Appendix A

Emergency Response Documents

1. LGVSD Incident Report
2. Reference sheet for estimating sewer overflow rates
3. SSO Spill Containment and Cleanup Procedures (checklist)
4. Sewer Overflow Response Manual
5. Emergency call list
6. Marin County Environmental Health *Services Sanitation Agency Response During a Sewage Discharge* (February 2014)
7. Marin County Environmental Health *Unauthorized Discharge of Waste Report*
8. SOP – Reporting of SSOs to State
9. SSO Monitoring Plan
10. SMART Sewer Overflow Volume Estimation Workbook, DKF Solutions Group LLC, 2013. This workbook provides more detailed procedures for estimating SSO volumes than the reference sheet listed above. The SMART workbook is a separate document that is incorporated by reference into this Appendix.
11. Example Emergency Response Plan for Pump Stations (Duckett PS)

    Pump Station ERPs are kept separately from this SSMP. Refer to the specific ERP for the pump station in question. A set of all pump station ERPs is kept in the Collections Office.

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LGVSD Incident Report

Work Order No:_____ **Notified By: ___Radio**

Sent to: _____ **___In Person**

Issued By:_____ **___Telephone**

Date:_____ **Time Notified:**_____

Time Arrived:_____

Time SSO Started:_____

Time SSO Cleared:_____

Reporting Party:_____ **Telephone**: _____

Contact Person (if different from above):_____

Telephone (if different from above):_____

LOCATION:

Address:_____

Cross Street: _____

If spill, date and time citizen first noticed spill_____

Citizen's observation_____

_____

Problem Cited By Reporting Party: _____

_____

_____

Exact Location of Problem: _____

Latitude:_____ **Longitude**_____

Description of Problem: _____

_____

Action Taken: _____

_____

Location of cleanout and lateral_____

_____

Comments (include injuries or property damages sustained, etc.): _____

_____

DID INCIDENT RESULT IN SPILL: YES NO Lateral or Main

If a spill:_____**gallons per minute**_____**duration(minutes)**_____**total gallons**

Pictures taken:_____**yes** _____ **no**

Notes:_____

Use back of form for additional comments and to demonstrate method of estimating volume spilled and volume recovered. Note what volume estimation procedure you used

Was surface water in vicinity checked for signs of sewage (solids, grease, paper), abnormal color, fish kills, etc.?_____ **yes** _____ **no If yes, list location of surface water and findings**_____

Upper MH Cover: _____ **Responding Staff:**_____

ADDITIONAL DOCUMENTATION:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

SHORT-CUT LANGUAGE FOR PROBLEM TYPE

1 = Private property lateral has stoppage
5 =Sewage flowing out of private property lateral
10 =Sewage flowing into home/building out of internal plumbing fixtures
15 =Sewage flowing out of District manhole/rodhole in street
20 =Sewage flowing out of District manhole/rodhole in easement
25 =District main, manhole, or rodhole odor complaint
89 =Pump Station Problem
99 =Other representation of problem

SHORT-CUT LANGUAGE FOR ACTION TAKEN

101 =We conclude that stoppage problem is in property lateral not District main-no main cleaning.
105 =We conclude that stoppage problem is in property lateral not District main-but main is cleaned.
110 =We conclude that lateral stoppage is due to main stoppage and clear main – no work on private property.
115 =We conclude that lateral stoppage is due to main stoppage and clear main – we did cleanup work on private property.
120 =We conclude sewage flowing into home/building is due to blocked main and initiate cleanup-restoration of building.
125 =We conclude sewage is flowing out of District main/manhole/rodhole and we remove blockage and cleanup area.
130 =We conclude sewage is flowing out of District main/manhole/rodhole and problem is either storm drain or water main problem.
135 =We conclude odor problem from our main/manhole/rodhole exist and resolve odor problem.
140 =We conclude odor problem from our main/manhole/rodhole does not exist.
145 =We conclude that manhole overflow is due to excessive rainfall
189 =We resolve pump station problem
199 =We resolve problem represented as “other problem”.
200 =We did not respond

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 five 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.

Step 1 Sketch the shape of the contained sewage (see Figure A).

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)

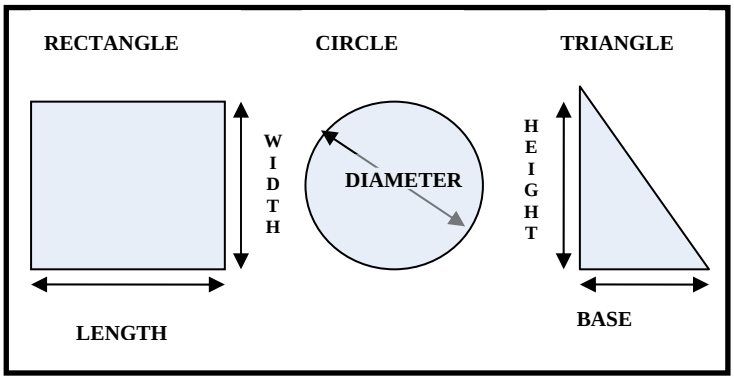
Circle: Area = diameter (feet) x diameter (feet) x 0.785

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.

Figure A: Common Shapes and Dimensions used for Estimating Spill Size



Method 3: Duration and Flow Rate

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 flow rate. The methods of estimating duration and flow rate 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 a few approaches:

- 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.
- Conditions at the spill site change over 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. From 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.
- 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.

Flow Rate

The flow rate is the average flow that left the sewer system during the time of the spill. Two common ways to estimate the flow rate are described below:

1. ***San Diego Manhole Flow Rate Chart:*** This chart, included as Appendix VI-F-1, shows sewage flowing from manhole covers at a variety of flow rates. The observations of the field crew can be used to select the appropriate flow rate from the chart. If possible, photographs are useful in documenting the basis for the flow rate estimate.
2. ***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 eight to ten gallons per hour per connection.

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

= 198 gallons per hour ÷ 60 minutes per hour

= 3.3 gallons per minute

Spill Volume

Once duration and flow rate have been estimated, the volume of the spill is the product of the duration in hours or days and the flow rate in 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

SSO Spill Containment and Cleanup Procedures

Responding employees:_____

Date:_____ Manholes impacted by spill:_____

Total amount of spill:_____

Location of spill:_____

Initials

_____ Determine where spill is coming from and clear the stoppage. If SSO is a lateral, advise the homeowner to call a plumber. Check the elevation of homes to assure that main is flowing but not backing up into laterals. ***Refer to the Sewer Overflow Response Manual.*** Document your findings. **TAKE PICTURES.** If the SSO is from our main, continue with the following:

_____ Note where storm water drains are located using the County / City storm water maps. Note whether a creek, pond, etc. is in the area and if wastewater is able to enter. (Make every effort to block the sewage water from entering into the drains, culverts, etc.) Use the buoys and spill containment items to block the entrance of these areas. If sewage enters the storm drain, utilize inflatable plugs in down stream storm drain or storm drain manhole. ***Draw a diagram that depicts the spill.***

_____ If wastewater has entered the storm drains, use the vactor truck to retrieve the wastewater. Be aware of where storm water pumps are located so that it can be requested to stop or start a pump if needed. (Refer to County/City Storm Water maps.) City storm water contact is 485-3375. A/O 10-2012 the County does not have a storm water map book. For County storm drains call 499-6528, Neal Conatser, Flood Control Engineer at 499-6528 OR 507-2941. You could request they shut down the discharge flow exiting the pump station so that the sewage is contained and not allowed to enter waters of the State.

_____ Estimate amount of spill, using the San Diego Flow Rate Reference Sheet, SMART workbook or eyeball method. Check with citizens and homeowners to assist in determining when spill started. If reasonable estimates cannot be made using these methods, an alternative approach is to determine how many laterals are on the line to achieve typical flow amount. (approximately 200 gals per lateral per day). Spill duration is the elapsed time from the time the spill started to when the flow was restored. Keep track of time notified, time arrived at site, and time SSO cleared for LGVSD Incident Report. Note what caused the spill; roots, grease, broken pipe, etc.

_____ Take pictures of spill (before and after stoppage is cleared) /include equipment/vehicles and sampling points. If signs need to be posted, take pictures of each location that a sign was placed making sure to encompass areas readily identifiable in the pictures.

_____ If spill has impacted homes and buildings, notify TMB 800-413-2999 or Restoration Management 707-750-6326 for cleanup crew. Refer to the ***Sewer Overflow Response Manual Section 2-1 through 2-7.***

Normally the Manager will make this call. Take copious pictures even in rooms where no spill is evident. Note if there is a cleanout or SRV installed. ***Refer to Sewer Overflow Response Manual, section 2-1 through 2-7.***

_____ Cleanup area using absorbent material (never rinse off area with water unless it's able to be recovered), Spread deodorizer if necessary. Post "Caution – Wastewater Could be Present" signs if in an area where there is a chance the public could be exposed. ***Take photos of each location a sign is placed.***

_____ If spill reached waters of the State, refer to the ***Water Quality Samples for SSO's*** and obtain samples. (attached)

_____ Notify management immediately so that the proper reporting can be done.

_____ Notify Police (City) or Sheriff (County) if street closure is required or if public safety is compromised. Police: 485-3000, Sheriff: 499-7233

_____ Create a timeline of events including: arrival, clearing of SSO, equipment brought out, signage placed, pictures taken, contact with H/O, police/sheriff called, etc.

_____ Obtain and complete LGVSD Incident Report and forward it to the Manager

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LAS GALLINAS VALLEY SANITARY DISTRICT
300 SMITH RANCH RD
SAN RAFAEL, CA 94903
415-472-1734

CALL LIST

Revised
April 2020

Plant / Pump Station Emergency Situations

For any Pump Station or Plant related calls, including alarms or police calls after **3:00PM** and before 6:30AM on weekdays and *anytime* on Saturdays, Sundays and Holidays, please call:

Call the PLANT PAGER NUMBER: 415-721-6297

If you do not receive a response from the pager number, go down the list, **CALL UNTIL YOU REACH SOMEONE**

	Cell Phone Call 1st	Home Call 2nd
Operations Supervisor (J.B.)	415-747-7034	
Operator J.B.	415-747-7017	
Operator C.C	415-755-0570	
Operator R.L.	415-747-7048	Home phone numbers not included in
Operator B.E.	415-747-7030	the on-line version of this list.
Operator N.R.	415-747-7040	
Plant Manager M.L.)	415-747-2840	

Sewer Backups, Spills and Collection System Related Emergencies

Call the COLLECTION PAGER NUMBER: 415-258-5080

If you do not receive a response from the pager number, go down the list, **CALL UNTIL YOU REACH SOMEONE**

	Cell Phone Call 1st.	Home Call 2nd.
LeadsmanB.B.	415-747-7036	
Line Crew R.F.	415-747-7042	
Line Crew C.J.	415-747-7032	Home phone numbers not included in
Line Crew M.C	415-747-7046	the on-line version of this list.
Collections Manager (GP)	707-533-3520	
RotoRooter	415-454-7281	

CC: Redwood Security Fax: 388-2754
San Rafael Police Dept Fax: 485-3043
Marin County Sheriff Fax: 499-3636
Answering Service Fax: 927-4829

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Sanitation Agency Response during a Sewage Discharge

Revised February 2014

The role of Marin County Environmental Health Services (EHS) is to protect public health from sewage via upsets, bypasses, and overflows through its authority by Water Code Section 13271 and its oversight of the Public Beach Sanitation and Ocean Water-contact Sports standards. EHS has no direct authority over sewer agencies. EHS is willing to assist and advise sanitary agencies as much as possible during a discharge event if requested. The following outlines EHS' understanding and expectations of the sanitation agencies during a sewage discharge event.

Sanitation District Notification Requirements

The State Water Resources Control Board (SWRCB) recently changed the notification requirements in Order No. WQ 2013-0058-EXEC.

- **Category I equal to or greater than 1,000 gallons (or spilled in a location where it will probably discharge into surface water.)**: The Discharger shall, as soon as possible but not later than 2 hours after becoming aware of the discharge, notify OES at (800) 852-7550. The local health officer and EHS shall also be notified (see Marin County Notification).
- **Category I, II, III**: The Discharger must submit draft reports within 3 business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date via *CIWQS Online SSO Database*.
- **Category II**: EHS shall be notified (see Marin County Notification).

Sanitary Sewer Overflow Category I:
Discharges of any volume that:

- Reaches surface water and/or reaches a drainage channel tributary to surface water; or
- Reaches a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin.

Sanitary Sewer Overflow Category II:
Discharges equal or exceeding 1,000 gallons that do not reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain is fully recovered and disposed of properly.

Sanitary Sewer Overflow Category III:
All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition.

Marin County Notification

During *business hours*, please call:

Environmental Health Services:	(415) 473-6907
Fax:	(415) 473-4120

Rebecca Ng, Deputy Director:	(415) 473-6919 rng@marincounty.org
Armando Alegria, Supervising EHS:	(415) 473-6915 aalegria@marincounty.org
David Smail, Supervising EHS:	(415) 473-6916 dsmail@marincounyty.org
Steve Rosso, Senior EHS:	(415) 473-6918 srosso@marincounty.org
Jennifer Snow, EHS II:	(415) 473-6634 jsnow@marincounty.org
Health Officer, Health and Human Services:	(415) 473-3707
Fax:	(415) 473-3791
Napa-Solano-Yolo-Marin Regional PH Lab:	(707) 784-4410
Fax:	(707)423-1979

Drop-off at Marin County H&HS, 3260 Kerner Blvd, San Rafael

During the *evenings and weekends*, please call:
Sheriff Communication Center: (415) 479-2311
They will contact the EHS on-call person.

Procedure for Discharges

We request that the sewer agencies implement the following when there is a discharge of sewage.

1) Install barriers to prevent the public from having contact with the sewage.
2) Post signs to alert the public to keep out of the area and from having contact with the sewage.
3) Corrective action to stop and contain the sewage flow. Return sewage to sanitary sewer if possible.
4) Determine quantity of sewage that overflowed.
5) Clean up areas that the public may have contact with.
6) If sewage flowed into a drainage channel or water body, determine the final destination of the sewage and estimate quantities that may have flowed into the water body.
7) Post "Closed" signs at the outfall and minimum of 100 feet upstream and 100 feet downstream of the outfall. If there are large quantities of sewage, more signs would have to be posted downstream.
8) Generally a minimum of three (3) water samples shall be collected from the water body: one 100 feet upstream; one at point of entry into the water body; one 100 feet downstream of the entry point. The sample locations may be expanded dependent on the discharge volume.
9) Leave signs up until given approval to remove the signs by EHS (at least two (2) consecutive days of samplings to meet the Public Beach Sanitation and Ocean Water-Contact Sports standards).

EHS policy states that EHS may not be actively involved in the above if the overflow is less than 5,000 gallons. EHS will oversee the action taken and the lab results before approving the removal of closed signs. Depending on the situation, EHS will follow up and may inspect areas of the overflow, the final destination of

the overflow, the posting of signs, monitor the number of samples and the sampling locations. EHS may ask the sewer agency distribute a press release notifying the public of the overflow or may distribute a press release on the Marin County website, http://www.marincounty.org/depts/cd/divisions/environmental-health-services and/or have a recorded message on the Marin County Beach Monitoring Hotline, (415) 473-2335.

Water Sampling

SWQCB Order No. WQ 2013-0058-EXEC requires sampling within 48 hours after the initial SSO notification for Category I SSOs of 50,000 gallons or greater are spilled to surface water. **EHS requires daily water quality sampling until compliance is achieved, if there is a Category I discharge of 1,000 gallons or greater and spills into surface water.** *If a discharge occurs over the weekend, consult with EHS before sampling. Dependent on the circumstance, EHS may determine that sampling could be delayed until Monday.*

Sampling shall be conducted by the sewer agency and tested at a state-certified laboratory. Sampling of water bodies must be tested for compliance with the Public Beach Sanitation and Ocean Water-Contact Sports bacteriological standards. The water samples shall be tested for Total Coliform, E-coli and Enterococcus. Ideally, results can be provided by the lab to EHS within 24 hours. The sanitation agency will be responsible for the lab costs.

1. Single sample standard exceedance:
    - Total coliform bacteria are > 1,000 per 100 ml sample, if the ratio of fecal/total coliform 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 sample.

2. Exceedance based on the geometric mean of at least five weekly consecutive samples during any 30-day sampling period:
    - Total coliform bacteria > 1,000 per 100 ml sample; or
    - Fecal coliform bacteria are > 200 per 100 ml sample; or
    - Enterococcus bacteria are > 35 per 100 ml sample.

Signs must remain posted until at least two (2) consecutive days of samplings meet the Public Beach Sanitation and Ocean Water-Contact Sports standards. **The removal of signs must be approved by the Marin County Environmental Health Services Division.**

Background: Role of Marin County Environmental Health Services (EHS)

In the past, EHS was notified when there were overflows dues to breaks or blockages in sewer lines but that changed in October 10, 2008 with the adoption of AB 800 which amended the Water Code Section 13271 to include notification to EHS.

13271 (a)(1) *"… any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the state, or discharges or deposited where it is, or probably will be, discharged in or on any waters of the state, shall, as soon as (A) that person has knowledge of the discharge, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the California Emergency Management Agency of the discharge in accordance with spill reporting provision of the state toxic disaster contingency plan adopted…"*

(2) *"The California Emergency Management Agency shall immediately notify the appropriate regional board, the local health officer, and the director of environmental health of the discharge. The regional board shall notify the state board as appropriate."*

(3) *"Upon receiving notification of a discharge pursuant to this section, the local health officer and the director of environmental health shall immediately determine whether notification of the public is required to safeguard public health and safety. If so, the local health officer and the director of environmental health shall immediately notify the public of the discharge by posting notices or other appropriate means. The notification shall describe measures to be taken by the public to protect the public health."*

(b) *"The notification required by this section shall not apply to a discharge in compliance with waste discharge requirements or other provisions of this division."*

13271 (f)(1) "*The state board shall adopt regulations establishing reportable quantities of sewage for purposes of this section. The regulations shall be based on the quantities that should be reported because they pose a risk to public health or the environment if discharged to groundwater or surface water. Regulations establishing reportable quantities shall not supersede waste discharge requirements or water quality objectives adopted pursuant to this division…"*

UNAUTHORIZED DISCHARGE OF WASTE REPORT

Report to Marin County Environmental Health Services

M – F, 8 am – 4 pm: (415) 499-6907
Other times: Sheriff Communication Center, (415) 479-2311
EHS Fax: (415) 507-4120

Cal EMA Incident Number: _____
Date & Time Reported to EHS: _____ am/pm
EHS staff reported to: _____

Nature of Request ☐ On-Site Assistance ☐ Initial Notification ☐ Update Information ☐ Advise ☐ Other

Reporting Agency _____ **Phone** _____

Reporting Personnel _____ **Phone** _____

Responsible Agency _____

Agency Contact _____

Agency Address _____ Phone _____

Date of Discharge _____ **Time Reported** _____ am/pm **Est. Start Time** _____ am/pm

Location _____ **City** _____

Est. Total Volume _____ **Type** _____

Est. Vol. Released _____

Est. Vol. Recovered _____ **Surface** ☐ _____ **Subsurface** ☐ _____

Cause/Location of Incident ☐ Sanitary Sewer Overflow ☐ Unauthorized Release ☐ By-pass

_____

_____

_____

_____

If SSO: ☐ **Private** ☐ **Public** Cause: ☐ Line Blockage ☐ Line Break

Contact made with: Name & Phone # _____

Water Body/Area Affected _____

_____

_____

Date: Sign(s) Posted/Close _____ **Time of Closure** _____ am/pm

Areas & Distance of _____

Sign(s) Posted/Closure _____

Date of Cleanup _____ **Time of Arrival** _____ am/pm

Date Cleanup Completed _____ **Time Completed** _____ am/pm

Method of Disinfection _____ Quantity _____

Water Sample(s) **# collected** _____ **Name of Testing Lab** _____

Please send map of sample locations with corresponding lab code name.

Staff Responding _____

Date of Investigation _____ Time of Investigation _____ am/pm

Observations on Site _____

_____

_____

_____

Other Agencies contacted _____ BOS, Dist # contacted _____

Date Approved Sign Removal/Opening _____ Time _____ Completed by _____

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S.O.P. - REPORTING OF SSO's TO STATE

WRITTEN BY: **Janice Mandler**
DATE: **March 10, 2008**
REVISION:

05/20/08	**12/29/10**	**10/5/2012**	**10/3/2013**
02/23/09	**02/10/11**	**12/10/2012**	**03/20/2014**
03/25/09	**04/05/11**	**2/1/2013**	**03/27/2014**
09/15/09	**06/03/11**	**3/21/2013**	
03/17/10	**05/17/12**	**8/15/2013**	

When you have been notified of a SSO, and need to report the SSO, the following steps must be taken:

- Obtain a copy of the *Incident Report (Attachment A)* and/or the *SSO Spill Containment and Cleanup Procedures (Attachment B)* from the line crew member who responded to the SSO. These forms will have the required information you will need to report to the State.

- Refer to Sewer Overflow Response Manual – Tab 4-1 and 4-2 *(Attachment C)*

- As of 9-9-13, there are now three categories for reporting sewer spills:

CATEGORY 1 - Spills of any volume that reach surface water or a drainage channel tributary to a surface water, or reach a storm drain and are not fully recovered.

CATEGORY 2 - Spills greater than or equal to 1,000 gals that do <u>not</u> reach surface water drainage channel, or storm drain (unless the entire volume reaching the storm drain is fully recovered)

CATEGORY 3 - All other spills of untreated or partially treated wastewater from the sanitary sewer system (i.e. spill less than 1,000 gallons that do <u>not</u> reach surface water)

- **CATEGORY 1 - <u>NOTIFICATION AND REPORTING:</u>** Within two hours of becoming aware of a Category 1 SSO that is 1,000 gallons or over, you will need to notify the California Office of Emergency Services (Cal OES) and obtain a notification control number - (1-800-852-7550). They will notify the Regional Water Quality Control Board and local Health Departments. Submit a draft report to CIWQS (http://ciwqs.waterboards.ca.gov/) within 3 business days of becoming aware of the SSO and certify the report within 15 calendar days of SSO end date.

  If the Category 1 spill is under 1,000 gallons you do not have to report it to OES but you do need to call the Environmental Health Services and report it to them.

  During business hours: 415-472-6907
  During evenings or weekends: 415-479-2311 (Sheriff Communication Center)

  Conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters. (Water quality results are required to be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface water.) Provide a description of water quality sampling activities including analytical results and evaluation of results. Provide detailed location map illustrating sampling points (GIS aerial maps are a source)

Submit a SSO Technical Report to CIWQS within 45 calendar days after the spill date of a Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters.
Technical Report to include:

- Detailed explanation of how and when the SSO was discovered.
- Diagram showing the SSO failure point, appearance point and final destination
- Description of the methodology employed and available data used to calculate the volume of the SSO and volume recovered
- Detailed description of the cause of the SSO
- Copies to field crew records used to document the SSO
- Historical maintenance records for the failure locations (OASIS)
- Narrative description of all actions taken by enrollee to terminate the spill
- Explanation of how the SSMP Overflow Emergency Response plan was implemented
- Final corrective actions completed and/or planned, including a schedule for actions not yet completed.

A Category 1 SSO requires an "Unauthorized Discharge of Waste Report" be filled out and sent to the Marin County Environmental Health Services (*Attachment D).* Notify the applicable entity (City of San Rafael - Nader 485-3110 or 725-9233 (off hours only) or County of Marin Health Department – 415-499-6907 or 999-6444. If the spill is on the week-ends or at night, call Com Center at 499-7243. E-mail for the Health Department is psmith@co.marin.ca.us or dsmail@co.marin.ca.us.

CATEGORY 2 REPORTING- Environmental Health Services must be notified.

Business hours 415-473-6907
After hours and on week-ends: 415-479-2311 (Sheriff Communication Center)

Submit draft report to CIWQS within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date.

CATEGORY 3 REPORTING - Submit certified report within 30 calendar days of the end of month in which SSO occurred.

Note: you can **submit** *a report without certifying it if you don't have all the information you need. Once you have the information it is necessary to go back into the website, update the data and* ***certify*** *the report.* Reports can only be certified by the General Manager or the Collection System Manager.

_____ Notify the Department of Fish and Game at 916-445-0380 (if possible fish kill). Obtain name of contact person.

_____ Notify the Police Department at 485-3000 (city) or Sheriff's Department (county) at 499-7250 if street closure is required or if public safety is compromised.

_____ Provide notification and/or reporting as described above to the California Integrated Water Quality System (CIWQS) by accessing their website **http://www.waterboards.ca.gov/water_issues/programs/ciwqs/**
Login:
User Name -
Password

Note: latitude and longitude of spill location is a requirement when reporting a SSO. As of 09/09 the website has been changed so that you can obtain the latitude and longitude when you are reporting the SSO on the CIWQS website. At the end of the lines requesting the latitude and longitude information click on [GIS Tool] and you can obtain the information.

_____ Issue press release, if necessary. Contact Data Instincts 707-849-9858 (Barry Dugan – 707-836-0300 or Mark Millan 707-837-0193) to assist in the writing of the press release.

_____ Notify TMB, LCC (formerly EVLink) 800-413-2999 or Restoration Management at 707-750-6326 if cleanup inside a building is needed.

_____ Notify Carl Warren & Co. (insurance) with the details of the spill if the spill is our responsibility and an insurance claim is to be made. Call Mauri McGuire 707-732-6728 (or cell 805-509-1426 within 4 hours of acknowledging the spill. Fax: 925-825-5964 E-mail: mmcguire@carlwarren.com

_____ Once all applicable reports have been made, produce a file folder with copies of reports, OASIS historical information, incident report, description of the methodology used to determine amount of SSO, pictures, etc.

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SSO Monitoring Plan

Purpose

This monitoring plan is to be used to guide the collection of surface water samples collected in the event of a sanitary sewer overflow (SSO), in accordance with the Monitoring and Reporting Program (MRP) for the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. The MRP, which was revised by the SWRCB in 2013 (Order WQO 2013-0058-EXEC) requires water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or more are spilled to surface waters. In addition, the Marin County Environmental Health Services Division (MCEHSD) requires "daily water quality sampling until compliance is achieved, if there is a Category I discharge of 1,000 gallons or greater into surface water." Refer to MCEHSD's February 2014 "Sanitation Agency Response during a Sewage Discharge" document, also in Appendix A of this SSMP. Further guidance for when samples should be collected for smaller spills is provided in Section 3.3 of the SSMP.

Protocols for Sampling and Analysis

General

The purpose of sampling is to aid in assessing the impact of an SSO on surface waters. The general approach is to collect samples at locations represent of conditions upstream, at the discharge point, and downstream. For large spills or in quickly moving water, samples should be collected at additional downstream locations. As a general rule, the upstream and downstream locations should be 100-feet from the point where the spill enters surface water, however, conditions at the site may dictate other distances. In tidally influenced channels, reverse flows may occur during an incoming tide, making identification of upstream and downstream directions more difficult. In such cases, a field conductivity meter may be useful to distinguish tidal (high salinity/conductivity) and freshwater (low salinity/conductivity) flows.

For large spills, multiple sampling events will typically be needed to demonstrate that impact of the spill has attenuated over time. The MCEHSD will most probably require ongoing sampling until the results indicate compliance with bacterial standards and/or a return to "background" concentrations of bacterial indicators. The above-referenced MCEHSD document has information regarding these standards.

Initial sampling will normally be conducted by collection crew staff. Crew members have been trained by the LGVSD Environmental Services Manager in proper sample collection technique. Follow-up sampling may be conducted by collection crew staff or by LGVSD laboratory staff.

Bacterial Indicator

The LGVSD laboratory is ELAP-accredited for enterococcus analysis (Enterolert® method) and total/fecal coliform (multiple tube method). Enterococcus is the specified bacterial indicator for NPDES permit compliance during the treatment plant's November-May "discharge" season,

whereas total coliform is the specified indicator for LGVSD's reclamation permit and Title 22 recycled water permits, with testing performed during the June-October "reclamation season. Because enterococcus is considered a superior indicator for the presence of fecal contamination, and because the Enterolert® method produces results quickly, enterococcus is LGVSD's preferred bacterial indicator for SSO monitoring at any time of the year. The required media for the Enterolert® analysis is on hand at all times.

Note: For previous SSOs, the MCEHSD has directed the LGVSD lab to also conduct in-house analysis for total coliform and E. coli using Colilert® method (for quick results), even though the LGVSD lab is technically not ELAP-certified in this method. At MCEHSD direction, the lab will continue perform these additional tests, but will utilize enterococcus testing to meet the requirements of Order WQO 2013-0058.

Sampling Equipment

The LGVSD laboratory maintains kits for use by collection crew in collecting samples for SSOs and other types of spills. Kits typically include the following sample containers:

Pollutant	**Sample Containers**	**In-house or Contract Lab**	**Comment**
Bacterial Indicator(s)	(3) 100 ml sterilized snap top plastic bottles with thiosulfate pellet preservative	In-house or Contract lab	Required for SSOs where >50,000 gallons reach surface water. LGVSD lab will typically test for enterococcus.
Ammonia	(3) 500 ml plastic preserved with sulfuric acid preservative	In-house or Contract Lab	Required for SSOs where >50,000 gallons reach surface water
Ammonia & Misc.	(2) 1 liter plastic bottles (no preservative)	In-house	For Yes/No "quick test" at LGVSD lab in cases where nature of spill is uncertain. Positive ammonia indicates probable sewage spill
Oil & grease, petroleum products	(2) 1 liter amber glass (no preservative)	Contract Lab	Not collected for SSOs
Volatile Organics	(4) 40 ml VOA bottles with HCl preservative	Contract Lab	Not collected for SSOs

Other sampling equipment include:

- Sampling pole, extendable to 20-feet (dipper or sample bottle can be attached to end),
- Gloves, safety glasses, sample bottle labels
- Salinity meter
- Dissolved Oxygen meter (typically would be used by lab staff only)
- Chain-of-custody forms (a.k.a. laboratory requisition slips) for analysis by outside labs

Other equipment used in SSO response actions are described in Section 3.3 of the SSMP.

Sample Collection

Refer to the attached "S.O.P. - Water Quality Samples for SSOs" for specifics related to sample collection.

Accounting for Spill Travel Time

In cases where surface water monitoring is required, estimate the rate of flow of the water body (if applicable) and document how the estimate was made. This should be done even if conditions do not permit actual sampling.

The simplest method to estimate flow rate is to observe the distance an object present in the water (or placed in the water) moves in a given period of time. For example, if an object moves 25 feet in 10 seconds, the flow rate is 25/10 = 2.5 ft/second. For best accuracy, measurement over a larger distance and longer time are preferred (e.g. 100 ft is preferable to 10 feet). For time, use a stopwatch rather than counting (most cell phones are equipped with a stopwatch). An object that is mostly submerged works best, as it will be less affected by wind and surface currents. An orange or brightly colored rubber ball (with dense sponge interior) works well for this purpose. Make sure to note if the surface water is tidally influenced, and if so, indicate whether the tide is incoming or outgoing at the time of sampling.

Information regarding spill travel time should be used to inform decisions about sampling locations, both initial and follow-up. If water is moving quickly, the distance to downstream sample locations should be increased. A stream moving at 1 ft/second will travel 3600 feet (approximately ¾ of a mile) in one hour. A spill into rapidly moving water would be expected to dissipate quickly, whereas impacts of a spill into a marshland may persist for a long period. For water bodies that are tidally influenced, the impact of the spill may extend in both the upstream and downstream directions.

Sample Transport and Chain-of-Custody

Samples should be placed in the cooler with frozen blue ice (or other means to keep samples at <10 °C) and keep in a location out of the sun. Return samples as soon as possible to the LGVSD lab. At the lab, place samples into refrigerator and log into lab's internal chain-of custody log book. Note: If lab staff are present, samples are relinquished to lab staff, who then assume chain-of-custody responsibility. For samples being sent to a contract lab, LGVSD lab staff will prepare a chain-of-custody form using the contract lab's standard form. Analysis for bacterial indicator samples should begin within 8 hours of sample collection wherever possible. Hold time for preserved ammonia samples is less critical (28 days maximum).

Analytical Methods

The following analytical methods are used:

- Enterococcus: IDEXX Enterolert® – preferred bacterial indicator for SSOs (SM9230D)
- Total Coliforms: Multiple Tube Fermentation - alternative bacterial indicator for SSOs (SM 9221)
- Total Coliforms /E. coli: IDEXX Colilert® - alternative bacterial indicator for SSOs (SM 9223 Enzymatic)

- Ammonia: Ammonia selective electrode with distillation (SM 4500-NH3-D)
- Ammonia (in house "quick test"): Hach ammonia colorimeter
- Dissolved Oxygen: Luminescent dissolved oxygen probe (EPA 10360)
- Salinity: Electrical conductivity (SM2520 B)

Use of Accredited Laboratory

Samples for ammonia and bacterial indicators must be performed by accredited or certified laboratory. The LGVSD lab is accredited to analyze for enterococcus and total coliform, and those analyses would typically be conducted by LGVSD because of the short hold times. If this is not possible, the analyses can also be performed by a California Department of Public Health laboratory or a certified commercial laboratory specializing in microbiological analysis (Biovir). The LGVSD lab is also accredited to analyze for ammonia by Method SM 4500-NH3-D, and can also perform a "quick test" to detect presence/absence of ammonia using the Hach ammonia colorimeter. If necessary, ammonia samples can also be sent to Caltest Analytical Laboratory. Information for these labs is as follows:

Caltest Analytical Laboratory
1885 North Kelly Road
Napa, CA 94558
phone: 707-258-4000
Fax: 707-226-1001
Contact: Danielle Regan

Napa - Solano County Public Health Laboratory
2201 Courage Dr.
Fairfield, CA 94533
Phone:(707-784-4410

Biovir Laboratories

685 Stone Road, Unit 6
Benicia, CA 94510
phone: 800-442-7342
Fax: 707-747-1751

Equipment Maintenance and Calibration

LGVSD laboratory staff are responsible for having a supply of appropriate sampling containers on hand, and for adding preservatives where required. Lab staff also are responsible for calibrating instruments that are normally kept at the lab (e.g. D.O. meter), and can assist collections in calibrating the field conductivity meter. Responsibility for equipment maintenance rests with whichever group has normal "ownership" of the equipment (i.e. lab, collections, or operations).

Attachment: S.O.P. - Water Quality Samples for SSOs

S.O.P. - WATER QUALITY SAMPLES FOR SSOs

WRITTEN BY: **Janice Mandler**
DATE: **March 23, 2009**
REVISION DATE: **October 21, 2013 / March 26, 2014 / April 22, 2020**

Within 48 hours of a spill of 1000 gallons or greater that has reached surface water, or as otherwise directed by Marin County Environmental Health Services Division.[1]

Initials

_____ Account for spill travel time in the surface water. Observe or drop floating debris in the surface water and timing how long it takes to travel over a measured distance (e.g., 100 ft).

_____ Obtain, at a minimum, a sample at the discharge point, 100' upstream and 100' downstream. If the discharge is more than 1,000 gallons, select additional sites. Document sample locations using sewer (or storm drain) system maps and/or GPS coordinates

_____ Keep the sterile collection bottle (bacterial samples) closed until it is to be filled. Do not contaminate inner surface of the lid or bottle rim.

_____ Collect samples just below the surface in knee depth water - do not rinse the bottle out with sample

_____ Hold sampling bottle at its base, plunge it, neck downward, toward the current (being careful not to loose preservative). Turn bottle until neck turns slightly upward and mouth is directed toward the current. Fill bottle leaving about 1" of air. Collect a minimum of 100 mls (1 cup).

_____ Immediately place cap on bottle to avoid leaks and contamination. Dry the bottle

_____ Repeat sample collection process for ammonia sample (500 ml plastic bottles). Be careful not to spill the acid preservative.

_____ Label containers with <u>distinctive</u> sample site, name, date and time collected. Make sure locations are clearly indicated.

_____ Place sample bottle in a cooler with frozen blue ice. If blue ice is unavailable use double bagged regular ice, or return samples immediately to LGVSD laboratory.

_____ Bring bacterial samples back to LGVSD lab or to a State certified lab within 6 hours of collection (see SSMP Sampling Plan for location and phone number of outside labs).

_____ For samples going to outside lab, complete the laboratory's chain-of-custody slip (a.k.a. requisition slip) with the required information. LGVSD lab staff can assist with this during business hours.

[1] The 1000 gallon threshold is a local (Marin County EHS) requirement. The threshold for required sampling in the Statewide Order is 50,000 gallons.

_____ For ammonia samples or for bacterial samples to be analyzed at LGVSD lab, enter information into the LGVSD chain-of-custody log book and relinquish samples to LGVSD lab staff, or place samples in lab refrigerator if staff are not present. ***Contact lab staff immediately so that sample analysis can be done.***

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