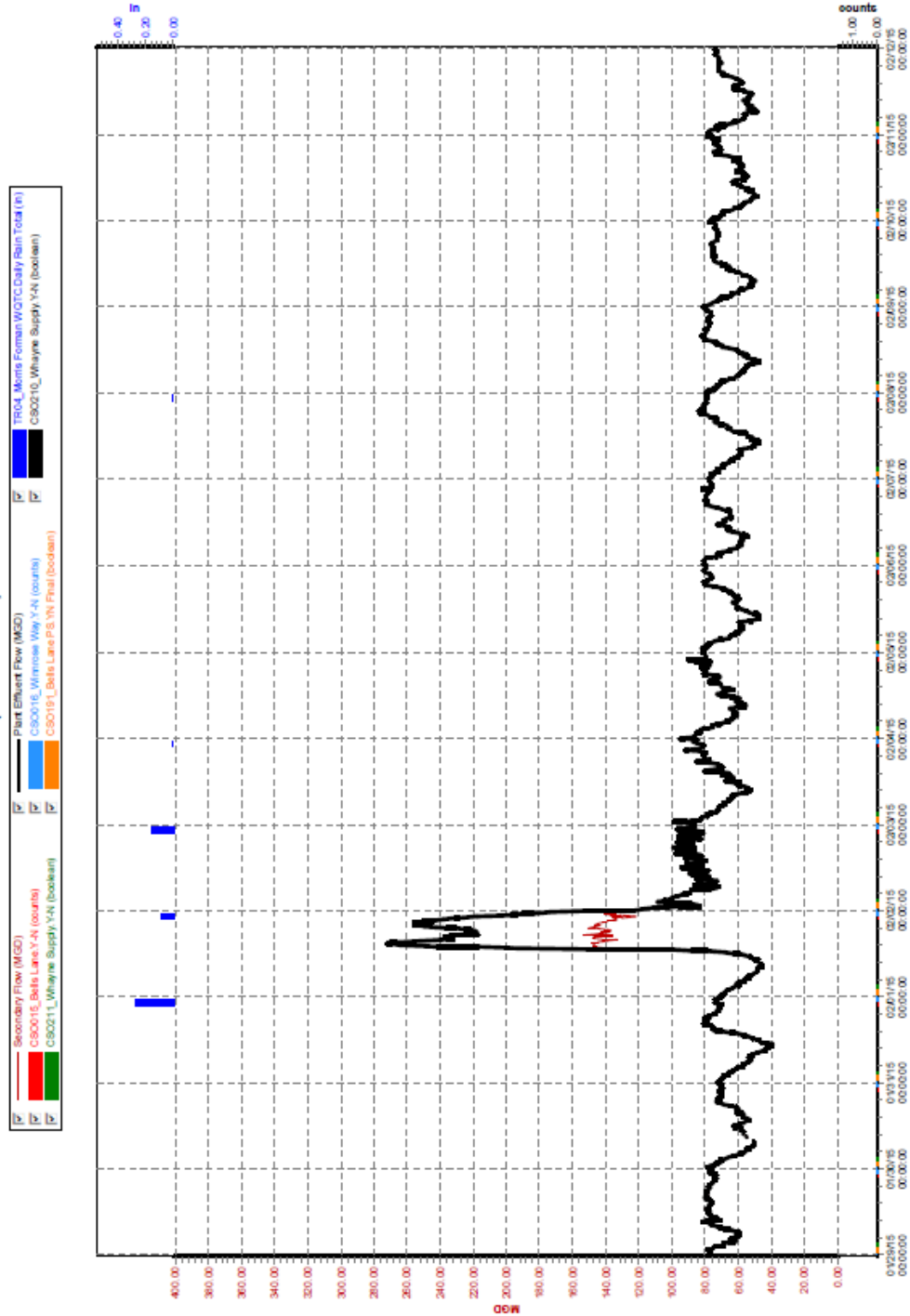
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(01/01/15 to 01/15/15)



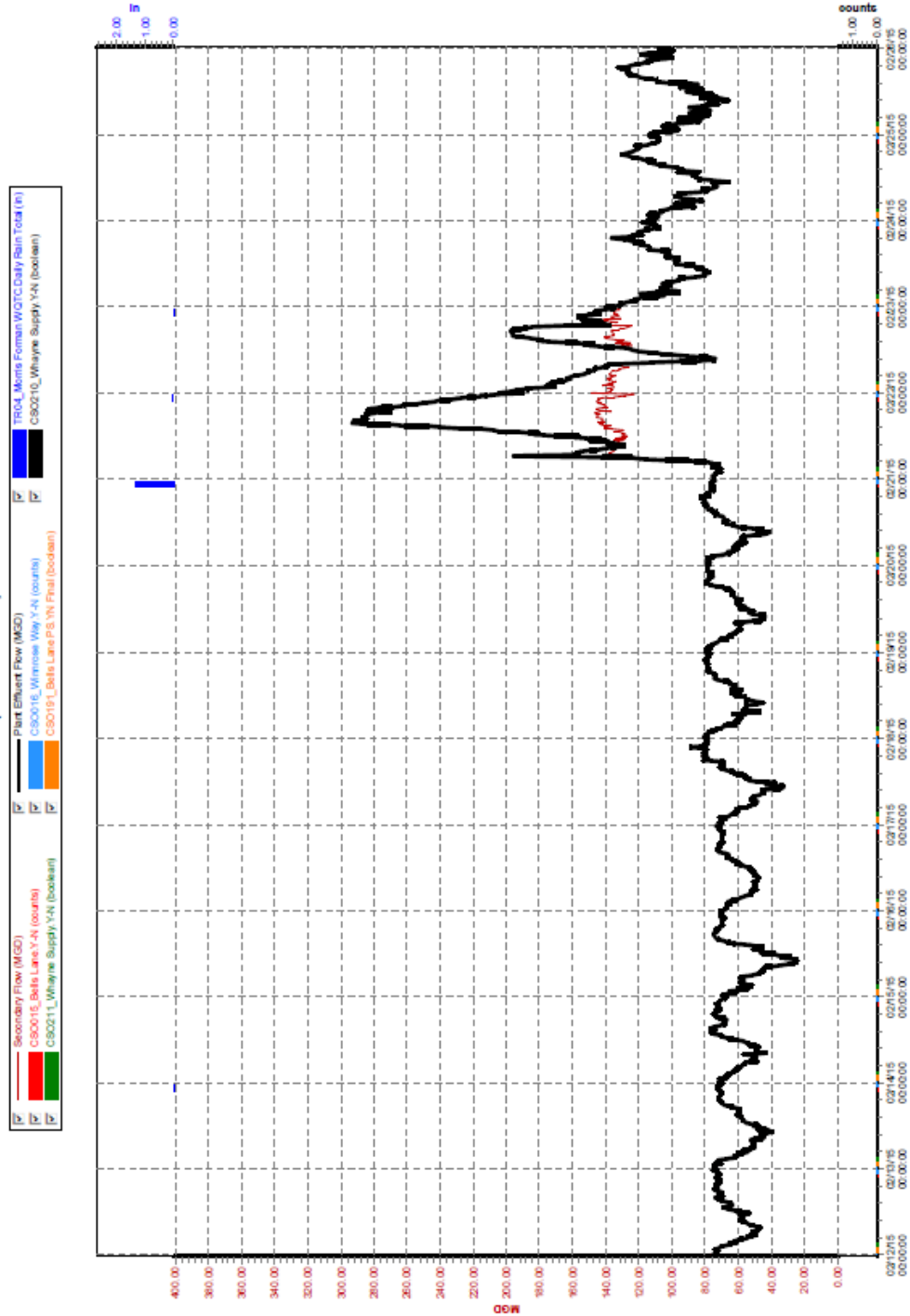
Morris Forman WQTC - Bypass vs. Large CSOs
(01/15/15 to 01/29/15)



Morris Forman WQTC - Bypass vs. Large CSOs
(01/29/15 to 02/12/15)

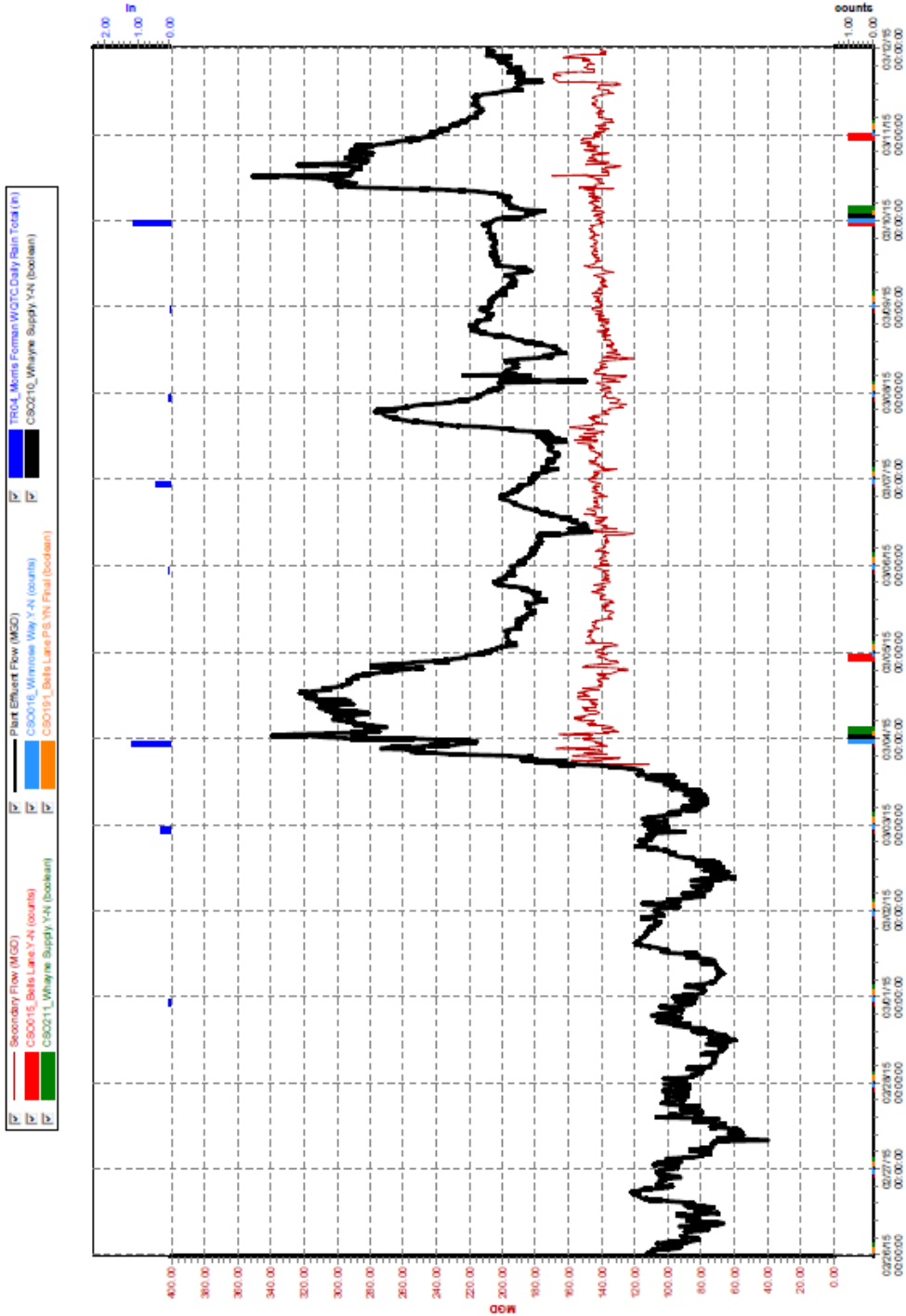


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(02/12/15 to 02/25/15)

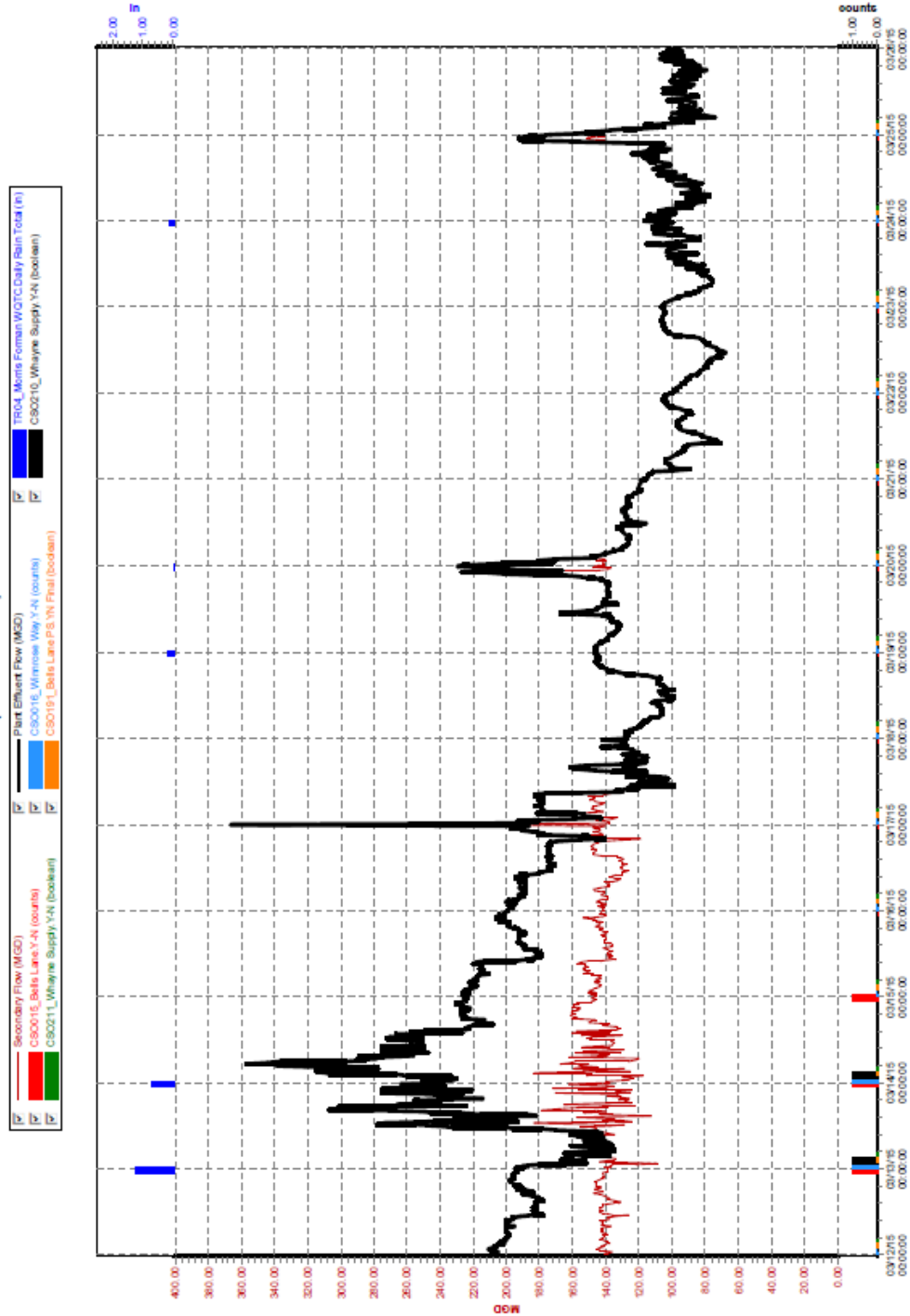


Morris Forman WQTC - Bypass vs. Large CSOs

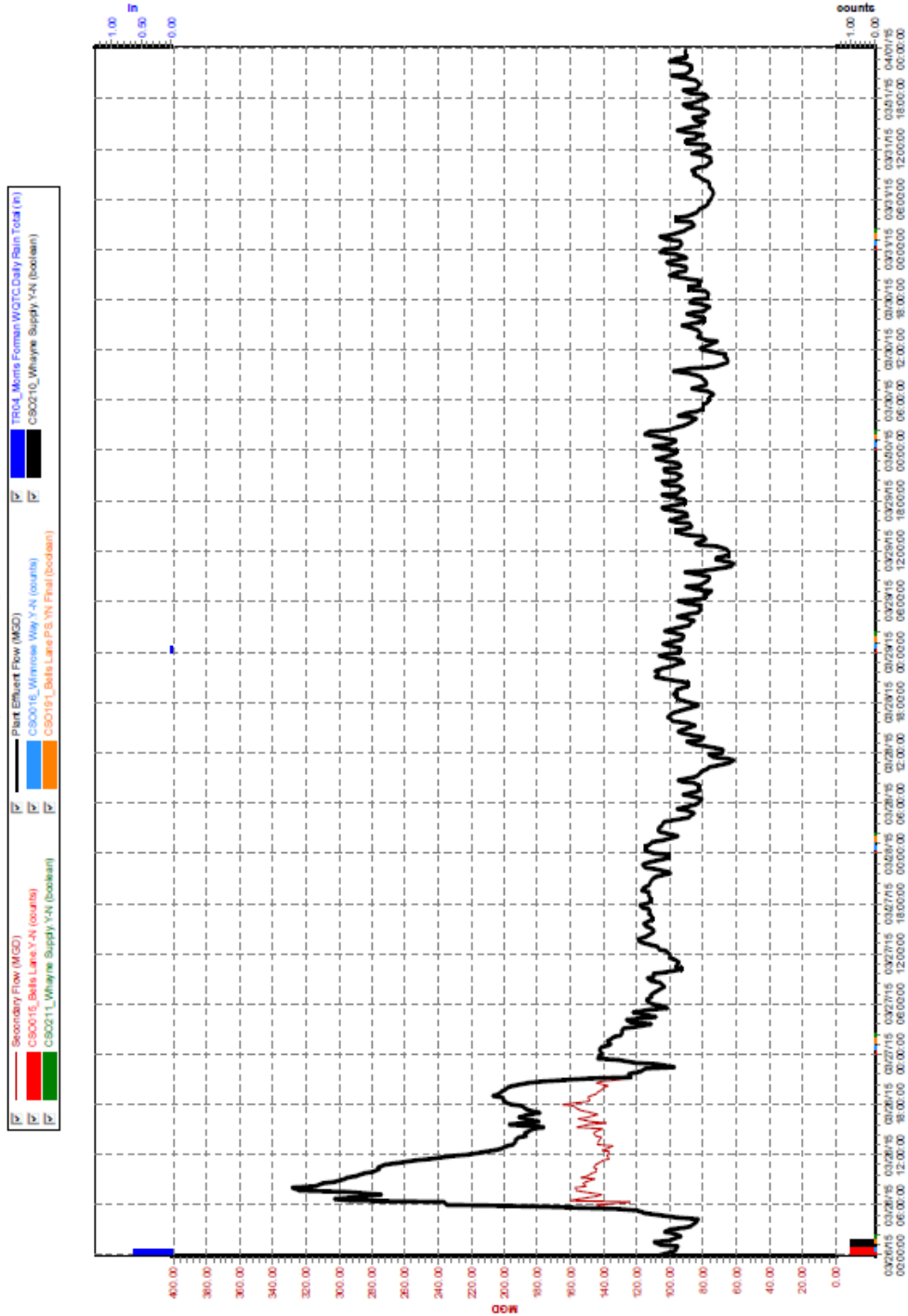
(02/28/15 to 03/12/15)



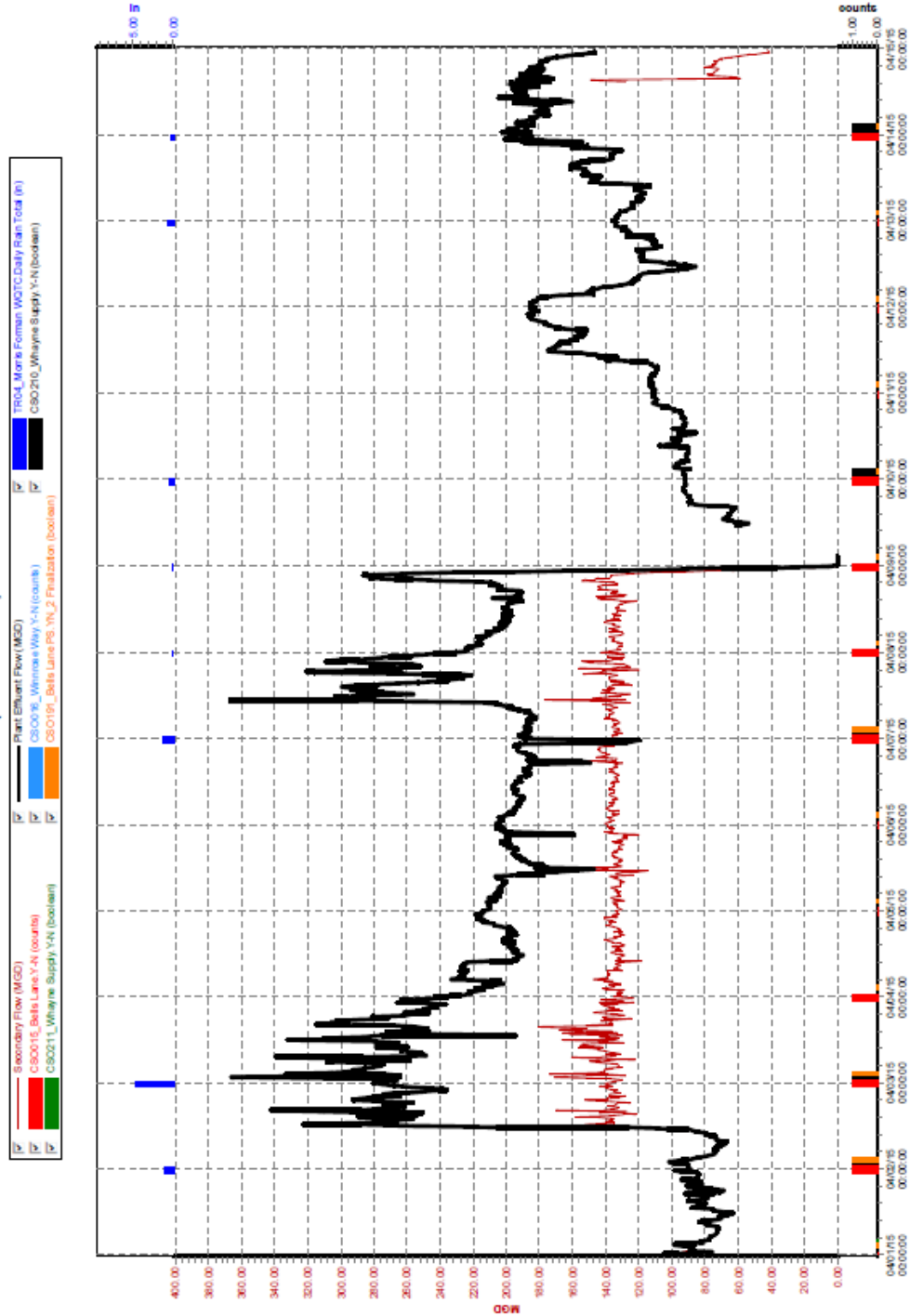
Morris Forman WQTC - Bypass vs. Large CSOs
(03/12/15 to 03/25/15)



Morris Forman WQTC - Bypass vs. Large CSOs
(03/26/15 to 04/07/15)

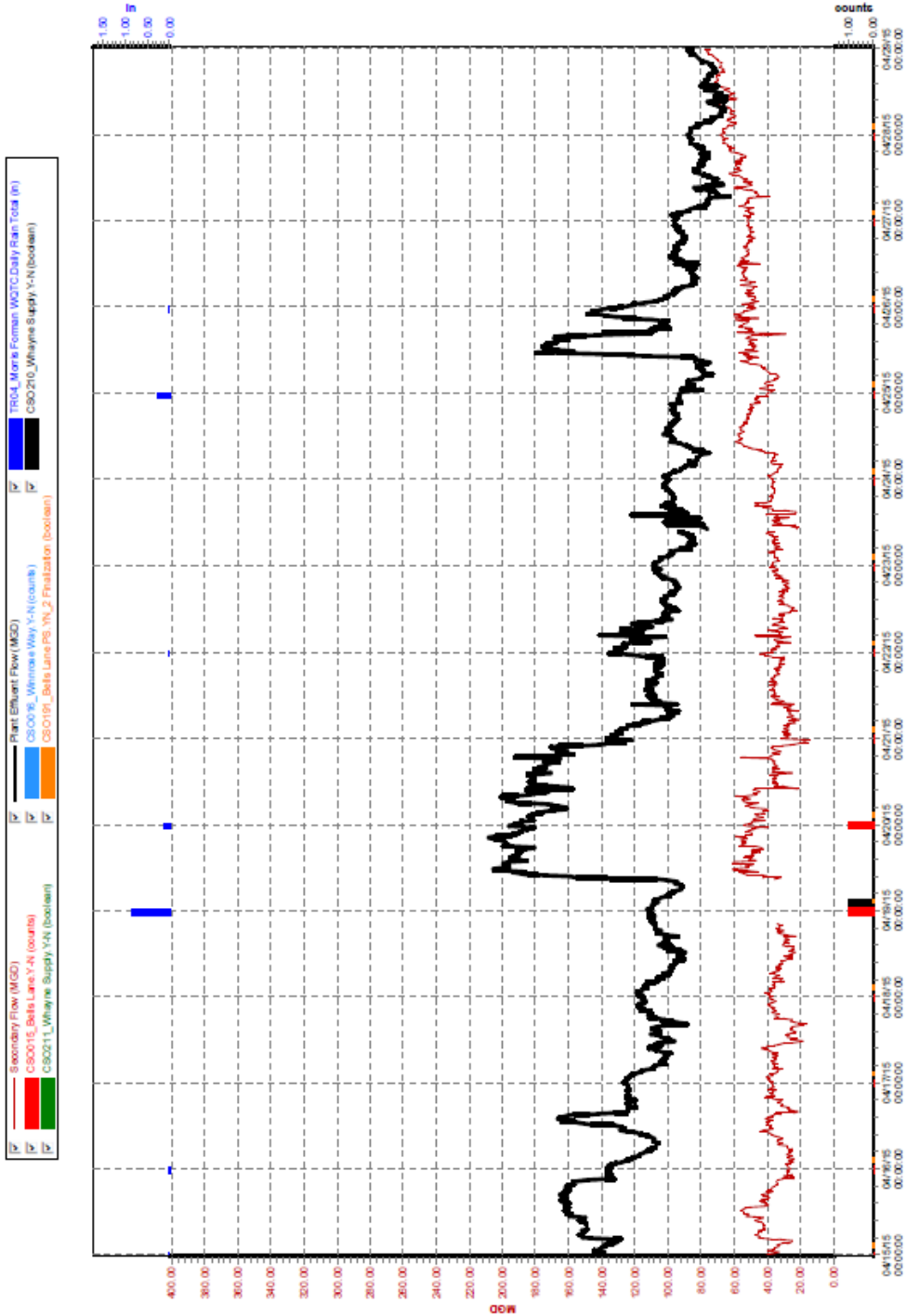


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(04/01/15 to 04/15/15)



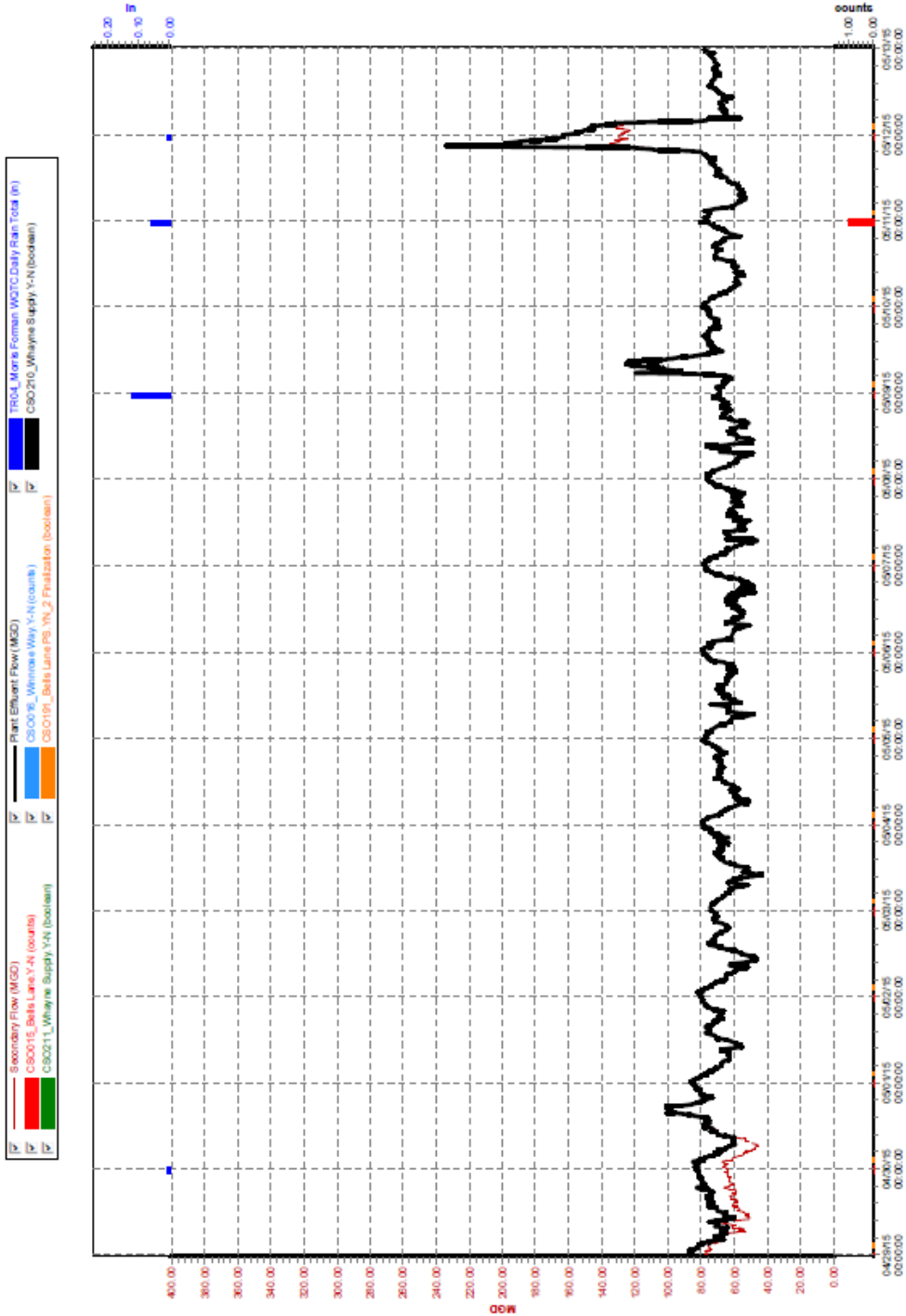
Morris Forman WQTC - Bypass vs. Large CSOs

(04/15/15 to 04/29/15)

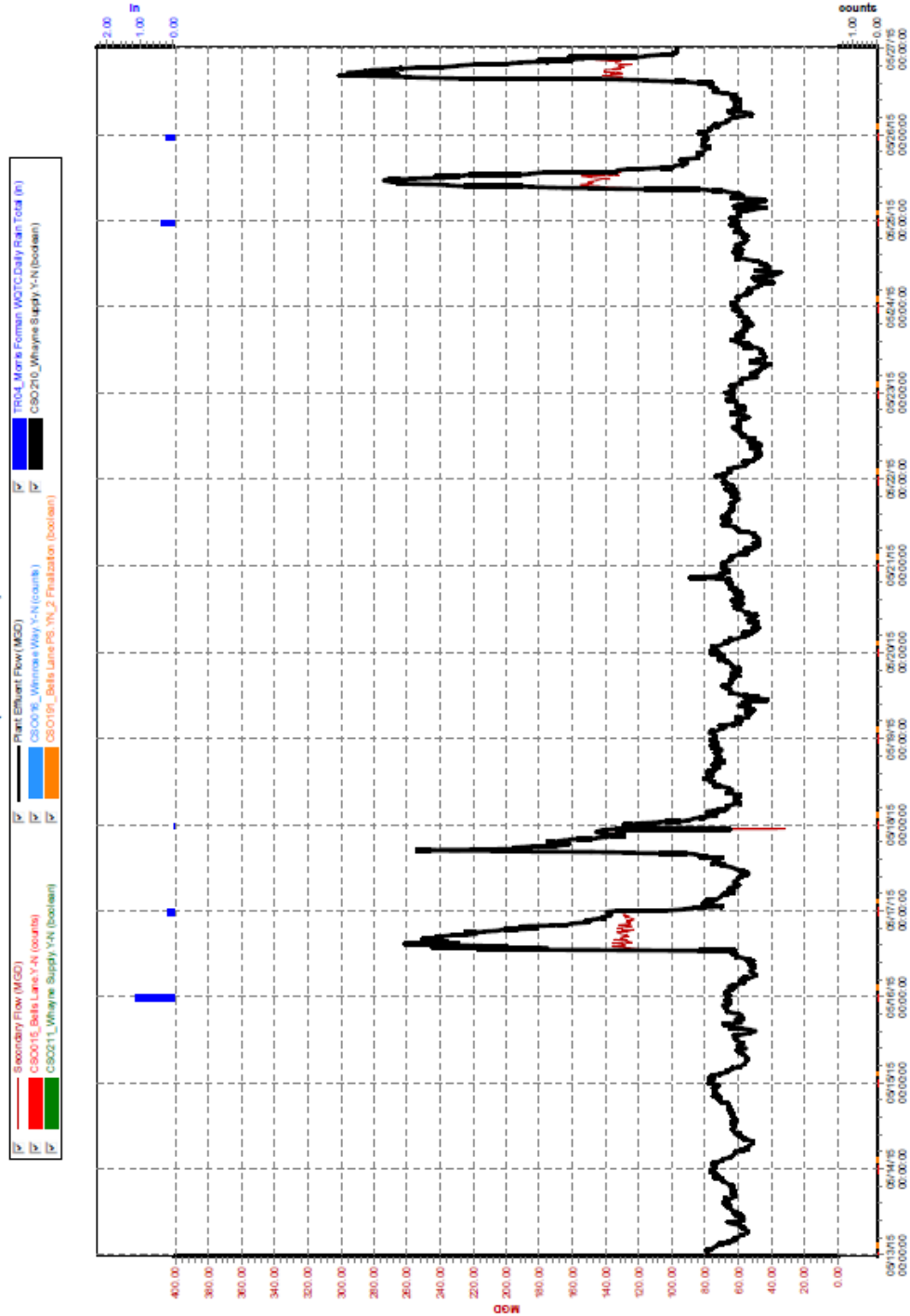


Morris Forman WQTC - Bypass vs. Large CSOs

(04/29/15 to 05/13/15)

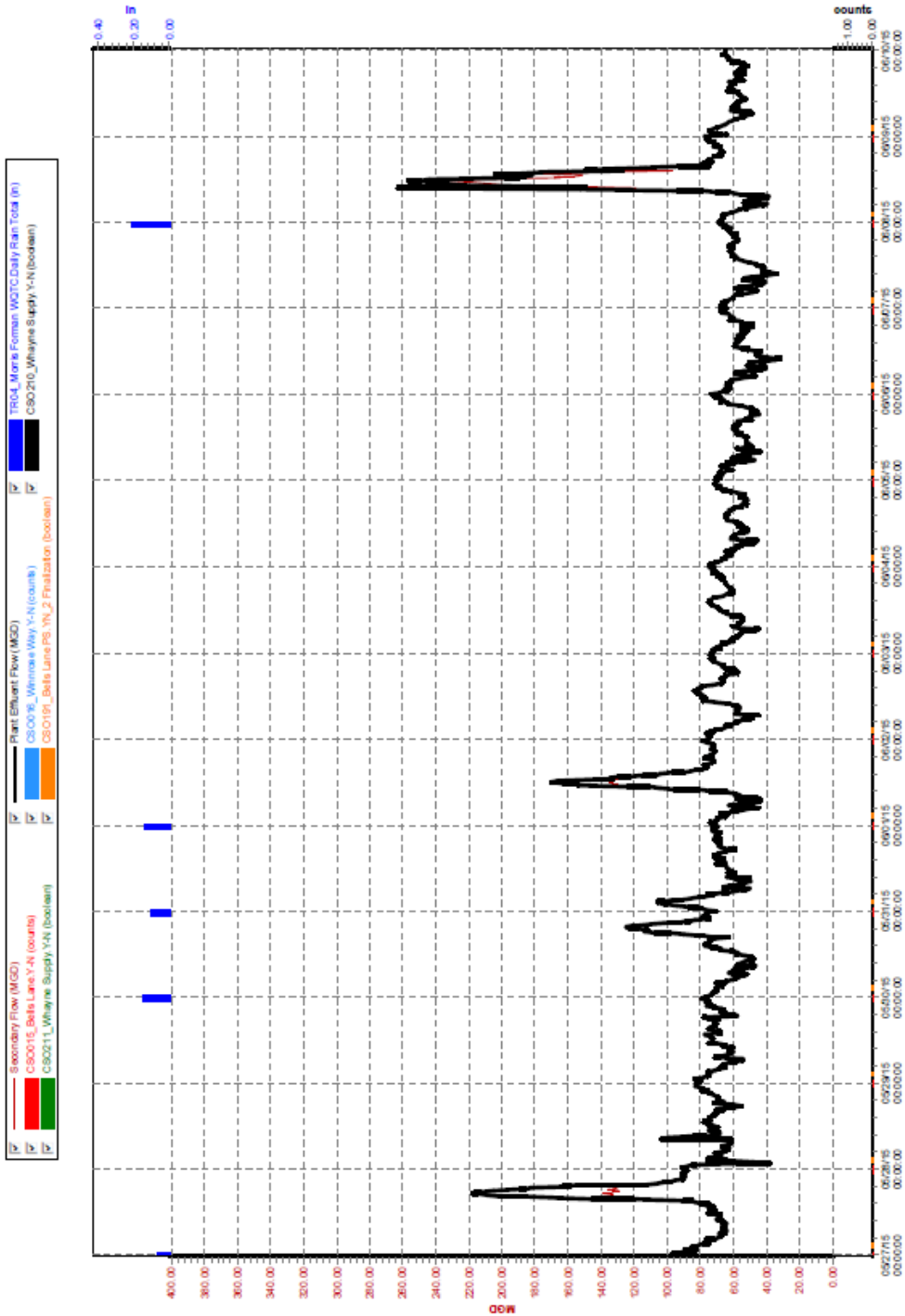


Morris Forman WQTC - Bypass vs. Large CSOs
(05/13/15 to 05/27/15)



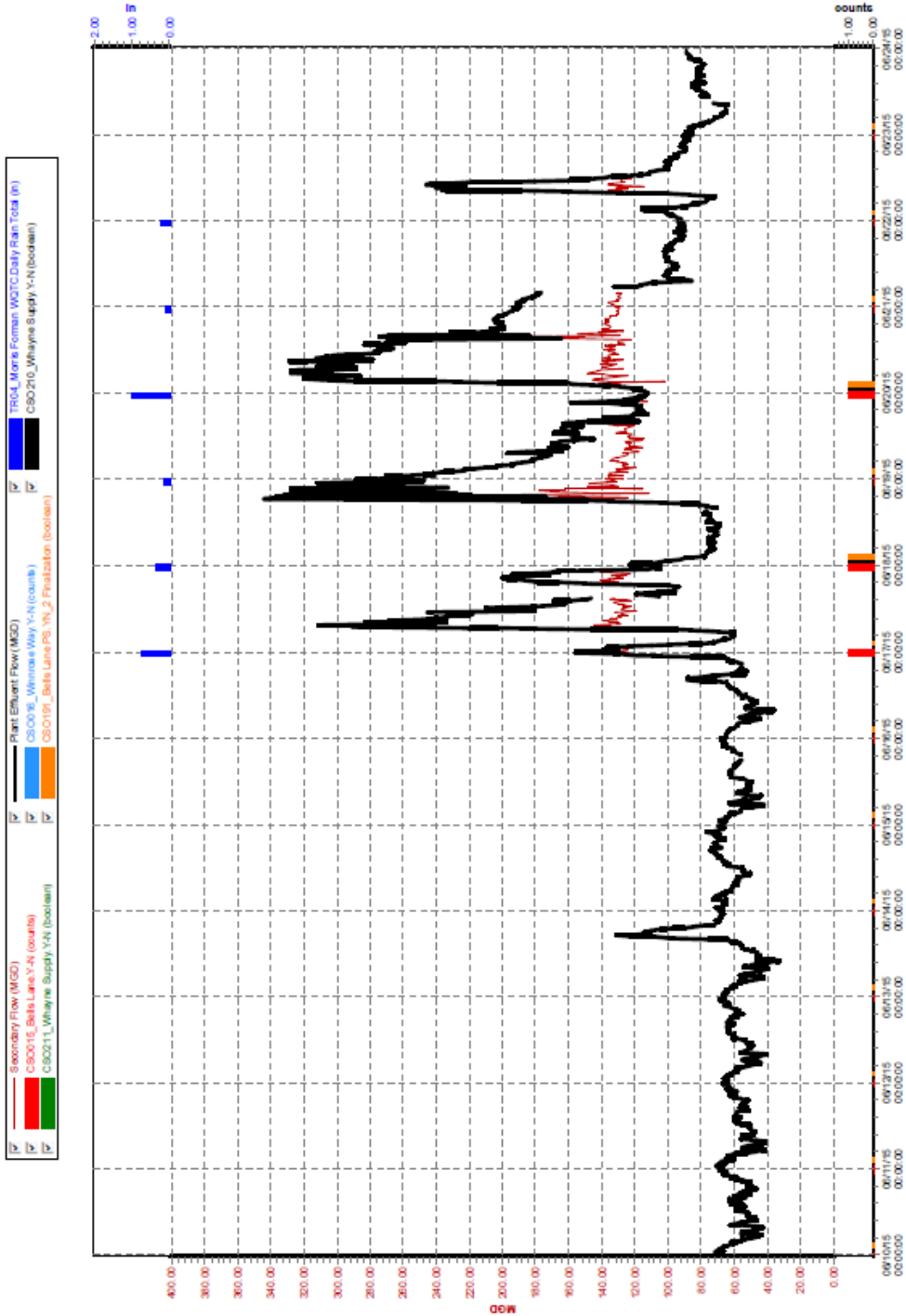
Morris Forman WQTC - Bypass vs. Large CSOs

(05/27/15 to 06/10/15)



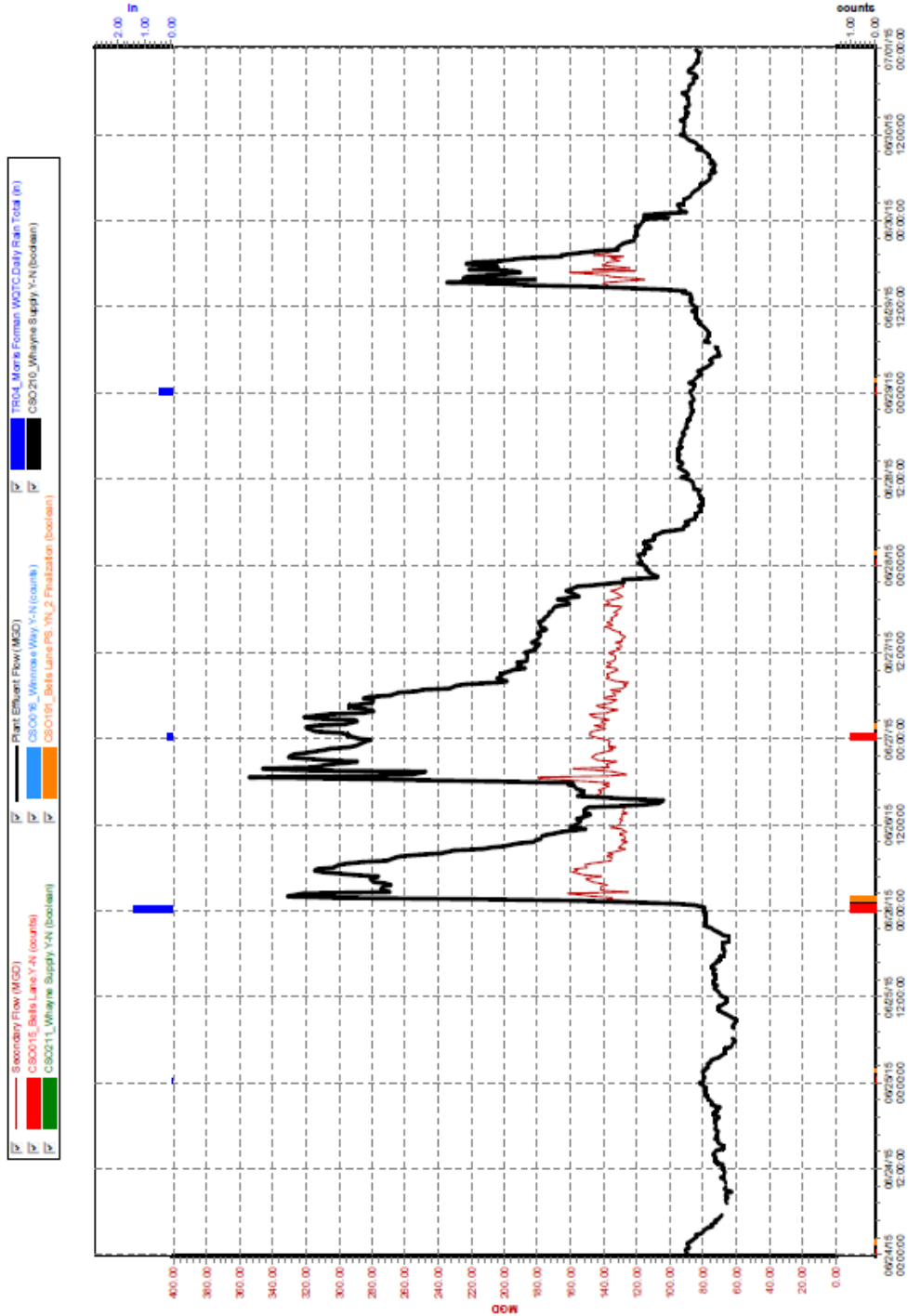
Morris Forman WQTC - Bypass vs. Large CSOs

(06/10/15 to 06/24/15)



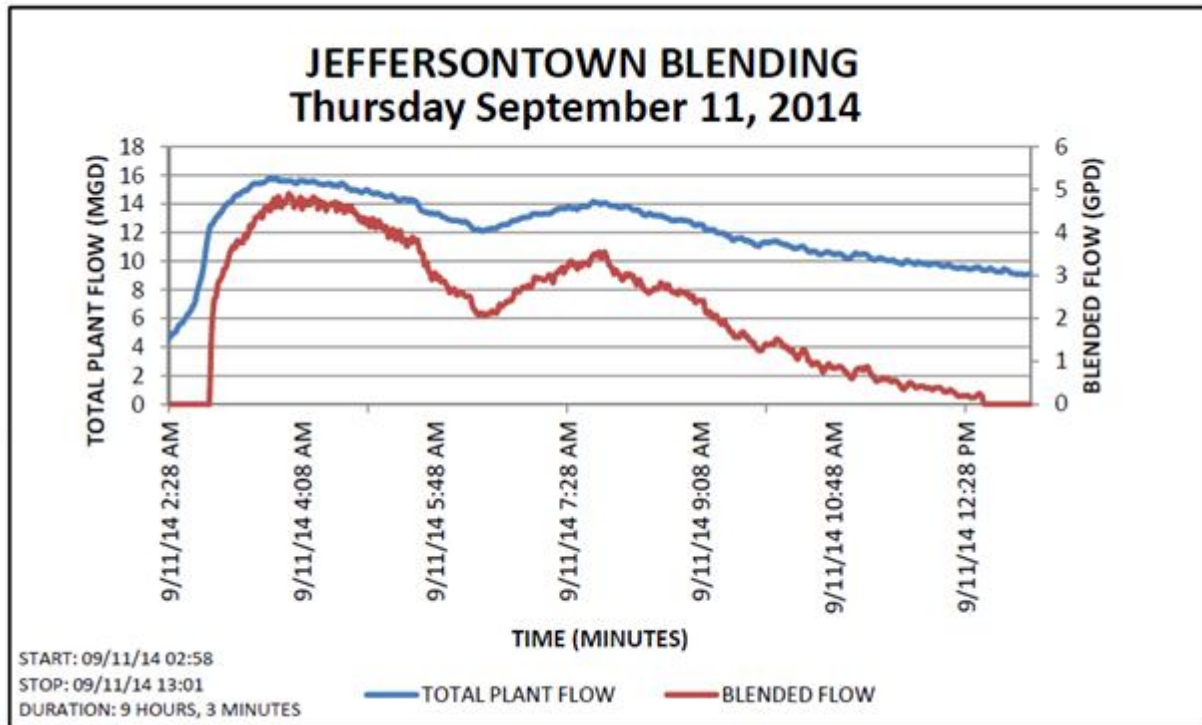
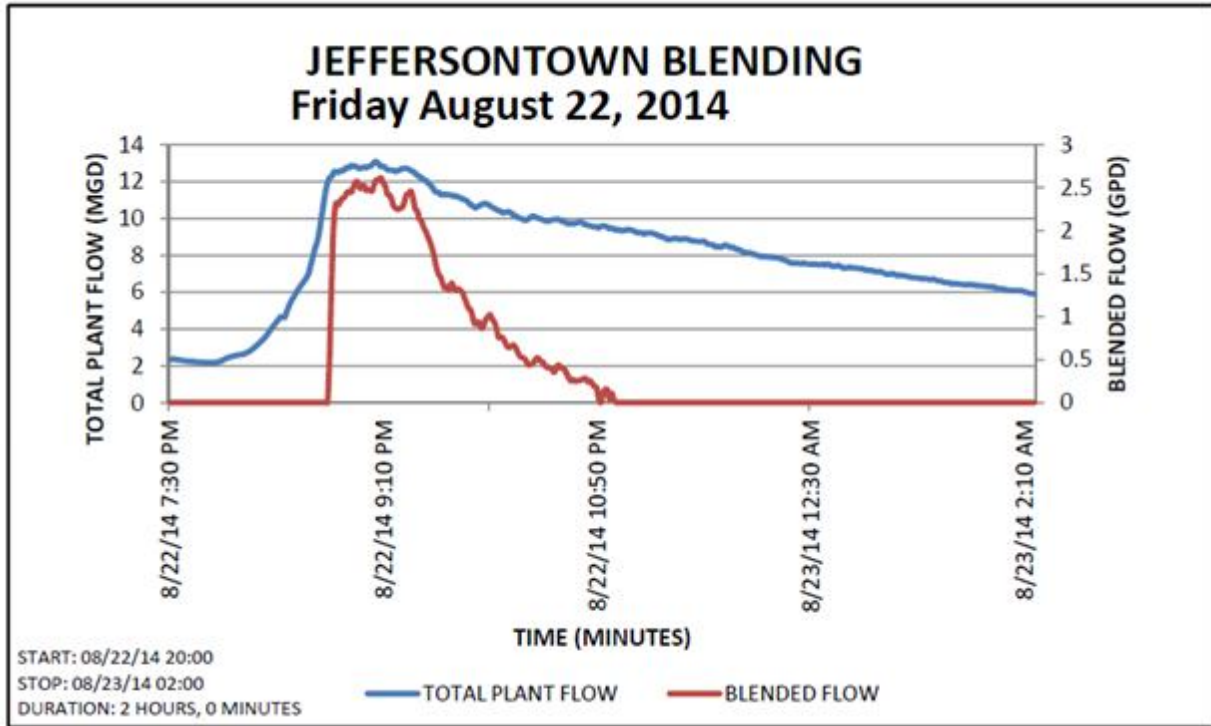
Morris Forman WQTC - Bypass vs. Large CSOs

(06/24/15 to 07/01/15)

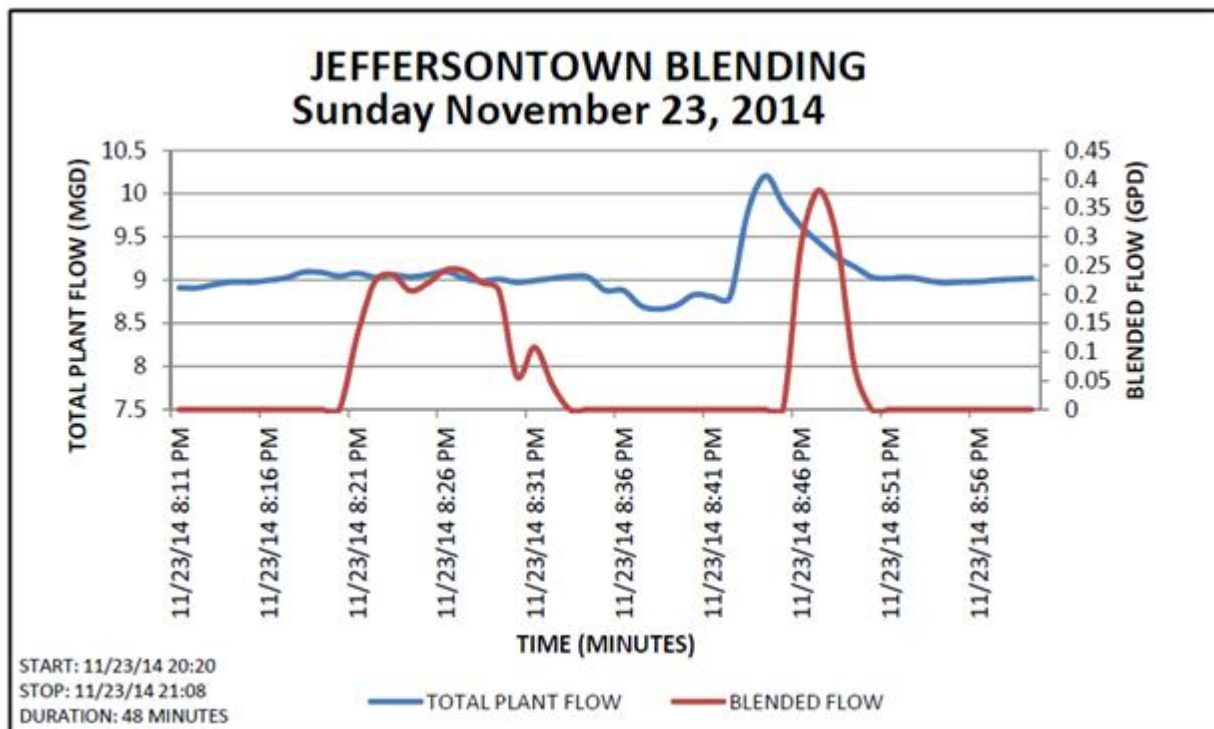
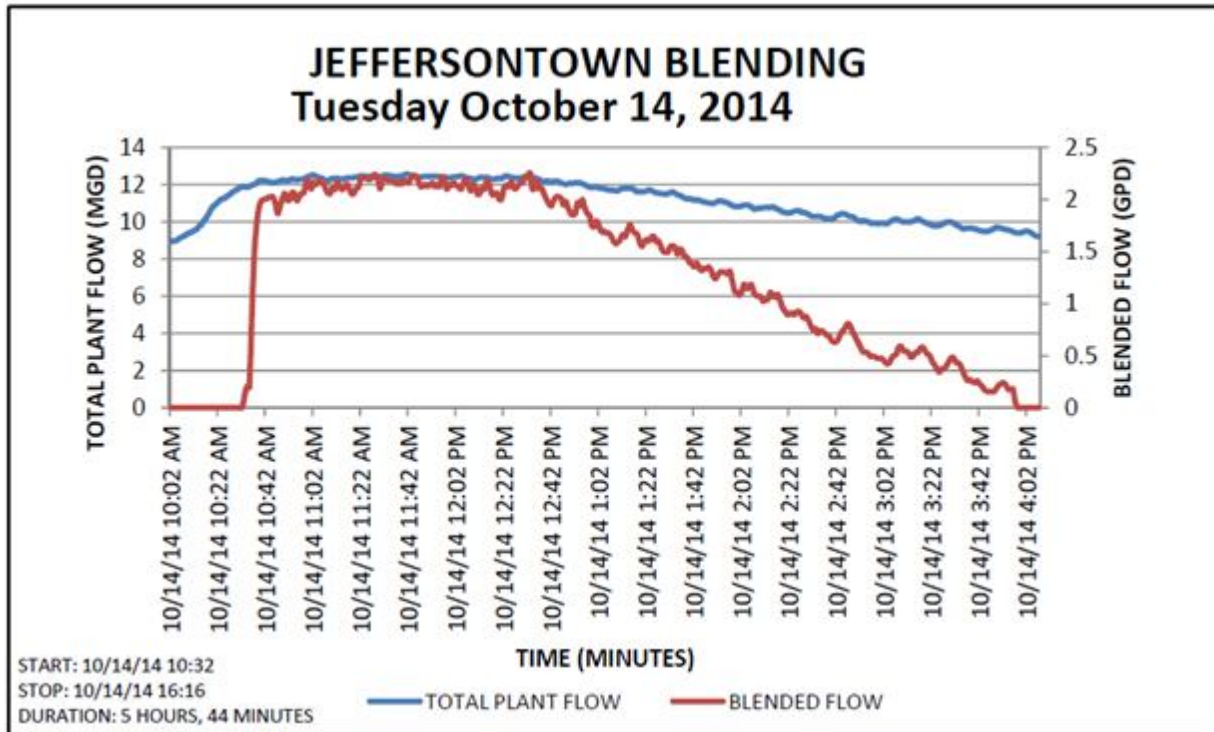


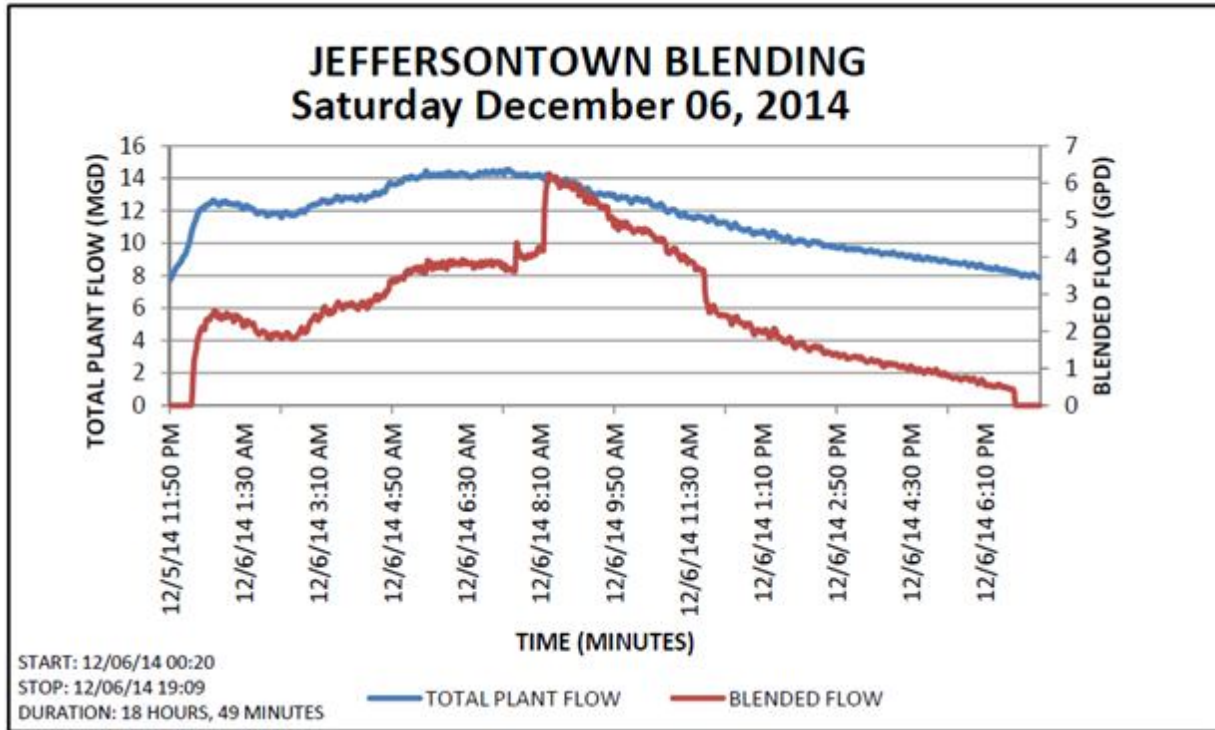
APPENDIX K – JEFFERSONTOWN WQTC BLENDING EVENT CHARTS

QUARTER 36 BLENDING: JULY 1, 2014 – SEPTEMBER 30, 2014

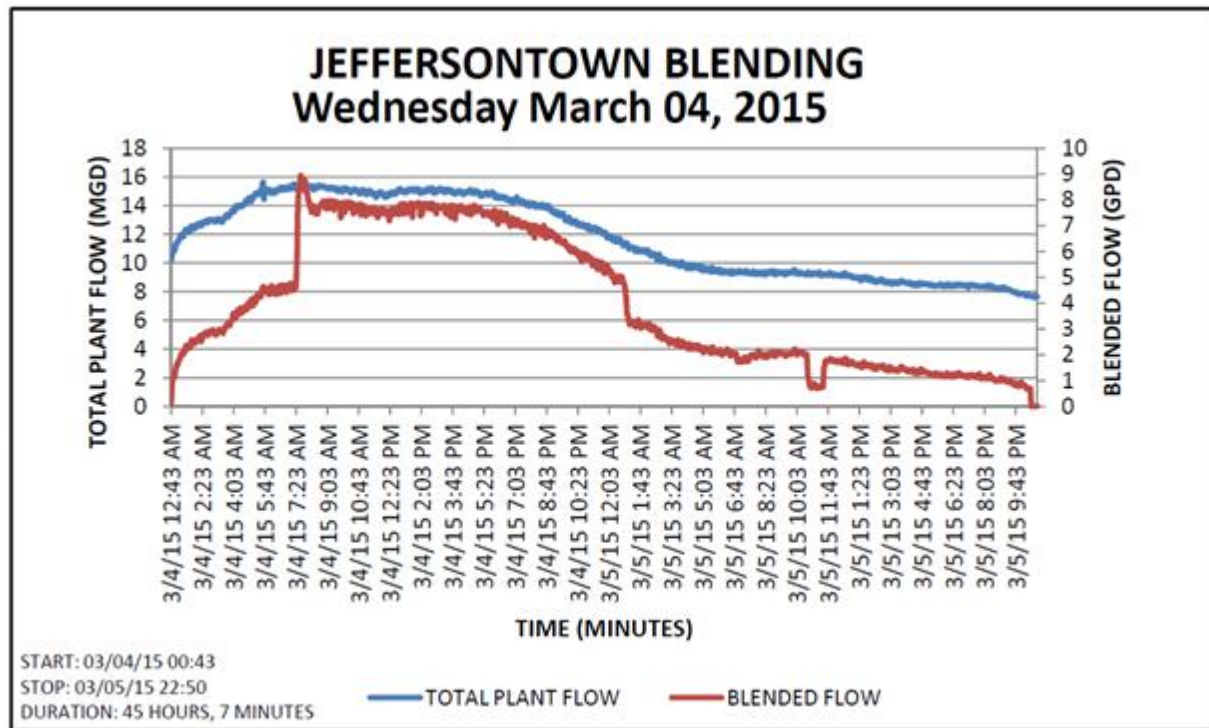


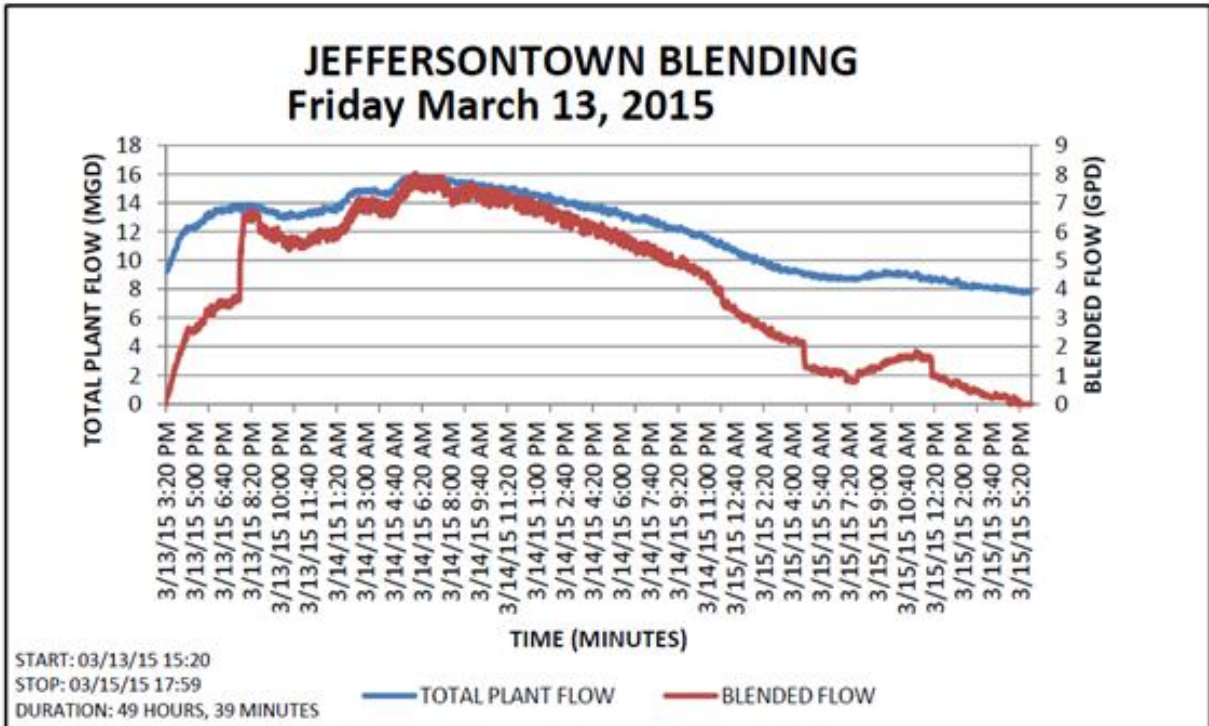
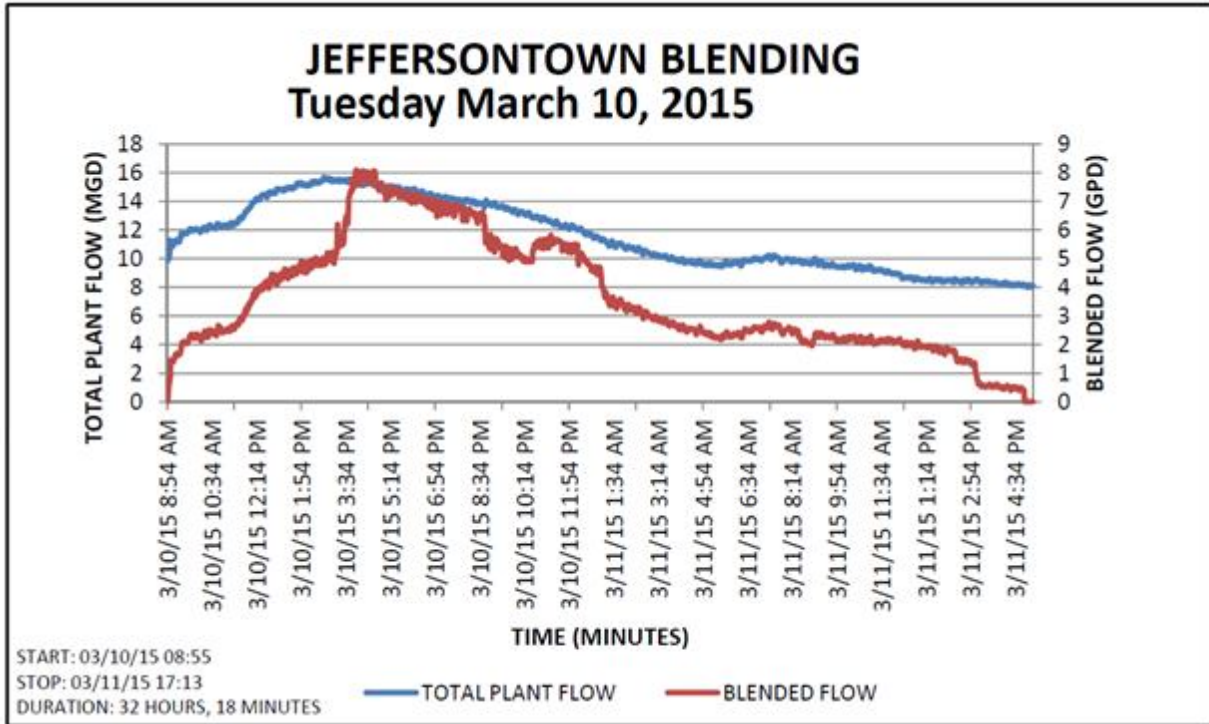
QUARTER 37 BLENDING: OCTOBER 1, 2014 – DECEMBER 31, 2014



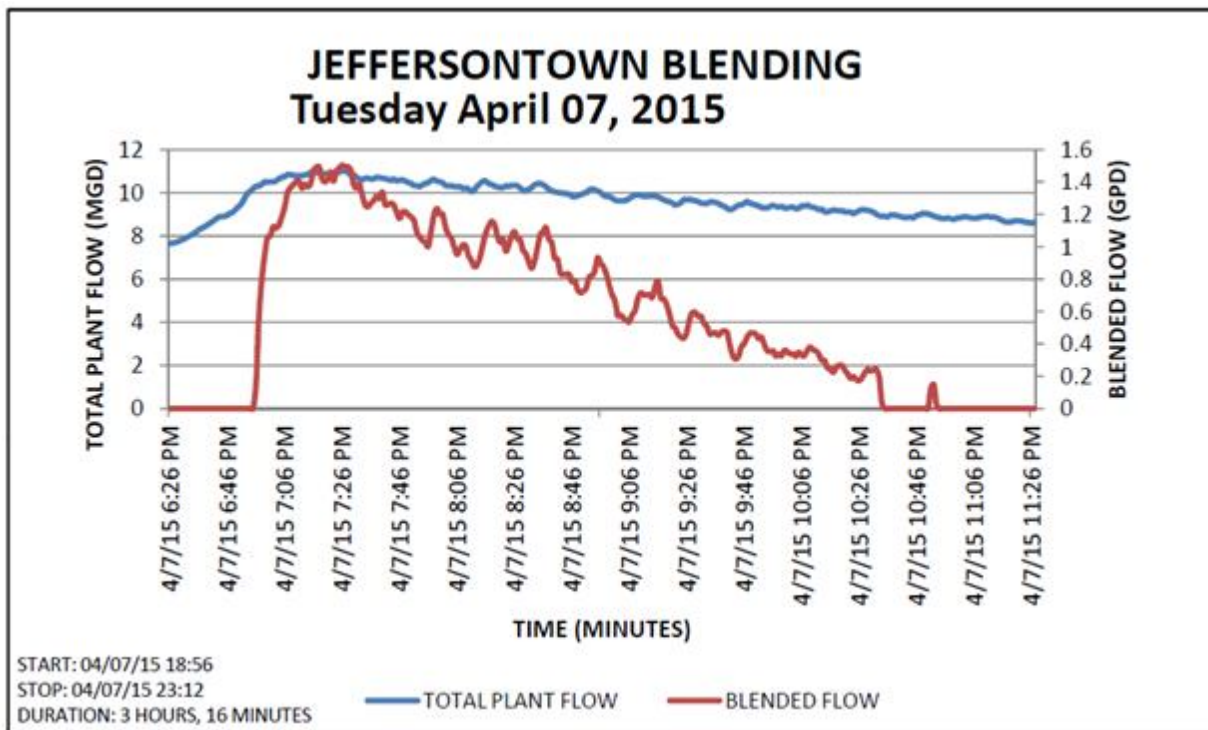
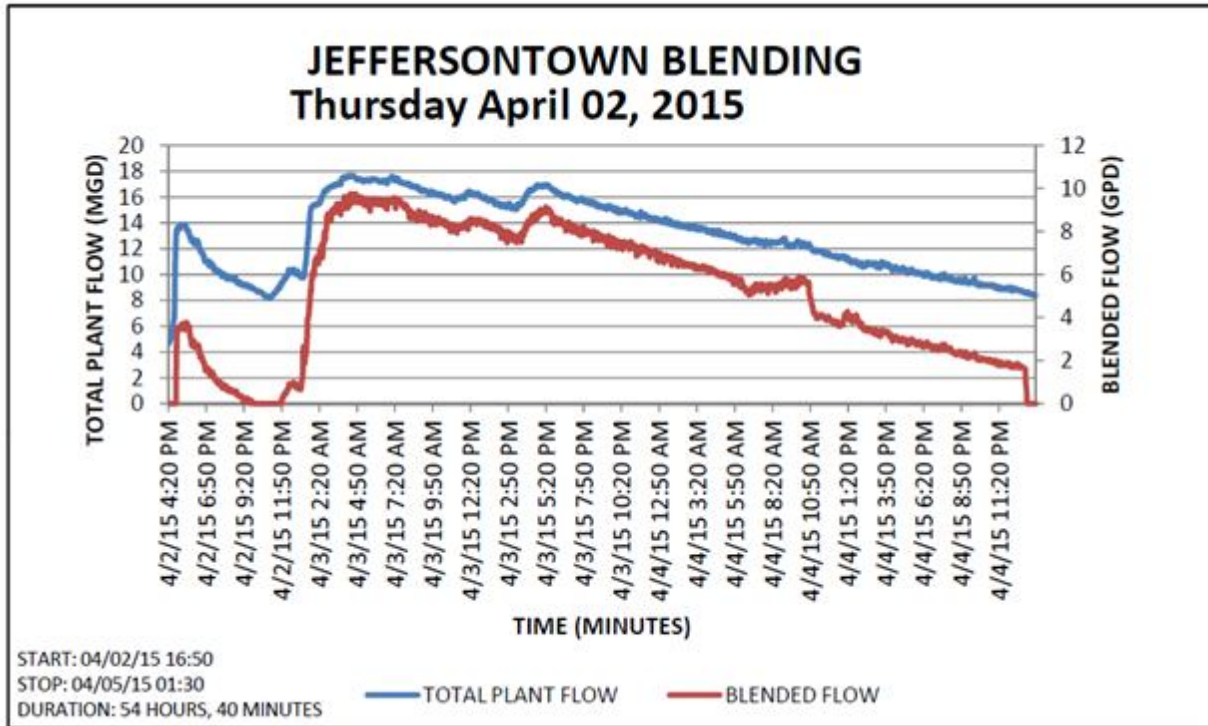


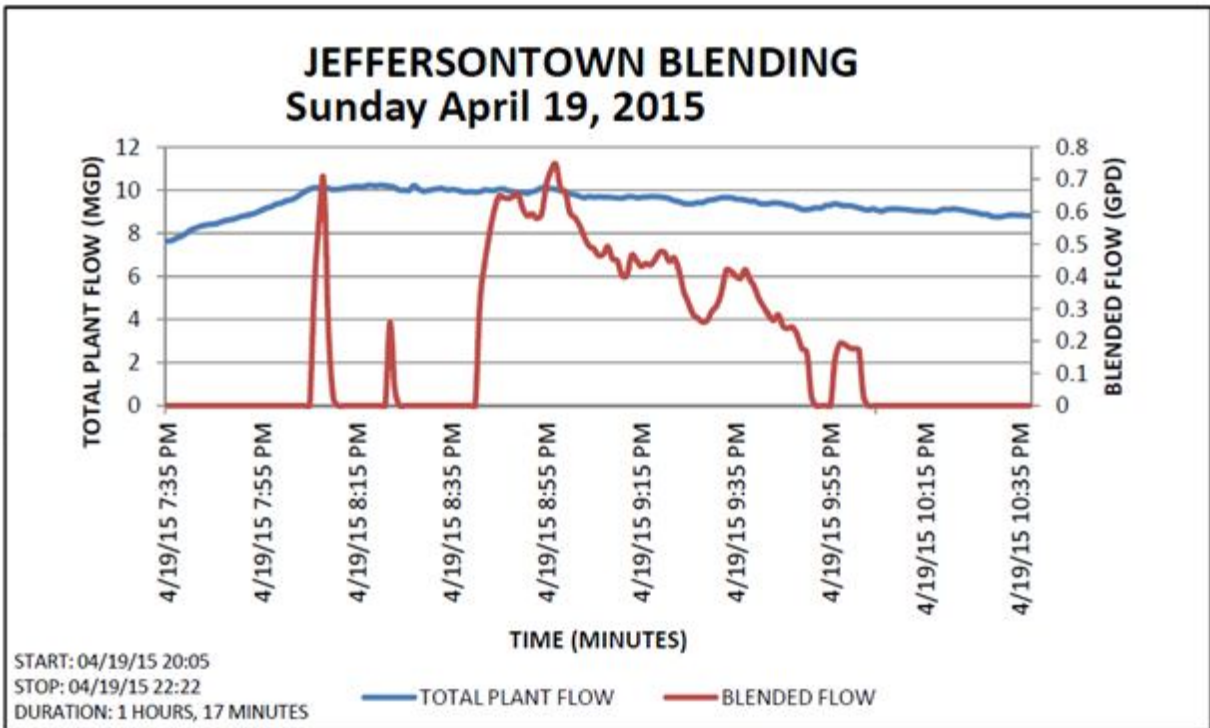
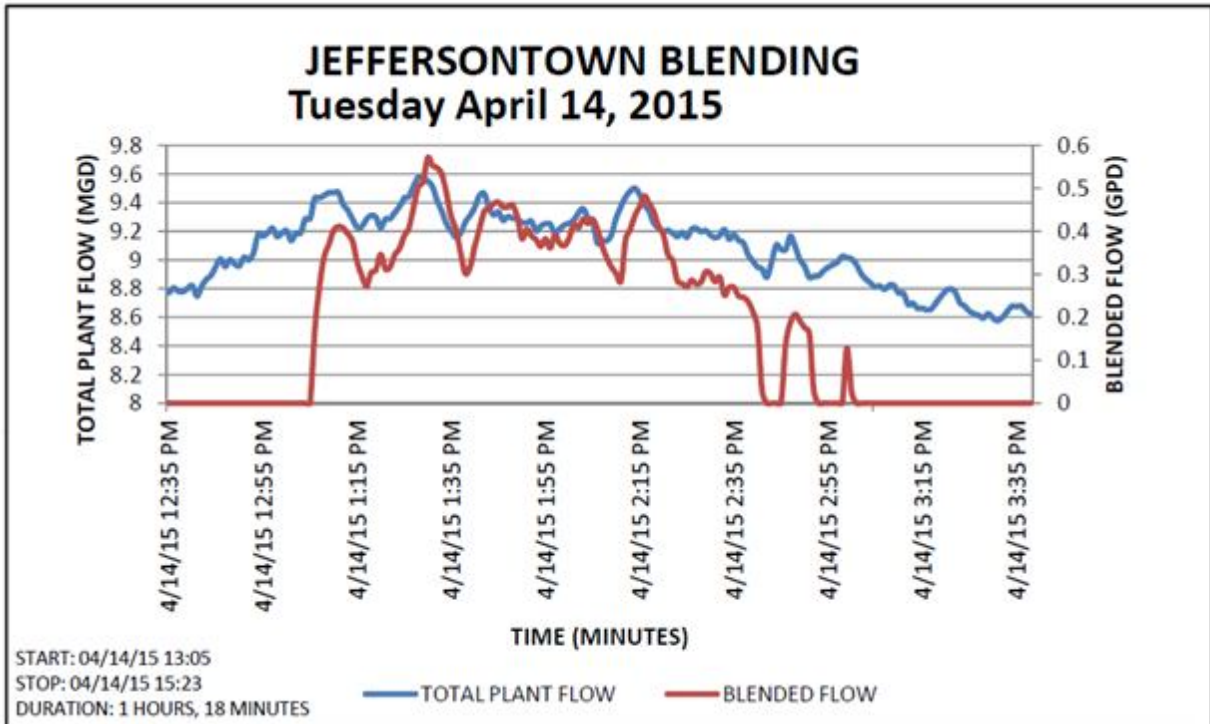
QUARTER 38 BLENDING: JANUARY 1, 2015 – MARCH 31, 2015

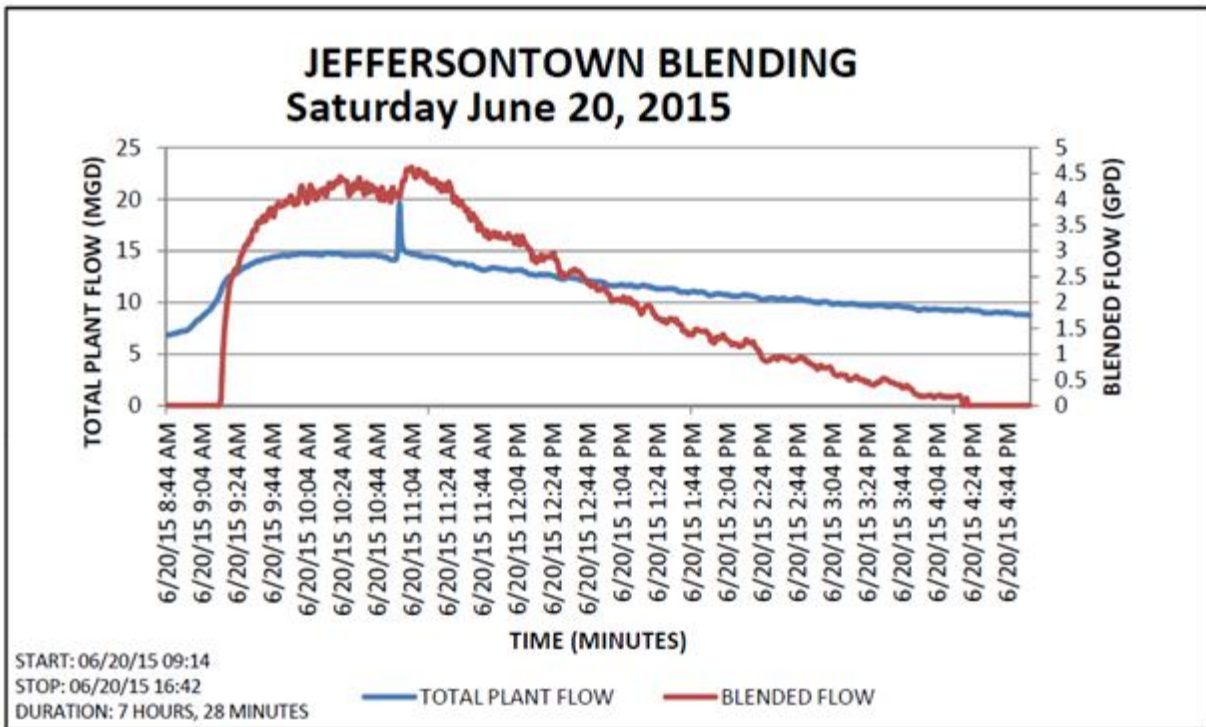
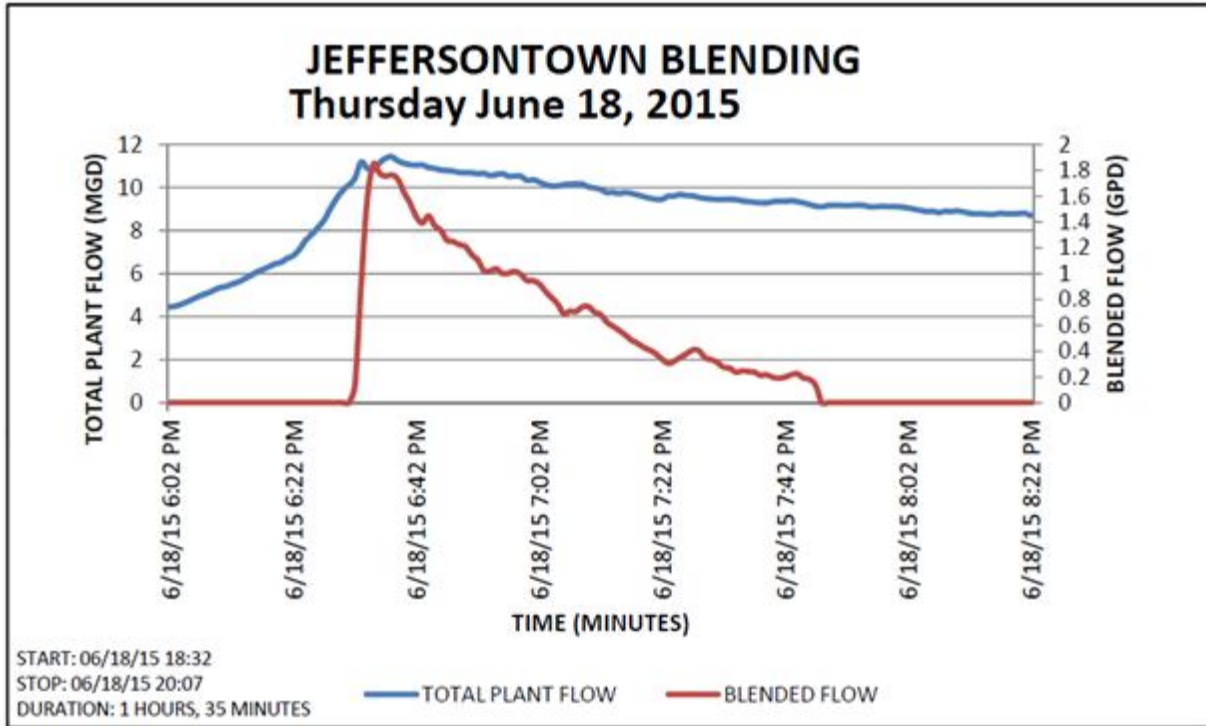


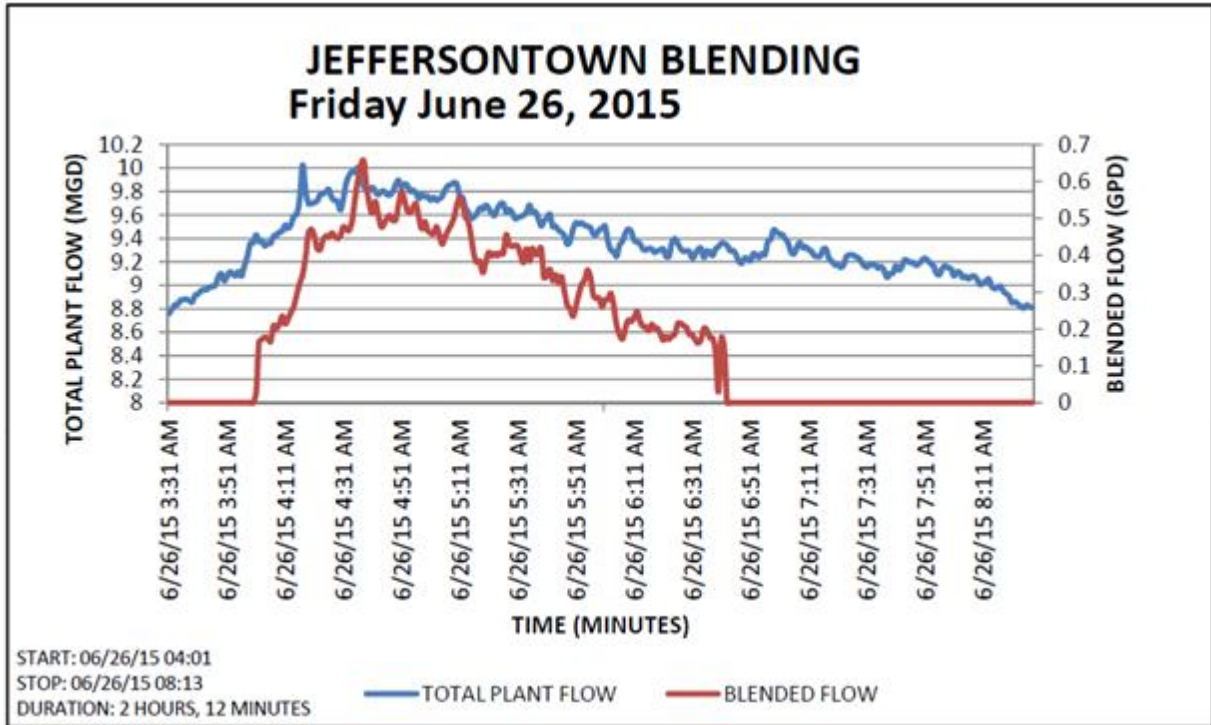


QUARTER 39 BLENDING: APRIL 1, 2015 – JUNE 30, 2015











APPENDIX L – BYPASS EVENT CORRECTIVE ACTIONS



**Project WIN – FY14 Annual Report
July 1, 2014 - June 30, 2015**

Bypass Summary - July 1, 2014 to September 30, 2014					
DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
Capacity (CAP)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
Human Error (OPN)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
Facility Failure (Mechanical - MCH, Electrical - ELE, Structural - SRT)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
External Power failures (LGE Related-PWR)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
Utility Damage					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A

Bypass Summary - October 1, 2014 to December 31, 2014					
DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
Capacity (CAP)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
Human Error (OPN)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
Facility Failure (Mechanical - MCH, Electrical - ELE, Structural - SRT)					
November 6, 2014	KEN CARLA	2263290	STR	The chlorine contact tank developed a hole and fully treated wastewater leaked out onto the ground. Approximately 34 gallons of fully treated wastewater leaked. Total flow for the day was 1,887 gallons.	Chlorine contact tank was pumped down and contractor repaired hole in concrete. This plant is to be eliminated in 2015.
External Power failures (LGE Related-PWR)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
Utility Damage					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A



**Project WIN – FY14 Annual Report
July 1, 2014 - June 30, 2015**

Bypass Summary - January 1, 2015 to March 31, 2015					
DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
Capacity (CAP)					
3/4/2015 9:40:00 AM	BERRYTOWN	2319385	CAP	On March 4, 2015, Berrytown WQTC bypassed disinfection and dechlorination treatment. Because of elevated levels in the aeration tank, approximately 191,000 gallons was bypassed. As a precaution, MSD turned off plant aeration to minimize the loss of biosolids. The design flow at Berrytown WQTC is 0.075 MG. We are unable to determine the exact flow rate at the time of bypass because the plant flow meter was maxed at a rate of 0.430 MDG.	Plant is to be eliminated in 2015. Snow accumulation of approximately 12 inches occurred at this facility after bypass began. Disinfected and cleaned by MSD staff.
3/10/2015 3:30:00 PM	BERRYTOWN	2323203	CAP	On March 10, 2015, Berrytown WQTC bypassed disinfection and dechlorination treatment. Because of elevated levels in the aeration tank, approximately 65,500 gallons was bypassed. As a precaution, MSD turned off plant aeration to minimize the loss of biosolids. The design flow at Berrytown WQTC is 0.075 MG. We are unable to determine the exact flow rate at the time of bypass because the plant flow meter was maxed at a rate of 0.430 MDG.	Plant is to be eliminated in 2015. Disinfected and cleaned by MSD staff.
3/14/2015 1:40:00 AM	BERRYTOWN	2325355	CAP	On March 14, 2015, Berrytown WQTC bypassed disinfection and dechlorination treatment. Because of elevated levels in the aeration tank, approximately 206,700 gallons was bypassed. As a precaution we turned off plant aeration to minimize the loss of biosolids. The design flow at Berrytown WQTC is 0.075 MG. We are unable to determine the exact flow rate at the time of bypass because the plant flow meter was maxed at a rate of 0.430 MDG.	Plant is to be eliminated in 2015. Disinfected and cleaned by MSD staff.
3/14/2015 6:50:00 AM	CEDAR CREEK	2325349	CAP	On March 14, 2015, Cedar Creek WQTC bypassed tertiary and UV treatment due to increased wet weather flows that exceeded plant capacity. In the interest of protecting the UV equipment from damage, MSD reduced flow to the UV channels, which prevented a shut down of the UV system. Plant flow was at a maximum of 23.544 MGD. Approximately 35,000 gallons were bypassed. The design flow at Cedar Creek WQTC is 7.5 MG. Flow during the duration of the bypass was 1.037 MGD.	MSD staff diverted flow into the #1 Oxidation ditch in order to protect the UV equipment and maintain tertiary treatment for the majority of plant flows. Disinfected and cleaned by MSD staff.



**Project WIN – FY14 Annual Report
July 1, 2014 - June 30, 2015**

Bypass Summary - January 1, 2015 to March 31, 2015					
DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
3/16/2015 6:00:00 AM	TIMBERLAKE	2325628	CAP	On March 16, 2015, Timberlake WQTC bypassed disinfection and dechlorination treatment due to the Ohio River being in flood stage and completely submerging the facility's chlorine contact tank. The bypass stopped at 2:00 pm on March 20, 2015, when river levels receded. Approximately 364,000 gallons were bypassed.	The plant is scheduled to be eliminated before January 1, 2016. Chlorine contact basin was cleaned on March 24, 2015 and put back in service same day.
Human Error (OPN)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
Facility Failure (Mechanical - MCH, Electrical - ELE, Structural - SRT)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
External Power failures (LGE Related-PWR)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
Utility Damage					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A

Bypass Summary - April 1, 2015 to June 30, 2015					
DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
Capacity (CAP)					
April 3, 2015	BERRYTOWN	2337674	CAP	The treatment plant experienced a bypass when a heavy rain event caused elevated water levels in plant clarifier weirs and aeration tanks. The bypassed flow received preliminary and some secondary treatment. Because of the elevated levels in the tanks, water flowed over and out of clarifiers and aeration tanks. Air to aeration tanks was shut off prior to bypass. Approximately 760,000 gallons overflowed. This plant is designed for 0.075 MGD. We are unable to determine the exact flow rate at the time of bypass because the plant flow meter was maxed at a rate of 0.430 MGD.	This plant is to be eliminated in 2015. Disinfected and cleaned by MSD staff.
April 8, 2015	BERRYTOWN	2340559	CAP	On April 8, 2015, Berrytown WQTC bypassed disinfection and dechlorination treatment due to heavy rain. Because of elevated levels in the aeration tank, approximately 5,220 gallons was bypassed. As a precaution, MSD turned off plant aeration to minimize the loss of biosolids. The design flow at Berrytown WQTC is 0.075 MG. The exact flow rate at the time of the bypass cannot be calculated because the plant flow exceeded the plant flow meter maximum readings.	This plant is to be eliminated in 2015. Disinfected and cleaned by MSD staff.
Human Error (OPN)					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A
Facility Failure (Mechanical - MCH, Electrical - ELE, Structural - SRT)					
April 9, 2015	MORRIS FORMAN	2341530	ELE	Description of the noncompliance and its cause: On April 8, 2015 Morris Forman WQTC began bypassing the entire treatment system. At 9:35 PM, the plant experienced a failure of the electrical station for the incoming 69KV electrical feed. All plant systems shutdown including Final Effluent Pumping, which was in service due to the elevation of the Ohio River. The main influent flows to Morris Forman, Main Diversion Structure and Southwestern Pump Station, were shutdown to reduce as much as possible the impact of flooding inside the plant boundaries. Flow from Rubbertown industries was also suspended. The plant flow at the time of the failure was approximately 260 MGD. We are unable to verify the total number of gallons which completely bypassed the plant because, due to the electrical system failure, the plant had no SCADA, Telemetry, or flow recording capability. Period of noncompliance: Beginning at 9:40PM on April 8, 2015, Morris Forman continues to bypassing secondary clarification. All flow entering the plant is currently receiving Preliminary and Primary Treatment, Chlorination and Dechlorination. A portion of the flow is receiving treatment through one Bioroughing tower with some secondary treatment prior to discharge to the Ohio River. As of the date of this letter, the bypass event is on-going and a total number of gallons not receiving full treatment will have to be estimated due to the scope of the event. Remedial actions: Power was restored to Morris Forman at 05:30AM April 9, 2015, and Final Effluent Pumping was restored at 05:47AM with one pump in service, and three pumps in service by 06:00 AM with the primary effort being to drain the flooding from the plant and reestablish normal liquid levels.	On April 9th, at 7:30AM, a meeting was held to identify: a plan to investigate the cause of the power failure; remove flooding from the plant buildings; an assessment and investigative process to identify equipment replacement needs; a process to re-establish flow through functional plant processes; contractor needs to assist in the recovery process, and a sequence to restore treatment streams to normal operations in the shortest time possible. Additional comments: Operations and maintenance staffs are working around the clock to restore equipment and processes, and briefings are conducted at 7:30AM and 2:30PM each day for progress reporting and next step identification.
External Power failures (LGE Related-PWR)					
June 29, 2015	STARVIEW	2379495	PWR	During a plant power outage, the portable generator at the facility failed to start. Approximately 665 gallons overflowed from the influent we well and bypassed all treatment processes.	MSD personnel installed an alternate portable generator. Plant is to be eliminated in 2015. MSD personnel will repair the generator that failed to start.
Utility Damage					
N/A	N/A	N/A	N/A	No bypasses of this category occurred during the reporting period.	N/A

Bypass Events - July 1, 2014 - September 30, 2014			
Type of Bypass	Date	ID	Facility Name
No bypasses occurred during the reporting period			

Bypass Events - October 1, 2014 - December 31, 2014			
Type of Bypass	Date	ID	Facility Name
RAIN EVENT DISCHARGE	11/06/14	MSD0208	KEN CARLA

Bypass Events - January 1, 2015 - March 31, 2015			
Type of Bypass	Date	ID	Facility Name
RAIN EVENT DISCHARGE	03/04/15	MSD0209	BERRYTOWN
RAIN EVENT DISCHARGE	03/10/15	MSD0209	BERRYTOWN
RAIN EVENT DISCHARGE	03/14/15	MSD0209	BERRYTOWN
RAIN EVENT DISCHARGE	03/14/15	MSD0289	CEDAR CREEK
RAIN EVENT DISCHARGE	03/16/15	MSD0293	TIMBERLAKE

Bypass Events - April 1, 2015 - June 30, 2015			
Type of Bypass	Date	ID	Facility Name
RAIN EVENT DISCHARGE	04/03/15	MSD0209	BERRYTOWN
RAIN EVENT DISCHARGE	04/08/15	MSD0209	BERRYTOWN
RAIN EVENT DISCHARGE	06/29/15	MSD0247	STARVIEW
RAIN EVENT DISCHARGE	04/09/15	MSD0278	MORRIS FORMAN