Richardson Bay Sanitary District

Sanitary Sewer
Overflow Response Plan

Revision No. 2

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Water and Environment

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List of Abbreviations

CCTV	Closed-Circuit Television
CDFG	California Department of Fish and Game
CIWQS	California Integrated Water Quality System
District	Richardson Bay Sanitary District
EHS	County of Marin Environmental Health Services
EPA	Environmental Protection Agency
Field Report	Sanitary Sewer Overflow Service Call & Field Report Form
GWDR	General Waste Discharge Requirement
LRO	Legally Responsible Officer
MMS	Maintenance Management System
MRP	Monitoring and Reporting Form
O&M	Operations and Maintenance
RWQCB	Regional Water Quality Control Board
SOP	Standard Operating Procedure
SSO	Sanitary Sewer Overflow
SSORP	Sanitary Sewer Overflow Response Plan
SWRCB	State Water Resources Control Board

Chapter 1 Introduction

The purpose of the Sanitary Sewer Overflow Response Plan (SSORP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The SSORP provides guidelines for responding to, cleaning up, and reporting SSOs that may occur within the collection system service area.

1.1 Regulatory Requirements

The section summarizes the regulatory requirements for the SSORP.

1.1.1 EPA Administrative Order Requirements

This Sanitary Sewer Overflow Response Plan addresses the requirements of Section II of the EPA Amended Order for Compliance, Docket No. CWA-309(a)-08-030, dated September 2, 2008 which includes the following requirements:

II. Sanitary Sewer Overflow Response Plan

A. By October 15th, 2008, an SSORP shall be submitted to EPA. An SSORP shall describe emergency response and contingency procedures to address SSOs from its collection system, including measures for containing and recovering spilled sewage, establishment of interim system operations, and timely repair and restoration of normal operations. Each agency shall ensure that agency staff and responders are adequately trained to perform the procedure outlined in the SSO response plan. The plan shall include:

i. Procedures to notify the responders during normal business hours and after business hours. A responder should be at the SSO spill location and initiating response activities within 60 minutes after the agency becomes aware of the spill. If the responder cannot be at the spill location within 60 minutes, the agency shall report the late response as part of the quarterly spill report required. The agency will include in the quarterly spill report a description of all late responses, reasons for each late response, and steps that will be taken to improve the response time.

ii. Procedures to ensure containment, termination, maximum recovery, and cleanup of spilled sewage. These procedures shall prevent spills from reaching storm drains and surface water, and mitigate the impact of spills that reach storm drains and surface water.

iii. Procedure to estimate volume. The procedures should include more than one estimation method that can be used for different spill scenarios.

iv. Procedures to secure the area surrounding a spill and post warning signs as necessary in coordination with the County of Marin's Department of Health and Human Services;

v. Procedures to sample and monitor surface waters following spills.

vi. A list of necessary spare parts and emergency equipment to ensure adequate response time and maximum recovery of spilled sewage.

vii. A description of staffing needs required to respond to SSOs and whether staffing duties will be carried out by agency staff, staff from other agencies, or private contractor(s). To the extent that any SSO response duties will be carried out by private contractor(s), the plan shall describe the contractor and include copies of the contracts obligating the contractor(s) to fulfill the requirements of the SSO response plan implemented pursuant to this Order.

B. *Recordkeeping: The response plan developed shall include procedures for agency staff or its contractors to maintain records of spill incidents, including field reports that provide adequate information to meet reporting requirements to regulatory agencies, and procedures to link these records to the Maintenance Management System.*

C. *Notification: The response plan developed shall include procedures for notifying the public, including schools and recreational clubs, which may be affected by the spill. The plan should include procedures for advising the public to avoid contact and to take steps, as appropriate, in cases of contact with spilled sewage. For spills in homes and businesses, the plan should include procedures for cleaning the spill area. The plan shall identify the agency staff person(s) responsible for public notification.*

D. *Reporting: The response plan shall include procedures for reporting spills, as required, to the appropriate regulatory agencies, including the Regional Board, State Water Resources Control Board, the State of California's Office of Emergency Services, and the County of Marin's Department of Health and Human Services. The plan shall identify the agency staff person(s) responsible for reporting sewage spills.*

1.1.2 GWDR Requirements

The Statewide General Waste Discharge Requirements (GWDR) for Sanitary Sewer System was adopted by the State Water Resources Control Board of California (SWRCB) on May 2, 2006. The goal of the GWDR is to provide a consistent statewide approach for reducing SSOs. The GWDR outlines requirements for all publicly owned sanitary sewer collection systems in California with more than one mile of sewer pipe. Per the GWDR, the collection system agency shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

(a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;

(b) A program to ensure appropriate response to all overflows;

(c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, regional water boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board Waste Discharge Requirements or National Pollutant Discharge Elimination System permit requirements. The Sewer System Management Plan should identify the officials who will receive immediate notification;

(d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;

(e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and

(f) A program to ensure that all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to waters of the United States and minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

1.2 Goals

The purpose of this SSORP is to provide Richardson Bay Sanitary District (District) personnel with established guidelines for responding to sewer spills which may occur within the collection system service area. The goals with respect to responding to SSOs are:

- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Contain the spilled wastewater to the extent feasible;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO; and
- Meet the regulatory reporting requirements.

1.3 Definitions

Minor Sanitary Sewer Overflow (SSO): Category 2 SSO.

Major Sanitary Sewer Overflow (SSO): Category 1 SSO.

Sanitary Sewer System: Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility.

Sanitary Sewer Overflow (SSO): An SSO includes any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundment, tanks, etc) are considered to be part of the sanitary sewer system, and discharges to these temporary storage facilities are not considered to be SSOs.

- **Category 1 SSO:** Includes all discharges of sewage resulting from a failure in the sanitary sewer system that: has a volume of 1,000 gallons or more; results in a discharge to a drainage channel and/or surface water; or discharges to a storm drain pipe that was not fully captured and returned to the sanitary sewer system. Definition created by the SWRCB.
- **Category 2 SSO:** All other discharges of sewage resulting from a failure in the sanitary sewer system.
- **Private Lateral Sewage Discharges:** Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

1.4 SSORP Review and Updates

To coordinate with the requirements of the state's GWDR process, the District SSORP will be reviewed at least once every two years and updated if necessary.

Chapter 2 Response to Notification of Spill

The Richardson Bay Sanitary District has adopted service call / overflow response procedures requiring immediate response to minimize or eliminate an overflow. The District provides or contracts with an emergency response contractor that provides all necessary spill response supplies. These supplies are available for use at any time. The Overflow Response Standard Operational Procedure (SOP), included as Appendix 1, is to aid staff in prompt and responsible SSO response.

When a notification of an SSO is received, it should be clearly communicated who will respond, the estimated time of arrival, and what areas will need to be accessed. The information provided by the caller should be verified before dispatching a field crew. This includes verifying the address and nearest cross street and making sure it is part of the District's conveyance system. If not, provide the caller with the phone number of the responsible agency and follow up by calling the agency and providing the details of the call. Contact information for neighboring agencies is included in Appendix 2.

2.1 Public Observation of SSO

Public observation is the most common way that the District is notified of blockages and spills. Contact information for reporting sewer spills and backups are in the phone book. The main telephone number is (415) 388-1345.

2.1.1 Normal Working Hours

The regular working hours are Monday through Friday from 8:00 a.m. to 5:00 p.m., except holidays. When a report of a sewer spill or backup is made, District staff receives the call, takes the information from the caller, and fills out the first section of the Sanitary Sewer Overflow Service Call & Field Report Form (Field Report) found in Appendix 4. The person who took the call verbally communicates it to the District's emergency contractor (Roto-Rooter) along with any information collected on the Field Report.

2.1.2 After Normal Working Hours

After working hours, the voicemail for the District's telephone number provides the phone number for the District's emergency contractor (Roto-Rooter), which responds to the incident and then files a report to the District Manager as soon as possible.

2.2 Receipt of SCADA Alarm

The District's pump stations are monitored using SCADA. Alarm conditions are monitored by Distrtict staff via an auto-dialer that continues to call District staff until the alarm is acknowledged.

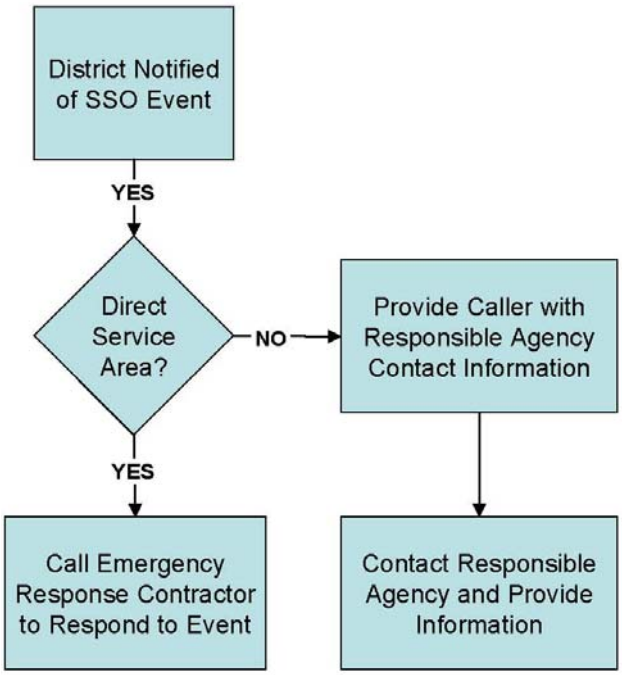
2.3 Staff Observation

District staff and contractors perform periodic work on its sewer system facilities. Any problems noted with the sewer system facilities are reported to the District Manager who, in turn, respond to emergency situations.

2.4 Response Flow Chart

Sewer service calls and pump station alarms are considered high priority events that demand a prompt response. The notification and response procedure flow chart is shown on **Figure 2-1**.

Figure 2-1: Notification and Response Flow Chart



2.5 Roles for Responding to SSOs

Currently, the following positions are responsible for responding to SSOs:

- First Responder to SSO: District Staff or Emergency Response Contractor (Roto-Rooter)
- First Responder to Pump Station or Forcemain Failure: District staff.
- Claims Processing: District Manager

The contact information for those currently holding the positions named above are shown in Appendix 3.

Chapter 3 SSO Response Procedures

This section describes the procedures for responding to an SSO from the time that the first responders are dispatched through containment of the spill.

3.1 Customer Relations Practices

As a representative of the District, you will occasionally have to deal with an irate homeowner. A sewer backup is a stressful event and even a reasonable homeowner can become irate if it is perceived that staff members as being indifferent, uncaring, unresponsive, and/or incompetent.

Although sometimes difficult, effective management of a sewage backup situation is critical. If it is not managed well, the situation can end up in a costly, prolonged process with the homeowner. The homeowner should feel assured that the District is responsive and the homeowner's best interest is a top priority.

It is important for employees to communicate effectively with customers, especially in sewage backup situations. How we communicate – on the phone, in writing, or in person – is how we are perceived. Good communication with the homeowner results in greater confidence in our ability to address the problem satisfactorily, less chance of having the homeowner prolong the claims process, and less chance of the customer exaggerating the damage done on the property.

Here are a few communication tips:

- Give the homeowner ample time to explain the situation or to vent. Show interest in what the homeowner has to say, no matter how many times you have heard it before, or how well you understand the problem.
- As soon as possible, let the customer know that you will determine if the source of the sewer backup is in the sewer main and, if it is, will have it corrected as quickly as you can.
- Acknowledge the homeowner's concerns. For example, if the homeowner seems angry or worried about property damage, say something like, "I understand that you're concerned about the possible damage to your property, but a professional cleanup crew can restore the area."
- Express understanding and empathy for any inconveniences caused by the incident, but do not admit fault. If it is determined that the District is at fault, the property owner has the right to file a claim for any reasonable repairs or losses resulting from the incident.
- As much as possible, keep the homeowner informed on what is being done and will be done to correct the problem.
- Keep focused on getting the job done in a very professional manner. Don't wander from the problem with too much unnecessary small talk with the homeowner.
- Don't find fault or lay blame on anyone.

3.2 First Responder Priorities

The first responder's priorities are:

- To follow safe work practices.
- To respond promptly with the appropriate equipment.
- To evaluate the cause of spill and determine responsibility.
- To restore the flow as soon as possible.
- To contain the spill whenever feasible.
- To minimize public access to and/or contact with the spilled sewage.

- To promptly notify the District Manager or appropriate District personnel in the event of a major SSO.
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible).

3.3 Safety

The first responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer work. Special consideration should be given to following all local traffic, confined space, and safety procedures.

3.4 Initial Response

All sewer system calls require a response to the reported location of the event in an attempt to minimize or eliminate an overflow. The first responder must respond to the reporting party or site of the problem and initiate response activities within 60 minutes after initial reporting of the spill to the District or its emergency response contractor (Roto-Rooter). If the responder cannot be at the spill location within 60 minutes after the spill, then the late response shall be reported per the requirements in Chapter 6.

The first responder should determine appropriate response measures based on the circumstances and information provided by the caller (e.g. weather and traffic conditions, small backup vs. sewage flowing on the ground, etc.). If additional help is needed, contact other employees, contractors, and/or equipment suppliers. Contact information for the District personnel is available in the Appendix 3. A comprehensive Emergency Contact List can be found in Appendix 2. Based on available information, the first responder should determine if a combination sewer cleaning truck and/or a spill response vehicle is needed.

Upon arrival at the site, the first responder should:

- Note arrival time at spill site (include in Sanitary Sewer Overflow Service Call & Field Report Form in Appendix 4).
- Verify the existence of a sewer system spill or backup.
- Field verify the address and nearest cross street, making sure it's part of the District's sewer/conveyance system.
- Identify and clearly assess the affected area and extent of spill.
- Comply with all safety precautions (traffic, confined space, etc.)
- Contact caller, if time permits.
- Notify the District Manager if:
    - The spill appears to be large, in a sensitive area, or there is doubt regarding the extent, impact, or how to proceed; or
    - Additional help is needed for line cleaning or repair, containment, recovery, lab analysis, and/or site cleanup.

3.5 Restore Flow

Upon arrival at the location of a spill into a house or a building, the first responder should evaluate and determine if the spill was caused by a blockage in the lateral or in the District owned sewer main, caused either by a backup in the sewer main line or nearby O&M activities.

- If a blockage is found in a property owner's lateral, it should be clearly communicated that it is not the District's responsibility to work on a private lateral.

- If a backup in the main line is found to have caused the SSO in a house or building, relieve the blockage in the main line and see Section 4.6 for Claims and Restoration Firm information.

The first responder should attempt to remove the blockage from the system and restore flow to the area. Using the appropriate cleaning tools, the field crew should set up downstream of the blockage and hydro-clean upstream from a clear manhole. The flows should be observed to ensure that the blockage does not recur downstream.

If the blockage cannot be cleared within a reasonable time, or sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If assistance is required, immediately contact other employees, contractors, and equipment suppliers. A First Responder Contact List can be found in Appendix 3, and an Emergency Contact List is in Appendix 2.

3.5.1 Pump Station or Forcemain Facilities

The first responder to a potential pump station or forcemain failure should:

- Determine whether flow can be restored within a reasonable time.
- If it appears that flow cannot be restored within a reasonable time or if the conveyance system facility requires construction and/or repairs, then employ contingency plans covering containment, bypass pumping, contractual assistance, etc.

If assistance is required, immediately contact other employees, contractors, and equipment suppliers as required. The contact information can be found in Appendix 2 and Appendix 3.

3.6 Contain the Spill

The first responder should attempt to contain as much of the spilled sewage as possible using the following steps:

- Determine the immediate destination of the overflowing sewage.
- Plug storm drains using available equipment and materials to contain the spill, whenever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dike/dam or sandbags.
- Pump around the blockage/pipe failure/pump station or vacuum flow from upstream of the blockage and dispose of downstream of the blockage to prevent further overflow.
- When an SSO occurs inside of a house or building, the first responder should provide a copy of the residential sewage contamination flyer in Appendix 10 and the property owner should be instructed to follow these guidelines:
    - Keep all family members and pets away from the affected area.
    - Place towels, rags, blankets, etc between areas that have been affected and areas that have not been affected.
    - Do not remove any contaminated items
    - Turn off the HVAC system
    - Move any uncontaminated property away from the overflow area.
- NOTE: If an SSO reaches a water body, see Section 4.3 for Water Quality Sampling requirements.

3.7 SSO Notification Signage and Restrict Public Access

Barriers shall be installed to prevent the public from having contact with the sewage if possible. Signs should be posted to keep vehicles and pedestrians away from contact with spilled sewage. Do not remove

the signs until directed by the District Manager. A sample warning sign is included as Appendix 5. Additional information about posting signs and public notification during major SSOs is included in Chapter 5 of this document.

Chapter 4 Recovery and Clean Up

The recovery and clean up phase begins when the flow has been restored and the spilled sewage has been contained to the extent possible.

4.1 Recovery of Spilled Sewage

Vacuum up or pump the spilled sewage and discharge it back into the sanitary sewer system.

4.2 Clean Up and Disinfection

Clean up and disinfection procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with an SSO event. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions. Where clean up is beyond the capabilities of District staff, a cleanup contractor will be used.

4.2.1 Private Properties

If a sewage backup occurs inside a building or on private property, provide a copy of the residential sewage contamination flyer in Appendix 10 to the resident(s).

The homeowner is responsible for clearing any blockage in the home's plumbing system or private lateral and for any resulting flood damage to the structure. The homeowner is also responsible for damage that happens because a lateral was not properly installed. Spills inside houses or buildings should be cleaned up by a professional cleaning company. Contact information for professional cleaning companies can be found in the "Water Damage Restoration" section of the Yellow Pages.

If the sewage backup is located inside a building or on private property and the backup was caused by a blockage in the public sewer main, the agency may be responsible for cleanup and restoration. If this is the case, the agency will arrange for a water damage restoration company. Claims by homeowners, if applicable, should be submitted based on information in Section 4.6 of this document.

4.2.2 Hard Surface Areas

- Collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes and brooms.
- Take reasonable steps to contain and vacuum up the wastewater.
- Disinfect all areas that were contaminated from the overflow using the disinfectant solution of household bleach diluted 10:1 with water. Apply minimal amounts of the disinfectant solution using a hand sprayer. Document the volume and application method of disinfectant that was employed.
- Allow area to dry. Repeat the process if additional cleaning is required.

4.2.3 Landscaped and Unimproved Natural Vegetation

- Collect all signs of sewage solids and sewage-related material either by hand or with the use of rakes and brooms.
- Allow the area to dry. Repeat the process if additional cleaning is required.

4.2.4 Natural Waterways

The California Department of Fish and Game (CDFG) should be notified in the event an SSO impacts any creeks, gullies, or natural waterways. CDFG will provide the professional guidance needed to effectively clean up spills that occur in these sensitive environments. Clean up should proceed quickly in order to minimize negative impact. Any water that is used in the cleanup process should be de-chlorinated prior to use.

4.2.5 Wet Weather Modifications

Omit flushing and sampling during heavy storm events with heavy runoff where flushing is not required and sampling would not provide meaningful results.

4.3 Water Quality Sampling

Water quality sampling and testing is required whenever spilled sewage enters a water body to determine the extent and impact of the SSO. The following guidelines must be followed:

- The first responder should notify District Manager to collect samples. Samples should be collected as soon as possible after the discovery of the SSO event.
- For spills less than 1,000 gallons, at a minimum water quality samples should be collected at the discharge point, 100 feet upstream, and 100 feet downstream.
- If a spill is more than 1,000 gallons, additional sites should be sampled; recommendations should be given according to County of Marin Environmental Health Services (EHS) requirements.
- If a spill reaches a large water body, the water quality samples should be collected near the point of entry of the spilled sewage and every 100 feet along the shore of stationary water bodies.

The water quality sampling procedures, which are the same as the EHS procedures are:

- Keep the sterile collection bottle closed until it is to be filled. Do not contaminate inner surface of the lid or bottle rim.
- Collect water sample just below the surface in knee deep water, approximately 3 feet deep (full arm's length), without rinsing. If needed, extend the sampling pole to the fullest length to reach deeper water depth. Minimize contact with bank or beach bed as water fouling may occur.
- Remove cap and hold the bottle near its base and plunge it, neck downward, below the surface. Turn bottle until neck points slightly upward and mouth is directed toward the current. Fill bottle leaving about 1 inch of air to allow lab to mix by shaking. Collect a minimum of 100 mL. (If applicable, insert sterile collection bottle into the holder on the sample pole. Extend the sample pole and plunge bottle end into the water, bottle opening downward.)
- Immediately place cap securely on bottle to avoid leaks and contamination.
- Dry the bottle.
- Label container with distinctive sample site name, date, and time collected.
- Complete the laboratory requisition slip with requested information (site, bottle number, collector, date and time of collection, type of sample, test requested, name and phone number of responsible person for reporting purposes, and deliverer name). Note any field observations that may have occurred during the sampling.
- Test samples from SSO events for ammonia, dissolved oxygen, fecal coliform, total coliform and enterococcus. The method of analysis for ammonia and dissolved oxygen may be a readily available, good quality test kit, suitable for field analysis.

Samples should be stored and shipped according to the following procedures:

- Place water sample bottle in a cooler with frozen blue ice. Water sample must be kept cool. Ice may be used but care must be taken so water samples are not contaminated or diluted by the ice.
- Bring to a California state-certified laboratory within 8 hours of collection. For compliance tests, the holding time must not exceed 8 hours from the time of collection to time of processing or the tests will be invalidated. Other water tests for non-compliance purposes may be held below 10 degrees C until the time of analysis, up to 24 hours.

- Water samples may be taken to the **County of Marin Health and Human Services Public Health Laboratory, 920 Grand Avenue, San Rafael, CA, 94901, (415) 499-6849**. The water samples must be brought to the Public Health Lab within 8 hours of collection, before 3:00 pm, for processing.
- If the County Health Laboratory is closed, utilize an alternate testing laboratory that is certified for the required water quality tests.

If deemed necessary by County EHS, sampling must be tested for compliance with Public Beach Sanitation and Ocean Water-Contact Sports bacteriological standards.

A single sample exceeds the standard if:

- Total coliform bacteria are > 1,000 per 100 mL sample, if the ratio of fecal/total coliforn bacteria exceeds 0.1; or
- Total coliform bacteria are > 10,000 per 100 mL sample; or
- Fecal coliform bacteria are > 400 per 100 mL sample; or
- Enterococcus bacteria > 104 per 100 mL of sample.

The mean value of at a least five weekly consecutive samples during any 30-day sampling period exceeds the standards if:

- Total coliform bacteria > 1,000 per 100 mL of sample; or
- Fecal coliforn bacteria are > 200 per 100 mL sample; or
- Enterococcus bacteria are > 35 per 100 mL sample.

If water quality samples are required by an environmental or health regulatory agency or State law, or if voluntary monitoring is conducted by the District or its agent(s), as a result of any SSO, records of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed;
- The individual(s) who performed the analyses;
- The analytical technique or method used; and
- The results of such analyses.

4.4 Estimate the Volume of Spilled Sewage

Use the methods outlined in Appendix 6 to estimate the volume of the spilled sewage.

Some spills may occur in locations where the wastewater can seep into the ground or flow away from the spill location. In such conditions, consider when the spill was first detected and observations from bystanders in order to determine the total spill volume.

4.5 Follow Up Activities

If sewage has reached the storm drain system, the combinations sewer cleaning truck should be used to vacuum/pump out the catch basin and any other portion of the storm drain that may contain sewage.

In the event that an overflow occurs at night, the location should be reinspected first thing the following day. The operator should look for any signs of sewage solids and sewage-related material that may warrant additional cleanup activities.

4.6 Claims for Backups into a Building

The responder to a sewer backup into a house or building should

- Gather information and fill out the Sewer Backup Summary Report in Appendix 7.
- Notify the District Manager of the incident.
- Wait for restoration firm to arrive.
- Forward incident reports and related documents to District Manager.

For potential claims, follow District policies.

Chapter 5 Public Notification

5.1 Spills that do not Reach Public Waters

For spills that are contained and do not release unrecovered sewage into a storm drain, stream or a surface water body, notification to the public shall be accomplished through the use of signs at the location of the spill. See Chapter 3.7 and Appendix 5 for guidelines on the installation of signs for these types of spills.

5.2 Spills that Reach Public Waters - County EHS Requirements

The EHS Deputy Director shall determine if a field investigation of the discharge site and potentially affected areas is required. If possible, verify the extent of the contamination in the field before the water body closure decision is made. During the field investigation, EHS staff shall notify the Deputy Director of their findings by telephone.

Creeks, streams and beaches that have been contaminated as a result of an SSO should be posted at visible access locations until the risk of contamination has subsided to acceptable background levels. The warning signs, once posted, should be checked every day to ensure that they are still in place. “Closed” signs shall be posted at the outfall and a minimum of 100 feet upstream and 100 feet downstream of the discharge. If there is a large volume of sewage, more signs must be posted downstream.

Signs must remain posted until at least two consecutive days of samplings meet the Public Beach Sanitation and Ocean Water-Contact Sports standards as listed in Section 4.3 of this document. In the event where background levels of the water bodies may exceed the standards, EHS will analyze available test results, the situation at hand, and/or require more testing to determine if the Public Beach Sanitation and Ocean Water-Contact Sports standards can be met. The removal of signs must be approved by EHS and the County Public Health Officer.

EHS has the authority to close and re-open the beaches and water bodies for public water contact. The water bodies affected are determined by the following parameters and best professional judgment:

- The volume of sewage discharged;
- Parameters affecting flow of sewage to the water bodies;
- Direction of current;
- Tides;
- Past experience in the area; and/or
- Any other pertinent information.

5.3 Point of Contact

The District Manager shall be responsible for public notification, if necessary.

Chapter 6 SSO Documentation and Reporting

All SSOs should be thoroughly investigated and documented for use in managing the sewer system and meeting established reporting requirements.

6.1 Internal SSO Documentation

6.1.1 Category 1 and 2 SSOs

The first responder will complete a work order and Field Report (Appendix 4). The first responder will follow the procedures and complete the Sewer Backup Summary Report (Appendix 7) if an SSO has occurred in a residence or building.

The District Manager will prepare a file for each individual SSO. The file should include the following information:

- Initial service call information
- Collection System Service Call & Overflow Field Report Form (Appendix 4)
- Copies of the California Integrated Water Quality System (CIWQS) report forms
- Volume estimate
- Closed-Circuit Television (CCTV) inspection (optional for Category 2 SSOs that are not blockage related)
- Water quality sampling and test results, if applicable

6.1.2 Failure Analysis Investigation (OPTIONAL)

The objective of the failure analysis investigation is to determine the "root cause" of the SSO and to identify corrective action(s) needed that will reduce or eliminate future potential for the SSO to recur.

When this optional investigation is deemed necessary, the investigation should include reviewing all relevant data to determine appropriate corrective action(s). The investigation should include:

- Reviewing and completing Field Report (Appendix 4);
- Reviewing past maintenance records;
- Conducting a CCTV inspection to determine the condition of the line segment immediately following the SSO and reviewing the video and logs; and
- Interviewing staff who responded to the spill.

The product of the failure analysis investigation should be the determination of the root cause and the identification of the corrective actions. The Failure Analysis Form (Appendix 8) should be used to document the investigation.

6.2 External SSO Documentation

The GWDR requires that individual SSO records be maintained by the District for a minimum of **five years** from the date of the SSO. This period may be extended when requested by a RWQCB Executive Officer. All records shall be made available for review upon SWRCB, RWQCB, or EPA staff's request. Records shall be retained for all SSOs, including but not limited to the following when applicable:

- Copy of Certified CIWQS report;
- All original recordings for continuous monitoring instrumentation;
- Service call records and complaint logs of calls received by the District;
- SSO calls;

- SSO records;
- Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps;
- Work orders, work completed, and any other maintenance records from the previous five years which are associated with responses and investigations of system problems related to SSOs;
- A list and description of complaints from customers or others from the previous five years; and
- Documentation of performance and implementation measures for the previous five years.

6.3 Internal SSO Reporting Procedure

6.3.1 Category 1 SSO

The first responder will immediately notify the District Manager. The first responder will fill out the Field Report and turn it in to the Legally Responsible Official (LRO). The District Manager or their designee will meet with field crew(s) at the site of the SSO event to assess the situation. In the event of a very large overflow or an overflow in a sensitive area, the District Manager may notify the Board of Directors.

6.3.2 Category 2 SSO

The first responder will fill out the Field Report and turn it in to the LRO.

6.4 External SSO Reporting Procedure

6.4.1 SWRCB Requirements (CIWQS)

The CIWQS electronic reporting system should be used for reporting SSO information to the SWRCB whenever possible. A flow chart showing the external reporting response requirements based on the type of SSO is included as **Figure 6-1** and a check list with contact information is included as **Figure 6-2**.

Figure 6-1: External Reporting Requirement Flow Chart

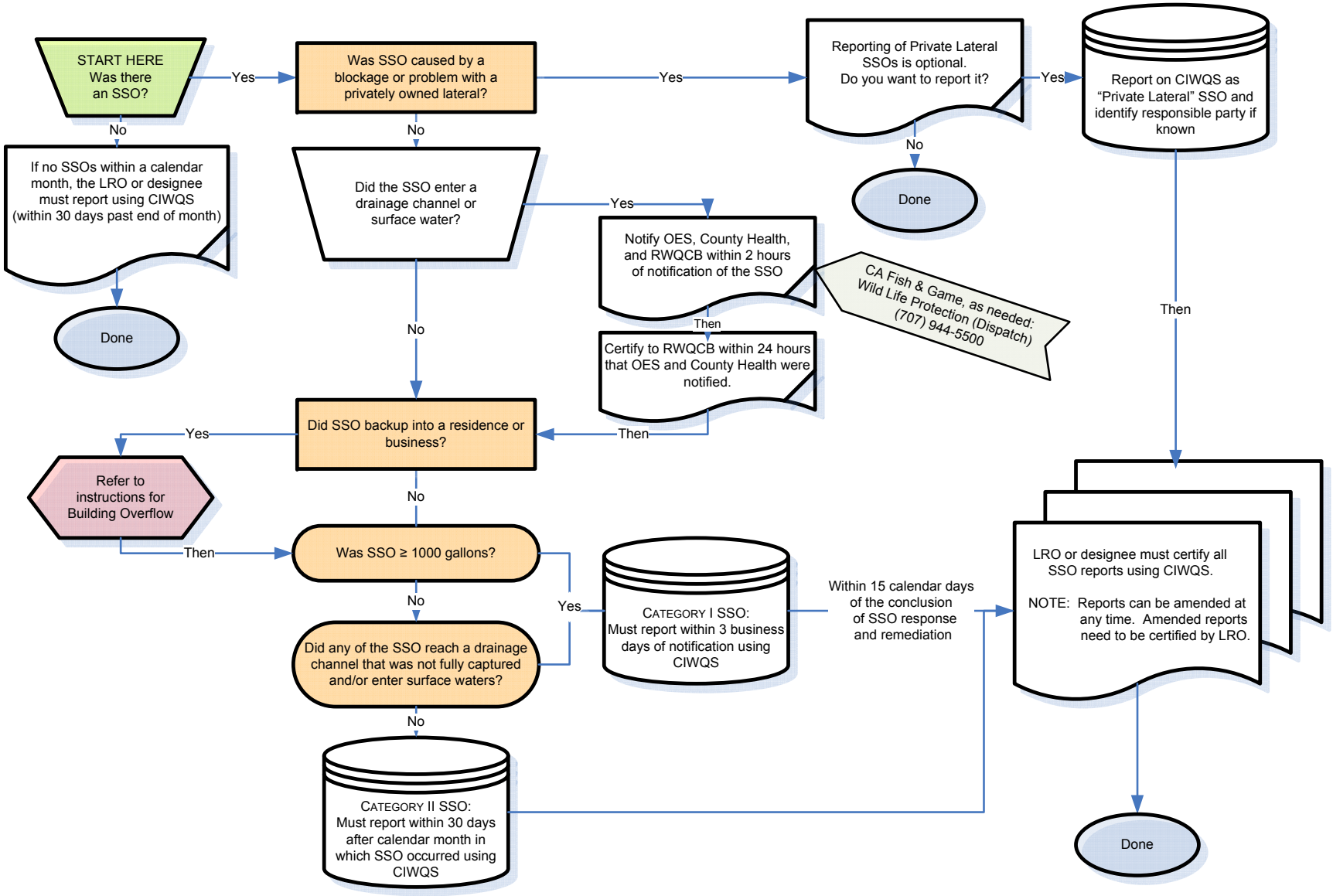


Figure 6-2: External Reporting Requirement Check List

Reporting & Certification Checklist

Category 1 SSOs that reach Surface Waters

2-Hour Notification: Regulatory Agencies (OES, County Health, RWQCB) must be notified within two hours of ANY discharge of sewage (untreated/partially treated) to a surface water or drainage channel (that is not fully captured and returned to sewer).

24-Hour Certification: Any SSO requiring notification based on the two-hour rule must be followed up with a certification submitted to the RWQCB within 24 hours.

Within 3 Business Days of Notification: As a Category I SSO, it must be reported to SWRCB using CIWQS.

Within 15 Calendar Days of Conclusion of Response/Remediation:

Must be certified by LRO using CIWQS.

Category 1 SSOs that do not reach Surface Waters

Within 3 Business Days of Notification (SWRCB/CIWQS): As a Category I SSO, it must be reported to SWRCB using CIWQS.

Within 15 calendar Days of Conclusion of Response/Remediation: Must be certified by LRO using CIWQS.

Category 2 SSOs (<1,000, no Property Damage or Surface Waters)

Within 30-Days After End of Calendar Month with SSO Event: Must be reported to SWRCB using CIWQS; Must be certified by LRO using CIWQS.

Negative Reporting (No SSOs in Month)

Within 30 days past the end of the month: The LRO or designee must report using CIWQS.

Private Lateral SSOs (Reporting is Optional)

If reporting is desired, report to SWRCB as "Private Lateral" SSO and identify responsible party, if known (not SASM), using CIWQS. Must be certified by LRO using CIWQS.

California Integrated Water Quality Systems (CIWQS)

SWRCB Reporting Timeframes Depend on the Size and Final Destination of the SSO.

- CIWQS must be used for reporting if the website is available (http://ciwqs.waterboards.ca.gov)
  - User Name: xxxx Password: xxxx
  - Waste Discharge Identification Number (WDID) #xxxxx
  - The SSO database will automatically generate an email notification with customized information about the SSO upon initial reporting and final certification for all Category I SSOs.
  - Emails will be sent to the EHS and the San Francisco Bay RWQCB
- Fax RWQCB (only if website is down)

Two-Hour Notification / 24-Hour Certification

1. **State Office of Emergency Services (OES)**
   Phone: (800) 852-7550; Make sure you ask for an "OES Control Number" (for RWQCB)
2. **Marin County Environmental Health Services**
   Phone - Day: (415) 499-6907 Night: (415) 499-7235 (Sheriff's Communication Center)
3. **RWQCB Region 2 (San Francisco Bay)**
   Option of phoning in the 2-hour notification and follow up within 24 hours using the online certification or utilize the online feature for both.

Phone (2-Hour Notification)		Online (2-Hour and/or 24-Hour Certification)
Phone - Day	(510) 622-2300	• www.wbers.net or www.r2esmr.net/sso_login2.asp
Phone - Night	(510) 622-2369	• User Name: xxxx Password: xxxx
		• Locate and open the 2-Hour/24-Hour form
		• Record OES Control Number on top of the page & complete form
		• Send "confirming" emails (followed up with a phone call) to the EHS Director and other appropriate agencies. Add your email address to the mail list as a record.

Sanitary Sewer Overflow (SSO)

Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system that:

(i) Reach waters of the United States (including storm drains, unless fully captured and returned to sanitary sewer system);
(ii) Do not reach waters of the United States; or
(iii) Backs up into buildings and on private property that are caused by SASM-owned lines.

Category 1 SSOs that reach Waters of the State

If a Category 1 SSO results in a discharge to **Waters of the State** (a drainage channel or surface water, if not fully recovered), the reporting requirements as described in this section apply.

Within 2 hours of being notified of the spill event, the District Manager, or their designee, will:

- Notify Office of Emergency Services (OES) (800.852.7550) and obtain spill number for use in other reports;
- Notify the County of Marin Environmental Health Services (415.499.6907); and
- Prepare an initial notification to the RWQCB (www.wbers.net or www.r2esmr.net/sso_login2.asp).[1]

Within 24 hours of being notified of the spill event, the District Manager, or their designee, will certify to the RWQCB that OES and County Health were notified of the SSO event (using the Electronic Reporting System for the San Francisco Bay Region).[2]

Within 3 business days of being notified of the spill event, District Manager, or their designee will certify the initial report using CIWQS.

Within 15 calendar days of the conclusion of SSO response and remediation, District Manager, or their designee will certify the final report using CIWQS.

The District Manager, or their designee will update the certified report as new or changed information becomes available. The updates can be submitted at any time and must be certified.

Category 1 SSOs that Do Not Reach Waters of the State

Within 3 business days of being notified of the spill event, the District Manager, or their designee, will certify the initial report using CIWQS.

Within 15 calendar days of the conclusion of SSO response and remediation, the District Manager, or their designee, will certify the final report using CIWQS.

The District Manager, or their designee, will update the certified report as new or changed information becomes available. The updates can be submitted at any time and must be certified.

Category 2 SSOs

Within 30 calendar days after the end of the calendar month in which the SSO occurs, the District Manager, or their designee will submit an electronic report using CIWQS. The District Manager, or their designee will certify the report. The report will include the information to meet the GWDR requirements.

[1] In the event a discharger is unable to provide online notification within 2 hours of becoming aware of an SSO, it shall phone the RWQCB's spill hotline at (510) 622-2369 and convey the same information contained in the notification form. In cases where the discharger satisfies 2-hour notification requirements via phone, it must still provide online notification to the RWQCB within 3 business days of becoming aware of a SSO.

[2] In most instances, the 2-hour notification will also satisfy 24-hour certification requirements. This is because the notification form includes fields for documenting that OES and the local health department has been contacted. In other words, if a discharger is able to complete all the fields in the notification form within 2 hours, certification requirements are also satisfied. In the event a discharger is unable to provide online certification within 24 hours of becoming aware of an SSO, it shall phone the RWQCB's spill hotline at (510) 622-2369 and convey the same information contained in the certification form. In addition, within 3 business days of becoming aware of an SSO, the certification information must also be entered into the RWQCB's online system in electronic format.

Private Lateral Sewage Discharges

The District Manager, or their designee may report private lateral SSOs using CIWQS, specifying that the sewage discharge occurred and was caused by a private lateral and identifying the responsible party (other than the District), if known.

Monthly No Spill Certification

If there are no SSOs during the calendar month, the District Manager, or their designee will submit an electronic report that the District did not have any SSOs, **within 30 calendar days after the end of each calendar month**. The District Manager, or their designee will certify the report.

CIWQS Not Available

In the event that CIWQS is not available, the District Manager, or their designee will fax all required information to the RWQCB office in accordance with the time schedules identified above. In such event, the District will submit the appropriate reports using CIWQS as soon as practical. The San Francisco Bay RWQCB (Region 2) fax number is (510) 622-2460.

6.4.2 EPA Reporting Requirements

On the fifteenth day of January, April, July, and October in each year in which activities are conducted pursuant to the EPA Administrative Order, District shall submit a tabulation of all sewage spills occurring during the previous calendar quarter. The quarterly reports shall indicate, for each spill, the spill date, spill volume, volume recovered, spill location, cause, and spill destination. Certified and uncertified spill reports submitted to the SWRCB's CIWQS during the previous calendar quarter may be included.

If the District cannot be at the spill location within 60 minutes after becoming aware of the spill, the late response shall be reported as part of the quarterly spill report. The District will include in the quarterly spill report a description of all late responses, reasons for each late response, and steps that will be taken to improve the response time.

Chapter 7 Equipment Inventory

Roto-Rooter maintains a stock of emergency response equipment which is available if needed for SSO response. The Roto-Rooter equipment inventory is included as Appendix 9. The District does not maintain specialized equipment to support SSO response.

SASM maintains water quality sampling kits for the District that include:

- Sterile plastic bottles, 125 mL and 250 mL
- Laboratory requisition forms
- Styrofoam container, ice chest, or equivalent
- Blue ice packs, frozen
- Waterproof marker and ballpoint pen
- Labels for collection bottles
- Towel for drying bottles
- Sampling pole for collecting samples
- Rubber boots and/or rubberized waders

These supplies meet EHS standards for proper water quality sampling.

Chapter 8 SSO Response Training

This section provides information on the training that is required to support this Sanitary Sewer Overflow Response Plan.

8.1 Employees and Contractor Employees

8.1.1 Initial and Annual Refresher Training

All District personnel and contractor employees who may have a role in responding to, reporting, and/or mitigating a sewer system overflow should receive training on the contents of this SSORP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed.

8.1.2 SSO Training Record Keeping

The District Manager keeps records of all training that is provided in support of this plan. The records for all scheduled training courses and for each overflow emergency response training event should include date, time, place, content, name of trainer(s), and names of attendees.

Appendix 1 - Overflow Response Standard Operating Procedures

Appendix 1 - Overflow Response SOP

The purpose of this Standard Operational Procedure (SOP) is to aid staff in prompt and responsible SSO response and is intended only as a condensed version of the Sanitary Sewer Overflow Response Plan (SSORP).

Addressing Service Calls

- When a report of a sewer spill or backup is made, District staff receives the call, takes the information from the caller, and fills out the first section of Field Report (SSORP Appendix 4).
- The person who took the call verbally communicates it to the District Manager (do not leave a voicemail) along with any information collected on the Field Report.
- The District Manager shall field verify the address and nearest cross street, making sure it's part of the District's conveyance system. If not, provide the caller with the phone number of the responsible agency and follow up by calling the agency yourself, providing the details of the call. Neighboring agency contact information is included in the Emergency Contact List (SSORP Appendix 2). Provide assistance if requested.
- The response measures will be based on the information provided by the caller (weather and traffic conditions, small back up vs. sewage flowing on the ground, etc). If additional help is needed, the District Manager will contact other employees, contractors, and/or equipment suppliers as listed in the Emergency Contact List (SSORP Appendix 2) and the First Responders Contact List (SSORP Appendix 3).

Responding to SSOs

- The First Responder shall visit the site immediately in an attempt to minimize or eliminate an overflow. Respond with the combination sewer cleaning truck and/or spill response vehicle depending on the situation.
- Upon arrival at the site, clearly assess the situation and comply with all safety precautions (traffic, confined space, etc.) and verify the existence of a sewer system spill or backup.
- Identify and assess the affected area and extent/impact of the spill and request additional help as needed for line cleaning or repair, containment, recovery, lab analysis and site cleanup.
- Using the appropriate cleaning equipment, set up downstream of the blockage and hydro clean upstream from a clear manhole. Attempt to remove the blockage from the system and observe the flows to ensure that the blockage does not recur downstream.
- If the blockage cannot be cleared within a reasonable time or conveyance system requires construction repairs, contingency plans must be employed as needed, including containment, bypass pumping, contractual assistance etc. If assistance is required, immediately contact other employees, contractors and equipment suppliers as required. See Emergency Contact List and First Responders Contact List (included as SSORP Appendices 2 and 3, respectively).
- Signs warning the public of a sewage release should be posted in the affected area. Use barricades, caution tape, cones, etc. as needed. (SSORP Appendix 5). Warning signs should remain posted until the District Manager approves their removal. For larger spills that reach surface water bodies, the District Manager may have to receive approval from the County of Marin Environmental Health Services Department or Regional Water Quality Control Board staff authorizes their removal.

- If the spill or overflow volume equals or exceeds 1,000 gallons or the spill is in a sensitive area, sampling shall be conducted according to Chapter 4 of the SSORP.
- The response crew shall complete the Field Report (SSORP Appendix 4) and provide copies as stated at the bottom of the report.
- SSO Notification and Reporting: Accurate and responsive reporting is vital. Refer to the SSO External Reporting Requirement Flow Chart (SSORP Figure 6-1).

Home or Business Back Ups

In the event of a backup into a home or business, SSORP Chapter 4 shall be used to guide staff through the process.

REFERENCES

Addressing Service Calls

- *Sanitary Sewer Overflow Field Report Form (SSORP Appendix 4)*
- *Emergency Contact List (SSORP Appendix 2)*
- *First Responders Contact List (SSORP Appendix 3)*

Responding to SSOs

- *Collection System Failure Analysis Form (SSORP Appendix 8)*
- *Methods for Estimating Spill Volume (SSORP Appendix 6)*
- *Sample Warning Sign (SSORP Appendix 5)*
- *SSO External Reporting Requirement Flow Chart (SSORP Figure 6-1)*
- *Emergency Response Inventory List (SSORP Appendix 9)*

Appendix 2 - Emergency Contact List

Appendix 2 – Emergency Contact List

Neighboring Agencies

Agencies	Phone Number
Almonte Sanitary District	415.388.8775
Alto Sanitary District	415.388.3696
City of Mill Valley	415.388.4033
City of Sausalito	415.289.4113
Homestead Valley Sanitary District	415.388.4796
Sausalito Marin City Sanitary District	415.332.0244
Sewerage Agency of Southern Marin	415.388.2402
Tamalpais Community Services District	415.388.6393

Maintenance Contractors

Company	Phone Number
Pipeline Contractors	
Roto-Rooter	415.388.2740
Maggiora & Ghilotti	415.459.8640; [redacted]
Ghilotti Bothers	415.454.7011
Forde Construction	415.924.3072; [redacted]
Team Ghilotti	415.720.5936
2,000 gallon tank trucks	
Mountain Sewer Service	415.383.6000
Roto-Rooter	415.388.2740
Roy's Sewer Service	415.456.2320
4,000 gallon tank trucks	
Erickson (Richmond)	510.235.1393
IT Corporation (San Jose)	408.894.1200
Equipment Rental	
Big 4 Rents (Corte Madera)	415.924.4444
Davis Rents (San Rafael)	415.454.1225
Welders	
Zappetini & Son	415.454.2511
Sun Ironworks	415.453.7562
Plating or Shoring	
Plank Inc.	707.763.7070
Baker Tanks	510.439.8251

Appendix 3 - First Responders Contact List

Appendix 3 – First Responder Contact List

Richardson Bay Sanitary District

Name	Title	Home	Cell	Pager
Johnny Tucker	District Manager	[redacted]	[redacted]	[redacted]

Roto-Rooter Contact List

Phone: 415.388.2740

	Nextel	Pager	Mainliner Pager
On-Call Service Tech	(#24) 415.720.0514	415.455.3574	650.205.0138

Name	Title	Home Number	Nextel #	Nextel Number
Office				
Don Calegari	Owner		[redacted]	[redacted]
Mendy Calegari	Vice President		[redacted]	[redacted]
Clyde Klyse	Senior Operations Mgr		[redacted]	[redacted]
Christie McLean	Business Mgr / HR	[redacted]	[redacted]	[redacted]
Bettina Atkinson	AR / Administrative	[redacted]	[redacted]	[redacted]
Edie Fain	SCR		[redacted]	[redacted]
Mike Ferreira	Shop/Mechanic		[redacted]	[redacted]
Linda Smith	Weekend Dispatcher		[redacted]	[redacted]
V J Gifford	Dispatch		[redacted]	[redacted]
Service Technicians / Plumbers				
Adam Gallagher		[redacted]	[redacted]	[redacted]
Dan Loeffel		[redacted]	[redacted]	[redacted]
Kenny Olufs		[redacted]	[redacted]	[redacted]
Mike Quecke		[redacted]	[redacted]	[redacted]
Rob Murphy		[redacted]	[redacted]	[redacted]
Steve Smith		[redacted]	[redacted]	[redacted]
Kirk Willwerth		[redacted]	[redacted]	[redacted]
Joey Lewis		[redacted]	[redacted]	[redacted]
Kurt Rankin		[redacted]	[redacted]	
Mike Johnson		[redacted]	[redacted]	[redacted]
Repair Crew				
Lorne Keyes	TV Truck	[redacted]	[redacted]	
Allan Lee	Repair Crew	[redacted]	[redacted]	[redacted]
Gerardo Novarro	Repair Crew	[redacted]	[redacted]	
Luis Rosas	Repair Crew	[redacted]	[redacted]	[redacted]
Matt Nichols	Pump Truck	[redacted]	[redacted]	
Fred Pajkos	Repair Crew	[redacted]	[redacted]	
Gulam Nakhuda	Repair Crew	[redacted]	[redacted]	

Appendix 4 - Sanitary Sewer Overflow Service Call & Field Report Form

Appendix 4 – Sanitary Sewer Overflow Service Call & Field Report Form

INITIAL INFORMATION

DATE:	CALL RECEIVED: AM / PM
RECEIVED BY:	CALLER'S NAME:
CALLER'S PHONE #:	CALLER'S ADDRESS:
SPILL LOCATION NAME / LOCATION OF OVERFLOW:	CROSS STREET:
TIME AND NAMES OF CREW MEMBERS CONTACTED:	
DESCRIPTION OF COMPLAINT:	

THis field report, gas detector, radio, system maps, personal protective equipment and camera should be collected by field crew prior to responding.

WORK ORDER NO:	
FREQUENCY OF CLEANING PROGRAM:	DATE OF LAST CLEANING:
RECOMMENDATIONS ON HOW TO ELIMINATE FUTURE PROBLEMS:	
FAILURE ANALYSIS COMPLETE: ☐ YES ☐ NO	DATE:

Distribute field report immediately Manager.

FIELD REPORT FOR RESPONSE CREW'S USE

TIME MOBILIZED: AM / PM		CREW:	
TIME ARRIVED AT SITE: AM / PM			
FORM COMPLETED BY:		DATE:	
ASSET #:	U/S ASSET #:	WORK AREA:	D/S ASSET#:
SIZE OF LINE:	LENGTH OF LINE:	EASEMENT: YES ☐ NO ☐	
GPS COORDINATES (LATITUDE / LONGITUDE; IF AVAILABLE):			

COMMENTS:

SKETCH OF AREA: (INCLUDE MANHOLES, INTERSECTIONS, STOPPAGE LOCATION, ETC.)

COMPLETE FORM IF AN OVERFLOW HAS OCCURRED

TIME OVERFLOW STARTED:	TIME OVERFLOW STOPPED:
DURATION OF SSO:	EST. SPILL VOLUME (GALLONS):
DESCRIBE HOW OVERFLOW QUANTITY WAS CALCULATED (APPENDIX 6 OF SSORP): ☐EYEBALL ESTIMATE ☐DURATION / FLOWRATE ☐MEASURED VOLUME ☐OTHER:_____	
DID SSO REACH STORM DRAINPIPE THAT WAS NOT FULLY RECOVERED? YES ☐ NO ☐	
DID SSO DISCHARGE TO DRAINAGE CHANNEL AND/OR SURFACE WATER? YES ☐ NO ☐	
IMPACTED SURFACE WATER(S) (IF APPLICABLE):	
IMPACTED BEACH(ES) (IF APPLICABLE):	
FINAL SSO DESTINATION: ☐ STORM DRAIN ☐ BUILDING ☐ YARD/LAND ☐ SURFACE WATER ☐ NO WATER INVOLVED ☐ CAPTURED FROM STORM DRAIN (100%) ☐ OTHER:_____	
VOLUME RECOVERED / RETURNED TO SEWER SYSTEM (GALLONS):	
VOLUME TO WATERS & NOT RECOVERED, INCLUDING SURFACE WATER, DRAINAGE CHANNEL, OR **NOT** RECOVERED FROM STORM DRAIN (GALLONS):	
FOR CONTINUING SPILLS WITHOUT COMPLETE BLOCKAGE REMOVAL AND/OR REPAIRS (IF APPLICABLE), CURRENT SPILL RATE (GALLONS PER MINUTE):	
WEATHER: SUNNY ☐ CLOUDY ☐ RAINY ☐ RAIN FOR SEVERAL DAYS ☐	

PRIMARY CAUSE:

☐ ROOTS	☐ GREASE	☐ DEBRIS	☐ VANDALISM	☐ PIPE FAILURE
☐ CONSTRUCTION DAMAGE		☐ PUMP STATION FAILURE		☐ POWER FAILURE
☐ CAPACITY (HEAVY RAIN)			☐ OTHER:_____	

ADDITIONAL INFORMATION:

SPILL APPEARANCE POINT / SOURCE OF SSO: ☐ MANHOLE ☐ GRAVITY MAIN ☐ FORCEMAIN ☐ CLEAN OUT ☐ PRIVATE LATERAL ☐ PUMP STATION:_____(NAME) ☐ OTHER:_____		
BLOCKAGE LOCATION: UPSTREAM MH#: ____	☐ PRIVATE LATERAL DOWNSTREAM MH#: ____	OVERFLOW MH#: ____
DESCRIBE CLEANUP METHOD:		
PHOTOS/VIDEO TAKEN: YES ☐ NO ☐	PHOTO/VIDEO FILE LOCATION:	
SAMPLES TAKEN BY:	LOCATION OF SAMPLES:	
DESCRIBE PROPERTY DAMAGE:		
SIGNS POSTED: YES ☐ NO ☐	NEIGHBORS NOTIFIED: YES ☐ NO ☐	
BARRICADED: YES ☐ NO ☐	OES NOTIFIED: YES ☐ NO ☐ ; DATE / TIME:_____	
OES CONTACTS/DETAILS:		
OES SSO#:		
RWQCB NOTIFIED: YES ☐ NO ☐ ; DATE / TIME:_____		
OTHER AGENCIES NOTIFIED:_____		
SSO INFORMATION FAXED TO RWQCB: YES ☐ NO ☐ ; DATE / TIME:_____		
CALLER/CUSTOMER NOTIFIED RE: STATUS: YES ☐ NO ☐		
IF NOT, WHY:		
RECOMMENDED SPILL CORRECTIVE ACTIONS:		

Appendix 5 - Sample Warning Sign

WARNING

WATER CONTACT MAY CAUSE ILLNESS

¡AVISO!

EL CONTACTO CON AGUA PUEDE CAUSAR ENFERMEDADES

BY ORDER OF THE HEALTH OFFICER
County of Marin
FOR FURTHER INFORMATION
CALL: (415) 499-6907

OR CALL

JOHNNY TUCKER, DISTRICT MANAGER
RICHARDSON BAY SANITARY DISTRICT
(415) 388-1345

WARNING

WATER CONTACT MAY CAUSE ILLNESS

¡ AVISO!

EL CONTACTO CON AGUA PUEDE CAUSAR ENFERMEDADES

BY ORDER OF THE HEALTH OFFICER
County of Marin
FOR FURTHER INFORMATION
CALL: (415) 499-6907

OR CALL

JOHNNY TUCKER, DISTRICT MANAGER
RICHARDSON BAY SANITARY DISTRICT
(415) 388-1345

Appendix 6 - Methods for Estimating Spill Volume

Appendix 6 - Methods for Estimating Spill Volume

A variety of approaches exist for estimating the volume of a sanitary sewer spill. This appendix documents the three methods that are most often employed. The person preparing the estimate should use the method most appropriate to the sewer overflow in question and use the best information available.

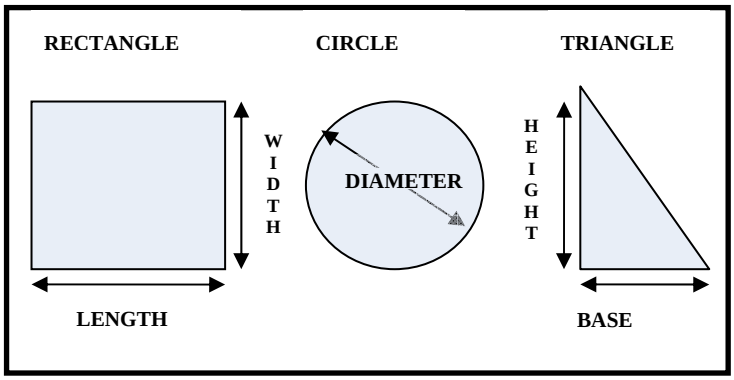
Method 1: Eyeball Estimate

The volume of small spills can be estimated using an "eyeball estimate". To use this method imagine the amount of water that would spill from a bucket or a barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to approximately 200 gallons.

Method 2: Measured Volume

The volume of most small spills that have been contained can be estimated using this method. The shape, dimensions, and the depth of the contained wastewater are needed. The shape and dimensions are used to calculate the area of the spills and the depth is used to calculate the volume.

Common Shapes and Dimensions



Step 1 Sketch the shape of the contained sewage (see figure above).

Step 2 Measure or pace off the dimensions.

Step 3 Measure the depth at several locations and select an average.

Step 4 Convert the dimensions, including depth, to feet.

Step 5 Calculate the area in square feet using the following formulas:

Rectangle: Area = length (feet) x width (feet)

Circle: Area = diameter (feet) x diameter (feet) x 0.785

Triangle: Area = base (feet) x height (feet) x 0.5

Step 6 Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.

Step 7 Multiply the volume in cubic feet by 7.5 to convert it to gallons

Method 3: Duration and Flowrate

Calculating the volume of larger spills, where it is difficult or impossible to measure the area and depth, requires a different approach. In this method, separate estimates are made of the duration of the spill and the flowrate. The methods of estimating duration and flowrate are:

Duration

The duration is the elapsed time from the time the spill started to the time that the flow was restored.

Start Time: The start time is sometimes difficult to establish. Here are some approaches:

1. Local residents can be used to establish start time. Inquire as to their observations. Spills that occur in rights-of-way are usually observed and reported promptly. Spills that occur out of the public view can go on longer. Sometimes observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.
2. Changes in flow on a downstream flowmeter can be used to establish the start time. Typically the daily flow peaks are "cut off" or flattened by the loss of flow. This can be identified by comparing hourly flow data during the spill event with flow data from prior days. This method will likely only be effective with consistent weather.
3. Conditions at the spill site change over time and can be used to establish the start time. Initially there will be limited deposits of toilet paper and other sewage solids. After a few days to a week, the sewage solids form a light-colored residue. After a few weeks to a month, the sewage solids turn dark. The quantity of toilet paper and other materials of sewage origin increase over time. These observations can be used to estimate the start time in the absence of other information. Taking photographs to document the observations can be helpful if questions arise later in the process. This method is valid for spills that have been occurring for a long time and may be used in conjunction with either of the above methods.
4. It is important to remember that spills may not be continuous. Blockages are not usually complete (some flow continues). In this case the spill would occur during the peak flow periods (typically 10:00 to 12:00 and 13:00 to 16:00 each day). Spills that occur due to peak flows in excess of capacity will occur only during, and for a short period after, heavy rainfall.

End Time: The end time is usually much easier to establish. Field crews on-site observe the "blow down" that occurs when the blockage has been removed. The "blow down" can also be observed in downstream flowmeters.

Flow Rate

The flowrate is the average flow that left the sewer system during the time of the spill.

There are three common ways to estimate the flowrate:

1. **The San Diego Manhole Flowrate Chart:** This chart, included as at the end of this appendix, shows sewage flowing from manhole covers at a variety of flowrates. The observations of the field crew can be used to select the appropriate flowrate from the chart. If possible, photographs are useful in documenting basis for the flowrate estimate.

2. **Flowmeter:** Changes in flows in downstream flowmeters can be used to estimate the flowrate during the spill.
3. **Counting Connections:** Once the location of the spill is known, the number of upstream connections can be determined from the sewer maps. Multiply the number of connections by 200 to 250 gallons per day per connection or 8 to 10 gallons per hour per connection.

   For example: 22 upstream connections * 9 gallons per hour per connection

   = 198 gallons per hour / 60 minutes per hour

   = 3.3 gallons per minute

Spill Volume

Once duration and flowrate have been estimated, the volume of the spill is the product of duration (hours or days) and the flowrate (gallons per hour or gallons per day).

For example:

Spill start time = 11:00

Spill end time = 14:00

Spill duration = 3 hours

3.3 gallons per minute x 3 hours x 60 minutes per hour

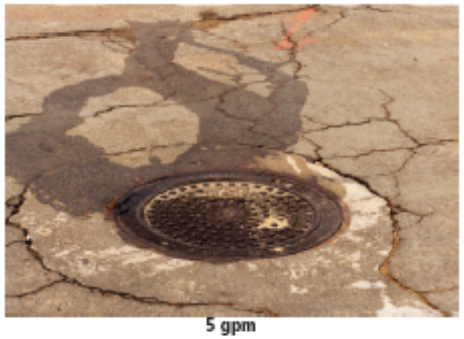
= 594 gallons

City of San Diego
Metropolitan Wastewater Department

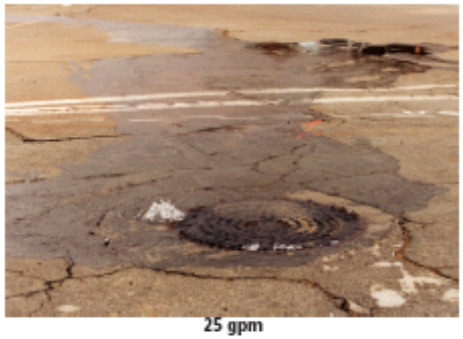
Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)

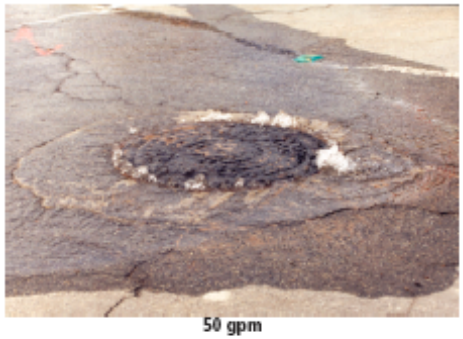
Wastewater Collection Division
(619) 654-4160



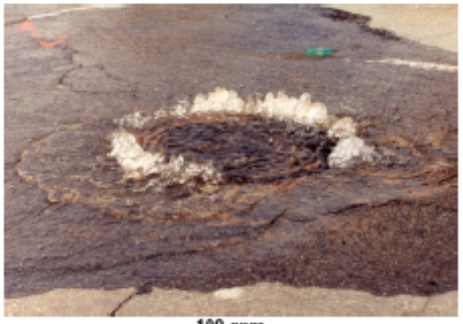
5 gpm



25 gpm



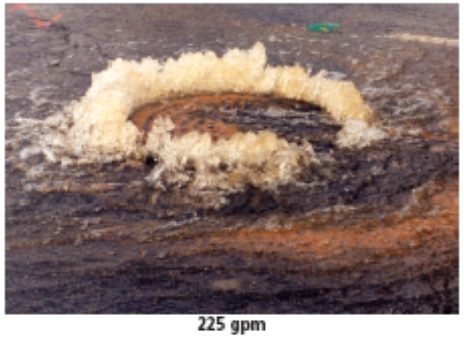
50 gpm



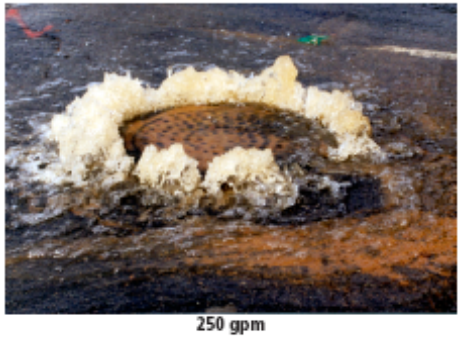
100 gpm

150 gpm

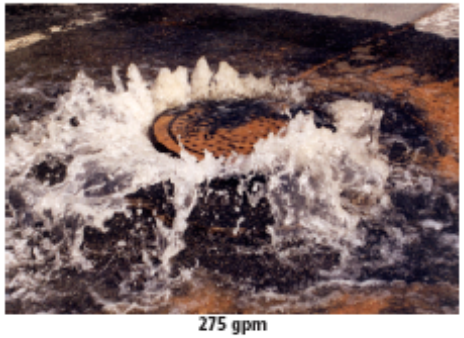
200 gpm



225 gpm



250 gpm



275 gpm

All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.

rev. 4/99

Appendix 7 - Sewer Backup Summary Report

Appendix 7 - Sewer Backup Summary Report

District's Site Arrival Time: _____ Time Cleaning Contractor Called: _____

Section A

DATE: TIME: EMPLOYEE NAME:

RESIDENT: PROPERTY MANAGER(S):
STREET ADDRESS: STREET ADDRESS:
CITY, STATE AND ZIP: CITY, STATE AND ZIP:
PHONE: PHONE:

CAUSE OF FLOODING:

LOCATION/SEWER: □ STREET □ REAR EASEMENT □ MANHOLE # _____TO_____
□ MAINLINE □ SERVICE LINE □ DOUBLE-WYE

DAMAGE: □ BLACK WATER □ GREY WATER □ FRESH WATER

OF PEOPLE LIVING AT RESIDENCE:

Comments:

CLEANING SERVICES: □ REQUESTED BY OWNER – WAIT FOR CLEANING CONTRACTOR TO ARRIVE
□ DECLINED BY OWNER

Section B

APPROXIMATE AGE OF HOME: _____ # OF BATHROOMS:_____ # OF ROOMS AFFECTED: _____

APPROXIMATE AMOUNT OF SPILL: _____(GALLONS)

APPROXIMATE TIME SEWAGE HAS BEEN SITTING:_____(*HOURS/DAYS*)

NUMBER OF PICTURES TAKEN: _____ DIGITAL OR FILM? _____

DOES THE CUSTOMER HAVE A BACKFLOW PREVENTION DEVICE (BPD)? □ YES □ NO
IF YES, WAS THE BPD OPERATIONAL AT THE TIME OF THE OVERFLOW? □ YES □ NO

HAVE THERE BEEN ANY PREVIOUS SPILLS AT THIS LOCATION? □ YES □ NO □ UNKNOWN

TYPE OF FLOORING IN THE ROOM AFFECTED:

□ TILE CONDITION OF TILE AND SEAMS (CRACKING, VISIBLE OPEN SPACES, ETC.)

□ CARPET
□ WOOD CONDITION OF FLOORING AND JOINTS (CRACKING, VISIBLE OPEN SPACES, ETC.)

□ OTHER PLEASE IDENTIFY:

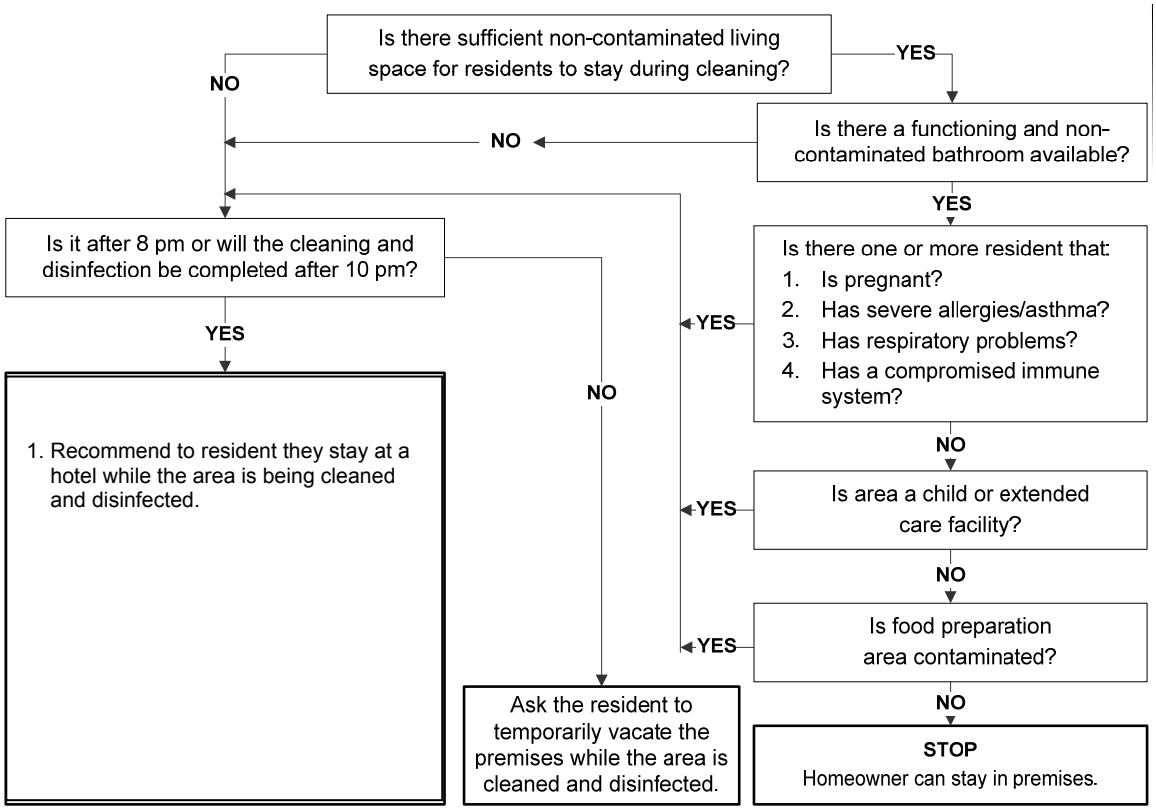
HAS THE RESIDENT HAD ANY PLUMBING WORK DONE RECENTLY? □ YES □ NO □ UNKNOWN
IF YES, PLEASE DESCRIBE:

ARE THERE BASEBOARDS: □ YES □ NO BASEBOARD MATERIAL: _____

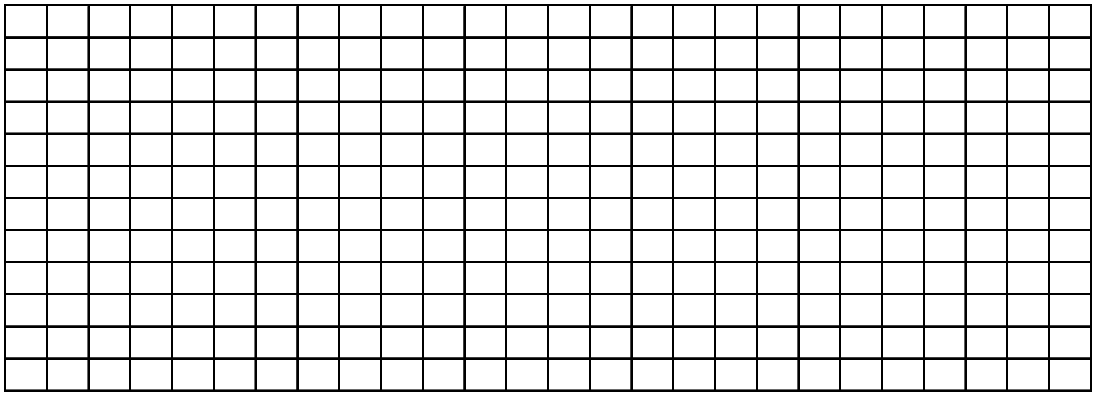
CONDITION OF BASEBOARDS:

□ BASEBOARD BOTTOM HAS TIGHT SEAL WITH WALL
□ BASEBOARD TOP HAS TIGHT SEAL WITH WALL
□ BASEBOARD HAS SPACE BETWEEN BOTTOM & FLOOR
□ BASEBOARD HAS SPACE BETWEEN BASEBOARD & WALL

SECTION C: LIVABILITY ASSESSMENT



PLEASE DIAGRAM THE ROOMS AFFECTED (SHADE THE AREAS MOST HEAVILY)



SECTION D: CLEANING CONTRACTOR

COMPANY NAME: PHONE: ARRIVAL TIME:

COMMENTS:

Appendix 8 - Collection System Failure Analysis Form

Appendix 8 – Collection System Failure Analysis Form

CIWQS Event ID:		Prepared By:	
SSO/Backup Information			
Event Date/Time:	Address:		
Volume Spilled:	Volume Recovered:		
Cause:			
Summary of Historical SSOs / Backups / Service Calls / Other Problems			
Date	**Cause**	**Date Last Cleaned**	**Crew**
Records Reviewed By:		Record Review Date:	
Summary of CCTV Information			
CCTV Inspection Date:		Tape Name/Number:	
CCTV Tape Reviewed By:		CCTV Review Date:	
Observations:			
Recommendations			
	No Changes or Repairs Required		
	Maintenance Equipment		
	Maintenance Frequency		
	Repair (Location and Type)		
	Add to Capital Improvement Rehabilitation/Replacement List: Yes □ No □		
Maintenance Manager: Review Date:			
Operational Services Director: Review Date:			

Appendix 9 - Equipment Inventory

Appendix 9 – Equipment Inventory

Roto-Rooter Inventory

Major Response Equipment

Combination hydroflusher/vacuum unit – 5-yard, 1000 gallon water tank

Combination hydroflusher/vacuum unit – 9-yard, 1000 gallon water tank

Rodding units – 1,500’ of 3/8” rod

CCTV Vans

Tractor driven CCTV cameras

Push cameras

Pump Truck – 2,500 gallons

Portable hydroflushing equipment – 16 hp, can clean up to 6” pipe

Portable rodder w/ 11/16” rod, 165’ cable capable of cleaning up to and including 6” pipe

Trailer

Bypass Equipment

2” Pump – Hydromatic with cam-lock connection

2”, 3”, and 4” cam-lock hoses (12 pieces of 25’ hose each, total 300’)

Fire hoses – 200’ of 3” hose (screw-on connection)

Containment Equipment

Containment rings for immediately around manhole

3’ x 5’ mats

3 mil and 5 mil Vizquin (thick plastic)

Plugs for all standard pipe sizes between 1.5” to 24”

Sand bags

Repair Equipment

Repair trucks for emergency repairs

Hitachi TB-25 for excavation, can dig to 7 feet

Cut-Off Saws – Gas-powered with 14” wheel

Air compressors

Locating equipment

600’ heavy duty, can locate to 30 feet

300’ regular duty

MH & castings, lids, and rings

Rod Hole castings, lids

Pipe

6” to 24” C-900 pipe

6” to 24” SDR 17 pipe

8” to 10” VCP pipe

Plates for covering trenches
Shoring
Dump truck

Confined Space Equipment
Gas detectors
Tripod
Harnesses
Blowers
Cable and winch

Washdown equipment
Camel machine has 500’ of hose
Camel has 100 feet of auxiliary hose
Spray nozzles
Pressure washer

Traffic Control Equipment
Cones
Signs
Road Work Ahead
Flagger Ahead
Arrows for Cones

Miscellaneous Tools and Equipment
Shovels
Couplers
Rakes
Brooms
Star Drill
Ladders
Sump Pumps
Hammer
Chisel
Screwdrivers
Manhole hook
50’ extension cords (2 per truck)
100’ extension cord (1 per truck)
Generators 2,500 watt

Appendix 10 - Residential Property Sewage Contamination Flyer

General Precautions for Sewage Contamination on Residential Property

If a sewer backup causes flooding in your home:

- Keep people and pets away from the affected area(s).
- Do not attempt to clean it yourself.
- Turn off central heat and air-conditioning systems and prevent flow from reaching floor vents by using towels or blankets as a berm. You can also remove the vent cover and stuff a towel in the opening to help prevent the flow from entering.
- Leave items in the affected area for the experts to handle.

Homeowner responsibilities

The homeowner is responsible for clearing any blockage in the home's plumbing system or private lateral and for any resulting flood damage to the structure. The homeowner is also responsible for damage that happens because a lateral was not properly installed. If the sewage flooding was caused by blockage in your private lateral:

- Call an experienced restoration company for cleanup and removal of affected surfaces.[1]
- Report a claim to your homeowner's insurance carrier.
- If you had recent plumbing work, contact your plumber or contractor.

If the sewage flooding was caused by a blockage in the public sewer main, the agency may be responsible for the damage. If you have a claim, file your claim as soon as possible. And the agency and/or insurance carrier will arrange for a restoration company.

Note: This information is provided to assist residents who experience an overflow of sewage on their property. It is not inclusive of events involving severe flooding, which can cause additional structural damage.

To report a sewage spill, contact SASM at (415) 388-2402.

1. See "Water Damage Restoration" section of the Yellow Pages for a list of restoration contractors.