Jefferson County

Environmental Services Department

Sanitary Sewer Overflow Response and Reporting Program

Effective: July 2012

Contents

Appendices

Appendix A	SSO Reporting Forms
Appendix B	SSO Volume Estimating Worksheets
Appendix C	SSO Picture Procedure and SSO Picture Form
Appendix D	Tables for Estimated SSO Flow Out of Manholes
Appendix E	Check Lists for Reporting

FORMS

ESD Form RF1-1 Wastewater Discharge Reporting Form

ESD Form RF2-1 24 Hour Report

ESD Form RF3-1 5 Day Follow-up Report

ESD Form RF4-1 Sewer Overflow Advisory

ESD Form WS1-1 SSO Volume Estimating Worksheet for Manholes

ESD Form WS2-1 SSO Volume Estimating Worksheet for Service Cleanouts

ESD Form WS3-1 SSO Volume Estimating Worksheet for Pipes or Cleanouts

CHECK LISTS

- **Service Request Check List**

- **SSO Check List for Line Maintenance –**

  Public Works Supervisor/ Sewer Video Operations Supervisor

- **5 Day Check List for Line Maintenance –**

  Principal Engineering Inspector

- **SSO Check List for Administration**

Jefferson County Environmental Services Department

Sanitary Sewer Overflow Response and Reporting Program (SSORRP)

Section 1 - Introduction

1.1 Purpose

On October 21, 1996, Jefferson County (County) entered into a Consent Decree with the United States Environmental Protection Agency (USEPA). As part of the Consent Decree, the Jefferson County Environmental Services Department (ESD) is required to report to the USEPA all Sanitary Sewer Overflows (SSOs) as defined in the Decree. The ESD also reports all SSOs to the Alabama Department of Environmental Management (ADEM) and the Jefferson County Department of Health (JCDH).

The purpose of the Sanitary Sewer Overflow Response and Reporting Program (SSORRP) is to provide policies and procedures for the response to and reporting of SSOs in an effort to protect public health and the environment and meet applicable regulatory requirements.

1.2 Distribution of SSORRP

This SSORRP will be made available to all individuals involved in responding to and reporting SSOs within the Jefferson County Environmental Services Department (ESD).

Copies of this program will be distributed to the following ESD personnel:

- Director
- Deputy Director
- Engineering Staff
- Inspection Staff
- Line Maintenance Personnel
- Pump Station Operations Personnel
- Construction Personnel

1.3 Training of Personnel

The ESD will provide training sessions upon the adoption of this program to all personnel involved in responding to and reporting of SSOs. New personnel will be trained as soon as practicable after hire. All ESD operations and maintenance personnel listed in Section 1.2 will be provided training sessions annually to refresh them of the adopted procedures. The training sessions and personnel trained will be documented for tracking purposes. As this SSORRP is updated, additional training sessions will be conducted to retrain personnel on new and/or changed procedures.

Section 2 – SSO Notification

2.1 SSO Call Center

The ESD operates a Dispatch Facility that is continually monitored twenty-four hours a day to receive calls regarding SSOs and backups. These calls may be received from other utilities, municipalities, ESD staff, the public or any individual that believes an SSO is occurring. Any ESD employee that discovers an SSO or evidence of an SSO will call the Dispatch Facility to report the details of the event. The phone number to report an SSO is 205-942-0681. The dispatcher on duty logs information including, but not limited to: the complaint address, caller's name, and complaint details into the ESDs complaint tracking database, which is integrated into ESDs Sewer Infrastructure Management System (SIMS).

The Call Center is physically manned by a dispatcher 16 hours per day from 6:00 AM to 10:00 PM. Between the hours of 10:00 PM to 6:00 AM, the system plays a recorded message which instructs the caller to leave a detailed message of the problem, the system then calls the on-call supervisor to notify them of the call. If the call is not acknowledged within 10 minutes by the supervisor, the system calls subsequent on-call supervisors until the call is acknowledged.

2.2 Notification of ESD Personnel

Following a call, a crew from the Shades Valley Line Maintenance Division or the Village Creek Line Maintenance Division is then notified by the dispatcher or on-call supervisor of the occurrence and responds to the call, as appropriate. Crews are manned seven days per week from 7:00 AM to 7:30 PM. After hours the on-call supervisor notifies the on-call maintenance crew for response. The managing supervisor of the responding crew or an inspector is also notified via two way radio or cell phone. The Sewer Construction/ Maintenance Supervisor and Principal Engineering Inspectors are also notified of any occurrence via email to their cell phone. **Table 2-1** below lists these personnel:

Position	Name	Phone Number	Email Address
Sewer Construction/ Maintenance Supervisor	**Position Vacant**	**205-XXX-XXXX**	name@jccal.org
Principal Engineering Inspector	**Brian Champion**	**205-601-5054**	champion@jccal.org
Principal Engineering Inspector	**Lavon Evans**	**205-601-5056**	evansl@jccal.org
Sewer Video Supervisor	**Don Goodwin**	**205-296-2012**	goodwind@jccal.org
Public Works Supervisor	**Todd Childers**	**205-369-3821**	childerst@jccal.org
Public Works Supervisor	**Ronnie Collier**	**205-601-5055**	ronniecollier@jccal.org
Public Works Supervisor	**Bruce Parsons**	**205-368-4325**	parsonsb@jccal.org
Sewer Service Inspector	**Jason Ashley**	**205-601-5052**	ashleyj@jccal.org
Sewer Service Inspector	**Position Vacant**	**205-XXX-XXXX**	name@jccal.org

Table 2-1

2.3 Notification of Regulatory Agencies and the Public

If an SSO is determined to reach surface waters in accordance with Section 3.3, a *Sewer Overflow Advisory* (ESD Form RF4-1) is sent to the ADEM, the JCDH, local officials, ESD employees and media groups (Table 2-2). In the future, *Sewer Overflow Advisories* will be placed on the ESD website. If it is determined that a significant danger to public health exists due to contact with affected surface waters, the portable sign shown in Figure 2-1 will be placed in the immediate vicinity of the SSO. The portable sign shown in Figure 2-2 will be placed at likely points of public access to the affected downstream surface waters. The signage will remain in the area until the SSO has ceased and sufficient time has elapsed to mitigate its effects.

The rationale for determining whether an SSO poses a significant danger to the public include, but are not limited to: the volume of the overflow, the size of the receiving stream, weather conditions, upstream and downstream fecal coliform testing results (if available), accessibility of the area near and downstream of the SSO, population density and the presence of sensitive or public facilities such as schools, parks, etc. If it is determined that there is a threat for exposure by a specific individual or group, ESD will notify them directly.

Within 24 hours of any SSO, ADEM will be notified via their phone number, and the *24 Hour Report* (ESD Form RF2-1) will be submitted to ADEM and the JCDH. A *5 Day Follow-up Report* (ESD Form RF3-1) is prepared and sent to ADEM and JCDH within 5 days of the SSO occurrence. Each month, the ESD submits a report and database of the SSOs from within the collection system to the USEPA in accordance with the requirements of the Consent Decree. In addition, copies of these reports are provided to the local ADEM office in Homewood, AL and the Government Documents Department at the Birmingham Public Library.

Agency	Contact	Number	Email
ADEM – 24 HR Notification	**ADEM SSO Hotline**	**334-274-4200(O)**	**N/A**
ADEM – 24 HR Report	**Kimberly Minton**	**334-279-3051(F)**	**kminton@adem.state.al.us**
ADEM – 5 Day Report	**Kimberly Minton**	**334-279-3051(F)**	**kminton@adem.state.al.us**
JCDH – 24 HR Report	**N/A**	**205-939-9019(F)**	**N/A**
JCDH – 5 Day Report	**N/A**	**205-939-9019(F)**	**N/A**
ESD Director	**David Denard**	**205-325-5979(O)**	**denardd@jccal.org**
ESD Deputy Director	**Daniel White**	**205-214-8610(O)**	**whited@jccal.org**
ESD Chief Civil Engineer	**Brian Rohling**	**205-521-7512(O)**	**rohlingb@jccal.org**
ESD Sewer Construction/ Maintenance Supervisor	**Position Vacant**	**xxx-xxxx**	**name@jccal.org**
Principal Engineering Inspector	**Brian Champion**	**205-601-5054(C)**	**championb@jccal.org**
County Manager	**Tony Petelos**	**205-731-2880(O)**	**petelost@jccal.org**
WABM	**N/A**	**205-290-2115(F)**	**N/A**
ABC 33/40	**N/A**	**205-982-3942(F)**	**N/A**
CBS 42	**N/A**	**205-320-2722(F)**	**N/A**
FOX 6	**N/A**	**205-583-4356(F)**	**N/A**
NBC 13	**N/A**	**205-323-3314(F)**	**N/A**

Table 2-2: *Listing of regulatory agencies, officials and media outlets.*
O – Office
F – Fax

Figure 2-1: *Portable sign* ***(WARNING SIGN)*** *for public awareness of SSO to be placed near discharge source in an area that may endanger human health.*

Figure 2-2: *Portable sign* ***(SURFACE WATER SIGN)*** *for public awareness of SSO to be placed near surface waters.*

If a SSO is attributed to grease–related causes and not attributable to a food service facility, the personnel of the Grease Control Program will alert the nearby public of the overflow in an effort to limit the introduction of grease to the system and prevent future overflows. The Grease Control Program Inspectors will place door hangers (Figure 2-3) on the doors of the residences in the area neighboring the overflow following the event. This notification may occur significantly after the SSO has occurred and is not intended to serve as an immediate public health warning.

Figure 2-3: *Door hanger placed by Grease Control for a grease related SSO.*

Section 3 – SSO Determination

3.1 Cause of SSO

The Line Maintenance crew supervisor that responds to the call, in coordination with a Supervisor or Inspector, initially determines the cause of the SSO. Determination of the cause will include the following:

1.) If a SSO is occurring, a Supervisor or Inspector will investigate the SSO to determine the cause. This includes but not limited to: Sewer Construction and Maintenance Supervisor, Principal Engineering Inspector, Public Works Supervisor, Sewer Video Operations Supervisor, or Sewer Service Inspector.

2.) The Supervisor or Inspector is to meet the crew assigned to the call to fully investigate the cause of the SSO.

3.) The name of the Supervisor or Inspector reviewing the call is to be put on the Service Request for that call.

- Example of Wet Weather Event: "Name (Public Works Supervisor) met the crew on site and verified that all proper procedures for investigating an overflow due to surcharge were met. The lines were traced all the way to the trunk line. Name and Crew #number believe that the probable cause of this overflow is due to a surcharge."
- Example of Dry Weather Event: "Name (Public Works Supervisor) met the crew on site and verified that all proper procedures for investigating an overflow due to a blockage were met. Name and Crew #number believe that the probable cause of this overflow is due to a grease blockage."

4.) During a rain event, the investigation will include opening manholes and tracing the surcharged sewer flow to the trunk line and washing or rodding in an attempt to remove any potential blockage. Following the rain event, follow up inspections will be performed to determine whether the SSO was due to general surcharge from infiltration and inflow-induced flows or a blockage.

5.) During a non-rain event, every attempt should be made to determine the cause of the SSO based on visual inspection. If the SSO is caused by a blockage, the type of blockage should be determined based on the material removed during the cleaning process. If the SSO is caused by Construction Damage, Vandalism, a Line Break or other external cause, a picture should be made of the cause for documentation.

6.) If a manhole or cleanout is overflowing due to general surcharge, the code should be "Manhole Overflow – Surcharge" or "Cleanout Overflow – Surcharge" on the Service Request.

7.) If a manhole or cleanout is overflowing but not due to a surcharge, the code should be "Manhole Overflow – *cause*" or "Cleanout Overflow – *cause*" on the Service Request.

8.) Following an SSO, sewer lines in the area will be television inspected along with a Supervisor or Inspector to proof the cleaning of the pipe, find any sources of

infiltration/inflow and to determine if any other cause might have contributed to an SSO during a rain event or non-rain event.

9.) In cases where further investigation shows that the original attributed cause is not the actual cause of the SSO, the Service Request, any associated reports and database should be corrected in accordance with Section 7.
    - Example Correction Statement: "TV Crew #number inspected the overflow location along with Name (Public Works Supervisor) on January 1, 2012, and found that the overflow was not due to surcharging from rain but was due to a collapsed pipe".

3.2 Source of SSO

The Line Maintenance crew that responds to the call along with a Supervisor or Inspector determines the discharge source of the SSO and whether or not the contributing asset (service lateral, pipe, manhole, pump station, etc.) is privately or County maintained. All service laterals are privately maintained and are defined as any connection outside the tee at the County-maintained line. Privately-maintained collector lines shall be determined from existing SIMS and other records. Upon the report of a discharge from a cleanout, purported service lateral or backup within a structure, the County-maintained line shall be inspected and, if the County main is not determined to be obstructed or surcharged, the contributing factor shall be determined to be private.

If the discharge source is maintained by the County and the factors contributing to the SSO are due to the County, the SSO is reported in accordance with Section 2 of the SSORRP. If the discharge source is not maintained by the County, but the contributing factors are due to the County, the SSO is reported in accordance with Section 2 of the SSORRP. If the discharge source is privately maintained and the factors contributing to the SSO are not due to the County, the SSO is not reported in accordance with Section 2 of the SSORRP, but it is documented on the Service Request within SIMS, Form RF1-1 is completed, and the JCDH is notified. Backups that are contained within a structure are also recorded on a service request within SIMS and Form RF1-1 is completed. If a backup exits the structure, it is classified as a SSO and is reported in accordance with Section 2 of the SSORRP. The table below is used in the decision making process regarding the reporting of an SSO.

Source	Maintained	Contributing factors	Reportable by ESD in accordance with Section 2 of SSORRP
manhole, service lateral, cleanout, pipe, pump station	County	County	Yes
manhole, service lateral, cleanout, pipe, pump station	Privately	County	Yes
manhole, service lateral, cleanout, pipe, pump station	Privately	Private	No. Documented on Service Request and Form RF1-1 completed. JCDH notified.

Table 3-1: *Source of SSO*

3.3 Destination of SSO

The Line Maintenance crew that responds to the call along with a Supervisor or Inspector determines the destination of the SSO and whether a *Sewer Overflow Advisory* (ESD Form RF4-1) is to be sent and the Portable SSO Signs (Figure 2-1 and 2-2) placed. As previously discussed, the *Sewer Overflow Advisory* is sent when a SSO reaches "surface waters." "Surface waters" for the purposes of this document are generally defined herein as flowing or standing waters of any river, stream, watercourse, pond or lake, natural or artificial. This does not include waters which are entirely confined and retained completely upon a single property and are not readily accessible to the public. The following definitions and table are used to aid in this decision making process.

Creek or river
- during wet or dry weather has continuous flowing water

Drainage ditch or storm drain
- during wet weather has continuous flowing water
- during dry weather does not have continuous flowing water

Ground absorbed
- contained within an area that does not reach a creek, river, drainage ditch or storm drain as described above

EVENT	DESTINATION	ACTION
Any SSO that enters a creek or river	Surface waters	ESD Form RF4-1 sent to ADEM, JCDH, local officials and media. *Surface Water Sign* placed near receiving water.
Wet Weather SSO that enters a drainage ditch or storm drain	Surface waters	ESD Form RF4-1 sent to ADEM, JCDH, local officials and media. *Surface Water Sign* placed near receiving water if receiving water can be determined and/or *Warning Sign* placed in an area that may endanger human health.
Dry weather SSO that is greater than 10,000[1] gallons and enters a drainage ditch or storm drain	Field determination[2]	ESD Form RF4-1 sent to ADEM, JCDH, local officials and media. *Surface Water Sign* placed near receiving water if receiving water can be determined and/or *Warning Sign* placed in an area that may endanger human health.
Dry weather SSO that is less than 10,000[1] gallons and enters a drainage ditch or storm drain	Field determination[2]	If in an area that may endanger human health, *Warning Sign* placed.
Wet weather or Dry weather SSO that is ground absorbed	Non-surface waters	If in an area that may endanger human health, *Warning Sign* placed.

Table 3-2: *Surface Waters*

[1]Based on an equivalent flow rate of 166 gallons per minute (gpm) for 60 minutes. 166 gpm equals an average flow height of 5" from a manhole with the cover in place or an average flow height of ½" from a manhole with the cover removed as seen in Appendix D.

[2]In cases of a field determination, the responding Supervisor or Inspector along with the line maintenance crew will visually inspect the surrounding area and trace downstream to determine whether the SSO reaches flowing water. In cases where the destination is indeterminate, it shall be assumed to have reached surface waters.

NOTE: ***ESD Form RF2-1 and ESD Form RF3-1 are sent to ADEM and JCDH for all Dry Weather and Wet Weather Events.***

Section 4 – SSO Volume Estimation

4.1 SSO Worksheets

The ESD has adopted procedures for estimating SSO volumes based on the type of overflow that has occurred. The Line Maintenance personnel utilize the *SSO Volume Estimating Worksheet for Manholes* (ESD Form WS1-1), the *SSO Volume Estimating Worksheet for Service Cleanouts* (ESD Form WS2-1), or the *SSO Volume Estimating Worksheet for Pipes or Cleanouts* (ESD Form WS3-1). All worksheets require the personnel to record the time the SSO was reported, the time they arrived and the time that the SSO stopped. Following the SSO event, the estimated volume is calculated and inserted into the *Wastewater Discharge Reporting Form* (ESD Form RF1-1) that is completed by the ESD Line Maintenance personnel responding to the SSO. The *Wastewater Discharge Reporting Form* is then submitted to the Dispatcher or On-call Supervisor.

4.2 SSO Field Data

When the ESD Line Maintenance personnel first arrive on-site to the SSO, digital photographs of the overflow and the surrounding area will be taken in accordance with the *SSO Picture Procedure* (Appendix C) and inserted on the *SSO Picture Form* (Appendix C). If there is not an active SSO when the crew arrives, pictures will be taken of any evidence that will document the occurrence. The digital photographs aid in identifying the address where the SSO occurred, the correct manhole or cleanout, and provide evidence of the event. All Line Maintenance crews are issued a digital camera and a plastic measuring stick that is carried in their vehicles.

The estimated height of the overflow shall be measured with the provided plastic measuring stick as accurately as possible; however, given the dynamic and transient nature of collection system hydraulics, steady-state height estimates may be difficult. Field personnel should, therefore, record the average, estimated height of the observed flow. In circumstances where the Line Maintenance personnel cannot safely access the SSO point to utilize the plastic measuring stick, a visual field estimate will be made.

All relevant field data shall be gathered on-site and recorded on the provided forms. Whenever possible, data should be recorded in the field as soon as possible after the event. Other field information should be provided as necessary as comments on or attached to the provided forms. Field crews are encouraged to gather and record any additional information.

4.3 SSO Volume Estimating Worksheet for Manholes

The *SSO Volume Estimating Worksheet for Manholes* (ESD Form WS1-1 and Appendix B) and the *Tables for Estimated SSO Flow Out of Manholes* (Appendix D) enable the Line Maintenance personnel to estimate the overflow volume. If the manhole is not overflowing when the personnel arrive, a ponding calculation is utilized to estimate the overflow volume.

4.4 SSO Volume Estimating Worksheet for Service Cleanouts

The *SSO Volume Estimating Worksheet for Service Cleanouts* (ESD Form WS2-1) enables the Line Maintenance personnel to estimate the overflow volume from cleanouts. If the cleanout is not overflowing when the personnel arrive, a ponding calculation is utilized to estimate the overflow volume and recorded on the *SSO Volume Estimating Worksheet for Pipes or Cleanouts* (ESD Form WS3-1).

4.5 SSO Volume Estimating Worksheet for Pipes or Cleanouts

The *SSO Volume Estimating Worksheet for Pipes or Cleanouts* (ESD Form WS3-1) allows the ESD personnel to estimate the overflow volume using the number of residential connections upstream of the overflow or the ponding calculation if the pipe is not overflowing upon arrival.

4.6 SSO Volume Estimating by Other Methods

While the methods provided in Sections 4.3 to 4.5 are to be the primary methods for estimation, there are occasions where other methods may be employed due to: insufficient field data to use standard methods, those standard methods produce results which are not reasonable or consistent with field observations, the nature of the overflow may be non-standard, or a more accurate estimation method may be available. These alternate estimation sources and methods may be used by ESD engineering staff and include: Manning or other hydraulic flow equations, actual run times of a pump station and calculated pumping capacity, data collected by SCADA or other remote collection devices, and long term flow monitor network data. Rationale for using non-standard estimation methods shall be based on the professional engineer's judgment and shall be sufficiently reviewed and documented.

Section 5 – Mitigation

Once the first Line Maintenance personnel arrives on-site and determines that there is an SSO, the process begins to identify and eliminate the root cause of the SSO. The Line Maintenance division of the ESD can employ the use of rod turning machines, jet-washer trucks, and combination jet-washer/ vacuum trucks to eliminate blockages in the sanitary sewer. If there is a pipe break, the Construction division of the ESD maintains a supply of pipe of varying sizes and materials as well as manholes. Portable bypass pumps are available to bypass sanitary sewer flow from an upstream manhole to a downstream manhole when a blockage cannot be immediately eliminated or a pipe repaired. If practical, the SSO will be contained with sand bags and/or a berm with the aid of the Construction division.

Utilizing the tools available to them, the personnel of the ESD will make every effort to stop the SSO as expeditiously as possible. In circumstances where, in their judgment, the safety of ESD personnel currently assigned to the SSO is threatened or a higher priority incident arises, as determined by an ESD supervisor, ESD personnel may temporarily suspend mitigation efforts until conditions allow a return to work. In the event an active SSO is left unattended, the site shall be secured by barricades or other means and a warning sign shall be placed at the site.

After the SSO has stopped and the cause remedied, clean-up of the impacted area begins. Hand tools including shovels, rakes, and brooms are carried on the Line Maintenance trucks and are used to collect any solids that remain for proper disposal. Combination trucks are utilized to vacuum up any liquids and/or solids that might remain following an event. Lime is also carried on the Line Maintenance trucks and applied to the area surrounding the SSO for disinfection. Follow-up visits to the impacted area may be required to return the location to pre-event conditions.

Section 6 – Safety

ESD personnel are made aware of the potential hazards of contact with untreated wastewater and other, associated safety hazards in responding to a SSO. Among the equipment issued to the personnel are safety glasses, reflective vests, rubber gloves and boots, and rain suits. Hepatitis inoculations are also offered to the ESD personnel that may come in contact with untreated wastewater.

Supervisors should use sound judgment in deciding when responding to an SSO places ESD personnel in unreasonable danger or harm. For example, there may be times where a SSO is surrounded by swift flowing or deep water and the personnel are advised not to enter due to the risk of being swept away or drowning. Supervisors should document the unsafe conditions and report to their Manager if working conditions prevent the ESD from responding and remain on-site until further instructions are received.

Section 7 – QA/QC

7.1 Line Maintenance

The ESD has developed Check Lists (Appendix E) to be utilized by the ESD personnel involved in the SSO reporting process to ensure accuracy of the data. When corrections are made to the data by ESD personnel, the original data is struck through and the corrected data is noted, dated, and initialed on the reporting forms by the person making the revisions. The original producer of the document is provided a copy of the revised form and acknowledges the revisions by initialing and dating the original. An explanation for any data corrections should be noted on the corrected form.

Following the submission of the *Wastewater Discharge Reporting Form* (ESD Form RF1-1), the Dispatcher will use the *Service Request Check List* to verify that the form and Service Request are correct and complete. Any corrections are dated and initialed by the Dispatcher, and the responding Line Maintenance crew supervisor is provided a corrected copy.

The Public Works Supervisor or Sewer Video Operations Supervisor then completes their respective *SSO Check List for Line Maintenance* after receiving the *Wastewater Discharge Reporting Form* (ESD Form RF1-1) and SSO pictures from the Line Maintenance personnel. The Supervisors date and initial any corrections made on ESD Form RF1-1 and/or the SSO Volume Estimating Worksheet. The Line Maintenance crew supervisor that completed the original ESD Form RF1-1 and/or SSO Volume Estimating Worksheet then initials and dates the corrections and is provided a copy. The Public Works Supervisor or Sewer Video Operations Supervisor forwards ESD Form RF1-1, the SSO pictures, his completed check list and the *Service Request Check List* to the Principal Engineering Inspector.

The Principal Engineering Inspector will review the previously completed check lists to see if corrections are needed prior to completing his respective *5 Day Check List for Line Maintenance* and submitting the *5 Day Follow-up Report* (ESD Form RF3-1). The Principal Engineering Inspector dates and initials any remarks or corrections and provides a copy to the Public Works Supervisor or Sewer Video Operations Supervisor and the original responding crew. If any remarks or corrections are made the Public Works Supervisor or Sewer Video Operations Supervisor and the Line Maintenance crew supervisor initials and dates the corrections and is also provided a copy. At the end of the month, for each SSO, the Principal Engineering Inspector packages copies of the Service Requests, check lists, and completed forms and forwards to the Chief Civil Engineer.

7.2 Engineering

The package of SSOs for the previous month is sent to the Chief Civil Engineer prior to submission to the USEPA the following month. The SSO package is first reviewed by a Civil Engineer who completes the *SSO Check List for Administration* for each SSO, notes any corrections and signs and dates each check list. After the review by a Civil Engineer, the Chief Civil Engineer reviews the *SSO Check List for Administration* and enters the SSO data in the Access database for that specific month. Once all data has been entered, the SSO data is

printed from the Access database and compared to the SSO package and the *SSO Check List for Administration* for each SSO by a Senior Civil Engineer who notes any omissions and/or corrections prior to preparation and submission to the USEPA. The Civil Engineer, Senior Civil Engineer, and/or Chief Civil Engineer initial, date, and sign for any remarks or corrections made on the *SSO Check List for Administration*. If any remarks or corrections are noted, every ESD employee involved in the reporting process for that particular SSO initials and dates the corrections and is provided a copy. The GIS Specialist receives the final Access database and imports the information into SIMS to represent the data geographically and ensure that the SSO corresponds with the reported location and provides corrections to the Chief Civil Engineer, as appropriate.

7.3 Records

All original and corrected forms related to an individual SSO are kept together in a file by month and year at the Shades Valley Administration Building for historical and reporting purposes. Copies can be requested by contacting the Sewer Construction/ Maintenance Supervisor.

Appendix A

Jefferson County, AL
Environmental Services Department
Suite A-300
716 Richard Arrington Jr. Boulevard, N
Birmingham, AL 35203

WASTEWATER DISCHARGE REPORTING FORM

Reported Information — Service Request Number:

Photos Taken: ☐ Yes ☐ No Number of Photos Taken: _____

Date Reported: _____ Time SSO Began _____ Time SSO Stopped _____

Caller Name: _____ Caller Phone No.: _____

Location from Caller Street Address: _____

Overflow Location Street Address: _____

Collection System Permit # _____ Overflowing Manhole Number: _____

Enter Mini-system number if overflow is from a cleanout

Municipality	☐ County Maintained	☐ Privately Maintained
☐ Adamsville ☐ Bessemer ☐ Birmingham ☐ Brighton ☐ Center Point ☐ Fairfield ☐ Fultondale ☐ Gardendale ☐ Graysville ☐ Homewood ☐ Hoover ☐ Hueytown ☐ Irondale ☐ Leeds ☐ Lipscomb ☐ Mountain Brook ☐ Midfield ☐ Pleasant Grove ☐ Tarrant ☐ Trussville ☐ Vestavia ☐ Warrior	☐ Cahaba ☐ Five Mile ☐ Leeds ☐ Prudes ☐ Trussville ☐ Turkey Creek ☐ Valley ☐ Village ☐ Warrior	☐ Referred caller to municipality ☐ County Investigated ☐ Other ☐ Notification of Public ☐ Press Release ☐ Placement of Signs

Field Observation (If County Investigated)

Destination of Discharge: ☐ Ground absorbed ☐ Drainage Ditch ☐ Storm Drain ☐ Creek or River _____ ☐ Other _____ ☐ Backup in Structure Exit? ☐ Yes ☐ No

Estimated Discharge Volume: ☐ Volume not determinable ☐ Estimated Volume (Gallons) _____

Discharge Source: ☐ Cleanout ☐ Pipe ☐ Treatment Plant ☐ Other _____ ☐ Manhole ☐ Pump Station ☐ Private Lateral/ Line

Known or Suspected Discharge Cause: (Check all that apply)

☐ Construction Damage ☐ Debris ☐ Infiltration/Inflow ☐ Force Main Break ☐ Gravity Main Break ☐ Grease ☐ Power outage ☐ P.S. Equipment Failure ☐ Rags ☐ Rocks ☐ Roots ☐ Surcharge from rain ☐ Vandalism ☐ Other _____

Comments _____

Recent Weather ☐ None **Rain:** ☐ Light ☐ Mod. ☐ Heavy **Estimated Duration:** _____

Conditions Contributing to the Discharge: **Flooding from rain in overflow area:** ☐ Yes ☐ No

Action Taken (If County Investigated)

☐ Blockage Removed ☐ Line Repaired ☐ Manhole Repaired ☐ Power Restored ☐ Additional Rehab Considered ☐ Project Planned to Replace/Repair Line ☐ Pump Station Repaired ☐ Other _____

SSO 24-Hour Notice FAXED? ☐ Yes ☐ No Date: _____

Remarks: _____

Maintenance Supervisor's Signature: _____ Date _____

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information.

JEFFERSON COUNTY, AL
ENVIRONMENTAL SERVICES DEPARTMENT
SUITE A - 300
716 RICHARD ARRINGTON JR. BOULEVARD, N
BIRMINGHAM, AL 35203

TO: Alabama Department of Environmental Management - Montgomery Office
Fax Number: (334) 279 - 3051
Attention: Kimberly Minton

SANITARY SEWER OVERFLOW (SSO)
24 - HOUR REPORT

The Jefferson County Environmental Services Department verified the occurrence of a sanitary sewer overflow (SSO).

I am _____at 205-942-0681. The SSO started on _____ at _____ at the following
(date) *(time)*

location: _____
(Street Address) *(City, Zip)*

The *estimated* volume of the SSO was: _____ Destination of Flow: _____
(Gallons) *(Basin)* *(Permit Number)*

Length of Occurrence: _____ Cause of the SSO due to: _____
(Minutes) *(Blockage Type)*

Corrective action taken: _____

The receiving water if any was: _____

Additional information will be provided in a Follow-up Report within five (5) days.

****

FOR JEFFERSON COUNTY ESD PERSONNEL ONLY

Service Request Number: _____

Date Called: _____ Date Faxed: _____

Time Called: _____ Time Faxed: _____

By: _____ _____
Name **Title**

Jefferson County Environmental Services
Sewer Line Maintenance
1295 Oak Grove Road, Homewood, AL 35209
205 - 942 - 0681

If this page does not transmit clearly, please contact Sewer Line Maintenance @ 205-942-0681

ESD FORM RF2-1

Jefferson County, AL
Environmental Services Department
Suite A-300
716 Richard Arrington Jr. Boulevard, N
Birmingham, AL 35203

WASTEWATER DISCHARGE REPORTING FORM
SSO - 5 - DAY FOLLOW - UP REPORT

Reported Information _____ Service Request Number: _____

Photos Taken: ☐ Yes ☐ No Number of Photos Taken: _____

Date Reported: _____ Time SSO Began _____ Time SSO Stopped _____

Caller Name: _____ Caller Phone No.: _____

Location from Caller Street Address: _____

Overflow Location Street Address: _____

Collection System Permit # _____ Overflowing Manhole Number: _____

Enter Mini-system number if overflow is from a cleanout

Municipality			☐ County Maintained		☐ Notification of Public
☐ Adamsville	☐ Graysville	☐ Mountain Brook	☐ Cahaba	☐ Turkey Creek	☐ Press Release
☐ Bessemer	☐ Homewood	☐ Midfield	☐ Five Mile	☐ Valley	☐ Placement of Signs
☐ Birmingham	☐ Hoover	☐ Pleasant Grove	☐ Leeds	☐ Village	☐ Other (Describe)
☐ Brighton	☐ Hueytown	☐ Tarrant	☐ Prudes	☐ Warrior	
☐ Center Point	☐ Irondale	☐ Trussville	☐ Trussville		
☐ Fairfield	☐ Leeds	☐ Vestavia			
☐ Fultondale	☐ Lipscomb	☐ Warrior			
☐ Gardendale					

Field Observation (If County Investigated)

Destination of Discharge: ☐ Ground absorbed ☐ Drainage Ditch ☐ Storm Drain ☐ Creek or River _____

Monitoring of the receiving water is: ☐ Complete ☐ Ongoing

Estimated Discharge Volume: ☐ Volume not determinable ☐ Estimated Volume (Gallons) _____

Discharge Source: ☐ Cleanout ☐ Manhole ☐ Pipe ☐ Pump Station ☐ Treatment Plant ☐ Other _____

Known or Suspected Discharge Cause: (Check all that apply)

☐ Construction Damage ☐ Debris ☐ Infiltration/Inflow ☐ Force Main Break ☐ Gravity Main Break
☐ Grease ☐ Power outage ☐ P.S. Equipment Failure ☐ Rags ☐ Rocks
☐ Roots ☐ Surcharge from rain ☐ Vandalism ☐ Other _____

Recent Weather ☐ None **Rain:** ☐ Light ☐ Mod. ☐ Heavy **Estimated Duration:** _____

Conditions Contributing to the Discharge: **Flooding from rain in overflow area** ☐ Yes ☐ No

Action Taken (If County Investigated)

☐ Blockage Removed ☐ Line Repaired ☐ Manhole Repaired ☐ Power Restored ☐ Additional Rehab Considered ☐ Project Planned to Replace/Repair Line ☐ Pump Station Repaired ☐ Other _____

SSO 24-Hour Notice FAXED? ☐ Yes Date & Time: _____

☐ Health Department ☐ Other (describe) _____

Remarks: _____

Principal Eng. Insp's Signature: _____ Date _____

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information.

Sewer Overflow Advisory

Issued By

Jefferson County Commission
Environmental Services Department
A-300
716 Richard Arrington, Jr. Blvd. North
Birmingham, AL 35203

Sewer Line Maintenance
24 hour Dispatch Center
(205)942-0681

Date Issued _____ Time _____

Overflow Location _____

Waterway(s) Affected _____

Downstream Of _____

Advisory

A Jefferson County sanitary sewer line at the location listed above has experienced an overflow. Overflow was due to

Additional advisories will be issued as information becomes available.

Appendix B

JEFFERSON COUNTY, AL

ENVIRONMENTAL SERVICES DEPARTMENT

Suite A-300
716 Richard Arrington Jr. Boulevard, N
Birmingham, AL 35203

SSO VOLUME ESTIMATING WORKSHEET FOR MANHOLES

Date: _____ Sewer Service Request Number: _____

If MANHOLE is overflowing or not overflowing at the time the crew arrives at the reported location, pictures will be taken in accordance with the SSO Picture Procedure. The Jefferson County SSO Volume Estimating Procedure will be used to determine the estimated flow rate.

Determine Duration

Time SSO Reported: _____ Time SSO Stopped: _____
(Dispatcher)

Time of Arrival: _____ * Duration of SSO: _____ Minutes

* DURATION OF SSO: If the MH is overflowing when crews arrive, then the SSO Start Time will be the Time SSO Reported (dispatcher) shown above. The duration of the SSO will be the difference between Time SSO Reported and Time SSO Stopped (minutes).

Determine Volume

○ *SSO Digital Photo Measurement - to be used when MH is overflowing upon crew arrival.*

_____ Average measured height from measuring stick.

_____ Cover On or Off _____ Table Used _____ GPM

Volume from Table - _____

Duration of SSO - _____ Minutes

Estimated Volume = _____ Gallons (est. rate in GPM X est. duration in minutes)

○ *Ponding Calculation - to be used when SSO originated from MH, is not overflowing upon crew arrival, but is contained in an area*

Volume of Sewage = length (ft) X width (ft) X depth (ft) X 7.48* _____ length (ft)

_____ width (ft)

* 7.48 gallons = 1 ft^3 _____ depth (ft)

Volume = _____ ft^3 **X** 7.48 = _____ Gallons

○ *Not Determinable - when an SSO from a MH is not overflowing upon crew arrival and rate can not be determined.*

Explain: _____

_____

_____

_____

_____

Crew # : _____ Signed: _____

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information.

JEFFERSON COUNTY, AL
ENVIRONMENTAL SERVICES DEPARTMENT

Suite A-300
716 Richard Arrington Jr. Boulevard, N
Birmingham, AL 35203

Date: Sewer Service Request Number:

SSO VOLUME ESTIMATING WORKSHEET FOR SERVICE CLEANOUTS

1 Determine diameter (d) of service cleanout. = _____ inches
2 Estimate height (h) of flow from service cleanout. = _____ inches
3 Determine estimated flow rate (Q) from charts below. = _____ gpm
4 Estimate time (t) of discharge. = _____ minutes
5 Multiply step 3 & 4 to obtain estimated volume. = _____ Gallons

4" Diameter Cleanout	
h (in)	Q (gpm)
0.25	6
0.5	14
0.75	24
1	35
1.5	60
2	86
2.5	108
3	128
3.5	145
4	160
4.5	173
5	184
6	205
7	223
8	239
9	254
10	268
11	282
12	295
14	320
16	345
18	367
20	388

6" Diameter Cleanout	
h (in)	Q (gpm)
0.25	9
0.5	23
0.75	40
1	58
1.5	100
2	150
2.5	205
3	250
3.5	293
4	330
4.5	365
5	395
6	445
7	485
8	520
9	550
10	585
11	631
12	650
14	705
16	755
18	800
20	850

Time SSO Reported:
(Dispatcher)
_____

Time of Arrival:
_____

Time SSO Stopped
_____

* Duration of SSO
_____
Minutes

*Duration of SSO: If the cleanout is overflowing when crews arrive, then the SSO start time will be the time SSO reported (dispatcher) shown above. The duration of SSO will be the difference between time SSO reported and time SSO stopped (minutes).

Crew #: _____ Signed: _____

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information.

Disclaimer:

This table was developed by the Jefferson County ESD utilizing *Chapter 14-Measurements in Pressure Conduits, Section 13-Trajectory Methods* of the *U.S. Department of the Interior Bureau of Reclamation Water Measurement Manual.* This table is provided as an example. Other Agencies may want to develop their own estimating tables.

JEFFERSON COUNTY, AL

ENVIRONMENTAL SERVICES DEPARTMENT

Suite A-300
716 Richard Arrington Jr. Boulevard, N
Birmingham, AL 35203

SSO VOLUME ESTIMATING WORKSHEET FOR PIPES OR CLEANOUTS

Date: _____ Sewer Service Request Number: _____

If CLEANOUT is overflowing or not overflowing at the time the crew arrives at the reported location, pictures will be taken in accordance with the SSO Picture Procedure. The Jefferson County SSO Volume Estimating Procedure will be used to determine the estimated flow rate.

Determine Duration

Time SSO Reported: _____ Time SSO Stopped: _____
(Dispatcher)

Time of Arrival: _____ * Duration of SSO: _____ Minutes

* DURATION OF SSO: If the PIPE is overflowing when crews arrive, then the SSO Start Time will be the Time SSO Reported (dispatcher) shown above. The duration of the SSO will be the difference between Time SSO Reported and Time SSO Stopped (minutes).

Determine Volume

○ *Determine number of residential connections upstream of overflow. Each residence contributes approximately 250 gal/day-res (100 gal/day-cap X 2.5 cap/res), or 10.5 gal/hr-res (0.175 gal/min-res).*

Res. Connections - _____ X 0.175 = _____ GPM

Duration of SSO - _____ Minutes

Estimated Volume = _____ Gallons (est. rate in GPM X est. duration in minutes)

○ *Ponding Calculation - to be used when SSO is not overflowing upon crew arrival, but is contained in an area.*

Volume of Sewage = length (ft) X width (ft) X depth (ft) X 7.48* _____ length (ft)

_____ width (ft)

* 7.48 gallons = 1 ft^3 _____ depth (ft)

Volume = _____ ft^3 **X** 7.48 = _____ Gallons

○ *Volume computed by Engineering Staff of ESD -*
Attach copy of supporting documentation and Engineer's name.

Comments: _____

_____

_____

_____

_____

Crew # : _____ Signed: _____

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information.

Appendix C

SSO PICTURE PROCEDURE

Please follow all steps to ensure that SSO pictures comply with requirements.

1) Verify that camera time and date are correct prior to taking pictures.
2) Verify that the time and date stamp is set to be active within the camera.
3) First picture should be taken from the side of the manhole or cleanout to show the height of the discharge on the measuring stick.
4) Second picture should be taken from a distance and angle so that a landmark (i.e.,house, street sign, mailbox) is visible in the picture.
5) If the SSO has ceased upon arrival, pictures are to be taken of the area surrounding the overflow.
6) The minimum number of pictures taken should be two. Additional pictures should be taken if necessary.
7) Please note the address of the closest structure or building to the manhole or cleanout. ***(Reported Location)***
8) The pictures should be submitted to the Public Works Supervisor or Sewer Video Operations Supervisor along with the ***Reported Location*** the same day.
9) The Public Works Supervisor or Sewer Video Operations Supervisor will then forward the pictures along with the signed ***SSO Check List for Line Maintenance*** to the Principle Engineering Inspector.
10) The Principal Engineering Inspector should insert the pictures on the **SSO Picture Form** and insert the required information. ***(Service Request Number, Address of Reported Location, Manhole number for overflowing manhole, Mini-system number for overflowing cleanout)***
11) The Principal Engineering Inspector will save an electronic copy of the SSO Picture Form with a file name of the Service Request Number.

SSO PICTURE FORM

SERVICE REQUEST NUMBER	MANHOLE OR MINI SYSTEM NUMBER	ADDRESS

PEI's Intials _____

Version 1

Appendix D

TABLES FOR ESTIMATED SSO FLOW OUT OF MANHOLES

TABLE 'A'

ESTIMATED SSO FLOW OUT OF M/H WITH COVER IN PLACE

24" COVER

Height of spout above M/H rim **H** in inches	S S O FLOW **Q** in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.001	
1/2	3	0.004	
3/4	6	0.008	
1	9	0.013	
1 1/4	12	0.018	
1 1/2	16	0.024	
1 3/4	21	0.030	
2	25	0.037	
2 1/4	31	0.045	
2 1/2	38	0.054	
2 3/4	45	0.065	
3	54	0.077	
3 1/4	64	0.092	
3 1/2	75	0.107	
3 3/4	87	0.125	
4	100	0.145	
4 1/4	115	0.166	
4 1/2	131	0.189	
4 3/4	148	0.214	
5	166	0.240	
5 1/4	185	0.266	
5 1/2	204	0.294	
5 3/4	224	0.322	6"
6	244	0.352	
6 1/4	265	0.382	
6 1/2	286	0.412	
6 3/4	308	0.444	
7	331	0.476	
7 1/4	354	0.509	
7 1/2	377	0.543	
7 3/4	401	0.578	8"
8	426	0.613	
8 1/4	451	0.649	
8 1/2	476	0.686	
8 3/4	502	0.723	
9	529	0.761	

36" COVER

Height of spout above M/H rim **H** in inches	S S O FLOW **Q** in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.002	
1/2	4	0.006	
3/4	8	0.012	
1	13	0.019	
1 1/4	18	0.026	
1 1/2	24	0.035	
1 3/4	31	0.044	
2	37	0.054	
2 1/4	45	0.065	
2 1/2	55	0.079	
2 3/4	66	0.095	
3	78	0.113	
3 1/4	93	0.134	
3 1/2	109	0.157	
3 3/4	127	0.183	
4	147	0.211	
4 1/4	169	0.243	
4 1/2	192	0.276	
4 3/4	217	0.312	6"
5	243	0.350	
5 1/4	270	0.389	
5 1/2	299	0.430	
5 3/4	327	0.471	
6	357	0.514	
6 1/4	387	0.558	8"
6 1/2	419	0.603	
6 3/4	451	0.649	
7	483	0.696	
7 1/4	517	0.744	
7 1/2	551	0.794	
7 3/4	587	0.845	10"
8	622	0.896	
8 1/4	659	0.949	
8 1/2	697	1.003	
8 3/4	734	1.057	
9	773	1.113	

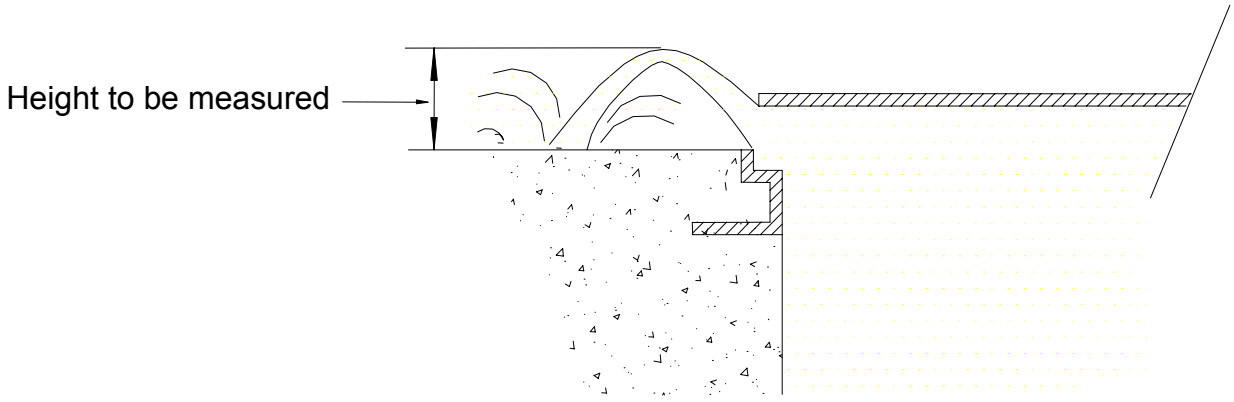
Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table A measures the maximum height of the water coming out of the maintenance hole above the rim. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is unseated and slightly elevated on a 24” casting. The maximum height of the discharge above the rim is 5 ¼ inches. According to Table A, these conditions would yield an SSO of 185 gallons per minute.

FLOW OUT OF M/H WITH COVER IN PLACE



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

TABLE 'B'

ESTIMATED SSO FLOW OUT OF M/H WITH COVER REMOVED

24" FRAME

Water Height above M/H frame **H** in inches	S S O FLOW **Q** in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	28	0.04	
1/4	62	0.09	
3/8	111	0.16	
1/2	160	0.23	
5/8	215	0.31	6"
3/4	354	0.51	8"
7/8	569	0.82	10"
1	799	1.15	12"
1 1/8	1,035	1.49	
1 1/4	1,340	1.93	15"
1 3/8	1,660	2.39	
1 1/2	1,986	2.86	
1 5/8	2,396	3.45	18"
1 3/4	2,799	4.03	
1 7/8	3,132	4.51	
2	3,444	4.96	21"
2 1/8	3,750	5.4	
2 1/4	3,986	5.74	
2 3/8	4,215	6.07	
2 1/2	4,437	6.39	
2 5/8	4,569	6.58	24"
2 3/4	4,687	6.75	
2 7/8	4,799	6.91	
3	4,910	7.07	

36" FRAME

Water Height above M/H frame **H** in inches	S S O FLOW **Q** in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	49	0.07	
1/4	111	0.16	
3/8	187	0.27	6"
1/2	271	0.39	
5/8	361	0.52	8"
3/4	458	0.66	
7/8	556	0.8	10"
1	660	0.95	12"
1 1/8	1,035	1.49	
1 1/4	1,486	2.14	15"
1 3/8	1,951	2.81	
1 1/2	2,424	3.49	18"
1 5/8	2,903	4.18	
1 3/4	3,382	4.87	
1 7/8	3,917	5.64	21"
2	4,458	6.42	
2 1/8	5,000	7.2	24"
2 1/4	5,556	8	
2 3/8	6,118	8.81	
2 1/2	6,764	9.74	
2 5/8	7,403	10.66	
2 3/4	7,972	11.48	30"
2 7/8	8,521	12.27	
3	9,062	13.05	
3 1/8	9,604	13.83	
3 1/4	10,139	14.6	
3 3/8	10,625	15.3	36"
3 1/2	11,097	15.98	
3 5/8	11,569	16.66	
3 3/4	12,035	17.33	
3 7/8	12,486	17.98	
4	12,861	18.52	
4 1/8	13,076	18.83	
4 1/4	13,285	19.13	
4 3/8	13,486	19.42	

Disclaimer:

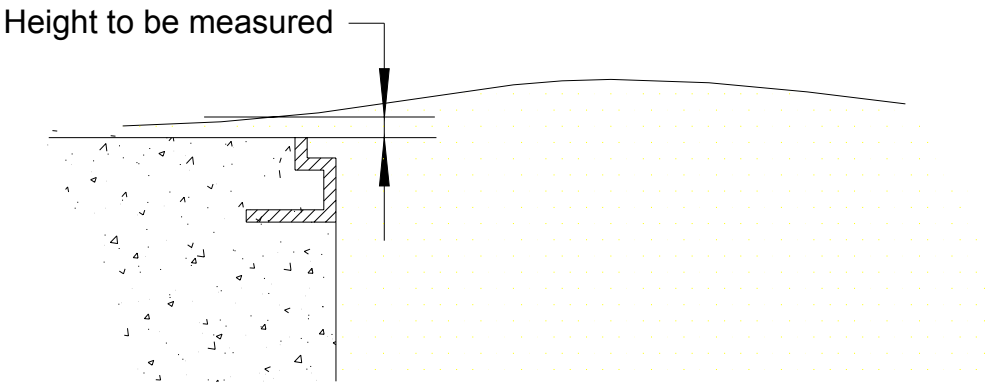
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table B for estimating SSO's out of maintenance holes without covers is based on discharge over curved weir -- bell mouth spillways for 2" to 12" diameter pipes. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is off and the flow coming out of a 36" frame maintenance hole at one inch (1") height will be approximately 660 gallons per minute.

FLOW OUT OF M/H WITH COVER REMOVED (TABLE "B")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

TABLE 'C'

ESTIMATED SSO FLOW OUT OF M/H PICK HOLE

Height of spout above M/H cover **H** in inches	SSO FLOW **Q** in gpm
1/8	1.0
1/4	1.4
3/8	1.7
1/2	1.9
5/8	2.2
3/4	2.4
7/8	2.6
1	2.7
1 1/8	2.9
1 1/4	3.1
1 3/8	3.2
1 1/2	3.4
1 5/8	3.5
1 3/4	3.6
1 7/8	3.7
2	3.9
2 1/8	4.0
2 1/4	4.1
2 3/8	4.2
2 1/2	4.3
2 5/8	4.4
2 3/4	4.5
2 7/8	4.6
3	4.7
3 1/8	4.8
3 1/4	4.9
3 3/8	5.0
3 1/2	5.1
3 5/8	5.2
3 3/4	5.3
3 7/8	5.4
4	5.5
4 1/8	5.6
4 1/4	5.6
4 3/8	5.7
4 1/2	5.8
4 5/8	5.9
4 3/4	6.0
4 7/8	6.0
5	6.1

Height of spout above M/H cover **H** in inches	SSO FLOW **Q** in gpm	
5 1/8	6.2	
5 1/4	6.3	
5 3/8	6.3	
5 1/2	6.4	
5 5/8	6.5	
5 3/4	6.6	
5 7/8	6.6	
6	6.7	
6 1/8	6.8	
6 1/4	6.8	
6 3/8	6.9	
6 1/2	7.0	← Unrestrained M/H cover will start to lift
6 5/8	7.0	
6 3/4	7.1	
6 7/8	7.2	
7	7.2	
7 1/8	7.3	
7 1/4	7.4	
7 3/8	7.4	
7 1/2	7.5	
7 5/8	7.6	
7 3/4	7.6	
7 7/8	7.7	
8	7.7	
8 1/8	7.8	
8 1/4	7.9	
8 3/8	7.9	
8 1/2	8.0	
8 5/8	8.0	
8 3/4	8.1	
8 7/8	8.1	
9	8.2	
9 1/8	8.3	
9 1/4	8.3	
9 3/8	8.4	
9 1/2	8.4	
9 5/8	8.5	
9 3/4	8.5	
9 7/8	8.6	
10	8.7	

Note: This chart is based on a 7/8 inch diameter pick hole

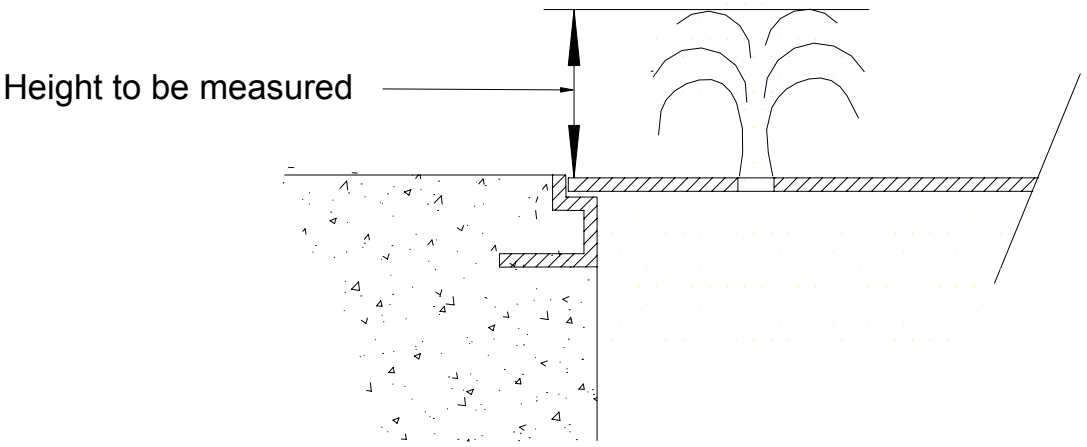
Disclaimer: This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table C is Q=CcVA, where Q is equal to the quantity of the flow in gallons per minute, Cc is equal to the coefficient of contraction (.63), V is equal to the velocity of the overflow, and A is equal to the area of the pick hole.[2] If all units are in feet, the quantity will be calculated in cubic feet per second, which when multiplied by 448.8 will give the answer in gallons per minute. (One cubic foot per second is equal to 448.8 gallons per minute, hence this conversion method).

Example Overflow Estimation:

The maintenance hole cover is in place and the height of water coming out of the pick hole seven-eighths of an inch in diameter (7/8") is 3 inches (3"). This will produce an SSO flow of approximately 4.7 gallons per minute.

FLOW OUT OF VENT OR PICK HOLE (TABLE "C")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

[2] Velocity for the purposes of this formula is calculated by using the formula h = v squared / 2G, where h is equal to the height of the overflow, v is equal to velocity, and G is equal to the acceleration of gravity.

Appendix E

SERVICE REQUEST CHECK LIST

YES	NO	N/A	
☐	☐	☐	Customer's Name
☐	☐	☐	Customer's Complete Address (No Abbreviations, Except in Directional)
☐	☐	☐	Problem Address (If different than caller address)
☐	☐	☐	City
☐	☐	☐	Zip Code
☐	☐	☐	Customer's Phone Number(s)
☐	☐	☐	Complete Customer Comments on problem having
☐	☐	☐	Sewer Basin (proper format - located on wall behind both computers)
☐	☐	☐	Map Page (Proper Format 46-Z13)
☐	☐	☐	Crew Dispatched to call
☐	☐	☐	Mini System Number
☐	☐	☐	Crew Arrival Time noted on request
☐	☐	☐	Complete Crew Comments
☐	☐	☐	Proper Code from Crew's Comments
☐	☐	☐	Closed Call (unless waiting for another crew)
☐	☐	☐	Did Crew talk with Homeowner/Business Owner?

Backup in Home/Business

☐	☐	☐	Were Pictures Taken? If so by whom?
☐	☐	☐	Was SERVPRO called? Who did you speak with? Time?

Broken Sewer Line

☐	☐	☐	Who is handling repair?

Cleanout Overflow

Overflow stopped at (time)?

Called into ADEM (Date & Time) *** Note these two are separate do not join together ***

Faxed ADEM & Health Department (Date & Time) *** Note (see above)***

WWTP Permit Number (located on wall behind computer monitor)

Called Wrong Utility

Company called? Who did you speak with?

GCP

Did crew discover grease or other debris/roots in line? Was Code changed?

MH Overflow

Overflow stopped at (time)?

Overflowing Manhole Number(s)?

Called into ADEM (Date & Time) *** Note these two are separate do not join together ***

Faxed ADEM & Health Department (Date & Time) *** Note (see above)***

WWTP Permit Number (located on wall behind computer monitor)

If line was Surcharging was it checked every 2 hours?

Date & Times Surcharge was checked

Overflow~BSL

Overflow stopped at (time)?

Overflowing Manhole Number(s)?

Called into ADEM (Date & Time) *** Note these two are separate do not join together ***

Faxed ADEM & Health Department (Date & Time) *** Note (see above)***

WWTP Permit Number (located on wall behind computer monitor)

TV Inspection Codes

Locate Manhole - Was Manhole Number listed?

SSO CHECK LIST FOR LINE MAINTENANCE

PUBLIC WORKS SUPERVISOR/ SEWER VIDEO OPERATIONS SUPERVISOR

Please verify that information is correct by placing a check in the box prior to each statement. If information is not correct make a note at the bottom of the next page and follow procedures as outlined in the SSORRP.

YES	NO	N/A	
			Service Request Number
			Date Reported
			Time SSO Began
			Time SSO Stopped
			Caller's Name
			Caller's Phone Number
			Reported Location *(Make sure that the reported location is not the caller's location unless they are the same.)*
			Street Address
			City
			Zip Code
			Collection System Permit
			Overflowing Manhole Number *(If overflow is from a cleanout, mini-system should be recorded.)*
			Municipality
			Basin
			Notification of Public
			Destination of Discharge
			Estimated Volume
			Discharge Source
			Discharge Cause
			Recent Weather

Service Request Number

YES	NO	N/A	
☐	☐	☐	Conditions Contributing to the Discharge
☐	☐	☐	Action Taken
☐	☐	☐	24 Hour Notice Faxed
☐	☐	☐	Date & Time
☐	☐	☐	Health Department/ Other

CORRECTIONS

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete unless noted above.

Signature _____ Date _____

5 DAY CHECK LIST FOR LINE MAINTENANCE

PRINCIPAL ENGINEERING INSPECTOR

Please verify that information is correct by placing a check in the box prior to each statement. If information is not correct make a note at the bottom of the next page. If a correction is required, the 5 day report should be corrected prior to submitting and procedures followed as outlined in the SSORRP.

YES	NO	N/A	
☐	☐	☐	Service Request Number ☐
☐	☐	☐	Date Reported
☐	☐	☐	Time SSO Began
☐	☐	☐	Time SSO Stopped
☐	☐	☐	Caller's Name
☐	☐	☐	Caller's Phone Number
☐	☐	☐	Reported Location *(Make sure that the reported location is not the caller's location unless they are the same.)*
☐	☐	☐	Street Address
☐	☐	☐	City
☐	☐	☐	Zip Code
☐	☐	☐	Collection System Permit
☐	☐	☐	Overflowing Manhole Number *(If overflow is from a cleanout, mini-system should be recorded.)*
☐	☐	☐	Municipality
☐	☐	☐	Basin
☐	☐	☐	Notification of Public
☐	☐	☐	Destination of Discharge
☐	☐	☐	Estimated Volume
☐	☐	☐	Discharge Source
☐	☐	☐	Discharge Cause
☐	☐	☐	Recent Weather

Service Request Number

YES	NO	N/A	
☐	☐	☐	Conditions Contributing to the Discharge
☐	☐	☐	Action Taken
☐	☐	☐	24 Hour Notice Faxed
☐	☐	☐	Date & Time
☐	☐	☐	Health Department/ Other

CORRECTIONS

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete unless noted above.

Signature _____ Date _____

SSO CHECK LIST FOR ADMINISTRATION

Please verify that information is correct by placing a check in the box prior to each statement. If information is not correct make a note at the bottom of the next page and follow procedures as outlined in the SSORRP.

YES	NO	N/A	
☐	☐	☐	Service Request Number ☐
☐	☐	☐	Date Reported
☐	☐	☐	Time SSO Began
☐	☐	☐	Time SSO Stopped
☐	☐	☐	Caller's Name
☐	☐	☐	Caller's Phone Number
☐	☐	☐	Reported Location *(Make sure that the reported location is not the caller's location unless they are the same.)*
☐	☐	☐	Street Address
☐	☐	☐	City
☐	☐	☐	Zip Code
☐	☐	☐	Collection System Permit
☐	☐	☐	Overflowing Manhole Number *(If overflow is from a cleanout, mini-system should be recorded.)*
☐	☐	☐	Municipality
☐	☐	☐	Basin *(Village - East or West)* *(Five Mile - Up or Down)* ***CIRCLE SELECTION***
☐	☐	☐	Notification of Public
☐	☐	☐	Destination of Discharge
☐	☐	☐	Estimated Volume
☐	☐	☐	Discharge Source
☐	☐	☐	Discharge Cause
☐	☐	☐	Recent Weather

Service Request Number

YES	NO	N/A	
☐	☐	☐	Conditions Contributing to the Discharge
☐	☐	☐	Action Taken
☐	☐	☐	24 Hour Notice Faxed
☐	☐	☐	Date & Time
☐	☐	☐	Health Department/ Other

CORRECTIONS

I certify that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, and complete unless noted above.

Signature _____ Date _____