Sanitation District No. 1
December 31, 2018

Capacity, Management, Operations, & Maintenance (CMOM) FY 2018 Annual Report

(This page intentionally left blank for double-sided printing.)

SD1
Managing Northern Kentucky's
Wastewater and Storm Water

December 31, 2018

Director of the Division of Enforcement
Department for Environmental Protection
300 Sower Blvd.
Frankfort, KY 40601

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

Mr. Daniel J. O'Lone, Acting Chief
NPDES Permitting and Enforcement Branch
U.S. Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

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

To Whom It May Concern:

Pursuant to the above-referenced Consent Decree, Sanitation District No. 1 (SD1) is required to submit annual reports on the implementation of its Capacity, Management, Operations, and Maintenance (CMOM) programs. These reports are due no later than December 31, each year.

The Consent Decree was entered on April 18, 2007 and required SD1 to submit four separate CMOM documents within the first year – the Grease Control Program, the Sewer Overflow Response Plan (SORP), the CMOM Self-assessment, and the Pump Station Operation Plan for Backup Power. Each of these submittals has received regulatory approval. Updates to these programs are now included in the CMOM Annual Report, as it is not required for the program updates to be submitted as separate documents.

A certification, as required by the Consent Decree (Paragraph 38), is also enclosed.

To the best of my knowledge and belief, the enclosed report is true, accurate, and complete, and further demonstrates SD1's commitment to the mission of protecting and enhancing the water resources and quality of life in Northern Kentucky.

If you have any questions or concerns, do not hesitate to contact me at 859-578-7465 or by e-mail at achaney@sd1.org.

Best regards,

Adam Chaney
Executive Director

AC/wck
Enclosures

CERTIFICATION

Capacity, Management, Operations, & Maintenance (CMOM)
FY 2018 Annual Report
Consent Decree Case No. 2:05-cv-00199-WOB

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

Adam Chaney
Executive Director

12/31/18
Date

COMMONWEALTH OF KENTUCKY

)ss.

COUNTY OF Kenton

The foregoing instrument was acknowledged before me this 31 day of Dec, 2018 by Adam Chaney, Executive Director of Sanitation District No. 1.

Angela M Cook
NOTARY PUBLIC

Kenton County, Kentucky

My commission expires:_____

Angela M. Cook
Notary Public
Kentucky, State at Large
Comm. Exp. 09-01-2020
Notary ID 562735

(This page intentionally left blank for double-sided printing.)

CAPACITY, MANAGEMENT, OPERATIONS, AND MAINTENANCE FY 2018 ANNUAL REPORT

December 31, 2018

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

TABLE OF CONTENTS

FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

CCTV	Closed Circuit Television
CIP	Capital Improvement Program
CMOM	Capacity, Management, Operations, and Maintenance
CSAP	Continuous Sewer Assessment Program
CSO	Combined Sewer Overflow
CSS	Combined Sewer System
ERP	Emergency Response Plan
FOG	Fats, Oils, and Grease
FSE	Food Service Establishments
FY	Fiscal Year
GCE	Grease Control Equipment
GIS	Geographic Information System
HAZWOPER	Hazardous Waste Operations and Emergency Response Program
I/I	Inflow and Infiltration
IT	Information Technology
NOV	Notice of Violation
O&M	Operations & Maintenance
OSHA	Occupational Safety and Health Administration
PM	Preventive Maintenance
SBP	Strategic Business Plan
SCREAM	System Condition and Risk Enhanced Assessment Model
SD1	Sanitation District No. 1
SL-RAT	Sewer Line Rapid Assessment Tool
SOP	Standard Operating Procedure
SORP	Sewer Overflow Response Plan
SSES	Sanitary Sewer Evaluation Survey
SSO	Sanitary Sewer Overflow
UAV	Unmanned Aerial Vehicle
YTD	Year to Date

SECTION 1. INTRODUCTION

1.1 Overview and Report Period

On April 18, 2007, Sanitation District No. 1 (SD1) entered into a Consent Decree with the U.S. Environmental Protection Agency and the Kentucky Energy and Environment Cabinet (Cabinet) to address sanitary sewer overflows (SSOs) and combined sewer overflows (CSOs), in an effort to improve water quality throughout SD1's service area. The Consent Decree requires that SD1 continue the implementation of formal Capacity, Management, Operations, and Maintenance (CMOM) programs. SD1's CMOM programs are designed to manage the collection system assets and provide operational guidelines that maximize efficiency and reduce the potential for overflow occurrences. Proper planning and management of CMOM programs can result in a reduction of the number, frequency, and volume of SSOs and CSOs.

SD1 received regulatory approval of its CMOM programs on May 14, 2008. Pursuant to the Consent Decree, SD1 is required to submit annual reports on its implementation of these CMOM programs. This report describes SD1's ongoing commitment to its CMOM programs, during Fiscal Year (FY) 2018, which began on July 1, 2017 and ended on June 30, 2018.

Section 2 provides updates on the progress of various SD1 CMOM programs. Described in Sections 3 through 5 are CMOM specific programs that required separate approvals but no separate reports. They include: Sewer Overflow Response Plan (SORP), Grease Control Program, and Pump Station Operation Plan for Backup Power. Section 6 deals with ongoing self-assessment routines and strategic business plan initiatives that support and advance SD1's CMOM programs.

1.2 CMOM Program Structure

SD1 has been performing CMOM activities for many years. In 2007, these activities were structured into formal programs with the CMOM Self-Assessment. During the self-assessment process, a written purpose, goals, and recommended improvements were

established for each program. Most of the recommendations of the initial CMOM Self-Assessment have been fully implemented, however, SD1 continues to strive for maximized efficiency and overflow reduction by sustaining the CMOM principle of continuous improvement.

The 34 formal programs identified in SD1's CMOM Self-Assessment are listed in Table 1.1. Section 2 and Section 6 of this Annual Report provide updates on the progress of some of these programs and new initiatives. The programs that have not been covered in this Annual Report are italicized in Table 1.1. Programs that are not currently covered in this report, may be in previous or future CMOM reports.

Table 1.1 CMOM Program Activities

Management Programs	**Operations Programs**
• Organizational Structure	• Emergency Preparedness & Response
• *Communication & Customer Service*	• Safety
• *Legal Authority*	• Budgeting
• *Acquisition Considerations*	• Engineering
• Information Management System (IMS)	• Call Before You Dig
• Training	• Water Quality Monitoring
• System Mapping	• Compliance
• SSO Reporting & Notification	• Mobile Waste Haulers
Maintenance Programs	• Pump Station Operations
• Manhole Repairs	• *Pump Station Emergencies*
• Rehabilitation & Replacement	• *Pump Station Force Mains PM*
• Mainline Sewer Repairs	• Odor & Corrosion Control
• Sewer Cleaning	• Continuous Sewer Assessment
• *Equipment & Tools Maintenance*	• *Smoke & Dye Testing*
• Pump Station Maintenance	• Flow Monitoring
• *Maintenance of Rights-of-Way*	• CCTV Inspection
Capacity Programs	• *Manhole Inspections*
• Capacity Assessment & Assurance	
• New Connection Tap-In	

Italicized programs in the above table have not been reviewed in this Annual Report

1.3 Collection System's Major Components

SD1's sanitary service area currently covers approximately 190 square miles, and its storm service area covers approximately 184 square miles. SD1 serves approximately 106,600 sanitary accounts and approximately 97,950 storm water accounts. SD1 manages a collection system that serves more than 286,000 residents and is approximately comprised of:

- 42,350 SD1 owned sanitary manholes
- 3,900 SD1 owned catch basins and inlets in the combined sewer system
- 1,600 miles of SD1 owned and operated gravity sewer lines and force mains
- 160 miles of additional Florence owned sewer lines and force mains
- 83 miles of additional privately owned sewer lines
- 431 miles of SD1 owned and operated separate storm water lines
- 126 pump stations (3 of which are owned by the Airport and operated by SD1 through a contract; 2 of which are associated with treatment plants)
- 78 gate structures
- 15 flood pump stations
- 6 small wastewater treatment plants (2 of which are owned by separate entities and operated by SD1)
- 3 regional water reclamation facilities

SD1 no longer operates 11 pump stations that are owned by the City of Walton. The contract with the city was terminated on June 30, 2016.

During FY 2018, SD1 acquired more than 41,100 feet of privately developed sewer, approximately 247 new manholes, and one new pump station. All newly acquired assets passed inspection and met the technical specifications and construction standards of SD1.

SD1's collection systems convey wastewater from private laterals connected to homes, businesses, and industries through a series of gravity lines, pumped systems, and interceptors to wastewater treatment plants. The service area consists of both combined and separate sewer systems. The combined sewers are located primarily in the river cities of Bromley, Ludlow, Covington, Newport, Bellevue, and Dayton. Maps of the service areas can be found in Appendix A.

SECTION 2. CMOM PROGRAM HIGHLIGHTS

This section provides updates on the implementation and progress of many of the CMOM programs provided in Table 1.1.

2.1 Budgeting

The purpose of SD1's Budgeting Program is to enable all operating departments to execute SD1's mission and vision in a fiscally responsible manner and provide cost-effective services to ratepayers. The Budgeting Program provides SD1 with a clear understanding of the organization's financial needs and obligations, which results in the ability to adequately manage debt service and plan for future needs. This program also helps SD1 personnel categorize expenses and properly manage assets and infrastructure.

2.1.1 Capital and Operations & Maintenance Expenditures

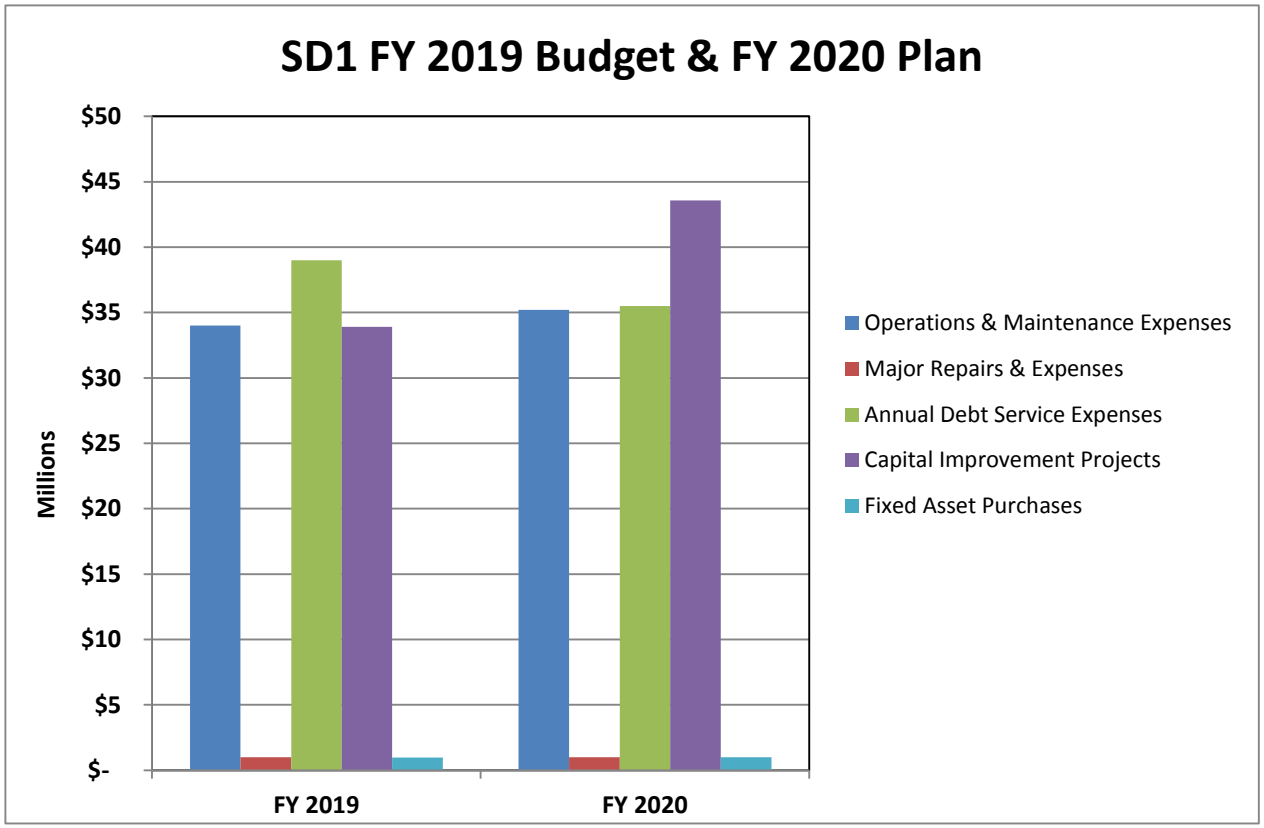
The audited capital expenditures for FY 2018 totaled approximately $16.1 million, and the audited O&M expenditures for FY 2018 totaled approximately $32.9 million. The total capital spending associated with all sanitary projects over the next two years is approximately $77.4 million, as demonstrated in Table 2.1. Figure 2.1 represents SD1's anticipated debt service, O&M, and capital improvement program (CIP) expenses over the next two years.

Table 2.1 Two-Year CIP Budget
(FY 2019 and FY 2020)

Fiscal Year	Projected Capital Spending
2019	$33,915,790
2020	$43,579,301
Total	**$77,495,091**

Figure 2.1 SD1 Estimated Expenses: Annual Debt Service, O&M, and CIP

(FY 2019 and FY 2020)



During FY 2018, user rates, fees, and other revenues made up the majority of the total funding sources. SD1 drew more than $176,000 in State Revolving Loan proceeds in FY 2018. Additionally, more than $104,000 was reimbursed to SD1 by the Federal Emergency Management Agency and the Kentucky Emergency Management Association for emergency operations of the flood control system in February of 2018.

2.2 Capacity Assessment & Assurance

The purpose of SD1's Capacity Assessment and Assurance Program is to continuously understand the overall capacity of the collection and treatment components of the system, and to identify problem areas that lack adequate wet-weather capacity, so solutions can be developed to provide sufficient service. This program provides staff with a comprehensive understanding of SD1's current capacity, which allows for better management, design, and control of the systems.

2.2.1 Overflow Inspections and Hydraulic Modeling

SD1's CSO investigation crew continued to perform routine CSO inspections after storms that produced more than half an inch of rain and routine dry-weather inspections. SSO investigation crews also continued to perform routine inspections and clean-ups after qualifying rain events at known recurring or suspected wet-weather SSO locations. The purpose of these routine inspections is to verify overflow activity due to a lack of capacity, assess the causes of overflows, and initiate the proper procedures for overflow containment and cleanup. SD1's continuous effort to characterize, verify, and respond to overflows throughout its collection system ensures that they are appropriately categorized and prioritized for elimination. Proper overflow characterization from field inspections reinforces the accuracy of the hydraulic models that are used by SD1 to understand system capacity, and helps identify effective solutions for overflow reduction and elimination.

SD1 developed a highly calibrated system-wide hydraulic model in 2008 to be used as an accurate planning tool for capital improvements, and to assess the current performance of SD1's collection system. To ensure that the hydraulic model continues to accurately reflect the current collection system, SD1's maintenance and asset planning crews perform routine inspections after rain events to verify model-predicted overflows. All inspection results are formally reviewed, annually, against model predictions. Any discrepancies found between the model and inspections are targeted for further investigation and model calibration.

SD1 conducted approximately 4,483 CSO diversion inspections in FY 2018. Approximately 2,918 of the CSO inspections were conducted within 48 hours of a storm that produced at least half an inch of rain, or after a high-river event that activated the flood control system. The remaining 1,565 were routine dry-weather CSO inspections. Additionally, following at least one inch of rain, SD1 conducted approximately 1,146 inspections at its known Recurring and Inactive SSO locations in FY 2018.

2.2.2 Flow Monitoring and Hydraulic Modeling

Flow Monitoring Activity

SD1's flow monitoring crew continuously utilizes remote-sensing devices, such as, flow meters, levels sensors, cameras, and rain gauges to collect various data in targeted

areas of the collection system. These data are used to understand wet-weather impacts on the collection system, improve model confidence, identify and confirm areas that are suspected of having high inflow and infiltration (I/I), inform reservation of capacity decisions, and quantify the benefits of capital projects.

Figure 2.2 identifies approximately 108 locations that were monitored with flow meters during the current reporting period. A summary of the reasons for monitoring these locations is provided below:

- 80 capacity analysis and model calibration sites
- 7 CSO monitoring sites
- 5 micro-monitoring SSES sites to evaluate inflow and infiltration
- 5 pre-construction monitoring sites
- 4 micro-monitoring sites to analyze average daily flows of new developments
- 3 Recurring Wet Weather SSO monitoring sites
- 2 post-construction monitoring sites
- 1 creek for a comprehensive watershed study
- 1 pump station SSO bypass (Highland Heights PS)

These meters are also used to calibrate and extend SD1's hydraulic models. Section 2.2.1 describes how field inspections are used to continuously ensure the validity of model simulations and predictions. Flow meters are used to gather more detailed information on system response to varying antecedent moisture conditions and weather patterns. The data collected with the flow meters address specific conveyance analyses related to the reservation of capacity and the construction of capital improvements, which may alter the system enough to warrant calibration of the models. This ongoing process ensures that SD1's collection system models are verified and remain up-to-date.

Figure 2.3 illustrates where SD1's hydraulic models were calibrated in FY18, with the continuous input of the flow monitoring program.

Figure 2.2 Flow Monitoring Locations in FY 2018

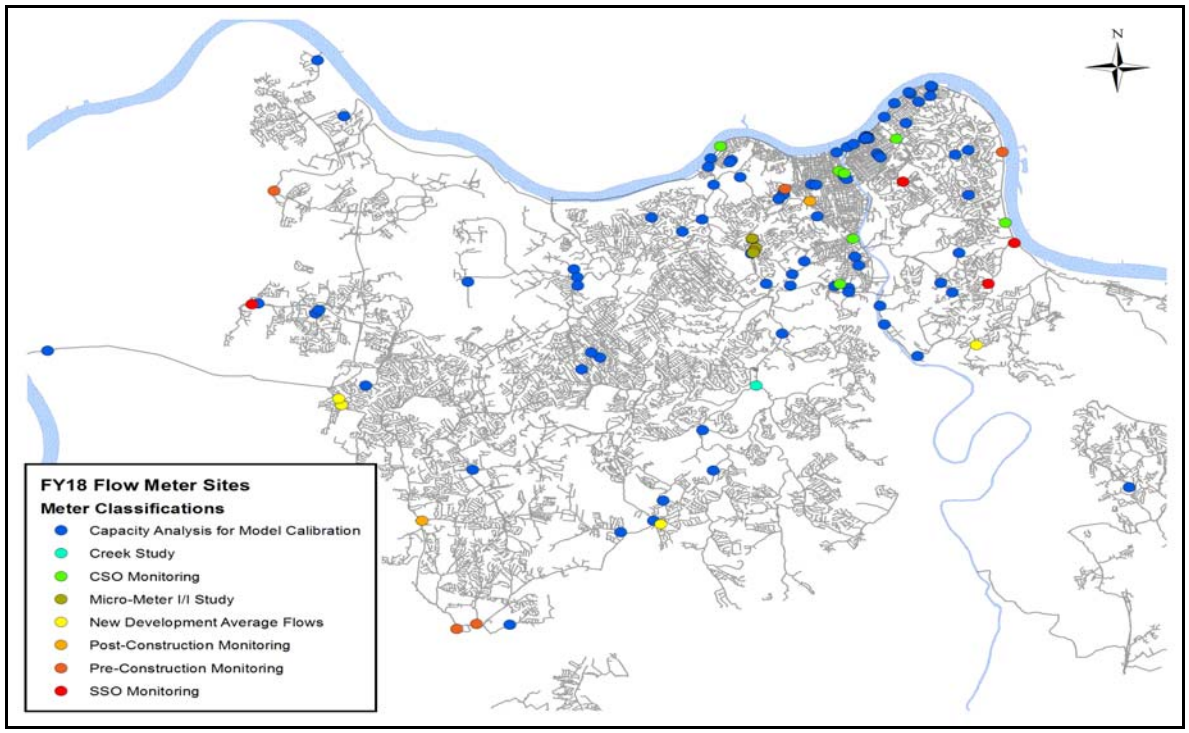
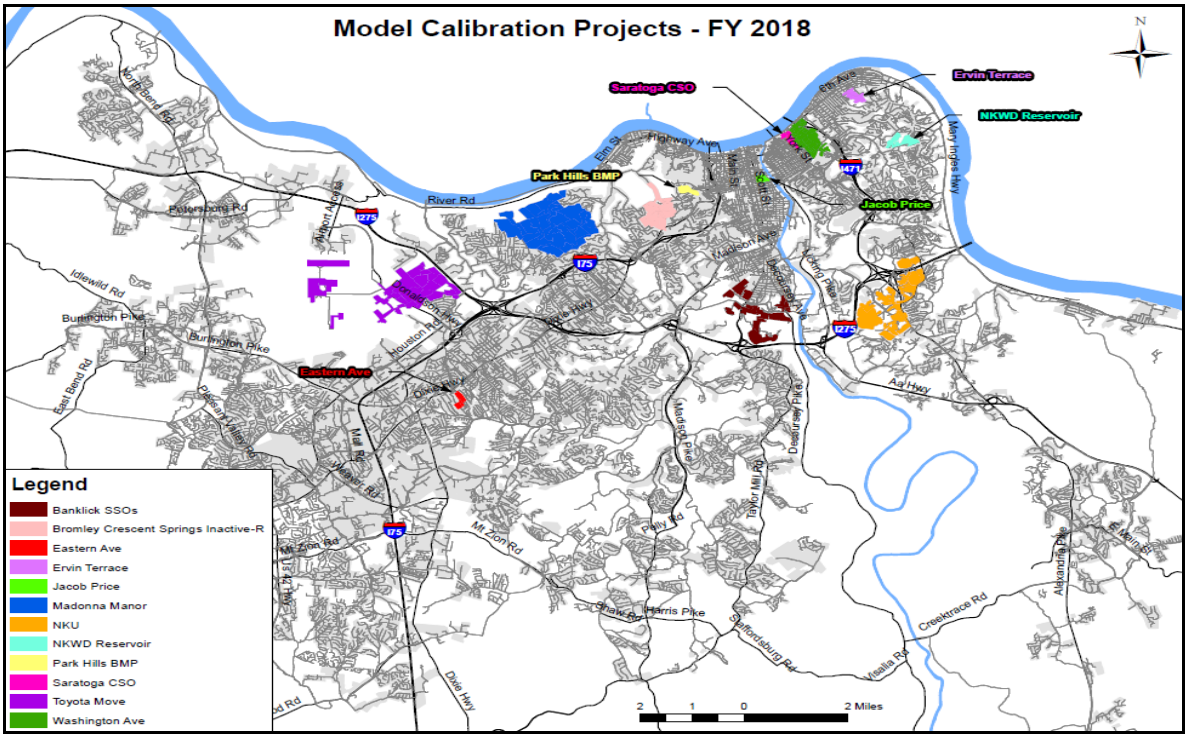


Figure 2.3 SD1 Model Calibrations in FY 2018

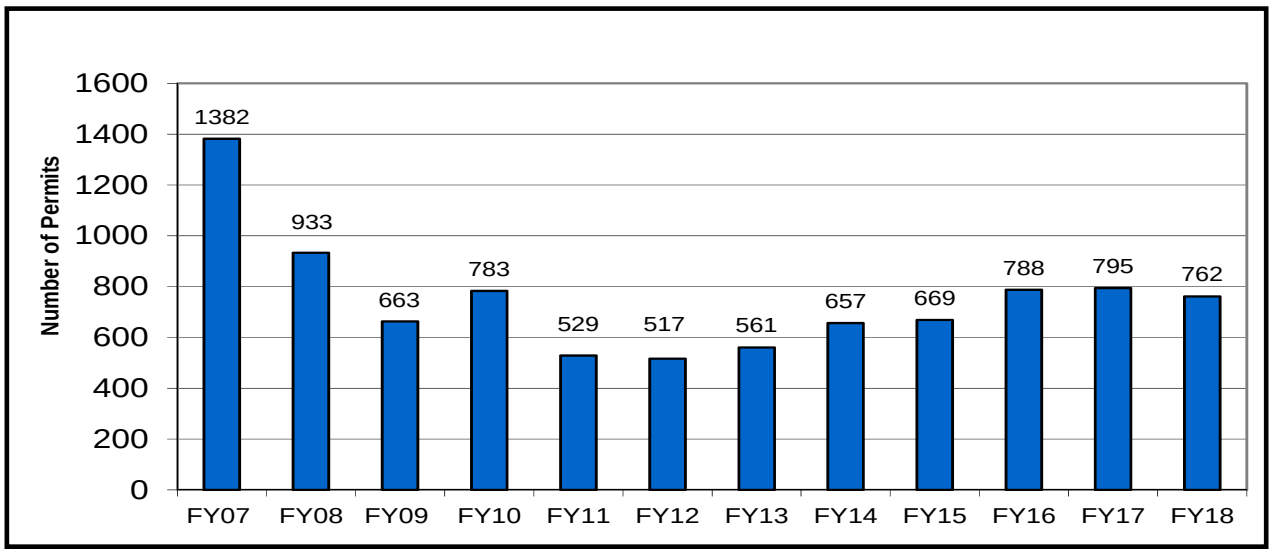


2.2.3 Reservation of Capacity

SD1's Rules and Regulations require developers to submit a written request for the reservation of sanitary sewer capacity, which is reviewed and considered for approval by SD1's Board of Directors.

A sewer capacity connection permit must be obtained from SD1, prior to connecting to the system. Figure 2.4 shows that permits issued by SD1 have declined sharply from ten years ago, but are steadily on the rise. SD1 has issued an average of 753 capacity connection permits per year, since entering the Consent Decree in 2007. In FY 2018, SD1 issued 762 capacity connection permits.

Figure 2.4 Capacity Connection Permits Issued (FY2005 - FY2018)



2.3 Call Before You Dig

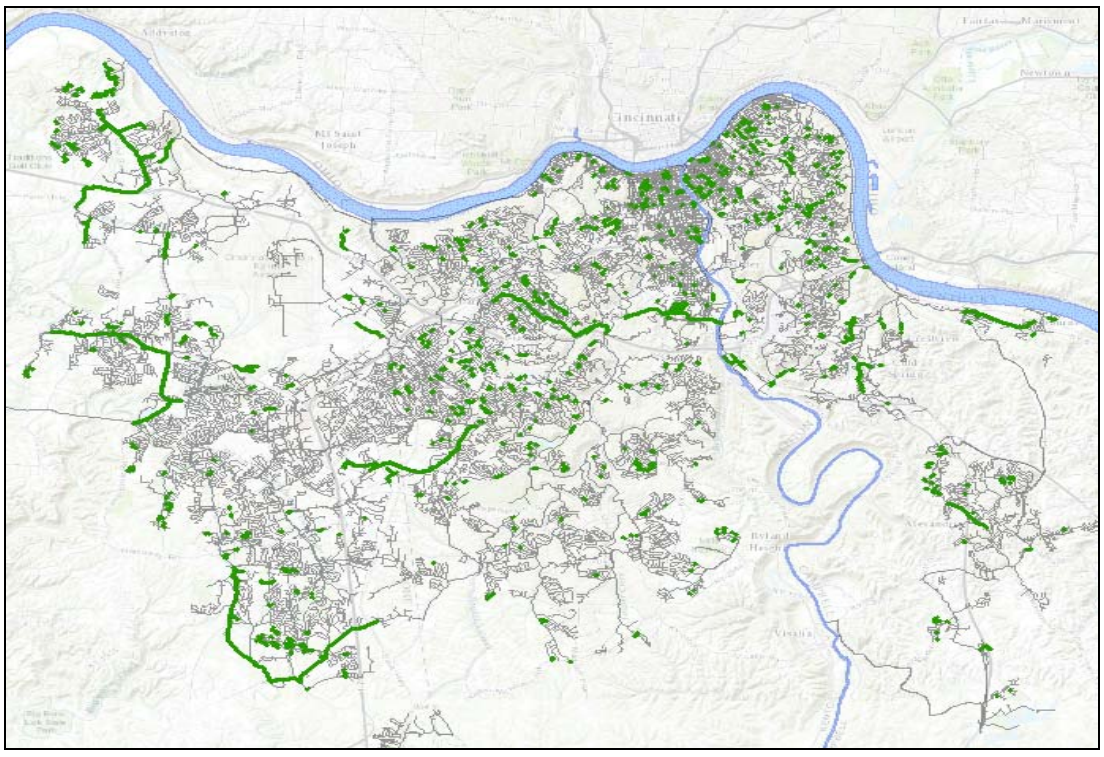
The purpose of SD1's Call Before You Dig Program is to protect underground assets by marking the ground where SD1 lines and easements exist, prior to construction activities by contractors, homeowners, or other utilities. By marking these assets prior to construction or any other land disturbance, SD1 prevents unintended damage that could lead to pipe failures and SSOs. In compliance with the American Public Works Association Uniform Color Code, SD1 uses green paint to mark all sewers.

During FY 2018, SD1 responded to approximately 1,474 external requests to locate underground assets. Approximately 1,202 work orders were generated from the requests and approximately 1,716 total assets were marked. Table 2.2 provides the approximate total of line location work orders and assets marked by SD1 in the past seven years. Figure 2.5 summarizes the assets that have been marked since FY 2011.

Table 2.2 Line Locations

Fiscal Year	Work Orders Completed	Assets Marked
FY 2011	688	1,220
FY 2012	1,194	2,722
FY 2013	955	2,520
FY 2014	966	2,226
FY 2015	1,465	2,701
FY 2016	1,698	2,065
FY 2017	1,794	2,045
FY 2018	1,202	1,716

Figure 2.5 Lines Located and Marked in FY 2018



2.4 New Connection Tap-In

The purpose of SD1's New Connection Tap-in Program is to ensure standard policies and procedures are in place to approve and perform connections to the sanitary and storm sewer systems. The objectives of this program are to:

- Accommodate economic development throughout the Northern Kentucky region
- Eliminate the number of illegal and improper taps made throughout the collection system
- Ensure all connection fees are paid and all new connections are put on billing
- Maintain the integrity of the sanitary sewer system by reducing the amount of I/I that can enter the system through bad taps or improper abandonment of service laterals
- Protect the integrity of the sanitary and storm sewer systems by enforcing the use of proper materials
- Provide an avenue for SD1 to keep certified tappers informed about changes to the Rules and Regulations or specifications for tapping the system
- Provide supplemental training on other critical SD1 programs, such as FOG, illicit discharge and confined space entry safety

2.4.1 Certified Tapper Program

SD1's formal Certified Tapper Program ensures that connections to the sanitary and storm sewer system are approved by SD1 personnel and are performed accurately based upon written specifications and procedures. Plumbers interested in becoming certified are required to attend training and pass a written exam. In addition, Certified Tappers must attend a recertification class offered by SD1 every three years. SD1 currently has 206 Certified Tappers representing 123 plumbing companies, three cities, one county, and one utility. Of these 206 Certified Tappers, 18 became newly certified during FY 2018.

2.4.2 Violations and Fines

During FY 2018, SD1 issued 10 violations and $5,000 in fines to 10 companies for connecting to SD1's sewer system without obtaining the proper Capacity Permit or Sanitary Sewer Connection Application Permit. Table 2.3 provides the total amount of documented violations and fines issued for unpermitted connections since FY 2009.

Table 2.3 Capacity Connection Violations and Fines

Fiscal Year	Total Violations	Total Companies	Total in Fines
2009	6	6	$3,000
2010	8	7	$5,250
2011	9	6	$5,500
2012	7	3	$2,000
2013	19	8	$10,500
2014	23	14	$15,250
2015	3	3	$1,500
2016	7	7	$3,500
2017	14	10	$8,250
2018	10	10	$5,000
Total	**106**	**74**	**$59,750**

2.5 Lateral Repair Program

In 2016, a formal policy was adopted by the SD1 Board of Directors to assist homeowners with the rehabilitation of failed service laterals that are in the public right-of-way. A full summary of the legal authority, the community's need for this program, and the program eligibility requirements was documented in the CMOM FY 2016 Annual Report.

Table 2.4 provides the total number of reviewed and repaired service laterals in the public right-of-way, since the formal establishment of this program.

Table 2.4 SD1 Repairs of Failed Private Laterals in the Public Right-of-Way

Fiscal Year	Lateral Failures Reviewed	Lateral Repairs Approved
2016	114	94
2017	92	45
2018	69	61
2019 YTD	26	25
Total	**301**	**225**

2.6 Continuous Sewer Assessment

The purpose of the Continuous Sewer Assessment Program (CSAP) is to provide a proactive and coordinated asset management-based approach to assessing the condition and life cycle of SD1's infrastructure and managing a cost-effective rehabilitation/replacement of the system. Implementation of this program has enabled SD1 to more effectively and proactively prioritize and implement system inspection, cleaning, and rehabilitation/replacement of its assets.

SD1's CSAP classifies pipes by using the Sewer Condition Risk Evaluation Analysis Model™ (SCREAM) to generate structural and maintenance scores for each pipe inspected. The structural and maintenance scores are used to identify appropriate schedules for recommended next actions, such as: reinspection, cleaning, repair, rehabilitation, or replacement.

The remaining portions of this section highlight the collective progress of various SD1 O&M programs in meeting the performance goals and projected targets of the overall CSAP.

2.6.1 Collection System Condition Assessment

Sewer Inspections

On the following page, Table 2.5 outlines the amount of the collection system that has been assessed since the implementation of the CSAP through the end of the current reporting period. The table provides the initial and follow-up inspection footages of pipe

inspected over eleven years. Initial inspections reflect the amount of the system that has been inspected for the first time, based on a prioritization of the assets and their criticality scores. Follow-up inspections are for pipes that have already been initially inspected and found to need maintenance, requiring reinspection for post-maintenance assessment and a new condition score.

Table 2.5 Sewer Inspection Footage

	Initial Inspection Footage	Follow-Up Inspection Footage	Total Cumulative Footage
FY 2008	374,068	46,898	420,966
FY 2009	1,340,874	498,113	1,838,987
FY 2010	421,130	589,519	1,010,649
FY 2011	600,306	583,389	1,183,695
FY 2012	501,160	483,494	984,654
FY 2013	622,585	788,311	1,410,896
FY 2014	716,278	629,179	1,345,457
FY 2015	1,070,089	623,860	1,693,949
FY 2016	1,304,103	450,934	1,755,037
FY 2017	475,850	654,491	1,130,341
FY 2018	53,048	813,171	866,219
Total	**7,479,791**	**6,161,359**	**13,640,850**

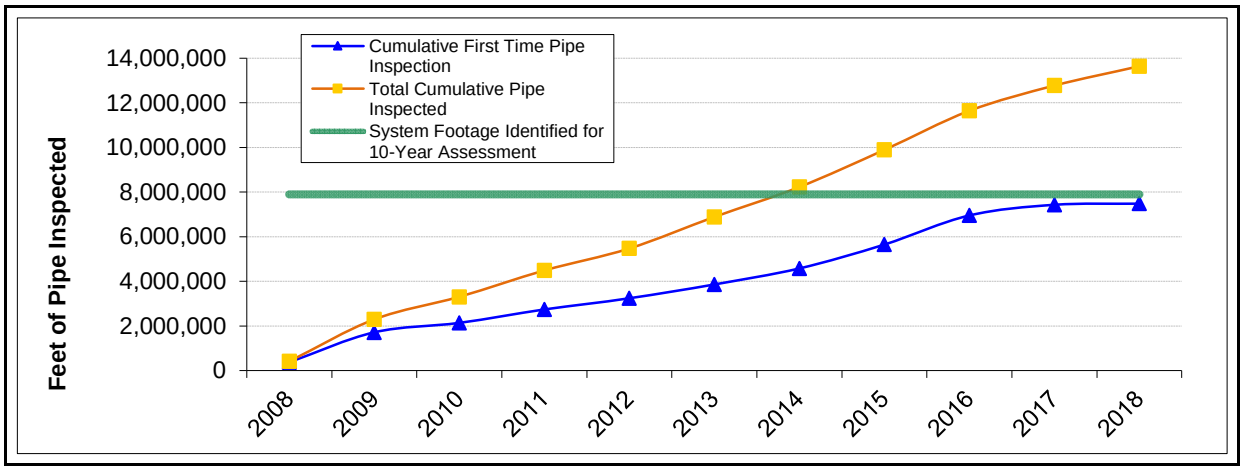
SD1's CMOM Self-Assessment, submitted on October 17, 2007, projected a 10-year target for system-wide condition assessment of SD1's existing assets at that time, totaling approximately 7,900,000 feet of pipe. The 2007 projection was assumed, using an early GIS inventory and historical maintenance programs that existed prior to the formal development of the CSAP.

To date, SD1 has inspected a grand total of 7,967,869 feet of active sanitary pipes. All initial inspections are not fully accounted for in Table 2.5, but will be updated in the CMOM FY 2019 Annual Report.

SD1 has completed its first system-wide assessment, and is currently evaluating the results to determine how to approach the next cycle.

Figure 2.6 demonstrates SD1's successful assessment of the entire collection system. The green horizontal line on the graph indicates the approximate footage of pipe that was projected to be inspected in ten years in the CMOM Self-Assessment.

Figure 2.6 Sewer Inspection Progress



RedZone Robotics

In order to complete the initial system-wide assessment, SD1 made strategic investments in new camera technology in 2014. RedZone Robotics' Solo Camera is the world's only unmanned condition assessment tool made for sewer inspections. Refer to CMOM FY 2014 Annual Report for a thorough description of the technology that SD1 has utilized over the past five years to complete its system-wide assessment. In FY 2018, SD1 used its RedZone Solo cameras for additional tasks, beyond inspections for the system-wide assessment. Additional tasks included: follow-up inspections to rescore assets after maintenance, evaluating newly acquired pipes prior to warranty expirations, and trouble call investigations. RedZone Solo cameras were used to inspect approximately 50,618 feet of pipe in FY 2018.

Catch Basin and Manhole Inspections

SD1 temporarily suspended its formal manhole inspection program in FY 2016, due to budgetary constraints. However, manholes are receiving informal inspections during

pipe inspections. Any structural issues with manholes that are discovered during the pipe inspections receive appropriate attention.

SD1 continually reviews its collected inspection data to adjust maintenance strategies. In the past, SD1 aimed to inspect all public combined sewer system catch basins at least once per year, as recommended in the Nine Minimum Controls Guidance. With the data collected over the past eleven years, SD1 can confidently target catch basins for inspections and cleanings where there are known recurring maintenance issues, without performing annual inspections of all catch basin. Catch basins that are known to not experience recurring maintenance issues are now inspected on a less frequent schedule. Catch basins are cleaned on an as-needed basis, as determined by the annual inspections. In addition to the as-needed cleanings, crews clean a set of approximately 400 catch basins that are assigned to a permanent preventive maintenance schedule.

Table 2.6 summarizes the number of catch basins and manholes inspected since the onset of CSAP.

Table 2.6 Catch Basin & Manhole Inspections

Fiscal Year	Number of Catch Basin Inspections	Number of Manhole Inspections
FY 2008	986	2,050
FY 2009	1,774	7,238
FY 2010	4,168	1,933
FY 2011	3,401	1,783
FY 2012	4,019	901
FY 2013	4,247	889
FY 2014	3,745	824
FY 2015	3,569	208
FY 2016	986	0
FY 2017	1,937	0
FY 2018	1,103	0
Total Inspections	**29,935**	**15,826**

2.6.2 Collection System Maintenance

Sewer Cleaning

Cleaning is critical in maintaining the capacity of the sewer system and preventing overflows. SD1's prioritization process ensures that cleaning activities are done in a cost-effective manner and only on pipes in need of cleaning. The cleaning program classifies pipes by using SCREAM™ maintenance scores and identifies appropriate schedules for re-inspections, cleaning, and when the pipe should be reviewed for a permanent solution to recurring maintenance issues.

Table 2.7 provides an overview of the total length of pipe cleaned, in accordance with the CSAP cleaning program logic.

Table 2.7 Sewer Cleaning Footage

Fiscal Year	Footage of Pipe Cleaned
FY 2008	113,695
FY 2009	439,191
FY 2010	737,613*
FY 2011	382,352
FY 2012	370,296
FY 2013	632,825
FY 2014	568,551
FY 2015	600,302
FY 2016	325,798
FY 2017	347,030
FY 2018	368,108
Total Feet Cleaned	**4,885,761**

**Higher totals in FY 2010 are due to sewer cleaning support provided by an outside contractor*

Pipes with high recurring maintenance scores undergo further evaluation for potential permanent solutions. Taking into consideration the pipe's structural and maintenance condition, a life-cycle cost analysis is performed to determine if it is more cost-effective to continue to inspect and clean the pipe on a regular preventive maintenance (PM) schedule or to permanently repair or replace the pipe.

The cleaning and re-inspection frequencies of pipes vary, depending on the structural condition of the pipe or other known recurring maintenance issues, such as grease, roots, and debris. SD1's permanent PM cleaning list will continue to evolve as new inspection data are collected and corrective actions are assigned. Currently, more than 6,000 pipes are assigned to a cleaning program.

Sewer Line Rapid Assessment Tool (SL-RAT)

SD1 made further investments in sewer assessment technology in FY 2015. The Sewer Line Rapid Assessment Tool (SL-RAT) is a portable and efficient assessment tool composed of one transmitter and one receiver, which sends, receives, and interprets acoustic signals in a pipe. The SL-RAT is designed to listen for and assess the presence of blockages in pipes that are 12 inches or less in diameter. Typical assessments take less than three minutes to perform. During FY 2016, SD1 began using the SL-RAT to manually adjust the automated scheduling of maintenance next actions as determined by the CSAP. The SL-RAT provides a much more efficient method of refining the CSAP scheduling logic than the conventional deployment of resource-intensive and time-intensive CCTV crews. During FY 2017, the SL-RAT inspections were programmed into the CSAP logic to improve the automation of next action scheduling, based on the acoustic scores.

Table 2.8 provides approximations of the annual acoustic inspection footages and adjustments to reschedule automated CSAP next actions.

Table 2.8 SL-RAT Inspections and Next Action Adjustments

Fiscal Year	Footage of SL-RAT Acoustic Inspections	Footage of Pipe with Next Action Adjustments Based on SL-RAT Score
FY 2016	290,000	240,000
FY 2017	267,087	139,968
FY 2018	256,570	214,459
Total	**813,657**	**594,427**

Catch Basin and Grit Pit Cleaning

In January 2009 SD1 began tracking the amount of debris removed during catch basin and grit pit cleaning. During FY 2018, SD1 removed approximately 246 cubic yards of debris from catch basins and 94 cubic yards of debris from grit pits.

Table 2.9 provides the estimated total cubic yards of debris removed from the collection system since 2009.

Table 2.9 Cubic Yards of Debris Removed from Catch Basin & Grit Pit Cleanings

Activity	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	Total
Total Cubic Yards Removed with Catch Basin Cleanings	149	433	629	527	367	455	486	985	315	**246**	**4,592**
Total Cubic Yards Removed with Grit Pit Cleanings	237	362	330	400	468	355	210	33	20	**94**	**2,509**
Total Cubic Yards Removed	**386**	**795**	**959**	**927**	**835**	**810**	**696**	**1,018**	**335**	**340**	**7,101**

Rehabilitation and Replacement

The Asset Renewal group within the SD1 Collection Systems Department manages the internal construction crews and external maintenance contractors that perform repair, replacement, and rehabilitation work. The work schedule is determined by various criticality factors and the proximity of pipes to priority watershed areas. Pipes requiring emergency work are scheduled for immediate repairs upon discovery. Additional considerations that may determine if the rehabilitation schedule should be accelerated are:

- proximity to known building backups
- proximity to recurring overflows
- lack of hydraulic capacity
- proximity to other assets in need of repair
- high consequence of failure

Table 2.10 provides the rehabilitation and replacement activities performed by SD1's internal construction crews and contractors since the onset of the CSAP through the end of the FY 2018. These activities do not include capital improvements managed by SD1's Engineering Division or O/M activities related to MS4 assets.

Table 2.10 Rehabilitation & Replacement Activities

	Feet of Sewer Lines Repaired or Replaced	Feet of Sewer Lines Rehabbed (CIPP)	Number of Manhole Repairs	Number of Manhole Replacements	Number of New Manhole Installations	Number of CSS Catch Basin Repairs	Number of CSS Catch Basin Replacements	Number of New CSS Catch Basin Installs
FY08	11,608	1,081	548	35	16	68	81	0
FY09	17,944	3,204	370	63	53	115	209	4
FY10	29,239	12,872	317	80	40	71	203	2
FY11	19,500	64,715	321	60	36	209	116	3
FY12	18,508	65,757	774	89	57	292	100	3
FY13	21,051	38,129	299	33	34	21	54	3
FY14	6,122	43,026	258	19	14	56	28	6
FY15	6,371	28,237	154	10	9	63	23	0
FY16	6,893	41,185	277	22	30	65	13	0
FY17	7,168	58,232	263	10	21	84	15	2
FY18	9,877	44,788	241	15	21	35	9	1
Total	**154,281**	**401,226**	**3,822**	**436**	**331**	**1,079**	**851**	**24**

2.6.3 CSAP Logic Improvements and Results

In 2017, SD1 worked extensively with its consultant who developed the SCREAM™ assessment model to make significant programming improvements to the CSAP logic. These programming improvements included:

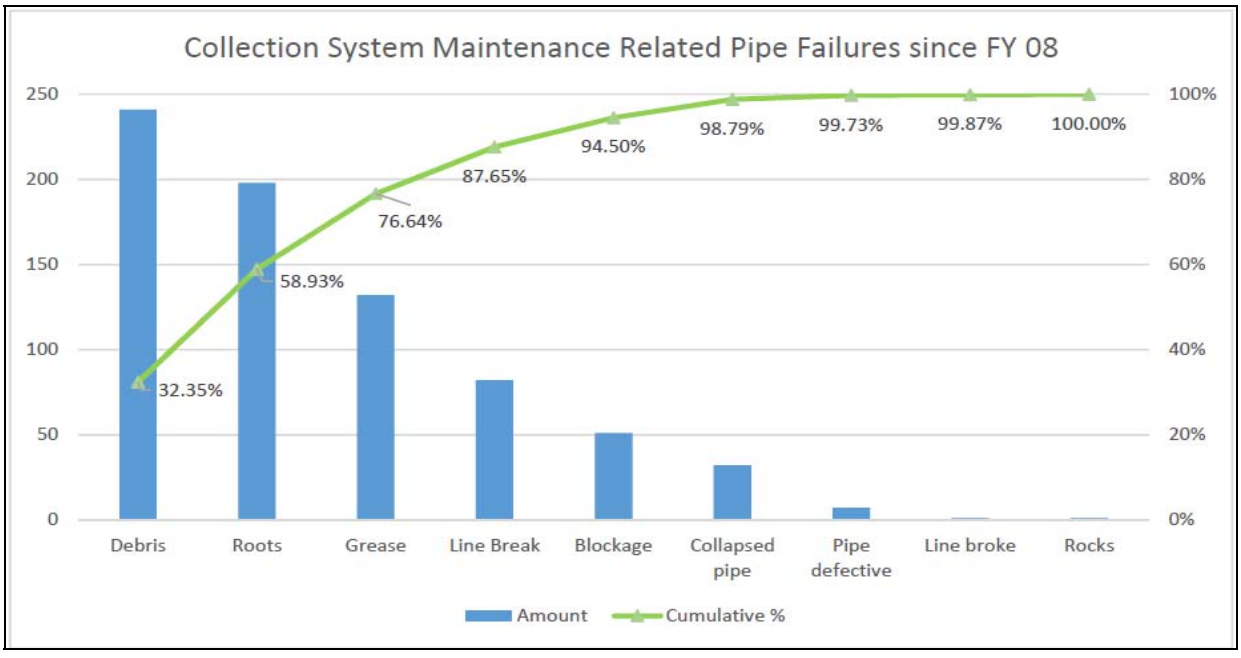
- Refinements of defect scoring to better predict failures
- Updated automation logic to better reflect historical behavior of the system
- Incorporated the recently developed consequence of failure and risk models in the CSAP logic
- Incorporated SL-RAT acoustic inspections into the logic for next action automation and scheduling
- Improved database management to reduce the need for manual overrides of automated next actions, making work order scheduling and quality control less cumbersome

- Better geographic distribution and clustering of work order creation
- Updates to costing tools and web reports

Recent investments in the CSAP programming are providing the intended results by reallocating resources, improving proactive maintenance schedules, and reducing asset failures that lead to SSOs and building backups. In particular, SD1 has utilized the recent CSAP upgrades and SL-RAT inspections to address the accumulation of debris before it becomes an issue. Debris blockages have been determined to be the most frequent cause of maintenance related pipe failures in the collection system. Specifically targeting the most frequent cause of pipe failures has proven to be a successful strategy in reducing overflows. The following graphs demonstrate the positive results of the recent adjustments.

Figure 2.7 illustrates how blockages of debris are the leading cause of all pipe failures since FY 2008.

Figure 2.7 Causes of Maintenance Related Pipe Failures since FY 2008



On the following page, Figures 2.8 demonstrates the reduction in debris-related pipe failures in FY 2018, relative to the trend illustrated in in Figure 2.7.

Figure 2.8 Causes of Maintenance Related Pipe Failures in FY 2018

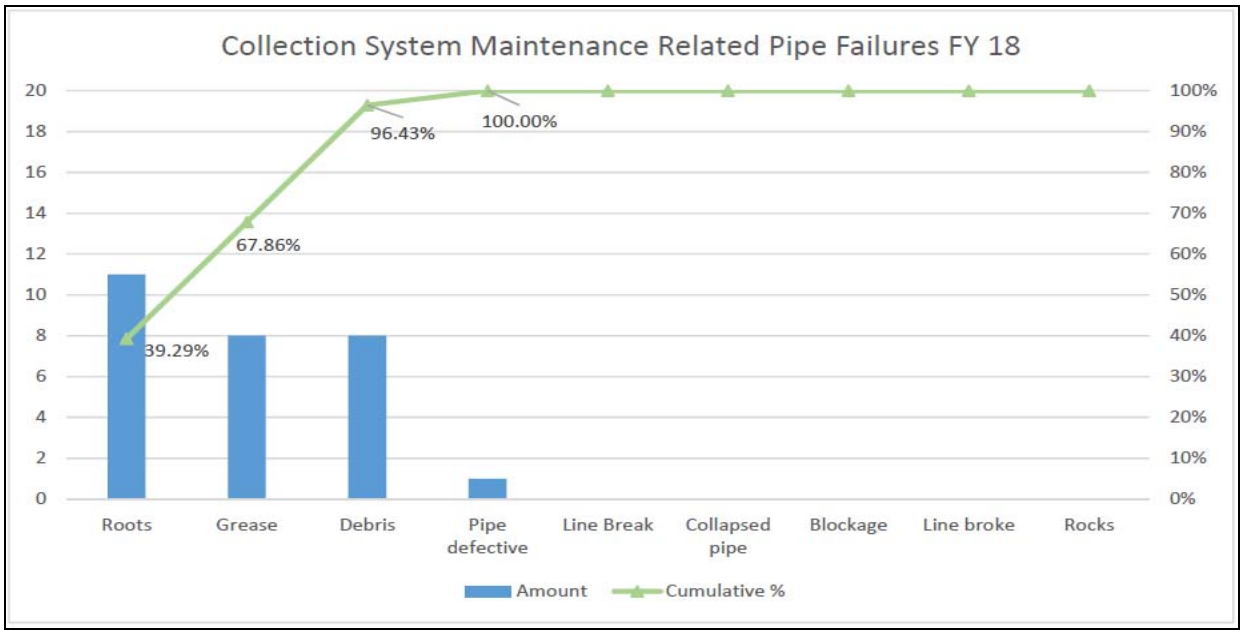
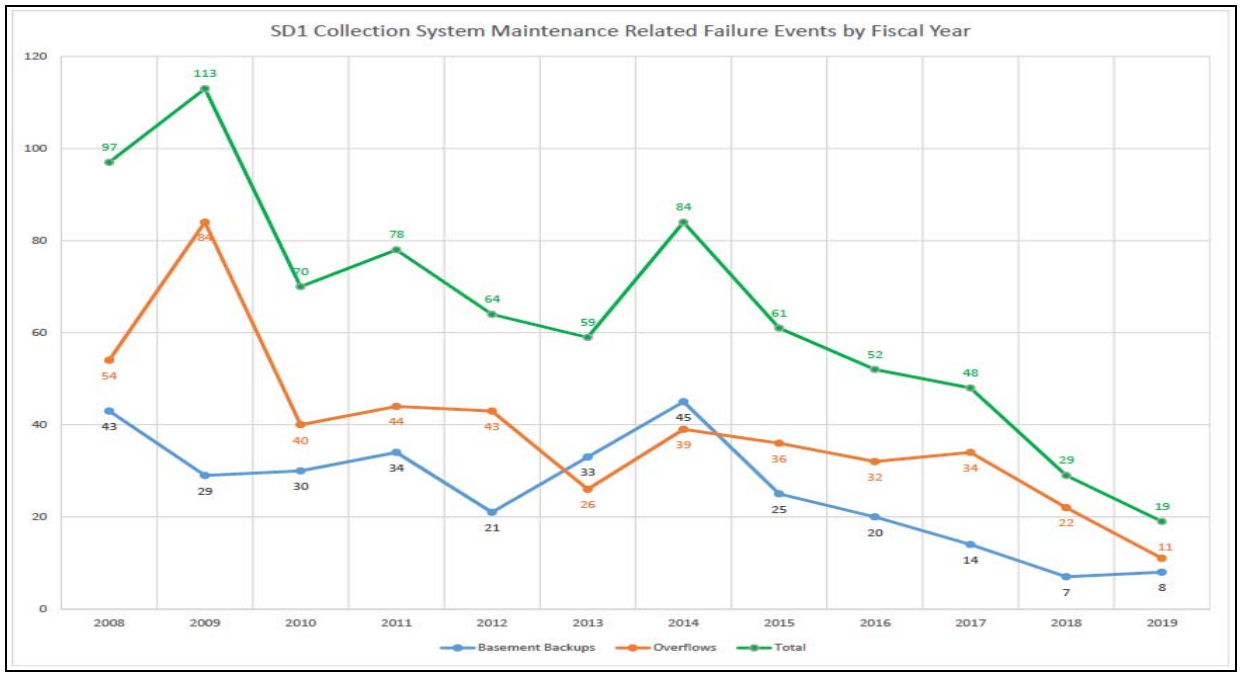


Figure 2.9 demonstrates the overall decrease in overflows and backups due to maintenance related pipe failures.

Figure 2.9 Maintenance Related Pipe Failures by Fiscal Year



2.7 Pump Station Operations

The purpose of SD1's Pump Station Operations program is to ensure reliable operations of the pump stations throughout the service area. Routine inspections and preventative maintenance are preformed to ensure that all stations are operating at maximum efficiency.

SD1 routinely performs operational inspections and preventative maintenance at all pump stations, flood stations, and associated facilities throughout the service area. This is done to ensure reliable and efficient operation of the pump stations.

2.7.1 Pump Station Inspections

In FY 2018, SD1 completed approximately 6,524 pump station operational inspections and approximately 592 flood station operational inspections. These routine inspections can vary based on stations size, odor control chemical feed systems, and the back-up power plan. Operational inspections include the following:

- Data Collection - Inspect and record pertinent information on respective inspection forms for equipment, pumps, and facilities, including pump run time, flow meter readings, chemicals remaining, and amp and voltage readings.
- Building, Grounds, and Security - General inspections and cleaning of facilities and grounds, including valve pits, vactor pits, and wet wells.
- Critical Systems Checks – Physical inspection of equipment, including valves, barscreens, gates, motors, level control, trash baskets, HVAC systems, and telemetry systems.
- Backup Power - Inspect and record pertinent information on respective inspection forms for generators and back-up pumps, including fuel gauges, coolant, and oil levels, as well as condition of belts, cables, and batteries.
- Odor Control – Inspect odor control chemical feed system for proper operation.

SD1's FY 2019 target is to perform approximately 6,652 pump station operational inspections and 780 flood station operational inspections.

2.7.2 Pump Station Preventative Maintenance

In FY 2018, SD1 completed approximately 4,330 mechanical and electrical preventative

maintenance work orders on pumps and equipment. These preventative maintenance work orders generally follow the manufacturer's recommended maintenance guidelines. Pump station preventative maintenance includes, but is not limited to:

- Generator assessments
- Stand-by pumps
- Heating ventilation and air conditioning
- Electrical components
- Air release valves, gate valves, plug valves
- Motors and motor controls
- Wet wells
- Pneumatics and bubblers
- Float switches for level control
- Telemetry equipment associated with SCADA

2.8 Compliance

The purpose of SD1's Compliance Program is to identify and control residential, commercial, and industrial sources of flow that could adversely affect the collection system. This program encompasses both the Industrial Pretreatment Program and Grease Control Program (see Section 4: Grease Control Program). This program meets the Clean Water Act pretreatment regulations and complies with the National Pollution Discharge Elimination System permit.

2.8.1 Permitting

The Compliance Program provides the authoritative measures necessary to permit and monitor discharges from commercial and industrial users that may cause corrosion or blockages in the collection system. SD1 ended FY 2018 with a total of 57 permitted Significant Industrial Users in its collection system.

2.8.2 Monitoring & Enforcement

The purpose of the Industrial Pretreatment Monitoring Program is to monitor discharges from industrial users throughout the service area to ensure compliance with Article 5 of SD1's Sanitary Rules and Regulations and protect SD1's sanitary sewer system, treatment plants, employees, and the receiving waters. All permitted industries are

inspected annually and monitored semi-annually, with additional inspection and sampling performed as needed. During FY 2018, a total of 62 inspections were conducted. Of the 62 inspections performed, 59 were routine annual inspections, one was a wet-weather inspection, and one was due to a foaming event.

SD1 has an Enforcement Response Plan in place to address each violation. Typically, the first Notice of Violation (NOV) issued is verbal. The second NOV is written. Each subsequent NOV includes a fine. Fines can range anywhere from $500 to $1000 depending upon the violation. Most issues are resolved before escalating to fines. If problems persist, an industry is put on a compliance schedule. During FY 2018, SD1 issued 75 NOVs and five written notices with fines totaling $5,500. Refer to Appendix B for a summary report describing these violations in more detail.

2.9 Water Quality Monitoring

The purpose of the Watershed Monitoring Program is to establish a baseline assessment of watershed and stream conditions, via the collection of instream water quality, biological, physical habitat and hydromodification data throughout Northern Kentucky. This program includes dry-weather base flow water quality and biological monitoring in all watersheds (approximately 75 locations), as well as, event-based wet-weather water quality in major watersheds (approximately 60 locations). Additionally, both wet and dry weather water quality samples are collected on the Ohio River between river miles 444 and 518 (22 locations).

Performance Monitoring

During FY 2018, 19 sites within the North Basin were sampled. These site revisits included biological and habitat assessments, base flow water quality samples, and where appropriate, hydromodification surveys. Additionally, one base flow and one wet-weather event were sampled for the entire Northern Kentucky portion of the Ohio River (river miles 444-518). SD1 continues to develop and refine performance metrics, in order to measure its progress in improving water quality in relation to the base-line water quality models. Water quality reports from these sampling events are currently in production and will be available in the CMOM FY 2019 Annual Report.

2.10 Information Management Systems (IMS)

The purpose of SD1's Information Management Systems (IMS) program is to provide tools and software that track asset management records, mapping, system performance, costs, work orders, inspections, and other datasets that measure the effectiveness and efficiency of SD1's O&M activities and capital expenditures. IMS programs are intended to maximize the accessibility and integration of a wide range of data that are pertinent to operational awareness and effective decision making.

2.10.1 Unmanned Aerial Vehicle

In FY 2018, SD1 acquired an Unmanned Aerial Vehicle (UAV), or drone, to improve its ability to collect and analyze aerial imagery. This new tool allows SD1 to directly collect various formats of imagery to monitor land use, construction projects, and emergency operations. The UAV and its accompanying software provides versatile remote sensing and analytical tools to perform change detection of surface features and volumetric calculations of basins. Most importantly, the UAV allows SD1 to perform remote inspections of above-ground assets and facilities that may be in locations that are temporarily inaccessible or too dangerous for staff to access.

Five SD1 employees have been trained and licensed by the Federal Aviation Administration to fly the UAV for business operations. Additionally, SD1 has secured a software license from ESRI for its standalone application called Drone2Map, which runs with ArcGIS Pro and provides extensions that allow the UAV products to be accessed and analyzed with SD1's GIS desktop programs.

The DJI Matrice 200 is a quad-copter UAV with both upward and downward facing cameras and sensors that can capture multiple formats of imagery and video. Figure 2.10 is a photograph of SD1's new UAV in flight.

Figure 2.10 DJI Matirce 200 UAV in Flight

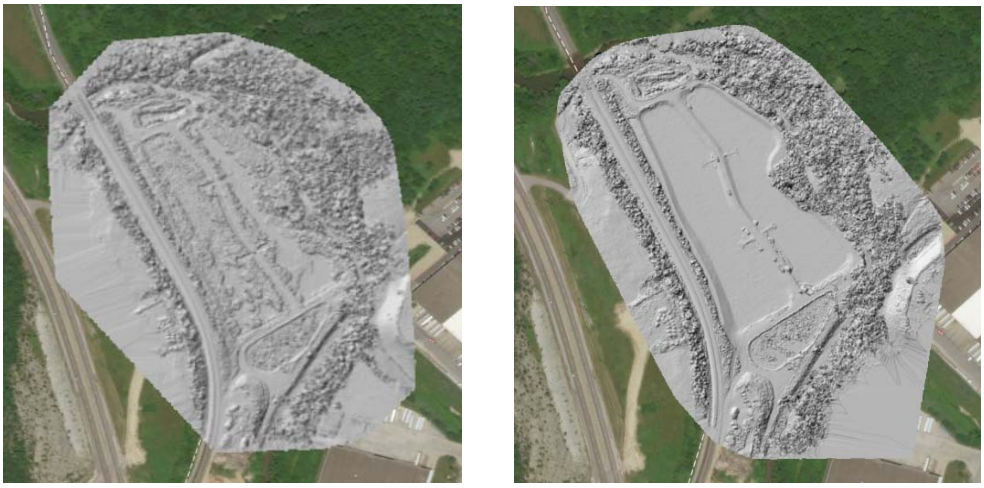
Some of the benefits already realized by the UAV include:

- Orthometric imagery that can be collected exactly when it is needed, and at sharper resolutions than the conventional aerial imagery that is collected in cycles of two to three years.
- Digital surface models and topographies that can be created for small areas of interest for asset planners.
- Emergency inspections of assets in potentially hazardous conditions can be performed without jeopardizing the safety of SD1 staff.
    - Flooding along creeks and rivers
    - Line breaks on steep hillsides
    - Facility rooftops
- Mapping of new impervious areas to update SD1's GIS and commercial storm water fees in the billing system.
- Pre/Post-construction imagery for capital project documentation and public communication.
- Year-to-year landslide detection that may impact SD1 assets.
- Monthly aerial inspections of temporary above-ground pipes, while permanent replacements are planned.
- Monthly aerial inspections to satisfy permit requirements for creek crossings.

- Volumetric calculations of detention and retention basins, as well as constructed wetlands.

In June of 2018, SD1 drained and dredged its Banklick Creek Regional Wetlands for the first time since its construction in 2011. The UAV captured before and after images of the dredging, which were then converted into digital surface models with the Drone2Map application. The surface models were then used to calculate the total sediment and debris removed from the wetland's cells. The models estimated approximately 30,000 cubic yards of sedimentation and vegetation were removed during the dredging operation. The imagery-derived digital surface models used for the volumetric calculations are illustrated in Figure 2.11.

Figure 2.11 Digital Surface Models of the Banklick Regional Wetlands, Before and After Dredging



Before *After*

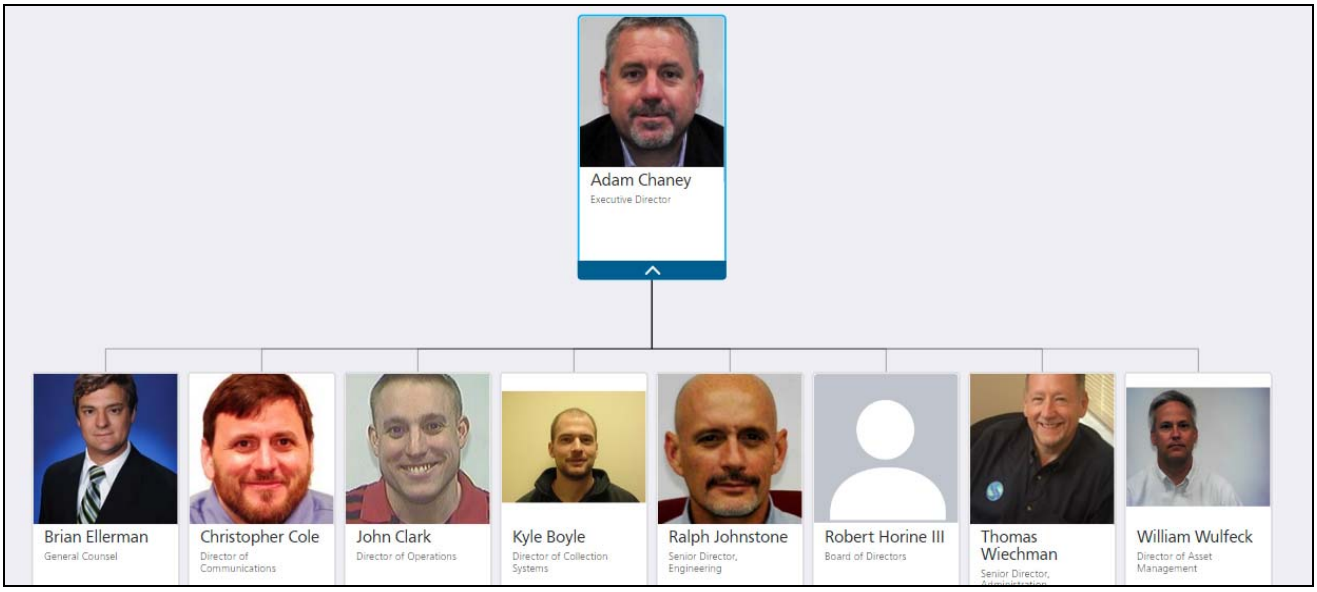
2.11 Organizational Structure

The purpose of SD1's Organizational Structure Program is to delineate job responsibilities, outline opportunities for advancement, ensure effective employee supervisor ratios, and guarantee adequate staff is in place to accomplish the mission and vision of SD1. This program also works in conjunction with the annual budget process to determine staffing needs and allocate operational expenses appropriately.

Currently, SD1 employs 249 full time equivalents.

Figure 2.12 is a chart of SD1's current executive management and senior leadership.

Figure 2.12 Current Executive Director and Senior Leadership of SD1



2.12 Safety

The purpose of SD1's Safety Program is to ensure that appropriate measures are taken to eliminate or control the exposure of SD1 employees and the general public to hazards that may cause physical harm, and to comply with local, state, and federal safety codes and legislation. Performing daily operations in a safe manner not only protects our workforce and the community, but also demonstrates fiscal prudence, high employee morale, and results in financial savings for SD1 ratepayers.

SD1's Safety Committee assists in providing a safe working environment for all employees. The Committee provides recommendations to improve safety and working conditions at SD1 and communicates with all departments, staff, and employees on matters relating to occupational safety and health. In addition, SD1 has an established an Emergency Response Team that has been trained to plan for and respond to workplace emergencies.

2.12.1 Safety Training

SD1 has continued to produce and distribute a Safety Training Calendar that identifies class offerings, instructors, times, and dates of training throughout the year. A copy of the FY 2018 Safety Training Calendar is included in Appendix C. The calendar is posted to SD1's intranet, and monthly email notifications are sent to SD1 employees to notify them of upcoming trainings and mandatory attendance requirements. Attendance at safety training classes is tracked in SD1's performance management software to ensure that each employee meets his or her annual safety training requirements.

2.12.2 Performance Indicators

Table 2.11 outlines the indicators used to measure the success of the Safety Program and SD1's performance in each area during FY 2008 through FY 2018.

Table 2.11 Safety Program Performance

Performance Metric	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
OSHA Recordables	10	15	19	6	8	8	27	23	16	22	21
Worker Comp Claims	10	9	10	9	7	5	34	37	16	11	18
Friendly Reminders	18	1	8	6	5	2	10	0	14	7	10
Safety Violations Issued	3	0	4	1	4	1	1	1	6	2	2
First Aids	17	17	21	23	22	5	7	6	16	19	10
Site Safety Audits	104	348	222	235	192	253	874	764	282	297	214

2.13 Training

The purpose of SD1's Training Program is to build an elite, professional, and proactive workforce capable of executing the mission and vision of SD1 in a safe, timely, and cost-effective manner.

SD1 employees are provided with a wide array of training opportunities throughout the year, including safety training, technical skills training, and soft skills training in areas such as communication and leadership. Employees may receive professional

development through external conferences and courses, or through SD1's formal in-house training program that is managed by Human Resources. SD1 personnel received more than 4,220 hours of training (an average of 16.5 hours per person), during FY 2018.

SECTION 3. SORP

3.1 Emergency Preparedness & Response

SD1's Sewer Overflow Response Plan (SORP) is an operational document that emphasizes emergency response activities to contain, mitigate, and clean residuals from overflows. The long-range objectives of the SORP are adherence to an established framework of proper documentation and cleanup of all overflows, in order to reduce the risk of exposure to the environment and public health, and to assist in the development of permanent overflow abatement programs that can be incorporated into SD1's Watershed Plans. SD1's SORP, as amended July 10, 2009, received regulatory approval on November 10, 2009.

3.1.1 SORP Training

In October and November of 2018, SD1 held multiple SORP training sessions for approximately 70 Collection Systems employees and approximately 25 Plant and Pump Station Operators. Employees who attended these trainings were also issued updated SORP standard operating procedures handbooks, if needed. Personnel in Collection Systems, Plant Operations, and Pump Station Operations are required to attend a one-hour training course, annually, as well as periodic refreshers throughout the year. The SORP initially required SD1 operations-level employees to attend a seven-hour course, annually. However, after a decade of intensive SORP trainings, it was determined in 2016 that an annual one-hour course is sufficient. Operations-level employees also receive continuous hands-on training from supervisors in the field, during actual overflow response events.

3.1.2 SORP Annual Review

The Consent Decree requires SD1 to perform annual reviews of the SORP and make adjustments as necessary. Specifically, Section 36 (c) states that:

> **36. (c) Specific CMOM Program Development – Sewer Overflow Response Plan ("SORP").** …By no later than each anniversary date of the approval of the SORP, the District shall annually review the SORP and propose changes as appropriate subject to Cabinet/EPA review and approval.

SD1 conducted multiple SORP program reviews in FY 2018. The first meeting was to prepare for an annual Wet Weather Inspection Meeting with KDOW and USEPA on October 27, 2017. The topics reviewed in the meeting with KDOW and USEPA included:

- Application of hydraulic modeling to overflow reporting
- Annual reviews of inspections to revise the Recurring, Inactive, and Eliminated SSO lists
- The process for rain data collection and the emails that initiate post-wet weather inspections
- Using areal rain estimates that are created with Thiessen polygons of SD1's rain gauge network and sewershed boundaries to determine which SSOs require inspection
- SSO statistics and mapping, including an overview of the Eliminated SSOs and remaining Recurring SSOs that appeared in Exhibit A of the Consent Decree
- Model-predicted SSOs that occur in storm events that produce less than one inch of rain
- Site visits of CSOs and SSOs

Additionally, a series of program reviews of the SORP followed the receipt of KDOW's letter dated June 25, 2018. KDOW's letter detailed 10 areas of concern with SD1's approved SORP procedures. Each concern was fully reviewed by SORP staff, SORP senior management, and executive management. Following these review meetings, SD1 began exploring options to improve SORP processes and procedures, where they are needed. SD1 provided a response to each of KDOW's concerns in a letter dated

August 10, 2018 and requested further clarification on the expectations of submitting a fully revised SORP. Both letters are provided in Appendix D.

Subsequent follow-up meetings were held in September and October of 2018 to discuss progress on improvements in inspection procedures, initial notification to the regulators, and public notification. Improvements are ongoing and will be reviewed again in early 2019.

3.1.3 SSO Reporting

The SORP describes SD1's required overflow reporting and notification procedures. On a quarterly basis, SD1 is required by the Consent Decree to report all known and predicted overflows that occurred throughout the service area. These reports include cumulative accountings of all quarterly and annual overflow activity from January 2008 through the current reporting period, as well as annual comparisons of the overflow activity and the variations in weather. For the most up-to-date information regarding total CSO and SSO occurrences and volumes, refer to SD1 Consent Decree Quarterly Report No. 44, submitted on October 30, 2018.

3.1.4 Initial Notifications

SD1 continues to provide timely initial notifications of SSOs and Dry-Weather CSOs that are a result of operational failures, as well as SSOs at pump stations that occur due to a lack of capacity during wet weather. The initial notifications are provided by email or phone to KDOW's Florence Regional Office, and are also entered into the Kentucky Department for Environmental Protection Electronic Submittals web site.

Additionally, SD1 is currently improving work order processes and developing automated reports for the initial notification requirements of post-wet weather SSO inspections. The ongoing process improvements will address the concerns KDOW expressed about initial notifications of wet-weather investigations, in its letter dated June 25, 2018.

Lucity Dashboard for SSO Work Orders and Inspections

An example of a recent process improvement for initial notification of post-wet weather inspections is the creation of a work order dashboard in SD1's asset management

software, Lucity. The new dashboard allows managers and supervisors to track the timeliness and completion of all post-wet-weather SSO inspection operations by event date, inspector, or structure number. Appendix E provides an overview of the Lucity dashboard and the Lucity filters that are used to monitor the progress on work order records and inspection records. The new dashboard has already been implemented by management in SD1's Collections Department, in preparation for additional process improvements with the current post-wet-weather inspection routine. The dashboard is an essential tool for ensuring the timeliness of all overflow inspections, which will ultimately be integrated with automation of inspection reports. Development of these new tools will continue in 2019 in order to provide automated initial notifications of post-wet-weather inspections to KDOW's Florence Regional Office.

3.1.5 HAZWOPER and Illegal Discharge Response

KDOW's letter of June 25, 2018 states that any references to obsolete documents that were provided in the approved 2009 SORP should be removed from any future revisions of the SORP. In particular, KDOW requests that references to the paper-based System Release Report and Notification of Hazardous Spills should be removed from the SORP, if they are no longer in use. SD1 confirmed in its letter of August 10, 2018 that each of the obsolete documents are no longer in use and that the relevant data is now managed in SD1's asset management software, Lucity.

In 2013 and 2015, SD1 developed formal programs and finalized standard operating procedures for emergency response to hazardous spills and illegal discharges. Provided in Appendix F are SD1's 2013 Hazardous Waste Operation and Emergency Response Program (HAZWOPER) with a flow chart of roles and responsibilities. Appendix G provides SD1's 2015 Illegal Discharge Response Program with a flow chart of roles and responsibilities. These documents reflect SD1's current operational standards for responding to hazardous spills and will be incorporated into future revisions of the SORP.

SECTION 4. GREASE CONTROL PROGRAM

The purpose of SD1's Grease Control Program is to prevent the introduction of fats, oils, and grease (FOG) into the sanitary sewer system thereby reducing sewer

overflows, maximizing sewer capacity and decreasing sewer maintenance costs. In addition, this program is intended to increase awareness of operators of local food service establishments (FSE) and homeowners about measures they can take to limit or prevent the introduction of FOG into the drains and sanitary sewer system.

SD1 received regulatory approval of its Grease Control Program: Proposed Phased Implementation Plan on January 8, 2008 and met the deadline for completion of all required tasks by January 8, 2012. The Grease Control Program includes components such as ordinances, design standards, and permitting requirements, inspection, and enforcement protocols. The enhancements made in the new Grease Control Program reduce sewer overflows within the collection systems and optimizes system capacity.

4.1 Permitting

SD1 determines the need to issue a Food Service Discharge Permit along with any applicable fees. Effective January 1, 2012, all new food service establishments are required to obtain a Food Service Discharge Permit, in accordance with SD1 Rules and Regulations.

4.1.1 Record Keeping

SD1 Food Service Discharge Permit requires that FSE maintain a “FOG Folder” at the FSE facility address that must be available for periodic inspections. Records shall be retained for a minimum of three years. Failure to demonstrate the record keeping requirements during an annual or surprise inspection is a violation of the Food Service Discharge Permit and SD1 Rules and Regulations and subject to enforcement actions.

4.1.2 Grease Control Equipment (GCE)

SD1’s permit requires that all discharges containing grease & oil pass through Grease Control Equipment (GCE) before entering the sanitary sewer. GCE refers to any equipment that removes fats, oils, and grease from wastewater, such as a grease trap which is installed inside the building, or a grease interceptor which is usually installed outside the building and is much larger in size. GCE must be well-maintained and in proper operating condition at all times.

The design criteria for approved devices are defined in the FOG Management Policy and are enforced with deadlines for installation with SD1's Sanitary Rules and Regulations, which were implanted on January 1, 2012.

During FY 2018, approximately 9 plans for GCE installations were reviewed and 15 permits were issued by SD1.

Table 4.1 provides an annual summary of plans reviewed and permits issued, since the effective date of the FOG Management Policy.

Table 4.1 GCE Plans Reviewed & Permits Issued

Period	Plans Reviewed	Permits Issued
FY 2012	10	23
FY 2013	53	52
FY 2014	45	58
FY 2015	36	50
FY 2016	29	30
FY 2017	26	4
FY 2018	9	15
Total	**208**	**232**

4.2 Grease Trap Waste Disposal

All individuals or companies that haul waste to the Dry Creek Wastewater Treatment Plant must apply for and obtain a Domestic Holding Tank Waste Hauler Discharge Permit. Permits are issued on an annual basis and provisions of the permit must be adhered to at all times. Mobile waste haulers disposing grease trap waste at the plant are required to submit a Domestic Holding Tank Waste Hauler Manifest, which provides a detailed description of each load on their truck. All FSEs in SD1's jurisdiction shall have an SD1-certified grease waste hauler complete a grease interceptor certification annually. SD1 monitors the method and location of disposal of grease removed from accepted grease control devices through the grease hauler manifest. The information is stored in SD1's Lucity asset management software.

A summary of the grease hauled and disposed of at the Dry Creek Wastewater Treatment plant since the beginning of the program is provided in Table 4.2.

Table 4.2 Grease Disposed at Dry Creek Wastewater Treatment Plant

Fiscal Year	Gallons of Grease
2008	555,833*
2009	43,649
2010	108,300
2011	161,150
2012	234,210
2013	185,575
2014	194,325
2015	163,645
2016	203,400
2017	171,250
2018	158,105
Total	**2,179,442**

*There was a significant reduction in the amount of grease disposed at Dry Creek following FY 2008 because SD1 no longer received grease from Schwan's Global Supply Chain.

4.3 Inspections

SD1's Industrial Monitoring Department performs inspections of local FSEs that may be contributing to the buildup of FOG in the collection system. Random inspections are conducted to ensure compliance with the permit and with SD1's Rules and Regulations. Additionally, SD1 requires permitted FSEs to report proof of service or cleaning of its GCE. All documentation must be submitted to SD1 by the FSEs within 30 days of the actual cleaning and hauling of grease.

4.3.1 Compliance Inspections

SD1 permitted 15 new FSEs throughout the service area, and 14 existing FSEs closed during FY 2018, bringing the total of permitted FSEs to 185. Within one year of a

permit's issue date, at least one follow-up inspection is conducted at each permitted FSE. Six Notice of Violations (NOVs) for non-compliance with the Food Service Discharge Permit were issued in FY 2018.

4.4 FOG Education

4.4.1 FSE Compliance Workshop

SD1's FSE compliance is coordinated with Northern Kentucky Health Department's (NKHD) monthly Food Service Managers Workshop, a required certification program for all FSEs in Northern Kentucky. The NKHD's certification test does have at least five questions covering proper grease disposal methods. This coordination provides a cost-effective and efficient way for SD1 to ensure that all FSEs, even those not currently permitted, are being trained. Additionally, FOG prevention posters printed in English and Spanish are provided at each workshop. All FSEs must have at least one certified employee on duty, per shift. During FY 2018, approximately 1,300 food service employees attended the workshop and received information on SD1's FOG program.

4.4.2 General Education

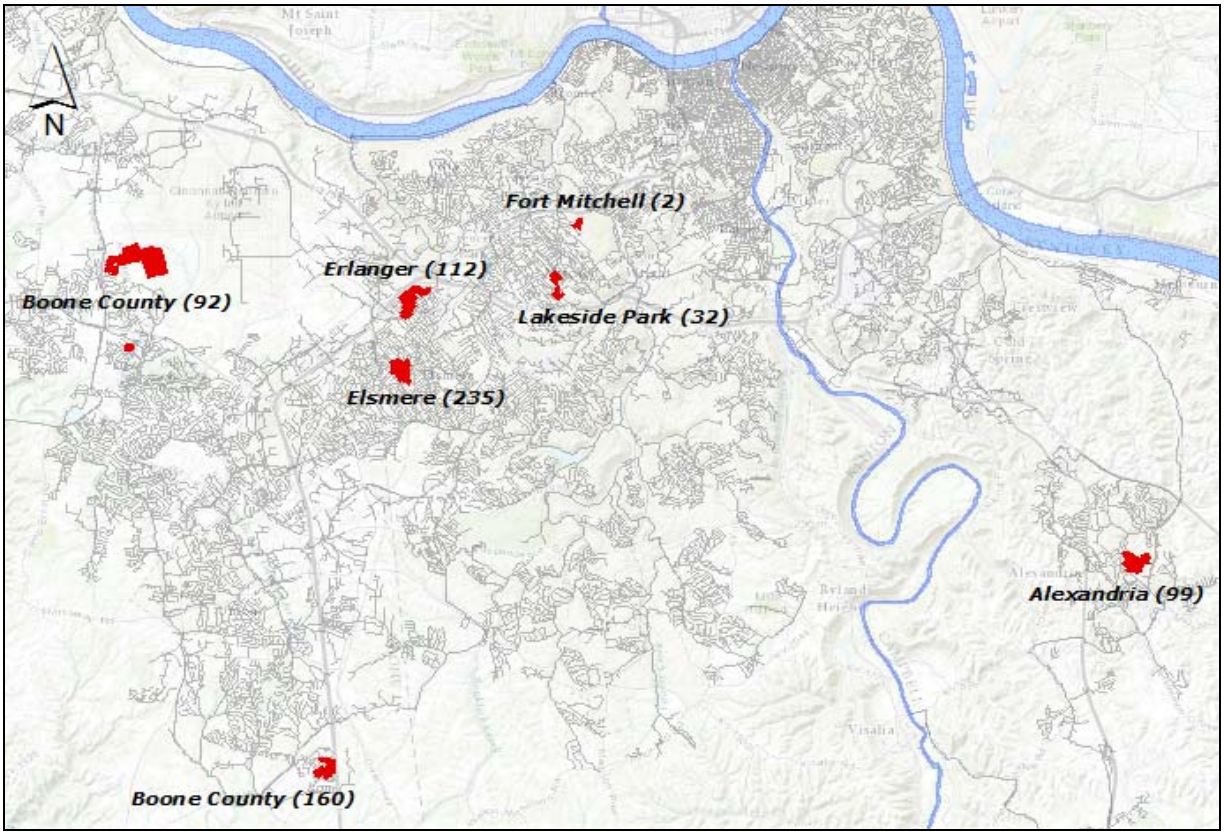
SD1 uses various communication pieces throughout the year to inform and educate private residences on the harmful effects of FOG in sewer lines and the proper grease handling techniques that can be used to minimize the release of FOG into the collection system. This information is distributed through various channels such as: direct mailings, bill inserts, SD1's website, promotional product giveaways, and community newsletters and newspapers. With the grease observations obtained from CCTV inspections and overflow responses, SD1 focuses its public education efforts primarily in areas that are showing signs of grease problems and applies the appropriate communication strategy to best fit the situation.

Residential Communication

During FY 2018, SD1 mailed approximately 733 letters to residents and business in areas that experienced overflows or building backups caused by excessive build-up of grease in SD1-owned pipes. The standard letter alerted customers that an overflow occurred, educated the residents about the effects of fats, oils, and grease on the collection system, and clarified proper disposal methods.

Figure 4.1 illustrates, in red, the properties that SD1 mailed FOG education material to, following downstream SSOs that were related to grease blockages in FY 2018.

Figure 4.1 Properties that Received FOG Education Material in FY 2018



4.5 Performance Indicators

Table 4.3 provides a summary of the performance indicators that SD1 is tracking in relation to its implementation of a formal Grease Control Program. Specifically, SD1 is determining if there is a correlation between the approximate amount of pipe on a PM cleaning list for grease and the frequency of SSOs and building backups due to grease.

Table 4.3 Grease Control Program Performance Indicators

Performance Indicator	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18
Pipe Footage on PM Cleaning List, due to Grease	82,000*	4,326	4,326	4,892	4,945	5,465	7,656	13,721	7,958	3,981	6,554
Number of SSOs due to Grease	4	17	10	7	5	4	6	12	7	8	8
Number of Backups due to Grease (Trouble Calls)	2	5	7	7	7	6	4	8	6	1	1

**Between FYs 2008 and 2009, the lines listed on the permanent PM list were inspected and assessed according to the CSAP, using SCREAM scores to help identify the lines requiring PM.*

SECTION 5. PUMP STATION BACKUP POWER

SD1 received regulatory approval of the Pump Station Operation Plan for Backup Power on May 14, 2009, and completed the 110 required backup power projects before the December 31, 2015 Consent Decree deadline. For a detailed summary of the completed schedule, refer to Appendix H.

SECTION 6. SELF-ASSESSMENT

SD1 performed an extensive self-assessment of each CMOM program in mid-2007, involving approximately 75 employees in a series of interviews and team planning workshops. During the process, SD1 employees identified nearly 100 improvements to SD1 operations that would help achieve regulatory compliance and reduce SSO and CSO occurrences throughout the service area. SD1 has completed or found better alternatives to nearly all of the original recommendations of the 2007 CMOM Self-Assessment.

Since the original CMOM Self-Assessment, SD1 has continued to perform self-assessments to improve its performance in meeting the needs of its customers and the obligations of its Consent Decree. In 2013, SD1 developed a five-year Strategic

Business Plan (SBP) for the organization. The SBP relied heavily upon employee input, similar to the original CMOM Self-Assessment. The process has produced a framework for identifying and prioritizing the goals, strategies, and metrics of SD1's essential services to the community. The following is an overview of the SBP and ongoing some improvements that have been implemented as a result of the SBP.

6.1 Strategic Business Plan

The SBP is a result of a collaborative planning process that was inclusive of customers, community stakeholders, and the employees of SD1. To develop a comprehensive community-focused and customer-centered plan, SD1 sought and assessed input and opinions from hundreds of individuals and organizations through surveys, interviews, and focus group sessions.

With the knowledge gathered from the assessment process, SD1 has:

- Updated its mission statement to reflect its purpose within the community
- Developed a new vision statement to communicate its plan to better serve the community moving forward
- Outlined company values to express the principles by which SD1 does business
- Identified seven goals to focus on the essential areas of improvement that are integral to the success of the organization and the Northern Kentucky community
- Devised key strategies to help SD1 achieve its seven goals

SD1's Strategic Business Plan summary document can be found in Appendix I.

6.1.1 Energy Management at Regional Treatment Facilities

In conjunction with SBP, SD1 began developing energy management plans at its three regional treatment facilities in 2014, following the approach of USEPA's Energy Management Guidebook for Wastewater and Water Utilities. The management plans aim to reduce energy costs by controlling and reducing electric and chemical costs. Since the implementation of the energy management plans, approximately $200,000 per year have been saved with the following improvements:

- Replaced an aging blower associated with the aeration system at the Dry Creek Wastewater Treatment Plant, which accounts for half of the plant's total energy

costs
- Downsized to a 40-HP plant water pump and motor and installed enhanced valve controls at the Dry Creek Wastewater Treatment Plant
- Negotiated a new electric rate at the Western Regional Water Reclamation Facility
- Modified the use of ultraviolet energy at the Western Regional Water Reclamation Facility
- Automated the aluminum sulfate feed based on real-time water readings at the Eastern Regional Water Reclamation Facility
- Based on a 2017 USEPA energy conservation study, removed a series of small mixers near the bottom of the Eastern Regional Water Reclamation Facility's oxidation ditch, which had insignificant impacts on dissolve oxygen levels in the ditch

6.1.2 SD1 Lean: Process Mapping

SD1 has made it an organization-wide priority to adopt and apply the principles of Lean Six Sigma, in order to eliminate wasteful, inefficient business processes and enhance its ability to provide excellent wastewater and storm water services to the Northern Kentucky community.

Five SD1 employees completed formal Six Sigma training and received certifications in 2017. The certified employees have been designated Lean Champions at SD1, and will continue to guide the organization through process improvements for each department. The goal of the SD1 Lean program is to create a culture of efficiency at SD1 by identifying and implementing continuous process improvement strategies that are in line with the continuous improvement principles outlined in CMOM. This Lean effort is also key realizing to SD1's Strategic Business Plan priority for achieving operational efficiency and resiliency through continuous improvement and innovation.

In FY 2018, SD1 focused its efforts on process mapping of critical business operations. Provided in Appendix J are a few examples of new process maps developed by SD1's Engineering Department. These process maps are working documents that are subject to change, as new efficiencies are implemented and programs evolve. The intent of the process mapping exercise is to formally identify how business is currently being conducted, in order to identify potential efficiency gains through process modifications.

The SD1 Lean process mapping exercise is central to the CMOM principle of continuous self-assessment.

Several ongoing SD1 Lean initiatives have been implemented as a result of the process mapping exercises. A comprehensive summary of SD1 Lean initiatives will be provided in the CMOM FY 2019 Annual Report.

APPENDIX A:

Maps of Sanitary and Storm Service Areas

(This page intentionally left blank for double-sided printing.)

SD1 Sanitary Service Area

Sewer Lines

- Gravity Line
- Force Main
- Proposed Force Main
- Tunnel

- SanitaryServiceArea
- Pump Stations
- SD1 Facility Sites

Florence

KENTON Co.
BOONE Co.

CAMPBELL Co.
KENTON Co.

275
471
71
75

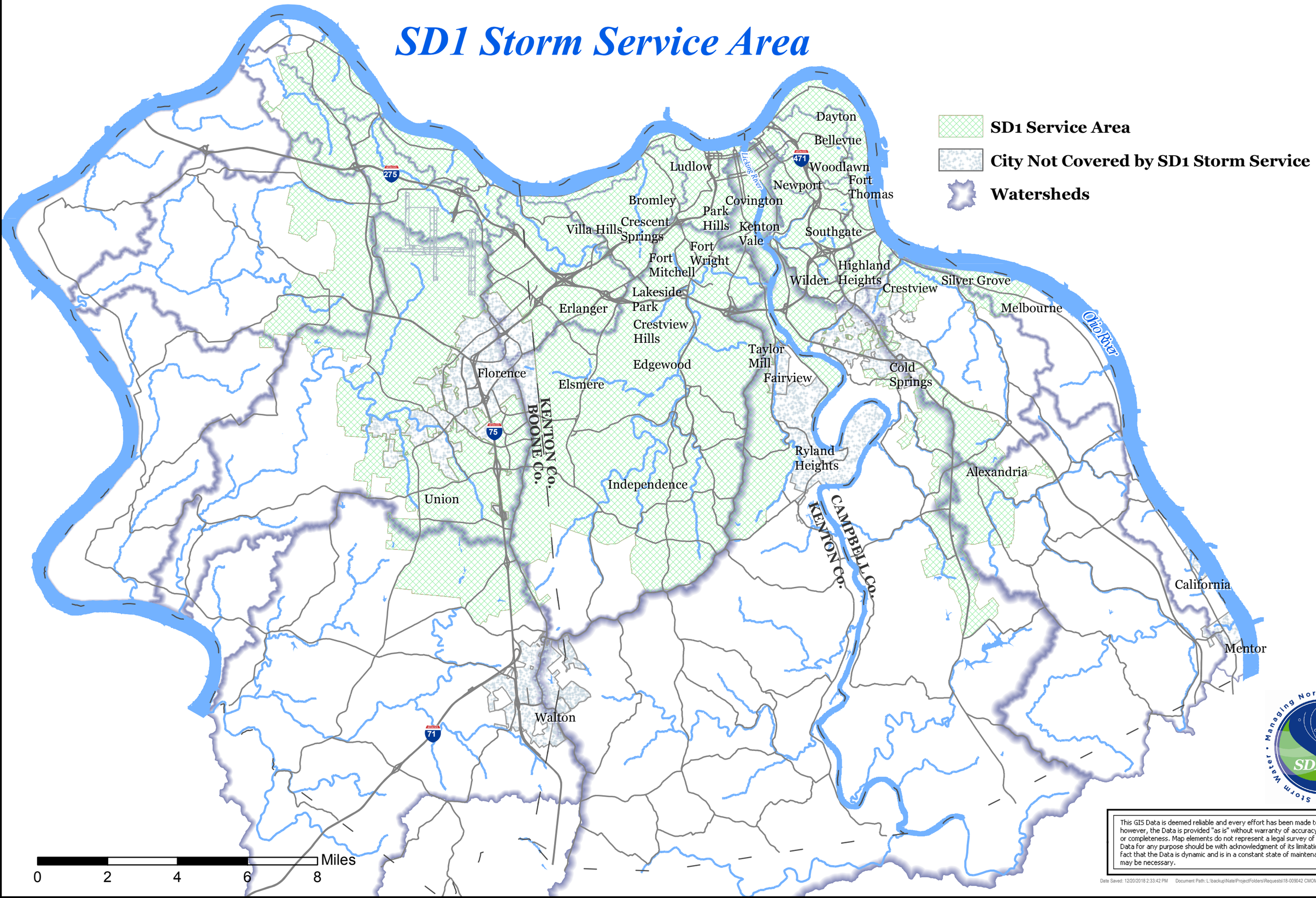
0 2 4 6 8 Miles

Managing Northern Kentucky's Wastewater and Storm Water • SD1

This GIS Data is deemed reliable and every effort has been made to ensure accuracy; however, the Data is provided "as is" without warranty of accuracy, timeliness, reliability or completeness. Map elements do not represent a legal survey of the land. Use of this Data for any purpose should be with acknowledgment of its limitations, including the fact that the Data is dynamic and is in a constant state of maintenance. Field investigation may be necessary.

Date Saved: 12/20/2018 4:08:42 PM Document Path: L:\backup\Nate\ProjectFolders\Requests\18-009042 CMOM Maps\Sanitary_SSA.mxd

SD1 Storm Service Area



Managing Northern Kentucky's Wastewater and Storm Water • SD1

This GIS Data is deemed reliable and every effort has been made to ensure accuracy; however, the Data is provided "as is" without warranty of accuracy, timeliness, reliability or completeness. Map elements do not represent a legal survey of the land. Use of this Data for any purpose should be with acknowledgment of its limitations, including the fact that the Data is dynamic and is in a constant state of maintenance. Field investigation may be necessary.

Date Saved: 12/20/2018 2:33:42 PM Document Path: L:\backup\Nate\ProjectFolders\Requests\18-009042 CMOM Maps\SW_SSA.mxd

APPENDIX B:

FY 2018 Industrial Pretreatment Violations Summary Report

(This page intentionally left blank for double-sided printing.)

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00011** **Mazak Corporation**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
1st half 2017 self monitoring report due on 7/20/17 was received late. Report of was reveived on 7/25/17	NC-R	07/21/17	07/25/17				
				V	21-Jul-17	Verbal Notice of Violation (NOV)	$0.00

Permit: **IND-00014** **Camco Chemical Co. Inc.**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Non-Compliance Parameter Violation - Oil & Grease, Hydrocarbon Daily Maximum Limit was exceeded. The sample result for the sample collected on 3/12/18 was 58.5 mg/L while the Daily Maximum Limit is 50 mg/L.	NC-P	03/12/18	03/13/18				
				W	04-May-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00018** **Duro Hilex Poly, LLC (Florence)**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
1st Half Self Monitoring report due on 7/20/17 was late.	NC-R	07/21/17	07/31/17				
				V	21-Jul-17	Verbal Notice of Violation (NOV)	$0.00

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00019** **Blue Grass Quality Meats**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Non-Compliance Parameter Violation - Oil & Grease, Hydrocarbon The sampling result for the sample collected on 4/24/18 was 62.2 mg/L while the Daily Maximum Limit is 50 mg/L.	NC-P	04/24/18	05/23/18				
				W	15-May-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00026** **Lingo Manufacturing Co., Inc.**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Tank 1 had a pH < 6 at time of grab samples.	NC-P	11/27/17	11/27/17				
				V	27-Nov-17	Verbal Notice of Violation (NOV)	$0.00

Permit: **IND-00036** **Ameripride Linen & Apparel Services**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Oil & Grease, Hydrocarbons Non-Compliance. The concentration result was 61.1 mg/L while the concentration daily limit is 50 mg/L.	NC-P	03/13/18	06/02/18				
				W	12-Apr-18	Written Notice of Violation (NOV)	$0.00

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00036** **Ameripride Linen & Apparel Services**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Oil & Grease, Hydrocarbons TRC Non-Compliance. The concentration result was 87.6 mg/L while the technical review criteria (TRC) daily limit is 60 mg/L. The violation occurred during the NOV resampling event conducted by Ameripride.	NC-P	05/01/18	06/02/18				
				W	30-Jul-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00039** **Duro Hilex Poly, LLC (Walton)**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
1st Half Self Monitoring report due on 7/20/17 was late.	NC-R	07/21/17	07/31/17				
				V	21-Jul-17	Verbal Notice of Violation (NOV)	$0.00
Zinc, total TRC Non-Compliance. The daily Limit was exceeded in a sample taken on 9/29/17 . The Result was 15.034 mg/L while the Daily Limit was 3.5 mg/L.	NC-P	09/29/17	12/12/17				
				W	09-Nov-17	Written Notice of Violation (NOV)	$0.00
Zinc, total TRC Non-Compliance. The daily Limit was exceeded in a sample taken on 11/28/17 . The Result was 4.69 mg/L while the Daily Limit was 3.5 mg/L.	NC-P	11/28/17	02/08/18				

Filter Criteria:
Event Category that Contain Violation
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00039** **Duro Hilex Poly, LLC (Walton)**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				W	08-Jan-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00045** **A.O. Smith Corp., Protective Coating Division**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Non-Compliance Parameter Violation - Total Nickel Daily Maximum Limit was exceeded. The sample result for the sample collected on 3/15/18 was 5.238 mg/L while the Daily Maximum Limit is 4.91 mg/L.	NC-P	03/15/18	03/16/18				
				W	04-May-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00046** **Kellogg's Snacks, Florence Bakery**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
pH was >10 for 9 hours. There was no production during this time.	NC-P	11/17/17	11/27/17				
				V	11-Dec-17	Verbal Notice of Violation (NOV)	$0.00

Permit: **IND-00054** **Perfetti Van Melle USA**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00054** **Perfetti Van Melle USA**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
pH at time of inspection was 4.8	NC-P	06/25/18	06/26/18				
				V	25-Jun-18	Verbal Notice of Violation (NOV)	$0.00

Permit: **IND-00057** **Mubea Inc. (Industrial Rd)**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Technical Review Criteria (TRC) Non-Compliance Parameter Violation - Zinc, Total The sampling result for the sample collected on 7/11/17 was 3.15 mg/L while the Daily Maximum Limit is 2.61 mg/L and the TRC Limit is 3.13 mg/L.	NC-P	07/11/17	07/12/17				
				W	27-Oct-17	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00060** **Givaudan Flavors, Corporation**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
TRC Non-Compliance Parameter Violation - Oil & Grease, Hydrocarbon The result for the sample collected on 4/18/18 was 110 mg/L while the daily maximum limit is 50 mg/L and the TRC limit is 70 mg/L.	NC-P	04/18/18	06/18/18				

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00060** **Givaudan Flavors, Corporation**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				W	16-May-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00067** **Signode Plastic Recycling Alliance**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
The pH fell outside Sanitation District No. 1 (SD1) limits of 6.0 to 10.0. The pH violations were recorded above 10.0, 11.0 and 12.0 numerous times, which is a violation of SD1 Rules and Regulations (see attached graph and also refer to SD1's Rules and Regulations on pH for the Western Regional Waster Reclamation Facility).	NC-P	08/02/17	09/13/17				
				W	11-Aug-17	Written Notice of Violation (NOV)	$0.00
Oil & Grease, Hydrocarbons - The TRC Daily Limit was exceeded in a sample taken on 8/2/2017. The Result was 122 mg/L while the Daily Limit is 50 mg/L.	NC-P	08/02/17	09/21/17				
				W	24-Aug-17	Written Notice of Violation (NOV)	$0.00
Oil & Grease, Hydrocarbon TRC Non-Compliance - The sample collected on 6/5/18 resulted in 103 mg/L while the daily maximum limit is 50 mg/L and the TRC limit is 70 mg/L.	NC-P	06/05/18	06/27/18				

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00067** **Signode Plastic Recycling Alliance**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				W	20-Jun-18	Written Notice of Violation (NOV)	$0.00
Oil & Grease, Hydrocarbon Non-Compliance - The sample collected on 6/6/18 resulted in 50.3 mg/L while the daily maximum limit is 50 mg/L.	NC-P	06/06/18	06/27/18				
				W	20-Jun-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00076** **Hillshire Brands**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Oil & Grease, Total Technical Review Criteria (TRC) Non-Compliance. The Concentration Result was 211 mg/L, the effluent limit is 100 mg/L, the TRC effluent limit is 140 mg/L	NC-P	10/04/17	10/12/17				
				W	27-Oct-17	Written Notice of Violation (NOV)	
Oil & Grease, Total Non-Compliance. The Concentration Result was 111 mg/L, the effluent limit is 100 mg/L	NC-P	10/06/17	10/12/17				
				W	27-Oct-17	Written Notice of Violation (NOV)Written Notice of Violation (NOV) and fine.	

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00076** **Hillshire Brands**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Chloride monthly average for April 2018 was 1640 mg/L. The monthly average allowable limit is 1500 mg/L	NC-P	04/30/18	05/08/18				
				V	31-May-18	Verbal Notice of Violation (NOV)	$0.00

Permit: **IND-00077** **Iofina Chemical, Inc.**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Oil & Grease, Hydrocarbons TRC Non-Compliance. The concentration result was 1010 mg/L while the technical review criteria (TRC) daily limit is 60 mg/L.	NC-P	04/26/18					
				W	30-Jul-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00078** **ImmuDyne Inc. (Florence Kentucky Facility)**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
TRC Non-Compliance Parameter Violation - Zinc, Total The result for the sample collected on 4/5/18 was 10.083 mg/L while the daily maximum limit is 3.94 mg/L.	NC-P	04/05/18	04/06/18				
				W	31-May-18	Written Notice of Violation (NOV)	$0.00

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00079** **Tressa, Inc.**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Bypassing pretreatment	NC-O	02/15/18	02/15/18				

A site visit was conducted due to observation of foam in the manhole at Lakeview headworks (across from substation at Dry Creek) Tressa's manhole was checked for signs of foam. Jason Crawford and Britney Carson observed foam discharging from a PVC pipe near the top of the manhole. Mr. Cooper was questioned as to what part of the facility discharge via the PVC pipe. Mr. Cooper did not know. Upon investigation it was determined the flow was from the upstairs QA/QC lab sink, which is used to dump product samples and handwashing. Mr. Cooper immediately ceased use of the sink for anything but hand washing and implemented a procedure to dump all samples in a drain that does go through pretreatment. A verbal violation was issued and it was advised that future use to the sink for any type of production use would result in further enforcement action. SD1 stated the if it is the industries desire to continue use of the sink for future production use it will need to be piped through pretreatment. Mr. Cooper stated that is not an avenue of interest at the time.

V	15-Feb-18	Verbal Notice of Violation (NOV)	$0.00	

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00079** **Tressa, Inc.**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
TRC Non-Compliance Parameter Violation - Oil & Grease, Hydrocarbon Daily Maximum Limit & Technical Review Criteria (TRC) were exceeded. The sample result for the sample collected on 4/4/18 was 114 mg/L while the Daily Maximum Limit is 50 mg/L and the TRC limit is 70 mg/L.	NC-P	04/04/18	04/05/18				
				W	07-May-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00083** **Club Chef LLC**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Bypass of pretreatment. Downstream manhole surcharge with vegetable matter. Line was jetted and vactored by SD1	NC-O	02/07/18					
				V	08-Feb-18	Verbal Notice of Violation (NOV)	$0.00

Permit: **IND-00085** **Mubea Inc. (8224 Dixie HWY)**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00085** **Mubea Inc. (8224 Dixie HWY)**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Non-Compliance Parameter Violation - Zinc, Total The sampling result for the sample collected on 9/27/2017 was 2.782 mg/L while the Daily Maximum Limit is 2.61 mg/L.	NC-P	09/27/17	09/28/17				
				W	27-Oct-17	Written Notice of Violation (NOV)	$0.00
Zinc, Total Daily Limit Non-Compliance (Central Cooling Station). The daily limit was exceeded in a self monitoring sample taken on 6/25/2018. The result was 3.05 mg/L while the daily maximum limit is 2.61 mg/L.	NC-P	06/25/18	10/12/18				
				W	02-Oct-18	Written Notice of Violation (NOV)	$0.00
Zinc, Total Daily Limit Non-Compliance (Central Cooling Station). The daily limit was exceeded in a sample taken on 6/27/2018. The result was 2.69 mg/L while the daily maximum limit is 2.61 mg/L.	NC-P	06/27/18	10/12/18				
				W	02-Oct-18	Written Notice of Violation (NOV)	$0.00

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00085** **Mubea Inc. (8224 Dixie HWY)**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Zinc, Total Monthly Average Non-Compliance (Central Cooling Station). The Technical Review Criteria (TRC) average monthly limit was exceeded for the month of June 2018. The monthly average result was 2.87 mg/L while the monthly average limit is 1.48 mg/L.	NC-P	06/30/18	10/12/18				
				W	02-Oct-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00090** **Augur Metal Products**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Failure to submit 1st Half 2017 self monitoring report.	NC-R	07/21/17	08/15/17				
				V	16-Aug-17	Verbal Notice of Violation (NOV)	

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00090** **Augur Metal Products**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Non-Compliance Reporting Violation A General Event violation occurred on 8/16/2017 General Event Type: NOV-V - Verbal NOV for late reporting 1st Half 2017 As a result of a violation and subsequent Verbal Notice of Violation (NOV), issued on 8/16/2017, the Facility must meet the following Compliance Plan by the Due Date shown above: [ ] Event Due Date: 8/16/2017 Event Complete Date: 8/16/2017	NC-R	08/16/17	08/16/17				

Permit: **IND-00272** **Kiswel Inc.**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
SELF - Due - 2nd Half Self Monitoring Report received. Issuing a verbal only for late reporting due to contact experiencing health issues that interfered with work for several months. Event Due Date: 1/20/2018 Event Complete Date: 1/22/2018	NC-E	02/21/18					

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00272** **Kiswel Inc.**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty

Permit: **IND-00606** **US Nonwovens**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Mercury, Total TRC Daily Limit was exceeded. The Result was 0.000896 mg/L while the Daily Limit was 0.0005 mg/L. The Violation occurred for Sample 'Self Monitoring' on the Sample Date of '8/21/2017' and for Monitoring Point 'Bldg 1 PT'.	NC-P	08/21/17					
				WF	25-Apr-18	Written Notice of Violation (NOV) and fine. Written Notice of Violation (NOV)	$500.00
Zinc, Total TRC Daily Limit was exceeded. The Result was 4.349 mg/L while the Daily Limit was 3.5 mg/L. The Violation occurred for Sample 'AD12501' on the Sample Date of '9/7/2017 3:00:00 PM' and for Monitoring Point 'Bldg 4 PT'.	NC-P	09/07/17	09/07/17				
				V	07-Sep-17	Verbal Notice of Violation (NOV)Written Notice of Violation (NOV)	$0.00

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00606** **US Nonwovens**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Zinc, Total TRC Daily Limit was exceeded. The Result was 13.62 mg/L while the Daily Limit was 3.5 mg/L. The Violation occurred for Sample 'AD12502' on the Sample Date of '9/7/2017 6:30:00 PM' and for Monitoring Point 'Bldg 4 PT'.	NC-P	09/07/17	09/07/17				
				V	07-Sep-17	Verbal Notice of Violation (NOV)Written Notice of Violation (NOV)	$0.00
Failure to respond to the Notice of Violations issued on August 22, 2017	NC-R	09/22/17					
				WF	09-May-18	Written Notice of Violation (NOV) and fine.	$750.00
3rd Qtr. 2017 Self Monitoring report not received by due date.	NC-R	10/21/17					
				WF	25-Apr-18	Written Notice of Violation (NOV) and fine. Written Notice of Violation (NOV)	$500.00
pH=10.38	NC-P	11/22/17	11/22/17				
				V	08-Dec-17	Verbal Notice of Violation (NOV)	$0.00
Zinc, Total TRC Daily Limit was exceeded. The result was 4.263 mg/L The allowable daily limit is 3.5 mg/L	NC-P	12/01/17					

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00606** **US Nonwovens**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				WF	25-Apr-18	Written Notice of Violation (NOV) and fine.	$750.00
3rd Qtr. 2017 Self Monitoring Report received more than 45 days after the due date.	SNC-R	12/05/17					
				P	01-May-18	Publish in local newspaper	$0.00
				WF	25-Apr-18	Written Notice of Violation (NOV) and fine.	$500.00
Unintentional bypassing of pretreatment.	NC-O	12/20/17	12/20/17				
				V	20-Dec-17	Verbal Notice of Violation (NOV)	$0.00
Zinc, Total Daily Limit was exceeded. The Result was 3.947 mg/L while the Daily Limit is 3.5 mg/L. The Violation occurred for Sample 'AD18185' on the Sample Date of '1/29/2018 10:35:00 AM' and for Monitoring Point 'Bldg 1 PT'.	NC-P	01/29/18					
				WF	09-May-18	Written Notice of Violation (NOV) and fine.	$1,000.00
Foam retain failed shake test	NC-O	06/28/18	06/29/18				
				V	29-Jun-18	Verbal Notice of Violation (NOV)	
Foam retain failed shake test.	NC-O	06/29/18					
				W	30-Jul-18	Written Notice of Violation (NOV)	$0.00

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00715** **Newly Weds Foods**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 11/27/2017. The result was 137 mg/L while the daily maximum limit is 50 mg/L.	NC-P	11/27/17	01/17/18				
				W	14-Dec-17	Written Notice of Violation (NOV)	$0.00
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 11/27/2017. The result was 500 mg/L while the daily maximum limit is 50 mg/L.	NC-P	11/29/17	01/17/18				
				W	14-Dec-17	Written Notice of Violation (NOV)	$0.00
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 12/20/2017. The result was 224 mg/L while the daily maximum limit is 50 mg/L.	NC-P	12/20/17	02/16/18				
				W	16-Jan-18	Written Notice of Violation (NOV)	$0.00

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00715** **Newly Weds Foods**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 12/27/2017. The result was 156 mg/L while the daily maximum limit is 50 mg/L.	NC-P	12/27/17	02/16/18				
				W	16-Jan-18	Written Notice of Violation (NOV)	$0.00
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 12/29/2017. The result was 3060 mg/L while the daily maximum limit is 50 mg/L.	NC-P	12/29/17	02/16/18				
				W	16-Jan-18	Written Notice of Violation (NOV)	$0.00
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 12/30/2017. The result was 80.7 mg/L while the daily maximum limit is 50 mg/L.	NC-P	12/30/17	02/16/18				
				W	16-Jan-18	Written Notice of Violation (NOV)	$0.00

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00715** **Newly Weds Foods**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Oil & Grease, Hydrocarbons - TRC Significant Non-Compliance. During the Significant Non-Compliance (SNC) determination period of July 1, 2017 through December 31, 2017, 50% of the daily results exceeded their allowed Technical Review Criteria (TRC) maximum limit for Oil and Grease, Hydrocarbon. The SNC TRC limit for a six month reporting period is less than 33%.	SNC-P	12/31/17	06/30/18				
				P	12-Sep-18	Publish in local newspaper	
				WF	19-Jan-18	Written Notice of Violation (NOV) and fine.	$500.00
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 1/26/2018. The result was 4480 mg/L while the daily maximum limit is 50 mg/L.	NC-P	01/26/18	04/05/18				
				WF	22-Feb-18	Written Notice of Violation (NOV) and fine.	$500.00
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 2/3/2018. The result was 4720 mg/L while the daily maximum limit is 50 mg/L.	NC-P	02/03/18	04/05/18				

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00715** **Newly Weds Foods**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				WF	22-Feb-18	Written Notice of Violation (NOV) and fine.	$500.00
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 2/6/2018. The result was 785 mg/L while the daily maximum limit is 50 mg/L.	NC-P	02/06/18	04/05/18				
				WF	22-Feb-18	Written Notice of Violation (NOV) and fine.	$500.00
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 2/9/2018. The result was 5890 mg/L while the daily maximum limit is 50 mg/L.	NC-P	02/09/18	04/05/18				
				WF	22-Feb-18	Written Notice of Violation (NOV) and fine.	$500.00
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 3/23/2018. The result was 150 mg/L while the daily maximum limit is 50 mg/L.	NC-P	03/23/18	05/16/18				
				WF	16-Apr-18	Written Notice of Violation (NOV) and fine.	$1,000.00

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00715** **Newly Weds Foods**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 3/28/2018. The result was 89.2 mg/L while the daily maximum limit is 50 mg/L.	NC-P	03/28/18	05/16/18				
				WF	16-Apr-18	Written Notice of Violation (NOV) and fine.	$1,000.00
Oil & Grease, Hydrocarbons - TRC Significant Non-Compliance. During the Significant Non-Compliance (SNC) determination period of October 1, 2017 through March 31, 2018, 61% of the daily results exceeded their allowed Technical Review Criteria (TRC) maximum limit for Oil and Grease, Hydrocarbon. The SNC TRC limit for a six month reporting period is less than 33%.	SNC-P	03/31/18	06/30/18				
				WF	16-Apr-18	Written Notice of Violation (NOV) and fine.	$500.00
				P	12-Sep-18	Publish in local newspaper	
Oil & Grease, Hydrocarbons Non-Compliance. The Technical Review Criteria (TRC) daily limit was exceeded in a sample taken on 4/242018. The result was 631 mg/L while the daily maximum limit is 50 mg/L.	NC-P	04/24/18	09/27/18				

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00715** **Newly Weds Foods**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				WF	08-Aug-18	Written Notice of Violation (NOV) and fine.	$1,000.00
Oil & Grease, Hydrocarbons Non-Compliance. The daily limit was exceeded in a sample taken on 5/1/2018. The result was 64.4 mg/L while the daily maximum limit is 50 mg/L.	NC-P	05/01/18	09/27/18				
				WF	08-Aug-18	Written Notice of Violation (NOV) and fine.	$1,000.00
Oil & Grease, Hydrocarbons Non-Compliance. The daily limit was exceeded in a sample taken on 5/2/2018. The result was 65.0 mg/L while the daily maximum limit is 50 mg/L.	NC-P	05/02/18	09/27/18				
				WF	08-Aug-18	Written Notice of Violation (NOV) and fine.	$1,000.00

Permit: **IND-00957** **Rumpke of Kentucky, Inc.**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Copper, Total TRC Non-Compliance The concentration result was 0.956 mg/L, the effluent limit is 0.58 mg/L, the TRC effluent limit is 0.696 mg/L	NC-P	05/04/18					
				W	26-Jun-18	Written Notice of Violation (NOV)	$0.00

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00957** **Rumpke of Kentucky, Inc.**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Lead, Total Technical Review Criteria (TRC) Non-Compliance The concentration result was 0.085 mg/L, the effluent limit is 0.06 mg/L, the TRC effluent limit is 0.072 mg/L	NC-P	05/04/18					
				W	26-Jun-18	Written Notice of Violation (NOV)	$0.00
Zinc, Total TRC Non-Compliance. The concentration result was 1.526 mg/L the effluent limit is 1.15 mg/L, the TRC effluent limit is 1.38 mg/L	NC-P	05/04/18					
				W	26-Jun-18	Written Notice of Violation (NOV)	$0.00

Permit: **IND-00996** **Valicor Environmental Services, LLC**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Oil & Grease, Hydrocarbons Technical Review Criteria (TRC) Non-Compliance. The Concentration Result was 152 mg/L, the effluent limit is 50 mg/L, the TRC effluent limit is 70 mg/L	NC-P	11/14/17	11/15/17				
				W	22-Dec-17	Written Notice of Violation (NOV)	

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00996** **Valicor Environmental Services, LLC**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Zinc, Total Non-Compliance. The Concentration Result was 4.723 mg/L while the Concentration Daily Limit is 3.94 mg/L.	NC-P	11/17/17	02/13/18				
				W	22-Dec-17	Written Notice of Violation (NOV)	$0.00
Zinc, Total Non-Compliance. The Concentration Result was 4.58 mg/L while the Concentration Daily Limit is 3.94 mg/L.	NC-P	12/21/17	02/13/18				
				W	27-Mar-18	Written Notice of Violation (NOV)	$0.00
Mercury, total Technical Review Criteria (TRC) Non-Compliance. The Daily Limit was exceeded. The sample result was 0.0117 mg/L while the TRC Daily Limit is 0.0006mg/L.	NC-P	04/10/18					
				W	10-Aug-18	Written Notice of Violation (NOV)Written Notice of Violation (NOV) and fine.Written Notice of Violation (NOV)	$0.00
Oil & Grease, Hydrocarbons Technical Review Criteria Non-Compliance. The Daily Limit was exceeded. The sample result was 288 mg/L while the TRC Daily Limit is 70 mg/L.	NC-P	04/10/18					

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00996** **Valicor Environmental Services, LLC**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				W	10-Aug-18	Written Notice of Violation (NOV)Written Notice of Violation (NOV) and fine.	$0.00
Tin, total Technical Review Criteria (TRC) Non-Compliance. Daily Limit exceeded. The sample result was 0.594 mg/L while the TRC Daily Limit is 0.402 mg/L.	NC-P	04/10/18					
				W	01-Aug-18	Written Notice of Violation (NOV)	$0.00
Zinc, total Non-Compliance. The Daily Limit was exceeded. The sample result was 4.086 mg/L while the Daily Limit is 3.94 mg/L.	NC-P	04/10/18					
				WF	01-Aug-18	Written Notice of Violation (NOV) and fine.	$500.00
Mercury, total Technical Review Criteria (TRC) Non-Compliance. The Daily Limit was exceeded. The sample result was 0.00726 mg/L while the TRC Daily Limit is 0.0006 mg/L.	NC-P	04/11/18					
				W	10-Aug-18	Written Notice of Violation (NOV)Written Notice of Violation (NOV) and fine.Written Notice of Violation (NOV)	$0.00

Sanitation District # 1
Industrial Pretreatment Program
Violations Summary Report

Event Category that Contain Violation **Filter Criteria:**
All Permits AND
All Permits AND Permit-ted ? DOES Contain ...Yes... AND

Permit: **IND-00996** **Valicor Environmental Services, LLC**

Violation Description	Violation Type	Date of NC	Date in Comliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Oil & Grease, Hydrocarbons Technical Review Criteria Non-Compliance. The Daily Limit was exceeded. The sample result was 118 mg/L while the TRC Daily Limit is 70 mg/L.	NC-P	04/11/18					
				W	10-Aug-18	Written Notice of Violation (NOV)	$0.00

APPENDIX C:

FY 2018 Safety Training Calendar

(This page intentionally left blank for double-sided printing.)

Fiscal Year 2018 Safety Training Calendar Revision 3: March 13, 2018

Month	Class	Length	Date	Class	Length	Date
July 2017	**NO TRAINING**			**NO TRAINING**		
August 2017	Lockout/Tagout the Control of Hazardous Energy Sources	2	7 - 11	Swift on Shore Water Rescue	8	25
September 2017	Bullying Workplace Violence Active Shooter **Second Session**	2	11-15	Flagger Traffic Control Operations Cancelled	2	26 - 29
October 2017	Fire Extinguisher Cancelled	2	16 - 20	Emergency Action Plan Designated Employees Cancelled	2	23 - 27
November 2017	Lockout/Tagout Control of Hazardous Energy **Second Session**	2	7 - 10	Defensive Non DOT Driver Safety	2	27 - 30
December	**Second Session**			**Defensive Driver Safety**	**2**	**5 - 8**
January 2018	CPR/AED First Aid BBP	**8**	**8 - 19**	CPR/AED First Aid BBP	**8**	**22 -31**
February 2018	***Safety Training Canceled***	**4**	**5 - 9h**	***Safety Training Canceled***	**2**	**19 -23**
March 2018	**HAZWOPER Clean-Up Work Site Operations**	**4**	**5 - 9**	**Flagger/Traffic Control Operations 1st session**	**4**	**26-30**
April 2018	**HAZWOPER Response Fixed Mobile Operations**	**4**	**16 - 20**	**Excavation/Trench Operations Rescue**	**4**	**11 - 15**
May 2018	**Permit Required Confined Space Entry/Rescue**	**4**	**14 - 18**	**Collection Systems Ques Training**	**8**	**22 - 24**
June 2018	**Excavation/Trench Operations Rescue**	**4**	**11 - 15**	**Permit Required Confined Space Entry/Rescue**	**4**	**18 - 21**

Note: Occupational Safety/Health courses are mandatory for all employees based upon compliance and potential exposure to injury, illness, and death. Refer to the Process Hazard Analysis and course description. If you have any questions regarding whether you are required to take the classes contact your Supervisor, Safety Committee Representative and/or the Safety Department.

(This page intentionally left blank for double-sided printing.)

APPENDIX D:

SORP Letters

(This page intentionally left blank for double-sided printing.)

MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

R. BRUCE SCOTT
DEPUTY SECRETARY

ENERGY AND ENVIRONMENT CABINET

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601
TELEPHONE: 502-564-3350
TELEFAX: 502-564-7484

June 25, 2018

Adam Chaney
Executive Director
Northern Kentucky Sanitation District No. 1
1045 Eaton Drive
Ft. Wright, Kentucky 41017

Dear Mr. Chaney:

This letter pertains to the Sewer Overflow Response Plan ("SORP") submitted by the Northern Kentucky Sanitation District No. 1 (SD1) to the Energy and Environment Cabinet (Cabinet) on July 10, 2009 pursuant to the 2007 Consent Decree entered into among SD1, the Cabinet, and the U.S. Environmental Protection Agency (EPA). Under Paragraph 36.(c) of the Consent Decree, SD1 is to "annually review the SORP and propose changes as appropriate subject to Cabinet and EPA review and approval." That review is to include, at a minimum, updates "to address regulatory reviews or concerns" (SORP, Section 5.1).

During discussions among the parties about the extent of SD1's progress under the Consent Decree, the Cabinet and EPA have become aware of issues pertaining to the reporting of Sanitary Sewer Overflows ("SSOs") based on demonstrative evidence of their occurrence, and the timeliness/staffing of SD1's response to SSOs. Technical representatives of the parties have discussed these issues, as well as other aspects of the SORP and how it is being implemented. The purpose of this letter is to convey to SD1 certain regulatory concerns about the SORP in order that SD1 can review the SORP and then propose changes to address these concerns. These concerns are as follows, with numbers provided only for ease of reference:

1. The SORP should include the definitions of each classification SD1 uses for SSOs, and an explanation of how SD1 determines which classification an SSO falls into, and when and how the classification changes.

2. The SORP should be updated to include all relevant methods in sections 3 and 4 to identify potential overflows, such as routine manhole inspections, routine sewer line inspections, and precipitation data from rain gauges or other sources. Each identification method should be fully explained in Section 3, including defining each use of "routine."

3. The SORP should include an explanation of and criteria for how the Wet Weather Investigation routes are developed, the procedures for using rainfall and other data to initiate Wet Weather Investigations of CSOs and SSOs, and procedures for how the Wet Weather Investigations are carried out in response to triggering rainfall events, including the timing and staffing of such investigations.

4. The SORP should clarify that the initial notification of overflows to the Division of Water (DOW) Regional Office will occur within 24 hours, and that investigation and written notification of all confirmed overflows will occur within five days of SD1 becoming aware of a potential overflow by any method of identification in Sections 3 and 4.

5. The procedures in Section 4 and Appendix E appear to be incorrect. Overflows that are not observed to be occurring at the time of the investigation, but for which there is demonstrative evidence that an overflow occurred, should be documented and reported in the same manner as other observed overflows. All unpermitted overflows, whether impacting a receiving stream or not, should be reported to DOW. The SORP should be updated to correct these unreported, unpermitted overflows. The SORP should also explain the reporting procedures for overflows that are investigated but not confirmed.

6. The communication and documentation mentioned in Section 4 should be explained in the SORP. SD1 should confirm whether the System Release Report (SRP) in Appendix H and the Notification of Hazardous Spill in Appendix I are still used, and, if not, remove references to these.

7. The public notification procedures should be reviewed to determine if the procedures are currently being implemented as described, and if additional notification methods, such as real-time notification of overflows on SD1's website, are appropriate.

8. The standard operating procedures (SOP) in Appendix C should be reviewed and updated to reflect current programs, including the Department for Environmental Protection's eNotification website. These procedures may be more appropriate to include in the training module in Appendix L. The training module in Appendix L is out of date and has many errors. This Appendix should be updated and corrected to be consistent with the rest of the SORP.

9. KPDES permits for the Eastern Regional Water Reclamation Facility and the Western Regional Water Reclamation Facility were issued in October 2016. These permits include requirements to implement CMOM programs, including specific requirements for a SORP. SD1 should review and update the SORP, as necessary, to meet these requirements:

"At a minimum the SORP shall include the following elements:

1) An overflow response procedure including designated responders for the permittee, response times, and cleanup methods;
2) A public advisory procedure;
3) A regulatory agency notification procedure.;
4) A manhole and pump station inspection schedule;
5) A procedure for addressing discharges to buildings caused by blockage, flow condition, or other malfunction in sewer infrastructure owned or operationally-controlled by the permittee; and
6) A requirement to include the structure ID for reported incidents."

10. Parts of the SORP are out of date and should be reviewed and updated as appropriate.

Pursuant to the Consent Decree and Section 5.1 of the SORP, please submit a revised SORP within 60 (sixty) days of your receipt of this letter proposing changes to address these regulatory concerns and permit requirements for Cabinet and EPA review and approval. If you have any questions regarding this matter, please do not hesitate to contact me at Peter.Goodmann@ky.gov or (502) 782-6956, or Jill Bertelson at Jill.Bertelson@ky.gov, (502) 782-6889.

Sincerely,

Peter T. Goodmann, Director
Division of Water

cc: Jack C. Bender
Brian M. Ellerman
William Bush

(This page intentionally left blank for double-sided printing.)

SD1
Managing Northern Kentucky's Wastewater and Storm Water

August 10, 2018

Via U.S. Mail and
Email: peter.goodmann@ky.gov

Peter Goodmann, Director
Division of Water
Kentucky Department for Environmental Protection
300 Sower Boulevard, Frankfort, KY 40601

RE: Sewer Overflow Response Plan (SORP)

Dear Mr. Goodmann:

SD1 has reviewed and is providing information in response to your correspondence of June 25, 2018 requesting an update to our Sewer Overflow Response Plan (SORP). As you mentioned, SD1's SORP was last approved on July 10, 2009 and we agree that revisions to our process are appropriate in response to your requests. As we reviewed your correspondence and our current SORP system -wide, we have had many fruitful discussions regarding revisions that we believe will address your concerns. However, before we can adequately address all concerns and submit a redlined SORP document with requested revisions, we first need clarification of some of the thoughts and questions outlined in your correspondence. Below is a list of the ten questions set forth in your request, each followed by SD1's clarification and response. In order to provide a detailed and revised SORP that will fully meet the Cabinet's expectations, SD1 is requesting further clarification of the Cabinet's expectations in response to the information and proposed revisions to the SORP set forth below.

1. The SORP should include the definitions of each classification SD1 uses for SSOs, and an explanation of how SD1 determines which classification an SSO falls into, and when and how the classification changes.

Initial classifications of overflows are determined by first responders and Dry Creek operators, prior to the electronic initial notification to the Department of Environmental Protection's eNotification website. Final classifications are confirmed and reported by the Regulatory Reporting and Wet Weather Manager in the Consent Decree Quarterly Reports. Classifications of overflows may occasionally change from the initial notification to the final report, based on further investigations of primary causes. However, classifications of overflows do not change after being submitted in the Quarterly Reports.

Overflow classifications are defined in Section 2 of the Quarterly Reports, as provided below. The Quarterly Reports also provide detail on how these categories are determined and quantitatively estimated. The revised SORP will include these definitions.

Overflow Categories

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

- *SSOs Due to Wet Weather Capacity Issues*: These are recurring and inactive overflows from SD1's sanitary sewer system that result from to a lack of capacity during wet weather. This category includes wet-weather discharges at pump stations that may or may not have a constructed bypass. Overflows are determined to be "Recurring" if they have been observed to overflow twice in a running twelve month period. Overflows are determined to be "Inactive" until they occur more than once in a running twelve month period. Inactive overflows are generally under investigation as suspected or predicted hydraulic model overflow points in the collection system.
- *SSOs Due to Operational Issues*: These are overflows from SD1's sanitary sewer system that are not a result of wet-weather capacity issues, including releases from pump stations. Many of these are one-time, dry-weather occurrences caused by temporary system issues that are promptly investigated and corrected.
- *Wet-Weather CSOs*: These are wet-weather discharges from the combined sewer system.
- *Dry-Weather CSOs*: These are dry-weather discharges from the combined sewer system.
- *Building Backups:* These are the release of raw sewage from a service lateral into a building in SD1's service area. Building backups can be caused by several factors, such as constrained capacity during wet weather, or a blockage in the private service lateral or public main line. Building backups can be determined to be associated with the public sewer system or can be due to other causes beyond the control of SD1.

SD1 is proposing to update the SORP with this information on overflow classifications.

2. The SORP should be updated to include all relevant methods in sections 3 and 4 to identify potential overflows, such as routine manhole inspections, routine sewer line inspections, and precipitation data from rain gauges or other sources. Each identification method should be fully explained in Section 3, including defining each use of "routine."

SD1 does not recognize rain gauge data as an explicit "method of identifying" potential overflows. Rain data are used to initiate inspections. The inspections are the methods of visually identifying evidence of an overflow. SD1 will revise the approved SORP to clarify established inspection methods, as well as new remote sensing capabilities provided by wireless flow meters and level sensors.

The following bullet points provide a summary of how rain gauge data are currently being used to initiate inspections. This procedure was documented in greater detail in Section 3.1.2 of the CMOM FY 2016 Annual Report, submitted on December 31, 2016 and presented to EPA and KDOW at SD1's office on October 27, 2017.

- Collection Systems initiates wet weather SSO inspections based on the weighted, areal average rainfall depths in a sewersheds, using Thiessen polygons for each of SD1's 23 wireless rain gauges.
- Each sewershed has two separate wet-weather SSO inspection lists based on the weighted average rainfall depth exceeding 1" or 2" thresholds.
- All wet weather SSOs in a sewershed are inspected per the designated list.
- Weather forecast will be consulted to determine if there is sufficient time to complete the inspections prior to the start of the next event.
- Inspections will be initiated when there is sufficient time between successive rain events to complete the full inspection list.
- Inspection may be initiated without reaching the 1" or 2" rainfall depth thresholds based on additional evidence of lack of system capacity.
    - SCADA Data
    - Flow Monitoring Data
    - Trouble Calls
- Dialogue between Collections and Engineering will occur prior to the initiation of wet-weather SSO inspections below the 1" or 2" rainfall depth thresholds

SD1 is currently developing network and work order automation that will speed up the internal process of converting rain data into potentially impacted sewersheds to be inspected, and alerting the responsible staff of which SSOs need to be inspected. Process improvement for initiating inspections is ongoing. However, the automation is in conceptual phase and has yet to be tested or proven. The revised SORP will describe the current automation that is in development, and how it will align with the goal of implementing real-time technology, as described in the Amended Consent Decree.

SD1 is proposing to update the SORP with this information.

3. The SORP should include an explanation of and criteria for how the Wet Weather Investigation routes are developed, the procedures for using rainfall and other data to initiate Wet Weather Investigations of CSOs and SSOs, and procedures for how the Wet Weather Investigations are carried out in response to triggering rainfall events, including the timing and staffing of such investigations.

As described above, post-wet-weather inspection routes are initiated by precipitation data from the 23 rain gauges distributed over SD1's three-county service area. Using Thiessen polygons for each of the 23 rain gauges, the actual precipitation data is used to develop weighted average rainfall depths for SD1's 15 sewersheds. Each sewershed has two separate wet-weather SSO inspection lists based on the weighted average rainfall depth exceeding 1" or 2" thresholds. Currently, SD1 has 66 wet-weather Recurring and Inactive SSOs assigned to the 1" list and an additional 102 assigned to the 2" list, for a total of 168 wet-weather potential SSOs locations that are receiving routine post-wet-weather inspections. SSOs that are assigned to the 1" list are also inspected when the 2" threshold is exceeded. SSOs are assigned to the 1" and 2" lists using historical inspection records and hydraulic model predictions of typical year activity. SSOs that are known or predicted to activate more frequently are assigned to the 1" list, and SSOs known or predicted to activate less frequently are assigned to the 2" list. SD1 will evaluate its established process for assigning SSOs to the 1" and 2" routes, and, if warranted, make adjustments in the revised SORP.

Currently, if a rain threshold is met to initiate inspections, a work order is manually created that identifies which SSOs need to be inspected. SD1 has 8 dedicated employees that perform post-wet-weather inspections from the Collections and Asset Planning groups. Inspections are initiated on the next work day (M-F), after the rain event has stopped. SD1 does not start an inspection routine in the middle of a work day. Occasionally, successive storms in the service area do not provide enough time to perform inspections in-between the separate events. Rain events are determined by 7 hours of inter-event dry time. If there is a dry period of 7 hours, and another rain event is not in the forecast for at least 48- 72 hours (based on previous event precipitation amount), then the inspections are scheduled. If there is another event forecasted within 48 hours, inspections will be delayed and performed after the successive storm events have passed through the service area.

Depending on the size of the rain event (1" or 2") and the amount of SD1 sewer sheds affected, inspections can take approximately 2 to 3 days for the 1" list and approximately 5 to 6 days for 2" list. Larger storm events and extreme circumstances, such as flooding, may also delay inspections.

4. The SORP should clarify that the initial notification of overflows to the Division of Water (DOW) Regional Office will occur within 24 hours, and that investigation and written notification of all confirmed overflows will occur within five days of SD1 becoming aware of a potential overflow by any method of identification in Sections 3 and 4.

Currently, SD1 provides electronic initial notification, via the Department of Environmental Protection's eNotification website, within 24 hours of becoming aware of SSOs Due to Operational Issues, Wet-Weather SSOs at Pump Stations, Dry-Weather CSOs, and Wet-Weather CSOs due to the operation of the flood control system during high river conditions per USACE specification. Telephone and/or email communication with the KDOW Florence Regional Office is provided with 24 hours if the Department of Environmental Protection's eNotification website is not available. On March 2, 2011, SD1 was notified by Mark Jones of KDOW, via email, that follow-up written overflow reports no longer needed to be faxed to KDOW's Florence Regional Office, and only the electronic initial notifications were necessary to submit.

SD1 is currently in the process of updating its reporting procedures to provide 24-hour initial notification to KDOW's Florence Regional Office, after becoming aware of evidence of an overflow, including through post-wet weather inspections that reveal evidence of unpermitted overflows, following qualifying storm events as described above. Sections 3 and 4 of the approved SORP will be revised to include the developments in automation and procedure that will allow for inspection results to be provided to KDOW within 24 hours from the time SD1 becomes aware of the evidence, as provided in 40 CFR 122.41(l)(6). Field evidence will be used to determine if the evidence of an overflow is subject to reporting on DMRs under 40 CFR 122.41(l)(7), i.e., determined not to present a threat to human health or the environment, and would provide that evidence with the DMR.

5. The procedures in Section 4 and Appendix E appear to be incorrect. Overflows that are not observed to be occurring at the time of the investigation, but for which there is demonstrative evidence that an overflow occurred, should be documented and reported in the same manner as other observed overflows. All unpermitted overflows, whether impacting a receiving stream or not, should be reported to DOW. The SORP should be updated to correct these unreported, unpermitted overflows. The SORP should also explain the reporting procedures for overflows that are investigated but not confirmed.

SD1 will revise Section 4 and Appendix E of the approved SORP to clarify that post-wet weather inspections of potential overflow locations demonstrating residual evidence of an overflow will be reported to KDOW's Florence Regional Office by email or to the Department of Environmental Protection's eNotification website. Wet Weather Investigation Routes in Appendix E will also be updated to reflect the current Recurring SSO list.

SD1 provides quarterly summaries of post-wet weather inspection results in the Quarterly Reports. These summaries detail how many inspections were performed, how many inspections indicated overflow evidence, and which rain events initiated the inspections. The summaries will continue to be provided in future Consent Decree reports.

6. The communication and documentation mentioned in Section 4 should be explained in the SORP. SD1 should confirm whether the System Release Report (SRP) in Appendix H and the Notification of Hazardous Spill in Appendix I are still used, and, if not, remove references to these.

The paper-based System Release Report (SRP) and Internal Notification of Hazardous Spills forms, provided in Appendices H and I of the approved SORP, are no longer in use. The relevant information previously tracked on the obsolete paper-based forms are now tracked in electronic overflow records that are maintained in SD1's CMMS software, Lucity. The appendices and references to the paper-based forms will be removed from the revised SORP. Standard operating procedures have been developed for the Internal Notification of Hazardous Spills and will be provided as a new Appendix to the revised SORP. The reported information will include the information listed in 40 CFR 122.41(l)(6).

7. The public notification procedures should be reviewed to determine if the procedures are currently being implemented as described, and if additional notification methods, such as real-time notification of overflows on SD1's website, are appropriate.

Public notification procedures are reviewed annually and are currently being implemented as described in the approved SORP. Summaries of SD1's public notifications are included in the CMOM Annual Report and the Nine Minimum Controls Annual Report.

SD1 currently has the technical capability to provide near-real-time website notifications of confirmed overflows that are a result of operational failures and wet-weather overflows at pump stations. An internal pilot project to automate the mapping and website publishing of such incidents is underway. However, SD1 will require significant program adjustments and additional investments in remote sensing, cellular communication, and data infrastructure to provide real-time public notifications of confirmed Recurring Wet Weather SSOs and CSOs on its website. As part of the process to update the Watershed Plan, SD1 may explore remote sensors and real-time technology which could be integrated with the public notification requirement of the SORP. SD1 will lay out the time line for developing and implementing all new processes in future revisions to the SORP.

8. The standard operating procedures (SOP) in Appendix C should be reviewed and updated to reflect current programs, including the Department for Environmental Protection's eNotification website. These procedures may be more appropriate to include in the training module in Appendix L. The training module in Appendix L is out of date and has many errors. This Appendix should be updated and corrected to be consistent with the rest of the SORP.

The SOP provided in Appendix C of the approved SORP is reviewed annually and reflects current programs for record keeping in SD1's CMMS, Lucity. Very minor changes have been made to some fields in the overflow records that are provided in the examples of Appendix C, but all relevant data are still tracked in the record as described in the Appendix C SOP. No substantive changes are required for the SOP, with the exception of the name of the CMMS (formerly gbaMS, rebranded as Lucity).

SD1 will include an SOP for record creation and data entry in the Department of Environmental Protection's eNotification website, as a new appendix to the revised SORP.

9. KPDES permits for the Eastern Regional Water Reclamation Facility and the Western Regional Water Reclamation Facility were issued in October 2016. These permits include requirements to implement CMOM programs, including specific requirements for a SORP. SD1 should review and update the SORP, as necessary, to meet these requirements: "At a minimum the SORP shall include the following elements:

1) An overflow response procedure including designated responders for the permittee, response times, and cleanup methods
2) A public advisory procedure;
3) A regulatory agency notification procedure;
4) A manhole and pump station inspection schedule;
5) A procedure for addressing discharges to buildings caused by blockage, flow condition, or other malfunction in sewer infrastructure owned or operationally-controlled by the permittee ; and
6) A requirement to include the structure ID for reported incidents."

SD1 is currently meeting the stated SORP requirements of the two KPDES permits with its approved SORP for the entire district. SD1 will update the procedure for addressing building backups (item #5) in the revised SORP. Prior to submitting a revised SORP, each listed requirement will be reviewed to ensure permit compliance.

10. Parts of the SORP are out of date and should be reviewed and updated as appropriate.

Any remaining out-of-date procedures, staff/department responsibilities, training requirements, contacts, or brand names will be updated in the revised SORP.

Sincerely,

Adam C. Chaney
Executive Director

cc:

Jill Bertelson (via email: Jill.Bertelson@ky.gov)
Chris Fitzpatrick (via email: Chris.Fitzpatrick@ky.gov)
Erritt Griggs (via email: Erritt.Griggs@ky.gov)
Bill Bush (via email: Bush.William@epa.gov)
Patrick Johnson (via email: johnson.patrick@epa.gov)
Brian Ellerman, SD1 (via email: bellerman@sd1.org)
Jack Bender (via email: Jack.Bender@DINSMORE.COM)

APPENDIX E:

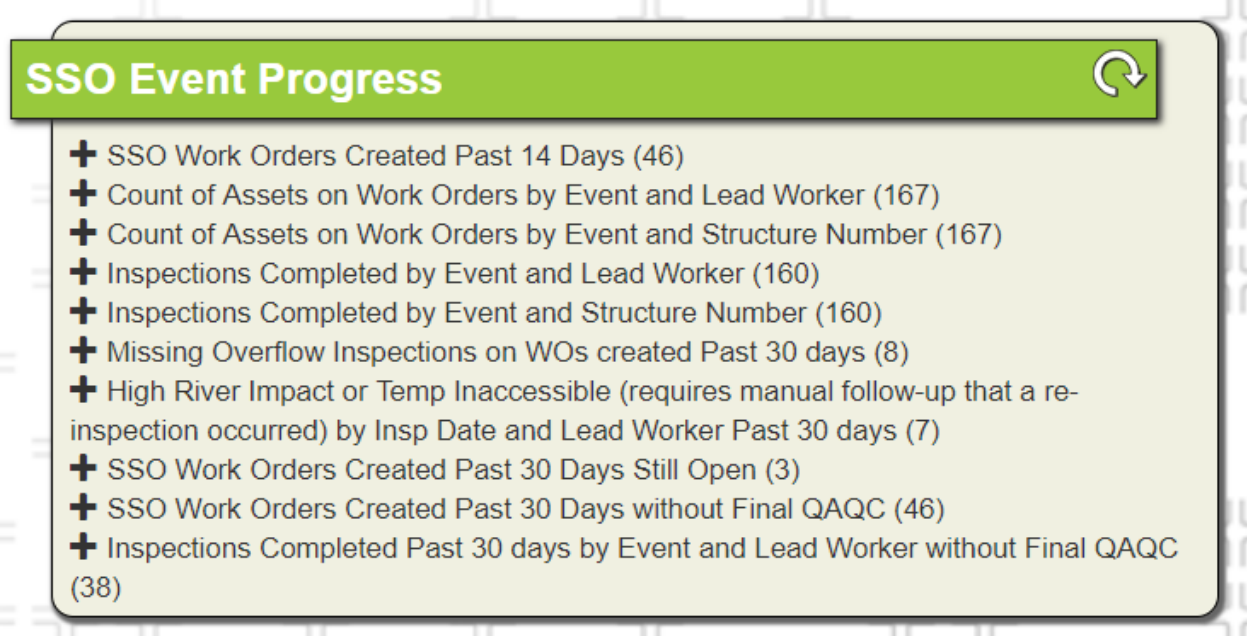
Lucity Dashboard for Wet Weather SSO Work Orders and Inspections

(This page intentionally left blank for double-sided printing.)

Lucity Dashboard for SSO Event Tracking

Developed 2018

The Lucity Dashboard for SSO Event Tracking allows Collection Systems managers to track the process of a wet weather SSO inspection event from work order creation, through the inspection process, high river impact follow-up inspections, to the QA/QC of the work orders and the inspections and finalization of the record.



SSO Work Orders Created in the Last 14 days

This filter lists all SSO inspection work orders created within the last 14 days. It can be sorted by work order creation date, which corresponds approximately with the storm event date, or by work order lead worker.

Count of Assets on Work Orders by Event and Lead Worker:

This filter produces a summary count of the SSOs to be inspected by event date with the ability to drill down to the lead worker, so supervisors and managers can track particular rain events and how many inspections were assigned to each lead worker. Expanding the lead worker will list the assets assigned to that inspector. When count equals the inspections completed count (see separate filter below), then the supervisor will have an indication of when the inspections are complete.

Count of Assets on Work Orders by Event and Structure Number:

This filter is similar to the previous filter, but lists structure numbers prior to the lead worker. This filter is useful for tracking which inspector was assigned a particular SSO.

Inspections Completed by Event and Lead Worker

This filter lists inspections completed by event and then by work order lead worker. Its purpose is to display the progress a particular inspector has made. It can be expanded by lead worker to see a list of structure inspections that inspector has completed.

Inspections Completed by Event and Structure Number

This filter is similar to the previous filter, but also includes a list of inspections completed for a particular storm event and structure ID number. Its purpose is to display which structures have been inspected. SSOs not inspected yet will not appear in this list.

Missing Overflow Inspections on WOs Created Past 30 days

This filter lists missing inspections completed by event and then by work order lead worker. Its purpose is to display which inspectors have been assigned SSO inspections that have not been completed. This works best when the Lucity work order field for lead worker field is populated.

High River Impact with no Follow-up Inspection by Event and Lead Worker

This filter lists inspection results coded as "High River Impact" or "Temporarily Inaccessible" by event date, by lead worker, and by status. The list of structures can be expanded by status and lead worker. The follow-up inspections on these structures are tracked by supervisors or managers to ensure inspectors return to the SSO for follow-up inspections, once flood waters recede.

SSO Work Orders Created in the Last 30 days Still Open

This filter lists the number of work orders still open with status "Closed in Field" or similar with the ability to drill down by date and lead worker.

SSO Work Orders Created Past 30 Days without Final QAQC

This filter lists work orders that do not have the final QA/QC performed.

Inspections Completed Past 30 Days by Event and Lead Worker without Final QAQC

This filter lists inspections that do not have the final QA/QC performed.

APPENDIX F:

SD1 HAZWOPER and Flow Chart

(This page intentionally left blank for double-sided printing.)

Hazardous Waste Operations and Emergency Response Program (HAZWOPER)

29 CFR 1910.120, 40 CFR Part 265, 40 CFR 302.6, 40 CFR 355
401 KAR 34:040, 401 KAR 35:040, 803 KAR 2:307, KRS 39E.190

Table of Contents

1 Purpose and Scope

The purpose of this program is to provide necessary information, training, and procedures to protect SD1 employees involved in hazardous substance release emergency response or cleanup activities. This program is intended to comply with the requirements of U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) regulations for hazardous waste operations and emergency response (HAZWOPER) at 29 CFR 1910.120 and 29 CFR 1926.65. The Kentucky Safety and Health (OSH) Program, under the statutory authority of Kentucky Revised Statutes (KRS) Chapter 338 and through a state plan approved by OSHA has adopted the federal regulations without change.

This program shall be made available to any contractor or subcontractor or their representative who will be involved with the hazardous waste operation; to employees; to employee designated representatives; to OSHA personnel, and to personnel of other Federal, state, or local agencies with regulatory authority over any cleanup operation in which SD1 takes part.

The OSHA HAZWOPER standard covers all employers and their employees performing three general categories of work:

- Emergency response operations involving hazardous substance releases;
- Hazardous waste site cleanup operations; and
- Operations involving hazardous waste that are conducted at treatment, storage, and disposal (TSD) facilities. TSD operations are not applicable to SD1 facilities or SD1 employees.

1.1 Incidental Releases

Emergency response is NOT the release of a hazardous substance that is limited in quantity, exposure potential, or toxicity, and poses no emergency or significant threat to the safety and health of employees in the immediate vicinity or to the employee cleaning it up. This is considered an incidental release and is generally cleaned up utilizing absorbent without posing a threat to the safety and health of employees. Although HAZWOPER standards may not apply to incidental releases, other OSHA standards may apply such as Hazard Communication and employees should assess all work situations for potential hazards prior to taking action and utilize necessary personal protective equipment (PPE) in order to minimize the risks when handling incidental releases.

1.2 Emergency Response Activities

Emergency response activities are those actions taken upon an uncontrolled release of a hazardous substance or where an uncontrolled release is likely. Examples of conditions resulting from a hazardous substance release and requiring emergency response include:

- High concentrations of toxic substances.
- Immediately Dangerous to Life and Health (IDLH) environments.
- Situations that present an oxygen deficient atmosphere.
- Conditions that pose a fire or explosion hazard.
- Situations that require an evacuation of the area.
- Situations that require immediate attention because of the danger posed to employees in the area.

1.3 Cleanup Operations

Externally, SD1 employees may become involved in cleanup operations that require HAZWOPER training through work performed at locations in the SD1 service area that are contaminated by hazardous substances. Examples include abandoned sites having contaminant removal under the EPA "Superfund" program, existing hazardous materials sites ordered to clean up or voluntarily cleaning up sites under EPA's RCRA program, or Brownfield sites.

Sites are regulated as a hazardous waste cleanup operation if they are:

- Identified or listed by a government agency as an uncontrolled hazardous waste site.
- Listed or proposed for listing on the National Priority List (NPL) – a federal EPA list of known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories (Superfund Sites)
- Listed or proposed for listing on a State priority list.
- Regulated as a corrective action covered by the Resource Conservation and Recovery Act (RCRA) – newly contaminated sites by a hazardous waste generator/industry.

Brownfield sites are property, the expansion, redevelopment or reuse of which may be complicated by the presence of a hazardous substance, pollutant, or contaminant. The site is not necessarily contaminated, but it is not assumed to be "clean" because of its prior commercial or industrial use. Generally, Brownfield sites do not have a level of contamination that would place them on either the National Priority List (NPL) or a State priority list. As such they are not likely to cause immediate or serious health effects to individuals living or working around them. However, they may pose hazards for employees conducting work on the site. The types and levels of contaminants present can vary considerably among them. When contaminants are present, they may be located in surface soil, buildings or containers (drums, underground tanks), subsurface soil, and groundwater aquifers. The types of contaminants present will depend on the industry or commercial facility that previously operated on the site. Examples of contaminants include petroleum hydrocarbons, lead, construction debris (lead paint or asbestos containing materials), polychlorinated biphenyls (PCBs), treated wood (creosote, cadmium/chromium/arsenic), industrial chemicals, and diesel fuel.

OSHA considers a Brownfield site a hazardous waste site if the site meets OSHA's definition of an uncontrolled hazardous waste site. OSHA's HAZWOPER standard also applies to work done at Brownfield sites if you're conducting clean-up operations on a site that falls within the scope of the HAZWOPER standard. Clean-up operations include operations where hazardous substances are removed, contained, stabilized, or processed in order to make the site safer for people or the environment. Such operations might involve excavating and removing contaminated soil or constructing engineering controls to contain site contaminants.

2 Responsibilities

2.1 SD1 Safety Department

The SD1 Safety Department is responsible and accountable for the safety of all SD1 employees. This directly relates to safeguarding employees, the environment, public property, and district equipment.

Specifically the SD1 Safety Manager is responsible for:

- Develop and revise as necessary the SD1 HAZWOPER Program
- Provide or arrange for the provision of initial and annual refresher training to employees involved in HAZWOPER related activities including applicable procedures and associated equipment.
- Upon request, determine PPE necessary to protect employees from the hazards present at a worksite.
- Act as liaison for health & safety of SD1 employees when acting as contractor/service employees on offsite cleanup operations. (Note: General supervision for site operations shall remain with the site controlling organization)
- Perform other duties as described in this and referenced procedures/programs.

2.2 Departmental Managers, Supervisors, Crew Leaders, and Designated Employees in a Leadership Position

Supervisory employees of the District are responsible and accountable, according to their responsibilities for the administration and enforcement of this safety procedure. Willful violation of this procedure is a serious matter. Supervisors shall:

- Ensure employees under their supervision are informed of safety requirements, and safety-related work practices and procedures under this program.
- Ensure employees attend required HAZWOPER training and only trained personnel perform duties requiring HAZWOPER training.
- Utilize the SD1 Field Site Assessment and Safety Checklist (See General Safety Program) when working outside SD1 facilities to assess the potential presence of hazardous substances

- Utilize the SD1 database of area Brownfield and other hazardous waste sites when planning field crew tasking.
- Ensure employees utilize appropriate Personal Protective Equipment as directed in the Site-specific Health and Safety Plan, the SD1 PPE program, or by the SD1 Safety Manager.
- Perform other duties as described in this and referenced procedures/programs.

2.3 Employees

Willful violation of this procedure is a serious matter. The failure of an employee to comply with this standard will result in disciplinary action. Employees shall:

- Understand and attend training necessary to perform their duties per this procedure, regardless of position and/or classification
- Perform duties as described in this and referenced procedures/programs.
- Review the Site-specific Health and Safety Plan when working at any external cleanup operation.
- Utilize appropriate Personal Protective Equipment as directed in the Site-specific Health and Safety Plan, the SD1 PPE program, or by the SD1 Safety Manager.

3 Definitions

Term	**Definition**
Brownfield	Real property, the expansion, redevelopment or reuse of which may be complicated by the presence of a hazardous substance, pollutant, or contaminant. A brownfield cannot be the subject of planned or on-going removal actions, posted or proposed for listing on the National Priority List, the subject of an administrative court order under solid and hazardous waste laws, the subject of corrective actions or closure requirements, or a federal facility.
Buddy System	A system of organizing employees into work groups in such a manner that each employee of the work group is designated to be observed by at least one other employee in the work group. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.
Clean-up operation	An operation where hazardous substances are removed, contained, incinerated, neutralized, stabilized, cleared-up, or in any other manner processed or handled with the ultimate goal of making the site safer for people or the environment.
Decontamination	The removal of hazardous substances from employees and their equipment to the extent necessary to preclude the occurrence of

Term	**Definition**
	foreseeable adverse health effects.
Emergency response	A response effort by employees from outside the immediate release area or by other designated responders (i.e., mutual aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance. Note: Responses to incidental releases of hazardous substances where the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel are not considered to be emergency responses within the scope of this standard. Responses to releases of hazardous substances where there is no potential safety or health hazard (i.e., fire, explosion, or chemical exposure) are not considered to be emergency responses.
Facility	(A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any water-borne vessel.
Hazardous materials response (HAZMAT) team	An organized group of employees, designated by the employer, who are expected to perform work to handle and control actual or potential leaks or spills of hazardous substances requiring possible close approach to the substance. The team members perform responses to releases or potential releases of hazardous substances for the purpose of control or stabilization of the incident.
Hazardous substance	Any substance designated or listed below, exposure to which results or may result in adverse effects on the health or safety of employees: (1) Any substance defined under section 103(14) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (42 U.S.C. 9601). (2) Any biologic agent and other disease causing agent which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any person,

Term	**Definition**
	either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in such persons or their offspring. (3) Any substance listed by the U.S. Department of Transportation as hazardous materials under 49 CFR 172.101 and appendices; and (4) Hazardous waste
Hazardous waste	A waste or combination of wastes as defined by the US EPA in 40 CFR 261.3 or or Those substances defined as hazardous wastes by the US DOT in 49 CFR 171.8.
Hazardous waste operation	Any operation conducted within the scope of 29 CFR 1910.120 This includes hazardous waste clean-up operations, TSD (treatment, storage, and disposal) facilities, and hazardous substance release emergency response.
Hazardous waste site	Any facility or location within the scope of 29 CFR 1910.120 at which hazardous waste operations take place.
Health hazard	A chemical, mixture of chemicals or a pathogen for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. It also includes stress due to temperature extremes.
Immediately dangerous to life or health (IDLH)	An atmospheric concentration of any toxic, corrosive or asphyxiant substance that poses an immediate threat to life or would interfere with an individual's ability to escape from a dangerous atmosphere.

Term	Definition
Oxygen deficiency	That concentration of oxygen by volume below which atmosphere supplying respiratory protection must be provided. It exists in atmospheres where the percentage of oxygen by volume is less than 19.5 percent oxygen.
Permissible exposure limit (PEL)	The exposure, inhalation or dermal permissible exposure limit specified by OSHA (29 CFR Part 1910, Subparts G and Z). The presence of contaminants above these limits requires action such as personal protective equipment (PPE) to prevent employee exposure.
Recommended exposure limit (REL)	National Institute of Occupational Safety and Health (NIOSH) recommended exposure limits (RELs) as listed in the NIOSH Pocket Guide to Chemical Hazards. NIOSH recommends action to prevent employee exposure in the presence of contaminants above these limits.
Threshold limit values (TLV)	Guidelines designed for use by industrial hygienists in making decisions regarding safe levels of exposure to various chemical substances and physical agents found in the workplace.
Site safety and health supervisor (or official)	The individual located on a hazardous waste site who is responsible to the employer and has the authority and knowledge necessary to implement the site safety and health plan and verify compliance with applicable safety and health requirements.
Post emergency response	That portion of an emergency response performed after the immediate threat of a release has been stabilized or eliminated and clean-up of the site has begun.
Uncontrolled hazardous waste site	An area identified as an uncontrolled hazardous waste site by a governmental body, whether Federal, state, local or other where an accumulation of hazardous substances creates a threat to the health and safety of individuals or the environment or both.
Qualified Person	A person with specific training, knowledge, and experience in the area for which the person has the responsibility and the authority to control.

4 Hazwoper Procedures

4.1 Emergency Response

Upon discovering a potential or actual hazardous material or waste spill or release staff shall:

1. Move a safe distance away from the spill / material. If facility or other personnel safety is at risk, immediately leave the area and notify others in area to evacuate.

2. Assess the situation from the safe distance. Avoid all contact with the material and equipment until the identity of the material. Information to collect:
    a. Present location of the spill and direction of anticipated movement
    b. Has the spill entered the sanitary or storm sewer systems?
    c. Identity of material.
    d. Estimated quantity of spill.
    e. Probable source of the spill.
    f. Time the spill was first observed.
    g. Any injured or affected people.

3. Alert the Lakeview Dispatch Center or the Dry Creek WWTP Control Room Operator via telephone or two-way radio.

4. Take defensive actions to contain spill if identity is known and appropriate PPE/Equipment is available.
    a. If possible or feasible, stop the spill by shutting down machinery or by closing valves or other methods that may apply.
    b. If the source is a leaking drum, move or turn the drum to stop or reduce the flow of material, if this can be done without personal contact with the material.
    c. Liquid spills should be contained, if possible, using the available sorbent or other spill control materials.
    d. Prevent the movement of liquid to sanitary or storm drains by diking with adsorbent pigs, pillows, booms or granular materials.
    e. If the material is a powder, close all entrance doors to prevent drafts from spreading the materials throughout the facility, and to the outside environment.
    f. Guard doors/access to spill area to prevent personnel exposure

5. Assist contaminated employees. Ensure PPE is worn and other measures taken to avoid getting contamination on personnel assisting the victim:
    a. Remove the contaminated victim well away from the contamination area.
    b. Remove all contaminated clothing and flush the affected areas with water from the Eye Wash Stations, the Eye Wash/Shower Stations or Decontamination Shower for at least 15 minutes.
    c. Administer first aid as appropriate using the first aid kits. Treat the victim to prevent or reduce shock, and provide comfort and reassurance to the victim until emergency medical services arrive.

Upon notification, the Lakeview Dispatch Center or the Dry Creek WWTP Control Room Operator shall:

1. Call 911 if not already done and deemed necessary

2. Notify the Incident Coordinator and the SD1 Safety Department and provide the assessment information collected.

Upon notification, the Incident Coordinator shall coordinate the Incident Response Team to perform the following actions:

Note: Only HAZWOPER trained technicians can perform offensive actions and a clean-up of spilled hazardous material.

1. If not done so previously and deemed necessary, call 911 to request appropriate response agencies (e.g. fire, police, and ambulance). Designate an employee to wait for the arrival of emergency responders and direct them to the emergency location.

2. Ensure all personnel in the immediate area are evacuated.

3. Make sure all doorways and access to the spill area are guarded.

4. Verify the identity of the material.

5. Assess the threat to human health and the environment.
    a. Retrieve associated safety data sheets and provide copies to emergency medical personnel for any injured personnel.
    b. Review additional information sources as necessary including US DOT Emergency Response Guidebook (ERG) and NIOSH Pocket Guide.
    c. Coordinate evacuation of the facility if necessary. Ensure personnel are directed to locations unaffected by the release (upwind, uphill preferred).

6. Determine if respiratory protection is required, perform air monitoring if necessary to determine appropriate level of protection. If airborne concentrations are unknown, Level B PPE shall be worn at a minimum.

7. Determine and don the appropriate personal protective equipment prior to entering the area of contamination.

8. Ensure that any injured personnel is given appropriate medical attention and/or arrange transportation to the hospital.
    a. Designate an employee to wait for the arrival of emergency responders and direct them to the emergency location.
    b. If the injuries are due to exposure to hazardous materials, ensure associated safety data sheets are provided to emergency medical personnel.

9. Identify the source of the spill and attempt to stop/secure.

10. Ascertain whether help will be required to clean up the spill. If help is required the Incident Coordinator will determine if an outside spill contractor's assistance is warranted.

11. Proceed with clean-up using necessary materials located in the spill kits.

12. Place all material used for the clean-up in a US DOT-approved drum.

13. Upon completion of the cleanup, seal the drum and label appropriately.

14. Drain sumps will only be pumped out by qualified and approved Waste Hauler.

15. All material will be manifested as required by law and can only be approved by the Incident Coordinator or designee.

16. Inspect the area carefully to ensure all material has been removed. After a suitable time period, check the condition of the atmosphere in the area. If all conditions are safe, contact the supervisor, who will notify personnel that they may return to work.

4.2 Cleanup Operations

Externally, SD1 employees may become involved in cleanup operations requiring HAZWOPER training through work performed at locations in the SD1 service area that are contaminated by hazardous substances. Examples include abandoned sites having contaminant removal under the EPA "Superfund" program, existing hazardous materials sites ordered to or voluntarily performing cleanup operations under EPA's RCRA program, or Brownfield sites.

HAZWOPER regulations require each employer conducting cleanup operations to develop and implement a written safety and health program that identifies, evaluates, and controls safety and health hazards, and provides emergency response procedures for each hazardous waste site. The written safety and health program must be made available to all affected employees, contractors, and subcontractors. The employer also must inform contractors and subcontractors, or their representatives, of any identifiable safety and health hazards or potential fire or explosion hazards before they enter the worksite.

Due to SD1's role as a contractor on cleanup sites, the site controlling organization shall be responsible for the creation of the written program and must provide the program to SD1 upon requesting services. When requested to participate in cleanup operations or suspected cleanup operations SD1 shall:

- During development of the work order, the issuing departmental manager shall determine if the worksite is a cleanup operation and/or Brownfield. A determination shall be based upon:

- Search of National and State Priority List sites (Internet, databases)
- SD1 database of area Brownfield sites
- Information provided by requesting customer including written program and site characterization data.
- Prework visit to the site

- If determined to be a cleanup operation, prior to commencing work a copy of the site-specific health and safety plan (HASP) and site characterization information shall be reviewed and approved for SD1 employee use by the SD1 Safety Manager. The SD1 safety manager shall review the plan for:

    - Hazard analysis for each site task to be performed by SD1 employees
    - Required training for SD1 employees
    - Personal protective equipment (PPE) to be used by SD1 employees based upon hazard analysis
    - Medical surveillance requirements/needs
    - Exposure monitoring requirements
    - Site control measures including site entry and exit procedures
    - Decontamination procedures
    - Emergency response procedures

- The SD1 safety manager shall provide in writing any safety measures (e.g. PPE, air monitoring) he/she determines necessary in addition to those stated in the site HASP. Risks to consider include but are not limited to:

    - Exposures exceeding the OSHA permissible exposure limits and or other published exposure limits (NIOSH – RELs, ACGIH TLVs)
    - IDLH Concentrations
    - Potential Skin Absorption and Irritation Sources
    - Potential Eye Irritation Sources
    - Explosion Sensitivity and Flammability Ranges
    - Oxygen deficient (asphyxiation) atmospheres
    - Engulfment or entrapment
    - Contact from hazardous objects or materials
    - Confined Spaces

- The field crew shall then be issued the work order and work will be completed under the guidance of the remaining sections (6 to 12) of this program.

5 Site Control

Due to SD1's role as a contractor on cleanup sites, the site controlling organization shall be responsible for the creation of the written program including site control measures. SD1 employees should comply with the site control methods provided in the written plan. The SD1 safety manager in conjunction with the site safety manager and general supervisor may implement additional controls for the protection of SD1 employees.

SD1 employees shall maintain the buddy system, keeping employees in visual contact with each other and at least one employee outside the danger area enabling that employee to call for help if the other employees require assistance such as becoming unconscious, trapped, or seriously disabled on site.

6 Employee Training

Training makes employees aware of the potential hazards they may encounter and provides the necessary knowledge and skills to perform their work with minimal risk to their own and other employees' safety and health. Both supervisors and employees must be trained to recognize hazards and to prevent them; to select, care for, and use respirators properly, as well as other types of PPE; to understand engineering controls and their use; to use proper decontamination procedures; to understand the emergency response plan, medical surveillance requirements, confined space entry procedures, spill containment program, and any appropriate work practices. Employees also must know the names of personnel and their alternates responsible for site safety and health.

6.1 Cleanup Site Specific Training

Employees and the Supervisor shall review the site HASP and additional safety instructions and tasks to be completed onsite prior to commencing work and ensure necessary PPE is at hand. This training may be completed through formal classroom training, a predeployment briefing, or an onsite "tailgate" brief. The review shall thoroughly cover the following:

- Names of personnel and alternates responsible for site safety and health;
- Safety, health and other hazards present on the site;
- Use of personal protective equipment;
- Work practices by which the employee can minimize risks from hazards;
- Safe use of engineering controls and equipment on the site;
- Medical surveillance requirements including recognition of symptoms and signs which might indicate over exposure to hazards; and
- Decontamination procedures
- Emergency procedures
- Confined space entry procedures, if applicable

6.2 Required Training

SD1 employees and their supervisors/management engaged in field site cleanup operations shall receive training meeting the requirements of OSHA 29 CFR 1910.120(e) before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances or safety/health hazards. SD1 employees engaged in emergency response to onsite hazardous substance releases shall receive training meeting the requirements of OSHA 29 CFR 1910.120(q)(6) before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances or safety/health hazards. In addition, both groups shall receive

refresher training as specified in the corresponding section of the regulation. Table 1 and Table 2 summarize these training requirements.

Table 1. Fixed Facility Employee HAZWOPER Training Requirements

Employee	Training Level	Required Training
General employees who work in areas with hazardous materials. Potential "Discoverers" of releases.	First Responder Awareness Level (Witnesses or discovers a release of hazardous substances and is trained to notify the proper authorities)	4 hours initial training Annual refresher
Plant Operations and Maintenance Personnel	First Responder Operations Level (Responds to the releases of hazardous competencies substances in a defensive manner, without trying to stop the release)	8 hours initial training Annual refresher
Emergency Response Team Member	Hazardous Materials Technician/Specialist (Responds aggressively to stop the Annual refresher release of hazardous substances)	24 hours initial 8 hour annual refresher
Incident Coordinator	On Scene Incident Commander (Assumes control of the incident scene beyond the first responder awareness level)	24 hours initial training 8 hour annual refresher

Table 2. Field Employee HAZWOPER Training Requirements

Employee	Training Level	Required Training
Field Crew Member	Occasional Site Worker – Cleanup Operations Employees occasionally on site for a limited task	24 hours initial 8 hours supervised field experience 8 hour annual refresher
Field Supervisors	Supervisors of employees occasionally on site for a limited task (e.g., groundwater monitoring, land surveying, etc.)	24 hours initial 8 hours supervised field experience 8 hours SD1 Safety/Health Program Training 8 hour annual refresher

6.2.1 Equivalent Training

A new employee who can show by documentation or certification that prior work experience and/or training has resulted in training equivalent to that training required in 29 CFR 1910.120(e) or (q)(6) shall not be required to complete the initial training requirements. The SD1 Safety Program manager shall retain a record of any prior certification or documentation. However, the new employee shall receive appropriate, SD1 specific training prior to any HAZWOPER duties and have appropriate supervised field experience. Equivalent training includes any academic training or the training that existing employees might have already received from actual hazardous waste site experience.

6.2.2 Trainers

Trainers who teach any of the above training shall have satisfactorily completed a training course for teaching the subjects they are expected to teach, such as the courses offered by the U.S. National Fire Academy, or they shall have the training and/or academic credentials and instructional experience necessary to demonstrate competent instructional skills and a good command of the subject matter of the courses they are to teach.

Trainers may include SD1 employees or outside training providers. However, an outside training provider shall be used at least once every 3 years to ensure program compliance and up to date content.

7 Medical Surveillance Program

Per 29 CFR 1910.120(f), SD1 employees involved in HAZWOPER activities shall be provided medical surveillance as described in this section.

7.1 Employees Covered

All emergency response team members shall be enrolled in the medical surveillance program.

HAZWOPER field crew members in general will not require enrollment in the program. However, crew members shall be enrolled if:

- The member is or may be exposed to hazardous substances or health hazards at or above the established permissible exposure limit or other published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year;
- Member is required to wear a respirator for 30 days or more a year or as required by 29 CFR 1910.134;
- Member is injured, becomes ill or develops signs or symptoms due to possible overexposure involving hazardous substances or health hazards.

7.2 Exam Frequency

Employees enrolled in the medical surveillance program shall be provided medical examinations at the following frequency:

- A baseline examination prior to assignment to hazmat duties
- A periodic examination at least once every twelve months
- An exit examination at termination of employment or reassignment to an area where the employee would not be covered if the employee has not had an examination within the last six months
- As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels in an emergency situation;
- At more frequent times, if the examining physician determines that an increased frequency of examination is medically necessary.

Medical examinations shall include a medical and work history (or updated history if one is in the employee's file) with special emphasis on symptoms related to the handling of hazardous substances and health hazards, and to fitness for duty including the ability to wear any required PPE under conditions (i.e., temperature extremes) that may be expected. All medical examinations and procedures shall be performed by or under the supervision of a licensed physician and shall be provided without cost to the employee, without loss of pay, and at a reasonable time and place.

SD1 shall provide to the physician a description of each employee's hazardous materials duties, the employee's exposure levels or anticipated exposure levels, a description of any personal protective equipment used or to be used (including respiratory protection), and any information from previous medical examinations of the employee which is not readily available to the examining physician.

Each employee shall be provided a copy of a written opinion from the examining physician containing the following:

- The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from work in hazardous waste operations or emergency response, or from respirator use.
- The physician's recommended limitations upon the employees assigned work.
- The results of the medical examination and tests if requested by the employee.
- A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

An accurate record of the medical surveillance required shall be retained. This record shall be retained per 29 CFR 1910.120(f)(8).

8 Engineering Controls, Work Practices and Personal Protective Equipment for Employee Protection

8.1 Engineering Controls and Work Practice

Engineering controls and work practices shall be instituted to reduce and maintain employee exposure below the permissible exposure limits for substances regulated by 29 CFR Part 1910, to the extent required by Subpart Z, except when such controls and practices are not feasible. An appropriate combination of engineering controls, work practices, and personal protective equipment shall be used to reduce and maintain employee exposure below published exposure levels for hazardous substances and health hazards not regulated by 29 CFR Part 1910, Subparts G and Z. When determining proper controls and practices, SD1 shall refer to:

- NIOSH Recommended Exposure Limits (REL)
- ACGIH Threshold Limit Values (TLV)
- Material Safety Data Sheets (MSDS)
- Any other pertinent published literature

8.2 Personal Protective Equipment Selection.

When engineering controls and work practices are infeasible, personal protective equipment shall be selected to protect employees from exposure about permissible limits. Personal protective equipment selection shall be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the site, the task-specific conditions and duration, and the hazards and potential hazards identified at the site. PPE required shall be based on the following:

- PPE required by a cleanup site specific health and safety plan
- Hazard analysis for each task to be performed by SD1 employees
- SD1 written PPE program.
- SD1 Respiratory Protection Program

Employees engaged in emergency response and exposed to hazardous substances presenting an inhalation hazard or potential inhalation hazard shall wear positive pressure self-contained breathing apparatus (SCBA) while engaged in emergency response, until such time that the Incident Coordinator determines through the use of air monitoring that a decreased level of respiratory protection will not result in hazardous exposures to employees.

Employees conducting an emergency response to an unknown hazard substance or a hazardous substance whose vapor may adversely affect the skin shall only enter the release area in Level A PPE. If the hazardous substance is known and does not

present a gas/vapor hazard to the skin, may enter in other than Level A if determined sufficient by the Incident Coordinator or incident safety representative.

Emergency response PPE is maintained at the Dry Creek Wastewater Treatment Plant including SCBAs, Level A and Level B garments. Field personnel shall maintain PPE per the SD1 Personal Protective Equipment Program and Respiratory Protection Program. Personnel may add additional PPE as required by site conditions.

9 Air Monitoring

Monitoring shall be performed where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment so that employees are not exposed to levels which exceed permissible exposure limits, or published exposure levels if there are no permissible exposure limits, for hazardous substances.

9.1 Emergency Response

Atmospheric monitoring during an onsite hazardous materials release shall be performed by an incident response team member trained and qualified to operate atmospheric monitoring equipment in accordance with the SD1 Air Monitoring Program. Atmospheric monitoring shall provide real time data to determine or assist in determining:

- Employee exposure levels
- Emergency response boundaries (i.e. hot zone, warm zone, cold zone)
- PPE requirements for emergency response team members responding to the release.

9.2 Cleanup Operations

Initial site characterization is the responsibility of the site controlling organization and thus shall not be performed by SD1 employees. Air monitoring shall be provided by the controlling organization or SD1 personnel for SD1 staff where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment so that employees are not exposed to levels which exceed permissible exposure limits or other published exposure levels if there are no permissible exposure limits. If atmospheric monitoring is provided by SD1, an employee trained and qualified to operate atmospheric monitoring equipment shall perform monitoring in accordance with the site safety plan and the SD1 Air Monitoring Program.

SD1 employees shall cease operations, evacuate the area, and request further monitoring whenever:

- Contaminants other than those previously identified are discovered.
- Obvious liquid contamination is discovered
- Unknown odors, vapors, or other indications of airborne hazards are detected.
- Employees exhibit symptoms consistent with possible airborne hazards.

10 Handling Drums and Containers

Following emergency response to a hazardous substance release, SD1 emergency response team members will place all material used for the clean-up in a US DOT-approved drum. Upon completion of the cleanup, the SD1 safety manager shall ensure the drum is labeled and disposed in accordance with DOT, OSHA and EPA regulations.

SD1 field crews providing service at cleanup sites shall not participate in hazardous materials drum and container handling. If hazardous material drums or containers are discovered in the course of work, work shall be ceased until an assessment of the material and hazards can be completed by the supervisor or the SD1 safety manager. The site controlling organization shall also be informed and shall perform any drum handling or removal. If unlabeled drums and containers are discovered, they shall be considered to contain hazardous substances and treated in the same manner until the contents are positively identified and labeled.

11 Decontamination

11.1 Emergency response

11.1.1 Personnel Decontamination

The Incident Coordinator will take all reasonable measures to protect human health or environment, including the responsibility of decontamination of response personnel. Normally decontamination will be coordinated and performed by responding outside emergency services units (fire department, community hazmat team). In the event, emergency decontamination is required; the incident coordinator shall utilize decontamination facilities as outlined in the emergency action plan.

A decontamination control corridor shall be established from the spill area (hot zone) to the clean area (cold zone).

11.1.2 Equipment Decontamination

The following procedure may be varied or changed as required, dependent upon site conditions, equipment limitations, or limitations imposed by the procedure. Equipment decontamination will occur during emergency response cleanup/follow-up operations and should only be performed if equipment can be safely and cost effectively decontaminated. If this is not possible, equipment shall be packaged for appropriate disposal meeting all OSHA, DOT, and EPA regulations. Appropriate personal protective equipment (e.g, safety glasses or splash shield, appropriate gloves, aprons or coveralls,

respirator, emergency eye wash) shall be utilized as determined by the Incident Coordinator or SD1 safety manager.

Removing or neutralizing contaminants from equipment should be performed to reduce or eliminate the transfer of contaminants to clean areas, and prevent the mixing of incompatible substances. Gross contamination can be removed by physical decontamination procedures. These abrasive and non-abrasive methods include the use of brushes, air and wet blasting, and high and low-pressure water cleaning. In summary the following method shall be used.

1) Physical removal
2) Decontamination solution/Non-phosphate detergent wash
3) Hand brushing
4) Water rinse
5) Air dry

All decontamination solution should be collected until proper waste characterization and disposal can be performed.

Decontamination equipment, materials and supplies are generally selected based on availability. Other considerations include the ease of decontaminating or disposing of the equipment. Most equipment and supplies can be easily procured such as soft wash and rinse solutions. Children's wading pools can also be used as decon containment. Large plastic garbage cans or other similar containers lined with plastic bags can help segregate contaminated equipment. Contaminated liquid can be stored temporarily in metal or plastic cans or drums. The following standard materials and equipment are recommended for decontamination activities:

- DECONTAMINATION SOLUTIONS:
  - Non-phosphate detergent
  - Selected solvents (acetone or hexane for organics, nitric acid for metals)
  - Tap water
  - Distilled or deionized water

- DECONTAMINATION TOOLS & SUPPLIES:
  - Long and short handled brushes
  - Bottle brushes
  - Drop cloth/plastic sheeting
  - Paper towels
  - Plastic or galvanized tubs or buckets
  - Pressurized sprayers for water
  - Solvent sprayers

- WASTE DISPOSAL:
  - Trash bags
  - Trash containers

- 55-gallon drums
- Metal/plastic buckets/containers for storage and disposal of decontamination solutions

11.2 Cleanup Operations

Decontamination of SD1 employees and equipment providing services at a HAZWOPER regulated cleanup site shall be performed per the procedures of the site health & safety plan provided by the site controlling organization. The SD1 safety manager may provide decontamination procedures based upon the EPA 9 step decontamination procedure (See Figure 1 and Table 2 below) if no procedures are available or if additional measures are deemed necessary for SD1 personnel. The 9 step procedure may be modified as needed to fit site characteristics and needs.

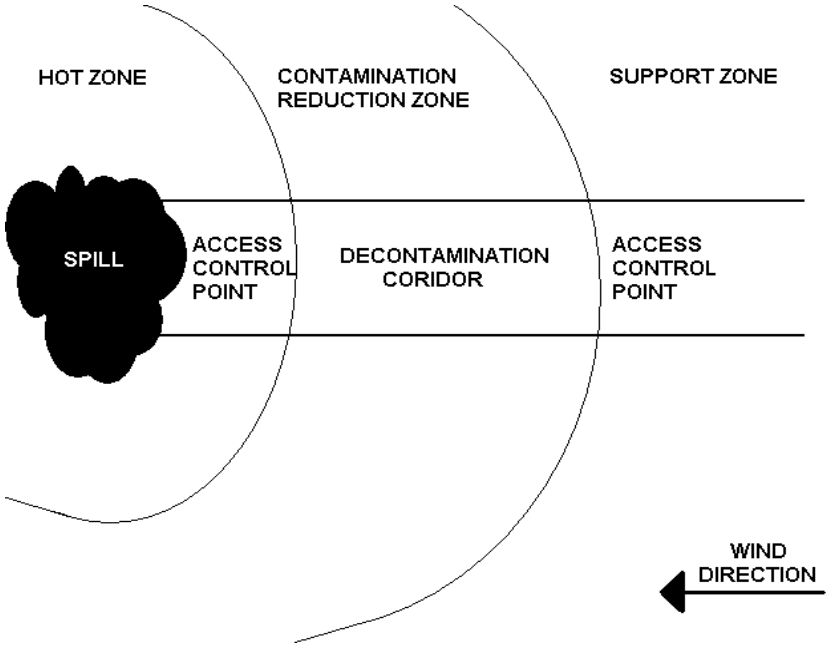


Figure 1. Decontamination Corridor Zones

Table 3. EPA 9 Step Decontamination Process

Step	Descriptions of Actions
1	Personnel enter decontamination area and drop tools on contaminated side.
2	Remove as much contamination as possible. Dilution is conducted inside containment or diked area. Personnel are wearing SCBA.
3	Remove SCBA to contaminated side and move to Step 4, or don new SCBA from clean side and re-enter work area.
4	Remove protective clothing and place on contaminated side. or transport personnel to a fixed decontaminated facility.
5	Remove all personal clothing and isolate items on contaminated side. Bag personal items.
6	Personal showering using soap and sponges. Bag cleaning items for disposal.
7	Personal dry off. Bag towels. Put on clean clothing.
8	Personnel receive medical evaluation and treatment as necessary.
9	Identify Personnel. Complete field records. Transport personnel to hospital or to a fixed decontaminated facility for Steps 5-8.

12 Equipment, Supplies, Services, and Manpower

12.1.1 Spill Kits

Spill kits are provided in the following locations:

Response Spill Kit #1: Maintenance Hallway Dry Creek WWTP:

- Effectively collects 70 gallons of oil
- Optimally collects 110 gallons of oil
- Socks, Absorbent, 3”x 48”: 7
- Pads, Absorbent, 8”x 18”x 1”: 36
- Sheets, Absorbent, 17”x 19”x ¼”: 100
- Area Drain Cover, 3’x 3’ (1)
- Small Tool Box:
- Disposal Bags: 10
- Gloves, Formed Neoprene: 1 pair
- Gloves, disposable: 10 pair
- Goggles: 1 pair

Response Spill Kit #2: Lakeview Pump Station Garage Field Technical Services

- Effectively collects 70 gallons of oil
- Optimally collects 110 gallons of oil
- Socks, Absorbent, 3”x 48”: 7
- Pads, Absorbent, 8”x 18”x 1”: 36
- Sheets, Absorbent, 17”x 19”x ¼”: 100
- Area Drain Cover, 3’x 3’ (1)
- Small Tool Box:
- Disposal Bags: 10
- Gloves, Formed Neoprene: 1 pair
- Gloves, disposable: 10 pair

Response Spill Kit #3: North Utility Building Collection Systems

- Effectively collects 70 gallons of oil
- Optimally collects 110 gallons of oil
- Socks, Absorbent, 3”x 48”: 7
- Pads, Absorbent, 8”x 18”x 1”: 36
- Sheets, Absorbent, 17”x 19”x ¼”: 100
- Area Drain Cover, 3’x 3’ (1)
- Small Tool Box:
- Disposal Bags: 10
- Gloves, Formed Neoprene: 1 pair
- Gloves, disposable: 10 pair

Response Spill Kit #4: Collection Systems Portable Overpack Drum:

- Effectively collects 70 gallons of oil

- Optimally collects 110 gallons of oil
- Socks, Absorbent, 3”x 48”: 7
- Pads, Absorbent, 8”x 18”x 1”: 36
- Sheets, Absorbent, 17”x 19”x ¼”: 100
- Area Drain Cover, 3’x 3’ (1)
- Small Tool Box
- Disposal Bags: 10
- Gloves, Formed Neoprene: 1 pair
- Gloves, disposable: 10 pair

Waterway Protection: Collection Systems Garage

- Boom, SELB5, 5”x10”, 36/pkg.
- Pads, SEL1836, 8”x18”x1”, 4/pkg.
- Fifteen (15) -eight foot socks
- Three (3) –four foot socks
- Ten (10) SEL100, 17”x19”x3/8” sheets, 100/pkg.,
- Three (3) SEL2501, 25 lb loose particulate
- Boom, SELB5, 5”x10”, 4/pkgs.
- Pads, SEL1836, 8”x18”x1”, 36/pkgs.

Combustible Gas Indicators with H2S detection capabilities are also available.

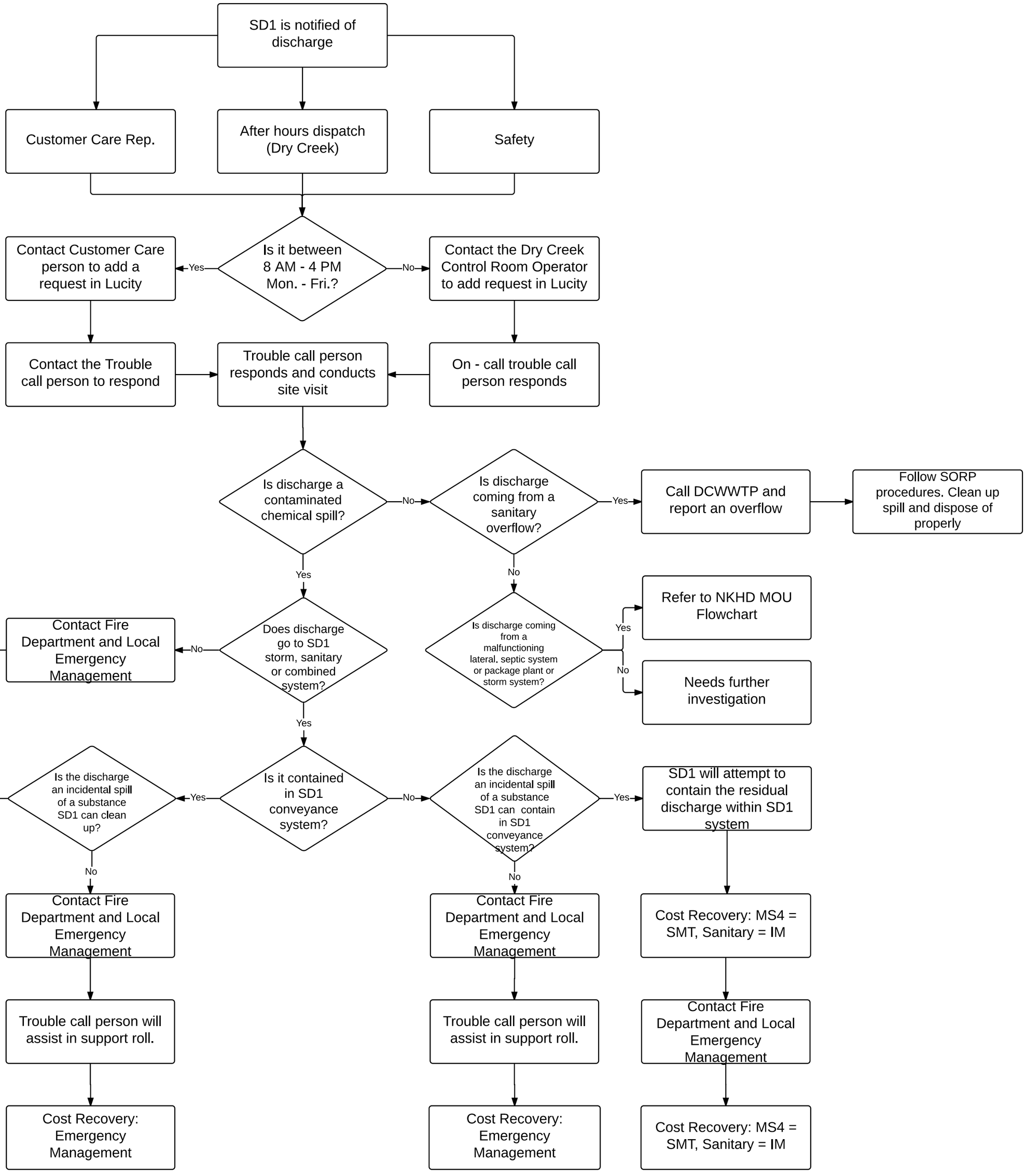
This material is sufficient to respond to most minor discharges occurring at the facility and to initially contain a major discharge while waiting for additional material or support from outside agencies and contractors. The inventory is verified on a monthly basis by designated personnel and is replenished as needed.

In addition, SD1 has several Vactor Trucks used for the cleaning of sewers. The vacuum systems of these trucks may be utilized to collect spilled materials in emergency situations to prevent discharge to waterways.

To respond to larger discharges and ensure the removal and disposal of cleanup debris, SD1 has will rely upon outside emergency response agencies. These have immediate access to an assortment of equipment and materials, including mechanical recovery equipment for use on water and on land, small boats, floating booms, and large waste containers.

Contaminated Spill Response Flow Chart

Draft



APPENDIX G:

Illegal Discharge Response Program and Flow Chart

(This page intentionally left blank for double-sided printing.)

Illegal Discharge Response Program

Table of Contents

1 Purpose and Scope

The illegal discharge of regulated or prohibited substances to a sanitary sewer system (i.e., separate or combined) can result in treatment plant upsets, poor quality of biosolids, eroded pipes, exploding sewer lines, and noxious fumes. The illegal discharge of regulated or prohibited substances to a separate storm water drainage system can negatively affect the water quality of local creeks, lakes, rivers, and wetlands, thereby harming the environment as well as public health. The purpose of this program is to describe the procedures to be followed by SD1 personnel for the immediate response to accidental spills, leaks, or illegal discharges of pollutants requiring clean up.

This program applies to illegal discharges that directly or indirectly impact SD1 managed systems. It applies to all areas and employees of SD1 and establishes requirements throughout SD1.

2 Regulatory Application

2.1 Authorities

The following laws and regulations are sources of legal authority that establish the applicability and requirements of this program. Other mandates and standards with collateral impacts are incorporated by reference.

- KRS 220.320 Sanitation Districts; Regulations as to use and construction of works and improvements -- Enforcement -- Penalties and damages
- Sanitation District No. 1 Rules and Regulations
- Northern Kentucky Regional Storm Water Management Program Rules and Regulations

2.2 References

The following materials are useful supplemental resources:

- 29 CFR 1910.120 Hazardous waste operations and emergency response
- SD1 Hazardous and Other Regulated Wastes Management Program

2.3 First Responder Operation and Technician Response Descriptions

- The Collection Systems Corrective Maintenance Trouble Call personnel are HAZWOPER Technician Level responders who are responsible for and trained in the detection, investigation and response to trouble calls. Trouble call personnel are primary responders and will provide incidental mitigation of discharges into the municipal sewer systems (i.e., separate sanitary, separate storm water, and combined sewer systems) and are also responsible for maintaining communications as outlined below:

    - Customer Care Center
    - Dry Creek Wastewater Treatment Plant Control Room Operator
    - All other affected departments located at the Main Office
    - SD1 Customers
    - Insert trouble call information into the Lucity data management program
    - Request additional resources from the Asset Maintenance or Asset Renewal Group when it is determined that SD1 may have responsibility
    - Create work order requests

- The Industrial Monitoring personnel are HAZWOPER Operations Level responders who are responsible for and trained in the prevention, detection, investigation, elimination and mitigation of incidental discharges to the sanitary or combined sewer systems from industrial facilities discharging wastewater to the sanitary or combined sewer systems.

- The Fats, Oils, and Grease (FOG) personnel are HAZWOPER Operations Level responders who are responsible for and trained in the prevention, detection, investigation, elimination and mitigation of incidental discharges of Fats, Oil and Grease (FOG) to the sanitary or combined sewer systems.

- The Integrated Watershed Management Source Monitoring Team personnel are HAZWOPER Technician Level responders who are responsible for and trained in the detection, investigation, elimination and mitigation of incidental discharges to the municipal separate storm sewer system that are not entirely composed of storm water.

3 Responsibilities

3.1 SD1 Safety Department

The SD1 Safety Department is responsible and accountable for the safety of all SD1 employees. This directly relates to safeguarding employees, the environment, public property and SD1 equipment.

Specifically, the SD1 Safety Department is responsible for:

- Provide or arrange for the provision of initial and annual refresher training to employees involved in discharge cleanup related activities, including applicable procedures and associated equipment.
- Upon request, determine PPE necessary to protect employees from the hazards present at a worksite.
- Act as a liaison for health & safety of SD1 employees when acting as contractor/service employees on offsite cleanup operations. Note: General supervision for site operations shall remain with the site controlling organization.

3.2 Supervisors

Supervisors shall:

- Ensure employees under their supervision are informed of safety requirements and safety-related work practices and procedures under this program.
- Ensure employees attend required training under this program and only trained personnel perform duties requiring training.

3.3 Trouble Call Responders

The Collection Systems Corrective Maintenance Trouble Call personnel are designated as primary responders to illegal discharges into SD1 owned and operated sanitary and storm water systems. Employees assigned as trouble call responders shall:

- Understand and attend training necessary to perform their duties per this procedure.
- Perform duties as described in this and referenced procedures/programs.
- Utilize Personal Protective Equipment (PPE) as directed in this program, the SD1 PPE program, or by the SD1 Safety Manager.
- Maintain assigned discharge cleanup response kits with materials as listed in Appendix A, including timely replacement of materials used.

3.4 Industrial Monitoring Group

Industrial facilities that are designated as a Significant Industrial User (SIU) must be permitted under SD1's Industrial Pretreatment Program. The Industrial Monitoring Group is responsible for ensuring compliance of permitted facilities under the pretreatment program. Under this program, the Industrial Monitoring Group is responsible for:

- Coordinating wastewater treatment facilities response to unexpected discharges, spills and/or pretreatment bypasses should the illegal discharge be determined to have come from a permitted SIU.
- Coordinating cost recovery and discharge investigation as assigned by Section 8 of this program for all illegal discharges that have been confirmed to come from a permitted SIU.

3.5 Source Monitoring Team

Illegal discharges into a MS4 are generally any discharge that is not composed entirely of storm water. The Source Monitoring Team is responsible for the program to detect and eliminate these illegal discharges. Under this program, the Source Monitoring Team is responsible for:

- Upon discovery of an illegal discharge by a member of the team, act as a discharge cleanup responder per this program.
- Coordinating cost recovery and discharge investigation as assigned by Section 8 of this program.

4 Definitions

Term	Definition
Combined Sewer System (CSS)	A system that is specifically designed to collect and convey sanitary wastewater and storm water through a single pipe.
Illegal Discharge	Any direct or indirect discharge to a sanitary sewer system, combined sewer system, or MS4 that is prohibited by federal, state, or local laws and regulations. Illegal discharge to an MS4 includes any non-storm water discharge to the storm drainage system, except as exempted in Section 1203 of the Storm Water Rules and Regulations.
Municipal Separate Storm Sewer System (MS4)	A conveyance or system of conveyances, including but not limited to any street curbs and gutters, piped storm drains, pumping facilities, and other drainage structures designed or used for collecting or conveying storm water.

Term	**Definition**
Sanitary Sewer	A sewer, which carries sanitary sewage and industrial wastes and to which storm, surface and groundwater are not intentionally admitted.
Sanitary Sewer Overflow (SSO)	A condition whereby untreated sewage is released into the environment prior to reaching treatment facilities thereby escaping wastewater treatment.
Wastewater Discharge Permit	A permit issued to industrial users, which authorizes discharges to the public sewer.

5 Discharge Response/Cleanup Limits

SD1 spill response and cleanup capabilities are limited by the ability to identify spilled/discharged material and the capacity of the spill response equipment available. SD1 spill cleanup is limited to up to 5 gallons of the following materials:

- Antifreeze (automotive, ethylene glycol and propylene glycol based)
- Oil (vegetable, hydraulic, automotive and other petroleum based oils)
- Paint (latex and oil based)
- Diesel fuel
- Gasoline
- Concrete washout water

SD1 personnel shall not clean up spills of these materials greater than 5 gallons or the following materials:

- Materials whose identity is unknown
- DOT regulated hazardous materials including, but not limited to, corrosives and poisons
- Fluids with unusual properties (i.e., odor, smoke, bubbling, etc.)

6 Response Procedures

6.1 Reporting of a Discharge

Individuals external to SD1 may report an illegal discharge to the sewer system, which would include the following:

- Customers with a discharge at their location
- Residents or other customers who witness an illegal discharge
- Other governmental groups, including emergency management and emergency response units

These reports may be received by a Customer Care Representative, a Dry Creek Control Room Operator, the Safety Department, or other employees. Any employee who receives the report of an illegal discharge shall:

1. Record the spill information by creating a work order request in Lucity that will notify the Corrective Maintenance Group that an illegal discharge has been reported. If employee is unable to create a work order then the employee should attempt to obtain the following minimum information:
    a. Name and phone number of the person reporting
    b. Time of call/report
    c. Location of discharge including nearest street address or public roadway and general directions to the area
    d. Type of incident/source of the discharge
    e. Type of material discharged
    f. Amount of material discharged
    g. Affected waterbody/sewer intake
    h. The suspected violator, if known

2. Following recording of the information, the employee shall:
    a. Contact a Customer Care Representative or a Dry Creek Control Room Operator by calling (859) 578-7450 and provide them the obtained information.

3. If the material is within the cleanup limits specified in Section 5, the Customer Care Representative or Dry Creek Control Room Operator shall then enter a work order request into Lucity to initiate a response to the discharge.

4. If the material is a hazardous material or exceeds the quantity limits specified in Section 5, the Customer Care Representative or Dry Creek Control Room Operator shall notify the local fire department or emergency management office for response.

If an illegal discharge to a sewer system is observed by an SD1 employee while working outside SD1 facilities, the employee shall do one of the following:

1. If cleanup of the material is allowed per Section 5, but the employee DOES NOT have an SD1 spill response kit or is not trained for spill response, then the employee shall report the discharge by calling (859) 578-7450.

2. If cleanup of the material is allowed per Section 5, the employee has an SD1 spill response kit, and the employee is trained for spill response, then the employee shall initiate a spill response as described in Section 6.2.

3. If cleanup of the material is not allowed per Section 5 (i.e., a hazardous material, an unknown material, or exceeds the quantity limits), the employee shall:

a. Proceed to a safe location and instruct any other people in the area to remain clear of the area.
b. Notify the local fire department or emergency management office.
c. Wait at the location for their arrival to assist them in locating the discharge and act in a supporting role.
d. If to the sanitary sewer system (i.e., separate or combined), notify a Customer Care Representative or Dry Creek Control Room Operator of the discharge to enable an evaluation of the effects on WWTP operation.

6.2 Discharge Response Procedures

Upon entry of a trouble call work order into Lucity, a trouble call responder shall proceed to the reported discharge location to investigate the spilled material and perform cleanup actions per the following procedures:

6.2.1 Sanitary Sewer Overflow

If the discharge is the result of a sanitary sewer overflow, the responder shall:

1. Call the Dry Creek Waste Water Treatment Plant to report the overflow
2. Follow SORP Procedures and clean up the spill

6.2.2 Malfunctioning Lateral, Septic System or Package Plant

If the discharge source is a malfunctioning lateral, septic system or package plant, the responder shall follow the NKHD/SD1 Memorandum of Understanding (MOU).

6.2.3 Illegal Discharge Not Involving SD1 Storm, Sanitary, or Combined Sewer System

If the discharge does not go to and could not eventually go to an SD1 operated system, the responder shall call the local fire department and emergency management office. They shall remain at the site to assist them in locating the discharge and to serve in a supporting role.

6.2.4 Illegal Discharge Exceeding Response Capabilities

If cleanup of the material is not allowed per Section 5 (i.e., a hazardous material, an unknown material, or exceeds the quantity limits), the employee shall:

1. Proceed to a safe location and instruct any other people in the area to remain clear of the area.
2. Notify the local fire department or emergency management office.
3. Wait at the location for their arrival to assist in locating the discharge and act in a supporting role.

4. If to the sanitary sewer system (i.e., separate or combined), notify a Customer Care Representative or Dry Creek Control Room Operator of the discharge to enable an evaluation of the effects on WWTP operation.

6.2.5 Illegal Discharge within Response Capabilities

If cleanup of the material is allowed per Section 5 (i.e., 5 gallons or less of antifreeze, oil, diesel fuel, gasoline, or paint), the responder shall:

1. Ensure that any other applicable SD1 operating procedures or safety program requirements are met, such as the Permit Required Confined Space Program, the Respiratory Protection Program, and the Traffic Control and Flagger Safety Program.
    a. Warning: Spills of gasoline within a confined space or small, contained space may result in a flammable atmosphere. In these situations, responders should obtain an SD1 air-monitoring instrument and only proceed with cleanup if monitoring shows less than 10% of the lower explosive limit. Alternatively, the responder may contact the local fire department for monitoring and cleanup support.
2. Don personal protective equipment including nitrile gloves and chemical splash goggles. Note: Additional PPE may be necessary based upon identified hazards in the area, e.g. respirator with organic vapor cartridges for gasoline or diesel fumes, hardhat, hearing protection, reflective clothing, etc.
3. Using the response spill kit (See Appendix A), contain the spill or discharge; use absorbent pads, socks, or berms to prevent or minimize the amount of spilled liquid entering sewer drains.
4. Use absorbents to clean up the spilled material and place in a plastic waste collection bag. This includes the removal or cleanup of spilled material accessible within the sewer/drainage system.
    a. For antifreeze and other water-based liquids, use of universal sorbents is necessary.
    b. For oils, paints, gasoline, and diesel fuel, use of “oil-only” sorbents is preferred. These sorbents repel water, minimizing the number of sorbents used and the amount of water collected in addition to the contaminant.
    c. Small amounts of water based (latex) paints within a sanitary or combined sewer system may be flushed through the system.
    d. If at any time the material being cleaned up shows unusual properties (odor, smoke, bubbling, etc.), the responder shall IMMEDIATELY stop clean-up efforts, evacuate the immediate area, and notify the local fire department or emergency management office.
5. Seal the waste collection bag by tying or sealing with tape and place the bag in the overpack spill response container for transport back to SD1 facilities for disposal.

Note: The use of vactor trucks for the cleanup of spilled materials other than sanitary sewage is not permitted.

7 Discharge Cleanup Materials Disposal

Following their return to SD1 facilities, the waste materials and absorbent shall be disposed of as follows:

- Cleanup materials containing oil based paints, diesel fuel, and gasoline shall be placed at the facility waste collection point and disposed of via the SD1 Hazardous and Other Regulated Wastes Management Program.

- Cleanup materials containing antifreeze, latex paint, and used oil:
    - If there are no free flowing liquids within the waste collection bag and no material would leak from the absorbent if held up for 5 minutes (free flowing liquid per paint filter test), then the absorbents may be placed in a plain trash bag and placed in the normal trash for disposal.
    - If there are any free liquids in the bag or the absorbents would drip liquid within 5 minutes of being held up, they shall be disposed of via the SD1 Hazardous and Other Regulated Wastes Management Program.

8 Post Cleanup Response Actions

8.1 Spill report

Following completion of spill response procedures, the SD1 responder(s) shall complete the SD1 Notification of Spill and Odor Complaints Report Form. The responder shall then file the form with their immediate Supervisor to be distributed to the responsible department for post spill investigation and cost recovery per Table 1.

8.2 Cost recovery

Cost recovery is the practice of establishing and collecting user fees for services. User fees are commonly charged across all levels of government for services such as licenses, access to parks, fees to industry for regulatory services, and some emergency services.

There are numerous provisions in Chapter 220 of the Kentucky Revised Statutes (KRS) and SD1's Rules and Regulations pertaining to enforcement of discharge prohibitions and requirements. KRS 220.320 permits the SD1 Board of Directors to make and enforce regulations that may prevent the unnecessary pollution of any watercourse or supply within SD1's jurisdictional boundary and may prohibit the discharge into such sewers of any wastes deemed detrimental to the works and improvements of the SD1. SD1's regulations include the ability to recover costs of emergency cleanup response through administrative and/or judicial enforcement remedies.

Table 1 describes which department within SD1 shall be responsible for determination of the need for and enacting cost recovery measures.

Table 1. Cost Recovery Responsibility

Discharge Type or Location	Responsible Division/Department Team
Sanitary Sewer - Commercial/Residential	Operations - Trouble Call Team
Combined Sewer - Commercial/Residential	Operations - Trouble Call Team
Sanitary Sewer - Permitted SIU's Only	Operations - Industrial Monitoring Group
Combined Sewer - Permitted SIU's Only	Operations - Industrial Monitoring Group
Separate Storm Sewer (MS4) - All	Engineering - Source Monitoring Team

For hazardous materials and excess quantity support, the local Emergency Management/Fire Department must be notified.

9 Training

All discharge cleanup response employees shall be, at a minimum, HAZWOPER Technician/Operations Level trained responders.

Appendix A. SD1 Illegal Discharge Response Spill Kit Contents

Trouble call and other responders responsible for cleanup of illegal discharges as described in this program shall be equipped with a spill cleanup response kit with the following materials at a minimum. Upon using this equipment, replacement equipment shall be obtained from the Safety Department as soon as possible.

Vehicle Container Type Spill Kit

- Size 17”H x 8”W Duffel Bag Container

Container Includes:

- (1) Heavy Duty Water Resistant Duffel
- (1) Quart Bag Ensorb
- (10) Pads
- (2) Medium Socks
- (1) Pack Wipes
- (1) Disposal Bag and Tie,
- (1) Pair of Nitrile Gloves (Standards EPA, SPCC and NPDES Gloves)
- (1) Pair Goggles
- (3) Disposable Bags

Maximum Spill Capacity = 5 Gallons

Additional Response Capability - 20-Gallon Salvage Drum

- (1) One Gallon Jug ENSORB®
- (20) Oil Only Pads
- (10) Universal Pads
- (1) Oil Only Large Sock
- (6) Oil Only Small Socks
- (will order pads and socks for universal capability)
- (1) Package Wipes
- (2) Disposal Bags & Ties
- (1) Pair of Nitrile Gloves
- (1) Pair Goggles

Maximum Spill Capacity = 11 Gallons

Appendix B. Notification of Spill and Odor Compliants

SANITATION DISTRICT NO. 1

REPORT FORM

☐ ODOR COMPLAINT
☐ SPILL REPORT

NOTIFICATION OF SPILL AND ODOR COMPLAINTS

Appendix B. Notification of Spill and Odor Complaints. **SANITATION DISTRICT NO.1 STAFF MEMBER RECEIVING CALL:**

2. NAME OF PERSON CALLING:

3. REPRESENTING (AGENCY):

4. TELEPHONE # OF PERSON CALLING:

5. ADDRESS OF PERSON CALLING:

6. TIME OF CALL _____ A.M. _____ P.M. DATE OF CALL: (month) _____ (day) _____ (year) _____

7. AFFECTED WATERWAY:

8. LOCATION OF SPILL: TOWN/CITY _____

COUNTY: _____ STATE: _____

9. NEAREST STREET ADDRESS OR PUBLIC ROADWAY AND GENERAL DIRECTIONS (HIGHWAY OR RT. #, WHICH RAMP, ETC.)

10. TYPE OF INCIDENT: ( ) TRAFFIC ACCIDENT ( ) CUSTOMER COMPLAINT ( ) BYPASS ( ) EQUIPMENT FAILURE

( ) OTHER (IDENTIFY) _____

11. TYPE OF MATERIAL SPILLED: ( ) SEWAGE ( ) PETROLEUM ( ) HAZARDOUS MATERIAL
( ) OTHER (IDENTIFY) _____

12. AMOUNT OF MATERIAL: _____ LBS _____ GALS (INDICATE IF THIS IS AN ESTIMATE)

13. CAUSE OF SPILL OR ODOR?

14. SPILL OCCURRED: (check one)

( ) ON LAND NEAR CREEK ( ) ON ROADWAY ( ) DIRECTLY INTO RIVER ( ) OTHER (DESCRIBE) _____

( ) TO A STORM SEWER VIA A SEWER SYSTEM ( ) DIRECTLY INTO CREEK OR TRIBUTARY _____

15. DATE OF SPILL: (month) _____ (day) _____ (year) _____

16. TIME OF DAY SPILL: (began) _____ (stopped) _____

17. THE SPILL HAS BEEN REPORTED TO:

a. (Name) _____ (Agency) _____

b. (Name) _____ (Agency) _____

c. (Name) _____ (Agency) _____

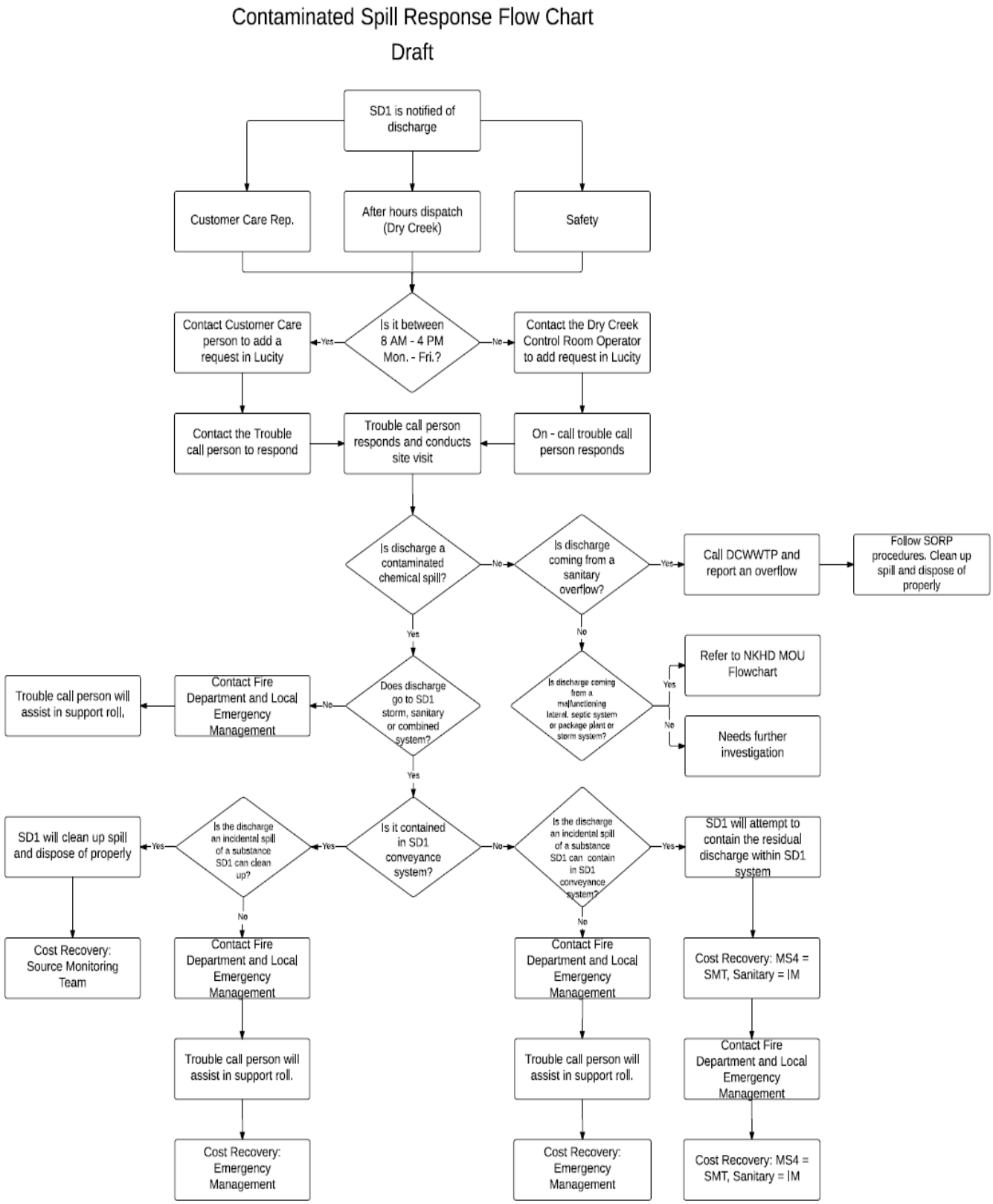
d. (Name) _____ (Agency) _____

18. REMARKS / COMMENTS:

KENTUCKY NATURAL RESOURCES AND ENVIRONMENTAL MANAGEMENT: (502) 564-2741 U.S. EPA REGION IV (404) 562-8700

ORSANCO: (513) 231-7719 KENTUCKY DIVISION OF WATER: FRANKFORT: (502) 564-3410 FLORENCE OFFICE: (859) -292- 6411

Appendix C. Contaminated Spill Response Flow Chart



APPENDIX H:

Pump Station Backup Power Plan Completed Schedule

(This page intentionally left blank for double-sided printing.)

Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Solution	Scheduled Completion Date	Actual Completion Date	Final Status as of October 2015
Category 1 Projects (4 total projects)						
Alex Licking	East	Permanent Generator	n/a	2008	2008	Complete
American Sign	West	Permanent Generator	n/a	2008	2008	Complete
Riley Road	East	Permanent Generator	n/a	2009	2009	Complete
Sunset	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2010	2010	Complete
			PS Elimination	2013	2013	Complete
CIP Title	**Basin**	**Original Proposed Solution**	**Updated Solution**	**Scheduled Completion Date**	**Actual Completion Date**	**Final Status as of October 2015**
Category 2 Projects (21 total projects)						
Kahns	East	PS Elimination	n/a	2007	2007	Complete
Meadow Hill	Central	PS Elimination Study	PS Elimination	Study - 2008	2008	Complete
				2012 - 2015	2010	
Riley Road No. 1	East	PS Elimination	n/a	2009	2009	Complete
Riley Road No. 2						
Riverwatch PS	North	PS Elimination Study	PS Elimination	Study - 2008	2008	Complete
				2012 - 2015	2008	Complete
South Park Industrial	North	PS Elimination Study	Backup Dry Prime Pump with a Diesel	Study - 2008	2008	Complete
				2012 - 2015	2010	Complete
Wedgewood Dr	Central	PS Elimination Study	Electrical hook up for portable generator	Study - 2008	2008	Complete
				2015	2015	Complete
Willow Bend No. 2	West	PS Elimination Study	PS Elimination	Study - 2008	2008	Complete
				2013	2013	Complete
Army Reserve	East	PS Elimination Study	Electrical hook up for portable generator	Study - 2008	2008	Complete
				2013-2014	2014	Complete
Eagles Landing	West	PS Elimination Study	Electrical hook up for portable generator	Study - 2008	2008	Complete
				2013-2014	2014	Complete
Evergreen	Central	PS Elimination Study	Electrical hook up for portable generator	Study - 2008	2008	Complete
				2014	2014	Complete
Lamphill	East	PS Elimination Study	Electrical hook up for portable generator	Study - 2008	2008	Complete
				2011	2011	Complete
Mill House Crossing	Central	PS Elimination Study	Backup Dry Prime Pump with a Diesel	Study - 2008	2008	Complete
				2012	2012	Complete
Ridgefield	North	PS Elimination Study	Backup Dry Prime Pump with a Diesel	Study - 2008	2008	Complete
				2014	2014	Complete
War Admiral	West	PS Elimination Study	PS Elimination	Study - 2008	2008	Complete
				2012 - 2015	2011	Complete
Blackstone	West	PS Elimination Study	Electrical hook up for portable generator	Study - 2008	2008	Complete
				2015	2015	Complete
Dublin Green No. 1	West	PS Elimination Study	PS Elimination	Study - 2008	2008	Complete
				2015	2012	Complete
Fowler Creek	West	PS Elimination	These stations were eliminated after the Western Regional collection system became operational.	2013	2011	Complete
Gammon Calmet	West	PS Elimination		2013	2012	Complete
Gunpowder	West	PS Elimination		2013	2012	Complete
Union	West	PS Elimination		2013	2012	Complete

Updated: October 30, 2017

Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Solution	Scheduled Completion Date	Actual Completion Date	Final Status as of October 2015
Category 3 Projects (24 total projects)						
Airport Exchange Ind Park	North	Permanent Generator	n/a	2009	2009	Complete
Barrs Branch	East	Permanent Generator	Portable Generator	2009	2009	Complete
Cedar Point	East	Permanent Generator	n/a	2009	2009	Complete
Bullitsville	North	Permanent Generator	n/a	2008	2008	Complete
Catalpa	Central	Permanent Generator	n/a	2009	2009	Complete
Centerplex	East	Permanent Generator	n/a	2008	2008	Complete
Hempsteade	West	Permanent Generator	Permanent Generator	2009	2009	Complete
			PS Elimination	2011	2011	Complete
Highland Heights	East	Portable Generator	n/a	2009	2009	Complete
Dublin Green No. 2	West	Permanent Generator	n/a	2009	2009	Complete
Brookwood	East	Permanent Generator	n/a	2009	2009	Complete
Ky Aire	West	Permanent Generator	Permanent Generator	2008	2007	Complete
			PS Elimination	2014	2014	Complete
Levi	West	Permanent Generator	n/a	2008	2007	Complete
Maple Ave	Central	Permanent Generator	n/a	2009	2009	Complete
Sand Run	North	Permanent Generator	n/a	2008	2008	Complete
Saturn	West	Permanent Generator	n/a	2009	2009	Complete
Second Street	Central	Permanent Generator	n/a	2009	2009	Complete
Skyport	North	Permanent Generator	n/a	2008	2008	Complete
South Hampton	West	Permanent Generator	Permanent Generator	2008	2007	Complete
			PS Elimination	2012	2012	Complete
Thornwilde	North	Permanent Generator	n/a	2008	2008	Complete
Bunning Lane	East	PS Elimination Study	Electrical hook up for portable generator	2015	2015	Complete
Kees	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2011	2011	Complete
Overlook	East	Permanent Generator	Electrical hook up for portable generator	2015	2015	Complete
Riverview Farms	North	Permanent Generator	Electrical hook up for portable generator	2015	2015	Complete
Stillwater	East	Permanent Generator	Electrical hook up for portable generator	2015	2015	Complete

Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Solution	Scheduled Completion Date	Actual Completion Date	Final Status as of October 2015
Category 4 Projects (50 total projects)						
Banklick	Central	Permanent Generator	n/a	2009-2014	2009	Complete
Cedar	Central	Permanent Generator	n/a	2009-2014	2009	Complete
Fowler Ridge	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2010	Complete
Lassing Green	West	Permanent Generator	n/a	2009-2014	2009	Complete
Leathers Rd	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2010	Complete
Marshall Rd	Central	Permanent Generator	n/a	2009-2014	2010	Complete
Mineola Pike	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2010	Complete
Newport Steel Mill	East	Permanent Generator	n/a	2009-2014	2009	Complete
Paul Rd	East	Permanent Generator	Portable Generator	2009-2014	2010	Complete
Rosewood Lane	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2010	Complete
Shadow Lake	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2009	Complete
Wolf Rd	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2009	Complete
Air Park West	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2011	Complete
Arbortech	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012	2012	Complete
Arborwood	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2014	2014	Complete
Brandtly Ridge	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012	2012	Complete
Brentwood	North	Permanent Generator	Electrical hook up for portable generator	2015	2014	Complete
Brushup Lane	West	Permanent Generator	PS Elimination	2012	2012	Complete
Carlisle Ave	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2014	2014	Complete
Cinnamon Ridge	West	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012	2012	Complete
Cold Spring Crossing	East	Permanent Generator	Permanent Generator	2014	2014	Complete
Cold Spring Plaza	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012	2012	Complete
Darma Ct	East	Permanent Generator	Electrical hook up for portable generator	2013-2014	2014	Complete
Deer Creek No. 1	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2011	Complete
Deer Creek No. 2	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2011	Complete
Eighth Street	Central	Connect to Grid Power	Permanent Generator	2015	2015	Complete
Gerrard Ave	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete
Golf Course	Central	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete
Hampton Ridge	West	Permanent Generator	Electrical hook up for portable generator	2015	2015	Complete
Harrison Harbor	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete

Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Solution	Scheduled Completion Date	Actual Completion Date	Final Status as of October 2015
Category 4 Projects (continued)						
Harvest Hill	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2014	2014	Complete
ICH	Central	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
IDI	North	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete
Independence Station Rd	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2011	Complete
Jefferson Ave	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete
Jericho Rd	Central	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
Jonathan	West	Permanent Generator	Electrical hook up for portable generator	2015	2015	Complete
Litton	North	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete
Ohio Ave	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete
Orchard Estates	West	Permanent Generator	Backup Dry Prime Pump with a Diesel	2014	2014	Complete
Parkside No. 2	East	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete
Patton Street	Central	Dual Utility Power Feed	Permanent Generator	2015	2014	Complete
Ria Vista	North	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
Silver Grove	East	Permanent Generator	Permanent Generator	2015	2015	Complete
St Annes	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2014	2014	Complete
Sycamore	West	Permanent Generator	PS Elimination	2015	2012	Complete
Taylor Mill Rd	Central	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
Wilder	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2014	2014	Complete
Wyndemere	North	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete
Youell Rd	West	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete

Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Solution	Scheduled Completion Date	Actual Completion Date	Final Status as of October 2015
Category 5 Projects (6 total projects)						
Keavy	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2010-2015	2010	Complete
Meadow Lane	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2010-2015	2009	Complete
Cardinal Cove	North	Permanent Generator	Permanent Generator	2015	2013	Complete
Crestview	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2015	2015	Complete
Ripple Creek	East	PS Elimination Study	PS Elimination	2010-2015	2010	Complete
Winters Lane No. 2	East	Permanent Generator	Electrical hook up for portable generator	2014	2014	Complete
CIP Title	**Basin**	**Original Proposed Solution**	**Updated Solution**	**Scheduled Completion Date**	**Actual Completion Date**	**Final Status as of October 2015**
Category 6 Projects (5 total projects)						
Enzweiller	East	Permanent Generator	n/a	2012-2015	2009	Complete
Mafred	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012-2015	2009	Complete
Ridgeway	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012-2015	2009	Complete
Richwood	West	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012	2012	Complete
Twin Lakes	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2014	2014	Complete

Progress Summary	Number
2007 Complete Projects	4
2008 Complete Projects	8
2009 Complete Projects	24
2010 Complete Projects	11
2011 Complete Projects	16
2012 Complete Projects	18
2013 Complete Projects	2
2014 Complete Projects	16
2015 Complete Projects	11
Total Complete	**110**

(This page intentionally left blank for double-sided printing.)

APPENDIX I:

SD1 Strategic Business Plan Summary Document

(This page intentionally left blank for double-sided printing.)

STRATEGIC BUSINESS PLAN

Customer-Centered and Community-Focused

The staff of SD1 has worked with stakeholders throughout the community and across the organization to develop a new strategic business plan. The plan will help SD1 to become a utility that is more customer-centered and community-focused. This summary provides an outline of our long-term goals and the strategies we will implement over time to achieve the expected outcomes.

MISSION: Why we exist

To reliably provide the Northern Kentucky region with wastewater and storm water services to protect public health, property and the environment and to support the economic vitality of the community.

VISION: Our focus for the future

To be a customer-centered and community-focused utility by understanding and meeting the needs of our customers and addressing issues that are of strategic importance to the entire community.

VALUES: Principles guiding our actions

- Accountability
- Collaboration
- Customer Focus
- Environmental Stewardship
- Integrity
- Safety

GOALS

CUSTOMER SATISFACTION

Create a culture of exceptional service by focusing on understanding and meeting the needs of both internal and external customers.

OPERATIONAL EFFICIENCY AND RESILIENCY

Ensure operational efficiency through effective performance improvements while managing and minimizing business risks.

FINANCIAL VIABILITY

Effectively manage and generate the financial resources required to meet current and future operating, debt service and capital needs.

WORKFORCE DEDICATION

Develop a high-performance, collaborative workforce that is engaged, motivated and dedicated.

ENVIRONMENTAL STEWARDSHIP

Ensure adequate and reliable quality of Northern Kentucky's waterways for the benefit of those who live, visit and work in the community.

STAKEHOLDER SUPPORT

Effectively communicate and collaborate with our stakeholders to create a shared understanding of SD1's Mission and Vision.

OPTIMAL INFRASTRUCTURE MANAGEMENT

Optimize asset functionality, condition and operations to ensure we have adequate and reliable facilities and infrastructure needed to convey, manage and clean wastewater and storm water.

STRATEGIES: Actions to achieve our goals

CUSTOMER SATISFACTION

1. Conduct an assessment of existing customer service practices and response standards, and take necessary actions based upon an understanding of the needs of different types of customers.
2. Develop and implement customer service training plans for each department, based on SD1's Mission, Vision and Values.
3. Identify and expand interactive customer technology to improve the customers' experience.

EXPECTED OUTCOMES

- Improved external customer satisfaction of specific and overall service experiences
- Improved employee satisfaction of specific and overall internal service experiences

OPERATIONAL EFFICIENCY AND RESILIENCY

1. Optimize the use of technology and data to support and improve decision-making.
2. Implement resource optimization initiatives and best business practices to reduce operating costs.
3. Ensure business continuity and operational reliability during both routine operations and emergency conditions.
4. Create a culture of continuous improvement and innovation.

EXPECTED OUTCOMES

- Improved efficiency in using resources
- Improved operational performance levels
- Increased operational reliability
- Comprehensive emergency preparedness

FINANCIAL VIABILITY

1. Invest in projects and technology intended to reduce operating costs.
2. Seek project partnership opportunities with municipalities, as well as with state and/or federal agencies, to expand financial resources.
3. Develop and adopt comprehensive financial management policies.
4. Develop a multi-year comprehensive financial plan.
5. Establish financial performance metrics.

EXPECTED OUTCOMES

- Optimized operations costs
- Achievement of capital and fixed asset expenditure plans
- Recovery of costs for providing services through rates and fees
- Maintained bond ratings (AA stable – S&P and Aa2 – Moody's)

WORKFORCE DEDICATION

1. Recognize employee achievements.
2. Regularly communicate with employees about current and relevant topics.
3. Create a learning environment that fosters professional growth and the retention of institutional and technical knowledge.
4. Explore new wellness programs that offer improvement in preventative care.
5. Encourage the use of collaborative teams to address issues of strategic importance and facilitate employee development.
6. Promote employee development by providing effective training and quality educational opportunities.
7. Provide employees with the tools, resources and technology necessary to perform their jobs.

EXPECTED OUTCOMES

- Improved employee satisfaction
- Increased employee awareness and participation in Wellness Program
- Increased number of interdepartmental work teams
- Eighty percent of employees fully meeting their personal development and performance plans

ENVIRONMENTAL STEWARDSHIP

1. Actively participate in matters relating to local, state and national water quality-related regulations.
2. Utilize local data to optimize the use of models, tools and other technologies.
3. Advocate appropriate environmental regulations.
4. Implement cost-effective integrated storm water management practices to control runoff.
5. Explore opportunities to improve stream conditions that are supported by scientific principles and data.

EXPECTED OUTCOMES

- Reduced volume and number of sewer overflows
- Sustained or improved stream conditions
- Compliance with all water quality-related permit conditions and limits
- Influenced environmental policies and regulations

STAKEHOLDER SUPPORT

1. Expand involvement in and collaborations with local community groups.
2. Build and improve relationships with key non-residential accounts.
3. Identify and implement new communication strategies to reach stakeholders.
4. Regularly inform community leaders about SD1 through various strategies.

EXPECTED OUTCOMES

- Improved stakeholder support
- Increased number of stakeholder collaborations

OPTIMAL INFRASTRUCTURE MANAGEMENT

1. Conduct on-going infrastructure risk assessments, and target resources accordingly.
2. Regularly communicate to SD1's Board and the public about infrastructure issues through standardized reporting and data.
3. Evaluate industry trends and utilize emerging technologies to reduce costs and improve the longevity, reliability and performance of infrastructure.
4. Develop and adopt a sustainable asset repair and replacement program.
5. Maximize the use of information technology systems to collect and share the asset-specific knowledge required to optimize the maintenance, refurbishment and replacement of assets at the right times.

EXPECTED OUTCOMES

- Maintained asset renewal rate to optimize system performance
- Achievement of regulatory requirements
- System assessments of pipes conducted on a 10-year cycle
- Optimized asset life-cycle costs
- Achievement of operational performance metrics

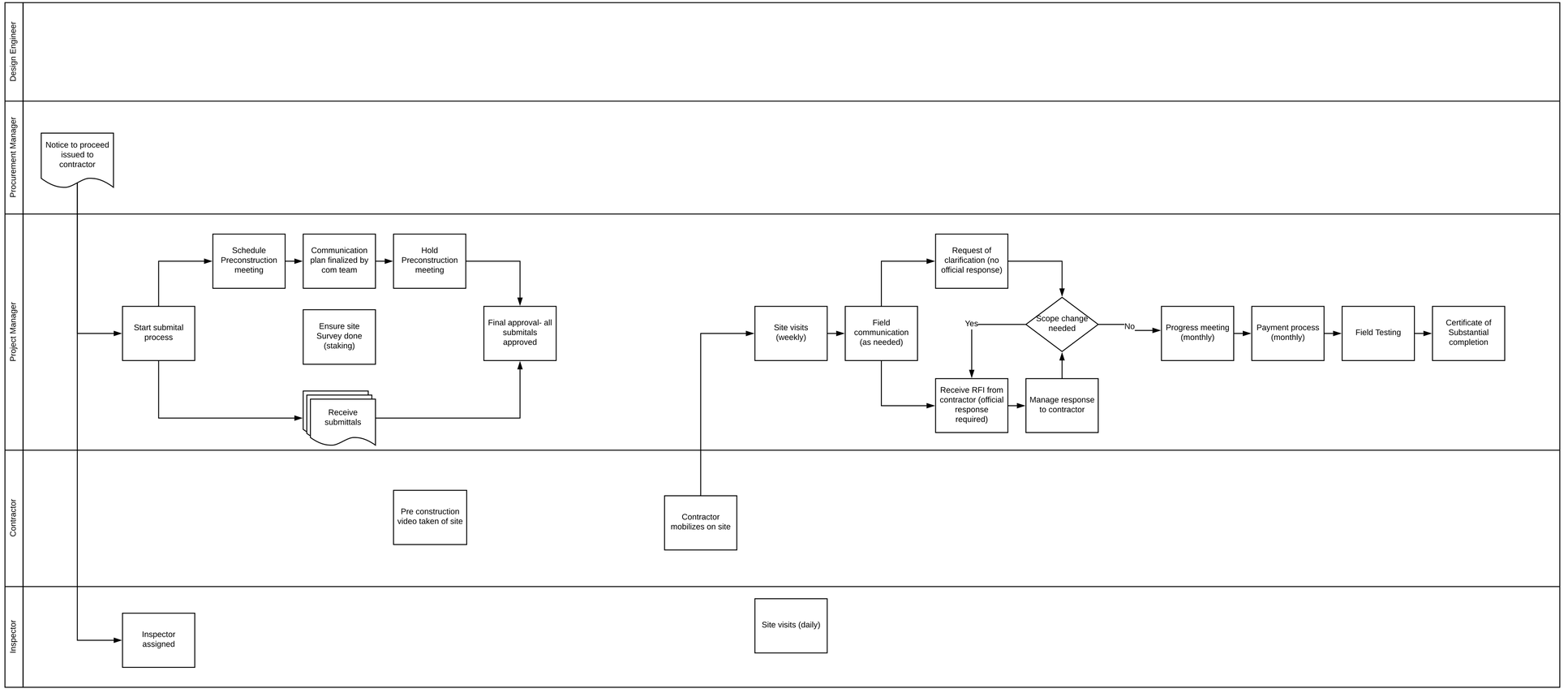
APPENDIX J:

SD1 Lean – Engineering Department Process Maps

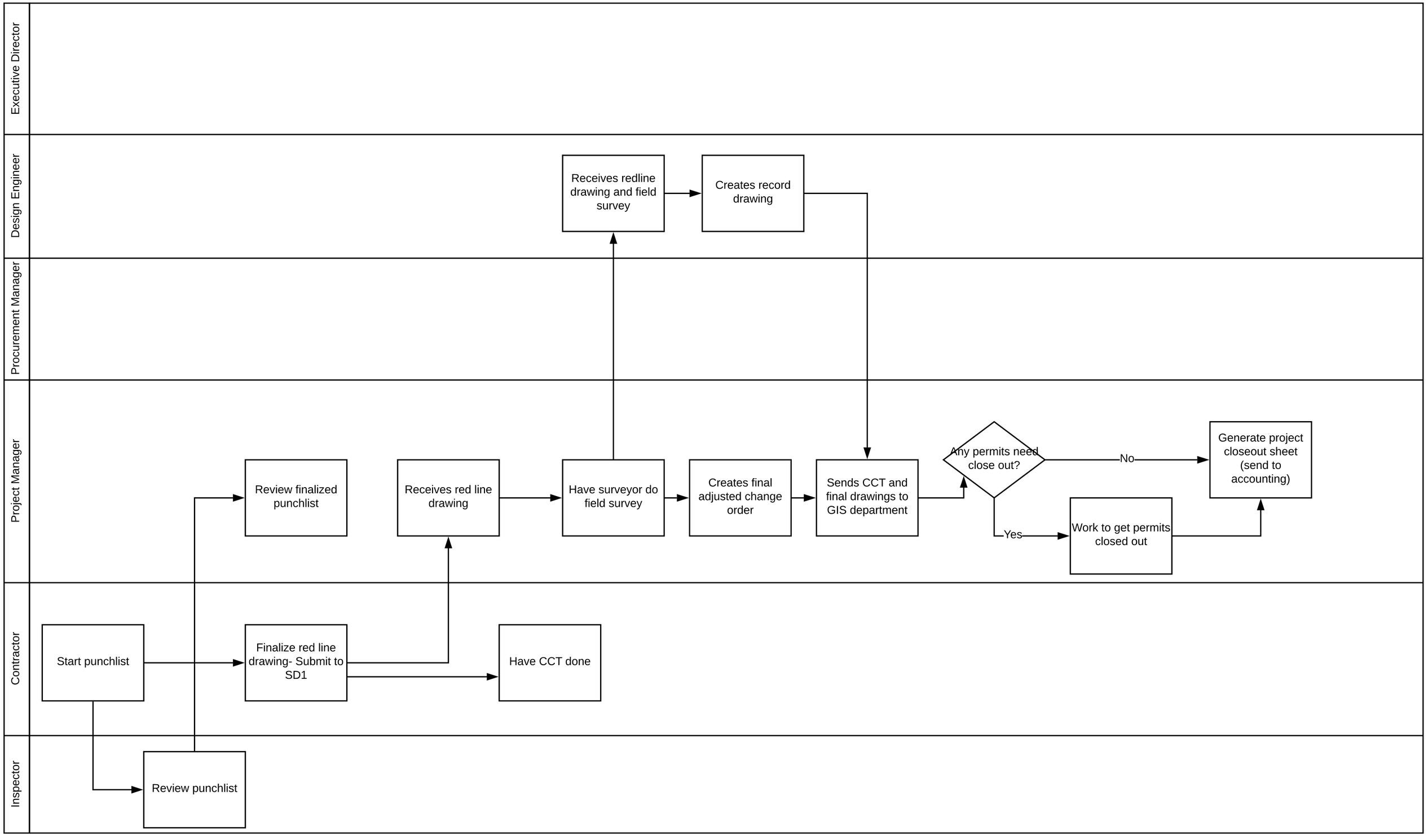
(This page intentionally left blank for double-sided printing.)

CONSTRUCTION MGMT- START OF CONSTRUCTION

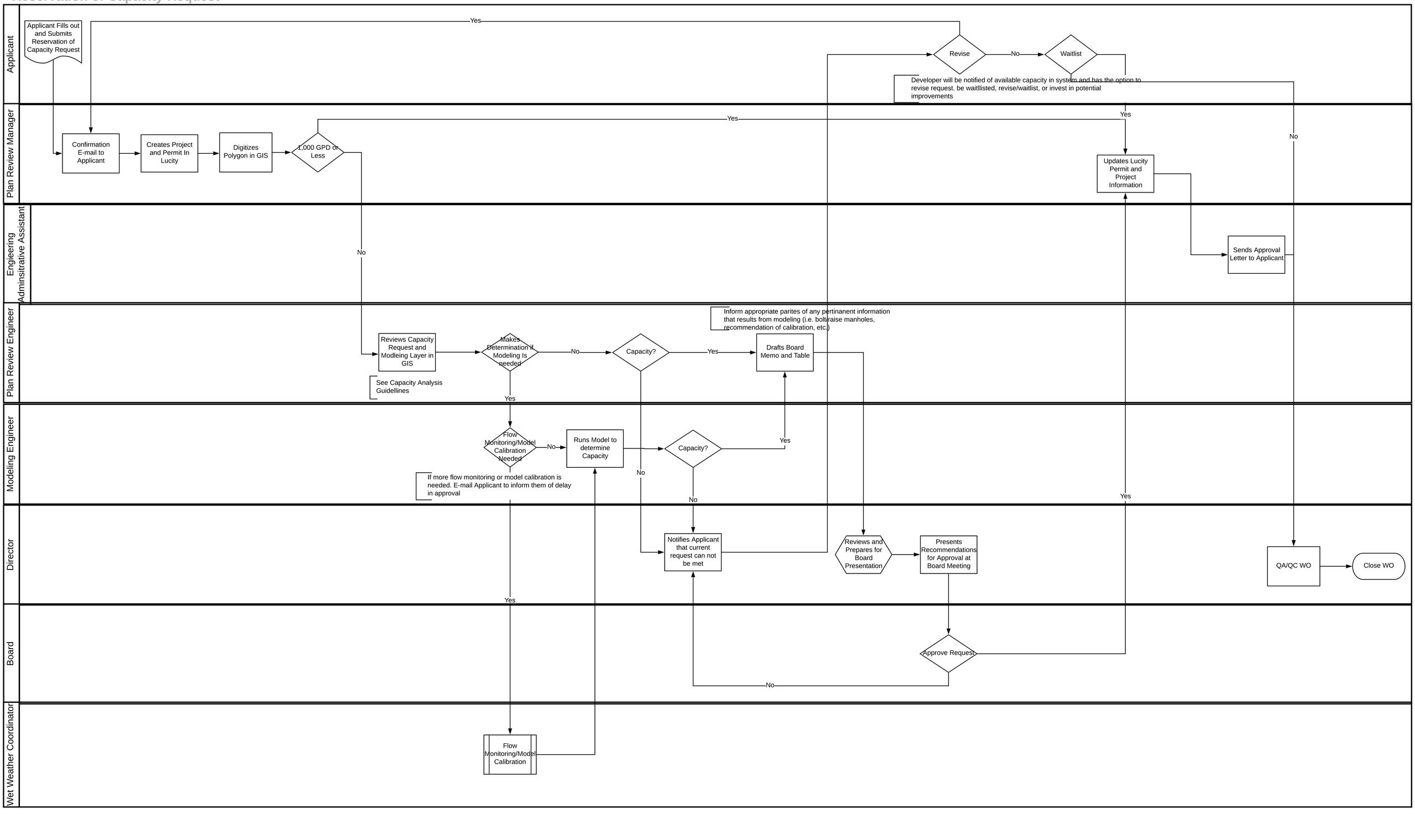
START OF CONSTRUCTION



CONSTRUCTION MANAGEMENT- CLOSEOUT



Reservation of Capacity Request



Project Manager
Project is Assigned
Schedule, PDP, Cost Estimate, PPO
Preliminary Survey
No
Yes
RFP is Drafted
Proposals evaluated and surveyor selected
Survey Data Recieved and Analyzed
Preliminary Geo-tech
Yes
RFP is Drafted
No
Proposals are evaluated and geo selected
Geotech Data is Recieved and Analyzed
Design RFP is drafted
RFP is finalized and made ready for advertisement
Yes
RFP is Reviewed
Proposals are reviewed and a selection is made
Yes
Kick off meeting is scheduled
Kick-off meeting
30% Design Submittal Review
Land Acqusition
Yes
Land Acqusition
No
60% Design Submittal Review
Permitting
Yes
No
90% Design Submittal Review
Project Ready for Bidding
DCM Director
30% Design Submittal Review
60% Design Submittal Review
90% Design Submittal Review
Procurement Manager
RFP is advertised
Proposals are recieved
Yes
RFP is advetrised
Proposals are recieved
RFP is advertised
Proposals are recieved
Project is awarded to selected design consultant
Yes
Consultant
Kick-off meeting
30% Drawings, Specifications, and Class 3 Cost Estimate Established
60% Drawings, Specifications, and Class 2 Cost Estimate Established
Acquire Necessary Permits
90% Drawings, Specifications, and Class 1 Cost Estimate Established
100% Drawings, Specifications, and Class 1 Cost Estimate Established
Survey Consultant
Survey Data is collected
Geo-tech Consultant
Geotech Data is collected