West Valley Sanitation District

Water Quality Monitoring Plan

December 11, 2014

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1. PURPOSE OF PROGRAM PLAN

The purpose of this Water Quality Monitoring Program Plan (WQMP or Plan) is to implement the recent requirements for sampling of sanitary sewer overflows (SSOs) greater than 50,000 gallons that reach surface waters. This plan conforms to the State Water Resources Control Board Waste Discharge Requirements Order No. 2006-0003-DWQ, Section D.7(v) and Monitoring and Reporting Program (MRP) Section D, Water Quality Monitoring Requirements issued by executive order number WQ 2013-0058-EXEC effective on September 9, 2013. This WQMP provides the West Valley Sanitation District (District) policies and procedures to assure consistent conformance to the regulatory requirements and to establish procedures for District staff and contractors in their responses to large releases of sanitary sewage that reach surface waters. This WQMP is consistent with and supplemental to the District Overflow Emergency Response Plan, Element VI of its SSMP. Finally, this document will be used to coordinate training for the District's new employees and regular refresher training for existing employees.

Additionally this Plan is also used as a guideline for monitoring and sampling requirements that are self–imposed or may be imposed upon the District from citizen suits under the Clean Water Act (CWA) resulting in settlement agreements, stipulated orders or consent decrees that can require monitoring and sampling of sanitary sewer overflows of any kind or size. It should be noted, however, that this Plan is specifically tailored to meet the requirements of the SWRCB and any lesser requirements for SSOs <50,000 gallons and or specifically cited in settlement agreements, stipulated orders or consent decrees, still remain in effect and are not enhanced by this Plan. This Plan establishes procedures for the identification of sampling locations, protocols for the proper collection of samples, the chain of custody for sample collections, the handling of samples, the reporting and recordkeeping to assure the legal integrity of monitoring for compliance with regulatory requirements. The plan will also establish policies and procedures that will be used to assure proper coordination between the taking and testing of samples, as well as assure that samples taken will satisfy the local regulatory agency's Basin Plan and the unique character of the District's local service area and surface waters.

This Plan is intended to establish protocols for all sampling including when, where and how; establish the required water quality sample analyses that will be conducted; identify the access and safety requirements related to sampling considerations; and identify any local concerns that this monitoring plan should address. In addition, the Plan establishes the requirements for equipment calibration, notification requirements related to an overflow, recordkeeping requirements, staff training issues and requirements for regular reviews and audits. Finally, all District forms used for water quality monitoring are included and available for use in any SSO incident.

2. DEFINITIONS

The following definitions and acronyms are used in this Plan:

BACTERIA	Probaryotic microorganisms typically a few micrometers in length, with shapes from spheres to rods and spirals
CalOES	State of California Office of Emergency Services
CALOSHA	California Division of Occupational Safety and Health
CFR	Code of Federal Regulations
CFS	Cubic feet per second

CIWQS	California Integrated Water Quality System
CSRMA	California Sanitation Risk Management Association
CWA	Clean Water Act
DH2O	Distilled Water
DEET	N,N-Diethyl-meta-toluamide
DOHS	California Department of Health Services
E. Coli	Escherichia coli (bacteria)
ELAP	Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency
Field QC	Field Quality Control
GPM	Gallons per minute
GWDR	General Waste Discharge Requirements or WDR
GIS	Geographic Information System
LIMS	Laboratory Information Management System
LRO	Legally Responsible Official
mg/l	Milligrams per liter
ml	Milliliter
MPN	Most probable number
MRP	Monitoring and Reporting Program
NH3	Ammonia
NH3-N	Ammoniacal Nitrogen
NPDES	National Pollution Discharge and Elimination System
OERP	Overflow Emergency Response Plan
OES	See CalOES
PPE	Personal Protective Equipment
ppm	Parts per million
QA/QC	Quality Assurance/Quality Control

RWQCB	Regional Water Quality Control Board
SOP	Standard Operating procedure
SSC	Sewer Service Charge
SSMP	Sanitary Sewer Management Plan
SSO	Sanitary Sewer Overflow
SSO GWDR	Sanitary Sewer Overflow General Waste Discharge Requirements
SURFACE WATER	All waters whose surface is naturally exposed to the atmosphere; for example, rivers, lakes, reservoirs, ponds, streams, impoundments, seas, estuaries, etc., and all springs, wells, or other collectors directly influenced by surface water.
SWRCB	State Water Resources Control Board
WQMP	Water Quality Monitoring Program Plan
WQ	Water Quality
WDR	Waste Discharge Requirements
VOC	Volatile Organic Compound

3. RESPONSIBILITY

The District shall designate responsibility for all WQMP roles to appropriate classifications in the District's organizational structure to assure conformance of all activities for the monitoring of SSOs greater than 50 gallons reaching surface waters (Category 1 SSO)*, to reduce potential liability, protect public health, and to assure those responsible for this Plan are trained in their roles and responsibilities for the performance of proper protocols. It is further recognized that the proper application of this Plan will assure that all monitoring can withstand regulatory or legal scrutiny of the State, Regional Board, or from the actions of a citizen lawsuit. These roles and responsibilities are intended to be compliant with WDR Sections D.13(vi), G and Section C.5 and D of the September 9, 2013 MRP.

* The requirement to perform water quality samples for SSOs ≥50 gallons is based on the August 29, 2012 Agreement between the District and Northern California River Watch. This requirement expires on the Agreement termination date of August 29, 2022.

The following table contains the roles and responsibilities as assigned by the District to individual classifications or service contractors of the District:

Roles and Responsibility	Responsible Classification
Provide and document regular training on WQMP for all District classifications that have a role or responsibility in the WQMP and identified herein	Operations Supervisor

Identification and assessment of potential impacts to local areas with surface waters that may require WQMP (i.e. aerial crossings, creeks, waterways, rivers, bays, estuaries, etc.)	Director of Engineering and Operations or Operations Supervisor
Certification of calibration of sampling equipment and maintenance of calibration records	Director of Engineering and Operations or Operations Supervisor
Determination of specific sampling protocols and analytic methods to be used for the District-required testing	Director of Engineering and Operations or Operations Supervisor
Determination of appropriate bacterial indicators for sampling	Director of Engineering and Operations or Operations Supervisor
Quarterly completion of the monitoring and sampling kit checklist from Appendix E	Operations Supervisor or Supervising Lead Worker
Annual review of all standard operating procedures related to this WQMP especially the Sample Collection procedures	Director of Engineering and Operations or Operations Supervisor
Decision to invoke a WQMP and direct the monitoring program to conclusion	Director of Engineering and Operations or Operations Supervisor
Selection of sampling locations	Operations Supervisor or Supervising Lead Worker
Coordination of field sampling	Operations Supervisor or Supervising Lead Worker
Conduct field sampling per District protocols	Any trained Operations staff
Authorization and direction for placement of public notifications and signage	Any trained Operations staff
Photographs of sampling and signage placed to protect public health and safety	Any trained Operations staff
Preparation of Chain of Custody for all samples taken including proper labeling	Any trained Operations staff
Determination of spill travel time, if applicable.	Operations Supervisor or Supervising Lead Worker
Review and evaluate lab results for termination of sampling and to determine the nature and impact of the release	Director of Engineering and Operations or Operations Supervisor
Decision to terminate sampling	Director of Engineering and Operations or Operations Supervisor
Preparation of detailed sampling location map	Director of Engineering and Operations or Operations Supervisor
Conduct sample analysis	
Preparation of water quality sampling activities narrative for Technical Report	Director of Engineering and Operations or Operations Supervisor
Review and Approval of Technical Report	Director of Engineering and Operations
Certification and placement of Technical report in the CIWQS spill reporting system.	Director of Engineering and Operations
Failure Analysis Investigation of all water quality monitoring from the SSO event to determine all necessary changes or modifications to the WQMP	Director of Engineering and Operations
Audits of the WQMP as required by District SSMP Element 10, Audit.	Director of Engineering and Operations
Management of Change responsibilities for the WQMP and all associated forms and documents required for use during an incident	Director of Engineering and Operations

It is recommended that this list of responsibilities be placed on a laminated card and kept in the Monitoring and Sampling Kit for easy access during an SSO sampling incident.

4. AUTHORITY AND REFERENCES

The authority and or requirements for the monitoring and sampling of sanitary sewer overflows are contained in the following:

1. State Water Resources Control Board Waste Discharge Requirements Order No. 2006-0003-DWQ, Section D.7(v).
2. State Water Resources Control Board Monitoring and Reporting Program (MRP) Sections C.5 D, Executive Order number WQ 2013-0058-EXEC effective September 9, 2013
3. Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Organization et al.
4. Clean Water Act Sections 301(a), 304(h), and 501(a).
5. Code of Federal Regulations, Title 40, Part 136.
6. Agreement between the District and Northern California River Watch, dated August 29, 2012 (provides criteria for monitoring when a Category 1 SSO ≥50 gallons).

There are a number of applicable references that are available to assist with the Water Quality Monitoring Program as follows:

A. Basin Plan of the Regional Water Quality Control Board
B. Best Management Practices for Sanitary Sewer Overflow (SSO) Reduction Strategies, Central Valley Clean Water Associates and Bay Area Clean Water Agencies, December 2009
C. District Overflow Emergency Response Plans
D. Field Guide for Surface Water Sample and Data Collection, Air Program, USDA Forest Service, June 2001.
E. Standard Operating Procedures for Surface Water Quality Sampling, Arizona Department of Environmental Quality, Surface Water Section, September 2012.
F. Surface Water Sampling_AF.R3, Document Number SESDPROC-201-R3, Region 4, Environmental Protection Agency, Science and Ecosystem Support Division, Athens, Georgia, February 28, 2013.

5. IDENTIFICATION OF LOCAL SURFACE WATERS AND CHARACTERISTICS

An important element of any water quality monitoring program is the proper and thorough understanding of the service area and the various challenges the geography and sanitary sewer infrastructure of the service area present for the potential of wastewater reaching surface waters or storm water facilities. By evaluating the areas of concern in a service area such as lakes, rivers, dry creeks, aerial pipeline crossings over water ways and all storm water related infrastructure, the District can be better prepared to timely respond to any SSO reaching surface waters and to minimize the impacts of an SSO in or around local surface waters and storm water infrastructure.

A. Surface Waters of Concern

For the purposes of this Plan, surface waters are defined as all waters whose surface is naturally exposed to the atmosphere, for example, rivers, lakes, reservoirs, ponds, streams, impoundments, seas, estuaries, etc., and all springs, wells, or other collectors directly influenced

by surface water. In addition, the District will also identify and evaluate areas where collection system pipelines and force mains cross over or under waterways as these crossings can require additional resources and equipment to properly address any SSO from these collection system assets.

Surface waters of concern are those surface waters within the District's service area that may be impacted by a sanitary sewer overflow from the District's sanitary sewer collection system. Prior planning, review and evaluation of potential failure mechanisms can help minimize any potential impacts to surface waters or storm water infrastructure when and if the WQMP must be invoked. Any review of these important areas of potential surface water contamination in advance of an SSO should allow the District to be better prepared to respond to an SSO with the proper equipment and a better understanding of the procedures that may need to be invoked during the SSO such as flow rate of a creek or stream, and potential areas of significant environmental concern such as shell fish beds or fish habitats. In addition, having all storm water infrastructure located on the collection system field maps will help the District's responders quickly determine if SSOs may flow into storm drains reach and impact surface waters.

The following (Table 5.1) are the surface waters of concern within the District's jurisdiction:

Table 5.1: Surface Waters of Concern

Name	Type (see legend, below)	Map Location	Background Monitoring?	Access Considerations	Safety Considerations
Saratoga Creek	PS, CH, DC, CU	West	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning
Wildcat Creek	ES, DC, CU	West	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning
Vasona Creek	ES, DC, CU	West	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning
Sobey Creek	ES, DC, CU	West	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning
San Tomas Aquino Creek	PS, CH, DC, CU	Central	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning
Smith Creek	ES, DC, CU	Central	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning
Daves Creek	ES, DC, CU	Central	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning
Almendra Creek	ES, DC, CU	Central	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning
Los Gatos Creek	PS, CH, DC, CU	Central	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning
Ross Creek	PS, CH, DC, CU	East	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning
Guadalupe Creek	PS, CH, DC, CU	East	No	Limited,vegetation,private yards	Trip/fall, poison oak, drowning

Bog: Freshwater wetlands that are poorly drained and characterized by a buildup of peat.

Brackish Water: Generally, water containing dissolved minerals in amounts that exceed normally acceptable standards for municipal, domestic, and irrigation uses. Considerably less saline than sea water. Also, Marine and Estuarine waters with Mixohaline salinity (0.5 to 30 due to ocean salts). Water containing between 1,000-4,000 parts per million (PPM) Total Dissolved Solids TDS). The term brackish water is frequently interchangeable with Saline Water. The term should not be applied to inland waters.

Brook: A natural stream of water, smaller than a river or creek; especially a small stream or rivulet which breaks directly out of the ground, as from a spring or seep; also, a stream or torrent of similar size, produced by copious rainfall, melting snow and ice, etc.; a primary stream not formed by tributaries, though often fed below its source, as by rills or runlets; one of the smallest branches or ultimate ramifications of a drainage system.

Canal: A constructed open channel for transporting water.

Channel (CH): An area that contains continuously or periodically flowing water that is confined by banks and a stream bed.

Culvert (CU): A buried pipe that allows streams, rivers, or runoff to pass under a road.

Ditch: A long narrow trench or furrow dug in the ground, as for irrigation, drainage, or a boundary line.

Diversion channel: (1) An artificial channel constructed around a town or other point of high potential flood damages to divert floodwater from the main channel to minimize flood damages. (2) A channel carrying water from a diversion dam.

Drainage Channel (DC): For the purposes of complying with the Statewide Sanitary Sewer Order, (1) a man-made canal used to transport storm water as part of a municipal separate storm sewer system, or (2) an intermittent or perennial stream bed.

Dry Wash: A streambed that carries water only during and immediately following rainstorms.

Ephemeral Streams (ES):Streams which flow only in direct response to precipitation and whose channel is at all times above the water table.

Freshwater marsh: Open wetlands that occur along rivers and lakes.

Intermittent stream: Any nonpermanent flowing drainage feature having a definable channel and evidence of scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two criteria.

Perennial streams (PS): Streams which flow continuously.

Pipe crossing: Crossing of a pipe or force main over or under a surface water body.

Riverine: Relating to, formed by, or resembling a river including tributaries, streams, brooks, etc.

Slough: A shallow backwater inlet that is commonly exposed at low tide.

Stream: A general term for a body of flowing water; natural water course containing water at least part of the year. In Hydrology, the term is generally applied to the water flowing in a natural channel as distinct from a canal. More generally, as in the term Stream Gaging, it is applied to the water flowing in any channel, natural or artificial.

For additional definitions refer to the glossary at http://www.streamnet.org/glossarystream.html.

6. LAB SELECTION

A. Analytical Lab

Samples collected for monitoring purposes will be analyzed either at the District's primary laboratory location at San Jose - Santa Clara Regional Wastewater Facility Laboratory, or secondary laboratory location at Cerco Analytical, Inc. These laboratories are accredited through California's Department of Public Health Environmental Laboratory Accreditation Program (ELAP). ELAP provides evaluation and accreditation of environmental testing laboratories to ensure the quality of analytical data used for regulatory purposes to meet the requirements of the State's drinking water, wastewater, shellfish, food, and hazardous waste programs. The State agencies that monitor the environment use the analytical data from these accredited labs. The ELAP-accredited laboratories have demonstrated capability to analyze environmental samples using approved methods. The secondary laboratory, will be utilized when samples cannot be received by the primary laboratory.

B. Getting Samples to the Lab

At all times, sample hold times identified below will be observed in accordance with Section 7.0. Once samples are collected and coordination is made with the laboratory to receive the samples, they will be transported to the laboratory by District staff.

C. Lab Contact Info

Primary Lab

Name: San Jose-Santa Clara Regional Wastewater Facility Laboratory

Contact: Rey Honrada (Lead Chemist), Jo Andrade Bunnell (Client Support Supervisor)

Address: 700 Los Esteros Road San Jose, CA 95134

Hours Samples Are Accepted: M-F 8 AM to 3:00 PM except holidays
(after hours by arrangement)

Phone: (408) 945-3724

Alternate or After Hours Phone: (408) 945-3728

Secondary Lab

Name: Cerco Analytical, Inc.

Contact: Darlene Langford (Office Manager), Cheryl McMillan (Lab Director)

Address: 1100 Willow Pass Court, Concord, CA 94520

Hours Samples are Accepted: M–F 8:00AM to 5:00PM except holidays

Phone: (925) 462-2771

Alternate or After Hours: (925) 998-4412 Darlene, (925) 963-5201 Cheryl

7. SAMPLING PARAMETERS

A. Required Sampling Parameters

The RWQCB Basin Plan and/or NPDES permit set the water quality standards against which one can judge the levels of impacts of an SSO on surface waters.

In accordance with the SWRCB Revised MRP WQ 2013-0058, the following parameters will be sampled:

1. Ammonia

   Ammonia-N, is a key indicator of the extent of the gross pollution of the receiving water from a SSO. Untreated wastewater or partially-treated wastewater is generally high in ammonia-N (typical 20-30 mg/L). In comparison, the natural background concentration of most surface waters is low, typically, less than 0.5 mg/L. Therefore, the elevated concentration of ammonia of the surface water downstream or at the site of the SSO, as compared to that upstream of the site is a reasonable indication of the extent of contamination from the SSO.

2. Bacteriological Indicator as specified in the local Basin Plan

   Total coliform, fecal coliform, E coli. and enterococci count are indicators of potential public health impacts of an SSO on the receiving waters. If the concentrations of these groups of bacteria are elevated above and beyond the natural background and/or above the RWQCB Basin Plan Water Quality Standards (objective), public notification and posting may be necessary.

   It should be noted that there may be non-SSO related causes of elevated bacteria in surface water, for example, animal sources, storm drain discharge, homeless encampments, septic system/leach field malfunctions. Any or all samples taken may reflect the extent of bacterial contamination from these other sources. Sometimes the extent of the SSO may be indistinguishable from the other natural sources beyond the District's control. This is especially true when taking Source samples based on an estimated downstream location of the SSO plume (Reference Section 7F).

   Generally, if the concentrations of these groups of bacteria at the downstream or at the site of impact are within the range of the non-impacted site (i.e. upstream) or levels indicated in historical background monitoring levels, the water quality impacts of the SSO are considered insignificant.

   The surface water quality objectives of these groups of bacteria are shown in Table 7.1 and 7.2, below. For this District, the highest beneficial use of surface waters would be considered as non-contact water recreation on a portion of Los Gatos Creek (Vasona Reservoir) and as a municipal water supply on the upper reach of the Saratoga Creek (Congress Springs Water Treatment Plant). Otherwise, there is no beneficial use of surface waters in any other creek within the District.

Table 7.1: Water Quality Objectives for Coliform Bacteria[a]		
Beneficial Use	**Fecal Coliform (MPN/100ml)**	**Total Coliform (MPN/100ml)**
Water Contact Recreation	Geometric mean < 200 90th percentile < 400	Median < 240 No sample > 10,000
Shellfish Harvesting[b]	Median < 14 90th percentile < 43	Median < 70 90th percentile < 230
Non-contact Water Recreation[d]	Mean < 2000 90th percentile < 4000	
Municipal Supply: • Surface Water[c] • Groundwater	Geometric Mean < 20	Geometric Mean < 100 < 1.1[e]

NOTES:

a. Based on a minimum of five consecutive samples equally spaced over a 30-day period.

b. Source: National Shellfish Sanitation Program.

c. Based on a five-tube decimal dilution test or 300 MPN/100ml when a three-tube decimal dilution test is used.

d. Source: Report of the Committee on Water Quality Criteria, National Technical Advisory Committee, 1968.

e. Based on multiple tube fermentation technique; equivalent test results based on other analytical techniques, as specified in the National Primary Drinking Water Regulation, 40 CFR, Part 1421.21 (f), revised June 10, 1992, are acceptable.

Source: San Francisco Bay Basin (Region 2)
Water Quality Control Plan (Basin Plan)
California RWQCB, San Francisco Bay Region
Dec. 31, 2010

Table 7.2 – U.S. EPA Bacteriological Criteria for Water Contact Recreation[1, 2]
(in colonies per 100 ml)

Steady State (all areas)	Fresh Water		Salt Water
	Enterococci	E. Coli	Enterococci
	33	126	35
Maximum at:			
• Designated beach	61	235	104
• Moderately used area	89	298	124
• Lightly used area	108	406	276
• Infrequently used area	151	576	500

NOTES:

1. The criteria were published in the Federal Register, Vol. 51, No. 45 / Friday, March 7, 1986 / 8012-8016. The criteria are based on:
   a. Cabelli, V.J. 1983. Health Effects Criteria for Marine Recreational Waters, U.S. EPA, EPA 600/1-80-031, Cincinnati, Ohio, and
   b. Dufour, A.P. 1984, Health Effects Criteria for Fresh Recreational Waters, U.S. EPA, EPA 600/1-84-004, Cincinnati, Ohio.

2. The U.S. EPA criteria apply to water contact recreation only. The criteria provide for a level of production based on the frequency of usage of a given water contact recreation area. The criteria may be employed in special studies within this region to differentiate between pollution sources or to supplement the current coliform objectives for water contact recreation.

B. Sampling Parameters for West Valley Sanitation District

1. Ammonia
   - Discussion: See Section 7A
   - Sample Container: Plastic/glass
   - Sample Type: Grab
   - Sample Volume Required: 200 ml. minimum
   - Hold Time: 28 days
   - Preservative: Sulfuric acid
   - Analytical Method: Method 4500-XX R and C, Standard Methods for the Examination of Water or Wastewater, 21st Edition

2. Total Coliform, E. coli
   - Discussion: See Section 7A.2
   - Sample Container: Plastic (sterile)
   - Sample Type: Grab
   - Sample Volume Required: 100 ml. minimum
   - Hold Time: 8 hours
   - Preservative: None if waters are not chlorinated
   - Analytical Method: Method 9221 B, C and E, Standard Methods for the Examination of Water or Wastewater, 21st Edition

3. Enterococcus
   - Discussion: See Section 7A.2
   - Sample Container: Plastic (sterile)
   - Sample Type: Grab
   - Sample Volume Required: 100 ml. minimum
   - Hold Time: 8 hours
   - Preservative: None if waters are not chlorinated
   - Analytical Method: IDEXX Enterolert® Test Kit, Method 9230D, Standard Methods for the Examination of Water or Wastewater, 21st Edition

4. pH (doesn't apply to samples required per settlement with River Watch)
   - Discussion: Just as “degree” is a measure of temperature, pH is a measure of how acidic or basic the water is. Water pH is critical to fish habitat because it can affect fish egg production and survival, aquatic insect survival and emergency, and the toxicity of other pollutants such as heavy metals or ammonia. Like water temperature, pH naturally varies both daily and seasonally.

     Most daily cycles in pH occur as a result of the photosynthesis of aquatic plants. Through photosynthesis, plants convert the sun’s energy into chemical products they need to live and grow. During daylight hours, aquatic plants consume carbon dioxide (an acid), and produce hydroxide (a base). As a result, water becomes more basic during the day (pH values get higher) and usually peaks mid- to late-

afternoon. Virtually all aquatic organisms product carbon dioxide (an acid) through their normal metabolism of food (respiration). As a result, water becomes more acid during the night (pH values drop) and usually is lowest just before sunrise.

- Sample Container: None, in-field measurement
- Sample Type: Grab
- Hold Time: 15 minutes
- Preservative: None
- Analytical Method: Direct read pH meter, calibrated per manufacturer's instructions prior to use.

5. Temperature (doesn't apply to samples required per settlement with River Watch)
   - Discussion: Water temperature is a key factor affecting the growth and survival of all aquatic organisms. The effect of stream temperature on fish, amphibians, macroinvertebrates, etc. varies between species and within the life cycle of a given species (Armour 1991; Beschta et al. 1987; Bjornn and Reiser 1991; Lantz 1971; DEQ 1995). As stream temperatures increase, the amount of dissolved oxygen (DO) available to aquatic biota decreases. As a result, even if food is abundant at higher temperatures, decreases in DO may metabolically stress aquatic organisms, further increasing their susceptibility to disease.
   - Sample Container: None, in-field measurement
   - Sample Type: Grab
   - Hold Time: None
   - Preservative: None
   - Analytical Method: Direct read temperature meter, calibrated per manufacturer's instructions prior to use.

6. Dissolved Oxygen (doesn't apply to samples required per settlement with River Watch)
   - Discussion: The dissolved oxygen concentration is an indication of the potential impacts of the spill on the biological community of the receiving water. The dissolved oxygen concentration of <2 mg/L downstream or at the site of the spill is an indication of serious biological impacts including potential fish kill. Generally, the dissolved oxygen at the downstream should not drop below 5 & 7 mg/L for warm and cold water, respectfully.
   - Sample Container: None, in-field measurement
   - Sample Type: Grab
   - Hold Time: 15 minutes
   - Preservative: None
   - Analytical Method: Direct read temperature meter, calibrated per manufacturer's instructions prior to use.

8. SAMPLING EQUIPMENT AND CALIBRATION

A. Sampling Equipment Used At West Valley Sanitation District

The following are the sampling equipment used by the District

- Sampling pole with fixed container
- Sampling pole with removable container
- Portable pH and temperature probe
    - Extech DO700 Portable Dissolved Oxygen Meter
- Portable dissolved oxygen meter
    - Extech DO700 Portable Dissolved Oxygen Meter
- Sampling pail and rope
- Stream velocity meter
    - JDC Flowatch Flowmeter
- Grab-n-Go Sample Kit containing:
    - Ice pack
    - Waterproof pen
    - Sample labels
    - Camera
    - Sample bottles
    - Etc.

B. Calibration and Record Keeping

Each piece of equipment is required to have an up-to-date calibration and maintenance logbook. The logbook will be maintained to have consecutively numbered pages and shall contain at least the following:

- Date
- Calibration Results
- Calibration comments
- Initials of the individual calibrating the instrument

Each instrument must be clearly identified (*e. g.,* the make, model, serial and/or ID number) to differentiate among multiple meters.

The appropriate calibration procedure must be followed pursuant to the manufacturer's recommended standard calibration operating procedure and if the instrumentation does not have an electronic program that maintains a running calibration log, then the results must be recorded in the logbook each time a piece of field equipment is used, along with the date and name/initials of the person performing the calibration.

If difficulty is encountered in calibrating an instrument, or if the instrument will not hold calibration, this information must also be recorded. Malfunctioning equipment should not be used to collect data. Steps should be taken to correct the problem as soon as possible. All equipment maintenance should be recorded in the logbook indicating what was done to correct the problem, along with the date and signature/initials of the staff person that corrected the problem.

9. Sampling Procedures

A. Sample Location and Identification Procedures:

Samples will be collected by Operation staff. The most precise and accurate analytical measurements are worthless and even detrimental if performed on a sample that was improperly collected and stored, or was contaminated in the process. The purpose of sampling and analysis is to provide data that can be used to interpret the quality or condition of the water under investigation.

Unfortunately, water quality characteristics are not spatially or temporally uniform from one effluent to another. A sampling program must recognize such variations and provide a basis for compensations for their effects. The sample must be:

1. Representative of the material being examined;
2. Uncontaminated by the sampling technique or container;
3. Of adequate size for all laboratory examinations;
4. Properly and completely identified;
5. Properly preserved, and
6. Delivered and analyzed within established holding times.

These six requirements are absolutely necessary for a proper assessment of water quality.

It is impossible to establish hard and fast rules concerning sampling locations. However, the following general guidelines should be applied whenever District personnel conduct surface water sampling:

1. The sampling location should be far enough upstream or downstream of confluences or point sources so that the surface water and SSO volume is well mixed. Natural turbulence can be used to provide a good mixture.
2. Samples should be collected at a location where the velocity is sufficient to prevent deposition of solids, and to the extent practical, should be in straight reach having uniform flow. All flow in the reach should be represented, so divided flow areas should be avoided and samples should be taken towards the middle of the reach where feasible.
3. Sampler must always stand downstream of the collection vessel, and sample “into the current”. Care must be taken to avoid introducing re-suspended sediment into the sample.

B. Sample Types:

Grab samples are appropriate for the characterization of surface waters at a particular time and place, to provide information about minimum and maximum concentrations, to allow for the collection of variable sample volume.

Grab samples may be collected directly into the sample container, or a clean decontaminated intermediate container may be used if a wading sample is not possible or safe. If an intermediate container is used, when in the field, double rinse the sampling device (bucket, automatic sampler) with sample water prior to collecting the sample and be sure to discard rinse water downstream of where sample will be collected. If samples are collected in a bucket and distributed a consolidation collection container, swirl the contents of the bucket as it is being poured into the consolidation collection container to avoid settling of solids (and pour in back and forth pattern – *e.g.*, 1-2-3-3-2-1).

Grab Sample: A grab sample is defined as an individual sample collected at a given time. Grab samples represent only the condition that exists at the time the sample is collected (US EPA 1977).

Surface Grab Sample: A sample collected at the water surface (i.e. skimming) directly into the sample container or into an intermediate container such as a clean bucket. A single or discrete sample collected at a single location.

Field Blanks are used to evaluate the potential for contamination of a sample by site contaminants from a source not associated with the sample collected (e.g., airborne dust, etc.). Sterile, deionized water is taken into the field in a sealed container. This is the stock water. The stock water is then poured into the sample container. The containers and sample submission forms are labeled as "Field Blank". The same template selected for the test samples should be used. Field blanks are subject to the same holding time limitations as samples. The appropriate FIELD QC box on the sample Chain of Custody form should be checked.

C. Decontamination Procedures

Removing or neutralizing contaminants from sampling equipment minimizes the likelihood of sample cross contamination, reduces or eliminates transfer of contaminants to clean areas, and prevents the mixing of incompatible substances.

Gross contamination can be removed by physical decontamination procedures. These abrasive and non-abrasive methods include the use of brushes, air and wet blasting, and high and low pressure water cleaning.

The decontamination procedure described above may be summarized as follows:

1. Physical removal
2. Non-phosphate detergent wash
3. Tap water rinse
4. Distilled/deionized water rinse
5. 10% nitric acid rinse
6. Distilled/deionized water rinse
7. Solvent rinse (pesticide grade)
8. Air dry
9. Distilled/deionized water rinse

D. Sample Labeling and Chain of Custody Procedures

A sample is a physical evidence of a facility or the environment. An essential part of all enforcement investigations is that evidence gathered be properly documented. To accomplish this, the following sample identification and chain of custody procedures are established.

1. The method of sample identification depends on the type of measurement or analyses performed. When in-situ measurements are made, the data are recorded directly in Field

Data Worksheets with identifying information, field observations, and remarks. Examples of in-situ measurements are:

- pH
- Temperature
- Dissolved Oxygen
- Stream Flow Measurement

Samples other than in-situ measurements, must be identified by a sample label. These samples are removed from the sample location and transported to a laboratory for analyses. Before removal, however, a sample is often separated into portions depending upon the analyses to be performed. Each portion is preserved in accordance with applicable procedures and each sample container is identified by a sample label.

2. At a minimum, the following grab samples will be collected, in duplicate:
   - Field Blank: See Section 9.B for discussion.
   - Upstream: This sample will be collected far enough upstream of the SSO's point of entry into the surface water as to be free of contaminants from the SSO. Typically, 50-feet is sufficient, but this may vary on circumstances of the spill.
   - Source: Immediate vicinity where the SSO entered the surface water. This point will actually be downstream of the actual SSO entry point for SSO's that have stopped entering the surface water to be sampled. If the SSO has stopped, calculate the approximate downstream distance from the original SSO location by dividing the time since the SSO occurred by the estimated velocity. This is the approximate downstream distance from the SSO discharge point to the "source" sampling location.
     - Due to possible tidal action in the surface water or other factors, another method may be used to determine the "source" location at the discretion of the Director of Engineering and Operations or Operations Supervisor.
     - See Section 9.F for information on determining velocity of the surface water in order to determine the Source sample location.
   - "Downstream" of SSO: This sample will be collected far enough downstream to be representative of the water quality of the surface water after adequate mixing of the surface water and the SSO have occurred. Typically, this location will be 50-feet downstream of the Source sample, but this may vary on the size and velocity of the surface water to be sampled.
     - NOTE: The terms "upstream" and "downstream" may depend on the tidal cycle if the water body is tidally influenced. Check the tide chart(s) and table at the following link: http://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9415623.

3. Sample labels shall be completed for each sample, using waterproof ink. The information recorded on the sample tag/label includes:
   - Date: a six digit number indicating the year, month, day of collection
   - Time: a four-digit number indicating military time of collection (e.g., 0954)

- Sample Location: sampling location description as either Upstream, Source, or Downstream
- Samplers: each sampler is identified
- Parameter/preservative: the analysis to be conducted for the sample /sample preservation

4. Photos or video of each sample location will be taken, properly labeled with date, time, and view direction and a map of the photo locations completed. Photos and videos shall include relevant landmarks to identify sampling locations and their surroundings.

   Due to the evidentiary nature of samples collected during enforcement investigations, possession must be traceable from the time the samples are collected until they are analyzed. To document sample possession, a Surface Water Sample Chain of Custody Record (Attachment C) must be completed. A sample is under your custody if:

   - It is in your possession, or
   - It is in your view, after being in your possession, or
   - It was in your possession and under your control to prevent tampering, or
   - It is in a designated secure area.

5. As few people as possible should handle samples. The person taking the samples is personally responsible for the care and custody of the samples collected until they are transferred or dispatched properly.

6. Samples are accompanied by a chain of custody record. When transferring the possession of samples, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents sample custody transfer from the sampler, often through another person, to the analyst at the laboratory. The samples are typically transferred to the sample-receiving custodian at the laboratory.

E. Safety Considerations

Personal safety of staff engaged in any fieldwork activity (e.g., in transit, walking or hiking, and any field activities while at the sample site) is of primary importance. Staff should never place themselves in dangerous or risky situations. Any hazards that are known by field personnel should be communicated to other members of the field crew.

Fieldwork should be postponed if there is indication that engagement in the field activity could cause bodily harm. Working during lightning storms, at night, in heavy vegetation or poison oak, near aggressive wildlife or domestic animals, traversing steep or rugged terrain, unstable slopes, or creek banks, near swift moving water or potential flash flood conditions, or during snowy weather is not considered "normal risk". If any member of the field crew is uncomfortable with a reasonable self-determined hazardous field condition, it is that person's responsibility to bring this to the attention of the on site field supervisor or their supervisor. A "reasonable self-determined hazardous field condition" is defined as other than normal risk.

Supervisors shall not dismiss any person's spoken concerns that field conditions are too hazardous to complete the work assignment.

The person taking the samples must have adequate protection, including protective clothing. They must wear gloves, as protection against chemical and/or bacteriological hazards, while they are sampling or handling samples that are known or suspected to be hazardous (e.g. visible solids or sheens, downstream from sewage spills, etc.), or if hands have open wounds. The type of gloves worn shall be determined by the sampling circumstance and type of pollutants expected – for instance longer gloves are needed when samples must be taken well below the surface.

When in a boat or wading in a stream, a personal floatation device shall be worn at all times. Other protective measures shall be taken in accordance with West Valley Sanitation District safety procedures.

Upon arrival at a sampling site, safety equipment such as signs, cones, lights, etc. shall be set out as appropriate. Vehicles shall be parked in locations and directions to minimize traffic disruption and avoid sample contamination. Photos should be ultimately taken of the placement of all safety equipment and signage

The following guidelines apply to all fieldwork by District staff.

- No sample or measurement is worth the risk of injury.
- All staff shall use proper personnel protective gear as appropriate for the incident (e.g., life preservers, gloves, goggles, etc.)
- Field sampling crews should consist of at least two members unless otherwise approved by a supervisor.
- Be conscious of the whereabouts of rattlesnakes, mountain lions, and other dangerous animals.
- Open body wounds are entry sites for infection; take the necessary precautions for self-protection using appropriate PPE.
- If there is storm activity in the work area, wait for safer conditions to develop or postpone the sampling.
- Do not sample at night without approval from your supervisor.
- Do not trespass on private property, or posted restricted public lands without prior permission and or written approval from property owner or administrator.
- If strange or suspicious looking people are in the work area, either wait for them to leave or postpone the work to a later time. Do not force confrontations with strangers and back away from any confrontations with the public. Be courteous and understanding of public concerns of the situation.
- Take the necessary precautions against exposure to harmful weather conditions such as heat, wind, snow, cold, rain, etc.
- Carefully evaluate a given on-site situation to determine if the task can be performed safely.
- Wear protective footwear when entering streams.
- Do not enter the stream if the water is flowing too fast.

F. Stream Velocity Measurements (doesn't apply to samples required per settlement with River Watch)

If sampling is performed after the SSO has stopped, the velocity of the impacted surface water must be determined in order to estimate SSO travel time and select an accurate Source sample location. One way to measure the SSO travel time is to use a velocity probe (such as a Global Water FP111-S Flow Probe or similar in-stream flow measurement device) to determine the rate of flow in the water body. In cases where a water velocity probe is used, the manufacturer's instructions will be followed.

G. Grab-n-Go Sampling Kit

The District maintains a Grab-n-Go sampling kit located in the Operations Building lunchroom. The kit is inspected quarterly by the Operations Supervisor, Supervising Lead Worker, or their designee. Additionally, any District staff utilizing the kit is responsible for informing their supervisor of the need for decontaminating sampling equipment and field monitoring devices and or if the supplies need to be replenished.

SSO Sample Collection Kit Inventory:

- Cooler
- Surface Water Sampling SOP (Attachment B)
- Ice Pack (stored in freezer)
- 5 Ammonia sample bottles, preserved (3 for samples, 1 for Field Blanks and 1 extra in the event of contamination, spillage of the preservative or other contingency)
- 9 Coliform sample bottles (6 for samples, 1 for Field Blanks and 2 extra in the event of contamination, or other contingency)
- Field monitoring device(s) for DO, pH, and temperature (calibrated on regular basis) and extra batteries for each device
- Digital camera, with extra batteries
- Latex gloves
- Safety glasses/goggles
- Surface Water Sampling Worksheet (Attachment D)
- Sampling Pole
- Field Lights
- Waterproof Pen
- Minimum of 20 blank sample bottle labels
- Chain of Custody form (Attachment C)
- Velocity probe*
- Boat and personal floatation device (if applicable)

* These are not kept in Collection Kits as they are not needed for routine SSO Category I events, however, they are readily available for use in the field.

H. Surface Water Maps
Maps of surface waters in the West Valley Sanitation District service area that may be impacted by an SSO are located in Attachment F.

I. Follow Up Sampling (doesn't apply to samples required per settlement with River Watch)
1. Sampling will be repeated every 24 hours, or as directed by the RWQCB or Santa Clara County Environmental Health Department, until such time as one of the following criteria have been met:
   - The County Environmental Health Department or the RWQCB indicates follow up sampling is no longer required, or
   - Both the ammonia and bacteria levels downstream are approximately equal to or less than the upstream levels; or
   - The concentration of ammonia is at or below that of the upstream sample, or the un-ionized ammonia is below 0.4 mg/L as N; and
   the concentration of total coliform levels are below the applicable acute water quality objective for the appropriate beneficial use listed in the table below.

Table 9.1 Excerpt of Table 3-1 of the June 2013 SF Bay Area Basin Plan

Beneficial Use	Fecal Coliform (MPN/100mL)	Total Coliform (MPN/100mL)	Enterococcus Bacteria (MPN/100mL)		E. coli (MPN/100mL)
			Estuarine and Marine	Fresh Water	Fresh Water
Water Contact Recreation	90th percentile < 400	no sample > 10,000	no sample > 104	Max at 89	Max at 298
Shellfish Harvesting	90th percentile < 43	90th percentile < 230	--	--	--
Non-contact Water Recreation	90th percentile < 4,000	--	--	--	--

J. Surface Water Sampling SOP
The Surface Water Sampling SOP, Attachment B, provides step-by-step procedures to collect samples and deliver them for analysis in accordance with Sections 6, 7 and 9.

10. NOTIFICATIONS OF SENSITIVE RECEPTORS AND REGULATORY AGENCIES

Table 10.1 describes regulatory and other notifications that must be made in accordance with the triggers indicated:

Table 10.1 Notifications of Sensitive Receptors and Regulatory Agencies

Contact	Trigger	Deadline	How	Person(s) Responsible
OES	If SSO is greater than or equal to 1,000 gallons and reaches or has potential to reach surface waters.	2 hours after awareness of SSO	Call CalOES at (800) 852-7550.	LRO
County Environmental Health	Not Applicable	Not Applicable	Not Applicable	
SWRCB	If 50,000 gal or more were not recovered.	45 days after SSO end time, Submit SSO Technical Report.	CIWQS*	LRO, Director of Engineering and Operations
RWQCB	Not Applicable	Not Applicable	Not Applicable	

** In the event that the CIWQS online SSO database is not available, notify the State Water Resources Control Board (SWRCB) by phone or email and provide required information until the CIWQS online SSO database becomes available.*

11. TECHNICAL REPORT

The MRP requires that in the event of a 50,000 gal or greater overflow spilled to surface waters, the District must prepare and submit an SSO Technical Report that includes a description of all water quality sampling activities conducted, a location map of all water quality sampling points, and the analytical results and evaluation of the results, pursuant to Section B.5 of the MRP. In addition, this report must be submitted to the CIWQS Online SSO Database within 45 days of the end of the SSO and must be certified by the District's Legally Responsible Official, the Director of Engineering and Operations.

12. RECORDKEEPING

All sampling related records associated with this WQMP should be contained in the appropriate SSO Incident file designated with a specific locator record number. These records shall include at least the following documents related to the WQMP:

- A narrative description of water quality sampling activities associated with the event.
- Timeline of the sampling activities until sampling is terminated.
- All surface water sampling worksheets.
- Computations of spill travel time in surface waters, if appropriate.
- Chain of Custody for all samples.
- Sampling Map of all sample locations.
- All photos or video showing sampling activities.
- Final analytical results from the certified laboratory conducting the sample analysis along with an Agency evaluation of the results to determine the nature and impact of the release.
- Failure analysis reviews of the WQMP including recommendations for changes and modifications.
- Calibration records for specific equipment used in the sampling processes.
- Notification documentation for all public and private agencies involved with or requiring monitoring related to final sample results.

The District shall maintain all records including records from service contractors associated with this WQMP as part of the file records for an SSO as required by the WDR and MRP. These records shall be maintained for a minimum period of five-years from the end date of the SSO unless required by regulatory enforcement action, request of the State or Regional Board or as support for claims litigation resulting from the SSO. All records associated with the SSO shall be destroyed upon reaching the end of the file retention period or as otherwise required by the Regional or State Board.

Samples of all District forms and records used in this WQMP are included as attachments.

13. TRAINING

Training will be provided in accordance with Table 13.1.

Table 13.1 West Valley Sanitation District surface water sampling training program	
Who Is Trained To Collect Surface Water Samples?	ALL OPERATIONS PERSONNEL
Trainer Qualifications	The trainer shall, by virtue of training, experience, education or a combination thereof demonstrate expertise in surface water sampling science, techniques and documentation.
Training Curriculum	at a minimum, training shall include: • The District's Water Quality Monitoring Plan • Sampling technique, including hands on practice • Sampling equipment calibration, use and decontamination procedures, including hands on practice • Sampling safety • Completion of the Sampling Equipment Calibration/Maintenance Log, Surface Water Sampling Report and Chain of Custody
Training Documentation	Attendees shall be required to sign-in to all training on the appropriate forms used by AGENCY.
Refresher Training Frequency	Annual
Who is Responsible for Ensuring Training Occurs?	OPERATIONS SUPERVISOR
Required Training Records	Employee training sign in log
Who is Responsible for Maintaining Records?	OPERATIONS SUPERVISOR

14. INTERNAL REVIEW AND UPDATE OF THE WQMP

The WQMP is a requirement of the WDR and MRP regulations and therefore the WQMP must be adopted by the District governing board when completed and thereafter at the same time as the new adoption of the SSMP every five years or when major changes to the SSMP are required. Internal reviews of the WQMP should be conducted at a minimum with District SSMP audits or with a failure analysis following a SSO event requiring the use of this WQMP. This latter evaluation should be used to determine if any procedures or program changes would improve the WQMP.

The internal review of the WQMP must include a thorough review of the then existing WQMP against actual performance by the agency staff and testing laboratory during and after the event. All documents associated with the water quality sampling should be reviewed and included in the SSO file and compared to the requirements in this Plan. Particular attention should be given to all dates and times associated with the monitoring, proper tests in support of the Regional Board Basin Plan, proper completion of the Chain of Custody, equipment calibration documentation of all equipment used for sampling and available photographs or video of the sampling processes, review and sign-offs by all responsible parties, review of the sampling locations map, final lab results and the certification report that the Technical Report was submitted within 45 calendar days of the end of the SSO to the CIWQS system.

In addition, the District should also conduct regular reviews of the WQMP at least annually or along with the bi-annual SSMP Audit required by the WDR. The review should be undertaken to determine that all information in the Program is current, that all classification responsibilities have not changed, that all forms are still appropriate and that all contract relationships with testing laboratories, if not associated with the agency, are still current and available 24 hours per day and 7 days per week. The review should also include a review of the Regional Board Basin Plan to assure continuing conformance with the Basin Plan.

This internal review should be conducted by senior management of the collection systems personnel, laboratory management and any outside contract laboratory services subsequent to any event or once per year if the WQMP has not had to be invoked during the preceding year.

Finally, a schedule and assignment of responsibility for completion of the recommended changes should be prepared along with additions to the SSMP Change Log for these changes and modifications of the WQMP.

CHANGE LOG

The new MRP, Section E.3 requires that all changes to the Sanitary Sewer Management Plan be recorded and documented using an SSMP Change Log indicating what section is being change, a description of the changes, and the person or persons authorizing the changes. Because the WQMP is required by the WDR and MRP, it is also necessary that changes to the WQMP be included in the documentation of changes to the SSMP. Any changes resulting from Section 14 above should be added to the Change Log of the SSMP upon implementation and adoption of the changes as required by the WDR.

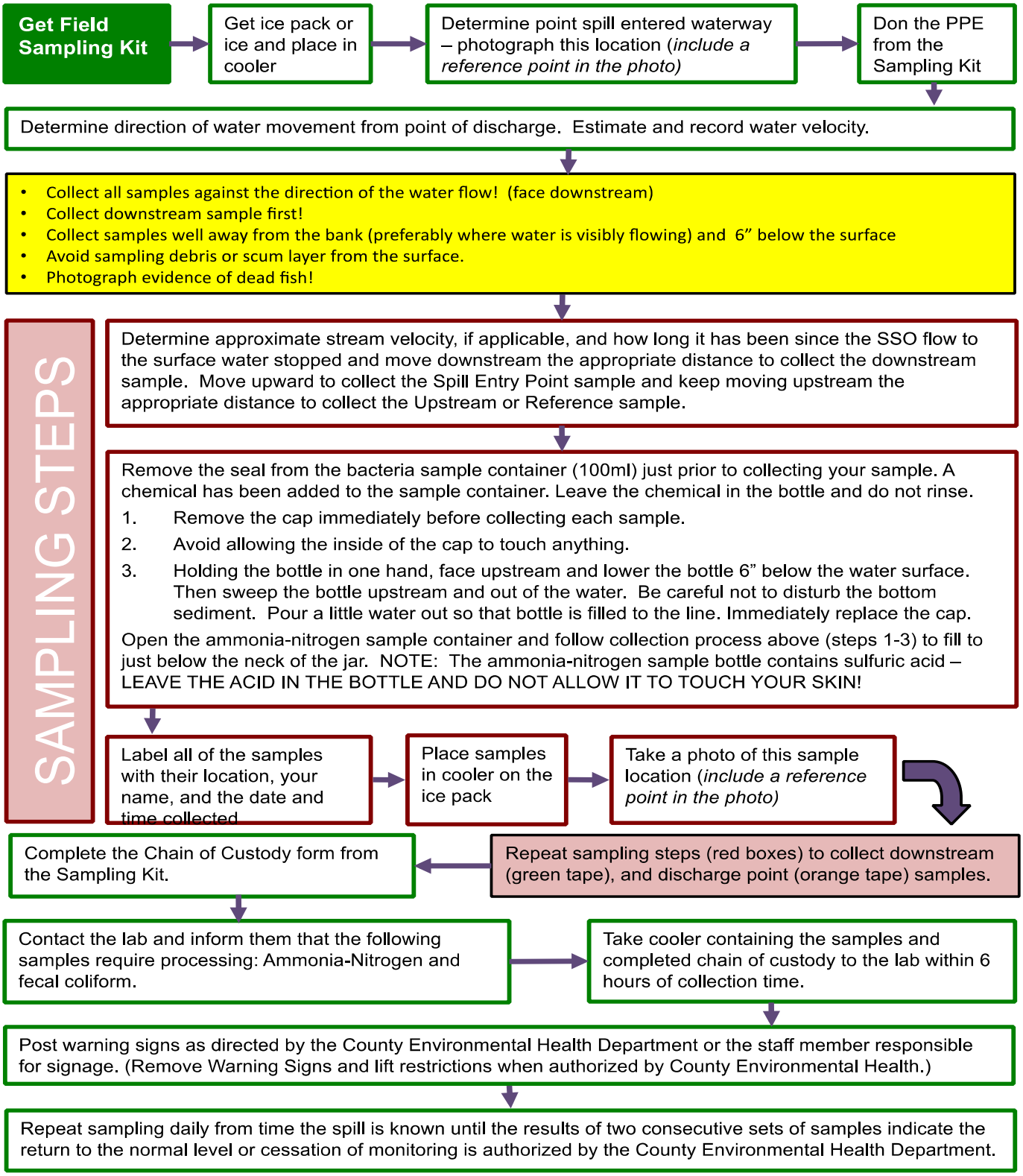
ATTACHMENT A
Water Quality Monitoring Plan Change Log

Water Quality Monitoring Plan Change Log

Date	Section(s) Changed	Summary of Change	Approved (signature)

ATTACHMENT B
Surface Water Sampling SOP

Surface Water Sampling Standard Operating Procedure



ATTACHMENT C
Sample Collection Chain of Custody Record

Surface Water Sample Collection Chain of Custody Record

Customer Name	West Valley Sanitation District		☐	**Hazardous Waste**	**PO#**	
Customer Address	100 E. Sunnyoaks Ave., Campbell, CA 95008		☐	**Unknown Material**	**WO#**	
Customer Telephone	(408)385-3012	**Mail Code**		**CONTRACT LAB INFORMATION**	**Turnaround Requirement**	
Program Name				Ship to:	☐ Normal (21 days)	
Lab Program Coordinator		**Phone #**		Ship Date:	☒ Rush: 3 days	
Sampled By				Courier:	☐ Other:	

LIMS# (Issued by Lab)	SAMPLE COLLECTION INFORMATION									Analysis Requested					QA/QC Requirements	
	Date	Time	Type: Composite	Type: Grab	Sample Location	Field pH	Field Temp	# Containers	Matrix*	Ammonia	Total Coliform / E. coli	Enterococcus			☒ Lab Standard ☐ Special (see attached)	Remarks/Notes
			☐	☒	Upstream			3	A	☒	☒	☒	☐	☐		
			☐	☒	Entry Point			3	A	☒	☒	☒	☐	☐		
			☐	☒	Downstream			3	A	☒	☒	☒	☐	☐		
			☐	☒	Field Blanks**			2	O	☒	☒	☐	☐	☐		Distilled Water
			☐	☐						☐	☐	☐	☐	☐		
			☐	☐	** Only used for					☐	☐	☐	☐	☐		
			☐	☐	≥50,000 gal SSO					☐	☐	☐	☐	☐		

*Matrix: P = Potable Water, W = Wastewater, A = Ambient Water, G = Groundwater, S = Soil, B = Biosolids, I = Industrial, O = Other (specify in remarks)

Relinquished	Date	Time

Relinquished to	Date	Time

Transport/Shipping Information		
☐ USPS	☐ UPS	☐ FedEx
Tracing #:		
☐ Other:		

Sample Receiving Documentation

Container intact? ☐ Yes ☐ No	Correct container? ☐ Yes ☐ No	Field preserved? ☐ Yes ☐ No	Custody tape intact? ☐ Yes ☐ No
Cooled? ☐ Yes ☐ No	Temp. Blank? ☐ Yes ☐ No (°C)	Comments:	
Sample distribution: ☐ Lab bench ☐ Ice chest ☐ Walk-in cooler shelf #		Disposal Date:	Disposed by: (inits.)
C-O-C Distribution Date: By:		☐ Lab Admin File ☐ Prog/proj Mgr. ☐ Lab Prog. Coord. ☐ Delivery courier ☐ Pick-up courier	

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ATTACHMENT D
Surface Water Sampling Worksheet

Surface Water Sampling Worksheet

Sample Date:	Sample Time: ☐AM ☐PM	Sample Location:
Sampler(s)' Name(s):		
Sampler(s)' Signature(s):		

What is being sampled?
☐Stream ☐Pond ☐Lake ☐Lagoon
☐Bay/Estuary ☐Ocean ☐River ☐Other:

Weather at time of sampling: ☐Sunny ☐Overcast
☐Sprinkling ☐Raining ☐Snowing

Was the SSO actively entering the surface water during Sampling?
☐YES ☐NO
If no, complete A-D in the gray box to the right ➔

If the SSO was not actively entering the surface water during sampling:

A. Stream Velocity: _____CFS
B. How Long Has the SSO ***NOT*** Been Entering the Surface Water?
_____ minutes X 60sec/min = _____ seconds
C. How Far Downstream Did You Travel To Collect The SOURCE Sample?
(A X C = Feet): _____ feet
D. Explain why you travelled a different distance, if you did, to collect the source sample:

NOTE: Calibrate equipment prior to use and record in the Equipment Calibration/Maintenance Log

Sample Location	# of Samples*	pH	Temp. (°C)	DO (mg/l)	Photo ID# of Sample Location	Visual Observations and/or Interferences
Upstream						
Source						
Downstream						
Field Blank						

* Minimum of 2 per location

FINISH CHECKLIST	NOTES / OBSERVATIONS
☐ **All Samples Labeled with:** ☐ Date: a six-digit number indicating the year, month, day of collection ☐ Time: a four-digit number indicating military time of collection. e.g. 0954 ☐ Sample Location: Upstream, Source, or Downstream ☐ Samplers: each sample is identified ☐ Parameter/preservative: analysis to be conducted for sample/sample preservation ☐ **Chain of Custody Completed** ☐ **Samples on Ice in Cooler** ☐ **Pictures Taken of Each Sample Location and the Photo ID/# Noted Above** ☐ **All Sampling Equipment Collected**	

ATTACHMENT E
Technical Report

Technical Report
Outline

1. Introduction
   Agency/system description

2. SSO Technical Report - Contents and Responses
   a. Causes and Circumstances of the SSO
      i. Detailed explanation of how and when SSO was discovered
      ii. Diagram indicating SSO "Cause point", appearance point, and final destination (use attachments, maps and diagrams as needed)
      iii. Detailed description of methodology employed and available data used to calculate the SSO volume and any volume recovered
      iv. Detailed description of the cause(s) of the SSO
      v. Copies of the original field crew records used to document the SSO (attachment)
      vi. Historical maintenance records for the lines involved in the cause of the SSO (attachment)

   b. Agency's Response to the SSO
      i. Chronological narrative description of actions taken by agency to terminate the SSO
      ii. Description of how the OERP was implemented to respond to and mitigate any impacts of the SSO
      iii. Final corrective action(s) completed and/or planned, including a schedule for actions not yet completed

   c. Water Quality Monitoring
      i. Description of all water quality sampling activities conducted, including analytical results and evaluation of the results
      ii. Detailed location map illustrating all water quality sampling points

3. Conclusions

ATTACHMENT F
SURFACE WATER MAPS