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January 30, 2020

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Subject: Quarterly Report 57
Civil Action No. 3:08-cv-00608-CRS

Attention Director and Chiefs:

Please find attached our Quarterly Report, prepared in accordance with Paragraph 29 of our Amended Consent Decree. This report is for the period October 1, 2019 – December 31, 2019, pertaining to Consent Decree compliance activities. Included are sections on Project WIN activities related to: NMC, SORP, Discharge Abatement Plans, Public Outreach, Education, Notification and Participation, CMOM and Performance Overview.

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
Louisville MSD Chief Engineer

cc: James A. Parrott
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File

Louisville and Jefferson County Wet Weather Consent Decree Quarterly Report #57



Reporting Period:

October 1, 2019 through December 31, 2019

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

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INTRODUCTION

The Louisville and Jefferson County Metropolitan Sewer District (MSD) is currently under an Amended Consent Decree with the Kentucky Department of Environmental Protection (KDEP), the United States Environmental Protection Agency (EPA), and the United States Department of Justice. 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.

Quarterly Reporting Period

This is the fifty-seventh Quarterly Report submitted in accordance with Paragraph 29 of the Amended Consent Decree. This report covers the time period from October 1, 2019, through December 31, 2019. The structure for this report is outlined as follows:

Section 1: Project Waterway Improvements Now (WIN) Performance Overview – This section provides an accounting of unauthorized discharges from the separate sanitary and combined sewer systems, and the estimated volumes along with performance information on bypasses at WQTCs. 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 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 (NMC)– This section describes the data collected for NMC 2 – Maximization of Storage in the Collection System, and NMC 4 – Maximization of Flow at the Morris Forman Water Quality Treatment Center (WQTC) that were active during the reporting period.

Section 3: Program Activities for Sewer Overflow Response Protocol (SORP) – This section describes the training attendance records, overflow data, and overflow reconnaissance inspection routes related to SORP that were active during the reporting period.

Section 4: Program Activities for Discharge Abatement Plans (DAP) – This section describes the schedule and status for projects related to the DAP by means of an updated Gantt chart for active DAP projects during the reporting period. This section also includes the anticipated projects and activities that are scheduled for continued compliance with the Amended Consent Decree.

Section 5: Program Activities For Public Outreach, Education, Notification and Participation – This section describes the activities related to public outreach that were active during the reporting period.

Section 6: Capacity Management Operations and Maintenance (CMOM) Report – The CMOM program activities and programmatic activities for WQTCs generating capital projects are reported in a Gantt chart for the reporting period. This section also includes the schedule for activities planned for the next reporting period for continued compliance with the Amended Consent Decree.

SECTION 1: PROJECT WATERWAY IMPROVEMENTS NOW (WIN) PERFORMANCE OVERVIEW

1.1. COMBINED SEWER OVERFLOW REDUCTION AND SANITARY SEWER OVERFLOW ABATEMENT ACTIVITIES

The following sections outline the activities performed during the reporting period to reduce or control CSOs and eliminate SSOs.

1.1.1. SANITARY SEWER OVERFLOW ELIMINATION ACTIVITIES

Refer to Section 4.4.1 for Final SSDP project updates.

1.1.2. COMBINED SEWER OVERFLOW REDUCTION AND CONTROL ACTIVITIES

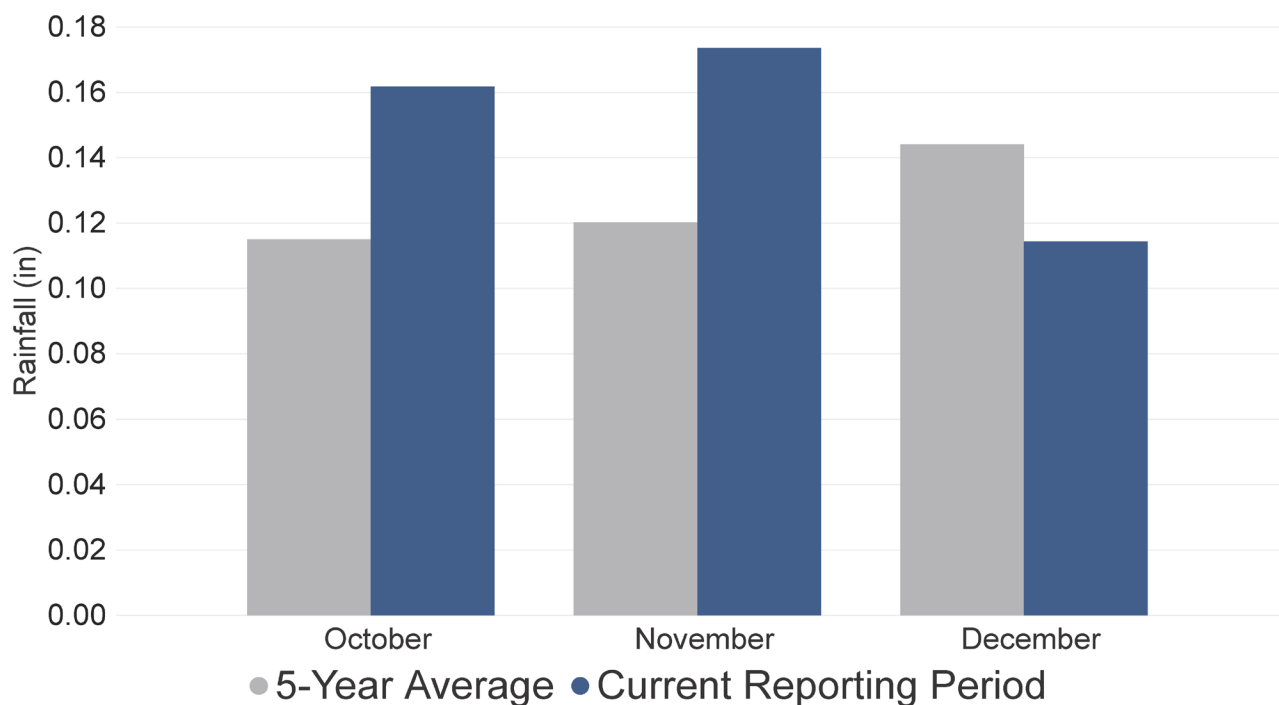
Refer to Section 4.4.2 for CSO LTCP project updates.

1.2. SYSTEMWIDE PERFORMANCE

1.2.1. 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. Figure 1.1 shows the service area daily average rainfall amounts for each month of the last quarter, compared with the average of the daily average rainfall for the previous five years. Data was pulled from MSD's rain gauge network. Daily average rainfall was above average for October and November and below average for December when compared with the previous 5-year average for these months.

Figure 1.1. Daily Average Rainfall by Month



1.3. WATER QUALITY TREATMENT CENTER PERFORMANCE

1.3.1. BYPASSES

There were no bypass events that occurred during this reporting period. Any details are included in Appendix A-1. Each quarter when bypasses occur, an assessment of bypasses is conducted to determine root cause of the bypass, the failure category, corrective actions to be taken, possible programmatic solutions, and corrective action completion date.

1.3.2. JEFFERSONTOWN WATER QUALITY TREATMENT CENTER

A letter dated December 23, 2015, certified the elimination of Jeffersontown WQTC. Inspections were conducted upstream of what was previously Jeffersontown WQTC Headworks during the reporting period. There were no overflows reported as a result of these inspections. Refer to Section 3.2 for SSO Route information.

1.3.3. PHOSPHORUS MONITORING AT THE PROSPECT WQTCs

An elimination plan for the five WQTCs serving Prospect (Timberlake, Hunting Creek North, Hunting Creek South, Ken Carla, and Shadow Wood) was submitted to EPA/KDEP on March 31, 2009. Approval of this plan was received on September 24, 2009, and work is now complete. A certification letter dated December 15, 2015, was submitted finalizing the completion of the project.

1.4. COMBINED SEWER OVERFLOW PERFORMANCE

1.4.1. AUTHORIZED DISCHARGES – WET WEATHER CSOs

The observed CSO data for the reporting period for each monitored overflow has been tabulated, along with rainfall information from the nearest rain gauge to facilitate review of the overflows that occurred. This data is included as Appendix B.

1.4.2. UNAUTHORIZED DISCHARGES – DRY WEATHER CSOs

There were no dry weather overflows reported at a CSO during the reporting period. Any details are included in Appendix A-2. MSD records information related to dry weather overflows from permitted combined sewer overflow outfalls. This information is entered and maintained in IPS utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. A detailed report of these overflows will be included in the Annual Report for the current reporting period.

1.4.3. CSO FLOW MONITORING QUALITY IMPROVEMENT

During the July 2016 – September 2016 reporting period, MSD identified a potential for inaccurate volume reporting at some CSOs. This was identified by comparing measured overflow volumes against modeled overflow volumes for similar storms. It was determined that several CSO flow monitors are affected by backwater levels from the receiving streams causing a discrepancy actual overflow volume, along with other potential variables at some locations. MSD notified EPA and KDEP of data discrepancies on September 29, 2016.

A workgroup was established to review CSO flow monitoring and resolve potential over-reporting of overflow volumes. Initial findings indicated that potentially significant discrepancies between modeling and monitoring data existed at 33 of MSD's 98 CSO locations. This set of 33 CSOs was the highest priority to review, correct data, document SOPs, and implement changes. For these CSO locations, MSD performed site visits including elevation surveys, performed detailed analysis, investigated equipment configurations, and investigated PLC programming or monitoring program logic. This has led to the development of an SOP for each CSO that describes the existing monitoring equipment, configuration, and flow calculation in use as of December 31, 2016, and evaluates the effectiveness of the existing setup. If a more effective arrangement was recommended, MSD added the proposed arrangement to the SOP for implementation and determined if historical data could be updated. In cases where the historical data could be updated, MSD has developed revised volumes for reporting. Locations for which revised volumes have been developed are detailed in Appendix F. In some cases, historical volumes could not be recalculated based on the available data. For instance, CSOs influenced by river or creek

elevation for which there was no available historic level data could not be recalculated for historical volumes but will be calculated or measured according to the revised SOPs as they are implemented.

To date, SOPs have been drafted and historical volume data corrections (where possible) have been made for all of the 33 initial CSO locations. These changes have also been made for two additional CSO locations included in the review due to interaction with priority CSOs. Multiple SOPs require programming or equipment changes in order to implement the final SOPs. During the upcoming reporting period, MSD will continue working to procure and replace equipment as required and update the programming at the PLC or with monitoring program logic, as summarized in Figure 1.2 and detailed in Appendix F, to support ongoing implementation of the SOPs.

The remaining 65 active CSO locations are being reviewed during the current fiscal year. MSD has also identified two inactive sites with historic data that will be reviewed. MSD has developed a schedule for review of these sites and has begun site visits, calculation review, and SOP development. Status for these remaining CSOs is summarized in Figure 1.3 and detailed in Appendix F.

During the course of review, MSD has made determinations about CSO monitoring configurations and SOPs that impact other CSOs that were previously listed as completed. MSD views this process as an ongoing review for continuous improvement, and continues to update status to reflect the latest and most appropriate determination.

Until the review is complete, CSO flow monitoring data will continue to be included as an appendix to each quarterly report, will be listed as “Draft”, and will include the statement “CSO data monitoring procedures are currently being revised”. As changes are made to flow meter locations and or flow meter calculation algorithms, MSD will provide status updates in the quarterly reports on progress to evaluate data accuracy, revise monitoring data records, update monitoring procedures, and implement recommendations. CSO flow monitoring data reported quarterly will include updated volumes based on completion of the review and update of the reporting standards for each CSO. Revised volumes for previous reporting periods up to and including FY18 for the 33 CSO locations initially reviewed were included as an appendix to the FY18 Consent Decree Annual Report. Any subsequently developed revised volumes for previous reporting periods up to and including FY20 will be included as an appendix to the FY19 or FY20 Consent Decree Annual Report as applicable.

1.5. COLLECTION SYSTEM OVERFLOW PERFORMANCE

1.5.1. UNAUTHORIZED DISCHARGES TO WATERS OF US

MSD recorded information related to overflows reaching Waters of the United States (WUS) for the reporting period. This information is entered and maintained in IPS utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. Details of these overflows are included in Appendix A-3. During this quarter, 66 unauthorized discharges to WUS were reported, summarized in Table 1.1.

MSD recorded information related to overflows to the ground that did not reach Waters of the United States for the reporting period. This information is entered and maintained in IPS utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. These overflows will be included in the Annual Report for the reporting period.

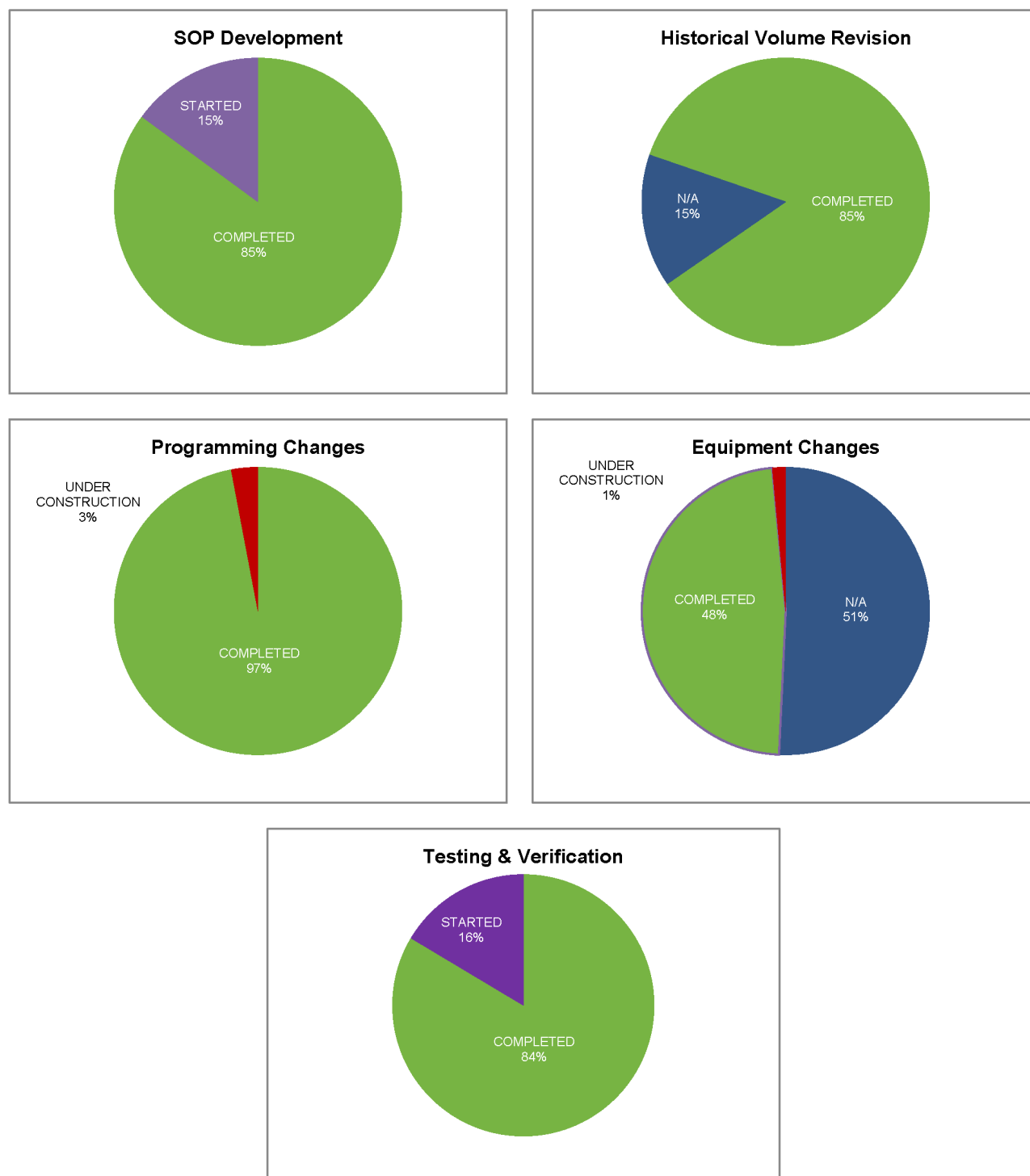
Table 1.1. Dry and Wet Weather SSOs by Cause – Unauthorized Discharges to Waters of US

PROBLEM	DRY WEATHER	WET WEATHER
LACK OF SYSTEM CAPACITY	0	55
OBSTRUCTION-NOT GREASE / ROOTS	1	0
STRUCTURAL FAILURE	6	1
UTILITY DAMAGED MSD ASSET	2	0
MECHANICAL FAILURE	0	1

Figure 1.2. CSO Flow Monitoring Improvement Status - Phase 1



Figure 1.3. CSO Flow Monitoring Improvement Status - Phase 2



¹Draft SOPs are completed and under review.

1.5.2. OVERFLOWS TO INTERIOR

MSD recorded information related to overflows to building interiors for the reporting period. This information is entered and maintained in IPS 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, will be included in the Annual Report for the reporting period.

1.6. GRAVITY LINE PREVENTIVE MAINTENANCE (GLPM)

Each quarter, data and statistics relating to the cleaning, inspection and maintenance of sewer assets performed under the Gravity Line Preventive Maintenance program are reported. Data for the current reporting period is shown in Figure 1.4 through Figure 1.6.

Targets, indicated by a blue line on the gauges, have been developed for structured work only, which includes any preventive or predictive activities that are routinely scheduled to maintain asset condition and decrease its likelihood of failure. Corrective maintenance activities include those activities performed as a reaction to correct asset deficiencies, whether identified through structured work or from outside the program, and do not have associated targets.

Figure 1.4. CSO Inspections and Cleaning

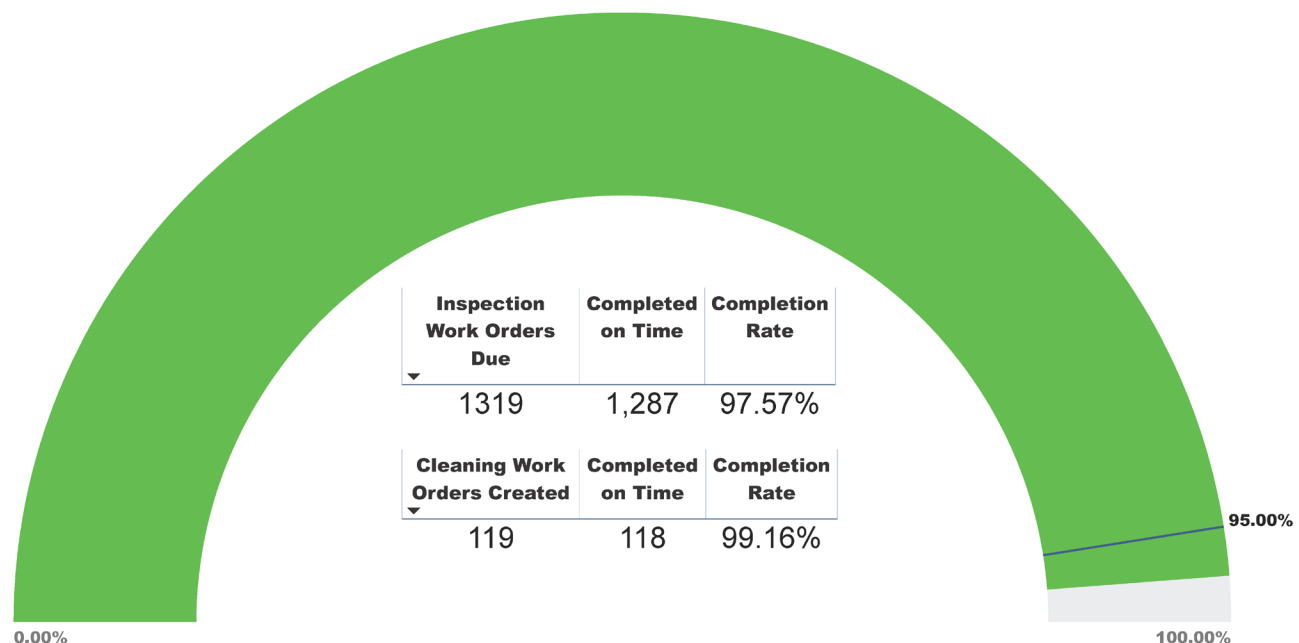


Figure 1.5. Gravity Main Cleaning

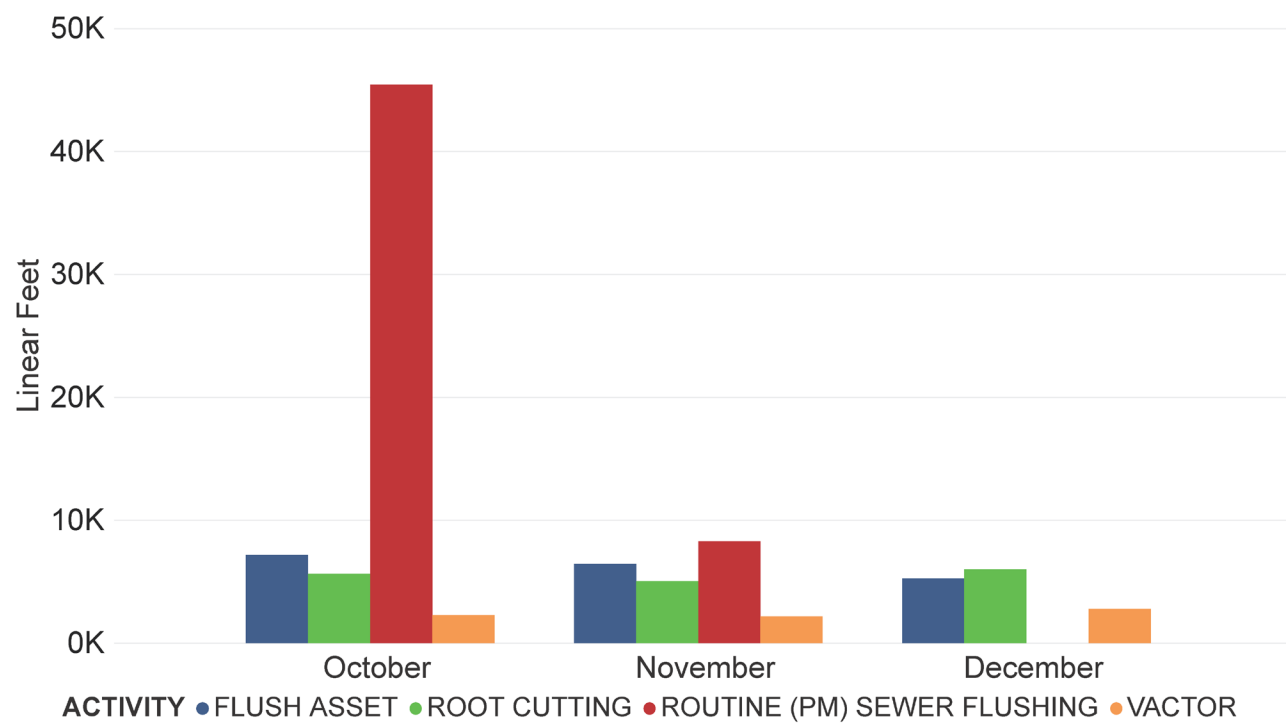
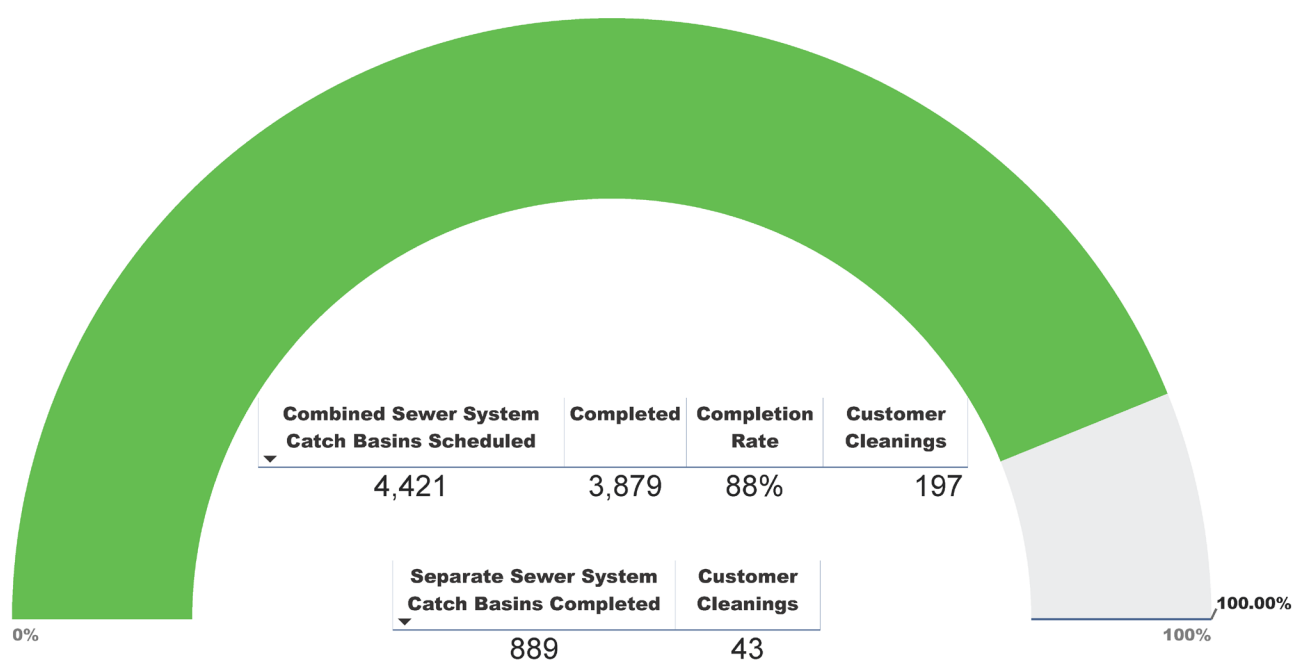


Figure 1.6. Catch Basin Cleaning



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 approval of the report on February 22, 2007. The approved NMC compliance document can be viewed on the MSD Project Waterway Improvements Now (WIN) website, available at www.msdpowerwin.org. Highlights of the NMC program implementation over this reporting period are outlined below.

2.2. NMC 2: MAXIMIZATION OF STORAGE IN THE COLLECTION SYSTEM

MSD has continued operation of the Real Time Control (RTC) system. During this reporting period, approximately 561 MG were stored in the system during rain events and routed to the Morris Forman Water Quality Treatment Center (MFWQTC) once the system was able to handle the flow. See Table 2.1 for a detailed report.

The following identifies on-going activities; those completed during the current period; and those anticipated to be completed during the next period.

RTC Integration

- MSD and the RTC consultant continue to implement the wet weather standard operating procedures (SOPs) incrementally, starting with a period of manual operation to validate the control assumptions, 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.
- During this reporting period, MSD and the RTC consultant continue to monitor and evaluate the performance of the RTC system against operational objectives and issue updates to configurations and site tuning as necessary to improve performance of the recently integrated facilities and Csoft 4.
- MSD and the RTC consultant performed local site startup and data transfer testing components of the integration process for the Bells Lane Wet Weather Treatment Facility, Splitter Structure #1 at the Southwestern Pump Station (SWPS), and improvements to RTC operations at the SWPS facilities.
- MSD and the RTC consultant began preparing configuration files and updating the Csoft model in relation to the Southwestern Parkway (Shawnee) CSO Basin.
- MSD continued development of a filling and dewatering strategy chapter for inclusion in the master RTC SOP manual and continued updating the entire master RTC SOP manual.
- MSD has completed updates to the RTC hydraulic model to incorporate the Portland CSO Basin and has begun operating the basin in advance of RTC integration.
- During the next reporting period, MSD will continue implementing RTC SOPs and validating operations of the Portland CSO Basin as well as programming Csoft configurations for the basin in preparation for commissioning the site into RTC. Once the site has been validated through manual operation and gradual implementation of local automatic control, the facility will be fully commissioned into the RTC system. MSD will complete the update of the master RTC SOP manual, including the Portland CSO Basin SOP and continue developing the filling and dewatering chapter of the SOP manual. MSD will continue developing a master programming guide for RTC facilities to document existing programming and parameters at each facility as a reference to ensure long term continuity of the RTC system. Csoft configurations will be programmed to allow final commissioning into RTC and the transfer of set points to the Southwestern Parkway (Shawnee) CSO Basin.

RTC Performance Assessment and Improvements

- The main objective of the RTC performance assessment is to determine whether the available flow and storage capacities within the system are utilized to their optimal potential. MSD staff continues to review and prioritize strategies for performance improvement. During the next reporting period, MSD staff and the RTC consultant will continue to implement hardware, software, and set-point changes as applicable on a site-by-site basis.
- MSD has initiated temporary flow monitoring of the Middle Fork Trunk to gather data to improve model calibration during post event recovery to improve dewatering of the Clifton Heights CSO Basin.
- MSD and the RTC consultant continued incorporating newly integrated facilities into the Hydroweb RTC dashboard and developing real time dashboard interfaces.
- MSD and the RTC consultant successfully identified a means to incorporate Telog data into the Hydroweb dashboard.
- The RTC consultant updated Csoft configurations to improve dewatering of Clifton Heights CSO Basin and reduce pump cycling by increased utilization of Starkey PS data and CSO020 level data to establish available dewater capacity.
- MSD and the RTC consultant reprogrammed the flow under the gate calculation at the Main Diversion Structure (MDS) to improve results.
- Construction is in progress to install a flow meter between the MDS and the MFWQTC to improve monitoring of flow from the MDS.
- MSD will continue to monitor the RTC system to ensure proper operation and further refine operations of the RTC system as performance issues are observed. MSD and the RTC consultant will continue to refine the local site tuning of RTC facilities as needed based on performance during varying rain events. MSD will continue to improve and automate operations of the SWPS, SWSG/SWOR1, the Bells Lane Wet Weather Treatment Facility, Southwestern Parkway (Shawnee) CSO Basin, and the Portland CSO Basin. MSD and the RTC consultant will continue evaluating use of the Hydroweb dashboard.

2.3. NMC 4: MAXIMIZATION OF FLOW AT THE MORRIS FORMAN WATER QUALITY TREATMENT CENTER

Plant Outages

The East and West Headworks were in service during the reporting period. Channels were taken out of service due to low flow as appropriate. Channel Two and Three of the West Headworks were taken out of service the majority of the reporting period for contractor work. The Final Effluent Pump Station (FEPS) was in service 17 days of the reporting period, limiting plant flow to 205 MGD. Flows at MFWQTC were sustained between 70 and 150 MGD, with some exceptions discussed below, before allowing flow to bypass secondary treatment during wet weather. Flows are shown in Figure 2.1 through Figure 2.3.

Morris Forman WQTC Projects

- MFWQTC Biosolids Management – Dryer Evaluation, Inspection of Digester No. 1, draft Odor Testing Technical Memorandum, and draft District-wide Biosolids Management Plan were completed during the reporting period.
- MFWQTC Biosolids Management Solutions – The WIFIA loan application was submitted during the reporting period.
- MFWQTC WQTC High Yard Modifications – The project was completed during the reporting period.



Table 2.1. Wet Weather Storage in the Morris Forman Sewer System via the RTC System

Event Number	Wet Weather Event			Rainfall			CSO Saved Volume (MG)											High River Levels	Comments
	Start Date	End Date	Duration	Average*	Max**		SWPS SG Chamber (14.25)	SWOR2 (4.1)	Brady Lake and Executive Inn Storage (21.5)	Ashland (1.0)	SOR1 (14.05)	Ohio River Interceptor (1.8)	Sneads Branch (2.5)	Logan (17)	NGPS (8.0)	Clifton Heights (6.9)	Total (91.1)		
				TRFD (in)	TRFD (in)	Rain Gauge													
2019-070	10/6/19 3:55	10/8/19 11:10	55:15:00	1	2	TR14	13	4	13	1	15	2	1	7	0	2	56	0	Large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2019-071	10/11/19 10:50	10/12/19 6:55	20:05:00	0	0	TR14	2	0	1	0	2	2	0	3	0	0	11	0	Small back-to-back storm cells homogeneously distributed over the service area.
2019-072	10/15/19 23:05	10/17/19 3:05	27:00:00	1	1	TR12	4	2	7	1	8	1	1	4	0	1	28	0	Moderate back-to-back storm cells homogeneously distributed over the service area.
2019-073	10/26/19 2:25	10/29/19 5:05	74:40:00	1	1	TR04	12	3	13	1	20	3	1	12	0	2	66	0	Large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2019-074	10/30/19 8:20	11/1/19 23:15	62:55:00	2	2	TR14	20	6	20	1	30	4	2	17	4	5	110	0	Very large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2019-077	11/6/19 20:00	11/7/19 19:40	23:40:00	1	1	TR14	6	1	3	0	7	1	0	1	0	0	20	0	Moderate storm cells homogeneously distributed over the service area.
2019-082	11/22/19 0:45	11/22/19 13:35	12:50:00	0	1	TR14	3	1	3	0	2	0	0	0	0	0	11	0	Small storm cells homogeneously distributed over the service area.
2019-084	11/26/19 18:20	11/28/19 18:20	48:00:00	1	1	TR12	7	2	10	1	15	2	1	9	0	2	48	0	Large back-to-back storm cells homogeneously distributed over the service area.
2019-085	11/29/19 23:35	12/1/19 23:20	47:45:00	2	3	TR14	13	4	19	1	17	2	2	16	7	7	88	0	Very large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2019-086	12/1/19 23:20	12/3/19 8:00	32:40:00	0	0	TR04	0	0	0	0	0	0	0	0	0	0	0	0	Analyzed as part of rainfall event #2019-085.
2019-089	12/13/19 14:20	12/14/19 12:05	21:45:00	1	1	TR14	1	0	0	0	1	0	0	0	0	0	2	0	Small back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2019-090	12/15/19 20:50	12/21/19 13:40	136:50:00	1	1	TR14	13	4	14	1	16	2	1	11	1	3	64	0	Large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2019-091	12/29/19 3:20	12/31/19 18:40	63:20:00	1	2	TR14	11	3	12	1	11	2	1	13	0	3	57	0	Large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
TOTAL							104	30	115	8	143	21	10	93	14	23	561		

* Average total rainfall depth based on rain gauges TR04, TR05, TR11, TR12, TR13, TR14 and TR15.

** Maximum total rainfall depth measurement and measurement location during the wet weather event.

*** The MDS is always controlled manually by operators.

- MFWQTC Truck Unloading Station – The project was awarded and Notice-to-Proceed was issued during the reporting period. Depending on weather, construction to take place in the next reporting period.
- MFWQTC Primary Sludge Line Replacement Project – This project will replace two old sludge lines between the primary sludge pump station building and the digesters. The project is still in construction due to some additional repairs added to the project.
- MFWQTC FEPS VFD Replacement – The project scope changed from VFDs to soft starts. The project is scheduled to be completed in the third quarter of 2020.
- MFWQTC Cake Pump, Phase II – This project will add a larger cake pump to the existing screw and pump conveyance systems for additional cake solids conveyance to the cake truck load out for offsite disposal. The project will also provide modifications to the East Cake Truck Bay to allow this second truck bay to be available for cake solids load out for offsite disposal. The project will add a third means for cake solids transfer to the load out bay and allow two trucks to be loaded from the West and East truck bay areas. Construction began during the reporting period.
- MFWQTC Sedimentation Basin Rehabilitation – A technology assessment is expected to be initiated in the next reporting period.
- MFWQTC Groundwater Study – The study began during this reporting period and is expected to be completed the third quarter of 2021.
- MFWQTC Chiller Replacement – The project is currently in the design phase, with bidding expected to take place in the second quarter of 2020.
- MFWQTCC Hypochlorite Line Replacement – The project has been changed to the MFWQTC Sodium Hypochlorite Building Relocation. The project is currently in the design negotiation phase.
- MFWQTC OGA and PTO Demolition – The project is currently in the design phase. The project scope has changed to include the Chlorine Rail Car Facility, in addition to the OGA and PTO buildings.
- MFWQTC Groundwater Well No. 10 – The Contractor was given the Notice-to-Proceed and performed a pilot bore during the reporting period. Well installation is anticipated to begin in the next reporting period.
- MFWQTC Oxygen Generation Plants 1 and 2 Replacement – The project was completed during the reporting period.

Morris Forman WQTC Performance

Figure 2.1 through Figure 2.3 illustrate performance in maximizing flow during wet weather to Morris Forman WQTC. The top of the chart shows rainfall in inches per day. The middle part of the chart shows Morris Forman WQTC effluent flow and secondary treatment flow. The difference between these flows 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 Ohio River backwater effects and the ultrasonic signal is sometimes blocked by mist and condensation when air and sewage temperatures are significantly different. Therefore, CSO activations at CSO211 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 CSO. 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 in Appendix B. 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 by as much as 24 hours.

Figure 2.1. Morris Forman WQTC - Plant Flows and Associated CSO Activations - October

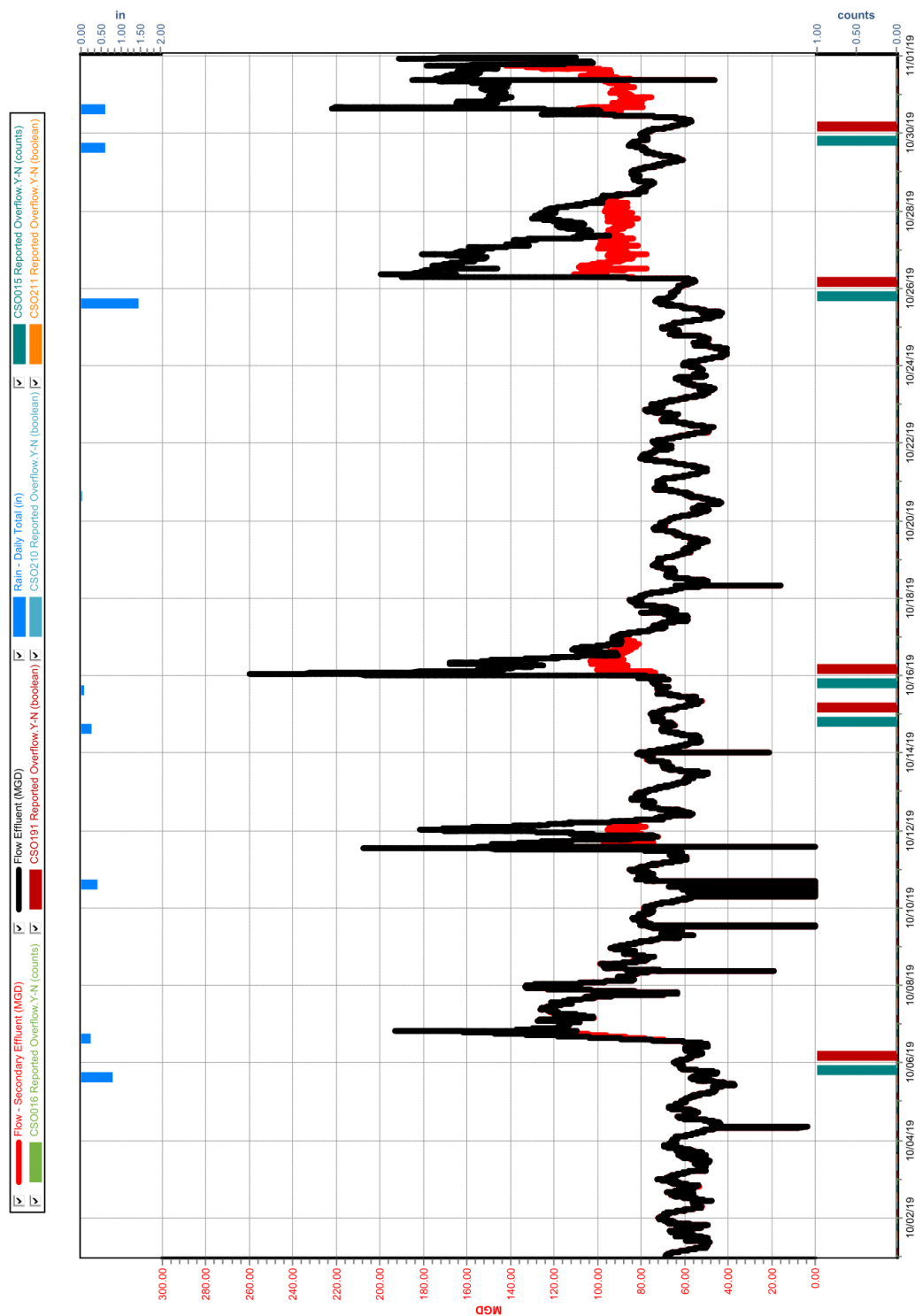


Figure 2.2. Morris Forman WQTC - Plant Flows and Associated CSO Activations - November

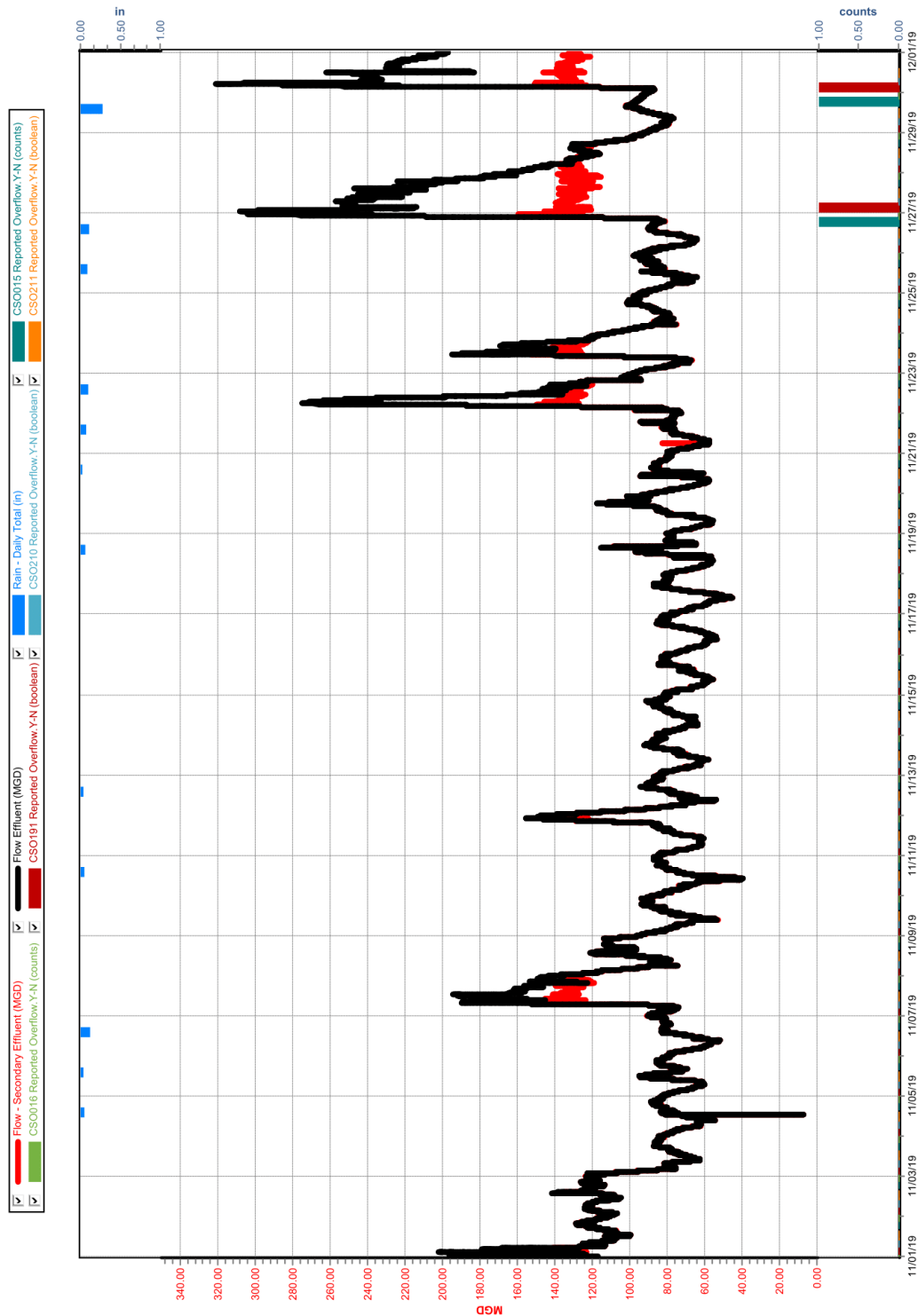
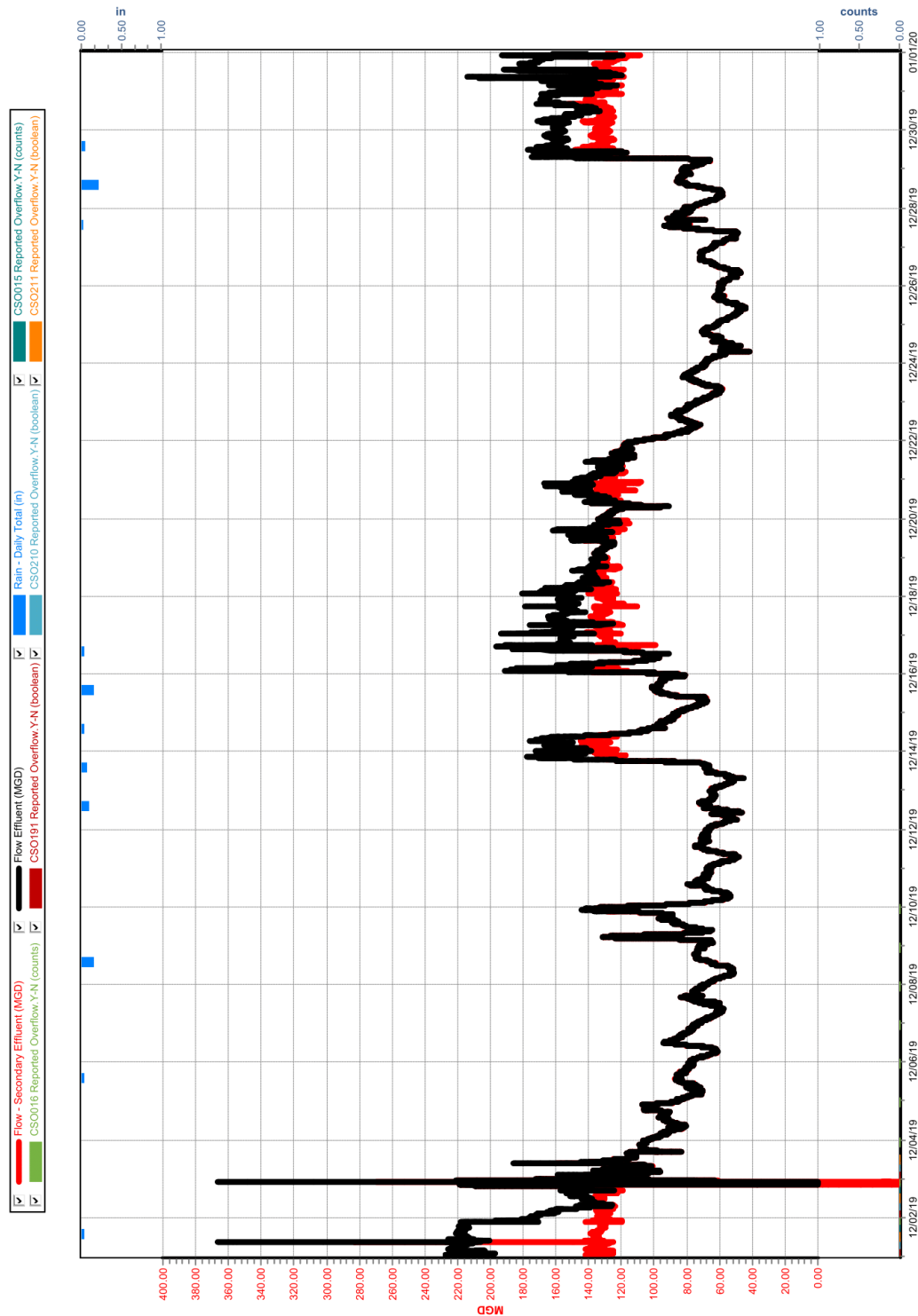


Figure 2.3. Morris Forman WQTC - Plant Flows and Associated CSO Activations - December



There are incidents in October and November when the secondary effluent flow fell slightly below 120 MGD when A-Battery was out of service that resulted in a reduction of flow through secondary treatment. On October 9-11, November 4, and December 2, when both plant effluent and secondary flows show zero, due to telemetry failure, plant-wide power outage, and power failure in FEPS, respectively, which caused no data to be recorded. MSD is investigating options for more reliable plant telemetry to reduce these occurrences.

Morris Forman effluent compliance for the previous three months is summarized in Table 2.2 where a “©” indicates compliance and an “X” indicates noncompliance. MSD continues to employ additional solids processing methods, including dewatered cake and an outside vendor to assist with solids handling in addition to purchasing additional liquid oxygen in an effort to meet permit requirements.

2.4. NMC ACTIVITY SCHEDULE

NMC capital project milestones for the current reporting period as well as a look-ahead for the upcoming reporting period are provided in Figure 2.4.

Table 2.2. Morris Forman WQTC Permit Compliance

PARAMETER	OCTOBER	NOVEMBER	DECEMBER
Ammonia Nitrogen, 30 Day Secondary Effluent	©	©	©
Ammonia Nitrogen, 7 Day Secondary Effluent	©	©	©
BOD, 30 Day Secondary Effluent	X	X	X
BOD, 7 Day Secondary Effluent	X	X	X
BOD, Percent Removal	X	X	X
Chlorine, Residual	©	©	©
Dissolved Oxygen	X	©	©
Fecal Coliform, 30 Day Geomean	©	©	©
Fecal Coliform, 7 Day Geomean	©	©	©
pH	©	©	©
TSS, 30 Day Secondary Effluent	X	X	X
TSS, 7 Day Effluent	X	X	X
TSS, Percent Removal	X	X	X

Figure 2.4. NMC Quarterly Commitments Schedule

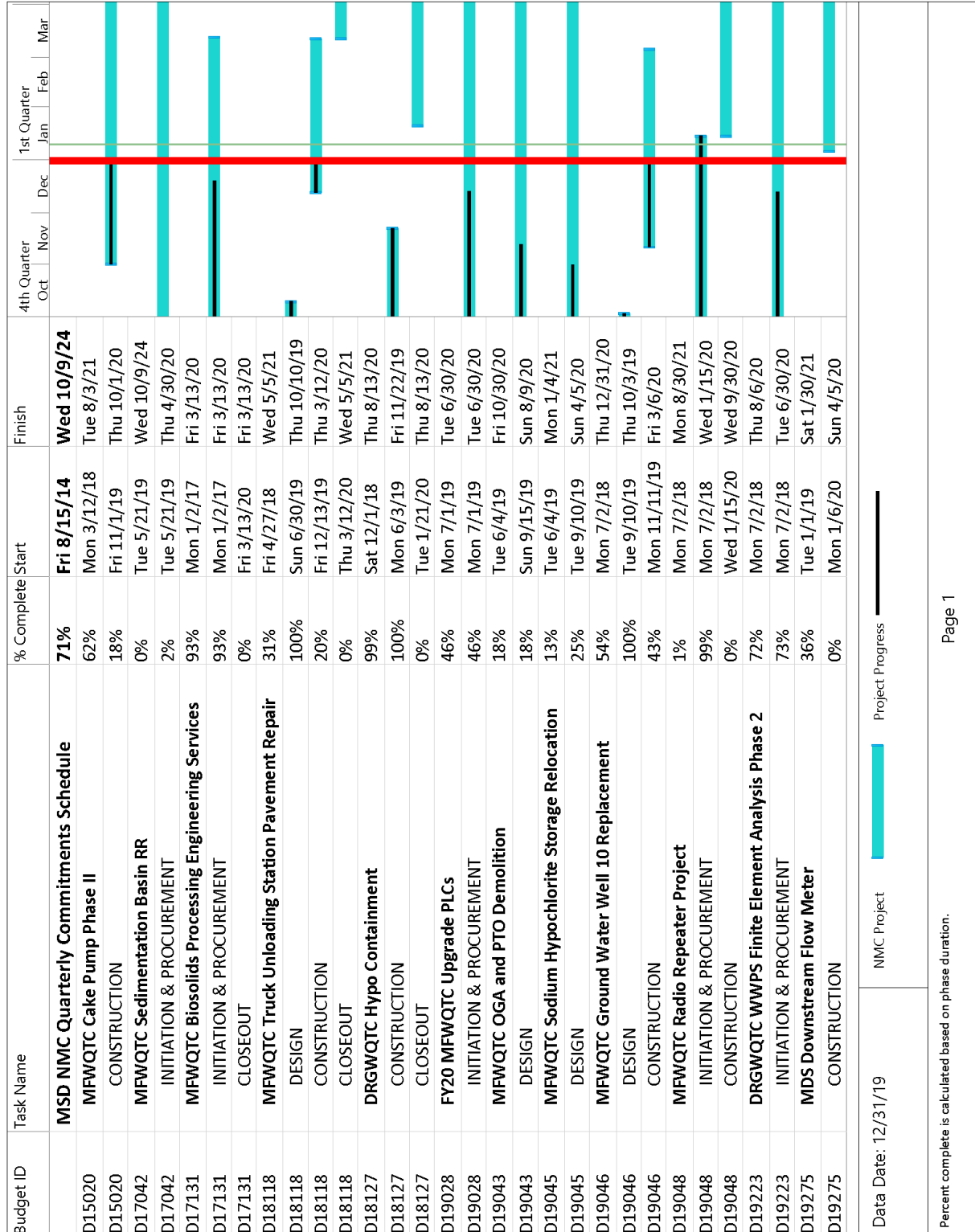


Figure 2.4. NMC Quarterly Commitments Schedule

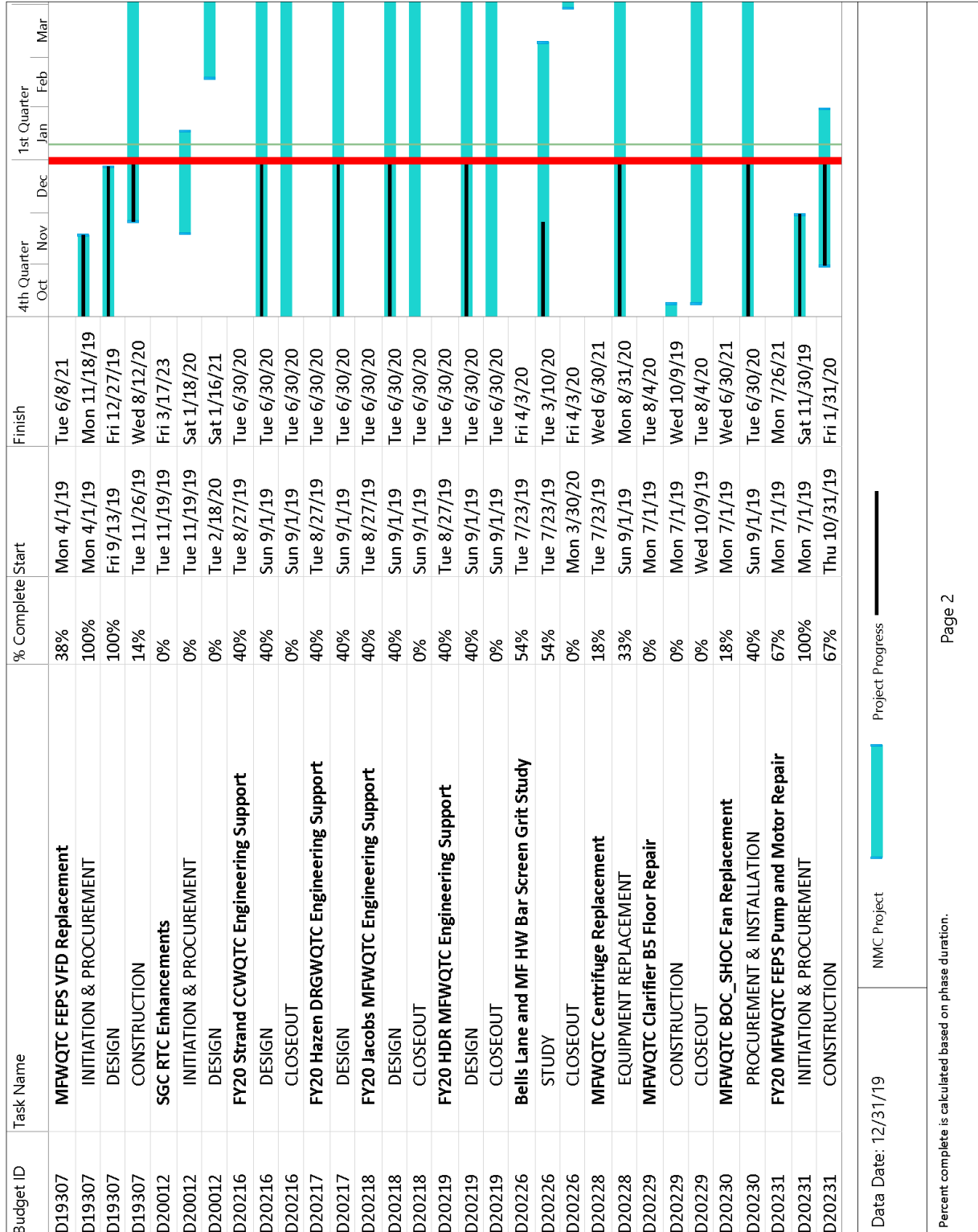
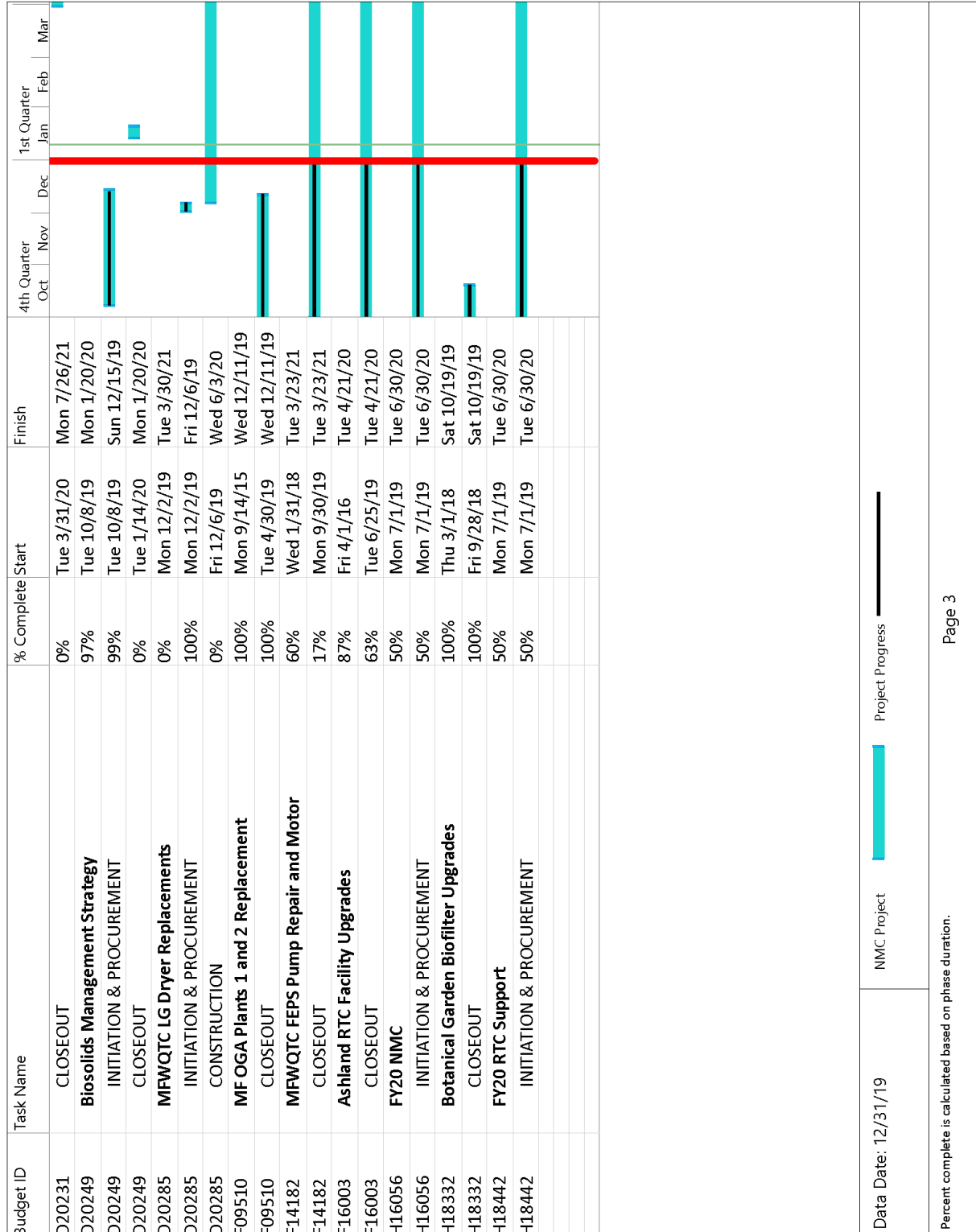


Figure 2.4. NMC Quarterly Commitments Schedule



SECTION 3: PROGRAM ACTIVITIES FOR SEWER OVERFLOW RESPONSE PROTOCOL (SORP)

3.1. 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, and received an approval letter for the SORP on August 22, 2006.

MSD completely revised the SORP documentation in 2011. The draft of this revised document was submitted for comment on August 22, 2011. Comments from EPA and KDEP were received and addressed, and the document was resubmitted October 28, 2011. Final approval of the updated SORP document was received February 21, 2012. Modifications were made to the document in 2016 to reflect the elimination of the Jeffersontown WQTC, and were approved on July 21, 2017. A hard copy of the approved document has been distributed to each division throughout MSD and a viewable, downloadable electronic version has been posted to the MSD Project WIN website, available at www.msdprojectwin.org. The following activities were performed during this reporting period.

3.2. OVERFLOW MANAGEMENT AND FIELD DOCUMENTATION

MSD monitored approximately 143 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 are monitored during rain events depending on the magnitude and location of the storm. If an overflow is observed, a Discharge Work Order is created to document the event. During this quarter, 49 unauthorized discharges were identified through route reconnaissance. During this period, 8 inspection routes were run.

The West County route is monitored via telemetry. During the Q55 reporting period, MSD determined that the inspection work orders should no longer be created to document this monitoring. However, discharge work orders will be created as required based on telemetry observations.

MSD Operations staff hauled 21,000 gallons due to capacity-related issues during this reporting period. Hauling was also initiated due to other issues as indicated in Table 3.1. Significantly, nearly 4.7 million gallons were hauled to mitigate discharges to Harrods Creek after a structural failure of the Harrods Creek Force Main, a 30-inch diameter pressure pipe, was discovered in November.

Table 3.1. Hauled Volumes in Gallons

PROBLEM	OCTOBER	NOVEMBER	DECEMBER
CORRECTIVE MAINTENANCE - PLANNED	0	3,000	0
LACK OF SYSTEM CAPACITY	6,000	9,000	6,000
MECHANICAL FAILURE	12,000	0	0
STRUCTURAL FAILURE	0	6,000	4,667,300

3.3. STAFF TRAINING AND COMMUNICATION

MSD continued training through the online training delivery system, which allows more flexibility for employees to complete training at convenient times during the quarter and to integrate SORP training with new employee and contractor orientation.

Fourth quarter training utilizes the online format, and included four modules under Reporting & Follow-up:

- Reporting Basics
- Hansen Reporting
- Paper-Based & Contingency Reporting

- Regulatory Reporting & Data Quality
- Q56 Updates (updates related to progress under the IOAP and projects under the CMOM and NMC programs)

The quarterly training was delivered to 261 staff in Operations and Engineering. The annual SORP training was completed by 368 staff members.

First quarter training utilizes the online format, and includes modules under Preparing for Overflows, Monitoring and Mobilization:

- SORP Overview
- SORP Process
- Monitoring and Mobilization

These modules will be reviewed and updated as needed for delivery during the next reporting period. An update module provides continued updates related to progress under the IOAP and projects under the CMOM and NMC programs and will also be updated for delivery.

SECTION 4: PROGRAM ACTIVITIES FOR DISCHARGE ABATEMENT PLANS (DAP)

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 and the combined sewer systems, 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 a Federal Order signed February 12, 2010, and was entered into public record on 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, including program descriptions, progress, and updated supporting text, was submitted to EPA/KDEP for approval on June 14, 2013. On June 19, 2014, MSD received approval of the 2012 IOAP Modification from EPA/KDEP. The project and program modifications proposed within this submittal resulted from additional information gathered from ongoing system monitoring, hydraulic modeling and best professional judgment. MSD's adaptive management approach to overflow abatement has justified modifications which provide a higher level of overflow control. These modifications will be completed faster than originally proposed for approximately the same overall budget.

Since the June 19, 2014, approval of the 2012 IOAP Modification, minor project modification requests have been submitted and approved on an individual project basis.

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 Sanitary Sewer Overflow Plan (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 an Interim Sanitary Sewer Discharge Plan (ISSDP) for approval 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 document can be viewed on the MSD Project WIN website, available at www.msdprojectwin.org.

All projects required by the ISSDP have been completed and certified. The Derek R. Guthrie WQTC Project's completion was delayed in accordance with the construction contract documents due to existing litigation and performance by the general contractor. However, the full functionality and capacity of the plant upgrades under this project met the demands of the service area. With this understanding, a revised certification letter dated October 19, 2015, was submitted certifying that the Derek R. Guthrie WQTC Project is performing in accordance with its stated intent and purpose, and is in compliance with the Consent Decree requirements.

4.2.3. FINAL SANITARY SEWER DISCHARGE PLAN (SSDP)

MSD submitted for approval a Final SSDP on December 19, 2008, as Volume 3 of the IOAP. The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by a Federal Order signed February 12, 2010, and was entered into public record on February 15, 2010. A revised SSDP was included in the 2012 IOAP Modification, submitted on June 14, 2013. On June 19, 2014, MSD received approval of the 2012 IOAP Modification from EPA/KDEP. The approved document can be viewed on the MSD Project WIN website, available at www.msdpwin.org.

4.3. CSO LONG TERM CONTROL PLAN (LTCP)

The CSO Long Term Control Plan (LTCP) addresses the overflows and unauthorized discharges from the Combined Sewer System (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 LONG TERM CONTROL PLAN (LTCP)

The Interim CSO LTCP was initially submitted to EPA and KDEP on February 10, 2006, and MSD received an approval letter dated February 22, 2007. The approved Interim LTCP can be viewed on the MSD Project WIN website, available at www.msdpwin.org. 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 LONG TERM CONTROL PLAN (LTCP)

MSD submitted for approval the Final CSO LTCP on December 19, 2008, as Volume 2 of the Integrated Overflow Abatement Plan. The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, and was entered into public record on February 15, 2010. A revised LTCP was included in the 2012 IOAP Modification, submitted June 14, 2013. On June 19, 2014, MSD received approval of the 2012 IOAP Modification from EPA/KDEP. The approved document can be viewed on the MSD Project WIN website, available at www.msdpwin.org.

4.3.3. GREEN INFRASTRUCTURE PROGRAM UPDATE

The IOAP describes that “MSD’s long-range commitment to this [Green Infrastructure] program will be based on how green performs in comparison to more traditional gray solutions” (Volume 2, Chapter 4, page 12). Through coordination with EPA and with strong support of MSD’s Wet Weather Team stakeholder group, MSD’s program evolved from solely project-level benefits to maximizing programmatic and community benefits. MSD’s green infrastructure program has been successful in downsizing or eliminating gray infrastructure projects, providing a programmatic factor of safety, and providing community enhancements, as described in the FY2019 Annual Report (Section 4.3.4). Beginning with the FY2020 Annual Report, MSD will provide updates on green infrastructure practices constructed during substantial development projects and inspections of existing practices.

4.4. DISCHARGE ABATEMENT PLAN PROJECT STATUS**4.4.1. SANITARY SEWER DISCHARGE PLAN (SSDP)**

Per the current approved schedule, no SSDP projects were completed during the current reporting period or anticipated to be completed or certified during the next reporting period.

4.4.2. COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN (LTCP)

Per the current approved schedule, no CSO LTCP projects were completed during the current reporting period or anticipated to be completed or certified during the next reporting period.

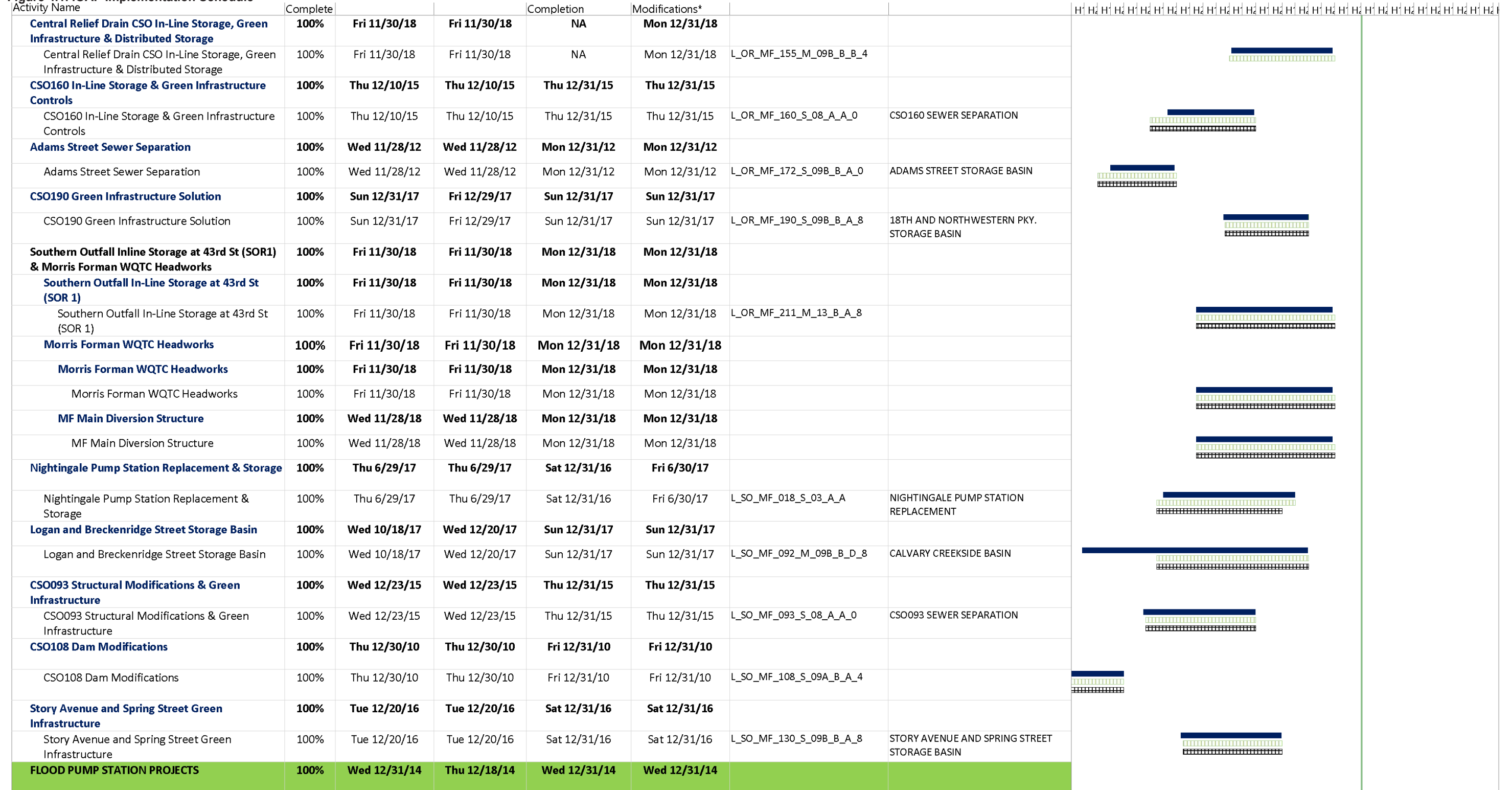
4.4.3. ACTIVITY PROGRESS CHART

A Gantt chart showing the 2012 IOAP Modification project schedules and subsequent approved minor modifications for the entire program is provided in Figure 4.1. Refer to IOAP, Volume 1 – Figure 6.3.1 for the previous chart. A crosswalk of projects and associated overflows is provided in Appendix E.

Activity Name	Complete			Completion	Modifications*			H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 T
MSD IOAP ANNUAL SCHEDULE								
LONG TERM CONTROL PLAN	100%	Fri 1/1/21	Wed 7/1/09	Thu 12/31/20	Thu 12/31/20			
GREEN DEMONSTRATION PROJECTS	92%	Thu 12/31/20	NA	Thu 12/31/20	Thu 12/31/20			
Green Infrastructure Demonstration Projects	100%	Mon 12/19/11	Mon 12/19/11	Sat 12/31/11	Sat 12/31/11			
Green Infrastructure Demonstration Projects	100%	Mon 12/19/11	Mon 12/19/11	Sat 12/31/11	Sat 12/31/11			
Green Infrastructure Program	90%	Thu 12/31/20	NA	Thu 12/31/20	Thu 12/31/20			
Green Infrastructure Program	90%	Thu 12/31/20	NA	Thu 12/31/20	Thu 12/31/20			
GRAY INFRASTRUCTURE PROJECTS	83%	Thu 12/31/20	NA	Thu 12/31/20	Thu 12/31/20			
Waterway Protection Tunnel	88%	Thu 12/31/20	NA	Thu 12/31/20	Thu 12/31/20			
Waterway Protection Tunnel	88%	Thu 12/31/20	NA	Thu 12/31/20	Thu 12/31/20	L_OR_MF_155_M_09B_B_B_4 L_OR_MF_020_S_09B_B_A_8 L_OR_MF_083_M_09B_B_A_8 L_MI_MF_127_M_09B_B_A_8	13TH STREET AND ROWAN STREET STORAGE BASIN, STORY AVENUE AND MAIN STREET STORAGE BASIN, LEXINGTON ROAD AND PAYNE STREET STORAGE BASIN, I-64 AND GRINSTEAD CSO BASIN	
CSO058 In-Line Storage and Green Infrastructure	100%	Tue 12/23/14	Thu 12/18/14	Wed 12/31/14	Wed 12/31/14			
CSO058 In-Line Storage and Green Infrastructure	100%	Tue 12/23/14	Thu 12/18/14	Wed 12/31/14	Wed 12/31/14	L_OR_MF_058_S_08_A_A_0		
CSO123 Downspout Disconnection	100%	Sun 12/30/12	Sun 12/30/12	Mon 12/31/12	Mon 12/31/12			
CSO123 Downspout Disconnection	100%	Sun 12/30/12	Sun 12/30/12	Mon 12/31/12	Mon 12/31/12	L_MI_MF_123_S_08_A_A_0		
CSO140 In-Line Storage & Green Infrastructure Controls	100%	Wed 12/23/15	Wed 12/23/15	Thu 12/31/15	Thu 12/31/15			
CSO140 In-Line Storage & Green Infrastructure Controls	100%	Wed 12/23/15	Wed 12/23/15	Thu 12/31/15	Thu 12/31/15	L_MI_MF_140_S_08_A_A_0	CSO140 SEWER SEPARATION	
CSO206 Sewer Separation	100%	Thu 12/12/13	Thu 12/12/13	Tue 12/31/13	Mon 12/30/13			
CSO206 Sewer Separation	100%	Thu 12/12/13	Thu 12/12/13	Tue 12/31/13	Mon 12/30/13	L_MI_MF_206_S_08_A_A_0		
Clifton Heights Storage Basin	100%	Sat 12/1/18	Sat 12/1/18	Mon 12/31/18	Mon 12/31/18			
Clifton Heights Storage Basin	100%	Sat 12/1/18	Sat 12/1/18	Mon 12/31/18	Mon 12/31/18	L_MU_MF_154_M_09B_B_A_8		
Bells Lane Wet Weather Treatment Facility	100%	Mon 7/24/17	Mon 7/24/17	Wed 12/31/14	Sat 9/30/17			
Bells Lane Wet Weather Treatment Facility	100%	Mon 7/24/17	Mon 7/24/17	Wed 12/31/14	Sat 9/30/17	L_OR_MF_015_M_13_B_B_8	PADDY'S RUN WET WEATHER TREATMENT FACILITY	
Portland CSO Basin	100%	Sun 8/18/19	Fri 8/9/19	Tue 12/31/19	Tue 12/31/19			
Portland CSO Basin	100%	Sun 8/18/19	Fri 8/9/19	Tue 12/31/19	Tue 12/31/19	L_OR_MF_019_S_13_B_A_8	PORTLAND WHARF STORAGE BASIN	
Southwestern Parkway Storage Basin	100%	Fri 3/29/19	Fri 3/29/19	Mon 12/31/18	Sun 6/30/19			
Southwestern Parkway Storage Basin	100%	Fri 3/29/19	Fri 3/29/19	Mon 12/31/18	Sun 6/30/19	L_OR_MF_105_M_13_B_A_0	SOUTHWESTERN PARKWAY STORAGE BASIN	

Data Date: 12/31/19

Figure 4.1. IOAP Implementation Schedule



Approved 2009 IOAP  IOAP Modifications  Remaining Work  Completed Work 

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

[illegible]

Data Date: 12/31/19

[illegible]












Data Date: 12/31/19

Activity Name

[illegible]

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

Figure 4.1. IOAP Implementation Schedule

Activity Name	Complete			Completion	Modifications*			H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 H1 H2 T
Beechwood Village Sanitary Sewer Replacement	100%	Wed 9/29/10	Wed 9/29/10	Wed 4/27/11	Wed 4/27/11			
Beechwood Village Sanitary Sewer Replacement	100%	Wed 9/29/10	Wed 9/29/10	Wed 4/27/11	Wed 4/27/11			
Sinking Fork Relief Sewer	100%	Mon 11/30/09	Mon 11/30/09	Thu 12/30/10	Wed 12/23/09			
Sinking Fork Relief Sewer	100%	Mon 11/30/09	Mon 11/30/09	Thu 12/30/10	Wed 12/23/09			
Derek R. Guthrie Water Quality Treatment Center	100%	Tue 11/27/12	Tue 11/27/12	Tue 11/27/12	Tue 11/27/12			
Derek R. Guthrie Water Quality Treatment Center	100%	Tue 11/27/12	Tue 11/27/12	Tue 11/27/12	Tue 11/27/12			
Hikes Lane Interceptor and Highgate Springs PS	100%	Fri 11/2/12	Fri 11/2/12	Tue 11/27/12	Tue 11/27/12			
Hikes Lane Interceptor and Highgate Springs PS	100%	Fri 11/2/12	Fri 11/2/12	Tue 11/27/12	Tue 11/27/12			
Northern Ditch Diversion Interceptor	100%	Wed 2/16/11	Wed 2/16/11	Sun 7/31/11	Sun 7/31/11			
Northern Ditch Diversion Interceptor	100%	Wed 2/16/11	Wed 2/16/11	Sun 7/31/11	Sun 7/31/11			
Southeastern Diversion Structure and Interceptor	100%	Mon 12/19/11	Mon 12/19/11	Sat 5/12/12	Sat 5/12/12			
Southeastern Diversion Structure and Interceptor	100%	Mon 12/19/11	Mon 12/19/11	Sat 5/12/12	Sat 5/12/12			
JEFFERSONTOWN AREA	61%	Sat 12/31/22	NA	Sat 12/31/22	Sat 12/31/22			
Jeffersontown WQTC Elimination	100%	Wed 12/23/15	Wed 12/23/15	Thu 12/31/15	Thu 12/31/15			
Jeffersontown WQTC Elimination	100%	Wed 12/23/15	Wed 12/23/15	Thu 12/31/15	Thu 12/31/15	S_JT_JT_NB01_M_01_C_A		
Elimination of Chenoweth Hills WQTC, Chenoweth Run PS, and Chippewa PS	100%	Mon 9/22/14	Mon 9/22/14	Thu 12/31/15	Thu 12/31/15			
Elimination of Chenoweth Hills WQTC, Chenoweth Run PS, and Chippewa PS	100%	Mon 9/22/14	Mon 9/22/14	Thu 12/31/15	Thu 12/31/15	S_JT_JT_NB01A_M_03_C	CHENOWETH HILLS WATER QUALITY TREATMENT CENTER ELIMINATION AND PS IMPROVEMENTS PROJECT	
Dell Rd and Charlane Pkwy Interceptor Improvements	0%	Sun 12/26/21	NA	Sat 12/31/22	Sat 12/31/22			
Dell Rd and Charlane Pkwy Interceptor Improvements	0%	Sun 12/26/21	NA	Sat 12/31/22	Sat 12/31/22	S_JT_JT_NB02_M_01_C		
Raintree and Marian Ct 1	33%	Wed 6/30/21	NA	Fri 12/31/21	Fri 12/31/21			
Raintree and Marian Ct 1 - PS Elimination	65%	Fri 2/12/21	NA	Fri 12/31/21	Fri 12/31/21			
Raintree and Marian Ct 1 - PS Elimination	65%	Fri 2/12/21	NA	Fri 12/31/21	Fri 12/31/21	S_JT_JT_NB03_M_01_C		
Raintree and Marian Ct 2 - Pipe Upgrades	0%	Tue 10/5/21	NA	Fri 12/31/21	Fri 12/31/21			
Raintree and Marian Ct 2 - Pipe Upgrades	0%	Tue 10/5/21	NA	Fri 12/31/21	Fri 12/31/21	S_JT_JT_NB03_M_01_C		
Monticello PS Elimination	0%	Fri 5/6/22	NA	Sat 12/31/22	Sat 12/31/22			
Monticello PS Elimination	0%	Fri 5/6/22	NA	Sat 12/31/22	Sat 12/31/22	S_JT_JT_NB04_M_01_A		

Approved 2009 IOAP  IOAP Modifications  Remaining Work  Completed Work 

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

Activity Name

[illegible]

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

Figure 4.1. IOAP Implementation Schedule



Approved 2009 IOAP  IOAP Modifications  Remaining Work  Completed Work 

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

[illegible]

Approved 2009 IOAP  IOAP Modifications  Remaining Work  Completed Work 

Data Date: 12/31/19

SECTION 5: PROGRAM ACTIVITIES FOR PUBLIC OUTREACH, EDUCATION, NOTIFICATION AND PARTICIPATION

5.1. PUBLIC NOTIFICATION PROGRAM

MSD has developed a program aimed at notifying the community of the objectives of Project WIN, and ways to reduce the risks of coming into contact with sewage overflows.

5.2. PUBLIC EDUCATION PROGRAMS

A public education program aimed at disseminating information to the public on MSD's primary business functions with emphasis on wastewater, stormwater and flood protection has been developed and implemented. Efforts to utilize various media outlets, including television, radio, magazines and newspapers, bill inserts, social media, and MSD websites, is anticipated to change over the course of the upcoming year to improve reach and impact of messaging. MSD plans to move from a single full-page print ad in the Courier Journal each year, estimated to reach 102,000, to multiple quarter-page print ads and digital news site ads, increasing the reach to an estimated 306,000. MSD also plans to begin year-round digital ads with Project WIN messages, estimated to reach 831,000. The on-line campaign continued to increase awareness of the Tunnel project, sewer overflows and What Not To Flush.

MSD included Consent Decree compliance, wastewater facility upgrades, and aging infrastructure as key topics in its Critical Repair & Reinvestment Plan. Public education about this initiative continue to include posts on MSD's website and social media accounts.

MSD continues its One Water education effort. This partnership with Louisville Water enables MSD to reach a wider audience through use of classroom educators and educational tours. The "River to River" education curriculum continued during the reporting period. This program is being taken into classrooms county-wide to share information on Louisville's water cycle. School groups have also had opportunities to tour the Floyds Fork WQTC.

During the reporting period, Metro TV aired the programs listed in Table 5.1.

Table 5.1. Metro TV Broadcasts

DATE	PROGRAM TITLE	ORIGINAL MEETING DATE
10/7/2019	Southwestern Parkway CSO Basin: Construction Meeting	4/18/2017
10/21/2019	Southwestern Parkway CSO Basin: Construction Meeting	4/18/2017
10/23/2019	Ohio River Tunnel: Construction Meeting	1/10/2018
10/26/2019	Ohio River Tunnel: Construction Meeting	1/10/2018
10/30/2019	Ohio River Tunnel: Construction Meeting	1/10/2018
11/16/2019	Portland CSO Basin: Conceptual Design Meeting	6/14/2016
11/19/2019	Ohio River Tunnel: Construction Meeting	1/10/2018
11/20/2019	Ohio River Tunnel: Construction Meeting	1/10/2018
11/24/2019	Southwestern Parkway CSO Basin: Construction Meeting	4/18/2017
12/12/2019	Ohio River Tunnel: Construction Meeting	1/10/2018
12/14/2019	Southwestern Parkway CSO Basin: Construction Meeting	4/18/2017
12/15/2019	Ohio River Tunnel: Construction Meeting	1/10/2018

5.3. PUBLIC OUTREACH PROGRAMS

MSD has developed a public education program aimed at expanding the public's knowledge of MSD's primary business functions of wastewater, stormwater and flood protection, with an emphasis on Project WIN Program elements.

5.3.1. IOAP PROJECT AND PROGRAM MEETINGS

MSD facilitates meetings for the Wet Weather Team and the public to review regulatory commitments, update progress on projects and initiatives, and to gather public input on efforts.

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. The current IOAP outreach activities and public meetings are using this process to elicit qualitative and quantitative information and enhance engagement with customers. 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, available at <http://www.msdprojectwin.org/Public-Input.aspx>.

MSD held no meetings during the current reporting period. During the upcoming reporting period, MSD has no meetings planned.

SECTION 6: CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE (CMOM) REPORT

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, available at www.msdpowerwin.org.

The primary objectives of CMOM are as follows:

- Capacity – Ensuring that adequate wet and dry weather capacity is maintained in existing and new infrastructure.
- Management – Implementing programs in support of operations and maintenance activities required to ensure KPDES permit compliance and promote public health by remedying design, construction and operational deficiencies; training staff; and performing activities in a safe manner.
- Operations – Implementing written standard operating procedures to operate system components as designed to meet permit requirements.
- Maintenance – Implementing systematic, comprehensive asset maintenance and rehabilitation programs to prevent overflows, maximize system reliability, and ensure system sustainability.

Although the program implementation deadlines from the CMOM Self Assessment Report were previously met, MSD continues to enhance the activities. Highlights of the CMOM program implementation over this reporting period are outlined below.

6.1. MANAGEMENT PROGRAMS

M-E-9 Infrastructure Rehabilitation

Refer to the CMOM activity schedule provided in Section 6.4.

M-E-10 System Capacity Assurance Program

Included in the goals of the CMOM Self-Assessment Report, the Sewer Capacity Assurance Plan (SCAP) is the basis for applying capacity decision criteria to support watershed community values. It provides a programmatic approach for confirming available capacity within MSD's sanitary sewer system, creating capacity credits through system improvement and rehabilitation, identifying hydraulic constrictions, and proposing capacity improvements that support interim and long-term performance objectives. SCAP revisions, including credit and balance projections and discussion of approach for multi-family residential unit populations, were discussed with EPA and KDEP and submitted electronically for review on July 21, 2014. The final SCAP revision was submitted for approval on December 9, 2014, and approval was received February 5, 2015. A copy of the approved SCAP can be found on the Project WIN website, available at www.msdpowerwin.org.

A current copy of the SCAP Credit Balance is included as Appendix D.

6.2. OPERATIONS PROGRAMS

O-A-1 Pump Station Operations Programs (Routine Operating Programs)

O-A-2 Pump Station Operations Programs (Emergency Operating Programs)

Refer to the CMOM activity schedule provided in Section 6.4.

6.3. 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 the District's WQTCs. Although the IOAP CPE assessments that defined specific WQTC improvements were completed by December 31, 2011, MSD will continue to implement CPE/CCP activities as part of the District's CMOM Program. This section lists activities per WQTC as they occur during the reporting period.

Refer to the CMOM activity schedule provided in Section 6.4. for CPE/CCP-related capital projects.

6.3.1. HITE CREEK WATER QUALITY TREATMENT CENTER

The HCWQTC Expansion project will expand the capacity of HCWQTC from 6 MGD to 9 MGD and provide regional dewatering of solids. Contractor was issued a Commencement of Performance on September 23, 2019. The project will be in construction during the next several reporting periods. Accelerated solids dewatering was initiated during this reporting period with costs and schedule changes to be confirmed in the next reporting period.

6.3.2. FLOYDS FORK WATER QUALITY TREATMENT CENTER

Evaluation of the Tertiary Filtration Process began during this reporting period. The final results will be available for the next quarterly report.

6.3.3. DEREK R. GUTHRIE WATER QUALITY TREATMENT CENTER

The DRGWQTC Dewatering Project was initiated during this reporting period under an Emergency Certificate. It is expected that solids from all the regional WQTCs (Cedar Creek, Floyds Fork, Hite Creek as well as DRG) will start being dewatered at DRG WQTC next reporting period.

The DRGWQTC Clarifier Grout Repair and Gate Replacement project will provide new gates and automated actuators for the influent and the Return Activated Sludge (RAS) lines for Clarifiers 1-6. In addition, defective grout will be removed or replaced as needed for Clarifiers 7-12 and the aeration basin isolation gate will be replaced. The project began construction this reporting period.

The DRGWQTC Hypochlorite Containment project was completed in this reporting period.

The DRGWQTC Admin Building and RAS Building HVAC project is currently in the design phase and is scheduled to be bid in the next reporting period.

6.3.4. CEDAR CREEK WATER QUALITY TREATMENT CENTER

The CCWQTC Sodium Aluminate Building project and the CCWQTC Effluent Parshall Flume Upgrades are under design.

The CCWQTC MCC Upgrades project is anticipated to be bid in the next reporting period.

6.3.5. PROSPECT AREA WATER QUALITY TREATMENT CENTER UPDATES

An elimination plan for the five WQTCs serving Prospect (Timberlake, Hunting Creek North, Hunting Creek South, Ken Carla, and Shadow Wood) was submitted to EPA/KDEP on March 31, 2009. Approval of this plan was received on September 24, 2009, and work is now complete. A certification letter dated December 15, 2015, was submitted finalizing the completion of the project.

6.3.6. JEFFERSONTOWN WATER QUALITY TREATMENT CENTER

A certification letter dated December 23, 2015, was submitted finalizing the completion of the Jeffersontown WQTC Elimination Project.

6.3.7. OTHER WATER QUALITY TREATMENT CENTERS

All non-regional WQTCs owned or operated by MSD have been eliminated as of May 27, 2016.

6.4. CMOM ACTIVITY SCHEDULE

CMOM capital project milestones for the current reporting period as well as a look-ahead for the upcoming reporting period are provided in Figure 6.1.

Figure 6.1. CMOM Quarterly Commitments Schedule

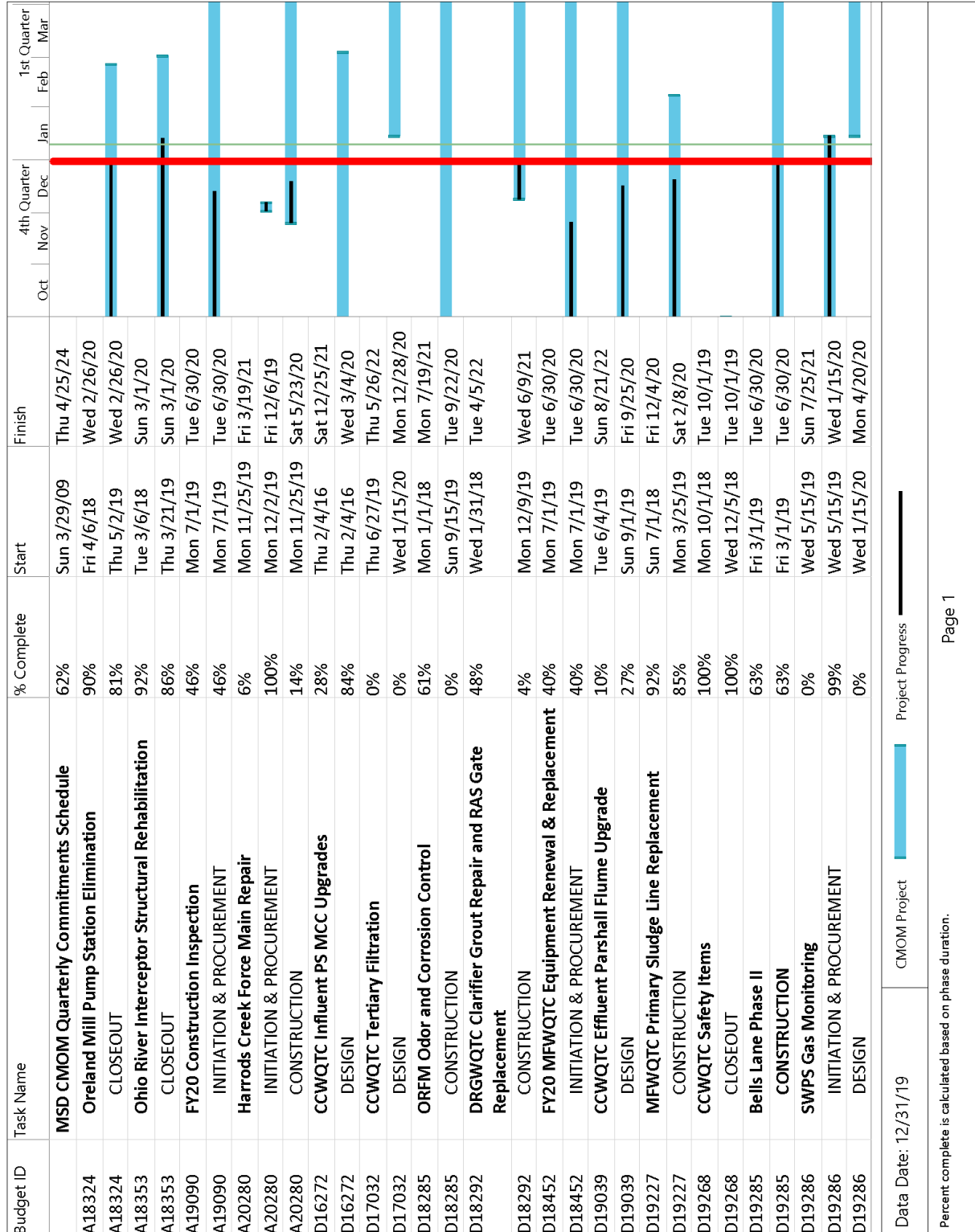


Figure 6.1. CMOM Quarterly Commitments Schedule

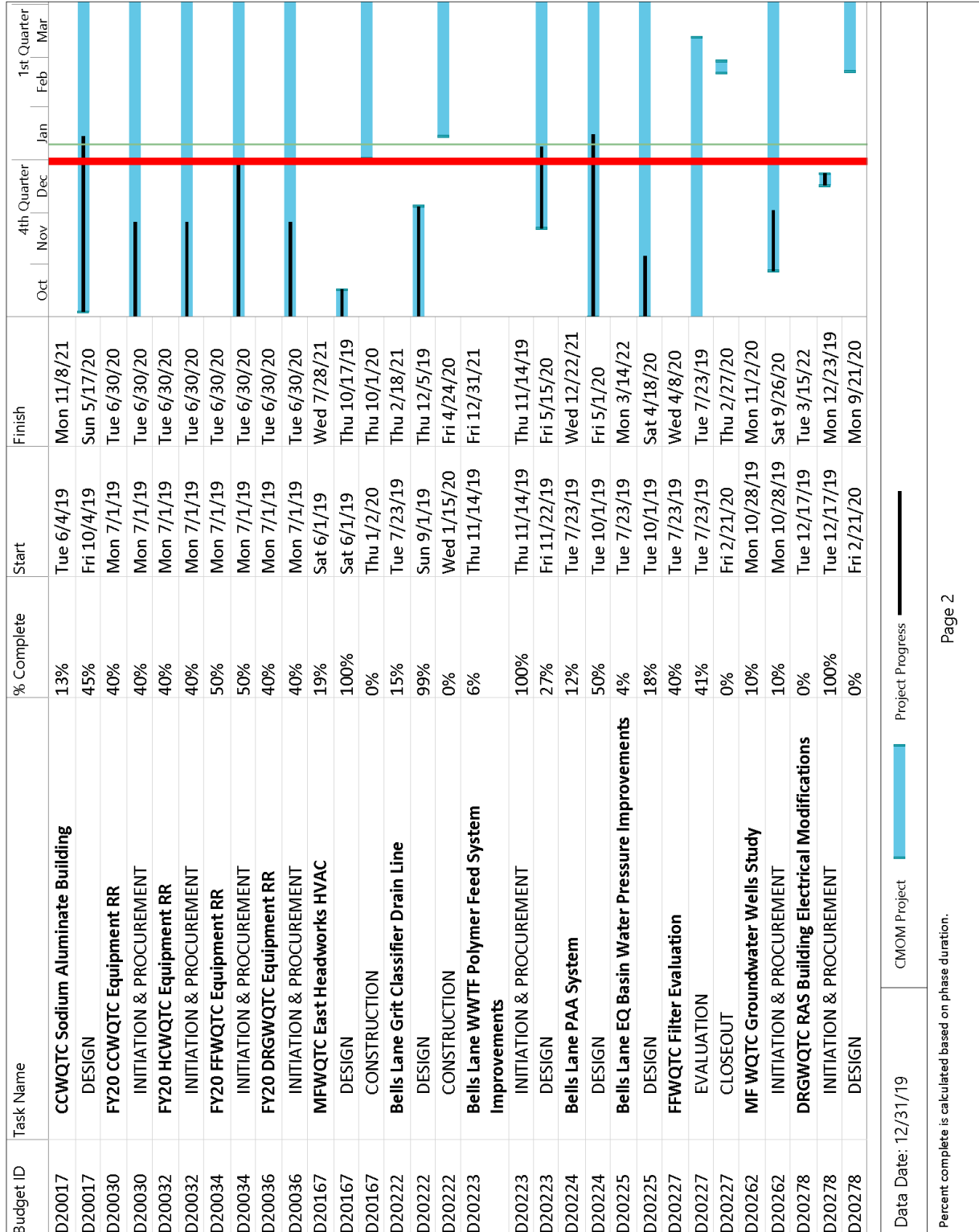


Figure 6.1. CMOM Quarterly Commitments Schedule

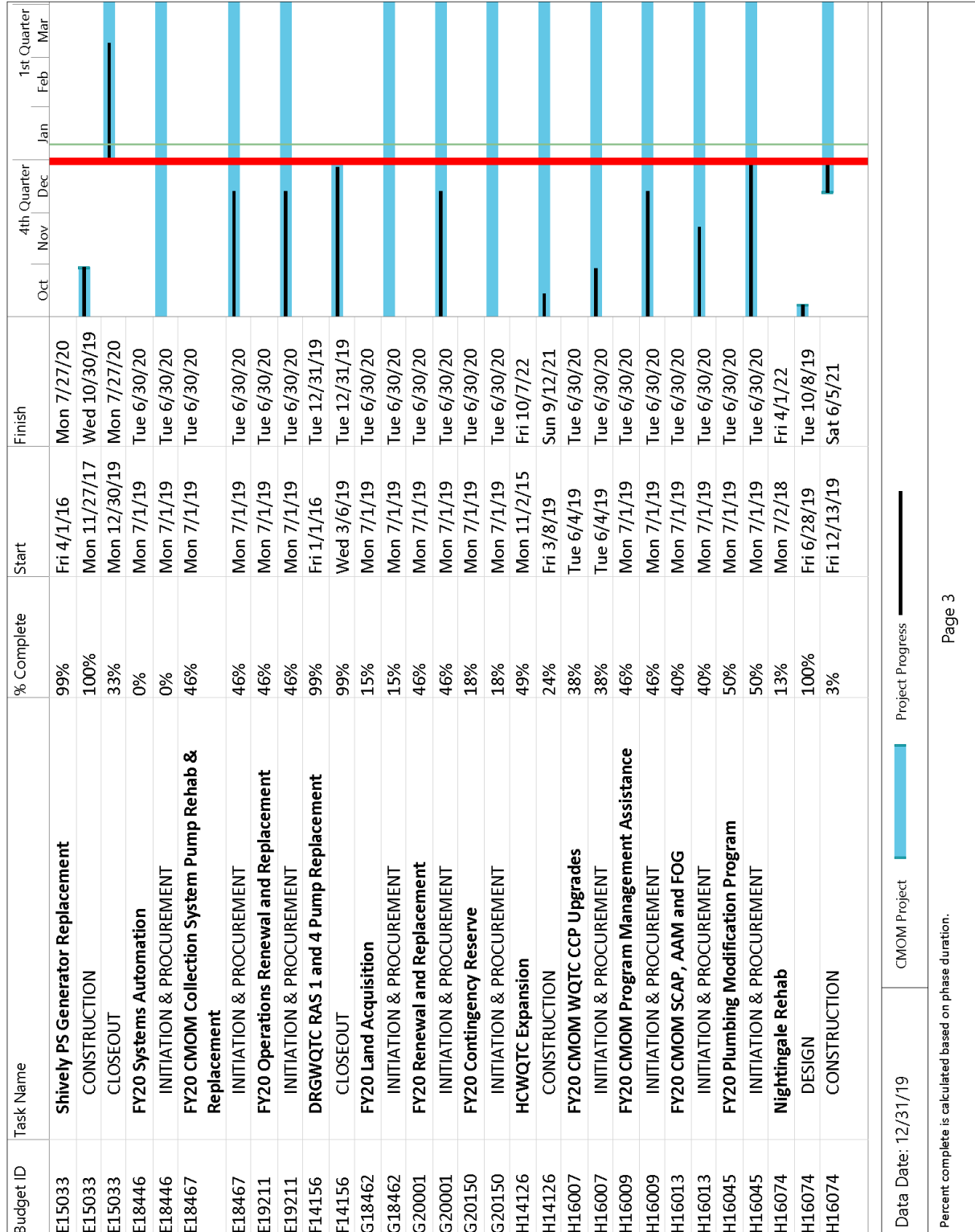


Figure 6.1. CMOM Quarterly Commitments Schedule

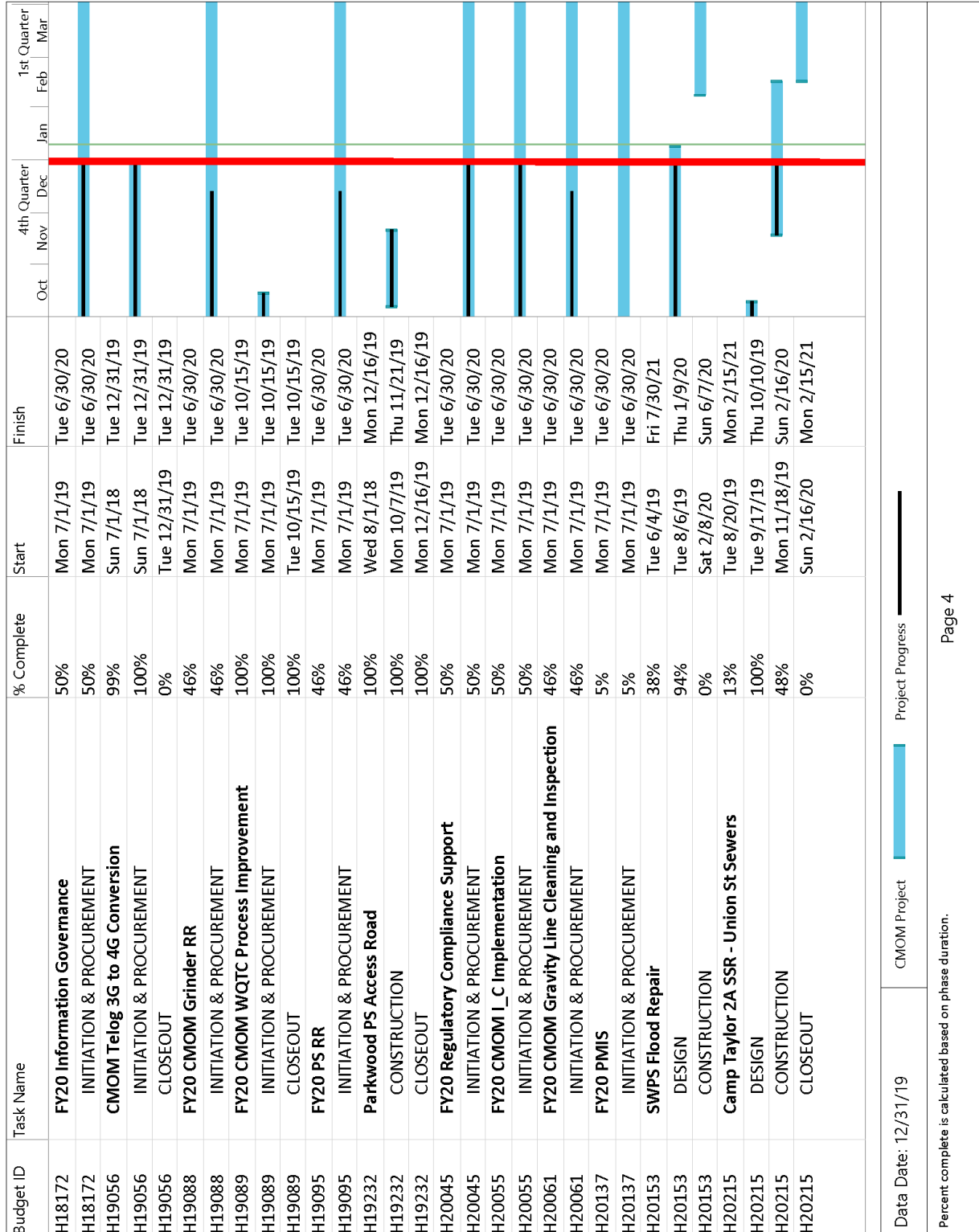
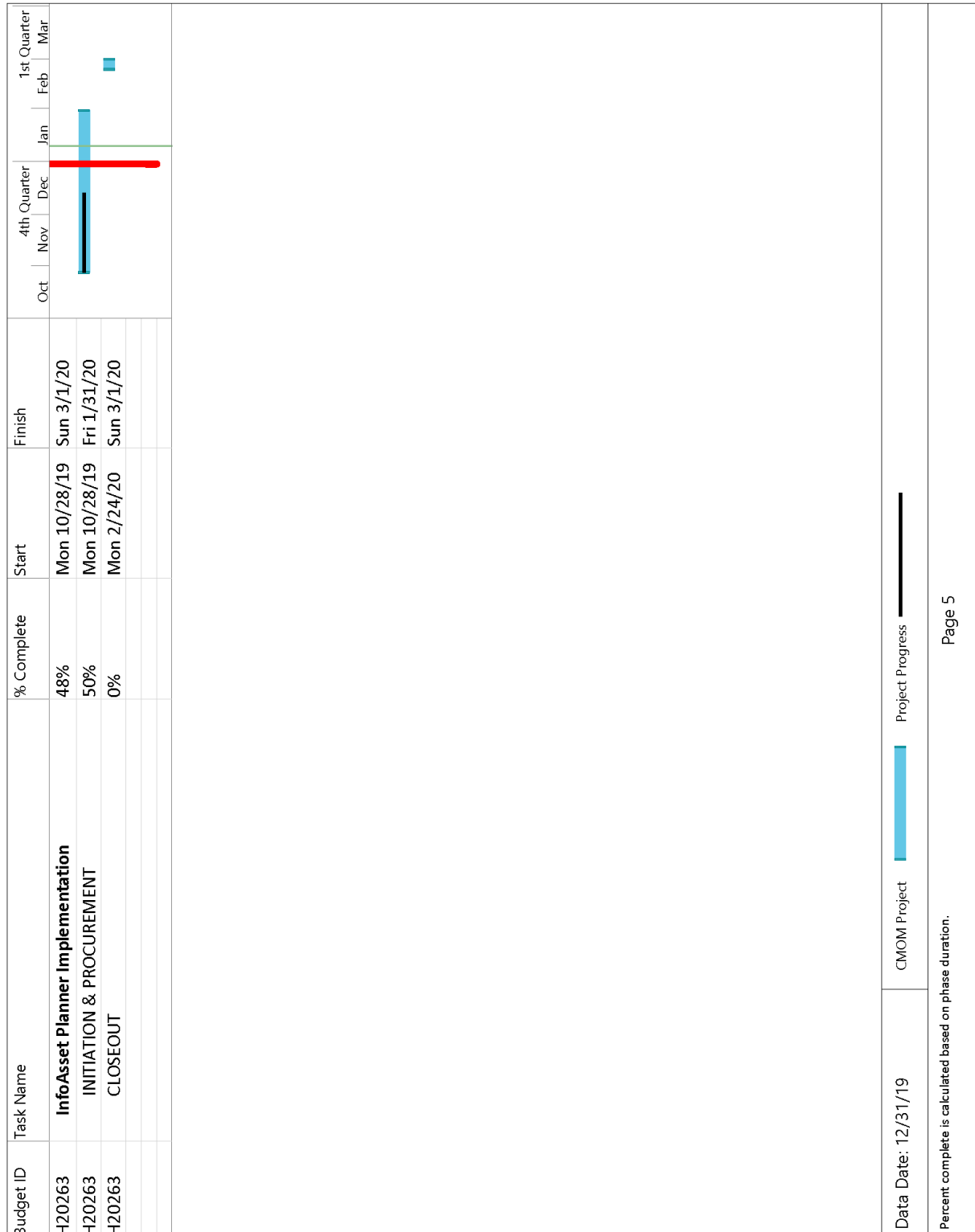


Figure 6.1. CMOM Quarterly Commitments Schedule



APPENDIX A

DISCHARGE WORK ORDERS

APPENDIX A-1

BYPASSES



ASSOCIATED WQTC NAME	ASSOCIATED WQTC KPDES#	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD
<div>No Bypasses Occurred during the Reporting Period</div>															

APPENDIX A-2

DRY WEATHER CSOs



ASSOCIATED WQTC NAME	ASSOCIATED WQTC KPDES#	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD

**No Dry Weather
CSOs Occurred
during the
Reporting Period**

APPENDIX A-3

UNAUTHORIZED DISCHARGES



ASSOCIATED WQTC NAME	ASSOCIATED WQTC KPDES#	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD
MORRIS FORMAN	KY0022411	11603 SHELBYVILLE RD	10/28/2019 0:00	10/29/2019 0:00	1440	Sewer Main	00595	CATCH BASIN	MIDDLETOWN BRANCH	THERE WAS POSSIBLE DAMAGE BY OTHER UTILITY.	UTILITY DAMAGED MSD ASSET	DRY WEATHER DISCHARGE	3172279	WORK ORDER 3172287.	REFERRED FOR MAIN SEWER REPAIR.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	10/31/2019 8:26	10/31/2019 12:14	2727	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY: HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3172781	NO CLEANUP REQUIRED, THE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY TO STREAM.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	10/31/2019 9:30	10/31/2019 14:30	600000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY: HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3172790	NO CLEANUP REQUIRED, MANHOLE DISCHARGES DIRECTLY TO CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	10/31/2019 10:55	10/31/2019 12:45	525	Sewer Manhole	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY:HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3172793	CLEAN UP NOT REQUIRED, NO VISABLE SIGNS OF DEBRIS ON OR AROUND MANHOLE.	LOCATION INCLUDED IN THE IOAP.
CEDAR CREEK	KY0098540	10519 PROVIDENCE DR	11/5/2019 9:15	11/6/2019 9:34	5	Sewer Main	102886-V	GROUND	CEDAR CREEK	STRUCTURAL FAILURE IN FORCE MAIN.	STRUCTURAL FAILURE	RAIN EVENT DISCHARGE	3173359	MSD PERSONNEL TO CLEAN AFFECTED AREA.	CONTRACTOR REPAIRING FORCE MAIN.
DEREK R. GUTHRIE	KY0078956	3809 DIXIE HWY	11/9/2019 5:25	11/9/2019 5:30	100	Sewer Main	06940-AG	GROUND	MILL CREEK	STRUCTURAL FAILURE: FORCE MAIN BREAK.	STRUCTURAL FAILURE	DRY WEATHER DISCHARGE	3174624	WE SPREAD LIME.	PUMP STATION SHUT DOWN AND HAULDED.
HITE CREEK	KY0022420	5504 TIMBER CREEK CT	11/25/2019 9:35	12/3/2019 15:20	98800	Sewer Main	117932-AG	GROUND	HARRODS CREEK	FORCEMAIN STRUCTURAL FAILURE.	STRUCTURAL FAILURE	DRY WEATHER DISCHARGE	3180984	MSD PERSONNEL TO CLEAN AFFECTED AREA OR CONTRACTOR.	CONTRACTOR TO REPAIR FORCEMAIN.
HITE CREEK	KY0022420	5500 HITT RD	11/26/2019 13:58	11/26/2019 17:37	6975	Sewer Treatment Plant	MSD0202	STREAM	HITE CREEK	CONTRACTOR HIT FORCE MAIN WHILE EXCAVATING.	UTILITY DAMAGED MSD ASSET	DRY WEATHER DISCHARGE	3181148	NO DEBRIS.	CONTRACTOR REPAIRED FORCE MAIN.
CEDAR CREEK	KY0098540	10801 FAIRMOUNT RD	11/26/2019 14:58	11/27/2019 16:21	30040	Sewer Main	78207	STREAM	CEDAR CREEK	STRUCTURAL FAILURE, FORCE MAIN BREAK.	STRUCTURAL FAILURE	DRY WEATHER DISCHARGE	3181130	PLACED BAILS OF STRAW TO CATCH DEBRIS, MSD PERSONNEL TO CLEAN AND DISINFECT FOLLOWING REPAIR.	CONTRACTOR TO REPAIR FORCE MAIN.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	11/30/2019 6:45	12/1/2019 23:30	7900000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181417	NO CLEANUP REQUIRED, MANHOLE IS DISCHARGING DIRECTLY INTO CREEK.	LOCATION INCLUDE IN IOAP.
MORRIS FORMAN	KY0022411	3406 DELL RD	11/30/2019 7:39	12/1/2019 7:35	28800	Sewer Manhole	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181429	WO#3181637.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	11/30/2019 7:50	12/1/2019 7:50	158400	Sewer Manhole	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181419	WO#3181632.	LOCATION INCLUDE IN IOAP.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	11/30/2019 7:52	12/1/2019 7:51	7200	Sewer Manhole	28452	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181421	WO#3181633.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3406 CHARLANE PKY	11/30/2019 8:02	12/1/2019 7:52	42900	Sewer Manhole	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181426	WO#3181634.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	9707 WILLOWWOOD WAY	11/30/2019 8:10	12/1/2019 7:45	35375	Sewer Manhole	28336	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181428	WO#3181636.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	11/30/2019 8:15	12/1/2019 7:40	56200	Sewer Manhole	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181427	WO#3181635.	LOCATION INCLUDED IN IOAP.

ASSOCIATED WQTC NAME	ASSOCIATED WQTC KPDES#	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	11/30/2019 8:56	12/1/2019 13:14	1612271	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181447	NO CLEANUP REQUIRED, MANHOLE IS DISCHARGING DIRECTLY INTO CREEK.	LOCATION IN IOAP.
DEREK R. GUTHRIE	KY0078956	9114 CINDERELLA LN	11/30/2019 9:45	11/30/2019 21:00	11550	Sewer Manhole	60679	DITCH	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181467	NONE POSSIBLE DUE TO MAGNITUDE OF STORM.	SITE FOUND DURING RAIN EVENT RECON - WILL BE MONITORED AND EVALUATED FOR REPAIR.
DEREK R. GUTHRIE	KY0078956	8800 ADMIRAL DR	11/30/2019 10:00	12/1/2019 3:48	53400	Sewer Manhole	93703	GROUND	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181471	NONE POSSIBLE DUE TO MAGNITUDE OF STORM.	SITE FOUND DURING RAIN EVENT RECON - WILL BE MONITORED AND EVALUATED FOR REPAIR.
MORRIS FORMAN	KY0022411	8409 SABERDEE DR	11/30/2019 10:20	12/1/2019 0:14	13200	Sewer Manhole	43472	DITCH	GOOSE CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181416	MSD CLEAN AND SANITIZE AREA.	SITE FOUND DURING RAIN EVENT RECON.
MORRIS FORMAN	KY0022411	3317 BROWNSBORO RD	11/30/2019 10:30	11/30/2019 15:30	6600	Sewer Manhole	26752	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181514	NO CLEANUP REQUIRED PIPE DISCHARGES DIRECTLY TO THE CREEK.	LOCATION INCLUDE IN IOAP.
DEREK R. GUTHRIE	KY0078956	9317 LANTANA DR	11/30/2019 10:30	11/30/2019 20:50	20400	Sewer Manhole	25484	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181473	NONE POSSIBLE DUE TO MAGNITUDE OF STORM.	SITE FOUND DURING RAIN EVENT RECON - WILL BE MONITORED AND EVALUATED FOR REPAIR.
MORRIS FORMAN	KY0022411	2408 GRAY FOX RD	11/30/2019 11:20	12/1/2019 5:30	135000	Sewer Manhole	27012	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181433	WO#3181641.	LOCATION INCLUDED IN IOAP.
FLOYDS FORK	KY0102784	815 TUCKER STATION RD	11/30/2019 11:25	11/30/2019 16:50	43000	Sewer Manhole	33003	STREAM	POPE LICK	LACK OF SEWER CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181450	NO CLEAN UP REQUIRED, SOLIDS & FLOATABLES WAS NOT DISCHARGED FROM THE MANHOLE.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	11/30/2019 11:30	12/1/2019 5:45	360000	Sewer Manhole	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181435	WO#3181642.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	11/30/2019 11:40	11/30/2019 19:30	36000	Sewer Manhole	72289	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181436	WO#3181643.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4315 PRUITT CT	11/30/2019 12:22	12/1/2019 15:04	40000	Sewer Manhole	08426	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181443	WO#3181656.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4313 PRUITT CT	11/30/2019 12:25	12/1/2019 15:08	320000	Sewer Manhole	08427	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181444	WO#3181657.	LOCATION INCLUDED IN IOAP.
HITE CREEK	KY0022420	7302 FLOYDSBURG RD	11/30/2019 12:30	12/1/2019 0:30	28800	Sewer Manhole	108953	DITCH	FLOYDS FORK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181457	NONE POSSIBLE DUE TO MAGNITUDE OF STORM.	SITE FOUND DURING RAIN EVENT RECON - WILL BE MONITORED AND EVALUATED FOR REPAIR.
MORRIS FORMAN	KY0022411	3506 CHARLANE PKY	11/30/2019 12:50	12/1/2019 7:55	34230	Sewer Manhole	28250	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181448	WO#3181638.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4337 PRUITT CT	11/30/2019 12:55	12/1/2019 15:21	15900	Sewer Manhole	08429	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181454	WO#3181659.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4341 PRUITT CT	11/30/2019 12:59	12/1/2019 15:27	159000	Sewer Manhole	08430	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181455	WO#3181660.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4332 PRUITT CT	11/30/2019 13:05	12/1/2019 15:30	79250	Sewer Service Line	085100290046A	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181453	WO#3181658.	LOCATION INCLUDED IN IOAP.

PROJECT WIN QUARTERLY REPORT #57
OCTOBER 1, 2019 - DECEMBER 31, 2019



ASSOCIATED WQTC NAME	ASSOCIATED WQTC KPDES#	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD
CEDAR CREEK	KY0098540	9719 COLLIER LN	11/30/2019 13:15	12/1/2019 0:15	12540	Sewer Manhole	98022	STREAM	CEDAR CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3182265	NO DEBRIS ON SITE.	LOCATION IN THE IOAP.
MORRIS FORMAN	KY0022411	4640 BARBOUR LN	11/30/2019 13:30	12/1/2019 0:36	66600	Sewer Manhole	65633	STREAM	LITTLE GOOSE CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181491	NONE POSSIBLE DUE TO MAGNITUDE OF STORM.	SITE FOUND DURING RAIN EVENT RECON - WILL BE MONITORED AND EVALUATED FOR REPAIR.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	11/30/2019 13:35	12/1/2019 6:00	320000	Sewer Manhole	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181504	WO#3181644.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	201 BULLITT LN	11/30/2019 13:35	12/1/2019 6:00	72000	Sewer Manhole	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181505	WO#3181646.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3302 TROUT CREEK DR	11/30/2019 13:44	12/1/2019 15:18	109950	Sewer Manhole	23211	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181477	WO#3181661.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7900 SHELBYVILLE RD	11/30/2019 13:45	12/1/2019 6:05	19200	Sewer Manhole	02935	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181506	WO#3181647.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7900 SHELBYVILLE RD	11/30/2019 13:50	12/1/2019 6:10	72000	Sewer Manhole	02933	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181507	WO#3181648	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	11/30/2019 13:55	12/1/2019 6:10	19200	Sewer Manhole	90700	CATCH BASIN	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181508	WO#3181651.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	11/30/2019 14:05	12/1/2019 6:15	96000	Sewer Manhole	47593	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181511	WO#3181655.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3305 INDIAN CREEK CT	11/30/2019 14:10	12/1/2019 14:13	36000	Sewer Manhole	51160	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181478	WO#3181662.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7913 SHELBYVILLE RD	11/30/2019 14:25	12/1/2019 6:15	72000	Sewer Manhole	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181510	WO#3181654.	LOCATION INCLUDED IN IOAP.
CEDAR CREEK	KY0098540	5410 SPRIGWOOD LN	11/30/2019 16:35	11/30/2019 18:25	15	Sewer Manhole	28984	GROUND	CEDAR CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181522	OPERATION DISCLN	A SOLUTION FOR THIS IS INCLUDED IN THE IOAP
CEDAR CREEK	KY0098540	5600 HOFELICH CT	11/30/2019 16:40	11/30/2019 18:20	15	Sewer Manhole	28998	GROUND	CEDAR CREEK	LACK OF SYSTEM CAPACITY- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181517	WO # 3181528	A SOLUTION FOR THIS IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2001 TERRIL LN	11/30/2019 16:50	12/1/2019 14:17	32175	Sewer Manhole	23212	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181515	WO#3181663.	LOCATION INCLUDED IN IOAP.
CEDAR CREEK	KY0098540	10800 FAIRMOUNT RD	12/1/2019 10:45	12/2/2019 8:00	129000	Sewer Manhole	97365	GROUND	BIG RUN	CAUSED DUE TO REPAIR ON FORCE MAIN AND LIMITED CAPACITY OF PUMP STATION.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3181606	WO#3182298.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	9420 BLOSSOM LN	12/2/2019 18:47	12/2/2019 18:51	30	Sewer Service Line	HP10884619	CATCH BASIN	LITTLE GOOSE CREEK	HEAVY PAPER.	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER DISCHARGE	3182413	NO CLEAN REQUIRED NO SOLIDS DRAINING INTO PRIVATE BASIN.	FLUSHED MAIN SEWER.
HITE CREEK	KY0022420	5504 TIMBER CREEK CT	12/11/2019 6:10	12/12/2019 12:15	600000	Sewer Main	117932-AG	GROUND	HARRODS CREEK	ADDITIONAL STRUCTURAL FAILURE OF FORCE MAIN AT CONSTRUCTION SITE/DISDW #3180984.	STRUCTURAL FAILURE	DRY WEATHER DISCHARGE	3185089	EXISTING CONSTRUCTION AREA/ DISDW #3180984.	FORCE MAIN REPAIR IN PROGRESS/ DISDW #3180984.
HITE CREEK	KY0022420	6596 KEN CARLA DR	12/11/2019 8:48	12/11/2019 15:50	150000	Sewer Lift Station	MSD1215-PS	STREAM	HARRODS CREEK	STRUCTURAL FAILURE OF FORCE MAIN AT CONSTRUCTION SITE/DISDW #3180984.	STRUCTURAL FAILURE	DRY WEATHER DISCHARGE	3185106	CONTRACTOR TO CLEAN AND SANITIZE AFFECTED AREA.	FORCE MAIN REPAIR DISDW #3180984.
HITE CREEK	KY0022420	6618 DEL HAVEN AVE	12/11/2019 15:20	12/12/2019 15:50	300000	Sewer Manhole	117936	STREAM	HARRODS CREEK	STRUCTURAL FAILURE FORCE MAIN BREAK.	STRUCTURAL FAILURE	DRY WEATHER DISCHARGE	3185202	LIME AND STRAW WAS APPLIED.	MAC CONSTRUCTED A SETTLING POND TO PUMP INTO FOR TEMP STORAGE.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	12/16/2019 18:00	12/17/2019 13:45	1700000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3186627	CLEAN-UP NOT REQUIRED, MANHOLE DISCHARGE DIRECTLY INTO THE CREEK.	LOCATION IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9317 LANTANA DR	12/16/2019 19:01	12/16/2019 21:10	129	Sewer Manhole	25484	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY DUE TO HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3186622	MSD CLEANED AND SANITIZED IMPACTED AREA.	RAIN STOPPED ALLOWING STATION TO RECOVER.

ASSOCIATED WQTC NAME	ASSOCIATED WQTC KPDES#	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	12/17/2019 0:01	12/17/2019 1:17	6700	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3187889	NO CLEAN UP PERFORMED – PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM	INVESTIGATION INDICATED THAT ADDITIONAL REPAIRS WERE NOT REQUIRED BY MSD
DEREK R. GUTHRIE	KY0078956	7201 FEGENBUSH LN	12/24/2019 20:02	12/25/2019 14:54	1080	Sewer Service Line	BW01857479			HEAVY SLUDE AND PAPER IN MSD'S PORTION OF THE PROPERTY SERVICE LINE	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER DISCHARGE	3188394	CUSTOMER CLEANED IMPACTED AREA	CAMERA WAS ABLE TO REMOVE PAPER AND SLUDGE...NOT DIGGING NEEDED
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	12/29/2019 18:15	12/30/2019 10:55	25000	Sewer Manhole	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3190126	WO#3190236.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	12/29/2019 20:30	12/30/2019 17:45	23000000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3190135	CLEANUP NOT REQUIRED, PIPE DISCHARGES UNDERGROUND INTO THE CREEK	LOCATION IS INCLUDED IN IOAP
DEREK R. GUTHRIE	KY0078956	9317 LANTANA DR	12/29/2019 21:54	12/30/2019 2:00	7650	Sewer Manhole	25484	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY - HEAVY RAIN	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3190153	NONE POSSIBLE DUE TO MAGNITUDE OF STORM	LOCATION INCLUDED IN THE IOAP
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	12/29/2019 21:56	12/30/2019 4:30	100000	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3190134	CLEANUP NOT REQUIRED, PIPE DISCHARGES UNDERGROUND INTO THE CREEK	LOCATION IS INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	3406 DELL RD	12/29/2019 22:35	12/30/2019 6:41	12150	Sewer Manhole	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3190198	WO#3190197.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	12/29/2019 22:47	12/30/2019 6:45	11950	Sewer Manhole	28452	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3190206	WO#3190201.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3406 CHARLANE PKY	12/29/2019 22:52	12/30/2019 6:49	11950	Sewer Manhole	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3190208	WO#3190207.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	9707 WILLOWWOOD WAY	12/29/2019 23:15	12/30/2019 11:00	17625	Sewer Manhole	28336	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3190212	WO #3190211.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	12/29/2019 23:20	12/30/2019 6:55	11375	Sewer Manhole	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3190210	WO #3190209.	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	9114 CINDERELLA LN	12/29/2019 23:30	12/30/2019 4:30	7500	Sewer Manhole	60679	DITCH	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	RAIN EVENT DISCHARGE	3190152	NONE POSSIBLE DUE TO MAGNITUDE OF STORM.	SITE FOUND DURING RAIN EVENT RECON - WILL BE MONITORED AND EVALUATED FOR REPAIR.
DEREK R. GUTHRIE	KY0078956	4005 KIRBY LN	12/30/2019 13:08	12/30/2019 14:30	2460	Sewer Manhole	61266	DITCH	FERN CREEK	MECHANICAL FAILURE, PUMPS AIRLOCKED.	MECHANICAL FAILURE	RAIN EVENT DISCHARGE	3190259	DEBRIS RAKED, BAGGED AND HAULED OFF WO # 3190326.	REPLACED THE FAULTY FLOAT SWITCH THAT CAUSED THE PUMPS TO AIRLOCK WO # 3190322.

APPENDIX B

CSO FLOW MONITORING DATA

PROJECT WIN QUARTERLY REPORT #57
OCTOBER 1, 2019 - DECEMBER 31, 2019

DRAFT

CSO Data Monitoring Procedures are being Revised



CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
CSO015	10/6/2019 15:45	10/6/2019 18:30	165	0	2,003.916	0	0	24	Atlas	(blank)	1,983,877	1
	10/15/2019 23:15	10/16/2019 2:15	180	0	17,181,229	0	0	3	Atlas	(blank)	4,810,744	1
	10/26/2019 6:00	10/26/2019 6:30	30	1	2,129,397	0	1	6	Atlas	(blank)	2,938,568	1
	10/30/2019 14:15	10/30/2019 14:30	15	0	1,104,418	2	0	3	Atlas	(blank)	684,739	1
	11/27/2019 0:45	11/27/2019 2:15	90	1	5,262,005	2	0	6	Atlas	(blank)	5,577,725	1
	11/30/2019 4:15	11/30/2019 6:00	105	2	11,921,605	2	1	12	Atlas	(blank)	28,611,853	1
CSO015 Total											44,607,506	6
CSO019	10/6/2019 7:30	10/6/2019 7:30	0	0	187,070	0	0	6	Atlas	(blank)	18,707	1
	10/6/2019 17:30	10/7/2019 9:15	945	0	603,044	0	0	24	Atlas	(blank)	428,161	1
	10/11/2019 10:45	10/11/2019 12:45	120	0	213,456	1	0	3	Atlas	(blank)	68,306	1
	10/11/2019 21:15	10/11/2019 23:15	120	0	128,656	1	0	3	Atlas	(blank)	41,170	1
	10/15/2019 22:30	10/16/2019 7:45	555	0	693,519	0	0	1	Atlas	(blank)	291,278	1
	10/26/2019 4:15	10/26/2019 23:15	1140	1	3,002,723	2	1	24	Atlas	(blank)	4,173,785	1
	10/30/2019 11:15	10/31/2019 15:45	1710	0	3,766,061	3	0	3	Atlas	(blank)	2,221,976	1
	11/5/2019 9:30	11/5/2019 10:30	60	0	103,723	1	0	3	Atlas	(blank)	13,484	1
	11/7/2019 4:00	11/7/2019 16:30	750	0	372,578	1	0	24	Atlas	(blank)	242,176	1
	11/11/2019 19:00	11/12/2019 1:00	360	0	431,352	1	0	12	Atlas	(blank)	107,838	1
	11/19/2019 15:45	11/19/2019 17:45	120	0	318,830	0	0	6	Atlas	(blank)	31,883	
	11/22/2019 2:15	11/22/2019 10:00	465	0	615,559	0	0	6	Atlas	(blank)	196,979	1
	11/23/2019 9:15	11/23/2019 17:00	465	0	496,270	0	0	3	Atlas	(blank)	99,254	1
	11/26/2019 20:15	11/27/2019 18:45	1350	0	1,261,403	1	0	6	Atlas	(blank)	946,052	1
	11/30/2019 2:30	12/1/2019 8:45	1815	2	3,953,379	3	1	12	Atlas	(blank)	8,736,968	1
	12/2/2019 1:30	12/2/2019 4:45	195	0	598,410	3	0	12	Atlas	(blank)	59,841	1
	12/6/2019 10:45	12/6/2019 10:45	0	0	55,657	2	0	6	Atlas	(blank)	3,966	1
	12/9/2019 3:30	12/9/2019 20:15	1005	0	313,642	0	0	24	Atlas	(blank)	59,592	1
	12/13/2019 16:45	12/14/2019 10:45	1080	0	629,653	0	0	12	Atlas	(blank)	371,495	1
	12/15/2019 22:45	12/17/2019 12:45	2280	0	7,566,007	2	0	6	Atlas	(blank)	1,059,241	1
	12/29/2019 5:30	12/30/2019 15:00	2010	1	1,230,536	1	1	24	Atlas	(blank)	1,759,667	1
CSO019 Total											20,931,819	20
CSO022	10/30/2019 14:15	10/30/2019 14:30	15	0	385,697	2	0	3	Atlas	(blank)	300,844	1
CSO022 Total											300,844	1
CSO034	12/16/2019 17:15	12/16/2019 17:30	15	0	1,341	1	0	6	Atlas	(blank)	979	1
CSO034 Total											979	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
CSO036	10/30/2019 14:30	10/30/2019 14:45	15	0	30,910	2	0	3	Atlas	(blank)	25,964	1
CSO036 Total											25,964	1
CSO050	10/6/2019 14:45	10/6/2019 20:00	315	0	167,301	0	0	24	Atlas	(blank)	143,879	1
	10/7/2019 6:30	10/7/2019 6:30	0	0	1,642	0	0	24	Atlas	(blank)	1,412	1
	10/11/2019 10:30	10/11/2019 11:15	45	0	98,723	1	0	1	Atlas	(blank)	29,617	1
	10/11/2019 21:45	10/11/2019 21:45	0	0	14,283	1	0	1	Atlas	(blank)	4,285	1
	10/15/2019 22:30	10/15/2019 23:45	75	0	181,233	0	0	1	Atlas	(blank)	54,370	1
	10/26/2019 5:00	10/26/2019 19:30	870	1	602,238	2	1	6	Atlas	(blank)	849,155	1
	10/30/2019 12:30	10/30/2019 17:45	315	0	905,761	2	0	3	Atlas	(blank)	597,802	1
	10/31/2019 4:00	10/31/2019 11:00	420	0	1,014,281	3	0	6	Atlas	(blank)	588,283	1
	11/7/2019 7:00	11/7/2019 10:00	180	0	50,126	0	0	24	Atlas	(blank)	34,086	1
	11/22/2019 2:45	11/22/2019 6:45	240	0	143,066	0	0	6	Atlas	(blank)	50,073	1
	11/23/2019 9:00	11/23/2019 9:15	15	0	48,837	0	0	3	Atlas	(blank)	9,279	1
	11/26/2019 20:00	11/27/2019 6:45	645	0	577,568	1	0	6	Atlas	(blank)	485,157	1
	11/30/2019 2:00	11/30/2019 21:45	1185	2	1,196,144	3	1	12	Atlas	(blank)	2,751,131	1
	12/9/2019 2:45	12/9/2019 2:45	0	0	3,362	0	0	1	Atlas	(blank)	706	1
	12/9/2019 20:00	12/9/2019 20:15	15	0	41,010	0	0	1	Atlas	(blank)	8,612	1
	12/13/2019 18:45	12/14/2019 1:45	420	0	21,752	0	0	12	Atlas	(blank)	13,051	1
	12/16/2019 0:00	12/16/2019 1:45	105	0	52,586	0	0	6	Atlas	(blank)	7,362	1
	12/16/2019 13:30	12/17/2019 0:00	630	0	465,393	2	0	6	Atlas	(blank)	386,276	1
	12/29/2019 5:30	12/30/2019 3:30	1320	1	654,235	1	0	24	Atlas	(blank)	791,624	1
CSO050 Total											6,806,160	19
CSO051	10/26/2019 5:45	10/26/2019 9:15	210	1	17,782	1	1	6	Atlas	(blank)	25,072	1
	10/30/2019 12:30	10/30/2019 16:00	210	0	25,215	2	0	3	Atlas	(blank)	16,642	1
	10/31/2019 6:15	10/31/2019 9:15	180	0	25,755	3	0	6	Atlas	(blank)	14,938	1
	11/26/2019 21:30	11/27/2019 0:15	165	0	5,223	1	0	6	Atlas	(blank)	4,387	1
	11/30/2019 5:00	11/30/2019 16:30	690	2	34,228	3	1	12	Atlas	(blank)	78,725	1
	12/16/2019 17:30	12/16/2019 18:15	45	0	13,145	1	0	6	Atlas	(blank)	10,910	1
	12/29/2019 19:30	12/29/2019 22:15	165	1	34,723	1	0	24	Atlas	(blank)	42,015	1
CSO051 Total											192,689	7
CSO054	10/26/2019 7:30	10/26/2019 9:15	105	1	20,759	1	1	6	Atlas	(blank)	29,270	1
	10/30/2019 15:00	10/30/2019 15:30	30	0	22,887	2	0	3	Atlas	(blank)	16,021	1
	10/31/2019 7:15	10/31/2019 9:00	105	0	60,556	3	0	6	Atlas	(blank)	37,545	1
	11/30/2019 5:00	11/30/2019 16:30	690	2	87,091	3	1	12	Atlas	(blank)	201,180	1

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CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
	12/16/2019 17:45	12/16/2019 18:00	15	0	12,019	1	0	6	Atlas	(blank)	9,495	1
	12/29/2019 20:00	12/29/2019 22:15	135	1	167,167	1	0	24	Atlas	(blank)	188,899	1
CSO054 Total											482,410	6
CSO055	10/11/2019 10:45	10/11/2019 10:45	0	0	1,778	1	0	1	Atlas	(blank)	569	1
	10/15/2019 22:30	10/15/2019 22:30	0	0	3,578	0	0	1	Atlas	(blank)	1,288	1
	10/26/2019 6:00	10/26/2019 10:00	240	1	35,369	1	1	6	Atlas	(blank)	49,870	1
	10/26/2019 19:30	10/26/2019 19:30	0	1	37	2	1	6	Atlas	(blank)	52	1
	10/30/2019 14:45	10/30/2019 18:00	195	0	250,899	2	0	3	Atlas	(blank)	175,629	1
	10/31/2019 6:30	10/31/2019 10:45	255	0	809,898	3	0	6	Atlas	(blank)	502,137	1
	11/30/2019 3:00	11/30/2019 5:00	120	2	100	2	1	12	Atlas	(blank)	232	1
	11/30/2019 13:45	11/30/2019 16:15	150	2	28,287	3	1	12	Atlas	(blank)	65,343	1
	12/16/2019 21:45	12/16/2019 22:00	15	0	927	1	0	6	Atlas	(blank)	732	1
	12/29/2019 14:15	12/30/2019 2:30	735	1	544,021	1	0	24	Atlas	(blank)	614,744	1
CSO055 Total											1,410,596	10
CSO056	10/26/2019 7:30	10/26/2019 9:00	90	1	3,658	1	1	6	Atlas	(blank)	5,158	1
	10/30/2019 14:30	10/30/2019 14:30	0	0	52,806	2	0	3	Atlas	(blank)	36,964	1
	11/27/2019 0:30	11/27/2019 0:30	0	0	6,922	1	0	6	Atlas	(blank)	5,122	1
	11/30/2019 5:15	11/30/2019 12:15	420	2	6,900	3	1	12	Atlas	(blank)	15,940	1
	12/29/2019 20:30	12/29/2019 21:15	45	1	13,723	1	0	24	Atlas	(blank)	15,507	1
	12/30/2019 7:30	12/30/2019 11:00	210	1	373	1	0	24	Atlas	(blank)	421	1
CSO056 Total											79,112	6
CSO057	10/15/2019 22:30	10/15/2019 22:30	0	0	619	0	0	1	Atlas	(blank)	229	1
	10/26/2019 7:15	10/26/2019 7:15	0	1	292	0	1	24	Atlas	(blank)	423	1
	11/19/2019 16:00	11/19/2019 16:30	30	0	810	0	0	6	Atlas	(blank)	81	1
	12/9/2019 20:00	12/9/2019 20:00	0	0	6,826	0	0	1	Atlas	(blank)	1,297	1
CSO057 Total											2,030	3
CSO062	10/6/2019 17:45	10/6/2019 20:15	150	0	448,719	0	0	24	Atlas	(blank)	421,796	1
	10/16/2019 0:00	10/16/2019 0:30	30	0	101,736	0	0	1	Atlas	(blank)	42,729	1
	10/26/2019 6:00	10/26/2019 10:15	255	1	472,840	1	0	24	Atlas	(blank)	600,507	1
	10/30/2019 14:30	10/30/2019 16:45	135	0	1,190,085	2	0	3	Atlas	(blank)	952,068	1
	10/31/2019 6:45	10/31/2019 10:15	210	0	1,247,469	3	0	6	Atlas	(blank)	873,228	1
	11/26/2019 22:15	11/27/2019 8:30	615	0	6,209,822	1	0	12	Atlas	(blank)	3,912,188	1
	11/30/2019 3:45	11/30/2019 23:45	1200	2	7,838,548	3	1	12	Atlas	(blank)	14,893,241	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
CSO062	12/29/2019 14:00	12/29/2019 23:45	585	1	1,371,955	1	0	24	Atlas	(blank)	1,509,150	1
Total											23,204,907	8
CSO082	10/30/2019 14:15	10/30/2019 15:00	45	0	42,505	2	0	3	Atlas	(blank)	32,729	1
	11/27/2019 0:00	11/27/2019 1:45	105	0	63,965	1	0	12	Atlas	(blank)	38,379	1
	11/30/2019 4:15	11/30/2019 17:45	810	2	420,245	3	1	12	Atlas	(blank)	811,073	1
	12/16/2019 15:45	12/16/2019 20:00	255	0	407,909	1	0	6	Atlas	(blank)	281,457	1
CSO082											1,163,638	4
Total											3,524	1
CSO083	10/30/2019 14:15	10/30/2019 14:15	0	0	4,146	2	0	3	Atlas	(blank)	3,524	1
CSO083												1
Total											59,083	1
CSO084	10/6/2019 14:45	10/6/2019 20:00	315	0	60,289	0	0	6	Atlas	(blank)	60,989	1
	10/15/2019 22:45	10/15/2019 23:00	15	0	117,287	0	0	1	Atlas	(blank)	221,700	1
	10/26/2019 5:30	10/26/2019 9:00	210	1	173,203	1	0	24	Atlas	(blank)	270,670	1
	10/30/2019 14:15	10/30/2019 15:15	60	0	318,435	2	0	3	Atlas	(blank)	145,895	1
	10/31/2019 6:30	10/31/2019 7:45	75	0	224,454	3	0	6	Atlas	(blank)	121,371	1
	11/26/2019 21:45	11/27/2019 1:00	195	0	192,652	1	0	12	Atlas	(blank)	546,512	1
	11/30/2019 3:15	11/30/2019 16:30	795	2	289,160	3	1	12	Atlas	(blank)	2,194	1
	12/9/2019 20:30	12/9/2019 20:30	0	0	10,448	0	0	1	Atlas	(blank)	148,219	1
	12/16/2019 17:15	12/16/2019 18:30	75	0	214,810	1	0	6	Atlas	(blank)	122,614	1
	12/29/2019 20:15	12/29/2019 21:15	60	1	110,463	1	0	24	Atlas	(blank)	1,699,247	10
CSO084											56	1
Total											56	1
CSO092	10/30/2019 14:15	10/30/2019 14:15	0	0	67	2	0	3	Atlas	(blank)	653	1
CSO092											653	1
Total												
CSO093	12/16/2019 13:45	12/16/2019 13:45	0	0	975	0	0	6	Atlas	(blank)	35,304	1
CSO093											68,809	1
Total											71,115	1
CSO097	10/6/2019 14:45	10/6/2019 20:00	315	1	29,420	1	1	6	Atlas	(blank)	146	1
	10/15/2019 22:30	10/16/2019 0:00	90	0	94,259	1	1	1	Atlas	(blank)	293,849	1
	10/26/2019 5:15	10/26/2019 8:45	210	1	57,351	1	0	24	Atlas	(blank)	192,587	1
	10/26/2019 19:30	10/26/2019 19:30	0	1	118	1	0	24	Atlas	(blank)	57,943	1
	10/30/2019 13:45	10/30/2019 16:15	150	0	358,352	2	0	3	Atlas	(blank)	1,478,658	1
	10/31/2019 6:15	10/31/2019 8:30	135	0	279,112	3	0	6	Atlas	(blank)		
	11/26/2019 21:45	11/27/2019 1:00	195	0	72,429	1	0	12	Atlas	(blank)		
	11/30/2019 2:45	11/30/2019 22:30	1185	2	808,010	3	1	12	Atlas	(blank)		

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CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
CSO097 Total											2,198,411	8
CSO104	10/6/2019 18:45	10/26/2019 21:45	28980	0	323,082	3	0	3	Atlas	(blank)	268,158	1
	10/30/2019 14:45	10/31/2019 11:30	1245	0	155,118	3	0	3	Atlas	(blank)	105,480	1
	11/7/2019 10:00	11/11/2019 9:45	5745	0	26,215	0	0	24	Atlas	(blank)	19,137	1
	12/14/2019 5:15	12/14/2019 7:00	105	0	1,158	0	0	12	Atlas	(blank)	556	1
	12/16/2019 16:45	12/16/2019 23:30	405	1	15,045	2	0	6	Atlas	(blank)	15,797	1
	12/29/2019 17:00	12/30/2019 3:30	630	2	155,465	1	1	24	Atlas	(blank)	234,752	1
CSO104 Total											643,880	6
CSO108	11/30/2019 11:30	11/30/2019 23:45	735	2	712	3	1	24	Atlas	(blank)	1,481	1
	12/29/2019 1:45	12/30/2019 9:30	1905	2	265	2	1	12	Atlas	(blank)	416	1
CSO108 Total											1,897	2
CSO109	10/15/2019 22:45	10/15/2019 22:45	0	0	67,760	0	1	1	Atlas	(blank)	54,886	1
	10/30/2019 14:15	10/30/2019 14:45	30	0	70,726	2	0	3	Atlas	(blank)	62,239	1
CSO109 Total											117,125	2
CSO110	10/6/2019 14:45	10/6/2019 15:00	15	1	19,326	0	0	6	Atlas	(blank)	22,612	1
	10/15/2019 22:45	10/15/2019 23:00	15	0	32,466	0	0	1	Atlas	(blank)	20,778	1
	10/26/2019 5:45	10/26/2019 9:00	195	1	22,638	1	0	24	Atlas	(blank)	26,939	1
	10/30/2019 14:15	10/30/2019 15:15	60	0	147,170	2	0	3	Atlas	(blank)	123,623	1
	10/31/2019 6:45	10/31/2019 7:30	45	0	49,452	3	0	6	Atlas	(blank)	32,144	1
	11/27/2019 0:30	11/27/2019 0:45	15	0	31,542	1	0	12	Atlas	(blank)	21,764	1
	11/30/2019 4:45	11/30/2019 16:30	705	2	93,574	3	1	12	Atlas	(blank)	181,533	1
	12/16/2019 17:30	12/16/2019 18:30	60	0	37,386	1	0	6	Atlas	(blank)	28,787	1
	12/29/2019 20:30	12/29/2019 21:00	30	1	16,970	1	0	24	Atlas	(blank)	22,570	1
CSO110 Total											480,750	9
CSO111	10/26/2019 7:15	10/26/2019 7:15	0	1	4,077	0	0	24	Atlas	(blank)	4,852	1
	10/31/2019 6:30	10/31/2019 6:45	15	0	8,948	2	0	6	Atlas	(blank)	5,816	1
	11/30/2019 10:30	11/30/2019 16:30	360	2	27,466	3	1	12	Atlas	(blank)	53,284	1
CSO111 Total											63,952	3
CSO113	10/30/2019 14:15	10/30/2019 14:45	30	0	24,858	2	0	3	Atlas	(blank)	20,632	1
CSO113 Total											20,632	1
CSO117	10/31/2019 7:30	10/31/2019 9:00	90	0	590,502	3	0	6	Atlas	(blank)	388,731	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
CSO117	11/30/2019 8:00	11/30/2019 23:00	900	2	3,212,172	3	1	12	Atlas	(blank)	6,713,440	1
Total											7,103,171	2
CSO118	10/6/2019 17:30	10/6/2019 20:15	165	0	1,088,522	0	0	6	Atlas	(blank)	1,066,752	1
	10/11/2019 11:00	10/11/2019 11:45	45	0	461,097	1	0	1	Atlas	(blank)	175,217	1
	10/15/2019 22:45	10/16/2019 0:15	90	0	1,463,577	0	0	1	Atlas	(blank)	761,060	1
	10/26/2019 5:30	10/26/2019 9:45	255	1	1,694,827	1	0	24	Atlas	(blank)	2,169,379	1
	10/26/2019 19:30	10/26/2019 20:15	45	1	260,755	1	0	24	Atlas	(blank)	333,766	1
	10/30/2019 14:15	10/30/2019 15:45	90	0	2,808,906	2	0	3	Atlas	(blank)	2,387,570	1
	10/31/2019 6:00	10/31/2019 8:30	150	0	2,402,232	3	0	6	Atlas	(blank)	1,561,451	1
	11/7/2019 8:00	11/7/2019 10:30	150	0	91,318	0	0	24	Atlas	(blank)	61,183	1
	11/22/2019 6:00	11/22/2019 7:00	60	0	344,888	0	0	6	Atlas	(blank)	117,262	1
	11/26/2019 21:45	11/27/2019 5:45	480	0	2,599,668	1	0	12	Atlas	(blank)	1,637,791	1
	11/30/2019 3:00	11/30/2019 17:30	870	2	4,434,533	3	1	12	Atlas	(blank)	8,381,267	1
	12/9/2019 20:30	12/9/2019 20:45	15	0	178,890	0	0	1	Atlas	(blank)	37,567	1
	12/16/2019 14:30	12/16/2019 19:30	300	0	2,181,588	1	0	6	Atlas	(blank)	1,505,296	1
	12/29/2019 13:30	12/30/2019 1:45	735	1	1,617,347	1	0	24	Atlas	(blank)	1,795,255	1
CSO118											21,990,816	14
Total												
CSO119	10/6/2019 14:45	10/6/2019 20:00	315	0	324,532	0	0	6	Atlas	(blank)	318,041	1
	10/15/2019 22:30	10/15/2019 23:30	60	0	258,438	0	0	1	Atlas	(blank)	134,388	1
	10/26/2019 5:15	10/26/2019 9:00	225	1	301,453	1	0	24	Atlas	(blank)	385,860	1
	10/26/2019 19:15	10/26/2019 19:30	15	1	35,341	1	0	24	Atlas	(blank)	45,236	1
	10/30/2019 14:00	10/30/2019 15:15	75	0	341,806	2	0	3	Atlas	(blank)	290,535	1
	10/31/2019 6:00	10/31/2019 8:00	120	0	454,920	3	0	6	Atlas	(blank)	295,698	1
	11/26/2019 21:30	11/27/2019 1:00	210	0	419,106	1	0	12	Atlas	(blank)	264,037	1
	11/30/2019 2:45	11/30/2019 16:45	840	2	770,820	3	1	12	Atlas	(blank)	1,456,850	1
	12/9/2019 20:15	12/9/2019 20:15	0	0	54,329	0	0	1	Atlas	(blank)	11,409	1
	12/16/2019 14:15	12/16/2019 18:45	270	0	519,265	1	0	6	Atlas	(blank)	358,293	1
	12/29/2019 13:15	12/29/2019 22:00	525	1	235,814	1	0	24	Atlas	(blank)	261,753	1
CSO119											3,822,100	11
Total												
CSO125	10/6/2019 15:00	10/6/2019 20:15	315	1	113,264	0	0	6	Atlas	(blank)	123,458	1
	10/15/2019 22:45	10/15/2019 23:00	15	0	214,369	0	0	1	Atlas	(blank)	90,035	1
	10/26/2019 5:30	10/26/2019 9:15	225	1	181,456	1	0	6	Atlas	(blank)	221,376	1
	10/26/2019 19:45	10/26/2019 20:00	15	1	21,532	1	0	6	Atlas	(blank)	26,269	1
	10/30/2019 13:15	10/30/2019 20:30	435	0	443,400	2	0	3	Atlas	(blank)	403,494	1

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C-SO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
	10/31/2019 6:15	10/31/2019 11:30	315	0	371,731	3	0	6	Atlas	(blank)	260,212	1
	11/22/2019 6:15	11/22/2019 6:15	0	0	7,426	0	0	6	Atlas	(blank)	2,599	1
	11/23/2019 23:15	11/24/2019 0:00	45	0	250	0	0	3	Atlas	(blank)	50	
	11/26/2019 22:00	11/27/2019 5:30	450	0	243,911	1	0	12	Atlas	(blank)	195,129	1
	11/30/2019 3:00	11/30/2019 21:00	1080	2	985,581	3	1	24	Atlas	(blank)	1,527,651	1
	12/9/2019 20:30	12/9/2019 20:45	15	0	76,357	0	0	24	Atlas	(blank)	21,380	1
	12/16/2019 14:30	12/16/2019 19:30	300	0	542,493	1	0	6	Atlas	(blank)	379,745	1
	12/29/2019 10:00	12/30/2019 1:45	945	1	299,399	1	0	24	Atlas	(blank)	395,207	1
CSO125 Total											3,646,605	12
CSO126	10/30/2019 14:15	10/30/2019 15:00	45	0	33,984	2	0	3	Atlas	(blank)	30,925	1
	10/31/2019 6:45	10/31/2019 6:45	0	0	443	3	0	6	Atlas	(blank)	310	1
	11/27/2019 0:30	11/27/2019 0:30	0	0	268	1	0	12	Atlas	(blank)	214	1
	11/30/2019 5:15	11/30/2019 18:45	810	2	23,759	3	1	24	Atlas	(blank)	36,827	1
	12/16/2019 17:45	12/16/2019 19:30	105	0	22,811	1	0	6	Atlas	(blank)	15,968	1
	12/29/2019 21:00	12/29/2019 21:00	0	1	913	1	0	24	Atlas	(blank)	1,205	1
CSO126 Total											85,449	6
CSO127	10/6/2019 14:45	10/6/2019 23:15	510	1	101,827	1	0	6	Atlas	(blank)	113,822	1
	10/11/2019 11:15	10/11/2019 12:00	45	0	51,989	1	0	12	Atlas	(blank)	19,236	1
	10/15/2019 22:45	10/16/2019 0:00	75	0	311,684	0	0	1	Atlas	(blank)	155,842	1
	10/26/2019 5:15	10/26/2019 9:30	255	1	87,099	1	0	24	Atlas	(blank)	105,390	1
	10/26/2019 18:45	10/26/2019 20:15	90	1	23,999	1	0	24	Atlas	(blank)	29,039	1
	11/22/2019 4:45	11/22/2019 7:00	135	0	42,419	0	0	6	Atlas	(blank)	15,695	1
	11/26/2019 21:45	11/27/2019 6:00	495	0	136,357	1	0	12	Atlas	(blank)	110,449	1
	11/30/2019 2:30	11/30/2019 21:00	1110	2	302,495	3	1	24	Atlas	(blank)	508,191	1
	12/9/2019 3:00	12/9/2019 3:00	0	0	560	0	0	24	Atlas	(blank)	168	1
	12/13/2019 19:45	12/13/2019 19:45	0	0	13,314	0	0	24	Atlas	(blank)	7,589	1
	12/16/2019 1:00	12/16/2019 2:00	60	0	38,227	0	0	6	Atlas	(blank)	4,205	1
	12/16/2019 14:45	12/16/2019 21:45	420	0	89,463	2	0	6	Atlas	(blank)	70,676	1
	12/29/2019 10:30	12/30/2019 2:00	930	1	134,818	1	1	24	Atlas	(blank)	198,183	1
CSO127 Total											1,338,485	13
CSO131	10/30/2019 14:30	10/30/2019 15:00	30	0	101,593	2	0	3	Atlas	(blank)	81,274	1
CSO131 Total											81,274	1
CSO141	10/30/2019 14:45	10/30/2019 14:45	0	0	156	2	0	3	Atlas	(blank)	120	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
CSO141 Total											120	1
CSO142	10/6/2019 14:45	10/6/2019 14:45	0	1	8,581	0	0	6	Atlas	Retained by Sneads Branch	8,753	1
	10/15/2019 22:45	10/15/2019 22:45	0	0	3,667	0	0	1	Atlas	Retained by Sneads Branch	2,090	1
	10/30/2019 14:15	10/30/2019 14:30	15	0	16,106	2	0	3	Atlas	Retained by Sneads Branch	13,529	1
CSO142 Total											24,372	3
CSO146	10/30/2019 15:00	10/30/2019 15:00	0	0	3,779	2	0	3	Atlas	(blank)	3,174	1
	11/30/2019 11:00	11/30/2019 12:30	90	2	8,191	2	1	12	Atlas	(blank)	16,792	1
CSO146 Total											19,966	2
CSO148	10/6/2019 14:45	10/6/2019 19:45	300	1	8,784	1	1	6	Atlas	(blank)	10,541	1
	10/11/2019 21:15	10/11/2019 21:15	0	0	374	2	0	12	Atlas	(blank)	127	1
	10/15/2019 22:45	10/15/2019 23:15	30	0	22,689	1	1	1	Atlas	(blank)	16,563	1
	10/26/2019 5:15	10/26/2019 8:45	210	1	21,398	1	0	24	Atlas	(blank)	26,534	1
	10/26/2019 19:30	10/26/2019 19:30	0	1	543	1	0	24	Atlas	(blank)	673	1
	10/30/2019 12:45	10/30/2019 14:45	120	0	56,013	2	0	3	Atlas	(blank)	45,931	1
	10/31/2019 6:30	10/31/2019 7:00	30	0	16,909	3	0	6	Atlas	(blank)	11,667	1
	11/27/2019 0:15	11/27/2019 5:15	300	0	12,135	1	0	12	Atlas	(blank)	9,708	1
	11/30/2019 3:00	11/30/2019 16:15	795	2	27,622	3	1	12	Atlas	(blank)	50,549	1
	12/16/2019 17:00	12/16/2019 18:15	75	0	11,700	1	0	6	Atlas	(blank)	9,126	1
	12/29/2019 20:15	12/29/2019 20:45	30	1	8,339	1	1	24	Atlas	(blank)	12,092	1
CSO148 Total											193,511	11
CSO150	10/26/2019 7:30	10/26/2019 9:45	135	1	37,448	1	1	6	Atlas	(blank)	52,801	1
	10/30/2019 14:15	10/30/2019 17:30	195	0	89,280	2	0	3	Atlas	(blank)	62,496	1
	10/31/2019 6:45	10/31/2019 10:30	225	0	144,069	3	0	6	Atlas	(blank)	89,323	1
	11/27/2019 0:30	11/27/2019 1:00	30	0	28,843	1	0	6	Atlas	(blank)	21,344	1
	11/30/2019 5:00	11/30/2019 17:00	720	2	104,849	3	1	12	Atlas	(blank)	242,202	1
	12/16/2019 17:15	12/16/2019 22:00	285	0	45,659	1	0	6	Atlas	(blank)	36,071	1
	12/29/2019 14:15	12/30/2019 2:15	720	1	132,612	1	0	24	Atlas	(blank)	149,851	1
CSO150 Total											654,088	7
CSO151	10/6/2019 18:00	10/6/2019 20:15	135	1	8,801	1	0	6	Atlas	(blank)	10,649	1
	10/15/2019 23:00	10/15/2019 23:00	0	0	65,848	0	0	1	Atlas	(blank)	36,875	1

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CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
	10/30/2019 14:30	10/30/2019 15:15	45	0	202,867	2	0	3	Atlas	(blank)	164,322	1
	10/31/2019 6:45	10/31/2019 7:45	60	0	156,820	3	0	6	Atlas	(blank)	103,501	1
	11/27/2019 0:30	11/27/2019 1:00	30	0	48,332	1	0	12	Atlas	(blank)	35,282	1
	11/30/2019 5:15	11/30/2019 16:45	690	2	115,832	3	1	12	Atlas	(blank)	209,656	1
	12/16/2019 14:45	12/16/2019 18:45	240	0	102,440	1	0	6	Atlas	(blank)	74,781	1
	12/29/2019 20:45	12/29/2019 21:15	30	1	34,969	1	0	24	Atlas	(blank)	45,110	1
CSO151 Total											680,176	8
CSO153	10/6/2019 14:30	10/6/2019 22:45	495	0	158,943	0	0	24	Atlas	(blank)	147,817	1
	10/11/2019 10:45	10/11/2019 11:00	15	0	33,908	1	0	1	Atlas	(blank)	12,885	1
	10/15/2019 22:30	10/15/2019 23:30	60	0	136,949	0	0	1	Atlas	(blank)	69,844	1
	10/26/2019 5:00	10/26/2019 9:00	240	1	173,928	1	1	24	Atlas	(blank)	233,063	1
	10/26/2019 18:00	10/26/2019 19:30	90	1	16,949	1	1	24	Atlas	(blank)	22,711	1
	10/30/2019 13:45	10/30/2019 15:15	90	0	324,888	2	0	3	Atlas	(blank)	250,164	1
	10/31/2019 5:45	10/31/2019 8:45	180	0	283,573	3	0	6	Atlas	(blank)	198,501	1
	11/7/2019 7:30	11/7/2019 10:00	150	0	29,589	0	0	24	Atlas	(blank)	19,233	1
	11/22/2019 5:30	11/22/2019 6:30	60	0	62,655	0	0	6	Atlas	(blank)	23,809	1
	11/26/2019 21:30	11/27/2019 6:45	555	0	421,875	1	0	12	Atlas	(blank)	253,125	1
	11/30/2019 2:45	11/30/2019 16:15	810	2	297,109	3	1	12	Atlas	(blank)	573,420	1
	12/9/2019 20:15	12/9/2019 20:15	0	0	49,275	0	0	1	Atlas	(blank)	9,855	1
	12/13/2019 19:15	12/13/2019 19:15	0	0	5,894	0	0	12	Atlas	(blank)	3,006	1
	12/16/2019 1:30	12/16/2019 1:30	0	0	7,660	0	0	6	Atlas	(blank)	766	1
	12/16/2019 14:00	12/16/2019 19:00	300	0	424,991	1	0	6	Atlas	(blank)	293,244	1
	12/29/2019 10:15	12/29/2019 22:15	720	1	181,825	1	0	24	Atlas	(blank)	203,644	1
CSO153 Total											2,315,087	16
CSO161	10/30/2019 14:15	10/30/2019 14:30	15	0	495	2	0	3	Atlas	(blank)	401	1
CSO161 Total											401	1
CSO166	10/6/2019 15:15	10/6/2019 20:45	330	1	332,766	0	0	6	Atlas	(blank)	372,698	1
	10/15/2019 22:30	10/15/2019 23:30	60	0	215,452	0	0	1	Atlas	(blank)	107,726	1
	10/26/2019 5:45	10/26/2019 9:15	210	1	219,424	1	0	24	Atlas	(blank)	265,503	1
	10/26/2019 20:00	10/26/2019 20:15	15	1	13,583	1	0	24	Atlas	(blank)	16,436	1
	10/30/2019 14:00	10/30/2019 16:00	120	0	588,873	2	0	3	Atlas	(blank)	518,208	1
	10/31/2019 6:15	10/31/2019 9:45	210	0	1,128,841	3	0	6	Atlas	(blank)	824,054	1
	11/26/2019 22:00	11/27/2019 5:45	465	0	366,175	1	0	12	Atlas	(blank)	296,602	1
	11/30/2019 3:15	11/30/2019 23:45	1230	2	2,016,148	3	1	24	Atlas	(blank)	3,387,129	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
	12/16/2019 14:45	12/16/2019 20:30	345	0	1,849,349	2	0	6	Atlas	(blank)	1,460,986	1
	12/29/2019 10:45	12/30/2019 2:30	945	1	707,003	1	1	24	Atlas	(blank)	1,039,294	1
CSO166 Total											8,288,636	10
CSO167	10/6/2019 15:00	10/6/2019 20:15	315	1	101,412	0	0	6	Atlas	(blank)	102,426	1
	10/11/2019 11:15	10/11/2019 11:15	0	0	3,602	1	0	1	Atlas	(blank)	1,513	1
	10/15/2019 22:45	10/15/2019 23:15	30	0	126,217	0	0	1	Atlas	(blank)	45,438	1
	10/26/2019 5:30	10/26/2019 9:15	225	1	104,240	1	0	6	Atlas	(blank)	123,003	1
	10/26/2019 19:45	10/26/2019 19:45	0	1	6,116	1	0	6	Atlas	(blank)	7,217	1
	10/30/2019 14:00	10/30/2019 15:30	90	0	194,922	2	0	3	Atlas	(blank)	169,582	1
	10/31/2019 6:15	10/31/2019 8:15	120	0	210,519	3	0	6	Atlas	(blank)	151,574	1
	11/26/2019 22:00	11/27/2019 5:45	465	0	154,473	1	0	12	Atlas	(blank)	98,863	1
	11/30/2019 3:15	11/30/2019 17:30	855	2	366,149	2	1	12	Atlas	(blank)	582,177	1
	12/9/2019 20:30	12/9/2019 20:30	0	0	52,643	0	0	1	Atlas	(blank)	11,055	1
	12/16/2019 14:30	12/16/2019 19:15	285	0	176,390	1	0	12	Atlas	(blank)	128,765	1
	12/29/2019 13:15	12/30/2019 1:30	735	1	122,281	1	0	24	Atlas	(blank)	138,178	1
CSO167 Total											1,559,791	12
CSO174	10/6/2019 14:45	10/6/2019 20:00	315	1	193,383	0	0	6	Atlas	Retained by Sneads Branch	197,251	1
	10/15/2019 22:45	10/15/2019 23:00	15	0	504,330	0	0	1	Atlas	Retained by Sneads Branch	287,468	1
	10/26/2019 5:30	10/26/2019 9:00	210	1	205,974	1	0	24	Atlas	Retained by Sneads Branch	249,229	1
	10/30/2019 14:15	10/30/2019 15:00	45	0	863,430	2	0	3	Atlas	Retained by Sneads Branch	725,281	1
	10/31/2019 6:30	10/31/2019 7:15	45	0	321,834	3	0	6	Atlas	Retained by Sneads Branch	215,629	1
	11/27/2019 0:30	11/27/2019 1:00	30	0	222,021	1	0	6	Atlas	Retained by Sneads Branch	139,873	1
	11/30/2019 4:30	11/30/2019 16:30	720	2	546,507	3	1	12	Atlas	(blank)	1,120,339	1
	12/16/2019 17:15	12/16/2019 18:30	75	0	378,454	1	0	6	Atlas	Retained by Sneads Branch	253,564	1
	12/29/2019 20:30	12/29/2019 21:00	30	1	161,179	0	0	12	Atlas	Retained by Sneads Branch	172,461	1
CSO174 Total											3,361,095	9
CSO180	10/6/2019 14:45	10/6/2019 14:45	0	1	5,459	0	0	6	Atlas	Retained by Sneads Branch	5,568	1

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	10/15/2019 22:45	10/15/2019 22:45	0	0	6,439	0	0	1	Atlas	Retained by Sneads Branch	3,670	1
	10/26/2019 5:30	10/26/2019 8:45	195	1	27,736	0	0	24	Atlas	Retained by Sneads Branch	33,561	1
	10/30/2019 14:00	10/30/2019 14:45	45	0	62,392	2	0	3	Atlas	Retained by Sneads Branch	52,409	1
	10/31/2019 6:30	10/31/2019 6:45	15	0	15,112	3	0	6	Atlas	Retained by Sneads Branch	10,125	1
	11/27/2019 0:15	11/27/2019 0:30	15	0	6,830	1	0	6	Atlas	Retained by Sneads Branch	4,303	1
	11/30/2019 4:30	11/30/2019 12:00	450	2	16,220	2	1	12	Atlas	(blank)	33,252	1
	12/16/2019 17:15	12/16/2019 18:00	45	0	7,846	1	0	6	Atlas	Retained by Sneads Branch	5,257	1
	12/29/2019 10:15	12/29/2019 10:15	0	1	264	0	0	12	Atlas	Retained by Sneads Branch	283	1
	12/29/2019 20:15	12/29/2019 20:45	30	1	5,607	0	0	12	Atlas	Retained by Sneads Branch	6,000	1
CSO180 Total											154,428	10
CSO183	12/16/2019 18:45	12/16/2019 18:45	0	0	101	1	0	12	Atlas	Retained by Sneads Branch	79	1
CSO183 Total											79	1
CSO184	10/6/2019 14:45	10/6/2019 14:45	0	1	4,052	0	0	6	Atlas	Retained by Sneads Branch	4,781	1
	10/15/2019 22:45	10/15/2019 22:45	0	0	1,425	0	0	1	Atlas	Retained by Sneads Branch	841	1
	10/30/2019 14:15	10/30/2019 14:15	0	0	750	2	0	3	Atlas	Retained by Sneads Branch	585	1
CSO184 Total											6,207	3
CSO185	10/6/2019 14:45	10/6/2019 15:00	15	1	43,018	0	0	6	Atlas	Retained by Sneads Branch	50,761	1
	10/15/2019 22:45	10/15/2019 23:00	15	0	44,453	0	0	1	Atlas	Retained by Sneads Branch	26,227	1
	10/26/2019 5:45	10/26/2019 9:00	195	1	4,187	0	0	24	Atlas	Retained by Sneads Branch	4,815	1
	10/30/2019 14:15	10/30/2019 14:45	30	0	42,758	2	0	3	Atlas	Retained by Sneads Branch	33,351	1
	10/31/2019 6:45	10/31/2019 6:45	0	0	5,228	2	0	6	Atlas	Retained by Sneads Branch	3,503	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	ANTECEDENT RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT
	11/27/2019 0:30	11/27/2019 0:45	15	0	1,539	1	0	12	Atlas	Retained by Sneads Branch	1,062	1
	11/30/2019 4:45	11/30/2019 14:00	555	2	4,705	3	1	12	Atlas	(blank)	10,116	1
	12/16/2019 18:00	12/16/2019 18:00	0	0	649	1	0	12	Atlas	Retained by Sneads Branch	506	1
	12/29/2019 20:30	12/29/2019 20:45	15	1	1,505	1	0	24	Atlas	Retained by Sneads Branch	2,002	1
CSO185 Total											132,343	9
CSO189	10/26/2019 5:45	10/26/2019 6:00	15	1	156,916	0	1	6	Atlas	(blank)	210,267	1
CSO189 Total											210,267	1
CSO190	12/29/2019 20:30	12/29/2019 20:30	0	1	555	1	0	24	Atlas	(blank)	671	1
CSO190 Total											671	1
CSO191	10/6/2019 15:45	10/6/2019 18:30	165	0	90,040	0	0	24	Atlas	(blank)	89,140	1
	10/15/2019 23:15	10/16/2019 2:15	180	0	771,989	0	0	3	Atlas	(blank)	216,157	1
	10/26/2019 6:00	10/26/2019 6:30	30	1	95,678	0	1	6	Atlas	(blank)	132,036	1
	10/30/2019 14:15	10/30/2019 14:30	15	0	49,624	2	0	3	Atlas	(blank)	30,767	1
	11/27/2019 0:45	11/27/2019 2:15	90	1	236,433	2	0	6	Atlas	(blank)	250,619	1
	11/30/2019 4:15	11/30/2019 6:00	105	2	535,663	2	1	12	Atlas	(blank)	1,285,590	1
CSO191 Total											2,004,309	6
CSO193	10/30/2019 14:15	10/30/2019 14:15	0	0	319	2	0	3	Atlas	(blank)	233	1
CSO193 Total											233	1
CSO197	10/30/2019 14:00	10/30/2019 14:00	0	0	542	2	0	3	Atlas	(blank)	401	1
CSO197 Total											401	1
CSO198	10/30/2019 14:00	10/30/2019 14:15	15	0	2,064	2	0	3	Atlas	(blank)	1,527	1
	11/30/2019 4:30	11/30/2019 11:45	435	2	15,800	3	1	12	Atlas	(blank)	33,969	1
CSO198 Total											35,496	2
CSO199	10/15/2019 22:30	10/15/2019 22:30	0	0	1,601	0	1	1	Atlas	(blank)	1,073	1
	10/30/2019 14:15	10/30/2019 14:30	15	0	2,441	2	0	3	Atlas	(blank)	1,806	1
CSO199 Total											2,879	2
CSO201	10/30/2019 14:30	10/30/2019 14:30	0	0	321	2	0	3	Atlas	(blank)	234	1

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CSO201 Total											234	1
CSO202	10/15/2019 22:30	10/15/2019 22:30	0	0	2,096	0	1	1	Atlas	(blank)	1,404	1
	10/26/2019 7:15	10/26/2019 7:15	0	1	28	0	0	6	Atlas	(blank)	36	1
	10/30/2019 14:00	10/30/2019 14:30	30	0	4,286	2	0	3	Atlas	(blank)	3,172	1
CSO202 Total											4,612	3
CSO203	10/30/2019 14:15	10/30/2019 14:30	15	0	78	2	0	3	Atlas	(blank)	58	1
CSO203 Total											58	1
CSO205	10/6/2019 14:45	10/6/2019 23:00	495	1	3,598	1	0	6	Atlas	Retained by Sneads Branch	4,066	1
	10/11/2019 10:45	10/11/2019 11:30	45	0	1,270	1	0	1	Atlas	Retained by Sneads Branch	470	1
	10/15/2019 22:45	10/16/2019 0:30	105	0	7,215	0	0	1	Atlas	Retained by Sneads Branch	3,896	1
	10/26/2019 5:15	10/26/2019 19:45	870	1	3,699	1	0	24	Atlas	Retained by Sneads Branch	4,624	1
	10/30/2019 14:00	10/30/2019 15:15	75	0	3,859	2	0	3	Atlas	Retained by Sneads Branch	2,856	1
	10/31/2019 6:00	10/31/2019 8:00	120	0	3,234	3	0	6	Atlas	Retained by Sneads Branch	2,070	1
	12/16/2019 17:30	12/16/2019 18:30	60	0	688	1	0	6	Atlas	Retained by Sneads Branch	571	1
CSO205 Total											18,553	7
Grand Total											162,174,694	324

APPENDIX C

ACRONYMS

ACRONYM	DEFINITION
AAOV	Average Annual Overflow Volume
ACD	Amended Consent Decree
BGI	Beargrass Interceptor
BGIR	Beargrass Interceptor Relief
BOD	Biological Oxygen Demand
CCP	Composite Correction Plan
CCWQTC	Cedar Creek Water Quality Treatment Center
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
DAP	Discharge Abatement Plan
DRGWQTC	Derek R. Guthrie Water Quality Treatment Center
DWO	Dry Weather Overflow
EPA	Environmental Protection Agency
FEPS	Final Effluent Pump Station
FOG	Fat Oil and Grease
FY	Fiscal Year
GLPM	Gravity Line Preventive Maintenance
HCWQTC	Hite Creek Water Quality Treatment Center
HMI	Human Machine Interface
I/I	Inflow and Infiltration
I/O	Input/ Output
ICM	Integrated Catchment Model
ID	Identification
IFIX	Software name
IOAP	Integrated Overflow Abatement Plan
ISSDP	Interim Sanitary Sewer Discharge Plan
KDEP	Kentucky Department of Environmental Protection
KPDES	Kentucky Pollutant Discharge Elimination System
LG&E	Louisville Gas & Electric Company
LTCP	Long Term Control Plan
LWC	Louisville Water Company
MCC	Motor Control Center
MF/MFWQTC	Morris Forman Water Quality Treatment Center
MFI	Middle Fork Interceptor
MG	Million Gallons
MGD	Million Gallons per Day

ACRONYM	DEFINITION
MSD	Metropolitan Sewer District (Louisville and Jefferson County)
NGPS	Nightingale Pump Station
NMC	Nine Minimum Controls
ORFM	Ohio River Force Main
ORI	Ohio River Interceptor
PLC	Programmable Logic Controller
PM	Preventive Maintenance
PS	Pump Station
RAS	Return Activated Sludge
RTC	Real Time Control
SCADA	Supervisory Control And Data Acquisition
SCAP	System Capacity Assurance Plan
SCS	Soil Conservation Service
SED2	South East Diversion 2
SOP	Standard Operating Procedure
SOR1	Southern Outfall Retention Facility 1
SORP	Sewer Overflow Response Protocol
SPS	Starkey Pump Station
SSDP	Sanitary Sewer Discharge Plan
SSES	Sewer System Evaluation Survey
SSO	Sanitary Sewer Overflow
SSOP	Sanitary Sewer Overflow Plan
SWOR1	Southwestern Outfall Retention – Phase 1
SWOR2	Southwestern Outfall Retention – Phase 2
SWPS	Southwestern Pump Station
SWSG	Southwest Sluice Gate
TRFD	Total Rainfall Depth
TSS	Total Suspended Solids
TV	Television
UM	Unplanned Maintenance
UMFPS	Upper Middle Fork Pump Station
US	United States
VFD	Variable Frequency Drive
WIN	Waterway Improvements Now
WQTC	Water Quality Treatment Center
WUS	Waters of the United States
WWTF	Wastewater Treatment Facility

APPENDIX D

SCAP BALANCE

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CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
Cedar Creek	11/1/2008	235533	MAINTENANCE WORK FY06 AUG-FY09 NOV - CEDAR CREEK	SCAPCREDIT		6,521
	12/31/2008	362688	MAINTENANCE WORK FY09A - CEDAR CREEK	SCAPCREDIT		5
	6/5/2009	236380	FAIRMOUNT ROAD MH REHAB	SCAPCREDIT		10,734
	6/30/2009	362689	MAINTENANCE WORK FY09B - CEDAR CREEK	SCAPCREDIT		201
	12/31/2009	SC1011254	MAINTENANCE WORK FY10A - CEDAR CREEK	SCAPCREDIT		347
	6/30/2010	SC1011255	MAINTENANCE WORK FY10B - CEDAR CREEK	SCAPCREDIT		194
	12/31/2010	SC1011259	MAINTENANCE WORK FY11A - CEDAR CREEK	SCAPCREDIT		1,720
	6/30/2011	SC1011262	MAINTENANCE WORK FY11B - CEDAR CREEK	SCAPCREDIT		934
	12/31/2011	SC1011264	MAINTENANCE WORK FY12A - CEDAR CREEK	SCAPCREDIT		269
	6/30/2012	SC1011267	MAINTENANCE WORK FY12B - CEDAR CREEK	SCAPCREDIT		814
	9/10/2012	SC1005519	CONTRACTED WORK FY12 - CEDAR CREEK	SCAPCREDIT		21,321
	9/27/2012	320989	LITTLE CEDAR CREEK I/I REHABIL	SCAPCREDIT		652,907
	11/30/2012	263934	ST JAMES CROSSINGS	LAT EXT	9,000	-19,575
	12/5/2012	196927	SONIC SPRINGS	LAT EXT	3,600	-7,830
	1/29/2013	350057	FMC EAST LOUISVILLE #1673-3	LAT EXT	3,400	-7,395
	6/30/2013	SC1074160	MAINTENANCE WORK FY13 JAN-JUN - CEDAR CREEK	SCAPCREDIT		4,443
	8/19/2013	SC1005524	CONTRACTED WORK FY13 - CEDAR CREEK	SCAPCREDIT		425
	12/31/2013	14SC1000	MAINTENANCE WORK FY13A - CEDAR CREEK	SCAPCREDIT		2,220
		SC1082184	MAINTENANCE WORK FY14 JUL-DEC - CEDAR CREEK	SCAPCREDIT		1,482
	6/30/2014	SC1082223	MAINTENANCE WORK FY14 JAN-JUN- CEDAR CREEK	SCAPCREDIT		4,729
	12/30/2014	SC1082493	MAINTENANCE WORK FY15 JUL-DEC-CEDAR CREEK	SCAPCREDIT		4,583
	1/26/2015	239030	POPLAR LAKES PH 1	LAT EXT	18,000	-39,150
	5/26/2015	13LE1003	Bardstown Woods Sec 6	LAT EXT	5,200	-11,310
	6/30/2015	SC1082496	MAINTENANCE WORK FY15 JAN-JUN-CEDAR CREEK	SCAPCREDIT		21
	9/14/2015	LE916330	Altawood Development	LAT EXT	1,600	-3,480
	9/25/2015	SC1003694	CONTRACTED WORK FY16 - CEDAR CREEK	SCAPCREDIT		328
		SC1006188	CONTRACTED WORK FY15 - CEDAR CREEK	SCAPCREDIT		1
	12/30/2015	SC1082497	MAINTENANCE WORK FY16 JUL-DEC-CEDAR CREEK	SCAPCREDIT		16
	5/25/2016	LE915727	BARDSTOWN WOODS SEC 7	LAT EXT	4,400	-9,570
	6/30/2016	SC1082498	MAINTENANCE WORK FY16 JAN-JUN-CEDAR CREEK	SCAPCREDIT		169
	10/26/2016	SC1006171	CONTRACTED WORK FY14 - CEDAR CREEK	SCAPCREDIT		45,900
	12/30/2016	SC1082499	MAINTENANCE WORK FY17 JUL-DEC-CEDAR CREEK	SCAPCREDIT		2,396
	6/30/2017	SC1082500	MAINTENANCE WORK FY17 JAN-JUN-CEDAR CREEK	SCAPCREDIT		3,464
	7/13/2017	SC1097042	Cedar Creek I&I Rehab FY17	SCAPCREDIT		309
	8/14/2017	LE983107	Poplar Lakes Phase 3	LAT EXT	12,000	-26,100
	10/24/2017	LE971176	Cedar Ridge	LAT EXT	18,800	-40,890
	12/30/2017	SC1082501	MAINTENANCE WORK FY18 JUL-DEC-CEDAR CREEK	SCAPCREDIT		3,067
	7/23/2019	LE1048252	Landherr Estates Phase II	LAT EXT	17,600	-38,280
	9/12/2019	LE1015579	Glenmary Commons	LAT EXT	8,800	-19,140
		LE1049657	Little Spring Farm, Section 4B	LAT EXT	14,000	-30,450

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	10/2/2019	LE978334	Houchens Industries	LAT EXT	780	-1,697
Cedar Creek Total						514,653
Floyds Fork	11/1/2008	235557	MAINTENANCE WORK FY06 AUG-FY09 NOV - FLOYDS FORK	SCAPCREDIT		14,540
	12/31/2008	362638	MAINTENANCE WORK FY09A - FLOYDS FORK	SCAPCREDIT		1
	6/30/2009	362647	MAINTENANCE WORK FY09B - FLOYDS FORK	SCAPCREDIT		4
	12/31/2009	362651	MAINTENANCE WORK FY10A - FLOYDS FORK	SCAPCREDIT		524
	1/5/2010	230379	SHAKES RUN SECTION 4	LAT EXT	3,770	-8,200
	6/30/2010	362655	MAINTENANCE WORK FY10B - FLOYDS FORK	SCAPCREDIT		82
	12/31/2010	362661	MAINTENANCE WORK FY11A - FLOYDS FORK	SCAPCREDIT		14,163
	6/30/2011	362669	MAINTENANCE WORK FY11B - FLOYDS FORK	SCAPCREDIT		22,707
	10/12/2011	309608	BLANKENBAKER TRAIL OFFICE LN-B	LAT EXT	2,880	-6,264
	10/17/2011	242480	CLAIBOURNE CROSSINGS PHASE 2	LAT EXT	0	0
	12/31/2011	359320	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		362674	MAINTENANCE WORK FY12A - FLOYDS FORK	SCAPCREDIT		317
	3/13/2012	319027	PREMIER SURGERY CENTER	LAT EXT	5,740	-12,485
	6/30/2012	362678	MAINTENANCE WORK FY12B - FLOYDS FORK	SCAPCREDIT		338
	10/26/2012	315945	BROOKFIELD SEC 3	LAT EXT	12,800	-27,840
	12/18/2012	361689	LAKE FOREST REHAB PH1	SCAPCREDIT		174,769
	12/31/2012	362683	MAINTENANCE WORK FY13A - FLOYDS FORK	SCAPCREDIT		10
	5/8/2013	331397	BROOKFIELD SEC 2A	LAT EXT	14,400	-31,320
	6/30/2013	13SC1000	FY14 STARVIEW REHABILITATION	SCAPCREDIT		14,183
		SC1082514	MAINTENANCE WORK FY13 JAN-JUN-FLOYDS FORK	SCAPCREDIT		161
	12/30/2013	SC1082517	MAINTENANCE WORK FY14 JUL-DEC-FLOYDS FORK	SCAPCREDIT		991
	6/30/2014	SC1082518	MAINTENANCE WORK FY14 JAN-JUN-FLOYDS FORK	SCAPCREDIT		662
	12/30/2014	SC1082519	MAINTENANCE WORK FY15 JUL-DEC-FLOYDS FORK	SCAPCREDIT		1,318
	2/18/2015	13LE1062	SPEEDWAY #9451	LAT EXT	540	-1,175
	6/30/2015	SC1003809	BERRY TOWN WQTC I/I REMEDIATION FY14	SCAPCREDIT		116,834
		SC1082520	MAINTENANCE WORK FY15 JAN-JUN-FLOYDS FORK	SCAPCREDIT		661
	11/6/2015	SC1003723	MIDDLETOWN SSR P2S2 I/I REMEDIATION	SCAPCREDIT		102
	12/30/2015	SC1082521	MAINTENANCE WORK FY16 JUL-DEC-FLOYDS FORK	SCAPCREDIT		659
	1/7/2016	LE941673	Locust Creek Section 8B	LAT EXT	2,000	-4,350
	6/30/2016	SC1082523	MAINTENANCE WORK FY16 JAN-JUN-FLOYDS FORK	SCAPCREDIT		3,578
	7/7/2016	SC1003331	CONTRACTED WORK FY16 - FLOYDS FORK	SCAPCREDIT		35
	9/20/2016	LE932677	Shakes Run Sec 9	LAT EXT	12,000	-26,100
	12/30/2016	SC1082524	MAINTENANCE WORK FY17 JUL-DEC-FLOYDS FORK	SCAPCREDIT		1,804
	1/4/2017	LE945783	Urton Woods, Section 2B	LAT EXT	17,200	-37,410
	1/6/2017	LE983784	Catalpa Farms Subdivision	LAT EXT	16,000	-34,800
	2/27/2017	LE971261	Notting Hills Section 4 and Clubhouse	LAT EXT	10,400	-22,620
	6/30/2017	SC1082525	MAINTENANCE WORK FY17 JAN-JUN-FLOYDS FORK	SCAPCREDIT		1,320

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	12/30/2017	SC1082526	MAINTENANCE WORK FY18 JUL-DEC-FLOYDS FORK	SCAPCREDIT		6,158
	1/7/2019	LE1039193	Glen Lakes Section 4 - Phase 3	LAT EXT	16,400	-35,670
	10/21/2019	LE1050932	Courtyard at Curry Farms Section 1	LAT EXT	17,000	-36,975
Floyds Fork Total						94,712
Hite Creek	5/15/2006	SC1006307	CONTRACTED WORK FY06 - HITE CREEK	SCAPCREDIT		656
	11/1/2008	235561	MAINTENANCE WORK FY06 AUG-FY09 NOV - HITE CREEK	SCAPCREDIT		6,404
	12/31/2008	362641	MAINTENANCE WORK FY09A - HITE CREEK	SCAPCREDIT		2
	6/1/2009	SC1006214	CONTRACTED WORK FY09 - HITE CREEK	SCAPCREDIT		328
	6/30/2009	362648	MAINTENANCE WORK FY09B - HITE CREEK	SCAPCREDIT		7
	12/31/2009	362652	MAINTENANCE WORK FY10A - HITE CREEK	SCAPCREDIT		10
	6/30/2010	362657	MAINTENANCE WORK FY10B - HITE CREEK	SCAPCREDIT		332
	12/17/2010	320906	FLOYDSBURG ROAD I/I REHABILITA	SCAPCREDIT		28,437
	12/31/2010	362662	MAINTENANCE WORK FY11A - HITE CREEK	SCAPCREDIT		9
	6/30/2011	362670	MAINTENANCE WORK FY11B - HITE CREEK	SCAPCREDIT		9
	9/7/2011	SC1011058	Meadow Stream Pump Station & Force Main Expansion	SCAPCREDIT		2,304,000
	9/28/2011	246638	CHAPMAN COURT S/S	LAT EXT	800	-1,740
	12/31/2011	362675	MAINTENANCE WORK FY12A - HITE CREEK	SCAPCREDIT		340
	6/30/2012	362679	MAINTENANCE WORK FY12B - HITE CREEK	SCAPCREDIT		5,007
	8/31/2012	290181	CAMDEN WOOD APARTMENTS	LAT EXT	12,400	-26,970
	12/1/2012	304536	MAGNOLIA SPRINGS EAST PRIV P/S	LAT EXT	9,500	-20,663
	12/7/2012	335610	ROCK SPRINGS FARM SEC 4B	LAT EXT	6,400	-13,920
	12/31/2012	362684	MAINTENANCE WORK FY13A - HITE CREEK	SCAPCREDIT		7
	4/11/2013	SC1005530	CONTRACTED WORK FY13 - HITE CREEK	SCAPCREDIT		1,442
	6/30/2013	SC1082527	MAINTENANCE WORK FY13 JAN-JUN-HITE CREEK	SCAPCREDIT		967
	12/30/2013	SC1082528	MAINTENANCE WORK FY14 JUL-DEC-HITE CREEK	SCAPCREDIT		3,211
	6/30/2014	SC1082529	MAINTENANCE WORK FY14 JAN-JUNE-HITE CREEK	SCAPCREDIT		2,207
	12/30/2014	SC1082530	MAINTENANCE WORK FY15 JUL-DEC-HITE CREEK	SCAPCREDIT		360
	1/27/2015	SC1006178	CONTRACTED WORK FY14 - HITE CREEK	SCAPCREDIT		77,660
	3/13/2015	SC983697	MEADOWSTREAM REHABILITATION - FY13	SCAPCREDIT		448,447
	6/30/2015	SC1082531	MAINTENANCE WORK FY15 JAN-JUN-HITE CREEK	SCAPCREDIT		124
	12/30/2015	SC1082532	MAINTENANCE WORK FY16 JUL-DEC-HITE CREEK	SCAPCREDIT		1,191
	6/30/2016	SC1082533	MAINTENANCE WORK FY16 JAN-JUN-HITE CREEK	SCAPCREDIT		336
	9/13/2016	LE943178	Rock Springs Farm Section 5A	LAT EXT	6,800	-14,790
	10/26/2016	SC1006192	CONTRACTED WORK FY15 - HITE CREEK	SCAPCREDIT		1
	12/30/2016	SC1082534	MAINTENANCE WORK FY17 JUL-DEC-HITE CREEK	SCAPCREDIT		3,599
	3/17/2017	LE971406	Old Henry Business Park	LAT EXT	930	-2,023
	6/30/2017	SC1082535	MAINTENANCE WORK FY17 JAN-JUN-HITE CREEK	SCAPCREDIT		4,109
	12/30/2017	SC1082536	MAINTENANCE WORK FY18 JUL-DEC-HITE CREEK	SCAPCREDIT		6,823
	11/18/2019	LE1103150	Anchorage Plaza II Phase II	LAT EXT	2,300	-5,003
Hite Creek Total						2,810,916
J'Town	11/1/2008	235563	MAINTENANCE WORK FY06 AUG-FY09 NOV - JEFFERSONTOWN	SCAPCREDIT		6,203
	12/31/2008	359323	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		4,000
	8/10/2010	254871	LAKE SIDE BAPT CHURCH PRIV PS	LAT EXT	2,500	-5,438

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	8/11/2011	340213	JEFFERSONTOWN ENG REHAB	SCAPCREDIT		997,448
	12/31/2011	359324	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		4,000
	12/31/2012	14SC1002	MAINTENANCE WORK FY13A - JEFFERSONTOWN	SCAPCREDIT		3,490
	5/28/2013	337261	SINGLE FAMILY 2909 PELHAM CT	LAT EXT	400	-870
	6/28/2013	13LE1010	SWOPE HR & TRAINING BLDG	LAT EXT	400	-870
	10/25/2013	13LE1092	BALE EQUIPMENT	LAT EXT	450	-979
	2/27/2014	13LE1098	UNIPAK	LAT EXT	720	-1,566
	12/31/2014	13LE1067	PARK COMMUNITY	LAT EXT	2,220	-4,829
	2/1/2016	14LE1149	Grand Lakes Section 3	LAT EXT	5,600	-12,180
	3/10/2016	LE924049	Blankenbaker Road S/S	LAT EXT	9,010	-19,597
	5/4/2016	326360	WATTERSON TRAIL CENTER	LAT EXT	2,745	-5,970
	6/21/2016	LE930127	Vantage Point Sec 3B	LAT EXT	7,200	-15,660
	7/28/2016	13LE1158	GOODWILL INDUSTRIES OF KENTUCKY	LAT EXT	400	-870
	11/8/2016	14LE1148	Grand Lakes Section 2	LAT EXT	4,400	-9,570
	3/23/2017	LE926081	Monticello Manors Sec 2	LAT EXT	7,600	-16,530
	3/31/2017	LE967619	Louis F. Zoeller, Jr Minor Plat	LAT EXT	400	-870
J'Town Total						919,342
Mill Creek	12/31/2005	359380	CALENDAR 2005 DOWNSPOUT CREDIT	SCAPCREDIT		12,000
	12/31/2007	359381	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		24,000
	11/1/2008	235568	MAINTENANCE WORK FY06 AUG-FY09 NOV - MILL CREEK	SCAPCREDIT		51,530
	12/31/2008	359382	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		16,000
		362642	MAINTENANCE WORK FY09A - MILL CREEK	SCAPCREDIT		93
	6/30/2009	362649	MAINTENANCE WORK FY09B - MILL CREEK	SCAPCREDIT		1,507
	9/9/2009	236614	DEVEROES	LAT EXT	960	-2,088
	12/31/2009	359383	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		32,000
		362653	MAINTENANCE WORK FY10A - MILL CREEK	SCAPCREDIT		25,272
	1/6/2010	253586	KINGSFORD RETAIL CENTER	LAT EXT	480	-1,044
	4/28/2010	238421	6840 DIXIE HWY OUTLOT	LAT EXT	2,100	-4,568
	6/30/2010	362658	MAINTENANCE WORK FY10B - MILL CREEK	SCAPCREDIT		6,216
	7/2/2010	259408	FAMILY DOLLAR 5105 DIXIE	LAT EXT	1,200	-2,610
	7/23/2010	264294	SAINT PETER THE APOSTLE CATHOL	LAT EXT	2,000	-4,350
	10/12/2010	276215	FAMILY DOLLAR - KRISTIN WAY	LAT EXT	400	-870
	12/31/2010	359325	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		8,000
		359384	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		4,000
		362664	MAINTENANCE WORK FY11A - MILL CREEK	SCAPCREDIT		22,745
	6/30/2011	320916	SONNE AVE PS REHABILITATION -	SCAPCREDIT		120,800
		362671	MAINTENANCE WORK FY11B - MILL CREEK	SCAPCREDIT		11,745
	10/4/2011	299399	FAMILY DOLLAR - GREENWOOD RD	LAT EXT	800	-1,740
	11/9/2011	309018	PRP PERFORMING ARTS ADDITION	LAT EXT	1,134	-2,466
	12/31/2011	359326	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12,000
		359385	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12,000
		362676	MAINTENANCE WORK FY12A - MILL CREEK	SCAPCREDIT		4,800
	1/19/2012	318096	CRACKER BARREL OLD COUNTRY	LAT EXT	6,000	-13,050
	3/16/2012	SC1005678	CONTRACTED WORK FY12 - MILL CREEK	SCAPCREDIT		22
	5/21/2012	262545	DIXIE MANOR SHOPPING CENTER	LAT EXT	965	-2,099
	6/26/2012	300374	FORT KNOX FEDERAL CREDIT UNION	LAT EXT	400	-870
	6/30/2012	361693	FY12 MILL CREEK REHAB	SCAPCREDIT		81,675

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		362680	MAINTENANCE WORK FY12B - MILL CREEK	SCAPCREDIT		4,133
	7/24/2012	231800	PIONEER MOBILE HOME PARK	LAT EXT	11,200	-24,360
	9/18/2012	237457	WAVERLY HILLS	LAT EXT	400	-870
	10/19/2012	341883	NHK SPRING PRECISION	LAT EXT	17,800	-38,715
	12/5/2012	334997	BEECHLAND BAPTIST CHURCH	LAT EXT	2,715	-5,905
	12/31/2012	359327	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		148,000
		359386	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		4,000
		362685	MAINTENANCE WORK FY13A - MILL CREEK	SCAPCREDIT		22,996
	1/18/2013	343763	SOUTHEAST CHRISTIAN CHURCH SW	LAT EXT	6,000	-13,050
	3/20/2013	224875	ASHBY GREEN APARTMENT HOMES	LAT EXT	36,400	-79,170
	6/6/2013	265944	RIVERPORT PHASE 4A - MICHELIN	LAT EXT	400	-870
	6/30/2013	SC1082559	MAINTENANCE WORK FY13 JAN-JUN-MILL CREEK	SCAPCREDIT		32,425
	9/10/2013	314887	DAYTON FREIGHT	LAT EXT	1,200	-2,610
	9/26/2013	13LE1014	LOUISVILLE FREE PUBLIC LIBRARY SOUTHWEST	LAT EXT	8,200	-17,835
	10/3/2013	357140	FAMILY DOLLAR CANE RUN ROAD	LAT EXT	832	-1,810
	12/30/2013	SC1082560	MAINTENANCE WORK FY14 JUL-DEC-MILL CREEK	SCAPCREDIT		11,451
	1/29/2014	13LE1171	SINGLE FAMILY HOME 3700 ROMANIA DR	LAT EXT	400	-870
	6/30/2014	SC1082562	MAINTENANCE WORK FY14 JAN-JUN-MILL CREEK	SCAPCREDIT		7,753
	12/30/2014	SC1082563	MAINTENANCE WORK FY15 JUL-DEC-MILL CREEK	SCAPCREDIT		4,491
	3/10/2015	SC1005536	ROSA TERRACE I/I REHABILITATION FY13	SCAPCREDIT		156,635
	6/30/2015	SC1082564	MAINTENANCE WORK FY15 JAN-JUN-MILL CREEK	SCAPCREDIT		4,861
	7/31/2015	SC1003690	CONTRACTED WORK FY15 - MILL CREEK	SCAPCREDIT		58
	12/30/2015	SC1082565	MAINTENANCE WORK FY16 JUL-DEC-MILL CREEK	SCAPCREDIT		6,692
	6/30/2016	SC1082566	MAINTENANCE WORK FY16 JAN-JUN-MILL CREEK	SCAPCREDIT		3,523
	7/28/2016	LE944727	Britz Deer Hollow Lane	LAT EXT	800	-1,740
	12/30/2016	SC1082567	MAINTENANCE WORK FY17 JUL-DEC-MILL CREEK	SCAPCREDIT		12,857
	6/30/2017	SC1082568	MAINTENANCE WORK FY17 JAN-JUN-MILL CREEK	SCAPCREDIT		5,103
	12/30/2017	SC1082569	MAINTENANCE WORK FY18 JUL-DEC-MILL CREEK	SCAPCREDIT		27,293
	4/10/2019	LE995375	1105 Dorsey lane	LAT EXT	10,300	-22,403
	10/31/2019	LE1039415	Delcour Multi-Family Apartments	LAT EXT	60,400	-131,370
Mill Creek Total						521,343
Middle Fork	12/31/2007	359328	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		20,000
		359400	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		84,000
	11/1/2008	235566	MAINTENANCE WORK FY06 AUG-FY09 NOV - MOIDDLE FORK	SCAPCREDIT		43,779
	12/31/2008	359329	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		8,000
		SC1011287	MAINTENANCE WORK FY09A - MIDDLE FORK	SCAPCREDIT		13
	1/16/2009	236517	ANCHOR ESTATES MH REHAB	SCAPCREDIT		15,552
	3/30/2009	217235	SINKING FORK ICA PHASE I REHAB	SCAPCREDIT		437,967
	5/15/2009	235376	MIDDLE FORK INT REHAB PH1	SCAPCREDIT		487,744
	5/26/2009	179246	SHADY GLEN OF LYNDON PERSONAL	LAT EXT	(500)	1,088
	6/30/2009	SC1011288	MAINTENANCE WORK FY09B - MIDDLE FORK	SCAPCREDIT		4,208
	11/4/2009	250572	1316 WITAWANGA AVE	LAT EXT	400	-870
	12/31/2009	359331	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		24,000
		359401	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		4,000
		SC1011290	MAINTENANCE WORK FY10A - MIDDLE FORK	SCAPCREDIT		50
	3/16/2010	197432	ALMOST HOME KENNELS - ALL PET	LAT EXT	3,700	-8,048
	4/15/2010	260064	OXMOOR GOLF FRONT 9	LAT EXT	400	-870

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		260065	OXMOOR GOLF BACK 9	LAT EXT	400	-870
	4/27/2010	229834	THE BROOK HOS- DUPONT ADDITION	LAT EXT	1,763	-3,835
	6/30/2010	SC1011292	MAINTENANCE WORK FY10B - MIDDLE FORK	SCAPCREDIT		1,113
	7/2/2010	265723	Z-XPRESS CAR WASH	LAT EXT	5,449	-11,852
	7/14/2010	255792	HERR LANE APARTMENTS - 8 PLEX	LAT EXT	2,400	-5,220
		255793	HERR LANE APARTMENTS - 4 PLEX	LAT EXT	1,200	-2,610
	9/9/2010	274303	FARM CREDIT SERVICES	LAT EXT	525	-1,142
	12/15/2010	278015	METROPOLITAN UROLOGY	LAT EXT	400	-870
	12/31/2010	359333	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12,000
		359402	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		8,000
		SC1011293	MAINTENANCE WORK FY11A - MIDDLE FORK	SCAPCREDIT		1,205
	1/20/2011	285637	SHELBYHURST OFFICE BUILDING 1	LAT EXT	6,600	-14,355
	1/27/2011	313465	DORSEY POINTE/CODOMINIUMS 8-13	LAT EXT	2,400	-5,220
	4/14/2011	291263	BROWNS LANE BUILDING	LAT EXT	400	-870
	6/14/2011	293400	FOUR PLEX APARTMENTS	LAT EXT	1,200	-2,610
	6/30/2011	SC1011294	MAINTENANCE WORK FY11B - MIDDLE FORK	SCAPCREDIT		7,183
	8/11/2011	330019	FY11 ANCHOR ESTATES REHAB	SCAPCREDIT		1,359
	10/31/2011	310046	EL NAPEL - MCMAHAN CENTER	LAT EXT	3,100	-6,743
	11/29/2011	314591	CHOCOLATE MARTINI BAR/REST	LAT EXT	3,275	-7,123
	12/27/2011	320983	HURSTBOURNE I/I INVESTIGATION	SCAPCREDIT		1,408,279
	12/31/2011	359335	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		16,000
		SC1011295	MAINTENANCE WORK FY12A - MIDDLE FORK	SCAPCREDIT		919
	2/15/2012	321228	SINGLE FAMILY UNIT	LAT EXT	400	-870
	3/16/2012	SC1005671	CONTRACTED WORK FY12 - MIDDLE FORK	SCAPCREDIT		7,305
	3/27/2012	321647	SINGLE FAMILY	LAT EXT	400	-870
	6/22/2012	328074	SINGLE FAMILY-703 FOUNTAIN AVE	LAT EXT	400	-870
	6/30/2012	SC1011297	MAINTENANCE WORK FY12B - MIDDLE FORK	SCAPCREDIT		949
	8/20/2012	193195	CEDAR LAKE LODGE WASHBURN	LAT EXT	1,900	-4,133
	8/23/2012	320923	ST MATTHEWS I/I REHABILITATION	SCAPCREDIT		20,841
	9/5/2012	337796	CHAMPPS	LAT EXT	635	-1,381
	12/28/2012	347126	ADVANCE PRODUCTION SYSTEMS	LAT EXT	400	-870
	12/31/2012	14SC1003	MAINTENANCE WORK FY13A - MIDDLE FORK	SCAPCREDIT		3,309
		359336	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		92,000
	1/4/2013	339367	BAPTIST RADIATION ONCOLOGY	LAT EXT	1,500	-3,263
	1/16/2013	340778	PANDA RESTAURANT	LAT EXT	1,725	-3,752
	2/4/2013	328659	SINGLE FAMILY HOME - 6911 AMBR	LAT EXT	400	-870
	2/20/2013	352805	POOL HOUSE 9213 REIGATE COURT	LAT EXT	200	-435
	3/19/2013	14LE1001	MIRANDA LAGRANGE RD	LAT EXT	400	-870
	3/20/2013	350246	SINGLE FAMILY - 218 BLISS AVE	LAT EXT	400	-870
	3/26/2013	349974	SINGLE FAMILY 205 N WATTERSON	LAT EXT	400	-870
	4/15/2013	342433	SHELBYHURST 700 OFFICE BLDG	LAT EXT	7,500	-16,313
	4/16/2013	350340	JARED THE GALLERY OF JEWELRY	LAT EXT	770	-1,675
	5/30/2013	SC1005532	CONTRACTED WORK FY13 - MIDDLE FORK	SCAPCREDIT		6,480
	6/7/2013	13LE1009	Single family 11716 Wetherby Ave	LAT EXT	400	-870
	6/30/2013	SC1082545	MAINTENANCE WORK FY13 JAN-JUN-MIDDLE FORK BEARGRAS	SCAPCREDIT		6,989
	8/28/2013	13LE1001	Single Family 835 Fountain Ave	LAT EXT	400	-870
	9/10/2013	355162	PROPOSED RESTAURANT	LAT EXT	7,540	-16,400

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	9/30/2013	13LE1045	SINGLE FAMILY 8325 WHIPPS MILL RD	LAT EXT	400	-870
	10/22/2013	319292	WATERMARK ON HURSTBOURNE	LAT EXT	71,600	-155,730
	10/28/2013	331542	DENTAL/MEDICAL OFFICE BLDG	LAT EXT	400	-870
	11/5/2013	13LE1128	SINGLE FAMILY HOME 1327 ETAWAH AVE	LAT EXT	400	-870
		13LE1144	SINGLE FAMILY 1329 ETAWAH AVE	LAT EXT	400	-870
	11/25/2013	13LE1165	SINGLE FAMILY 8504 LORE LANE	LAT EXT	400	-870
	11/26/2013	13LE1146	CITY OF ST MATTHEWS COMMUNITY CTR PARK RESTROOM	LAT EXT	1,500	-3,263
	12/11/2013	13LE1099	NICKLIES - ST MATTHEWS	LAT EXT	1,920	-4,176
	12/18/2013	353963	DORSEY COMMONS TRACTS 1,2,3	LAT EXT	4,335	-9,429
	12/30/2013	SC1082546	MAINTENANCE WORK FY14 JUL-DEC-MIDDLE FORK BEARGRAS	SCAPCREDIT		91,183
	12/31/2013	352026	MCMAHAN PLAZA PHASE II BLDG B	LAT EXT	766	-1,666
	4/10/2014	13LE1117	THE VININGS	LAT EXT	850	-1,849
	6/30/2014	14LE1128	WALDORF SCHOOL OF LOUISVILLE	LAT EXT	400	-870
		SC1082547	MAINTENANCE WORK FY14 JAN-JUN-MIDDLE FORK BEARGRAS	SCAPCREDIT		4,404
	12/30/2014	SC1082548	MAINTENANCE WORK FY15 JUL-DEC-MIDDLE FORK BEARGRAS	SCAPCREDIT		3,664
	2/10/2015	SC1006201	GOOSE CREEK PLANTATION I/I REHABILITATION FY14	SCAPCREDIT		163,919
	2/11/2015	SC1006179	CONTRACTED WORK FY14 - MIDDLE FORK	SCAPCREDIT		15,043
	6/30/2015	SC1082549	MAINTENANCE WORK FY15 JAN-JUN-MIDDLE FORK BEARGRAS	SCAPCREDIT		2,568
	12/30/2015	SC1082550	MAINTENANCE WORK FY16 JUL-DEC-MIDDLE FORK BEARGRAS	SCAPCREDIT		15,216
	6/8/2016	LE939199	Westport Road Apartments	LAT EXT	62,800	-136,590
	6/30/2016	SC1082552	MAINTENANCE WORK FY16 JAN-JUN-MIDDLE FORK BEARGRAS	SCAPCREDIT		3,573
	8/30/2016	LE971405	Lyndon Lane Office Condos	LAT EXT	2,652	-5,768
	10/18/2016	SC1003387	CONTRACTED WORK FY16 - MIDDLE FORK	SCAPCREDIT		91,264
	10/24/2016	SC1006194	CONTRACTED WORK FY15 - MIDDLE FORK	SCAPCREDIT		3
	12/20/2016	LE938563	The Paddock at Sawyer Park	LAT EXT	99,800	-217,065
	12/30/2016	SC1082554	MAINTENANCE WORK FY17 JUL-DEC-MIDDLE FORK BEARGRAS	SCAPCREDIT		2,385
	5/9/2017	LE1005641	City of Anchorage Sewer Extension	LAT EXT	800	-1,740
	6/30/2017	SC1082555	MAINTENANCE WORK FY17 JAN-JUN-MIDDLE FORK BEARGRAS	SCAPCREDIT		3,799
	12/30/2017	SC1082557	MAINTENANCE WORK FY18 JUL-DEC-MIDDLE FORK BEARGRAS	SCAPCREDIT		5,851
	2/19/2018	LE1017531	526 & 528 Fountain Ave	LAT EXT	800	-1,740
	9/7/2018	166053	616 & 618 FOUNTAIN AVE S/S	LAT EXT	1,600	-3,480
	7/26/2019	LE1020250	LFPL - Northeast Regional Library	LAT EXT	800	-1,740
		LE1024084	Morat Avenue Apartments	LAT EXT	63,200	-137,460
	11/4/2019	LE1083952	1700 Cold Spring Rd & 12004 Osage Rd	LAT EXT	800	-1,740
	12/2/2019	LE1056406	Stewart Condos	LAT EXT	4,500	-9,788
Middle Fork Total						2,299,600
Northern Ditch	12/31/2007	359404	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		28,000
	11/1/2008	235569	MAINTENANCE WORK FY06 AUG-FY09 NOV - NORTHERN DIT	SCAPCREDIT		11,147

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	11/25/2008	236363	NORTHERN DITCH INT REHAB PH1	SCAPCREDIT		108,760
	12/31/2008	SC1011338	MAINTENANCE WORK FY09A - NORTHERN DITCH	SCAPCREDIT		11
	6/30/2009	SC1011339	MAINTENANCE WORK FY09B - NORTHERN DITCH	SCAPCREDIT		1,884
	12/31/2009	359339	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		SC1011340	MAINTENANCE WORK FY10A - NORTHERN DITCH	SCAPCREDIT		1,177
	3/5/2010	234678	THE LIGHTHOUSE PROMISE COMPLEX	LAT EXT	2,825	-6,144
	6/30/2010	SC1011343	MAINTENANCE WORK FY10B - NORTHERN DITCH	SCAPCREDIT		2,532
	12/21/2010	284728	SUBWAY - NEW CUT RD	LAT EXT	1,314	-2,858
	12/31/2010	359340	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		SC1011344	MAINTENANCE WORK FY11A - NORTHERN DITCH	SCAPCREDIT		2,456
	6/28/2011	320908	PARKVIEW ESTATES REHABILITATIO	SCAPCREDIT		36
	6/30/2011	SC1011345	MAINTENANCE WORK FY11B - NORTHERN DITCH	SCAPCREDIT		1,989
	11/11/2011	312810	WILLOW PLACE APT COMMUNITY CEN	LAT EXT	400	-870
	12/31/2011	359341	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		24,000
		359405	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12,000
		SC1011346	MAINTENANCE WORK FY12A - NORTHERN DITCH	SCAPCREDIT		911
	1/26/2012	315723	JCPS EARLY CHILDHOOD DEVELOP	LAT EXT	6,000	-13,050
	3/21/2012	312057	DOLLAR GENERAL - MEDALLION CT	LAT EXT	400	-870
	6/30/2012	SC1011336	MAINTENANCE WORK FY12B - NORTHERN DITCH	SCAPCREDIT		7,893
	8/20/2012	312659	KROGER L-350 FUEL STATION	LAT EXT	400	-870
	12/31/2012	14SC1004	MAINTENANCE WORK FY13A - NORTHERN DITCH	SCAPCREDIT		4,239
		359343	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		24,000
	6/30/2013	SC1082570	MAINTENANCE WORK FY13 JAN-JUN-NORTH DITCH	SCAPCREDIT		6,459
	12/5/2013	13LE1147	CARLON ROOFING	LAT EXT	992	-2,158
	12/12/2013	13LE1126	JENNINGS CROSSING TRACT 3	LAT EXT	2,100	-4,568
	12/30/2013	SC1082571	MAINTENANCE WORK FY14 JUL-DEC-NORTH DITCH	SCAPCREDIT		2,707
	6/30/2014	SC1082572	MAINTENANCE WORK FY14 JAN-JUN-NORTH DITCH	SCAPCREDIT		9,044
	10/21/2014	SC1006180	CONTRACTED WORK FY14 - NORTHERN DITCH	SCAPCREDIT		5
	12/30/2014	SC1082573	MAINTENANCE WORK FY15 JUL-DEC-NORTH DITCH	SCAPCREDIT		8,330
	6/30/2015	SC1082575	MAINTENANCE WORK FY15 JAN-JUN-NORTH DITCH	SCAPCREDIT		5,564
	12/30/2015	SC1082576	MAINTENANCE WORK FY16 JUL-DEC-NORTH DITCH	SCAPCREDIT		6,074
	6/30/2016	SC1082577	MAINTENANCE WORK FY16 JAN-JUN-NORTH DITCH	SCAPCREDIT		5,519
	12/30/2016	SC1082578	MAINTENANCE WORK FY17 JUL-DEC-NORTH DITCH	SCAPCREDIT		9,266
	6/30/2017	SC1082579	MAINTENANCE WORK FY17 JAN-JUN-NORTH DITCH	SCAPCREDIT		6,441
	12/30/2017	SC1082580	MAINTENANCE WORK FY18 JUL-DEC-NORTH DITCH	SCAPCREDIT		7,810
Northern Ditch Total						274,866
ORFM	12/31/2007	359344	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		359433	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		56,000
	11/1/2008	235572	MAINTENANCE WORK FY06 AUG-FY09 NOV - ORFM	SCAPCREDIT		19,826

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	12/31/2008	362643	MAINTENANCE WORK FY09A - ORFM	SCAPCREDIT		2
	6/30/2009	362650	MAINTENANCE WORK FY09B - ORFM	SCAPCREDIT		3,835
	12/31/2009	362654	MAINTENANCE WORK FY10A - ORFM	SCAPCREDIT		7,330
	5/18/2010	263548	SINGLE FAMILY CONNECTION	LAT EXT	400	-870
	6/28/2010	213488	NORTHEAST CHRISTIAN CHURCH	LAT EXT	10,000	-21,750
	6/30/2010	362660	MAINTENANCE WORK FY10B - ORFM	SCAPCREDIT		6,773
	8/30/2010	254919	TRILOGY HEALTH SERVICES, LLC	LAT EXT	8,200	-17,835
	12/31/2010	362665	MAINTENANCE WORK FY11A - ORFM	SCAPCREDIT		181
	6/30/2011	362672	MAINTENANCE WORK FY11B - ORFM	SCAPCREDIT		4,139
	9/20/2011	280837	SPRINGHURST TOWNE CTR LOT C	LAT EXT	400	-870
	9/30/2011	320920	SHADOW WOOD I/I REHABILITATION	SCAPCREDIT		14,279
	10/14/2011	311412	SPRINGHURST CHEVROLET	LAT EXT	855	-1,860
	12/31/2011	359345	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		16,000
		359434	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		16,000
		362677	MAINTENANCE WORK FY12A - ORFM	SCAPCREDIT		7,268
	3/1/2012	320921	DERINGTON COURT I/I REHABILITA	SCAPCREDIT		56,208
	3/5/2012	187028	GLENVIEW PARK SUBD SECTION 1	LAT EXT	4,400	-9,570
		213450	GLENVIEW PARK SUB, SEC 2	LAT EXT	5,600	-12,180
	3/12/2012	322455	FIRST LADY NAILS	LAT EXT	400	-870
	6/30/2012	362681	MAINTENANCE WORK FY12B - ORFM	SCAPCREDIT		19,941
		SC1011315	MAINTENANCE WORK FY12B - ORFM	SCAPCREDIT		19,941
	7/5/2012	292239	SPRINGHURST RESTAURANT/ RETAIL	LAT EXT	3,440	-7,482
	12/11/2012	323821	TIRE DISCOUNTERS WESTPORT RD	LAT EXT	400	-870
	12/18/2012	341319	RAISING CANES RETAIL CENTER	LAT EXT	1,225	-2,664
		363238	FY13 PROSPECT MANHOLE REHAB	SCAPCREDIT		72,703
	12/31/2012	359346	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		24,000
		362686	MAINTENANCE WORK FY13A - ORFM	SCAPCREDIT		1,161
		363235	FY13 MUDDY FORK MH REHAB	SCAPCREDIT		41,653
	3/12/2013	322458	KROGER L-707 STORE EXPANSION	LAT EXT	400	-870
	5/13/2013	360262	SINGLE FAMILY 3419 HILLVALE RD	LAT EXT	400	-870
	6/21/2013	343729	RETAIL & RESTAURANT	LAT EXT	3,500	-7,613
	6/30/2013	SC1082581	MAINTENANCE WORK FY13 JAN-JUN-OHIO RIVER FORCE MAI	SCAPCREDIT		279
	11/7/2013	334154	GLENVIEW PARK SUBD SEC 4	LAT EXT	3,600	-7,830
	12/30/2013	SC1082582	MAINTENANCE WORK FY14 JUL-DEC-OHIO RIVER FORCE MAI	SCAPCREDIT		1,302
	12/31/2013	13LE1024	Overlook at Beech Spring Farm Sec 4	LAT EXT	5,600	-12,180
	3/11/2014	199896	SPRINGDALE OFFICE BUILDING	LAT EXT	4,210	-9,157
	5/16/2014	225863	SPRING FARM LAKES SEC 1	LAT EXT	4,800	-10,440
	6/30/2014	SC1082583	MAINTENANCE WORK FY14 JAN-JUN-OHIO RIVER FORCE MAI	SCAPCREDIT		1,293
	9/22/2014	177756	SUMMIT GARDENS PHASE 1	LAT EXT	32,000	-69,600
	11/10/2014	14LE1121	Riverside Sewer Extension	LAT EXT	1,200	-2,610
	12/30/2014	SC1082584	MAINTENANCE WORK FY15 JUL-DEC-OHIO RIVER FORCE MAI	SCAPCREDIT		4,394
	12/31/2014	SC1006181	CONTRACTED WORK FY14 - ORFM	SCAPCREDIT		1,654
	1/16/2015	13LE1071	SPRING FARM LAKE SEC 2	LAT EXT	6,000	-13,050
	2/12/2015	352634	BAUER PROPERTY	LAT EXT	2,920	-6,351

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	6/30/2015	SC1082585	MAINTENANCE WORK FY15 JAN-JUN-OHIO RIVER FORCE MAI	SCAPCREDIT		2,547
	7/12/2015	SC983704	PROSPECT I&I REHABILITATION - FY13 PHASE IA	SCAPCREDIT		1,034,758
	8/5/2015	SC1003730	RIVER ROAD I/I REMEDIATION	SCAPCREDIT		120,418
	10/21/2015	LE929244	Summit Gardens Phase 2	LAT EXT	18,000	-39,150
	11/19/2015	SC1006195	CONTRACTED WORK FY15 - ORFM	SCAPCREDIT		1
	12/14/2015	LE938166	Spring Farm Lake Section 3	LAT EXT	3,200	-6,960
	12/30/2015	SC1082586	MAINTENANCE WORK FY16 JUL-DEC-OHIO RIVER FORCE MAI	SCAPCREDIT		1,478
	6/30/2016	SC1082587	MAINTENANCE WORK FY16 JAN-JUN-OHIO RIVER FORCE MAI	SCAPCREDIT		460
		SC1082589	MAINTENANCE WORK FY17 JUL-DEC-OHIO RIVER FORCE MAI	SCAPCREDIT		3,171
	8/10/2016	SC1003696	CONTRACTED WORK FY16 - ORFM	SCAPCREDIT		17,566
	10/6/2016	SC1003728	PROSPECT I&I REHABILITATION - FY16 PHASE IB	SCAPCREDIT		199,036
	11/16/2016	LE923204	Indian Springs Hotel	LAT EXT	13,000	-28,275
	6/30/2017	SC1082590	MAINTENANCE WORK FY17 JAN-JUN-OHIO RIVER FORCE MAI	SCAPCREDIT		1,630
	12/30/2017	SC1082592	MAINTENANCE WORK FY18 JUL-DEC-OHIO RIVER FORCE MAI	SCAPCREDIT		3,330
	12/6/2019	LE971285	Cityscape - Simcoe Lane	LAT EXT	66,700	-145,073
ORFM Total						1,347,707
Pond Creek	11/1/2008	235574	MAINTENANCE WORK FY06 AUG-FY09 NOV - POND CREEK	SCAPCREDIT		71,782
	12/31/2008	359347	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		359438	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		4,000
		SC1011298	MAINTENANCE WORK FY09A - POND CREEK	SCAPCREDIT		1,913
	6/30/2009	SC1011299	MAINTENANCE WORK FY09B - POND CREEK	SCAPCREDIT		6,403
	12/31/2009	359348	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		359439	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12,000
		SC1011305	MAINTENANCE WORK FY10A - POND CREEK	SCAPCREDIT		22,337
	2/17/2010	192513	BANNON CROSSINGS SECTION 3A-1	LAT EXT	800	-1,740
	3/26/2010	219734	DSL LIFE LONG LEARNING CENTER	LAT EXT	900	-1,958
	4/27/2010	261115	EMERGENCY RESTORATION	LAT EXT	400	-870
	6/30/2010	SC1011307	MAINTENANCE WORK FY10B - POND CREEK	SCAPCREDIT		11,060
	10/13/2010	276977	DADISMAN BUILDERS-POPLAR TREE	LAT EXT	400	-870
	12/1/2010	266833	THORNTONS @ PRESTON HWY	LAT EXT	400	-870
	12/29/2010	280751	NOTTINGTON HILLS SEC 1	LAT EXT	4,400	-9,570
	12/31/2010	359350	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12,000
		SC1011308	MAINTENANCE WORK FY11A - POND CREEK	SCAPCREDIT		19,773
	1/13/2011	187739	GLENGARRY INDUSTRIAL PARK	LAT EXT	4,300	-9,353
	3/21/2011	277777	TIRE DISCOUNTERS - BOERSTE WAY	LAT EXT	2,960	-6,438
	6/30/2011	SC1011309	MAINTENANCE WORK FY11B - POND CREEK	SCAPCREDIT		10,562
	9/14/2011	304408	UPS SUPPLY CHAIN SOLUTIONS #7	LAT EXT	2,250	-4,894
	9/27/2011	320918	EDSEL I/I REHABILITATION - FY1	SCAPCREDIT		106,700
	11/4/2011	313444	PLANET FITNESS - JEFF BLVD	LAT EXT	1,600	-3,480
	11/29/2011	312391	LONGHORN STEAKHOUSE RESTAURANT	LAT EXT	4,840	-10,527
	12/29/2011	320919	LANTANA I/I REHABILITATION - F	SCAPCREDIT		5,000
	12/31/2011	359351	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		20,000
		SC1011310	MAINTENANCE WORK FY12A - POND CREEK	SCAPCREDIT		5,380

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	2/28/2012	310845	ZAXBY'S RESTAURANT	LAT EXT	3,750	-8,156
	3/13/2012	255044	ISA-RECYCLING CENTER	LAT EXT	400	-870
	3/19/2012	312814	MILLER TRANSPORTATION	LAT EXT	1,800	-3,915
	4/16/2012	324554	NORTONS TEMPORARY OFFICE	LAT EXT	900	-1,958
	6/19/2012	234102	ETHOS AT VALLEY FARM SR LIVING	LAT EXT	7,050	-15,334
	6/21/2012	322367	SHEPHERDS CARE MEMORY HOME	LAT EXT	2,000	-4,350
	6/30/2012	SC1011313	MAINTENANCE WORK FY12B - POND CREEK	SCAPCREDIT		3,877
	8/6/2012	307332	LOUISVILLE INDUSTRIAL BLDG B	LAT EXT	2,520	-5,481
	8/10/2012	279860	BANNON CROSSINGS SEC 3B-2	LAT EXT	9,600	-20,880
		SC1005684	CONTRACTED WORK FY12 - POND CREEK	SCAPCREDIT		3,812
	8/13/2012	312053	DOLLAR GENERAL - CLEARWATER FA	LAT EXT	400	-870
	10/12/2012	343455	SINGLE FAMILY 1812 GREYLING DR	LAT EXT	400	-870
	11/9/2012	243109	OVERBROOK APARTMENTS	LAT EXT	41,200	-89,610
	12/31/2012	14SC1005	MAINTENANCE WORK FY13A - POND CREEK	SCAPCREDIT		25,984
		359354	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		56,000
	2/20/2013	329624	COPART	LAT EXT	400	-870
	5/2/2013	346082	ZAXBYS	LAT EXT	2,065	-4,491
	6/30/2013	320924	LEA ANN WAY INTERCEPTOR I&I RE	SCAPCREDIT		1,017,423
		SC1082593	MAINTENANCE WORK FY13 JAN-JUN-POND CREEK	SCAPCREDIT		41,995
	7/2/2013	335385	HARRISON LOW PRESSURE S/S	LAT EXT	1,600	-3,480
	7/12/2013	SC1005534	PICADILLY I/I REHABILITATION FY13	SCAPCREDIT		187,564
	8/16/2013	320940	4 RESIDENCE SFU 7821 MANSLICK	LAT EXT	400	-870
	8/27/2013	SC1005538	CONTRACTED WORK FY13 - POND CREEK	SCAPCREDIT		18,958
	9/6/2013	324886	PNC BANK	LAT EXT	400	-870
		361336	RENAISSANCE SOUTH BUSINESS	LAT EXT	540	-1,175
	9/26/2013	13LE1083	SINGLE FAMILY HOME 5402 (H) E MANSLICK RD	LAT EXT	400	-870
	11/12/2013	SC1005319	FEGENBUSH I/I REHABILITATION FY13	SCAPCREDIT		226,201
	12/9/2013	353125	PEGASUS TRANSPORTATION	LAT EXT	250	-544
	12/10/2013	308206	APPLGATE FARMS	LAT EXT	57,200	-124,410
		341439	PRESTON GARDENS APTS	LAT EXT	22,200	-48,285
	12/30/2013	SC1082594	MAINTENANCE WORK FY14 JUL-DEC-POND CREEK	SCAPCREDIT		19,491
	2/14/2014	13LE1179	TIMBERBEND SUBDIVISION SEC 5B	LAT EXT	6,400	-13,920
	4/10/2014	13LE1035	RENAISSANCE SOUTH BUSINESS PARK TRACT 4	LAT EXT	5,415	-11,778
	4/24/2014	348014	ASHTON PARK TOWN HOMES	LAT EXT	9,000	-19,575
	5/16/2014	280180	LOUISVILLE INDUSTRIAL CTR F	LAT EXT	2,480	-5,394
	5/28/2014	14LE1085	Williams Properties - Self Storage Facility	LAT EXT	400	-870
	6/9/2014	13LE1034	6300 GEIL LANE WAREHOUSE	LAT EXT	720	-1,566
	6/30/2014	SC1082595	MAINTENANCE WORK FY14 JAN-JUN-POND CREEK	SCAPCREDIT		14,457
	7/7/2014	284215	HURSTBOURNE POINTE APTS	LAT EXT	9,600	-20,880
	8/25/2014	344230	AUSTIN PARK APARTMENTS PH6	LAT EXT	27,600	-60,030
	11/13/2014	13LE1105	JEFFERSON COMMONS	LAT EXT	17,075	-37,138
	11/18/2014	SC1005323	FERN CREEK I/I REHABILITATION FY13	SCAPCREDIT		551,108
	12/30/2014	SC1082596	MAINTENANCE WORK FY15 JUL-DEC-POND CREEK	SCAPCREDIT		26,095
	1/13/2015	13LE1017	APEX ON PRESTON APT HOMES(Formerly CITYSCAPE APTS	LAT EXT	84,400	-183,570

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	3/10/2015	SC1005541	STONY BROOK I/I REHABILITATION FY13	SCAPCREDIT		345,397
	3/11/2015	SC995942	CAVEN AVE I/I REMEDIATION - FY13	SCAPCREDIT		225,645
	4/29/2015	354207	COOPER FARMS SEC 11B	LAT EXT	12,400	-26,970
		354209	COOPER FARMS SEC 11A	LAT EXT	13,200	-28,710
	6/30/2015	SC1082597	MAINTENANCE WORK FY15 JAN-JUN-POND CREEK	SCAPCREDIT		10,279
	8/25/2015	13LE1086	WOODS OF PENN RUN OFFSITE SS	LAT EXT	1,000	-2,175
	10/2/2015	13LE1140	JEFFERSON POST APARTMENTS	LAT EXT	28,800	-62,640
	12/30/2015	14LE1116	CATALPA SPRINGS	LAT EXT	2,800	-6,090
		SC1082598	MAINTENANCE WORK FY16 JUL-DEC-POND CREEK	SCAPCREDIT		13,994
	12/31/2015	SC939830	Lea Ann Way West Quad 1 & 2 Rehabilitation Project	SCAPCREDIT		445,911
	2/4/2016	13LE1056	MORNING POINTE AT HURSTBOURNE	LAT EXT	13,000	-28,275
	2/12/2016	358356	WOODS OF PENN RUN Section 1	LAT EXT	18,800	-40,890
	5/17/2016	SC1003699	CONTRACTED WORK FY16 - POND CREEK	SCAPCREDIT		36,063
	6/6/2016	LE936598	Jefferson Commerce Center Tract 1A	LAT EXT	5,250	-11,419
	6/21/2016	14LE1170	Austin Park Phase 7 & 8	LAT EXT	26,400	-57,420
		LE918484	AUSTIN PARK SS PHASE 8	LAT EXT	16,800	-36,540
	6/30/2016	SC1082599	MAINTENANCE WORK FY16 JAN-JUN-POND CREEK	SCAPCREDIT		12,650
	8/5/2016	SC1003087	HILLRIDGE I/I REMEDIATION	SCAPCREDIT		308,184
	8/31/2016	SC1003292	LEA ANN WAY WEST (LAWW) QUAD 3 I/I REMEDIATION	SCAPCREDIT		311,526
	10/24/2016	SC1006197	CONTRACTED WORK FY15 - POND CREEK	SCAPCREDIT		310
	10/26/2016	SC1006182	CONTRACTED WORK FY14 - POND CREEK	SCAPCREDIT		8,390
	10/31/2016	SC1005631	LEA ANN WAY WEST (LAWW) QUAD 4 I/I REHABILITATION	SCAPCREDIT		692,905
		SC1005639	SILVER HEIGHTS SEWER REHAB	SCAPCREDIT		284,936
	12/30/2016	SC1082601	MAINTENANCE WORK FY17 JUL-DEC-POND CREEK	SCAPCREDIT		14,699
	1/17/2017	LE942402	Preston Crossing Apartments	LAT EXT	46,400	-100,920
	2/2/2017	LE954229	Jefferson Commerce Center Bldg.2	LAT EXT	3,150	-6,851
	6/30/2017	SC1082602	MAINTENANCE WORK FY17 JAN-JUN-POND CREEK	SCAPCREDIT		14,076
	7/6/2017	LE967615	Cooper Farms Section 12	LAT EXT	21,200	-46,110
	12/30/2017	SC1082603	MAINTENANCE WORK FY18 JUL-DEC-POND CREEK	SCAPCREDIT		10,803
	6/30/2018	SC1096902	Admiral PS I/I Rehab FY17 FY18	SCAPCREDIT		977,768
	6/10/2019	LE1047077	Orell Station 1C	LAT EXT	10,400	-22,620
	7/10/2019	LE1053368	Ferndale Place Subdivision	LAT EXT	9,600	-20,880
	11/22/2019	LE1048948	Estates of St Anthony Sec 3	LAT EXT	4000	-8,700
Pond Creek Total						4,972,751
SE Diversion	12/31/2007	359355	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		8,000
		359440	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		128,000
	11/1/2008	235575	MAINTENANCE WORK FY06 AUG-FY09 NOV - SE DIVERSION	SCAPCREDIT		71,472
	12/22/2008	236214	GOLDSMITH BUECHB ICA PHI REHAB	SCAPCREDIT		314,808
		236296	BEARGRASS INT REHAB PH1 SEDIV	SCAPCREDIT		122,688
	12/31/2008	359356	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		359441	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		16,000

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CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
		SC1011317	MAINTENANCE WORK FY09A - SE DIVERSION	SCAPCREDIT		1,555
	6/30/2009	SC1011318	MAINTENANCE WORK FY09B - SE DIVERSION	SCAPCREDIT		2,929
	10/20/2009	229854	TINY HANDS DAYCARE	LAT EXT	1,225	-2,664
	12/31/2009	359357	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12,000
		359443	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		8,000
		SC1011322	MAINTENANCE WORK FY10A - SE DIVERSION	SCAPCREDIT		16,974
	2/11/2010	235291	SULLIVAN COLLEGE OF TECHNOLOGY	LAT EXT	900	-1,958
	3/1/2010	238328	LOUISVILLE COLLEGIATE SPORTS	LAT EXT	400	-870
	3/5/2010	241759	FRISCHS BIG BOY RESTAURANT	LAT EXT	2,400	-5,220
	4/16/2010	257275	LOUISVILLE JUNIOR ACADEMY	LAT EXT	520	-1,131
	6/30/2010	SC1011326	MAINTENANCE WORK FY10B - SE DIVERSION	SCAPCREDIT		10,739
	12/14/2010	320993	BEARGRASS CREEK PHASE II - FY1	SCAPCREDIT		10,368
	12/31/2010	359358	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		359444	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		24,000
		SC1011328	MAINTENANCE WORK FY11A - SE DIVERSION	SCAPCREDIT		11,090
	2/16/2011	286513	GARDINER POINT RESIDENCE HALL	LAT EXT	10,800	-23,490
	5/6/2011	276378	TIRE DISCOUNTERS - BARDSTOWN	LAT EXT	1,500	-3,263
	5/30/2011	287888	BEVERAGE WAREHOUSE	LAT EXT	1,180	-2,567
	6/30/2011	SC1011330	MAINTENANCE WORK FY11B - SE DIVERSION	SCAPCREDIT		3,661
	7/1/2011	296295	KEN TOWERY -3800 S HURSTBOURNE	LAT EXT	400	-870
	12/31/2011	359359	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		64,000
		359445	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		8,000
		SC1011331	MAINTENANCE WORK FY12A - SE DIVERSION	SCAPCREDIT		5,071
	6/30/2012	SC1011316	MAINTENANCE WORK FY12B - SE DIVERSION	SCAPCREDIT		24,202
		SC1011333	MAINTENANCE WORK FY12B - SE DIVERSION	SCAPCREDIT		6,141
	8/10/2012	307018	HOOK PROPERTY FAMILY DOLLAR	LAT EXT	400	-870
	12/31/2012	14SC1006	MAINTENANCE WORK FY13A - SE DIVERSION	SCAPCREDIT		24,202
		359361	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		68,000
		359446	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		4,000
	3/11/2013	187741	BROOKSTONE SENIOR APARTMENTS	LAT EXT	16,800	-36,540
	6/14/2013	232601	RAINTREE/MARIAN CT P/S ELIM	LAT EXT	105,800	-230,115
	6/30/2013	SC1082605	MAINTENANCE WORK FY13 JAN-JUN-SOUTHEAST DIVERSION	SCAPCREDIT		21,761
	9/18/2013	SC1005539	CONTRACTED WORK FY13 - SOUTHEAST DIVERSION	SCAPCREDIT		25,344
	11/26/2013	330437	COLLEGIATE ATHLETIC FIELD	LAT EXT	800	-1,740
	12/30/2013	SC1082606	MAINTENANCE WORK FY14 JUL-DEC-SOUTHEAST DIVERSION	SCAPCREDIT		19,491
	6/30/2014	SC1082607	MAINTENANCE WORK FY14 JAN-JUN-SOUTHEAST DIVERSION	SCAPCREDIT		9,087
	12/30/2014	SC1082608	MAINTENANCE WORK FY15 JUL-DEC-SOUTHEAST DIVERSION	SCAPCREDIT		15,321
	2/11/2015	SC1006185	CONTRACTED WORK FY14 - SOUTHEAST DIVERSION	SCAPCREDIT		187,478
	6/30/2015	SC1082610	MAINTENANCE WORK FY15 JAN-JUN-SOUTHEAST DIVERSION	SCAPCREDIT		10,273
	10/20/2015	SC1006199	CONTRACTED WORK FY15 - SOUTHEAST DIVERSION	SCAPCREDIT		1
	12/22/2015	LE919560	Todd's Place Express Car Wash	LAT EXT	4,830	-10,505

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	12/30/2015	SC1082611	MAINTENANCE WORK FY16 JUL-DEC-SOUTHEAST DIVERSION	SCAPCREDIT		7,052
	2/16/2016	SC1003718	SOUTHEAST DIVERSION AREA G (SEDG) I/I REMEDIATION	SCAPCREDIT		75,998
	5/24/2016	SC1003704	CONTRACTED WORK FY16 - SOUTHEAST DIVERSION	SCAPCREDIT		66
	6/30/2016	SC1082612	MAINTENANCE WORK FY16 JAN-JUN-SOUTHEAST DIVERSION	SCAPCREDIT		19,904
	7/28/2016	LE943171	Costco Wholesale and Fuel Facility	LAT EXT	8,000	-17,400
	12/30/2016	SC1082613	MAINTENANCE WORK FY17 JUL-DEC-SOUTHEAST DIVERSION	SCAPCREDIT		5,812
	6/30/2017	SC1082614	MAINTENANCE WORK FY17 JAN-JUN-SOUTHEAST DIVERSION	SCAPCREDIT		6,961
	12/30/2017	SC1082615	MAINTENANCE WORK FY18 JUL-DEC-SOUTHEAST DIVERSION	SCAPCREDIT		14,909
SE Diversion Total						1,054,155
Grand Total						14,810,045

APPENDIX E

IOAP PROJECT CROSSWALK

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PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
17TH ST FPS DWO ELIMINATION	IOAP	MSD0306-FP	L_OR_MF_190_S_03_A_A
27TH STREET FPS DWO ELIM	IOAP	MSD0307-FP	L_OR_MF_019_S_03_A_A
34TH ST FPS DWO ELIMINATION	IOAP	MSD0308-FP	L_OR_MF_019_S_03_A_B
4TH STREET FPS DWO ELIMINATION	IOAP	MSD0303-FP	L_OR_MF_022_M_03_A_A
ADAMS STREET SEWER SEPARATION (FORMERLY STORAGE BASIN)	IOAP	CSO172	L_OR_MF_172_S_09B_B_A_0
ANCHOR ESTATES PS ELIMINATIONS 1 - VANNAH PUMP STATION ELIMINATION	IOAP	01106	S_MI_MF_NB06_M_01_A_A-2
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	IOAP	00056-W	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	IOAP	0057-W	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	IOAP	00746	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	IOAP	00817	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	IOAP	MSD0057-LS	S_MI_MF_NB06_M_01_A_A - 1
ASHBURTON PS IMPROVEMENTS & DIVERSION	IOAP	MSD0165-PS	S_FF_FF_NB03_M_01_C_A
ASHBURTON PS IMPROVEMENTS & DIVERSION	IOAP	MSD0166-PS	S_FF_FF_NB03_M_01_C_A
AVANTI PS ELIMINATION	IOAP	21229	S_PO_WC_PC07_M_01_A
BARDSTOWN RD PS IMPROVEMENTS	IOAP	88545	S_CC_CC_MSD1025_S_03_B
BEARGRASS INTERCEPTOR REHABILITATION PH 2	IOAP	51594	S_SD_MF_NB06_S_13_C
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21061	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21089	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21089A	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21101	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21153	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21156	BEECHWOOD VILLAGE SEWER REPL
BELLS LANE (FORMERLY PADDY'S RUN) WET WEATHER TREATMENT FACILITY	IOAP	CSO015	L_OR_MF_015_M_13_B_B_8
BELLS LANE (FORMERLY PADDY'S RUN) WET WEATHER TREATMENT FACILITY	IOAP	CSO191	L_OR_MF_015_M_13_B_B_8
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	08717	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	104223	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	104224	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	104231	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	13931	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	13943	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	13946	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	34093542	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	36763	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	44396	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	44397	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	51301	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	66349	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	99259	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	KK14815019	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	IOAP	KK14855239	S_SF_MF_30917_M_09_A
CAVEN AVENUE PS ELIMINATION	IOAP	17724	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	IOAP	27116	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	IOAP	61667	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	IOAP	61687	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	IOAP	70212	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	IOAP	MSD0133-PS	S_PO_WC_PC09_M_09B_C

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO028	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO029	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO034	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO036	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO178	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO181	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO193	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO195	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO196	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO197	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO199	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO200X	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO202	L_OR_MF_155_M_09B_B_B_4-1
CHARLESWOOD INTERCEPTOR EXTENSION	IOAP	25477	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXTENSION	IOAP	25479	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXTENSION	IOAP	25480	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXTENSION	IOAP	MSD0130-PS	S_PO_WC_PC03_M_01_C
CINDERELLA PS ELIMINATION	IOAP	102339	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	IOAP	35309	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	IOAP	60679	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	IOAP	MSD1013-PS	S_PO_WC_PC04_M_01_C
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO083	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO088	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO131	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO132	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO154	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO167	L_MU_MF_154_M_09B_B_A_8
CSO058 IN-LINE STORAGE & GREEN INFRASTRUCTURE	IOAP	CSO058	L_OR_MF_058_S_08_A_A_0
CSO093 STRUCTURAL MODIFICATIONS & GREEN INFRASTRUCTURE	IOAP	CSO093	L_SO_MF_093_S_08_A_A_0
CSO108 DAM MODIFICATION	IOAP	CSO108	L_SO_MF_108_S_09A_B_A_4
CSO140 IN-LINE STORAGE & GREEN INFRASTRUCTURE	IOAP	CSO140	L_MI_MF_140_S_08_A_A_0
CSO160 SEWER SEPARATION	IOAP	CSO160	L_OR_MF_160_S_08_A_A_0
CSO190 GREEN INFRASTRUCTURE (FORMERLY 18TH & NORTHWESTERN PKWY STORAGE BASIN)	IOAP	CSO190	L_OR_MF_190_S_09B_B_A_8
CSO206 SEWER SEPARATION	IOAP	CSO206	L_MI_MF_206_S_08_A_A_0
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	104289	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28249	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28250	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28336	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28340	S_JT_JT_NB02_M_01_C

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PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28413	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28414	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28415	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28416	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28417	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28451	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28452	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28453	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	IOAP	28711	S_JT_JT_NB02_M_01_C
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	22307	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	22370	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	22385	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	32682	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	32688	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	59169	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	MSD0277	DEREK R GUTHRIE WQTC UPGRADES
DERINGTON CT PS I&I INVESTIGATION & REHABILITATION	IOAP	20154-W	S_OR_MF_NB03_S_07_C
DERINGTON CT PS I&I INVESTIGATION & REHABILITATION	IOAP	20155	S_OR_MF_NB03_S_07_C
DERINGTON CT PS I&I INVESTIGATION & REHABILITATION	IOAP	MSD0095-PS	S_OR_MF_NB03_S_07_C
EAST ROCKFORD PS RELOCATION	IOAP	04699-W	S_MC_WC_NB02_S_03_C
EDEN CARE PS SSO INVESTIGATION	IOAP	MSD1105-PS	S_FF_FF_NB02_S_13_C
EDSEL PS I&I INVESTIGATION & REHABILITATION	IOAP	92098	S_PO_WC_PC11_M_07_C
EDSEL PS I&I INVESTIGATION & REHABILITATION	IOAP	92099	S_PO_WC_PC11_M_07_C
EDSEL PS I&I INVESTIGATION & REHABILITATION	IOAP	94009	S_PO_WC_PC11_M_07_C
EDSEL PS I&I INVESTIGATION & REHABILITATION	IOAP	MSD1048-PS	S_PO_WC_PC11_M_07_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	64096	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	86052	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	92061	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	MSD0196-PS	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	MSD0263	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	MSD0263A-PS	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	IOAP	MSD1043-PS	S_JT_JT_NB01A_M_03_C
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	116106	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	81316	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	97362	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	97363	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	97365	S_FF_CC_81316_M_03_C_A
FAIRWAY VIEW PS IMPROVEMENTS	IOAP	MSD1065-PS	S_HC_HS_NB01_S_03_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108953	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108956	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108957	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108958	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	90776	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	MSD1086-PS	S_HC_HC_MSD1086_M_07_C_A

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FOX HARBOR IN-LINE STORAGE	IOAP	62769	S_HC_HN_NB03_S_09A_A_A
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	105936	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	117721	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	43472	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	46891	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	62418	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	62420	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	91629	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	91630	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	MSD0040-PS	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	IOAP	MSD1024-PS	S_MI_MF_NB04_M_03_B-1
GOVERNMENT CENTER PS ELIMINATION	IOAP	94541	S_PO_WC_PC06_M_01_C
GOVERNMENT CENTER PS ELIMINATION	IOAP	94542	S_PO_WC_PC06_M_01_C
GOVERNMENT CENTER PS ELIMINATION	IOAP	MSD0180-PS	S_PO_WC_PC06_M_01_C
GUNPOWDER PS IN-LINE STORAGE	IOAP	MSD1055-LS	S_HC_HN_NB02_S_09A_C_B
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	IOAP	55665	S_MC_MF_55665_S_07_C
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	IOAP	55667	S_MC_MF_55665_S_07_C
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	17571	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18134	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18297	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18298	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18299	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18302	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18318-W	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18370	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18434	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18471	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18483	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18505	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18595	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	47960A	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	48885	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	48886	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	48888	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49224	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49236	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49672	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49673	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	73111	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	MSD0012-PS	HIKES LN INTER & HIGHGATE SPR
HURSTBOURNE I/I INVESTIGATION & REHABILITATION	IOAP	01793	S_MI_MF_NB07_S_07_C
HURSTBOURNE I/I INVESTIGATION & REHABILITATION	IOAP	47650	S_MI_MF_NB07_S_07_C

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HURSTBOURNE I/I INVESTIGATION & REHABILITATION	IOAP	47656	S_MI_MF_NB07_S_07_C
HURSTBOURNE I/I INVESTIGATION & REHABILITATION	IOAP	67535	S_MI_MF_NB07_S_07_C
IDLEWOOD IN-LINE STORAGE	IOAP	28984	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	IOAP	28985	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	IOAP	28998	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	IOAP	63094	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	IOAP	63095	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	IOAP	70158	S_CC_CC_70158_M_09A_C
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28173	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28390	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28391	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28392	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28395	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28551	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	31733	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	64505	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	IS028-SI	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	MSD0255	S_JT_JT_NB01_M_01_C_A
KAVANAUGH RD PS IMPROVEMENTS	IOAP	MSD1085-PS	S_HC_HC_MSD1085_S_03_A
KLONDIKE INTERCEPTOR	IOAP	20644	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	25676	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	26650	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	26651	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	49513	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	66232	S_SD_MF_NB04_S_01_B_A
LAKE FOREST PS SSO INVESTIGATION	IOAP	MSD1169-LS	S_FF_LF_NB01_S_13_C_A
LANTANA #1 PS I/I INVESTIGATION & REHABILITATION	IOAP	25484	S_PO_WC_PC05_M_07_C
LANTANA #1 PS I/I INVESTIGATION & REHABILITATION	IOAP	93719	S_PO_WC_PC05_M_07_C
LANTANA #1 PS I/I INVESTIGATION & REHABILITATION	IOAP	MSD0101-PS	S_PO_WC_PC05_M_07_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	19360	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	19369	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29933	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29943	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29948	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29949	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31073	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31074	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31083	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31084	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	57874	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	61266	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	79076	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	MSD1010-PS	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	MSD1200-PS	S_PO_WC_PC08_M_01_C
LELAND RD SSO INVESTIGATION	IOAP	96020	S_OR_MF_NB02_S_13_C
LEVEN PS ELIMINATION	IOAP	36419	S_PO_WC_PC10_M_01_C
LEVEN PS ELIMINATION	IOAP	MSD1019-PS	S_PO_WC_PC10_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	IOAP	67997	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	IOAP	67999	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	IOAP	86423	S_CC_CC_67997_M_01_C

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LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	IOAP	86424	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	IOAP	89196	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	IOAP	89197	S_CC_CC_67997_M_01_C
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO091	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO097	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO106	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO110	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO111	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO113	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO137	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO146	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO148	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO149	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO151	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	IOAP	CSO152	L_SO_MF_092_M_09B_B_D_8
LUCAS LN PS IN-LINE STORAGE	IOAP	MSD0199-LS	S_FF_BT_NB01_S_09A_C_A
MEADOW STREAM PS & FM UPGRADE	IOAP	91087	S_HC_HC_MSD1082_S_09A_C
MEADOW STREAM PS & FM UPGRADE	IOAP	MSD1082-PS	S_HC_HC_MSD1082_S_09A_C
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	24152-W	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	24472	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	26752	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	41374	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	41416	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	MSD0006-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	MSD0007-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	MSD0010-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	MSD0023-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	IOAP	MSD0024-PS	S_OR_MF_NB01_M_01_B-1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	02932	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	02933	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	02935	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	08537	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	08935-SM	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	115183	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	115184	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	115185	S_MISF_MF_NB01_M_01_C_A1

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MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	15194	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	15195	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	17618	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	23211	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	23212	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	24553	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	27005	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	27007	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	30376	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	40471	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	40559	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	43726	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	45796	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	45829	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	45835	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	45900	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47034	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47582	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47583	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47593	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47596	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47603	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	47604	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	48864	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	51160	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	51161	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	51180	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	51221	S_MISF_MF_NB01_M_01_C_A1

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	72288	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	72289	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	74513	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	84155	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	90700	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	96672	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	96673	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	IOAP	IS021A-SI	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	IOAP	27012	S_MISF_MF_NB01_M_01_C_A1-2
MONTICELLO PS ELIMINATION	IOAP	27969	S_JT_JT_NB04_M_01_A
MONTICELLO PS ELIMINATION	IOAP	MSD0151-PS	S_JT_JT_NB04_M_01_A
MORRIS FORMAN WQTC HEADWORKS (FORMERLY ALGONQUIN PKWY STORAGE BASIN)	IOAP	CSO211	L_OR_MF_211_M_13_B_A_8
NIGHTINGALE PS REPLACEMENT & STORAGE	IOAP	CSO018	L_SO_MF_018_S_03_A_A
NORTHERN DITCH DIVERSION INTER	ISSDP	MSD0271	NORTHERN DITCH DIVERSION INTER
PARKVIEW ESTATES I&I INVESTIGATION	IOAP	47250	S_SD_MF_NB03_S_07_C
PORTLAND CSO STORAGE BASIN	IOAP	CSO019	L_OR_MF_019_S_13_B_A_8
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	16455	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	22436	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	40870	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	40871	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	40872	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	40879	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	40880	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	42675	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	42680	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	46621	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	46623	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	46627	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	65606	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	65610	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	65623	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	65633	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	65635	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	89646	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	89791	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0123-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0183-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0186-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0192-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0193-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0291	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD0292	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD1044-PS	S_OR_MF_NB04_M_03_B_B-1

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PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	IOAP	MSD1063-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 3 - ORFM SYSTEM IMPROVEMENTS	IOAP	89641	S_OR_MF_NB04_M_03_B_B-3
RAINTREE DRIVE AND MARIAN COURT SYSTEM IMPROVEMENTS PHASE 1 - PUMP STATION ELIMINATION	IOAP	28729-W	S_JT_JT_NB03_M_01_C-1
RAINTREE DRIVE AND MARIAN COURT SYSTEM IMPROVEMENTS PHASE 1 - PUMP STATION ELIMINATION	IOAP	MSD0149-PS	S_JT_JT_NB03_M_01_C-1
RIDING RIDGE PS IMPROVEMENTS	IOAP	MSD1060-LS	S_HC_HN_NB01_S_03_C_A
RUNNING FOX PS ELIMINATION	IOAP	MSD1080-LS	S_CC_CC_MSD1080_S_01_C
SHAWNEE FPS DWO ELIMINATION	IOAP	MSD0309-FP	L_OR_MF_189_M_03_A_A
SHIVELY INTERCEPTOR	IOAP	04498	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	04542	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	81814-W	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0016-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0043-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0044-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0047-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0049-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0050-PS	S_MC_WC_NB01_M_01_A
SINKING FORK INTERCEPTOR	IOAP	21103	SINKING FORK RELIEF SEWER
SINKING FORK INTERCEPTOR	IOAP	25012	SINKING FORK RELIEF SEWER
SINKING FORK INTERCEPTOR	IOAP	63319	SINKING FORK RELIEF SEWER
SONNE PS I&I INVESTIGATION & REHABILITATION	IOAP	MSD0042-PS	S_OR_MF_42007_S_07_C
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	08426	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	08427	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	08430	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	08431	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	18654	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	30680	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	30681	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	30701	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	30702	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	30704	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	49647	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	63779	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	IOAP	72571-X	SOUTHEASTERN DIVERSION STRUCT
SOUTHERN OUTFALL IN-LINE STORAGE AT 43RD STREET (SOR1) (FORMERLY ALGONQUIN PKWY STORAGE BASIN)	IOAP	CSO016	L_OR_MF_211_M_13_B_A_8__
SOUTHERN OUTFALL IN-LINE STORAGE AT 43RD STREET (SOR1) (FORMERLY ALGONQUIN PKWY STORAGE BASIN)	IOAP	CSO210	L_OR_MF_211_M_13_B_A_8__
SOUTHWESTERN PKWY CSO BASIN	IOAP	CSO104	L_OR_MF_105_M_13_B_A_0
SOUTHWESTERN PKWY CSO BASIN	IOAP	CSO105	L_OR_MF_105_M_13_B_A_0
SOUTHWESTERN PKWY CSO BASIN	IOAP	CSO189X	L_OR_MF_105_M_13_B_A_0
ST RENE RD PS IN-LINE STORAGE	IOAP	94187	S_FF_CH_NB01_S_09A_C_A
SUTHERLAND INTERCEPTOR	IOAP	16649	S_SD_MF_NB05_M_01_A
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO022	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO023	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO050	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO051	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO052	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO053	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO054	L_OR_MF_155_M_09B_B_B_4

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO055	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO056	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO150	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	IOAP	CSO155	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	IOAP	CSO125	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	IOAP	CSO126	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	IOAP	CSO127	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	IOAP	CSO166	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO082	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO084	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO118	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO119	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO120	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO121	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO141	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	IOAP	CSO153	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY STORY & MAIN ST STORAGE BASIN)	IOAP	CSO020	L_OR_MF_020_S_09B_B_A_8
WOODLAND HILLS PS DIVERSION	IOAP	33003	S_FF_FF_NB01_S_01_C_A
WOODLAND HILLS PS DIVERSION	IOAP	65516	S_FF_FF_NB01_S_01_C_A
WOODLAND HILLS PS DIVERSION	IOAP	65531	S_FF_FF_NB01_S_01_C_A

APPENDIX F

CSO FLOW MONITORING QUALITY IMPROVEMENT

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Table F-1. Phase 1 CSOs

CSO	FINAL SOP COMPLETED	HISTORICAL VOLUME REVISED	PROGRAMMING CHANGES COMPLETED	EQUIPMENT CHANGES COMPLETED	TESTING / VERIFICATION COMPLETED
015	6/30/2017	6/30/2017	UNDER CONSTRUCTION	UNDER CONSTRUCTION	UNDER CONSTRUCTION
016	7/1/2019	42916	7/30/2018	N/A	9/10/2018
018	43647	42916	9/13/2017	N/A	3/11/2019
020	43647	42916	9/21/2017	N/A	10/10/2017
036	43647	42916	8/23/2017	N/A	9/14/2017
054	43647	42916	9/8/2017	N/A	9/12/2017
058	43647	42916	3/4/2019	N/A	2/16/2019
088	6/30/2017	42916	8/23/2017	43636	43518
093	7/1/2019	42916	11/19/2018	N/A	1/1/2018
104	43647	42916	8/16/2017	N/A	9/12/2017
105	43647	42916	42963	N/A	9/12/2017
106	43647	42916	N/A	N/A	N/A
108	43647	42916	11/21/2017	10/17/2017	12/1/2018
109	43647	42916	43060	10/13/2017	10/8/2018
110	6/30/2017	42916	11/19/2018	UNDER CONSTRUCTION	4/5/2019
118	7/1/2019	42916	N/A	9/1/2017	9/12/2017
121	43647	42916	9/12/2017	10/13/2017	12/21/2017
125	43647	42916	9/8/2017	8/7/2017	9/8/2017
126	43647	42916	9/14/2017	9/1/2017	12/21/2017
127	43647	42916	N/A	N/A	N/A
130	43647	42916	8/16/2017	N/A	3/11/2019
132	43647	42916	9/8/2017	9/1/2017	9/21/2017
140	43647	42916	11/21/2017	10/13/2017	3/16/2019
146	6/30/2017	42916	11/19/2018	UNDER CONSTRUCTION	3/12/2019
149	42916	42916	43423	UNDER CONSTRUCTION	3/12/2019
154	7/1/2019	42916	12/1/2017	9/1/2017	3/21/2018
160	43647	42916	8/23/2017	9/20/2017	12/22/2017
166	43647	42916	9/12/2017	10/9/2017	12/21/2017
167	43647	42916	9/8/2017	N/A	12/21/2017
189	43647	42916	8/16/2017	N/A	9/21/2017
190	43647	42916	1/26/2018	N/A	1/26/2018
191	6/30/2017	42916	UNDER CONSTRUCTION	UNDER CONSTRUCTION	UNDER CONSTRUCTION
206	7/1/2019	42916	N/A	11/22/2017	12/6/2017
210	43647	42916	1/23/2019	N/A	1/23/2019
211	43647	42916	8/16/2017	N/A	3/1/2019

Table F-2. Phase 2 CSOs

CSO	FINAL SOP COMPLETED	HISTORICAL VOLUME REVISED	PROGRAMMING CHANGES COMPLETED	EQUIPMENT CHANGES COMPLETED	TESTING / VERIFICATION COMPLETED
019	6/28/2019	COMPLETED	UNDER CONSTRUCTION	UNDER CONSTRUCTION	STARTED
022	43644	COMPLETED	12/17/2018	N/A	COMPLETED
023	43644	COMPLETED	43451	N/A	COMPLETED
027	43644	COMPLETED	1/14/2019	6/6/2019	COMPLETED
028	43644	COMPLETED	5/3/2019	2/4/2019	COMPLETED
029	43644	COMPLETED	43588	3/22/2019	COMPLETED
031	43644	COMPLETED	3/11/2019	2/24/2019	COMPLETED
034	43644	COMPLETED	5/3/2019	2/5/2019	COMPLETED
035	43644	N/A	4/12/2019	4/12/2019	STARTED
038	43644	COMPLETED	4/22/2019	N/A	COMPLETED
050	43644	COMPLETED	6/12/2018	N/A	COMPLETED
051	43644	N/A	43263	N/A	COMPLETED
052	43644	COMPLETED	3/25/2019	3/22/2019	COMPLETED
053	43644	COMPLETED	6/20/2018	N/A	COMPLETED
055	43644	COMPLETED	6/18/2018	N/A	COMPLETED
056	43644	N/A	10/24/2017	10/24/17	COMPLETED
057	43644	N/A	6/12/2018	N/A	COMPLETED
062	43644	N/A	4/17/2019	3/16/2019	COMPLETED
082	43644	COMPLETED	6/26/2018	N/A	COMPLETED
083	43644	COMPLETED	43277	N/A	COMPLETED
084	43644	COMPLETED	6/27/2018	4/9/2019	COMPLETED
091	Started	N/A	43455	43423	STARTED
092	6/28/2019	COMPLETED	6/20/2018	N/A	COMPLETED
097	Started	COMPLETED	1/7/2019	1/1/2018	STARTED
111	Started	COMPLETED	3/12/2019	43101	STARTED
113	Started	COMPLETED	12/21/2018	11/19/2018	STARTED
117	Started	COMPLETED	43455	43423	STARTED
119	6/28/2019	COMPLETED	6/26/2018	N/A	COMPLETED
120	43644	COMPLETED	43277	N/A	COMPLETED
131	43644	N/A	10/2/2018	10/2/2018	COMPLETED
137	Started	COMPLETED	12/21/2018	N/A	COMPLETED
141	6/28/2019	N/A	5/30/2018	5/30/18	COMPLETED
144	43644	COMPLETED	6/26/2018	8/6/2018	COMPLETED
148	Started	COMPLETED	3/12/2019	1/1/2018	STARTED
150	6/28/2019	N/A	6/12/2018	N/A	COMPLETED
151	Started	COMPLETED	3/12/2019	1/1/2018	STARTED
152	Started	COMPLETED	43536	43101	STARTED
153	6/28/2019	COMPLETED	6/26/2018	N/A	COMPLETED
155	43644	COMPLETED	6/12/2018	N/A	COMPLETED
161	43644	N/A	43263	N/A	COMPLETED
172	43644	N/A	1/1/2018	1/1/2018	COMPLETED
178	43644	COMPLETED	4/17/2019	3/16/2019	COMPLETED
179	Started	COMPLETED	UNDER CONSTRUCTION	1/1/2018	STARTED
181	6/28/2019	COMPLETED	4/17/2019	3/16/2019	COMPLETED
193	43644	COMPLETED	6/20/2018	N/A	COMPLETED
195	43644	COMPLETED	6/22/2018	N/A	COMPLETED
196	43644	COMPLETED	43273	N/A	COMPLETED

Table F-2. Phase 2 CSOs

CSO	FINAL SOP COMPLETED	HISTORICAL VOLUME REVISED	PROGRAMMING CHANGES COMPLETED	EQUIPMENT CHANGES COMPLETED	TESTING / VERIFICATION COMPLETED
197	43644	COMPLETED	4/9/2019	8/14/2019	COMPLETED
198	43644	COMPLETED	6/26/2018	10/4/2018	COMPLETED
199	43644	COMPLETED	6/18/2018	N/A	COMPLETED
200	43644	COMPLETED	12/12/2018	12/12/2018	COMPLETED
201	43644	COMPLETED	6/22/2018	5/31/2019	COMPLETED
202	43644	COMPLETED	6/15/2018	N/A	COMPLETED
203	43644	COMPLETED	43266	N/A	COMPLETED
207	43644	COMPLETED	6/22/2018	N/A	COMPLETED
208	43644	COMPLETED	6/25/2018	5/22/2019	COMPLETED
SBR 142	43644	COMPLETED	6/8/2018	N/A	COMPLETED
SBR 174	43644	COMPLETED	43259	N/A	COMPLETED
SBR 180	43644	COMPLETED	43259	12/7/2018	COMPLETED
SBR 182	43644	COMPLETED	43259	N/A	COMPLETED
SBR 183	43644	COMPLETED	6/4/2018	N/A	COMPLETED
SBR 184	43644	COMPLETED	43255	N/A	COMPLETED
SBR 185	43644	COMPLETED	43255	N/A	COMPLETED
SBR 186	43644	COMPLETED	6/8/2018	N/A	COMPLETED
SBR 187	43644	COMPLETED	43259	N/A	COMPLETED
SBR 188	43644	COMPLETED	43259	12/7/2018	COMPLETED
SBR 205	43644	COMPLETED	43259	N/A	COMPLETED

APPENDIX G

CSO108 SEMI-ANNUAL REPORT



January 30, 2020

Josh Lillpop
Natural Areas Branch Manager
Office of Kentucky Nature Preserves
Kentucky Energy and Environment Cabinet
300 Sower Boulevard, 4th Floor
Frankfort, KY 40601

Subject: CSO108 Semi-Annual Report #23

Dear Mr. Lillpop,

As required in Paragraph #2 of the document titled "Memorandum of Understanding by and between the Commonwealth of Kentucky, Office of Kentucky Nature Preserves and the Louisville and Jefferson County Metropolitan Sewer District", MSD submits to you the MOU Semi-Annual Report #22. This report summarizes activities at the CSO108 CDS Site during the reporting period of January 1, 2019 to June 30, 2019.

Should you have any questions or comments, please feel free to contact me via email at heather.dodds@louisvillemsd.org or phone at (502) 540-6961.

Sincerely,



Heather Dodds, PE
Regulatory Compliance & Asset Management Administrator

MOU SEMI-ANNUAL REPORT #23
JULY 1, 2019 - DECEMBER 31, 2019



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 31, 2018, and by the Commission on August 10, 2018. This MOU is effective for the period starting August 1, 2018, and ending on August 1, 2028.

This is the 23rd Semi-Annual Report submitted in accordance with Paragraph 2 of the MOU. This report covers the time period of July 1, 2019 to December 31, 2019.

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 for additional information not found within this document.

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

1. PARAGRAPH #2 OF THE MOU

MSD shall be diligent of this ten-year period in supplying the Commission with timely 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 January 30 and July 30 of each year.

2. MSD RESPONSE

This document is the 23rd semi-annual report to the Commission since the completion of the Project. Appendix A shows photos of the area around the CDS unit and South Fork Beargrass Creek during the reporting period.

2.1. CLEANING & INSPECTION ACTIVITIES

The CSO108 CDS unit is inspected weekly and cleaned on an as-needed basis. During the reporting period, MSD cleaned the CDS Unit bar racks 2 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 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 report often indicates the quantity removed as "unknown".

Table 1. CSO108 CDS Unit Debris Removal

ACTIVITY	QUANTITY	COMMENTS	COMPLETED DATE
DEBRIS	UNKNOWN	CLEANED MEDIUM DEBRIS OFF RACK BARS NORTHINGTON BRITTLE	7/9/2019
DEBRIS	UNKNOWN	CLEANED MEDIUM DEBRIS FROM RACK BARS NORTHINGTON BRITTLE	9/10/2019

duced into the sewer system, and as a result, is difficult to accurately estimate the amount removed during the maintenance process. The report often indicates the quantity removed as "unknown".

2.2. 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.

2.3. CAPTURED FLOW

The CDS unit 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 (WQTC).

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 1 ml/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 54.4 tons of solids during the reporting period. Appendix B lists the pump run times and Appendix C shows the calculations MSD used to determine the amount of debris captured by the CDS Unit and sent to the Morris Forman WQTC for treatment.

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APPENDIX A

**PHOTOS OF AREA ADJACENT TO CSO108 AND THE
CDS UNIT (DATED DECEMBER 18, 2019)**

Figure 1. Entrance to CDS Unit



Figure 2. Entrance to CDS Unit



Figure 3. Area Adjacent to CDS Unit



Figure 4. Area Adjacent to CDS Unit



Figure 5. Area Adjacent to Creek



Figure 6. Area Adjacent to Creek



APPENDIX B

CDS UNIT PUMP RUN TIMES

Date	Pump 1 Run Hours	Pump 2 Run Hours	Pump 3 Run Hours
July 1, 2019	0.00	0.00	0.08
July 2, 2019	0.00	0.00	0.03
July 3, 2019	0.00	0.00	0.05
July 4, 2019	0.00	0.00	0.03
July 5, 2019	0.00	0.00	0.05
July 6, 2019	0.00	0.00	0.03
July 7, 2019	0.00	0.00	0.00
July 8, 2019	0.00	0.00	0.05
July 9, 2019	0.00	0.00	0.00
July 10, 2019	0.00	0.00	0.05
July 11, 2019	0.00	0.00	0.00
July 12, 2019	0.00	0.00	0.00
July 13, 2019	0.00	0.00	0.03
July 14, 2019	0.00	0.00	0.00
July 15, 2019	0.00	0.00	0.05
July 16, 2019	0.00	0.00	0.00
July 17, 2019	0.00	0.00	0.03
July 18, 2019	0.00	0.00	0.00
July 19, 2019	0.00	0.00	0.00
July 20, 2019	0.00	0.00	0.45
July 21, 2019	0.00	0.00	0.00
July 22, 2019	0.00	0.00	0.00
July 23, 2019	0.00	0.00	0.00
July 24, 2019	0.00	0.00	0.00
July 25, 2019	0.00	0.00	0.00
July 26, 2019	0.00	0.00	0.00
July 27, 2019	0.00	0.00	0.00
July 28, 2019	0.00	0.00	0.00
July 29, 2019	0.00	0.00	0.00
July 30, 2019	0.00	0.00	0.03
July 31, 2019	0.18	0.00	0.38
August 1, 2019	0.00	0.00	0.05
August 2, 2019	0.00	0.00	0.00
August 3, 2019	0.00	0.00	0.03
August 4, 2019	0.00	0.00	0.00
August 5, 2019	0.00	0.00	0.00
August 6, 2019	0.00	0.00	0.05
August 7, 2019	0.00	0.00	0.00
August 8, 2019	0.00	0.00	0.00
August 9, 2019	0.00	0.00	0.03

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August 10, 2019	0.00	0.00	0.00
August 11, 2019	0.00	0.00	0.00
August 12, 2019	0.00	0.00	0.05
August 13, 2019	0.00	0.00	0.00
August 14, 2019	0.00	0.00	0.00
August 15, 2019	0.00	0.00	0.03
August 16, 2019	0.00	0.00	0.00
August 17, 2019	0.00	0.00	0.18
August 18, 2019	0.00	0.00	0.00
August 19, 2019	0.00	0.00	0.00
August 20, 2019	0.00	0.00	0.00
August 21, 2019	0.00	0.00	0.00
August 22, 2019	0.00	0.00	0.00
August 23, 2019	0.00	0.00	0.00
August 24, 2019	0.00	0.00	0.32
August 25, 2019	0.00	0.00	0.00
August 26, 2019	0.00	0.00	0.00
August 27, 2019	0.00	0.00	0.05
August 28, 2019	0.00	0.00	0.08
August 29, 2019	0.00	0.00	0.00
August 30, 2019	0.00	0.00	0.03
August 31, 2019	0.00	0.00	0.00
September 1, 2019	0.00	0.00	0.00
September 2, 2019	0.00	0.00	0.05
September 3, 2019	0.00	0.00	0.00
September 4, 2019	0.00	0.00	0.00
September 5, 2019	0.00	0.00	0.03
September 6, 2019	0.00	0.00	0.00
September 7, 2019	0.00	0.00	0.00
September 8, 2019	0.00	0.00	0.05
September 9, 2019	0.00	0.00	0.00
September 10, 2019	0.00	0.00	0.05
September 11, 2019	0.00	0.00	0.00
September 12, 2019	0.00	0.00	0.00
September 13, 2019	0.00	0.00	0.03
September 14, 2019	0.00	0.00	0.00
September 15, 2019	0.00	0.00	0.00
September 16, 2019	0.00	0.00	0.05
September 17, 2019	0.00	0.00	0.00
September 18, 2019	0.00	0.00	0.03
September 19, 2019	0.00	0.00	0.00

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September 20, 2019	0.00	0.00	0.05
September 21, 2019	0.00	0.00	0.00
September 22, 2019	0.00	0.00	0.00
September 23, 2019	0.00	0.00	0.03
September 24, 2019	0.00	0.00	0.00
September 25, 2019	0.00	0.00	0.05
September 26, 2019	0.00	0.00	0.00
September 27, 2019	0.00	0.00	0.00
September 28, 2019	0.00	0.00	0.03
September 29, 2019	0.00	0.00	0.00
September 30, 2019	0.00	0.00	0.05
October 1, 2019	0.00	0.00	0.00
October 2, 2019	0.00	0.00	0.03
October 3, 2019	0.00	0.00	0.00
October 4, 2019	0.00	0.00	0.05
October 5, 2019	0.00	0.00	0.00
October 6, 2019	0.00	0.00	0.05
October 7, 2019	0.00	0.00	0.00
October 8, 2019	0.00	0.00	0.08
October 9, 2019	0.00	0.00	0.03
October 10, 2019	0.00	0.00	0.05
October 11, 2019	0.00	0.00	0.03
October 12, 2019	0.00	0.00	0.00
October 13, 2019	0.00	0.00	0.05
October 14, 2019	0.00	0.00	0.00
October 15, 2019	0.00	0.00	0.03
October 16, 2019	0.00	0.00	0.00
October 17, 2019	0.00	0.00	0.05
October 18, 2019	0.00	0.00	0.08
October 19, 2019	0.00	0.00	0.05
October 20, 2019	0.00	0.00	0.00
October 21, 2019	0.00	0.00	0.03
October 22, 2019	0.00	0.00	0.05
October 23, 2019	0.00	0.00	0.00
October 24, 2019	0.00	0.00	0.03
October 25, 2019	0.00	0.00	0.00
October 26, 2019	0.00	0.00	0.05
October 27, 2019	0.00	0.00	0.00
October 28, 2019	0.00	0.00	0.13
October 29, 2019	0.00	0.00	0.08
October 30, 2019	0.00	0.00	0.00

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October 31, 2019	0.00	0.00	0.03
November 1, 2019	0.00	0.00	0.13
November 2, 2019	0.00	0.00	0.22
November 3, 2019	0.00	0.00	0.05
November 4, 2019	0.00	0.00	0.00
November 5, 2019	0.00	0.00	0.03
November 6, 2019	0.00	0.00	0.05
November 7, 2019	0.00	0.00	0.00
November 8, 2019	0.00	0.00	0.03
November 9, 2019	0.00	0.00	0.08
November 10, 2019	0.00	0.00	0.00
November 11, 2019	0.00	0.00	0.05
November 12, 2019	0.00	0.00	0.05
November 13, 2019	0.00	0.00	0.03
November 14, 2019	0.00	0.00	0.00
November 15, 2019	0.00	0.00	0.05
November 16, 2019	0.00	0.00	0.03
November 17, 2019	0.00	0.00	0.00
November 18, 2019	0.00	0.00	0.05
November 19, 2019	0.00	0.00	0.00
November 20, 2019	0.00	0.00	0.03
November 21, 2019	0.00	0.00	0.00
November 22, 2019	0.00	0.00	0.05
November 23, 2019	0.00	0.00	0.00
November 24, 2019	0.00	0.00	0.05
November 25, 2019	0.00	0.00	0.03
November 26, 2019	0.00	0.00	0.05
November 27, 2019	0.00	0.00	0.03
November 28, 2019	0.00	0.00	0.05
November 29, 2019	0.00	0.00	0.22
November 30, 2019	0.00	0.00	0.08
December 1, 2019	0.00	0.00	0.05
December 2, 2019	0.00	0.13	1.70
December 3, 2019	0.00	0.00	22.85
December 4, 2019	0.00	0.00	12.37
December 5, 2019	0.00	0.00	0.13
December 6, 2019	0.00	0.00	0.13
December 7, 2019	0.00	0.00	0.08
December 8, 2019	0.00	0.00	0.05
December 9, 2019	0.00	0.00	0.03
December 10, 2019	0.00	0.00	0.05

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December 11, 2019	0.00	0.00	0.03
December 12, 2019	0.00	0.00	0.05
December 13, 2019	0.00	0.00	0.05
December 14, 2019	0.00	0.00	0.00
December 15, 2019	0.00	0.00	0.03
December 16, 2019	0.00	0.00	0.08
December 17, 2019	0.00	0.00	0.08
December 18, 2019	0.00	0.00	0.30
December 19, 2019	0.00	0.00	0.32
December 20, 2019	0.00	0.00	0.22
December 21, 2019	0.00	0.00	0.12
December 22, 2019	0.00	0.00	0.13
December 23, 2019	0.00	0.00	0.13
December 24, 2019	0.00	0.00	0.03
December 25, 2019	0.00	0.00	0.05
December 26, 2019	0.00	0.00	0.05
December 27, 2019	0.00	0.00	0.03
December 28, 2019	0.00	0.00	0.00
December 29, 2019	0.00	0.00	0.05
December 30, 2019	0.00	0.00	0.03
December 31, 2019	0.00	0.00	0.18

APPENDIX C

CSO108 UNDERFLOW PUMP FLOW METER DATA

Date	Daily Volume (MG)	Daily Volume (CF)	Daily Volume (gal)	Daily Volume Debris (gal)
July 1, 2019	0.04	5,968.86	44,650.16	44.65
July 2, 2019	0.04	5,548.18	41,503.24	41.50
July 3, 2019	0.04	5,507.25	41,197.13	41.20
July 4, 2019	0.04	5,541.99	41,456.94	41.46
July 5, 2019	0.04	5,345.67	39,988.43	39.99
July 6, 2019	0.04	5,537.21	41,421.20	41.42
July 7, 2019	0.04	4,936.62	36,928.49	36.93
July 8, 2019	0.04	5,507.64	41,200.05	41.20
July 9, 2019	0.04	4,940.08	36,954.37	36.95
July 10, 2019	0.04	5,366.96	40,147.66	40.15
July 11, 2019	0.04	4,936.62	36,928.49	36.93
July 12, 2019	0.04	4,936.62	36,928.49	36.93
July 13, 2019	0.04	5,142.48	38,468.44	38.47
July 14, 2019	0.04	4,940.08	36,954.37	36.95
July 15, 2019	0.04	5,544.89	41,478.70	41.48
July 16, 2019	0.04	4,936.62	36,928.49	36.93
July 17, 2019	0.04	5,538.56	41,431.32	41.43
July 18, 2019	0.04	4,936.62	36,928.49	36.93
July 19, 2019	0.04	4,936.62	36,928.49	36.93
July 20, 2019	0.08	10,591.79	79,232.08	79.23
July 21, 2019	0.04	4,936.62	36,928.49	36.93
July 22, 2019	0.04	4,936.62	36,928.49	36.93
July 23, 2019	0.04	4,940.08	36,954.37	36.95
July 24, 2019	0.04	4,936.62	36,928.49	36.93
July 25, 2019	0.04	4,936.68	36,928.94	36.93
July 26, 2019	0.04	4,936.83	36,930.02	36.93
July 27, 2019	0.04	4,937.15	36,932.48	36.93
July 28, 2019	0.04	4,936.71	36,929.18	36.93
July 29, 2019	0.04	4,940.08	36,954.39	36.95
July 30, 2019	0.04	5,238.63	39,187.67	39.19
July 31, 2019	0.05	6,431.25	48,109.06	48.11
August 1, 2019	0.04	5,239.45	39,193.84	39.19
August 2, 2019	0.04	4,936.62	36,928.49	36.93
August 3, 2019	0.04	5,421.48	40,555.46	40.56
August 4, 2019	0.04	4,936.62	36,928.49	36.93
August 5, 2019	0.04	4,936.62	36,928.49	36.93
August 6, 2019	0.04	5,240.72	39,203.32	39.20
August 7, 2019	0.04	4,936.62	36,928.50	36.93
August 8, 2019	0.04	4,936.62	36,928.49	36.93

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August 9, 2019	0.04	5,525.03	41,330.13	41.33
August 10, 2019	0.04	4,936.62	36,928.49	36.93
August 11, 2019	0.04	4,936.62	36,928.49	36.93
August 12, 2019	0.04	5,524.27	41,324.40	41.32
August 13, 2019	0.04	4,940.17	36,955.06	36.96
August 14, 2019	0.04	4,936.62	36,928.49	36.93
August 15, 2019	0.04	5,496.94	41,119.99	41.12
August 16, 2019	0.04	4,936.62	36,928.49	36.93
August 17, 2019	0.05	7,153.55	53,512.31	53.51
August 18, 2019	0.04	4,936.63	36,928.55	36.93
August 19, 2019	0.04	4,936.62	36,928.49	36.93
August 20, 2019	0.04	4,936.62	36,928.49	36.93
August 21, 2019	0.04	4,940.08	36,954.37	36.95
August 22, 2019	0.04	4,936.62	36,928.49	36.93
August 23, 2019	0.04	4,936.62	36,928.50	36.93
August 24, 2019	0.05	6,901.90	51,629.79	51.63
August 25, 2019	0.04	4,936.62	36,928.49	36.93
August 26, 2019	0.04	4,941.89	36,967.89	36.97
August 27, 2019	0.04	5,197.01	38,876.37	38.88
August 28, 2019	0.04	5,839.68	43,683.82	43.68
August 29, 2019	0.04	4,936.62	36,928.49	36.93
August 30, 2019	0.04	5,555.87	41,560.78	41.56
August 31, 2019	0.04	4,936.78	36,929.66	36.93
September 1, 2019	0.04	4,936.62	36,928.49	36.93
September 2, 2019	0.04	5,243.68	39,225.44	39.23
September 3, 2019	0.04	4,936.62	36,928.49	36.93
September 4, 2019	0.04	4,940.08	36,954.37	36.95
September 5, 2019	0.04	5,474.25	40,950.27	40.95
September 6, 2019	0.04	4,936.62	36,928.49	36.93
September 7, 2019	0.04	4,940.13	36,954.71	36.95
September 8, 2019	0.04	5,521.43	41,303.14	41.30
September 9, 2019	0.04	4,936.77	36,929.60	36.93
September 10, 2019	0.04	5,519.62	41,289.63	41.29
September 11, 2019	0.04	4,940.39	36,956.71	36.96
September 12, 2019	0.04	4,936.63	36,928.58	36.93
September 13, 2019	0.04	5,450.06	40,769.26	40.77
September 14, 2019	0.04	4,936.62	36,928.49	36.93
September 15, 2019	0.04	4,936.62	36,928.49	36.93
September 16, 2019	0.04	5,516.95	41,269.63	41.27
September 17, 2019	0.04	4,943.52	36,980.14	36.98
September 18, 2019	0.04	5,500.00	41,142.84	41.14

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September 19, 2019	0.04	4,936.62	36,928.49	36.93
September 20, 2019	0.04	5,540.48	41,445.66	41.45
September 21, 2019	0.04	4,936.67	36,928.86	36.93
September 22, 2019	0.04	4,936.62	36,928.49	36.93
September 23, 2019	0.04	5,419.81	40,543.01	40.54
September 24, 2019	0.04	4,941.15	36,962.34	36.96
September 25, 2019	0.04	5,308.85	39,712.94	39.71
September 26, 2019	0.04	4,942.90	36,975.50	36.98
September 27, 2019	0.04	4,944.71	36,989.01	36.99
September 28, 2019	0.04	5,494.96	41,105.14	41.11
September 29, 2019	0.04	4,944.72	36,989.11	36.99
September 30, 2019	0.04	5,497.62	41,125.04	41.13
October 1, 2019	0.04	4,940.08	36,954.37	36.95
October 2, 2019	0.04	5,454.19	40,800.18	40.80
October 3, 2019	0.04	4,936.62	36,928.49	36.93
October 4, 2019	0.04	5,473.61	40,945.43	40.95
October 5, 2019	0.04	4,936.73	36,929.27	36.93
October 6, 2019	0.04	5,506.53	41,191.72	41.19
October 7, 2019	0.04	4,948.83	37,019.86	37.02
October 8, 2019	0.05	6,122.17	45,797.05	45.80
October 9, 2019	0.04	5,537.86	41,426.08	41.43
October 10, 2019	0.04	5,546.75	41,492.57	41.49
October 11, 2019	0.04	5,561.94	41,606.20	41.61
October 12, 2019	0.04	4,948.97	37,020.86	37.02
October 13, 2019	0.04	5,518.20	41,278.97	41.28
October 14, 2019	0.04	4,985.89	37,297.08	37.30
October 15, 2019	0.04	5,543.78	41,470.35	41.47
October 16, 2019	0.04	4,966.95	37,155.40	37.16
October 17, 2019	0.04	5,437.82	40,677.69	40.68
October 18, 2019	0.04	5,919.30	44,279.47	44.28
October 19, 2019	0.04	5,310.69	39,726.76	39.73
October 20, 2019	0.04	4,982.81	37,274.00	37.27
October 21, 2019	0.04	5,511.03	41,225.38	41.23
October 22, 2019	0.04	5,545.74	41,485.05	41.49
October 23, 2019	0.04	4,949.79	37,027.00	37.03
October 24, 2019	0.04	5,505.39	41,183.18	41.18
October 25, 2019	0.04	4,978.70	37,243.27	37.24
October 26, 2019	0.04	5,583.14	41,764.80	41.76
October 27, 2019	0.04	4,965.81	37,146.81	37.15
October 28, 2019	0.05	6,511.45	48,709.05	48.71
October 29, 2019	0.05	6,164.95	46,117.00	46.12

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OCTOBER 1, 2019 - DECEMBER 31, 2019



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JULY 1, 2019 - DECEMBER 31, 2019



October 30, 2019	0.04	4,973.87	37,207.12	37.21
October 31, 2019	0.04	5,567.61	41,648.60	41.65
November 1, 2019	0.05	6,592.65	49,316.48	49.32
November 2, 2019	0.06	7,727.06	57,802.46	57.80
November 3, 2019	0.04	5,615.89	42,009.81	42.01
November 4, 2019	0.04	5,041.92	37,716.17	37.72
November 5, 2019	0.04	5,571.34	41,676.51	41.68
November 6, 2019	0.04	5,545.37	41,482.27	41.48
November 7, 2019	0.04	5,006.56	37,451.68	37.45
November 8, 2019	0.04	5,603.53	41,917.29	41.92
November 9, 2019	0.05	6,151.29	46,014.88	46.01
November 10, 2019	0.04	5,124.81	38,336.21	38.34
November 11, 2019	0.04	5,642.26	42,207.02	42.21
November 12, 2019	0.04	5,621.06	42,048.48	42.05
November 13, 2019	0.04	5,593.65	41,843.45	41.84
November 14, 2019	0.04	5,200.44	38,902.01	38.90
November 15, 2019	0.04	5,782.82	43,258.50	43.26
November 16, 2019	0.04	5,677.51	42,470.70	42.47
November 17, 2019	0.04	5,125.54	38,341.70	38.34
November 18, 2019	0.04	5,645.22	42,229.22	42.23
November 19, 2019	0.04	5,078.78	37,991.93	37.99
November 20, 2019	0.04	5,599.39	41,886.33	41.89
November 21, 2019	0.04	5,038.45	37,690.21	37.69
November 22, 2019	0.04	5,596.49	41,864.67	41.86
November 23, 2019	0.04	5,002.96	37,424.78	37.42
November 24, 2019	0.04	5,520.27	41,294.52	41.29
November 25, 2019	0.04	5,593.69	41,843.71	41.84
November 26, 2019	0.04	5,543.00	41,464.52	41.46
November 27, 2019	0.04	5,508.94	41,209.73	41.21
November 28, 2019	0.04	5,579.09	41,734.46	41.73
November 29, 2019	0.06	7,698.42	57,588.21	57.59
November 30, 2019	0.04	6,007.84	44,941.75	44.94
December 1, 2019	0.04	5,586.34	41,788.76	41.79
December 2, 2019	0.21	27,652.30	206,853.57	206.85
December 3, 2019	0.05	6,579.48	49,217.90	49.22
December 4, 2019	0.07	8,940.85	66,882.17	66.88
December 5, 2019	0.05	6,395.84	47,844.21	47.84
December 6, 2019	0.05	6,676.47	49,943.48	49.94
December 7, 2019	0.05	6,220.76	46,534.51	46.53
December 8, 2019	0.04	5,564.22	41,623.24	41.62
December 9, 2019	0.04	5,595.86	41,859.95	41.86

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December 10, 2019	0.04	5,610.47	41,969.22	41.97
December 11, 2019	0.04	5,570.98	41,673.85	41.67
December 12, 2019	0.04	5,653.75	42,292.96	42.29
December 13, 2019	0.04	5,723.32	42,813.45	42.81
December 14, 2019	0.04	5,106.61	38,200.08	38.20
December 15, 2019	0.04	5,587.47	41,797.17	41.80
December 16, 2019	0.05	6,066.43	45,380.04	45.38
December 17, 2019	0.05	6,151.60	46,017.18	46.02
December 18, 2019	0.06	8,504.60	63,618.85	63.62
December 19, 2019	0.07	8,952.02	66,965.77	66.97
December 20, 2019	0.06	8,000.01	59,844.24	59.84
December 21, 2019	0.05	6,868.95	51,383.30	51.38
December 22, 2019	0.05	6,678.15	49,956.06	49.96
December 23, 2019	0.05	6,668.91	49,886.93	49.89
December 24, 2019	0.04	5,627.28	42,094.98	42.09
December 25, 2019	0.04	5,648.79	42,255.92	42.26
December 26, 2019	0.04	5,466.49	40,892.15	40.89
December 27, 2019	0.04	5,628.93	42,107.31	42.11
December 28, 2019	0.04	4,999.39	37,398.01	37.40
December 29, 2019	0.04	5,518.76	41,283.23	41.28
December 30, 2019	0.04	5,498.13	41,128.90	41.13
December 31, 2019	0.05	7,239.37	54,154.27	54.15

