



# SEWER SYSTEM MANAGEMENT PLAN

2019

Order No. R9-2013-0112, NPDES No. CA0109347

**REVISIONS:**

Camp Pendleton SSMP 2011

Camp Pendleton SSMP 2-year Audit 2013

Camp Pendleton SSMP 2-year Audit 2015

Camp Pendleton SSMP 2016 (missed 5-year Recertification Requirement)

Camp Pendleton SSMP 2018 (missed 2-year Audit/Recertification Requirement)

**TABLE OF CONTENTS**

	Title	Page
Acronyms		3
Section 1	Goals.....	4
Section 2	Organization.....	5
Section 3	Legal Authority.....	9
Section 4	Operations and Maintenance Program.....	11
Section 5	Design and Performance Provisions.....	16
Section 6	Overflow Emergency Response Plan.....	17
Section 7	Fats, Oils, and Grease (FOG) Control Program.....	22
Section 8	System Evaluation and Capacity Assurance Plan.....	27
Section 9	Monitoring, Measurement, and Program Modifications.....	29
Section 10	SSMP Program Audits.....	33
Section 11	Communication Program.....	34
Appendix A	Director, Water Resources Division “By Direction” Letter.....	35
Appendix B	WRD Spill Response and Reporting Instructions Handbook (excerpts).....	36

**References:**

California State Water Resources Control Board (SWRCB), Sept 2015; ***A Guide for Developing and Updating of Sewer System Management Plans (SSMPs).***

Central Valley Clean Water Association and Bay Area Clean Water Agencies, Dec 2009; ***Best Management Practices for Sanitary Sewer Overflow (SSO) Reduction Strategies.***

State Water Resources Control Board (SWRCB), Aug 2013; ***Enrollee’s Guide to the SSO Database Sanitary Sewer Overflow Reduction Program.***

**ACRONYMS:**

AC/S	Assistant Chief of Staff
BEQ	Bachelor Enlisted Quarters
BO	Base Order
CCTV	Closed Circuit Television
CG	Commanding General of MCIWest-MCB Camp Pendleton
CPR	Camp Pendleton Requirements
MCB CPEN	Marine Corps Base Camp Pendleton
DOD	Department of Defense
ES	Environmental Security
FEAD	Facilities Engineering and Acquisition Division
FMD	Facility Maintenance Division
FOG	Fats, Oils, and Grease
FSC	Facilities Support Contract Division
HQMC	Headquarters Marine Corps
MCB	Marine Corps Base Camp Pendleton
MCCS	Marine Corps Community Services
MCIWest	Marine Corps Installations West
MCO	Marine Corps Order
NPDES	National Pollutant Discharge Elimination System
NRTTP	Northern Regional Tertiary Treatment Plant
O&M	Operations and Maintenance
OWS	Oil Water Separator
POC	Point of Contact
PACP	Pipeline Assessment Certification Program
PWD	Public Works Division
SCPP	Source Control Pretreatment Program
SRTTP	Southern Regional Tertiary Treatment Plant
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SSORP	Sanitary Sewer Overflow Response Plan
STP-9	Sewage Treatment Plant 9
TAPS	Tributary Area Pump Station
UFC	Unified Facilities Criteria
WRD	Water Resources Division

## Section 1: Goals

### Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347

The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.

The PRIMARY goals of MCB Camp Pendleton’s Sewer System Management Program are:

1. Prevent SSOs.
2. Properly manage, operate, and maintain all portions of the MCB’s Collections System.
3. Ensure adequate sewer capacity to convey the peak wastewater flows.
4. Minimize the frequency of any SSO’s that do happen.
5. Mitigate the impacts associated with any SSO.
6. Meet all applicable regulatory notification and reporting requirements.

The SPECIFIC goals of MCB Camp Pendleton’s Sewer System Management Program are:

1. Clean and condition assess all gravity sewer mains and sewer manholes once every four years.
2. Structurally condition assess all gravity sewers within a 10- year period using Closed Circuit Television (CCTV).
3. Condition assess all sewer manholes (SMHs) once every four years.
4. Inspect and perform preventative maintenance on all sewer lift stations (SLSs) semiannually.
5. Perform monthly inspections of air relief valves.
6. Maintain a wastewater model with current and projected sewer loads/sewer collection systems.
7. Implement a scheduled education and training program for response staff, maintenance staff, and contractors to convey regulatory requirements and reduce SSOs. The plan will include annual sanitary sewer overflow response plan (SSORP) training and review.

## Section 2: Organization

Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347
The SSMP must identify:
A) Name of responsible or authorized representative;
B) Names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. Include lines of authority as shown in an org chart or similar document with a narrative explanation; and
C) The chain of communication for reporting SSO’s, from receipt of a complaint or other information, including the person responsible for reporting SSO’s to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Quality Control Board, and/or State Office of Emergency Services (OES)).

The legal responsibility for MCB Camp Pendleton’s Sanitary Sewer Systems is assigned in accordance with 40 CFR Part 122.22 (a) (3) *For a municipality, State, Federal, or other public agency* (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

For Camp Pendleton, that senior executive officer is the Commanding General for Marine Corps Installations West-Marine Corps Base Camp Pendleton.

Camp Pendleton’s Director, Water Resources Division, meets the requirements of 40 CFR Part 122.22 (b) (2) *as the individual having responsibility for the overall operation of the regulated facilities.*

### A) Legally Responsible Official:

Director, Water Resources Division, is MCB Camp Pendleton’s designated Legally Responsible Official.

In accordance with 40 CFR Part 122.22 (b) (1), Camp Pendleton’s Director, Water Resources Division, is authorized in writing to sign all reports and other information required by the San Diego Water Board, State Water Board, or USEPA as the duly authorized representative of MCIWest-MCB Camp Pendleton’s Commanding General. This authority has been delegated via the *Authority to Sign “By Direction”* letter dated 27 July 2017 shown in Appendix A.

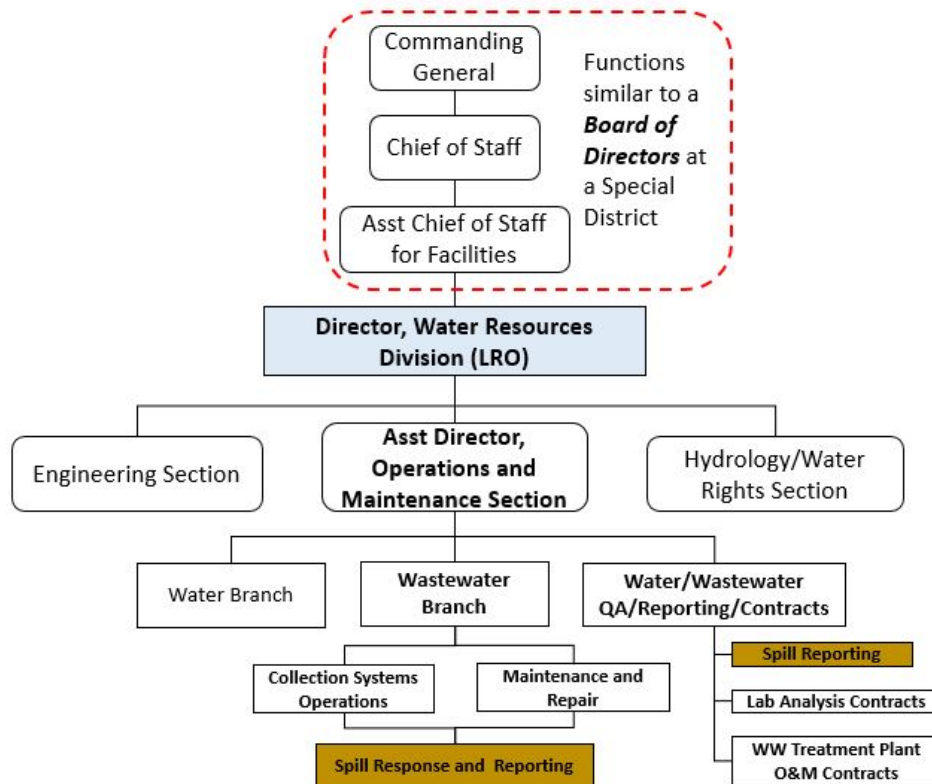
### B) SSMP Specific Measure Responsibilities

Table 2-1: Implementation Responsibilities for SSMP

SSMP Element	Responsible Position	Name	Number
A) Goals	Director, WRD	Dr. John Simpson	760-846-2273
B) Organization	Director, WRD	Dr. John Simpson	760-846-2273
C) Legal Authority	Director, WRD	Dr. John Simpson	760-846-2273
D) O&M Program	Asst Director, O&M WRD	Mr. Joel Heywood	760-214-4553
E) Design and Performance Provisions	Asst Director, O&M WRD	Mr. Joel Heywood	760-214-4553

F) Overflow Emergency Response	Wastewater Branch Supervisor	Mr. Mike Grimaud	760-805-6747
G) FOG Control Program	Wastewater Branch Supervisor	Mr. Mike Grimaud	760-805-6747
H) System Evaluation and Capacity Assurance Plan	Asst Director, O&M WRD	Mr. Joel Heywood	760-214-4553
I) Monitoring, Measurement, and Program Modifications	Asst Director, O&M WRD	Mr. Joel Heywood	760-214-4553
J) SSMP Program Audits	Asst Director, O&M WRD	Mr. Joel Heywood	760-214-4553
K) Communication Program	Director, WRD	Dr. John Simpson	760-846-2273

Below is the pertinent portion of MCB Camp Pendleton’s Organizational Chart illustrating the lines of authority and responsibility with respect to the operation, maintenance and management of the Installation’s wastewater systems.



Commanding General and Executive Staff

The Commanding General and his Executive Staff (Chief of Staff – Marine Corps Colonel and Assistant Chief of Staff for Facilities – US Navy Captain) in addition to their myriad of complex military duties and responsibilities provide strategic and policy direction to the Director of the Water Resources Division, approve and issue Base wide policies and orders, execute communication plans, and approve staffing

and budget levels for WRD. In terms of a typical California Special District, they function as a Board of Directors for the water and wastewater operations at Camp Pendleton.

#### Director, Water Resources Division

Under strategic and policy direction from the CG and Executive Staff, the Director manages, plans, organizes and controls public utility water and wastewater programs, services and resources in accordance with short- and long-term goals, policy statements and directives; interprets and administers policies of the Board; and performs related work as required. The Director requires notification of all SSOs as soon as practical, following control of the situation and is Camp Pendleton's designated LRO and certifying official in CIWQS.

#### Assistant Director, Operations and Maintenance, Water Resources Division

Under the general direction of the Director, serves as an executive level manager to plan and schedule, the water and wastewater utility engineering processes and public services; manages and participates in the gathering and compiling of data and professional engineering work in the areas of planning, survey, design, construction management, construction contract administration, cost estimates, specifications, maps, and reports, for MCB MCB CPEN's potable, recycled and wastewater, corrosion control and water quality system structures and facilities depending on assignment. Oversees the Wastewater Branch and the Wastewater QA and Contract Administration Section. Coordinates the implementation of the SSMP, requires notification of all SSOs as soon as practical, following control of the situation. Manages the supervisors of assigned

Branches and Sections; performs short and long-range planning of WRD programs and services; conducts studies and prepares administrative reports of findings and recommendations of WRD programs and activities; and performs related work as required, including CIWQS report submission and spill reporting.

#### Wastewater Branch Supervisor

Under the general direction of the Assistant Director O&M, plans, organizes and supervises a staff of employees assigned to the wastewater collections section and Sewage Treatment Plant 9 (STP9), and maintenance and repair section, as well as acting as the subject matter expert for both Tertiary Treatment Plant operation and maintenance contracts; performs a variety of technical and administrative support functions; and performs related work as required. The Wastewater Branch Supervisor makes recommendations for and implements the SSMP and sewer system response; investigates, drafts documentation, and ensures that SSOs have been reported and certified; communicates with Division management regarding overflow specifics, response, and remediation; and trains Collections field crew. This position also has responsibility over FOG (Fats, Oils and Greases) Control program; becomes SSO incident commander and has CIWQS spill reporting capabilities.

#### Collection System Workers/Field Crew

Under the supervision of the Collections System Supervisor, performs specialized and skilled work in the wastewater collections systems; STP9; and performs related work as required. The collections field crew performs preventative maintenance activities; mobilizes and responds to notification of stoppages and



SSOs; drafts SSO documentation and completes required initial notification and reporting and, if necessary, during after-hours events. All Work Leaders become incident commanders and have CIWQS spill reporting capabilities.

Wastewater QA/Contract/Reporting Section

Under supervision of the Assistant Director, O&M, this section manages all wastewater contracted laboratory sampling and analysis; troubleshoots and validates flow signal issues, electrical problems, autosampler issues, plant process, and investigate non-compliance reports (NCR's) to resolve personnel and procedural problems; review analytical reports QA/QC and field sampling logs for accuracy and compliance determination; review and interpret State and Federal rules and regulations as related to permit requirements to meet compliance; respond 24/7 to any spills that reach the waters of the US that requires environmental sampling. Prepares and submits all required CIWQS reports and has spill reporting capabilities.

**C) Chain of Communication for Reporting SSOs**

In general, WRD is notified of a sewer system overflow by a call received through the installation's 24/7 call center (Unity Control Room). If the potential SSO call is received during the day (0700-1600), the Unity Control Room Operator will contact a Wastewater Work Leader or Supervisor who will mobilize personnel and equipment to respond to and remediate any spill. If the potential SSO call is received after work hours (1601-0659), the Unity Control Room Operator will use the Wastewater Section ON-CALL CALNDAR/PRIORITY CALL LIST to contact the Collection Systems Operator on duty who will mobilize personnel and equipment to respond and remediate the spill.

Once the spill has been controlled and remediated, WRD staff drafts the report of the overflow incident, and if needed, completes the initial notifications in accordance with SWRCB Monitoring and Reporting Program Order No. WQ 2013-0058-EXEC.

The Director, Water Resources Division, is designated as the Legally Responsible Official (LRO) for Camp Pendleton's Wastewater Systems and, with administrative support from ES and WRD staff, will oversee the reporting process and certifying of all SSOs. The LRO has designated authorized data submitters from WRD to report overflows to all necessary agencies as well as the online data base CIWQS. Per SWRCB orders and guidelines, initial notification reports may be done in draft form with a finalized report submitted once all data is complete and verified.

The following table provides the WRD personnel duties and responsibilities during and SSO:

Name	Title	Contact	SSO Responsibility
Tony Velletto	Work Leader	760-212-4911	Incident Commander/CIWQS Reporting
Dwayne Iriarte	Work Leader	254-423-2596	Incident Commander/CIWQS Reporting
Rick Good	Work Leader	760-224-2936	Incident Commander/CIWQS Reporting
Mike Grimaud	Supervisor	760-805-6747	Incident Commander/CIWQS Reporting
Chris Butcher	Wastewater Chem	760-725-4247	CIWQS Reporting
Joel Heywood	Asst Director	760-214-4553	CIWQS Reporting
John Simpson	Director	760-846-2273	CIWQS Certifying

### Section 3: Legal Authority

<b>Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347</b>
Legal Authority: Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:
A) Prevent illicit discharges into its sanitary sewer system (examples include I/I, stormwater chemical dumping, unauthorized debris and cut roots, etc.);
B) Require that sewers and connections be properly designed and constructed;
C) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Discharger;
D) Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and
E) Enforce any violation of its sewer ordinances.

This chapter describes the legal authority to implement the SSMP plans and procedures.

- A) As a Federal installation, MCB Camp Pendleton’s authority to prevent illicit discharges into its sanitary sewer system comes from the following Federal Statutes:
- Water Quality Act of 1965 (Public Law 89-234)
  - Water Quality Improvement Act of 1970 (Public Law 91-224)
  - Federal Water Pollution Control Act (FWPCA) of 1972
  - Clean Water Act (CWA) of 1977 (33 U.S.C. 1251 et seq.)
  - Water Quality Act of 1987 (Public Law 100-4)

Marine Corps Order 5090.2 designates the MCIWest/MCB Camp Pendleton CG as the steward of Federal lands, thereby providing, in coordination with the EPA, the full authority to enforce the above statutes and to issue local orders that prevent illicit discharges into the sanitary sewer system.

MCIWest-MCB Camp Pendleton Base Order 5000.2, Chapter 1, Base Regulations, establishes responsibilities and procedures which govern the conduct of all personnel and activities on MCB MCB CPEN including prohibition of illicit discharges into the sanitary sewer system. Violations of Base Orders can result in disciplinary (fines, reduction in rank, incarceration, etc.) action against military personnel. Violations of Base Orders by DoD civilian personnel can result in (fines, detention, termination, etc.). Violations of Base Orders by non-DoD personnel or businesses can result in expulsion from the base, detention, and referral to EPA for enforcement actions (fines, incarceration, etc.)

- B) The authority to require that sewers and connections be properly designed and constructed comes from the Unified Facilities Criteria (UFC). UFC documents provide planning, design, construction, sustainment, restoration, and modernization criteria, and apply to the Military Departments, the Defense Agencies, and the DoD Field Activities in accordance with DoD Directive 4270.5 (Military Construction) and USD (AT&L) Memorandum dated 29 May 2002. Requirements are further specified and all local design and construction requirements are set forth in the Camp Pendleton

Requirements (CPR) which are issued to every contractor and become part of every contract awarded for construction, products and services at MCB Camp Pendleton.

- C) The legal authority to ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Discharger is inherent to the congressionally mandated legal authority of a Commanding General of a military installation. Personnel with “by direction” authority from the CG have guaranteed access to ALL facilities on base for maintenance, inspection or repairs.
- D) The legal authority to limit the discharge of fats, oils, and grease and other debris that may cause blockages flows from the CG through Base Order 11345.2 “Fats, Oils and Grease (FOG) Control Program”, which establishes proper FOG handling procedures, grease interceptor maintenance and inspection requirements, training and education requirements, and a public awareness campaign.
- E) The legal authority to enforce any violation of MCB Camp Pendleton’s sewer ordinances is derived from the legal statues shown above in part A, the inherent congressionally established authorities of an installation Commanding General and the specific Base Orders from the CG that set forth sewer ordinances.

## Section 4: Operations and Maintenance Program

Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347
The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee’s system.
A) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities;
B) Describe routine preventative operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;
C) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;
D) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and
E) Provide adequate equipment and replacement part inventories, including identification of critical replacement parts.

### A) Collection System Mapping:

Maps are utilized by the Wastewater Branch Collection System Operators and the Repair and Maintenance Section to identify the location of critical components of the system such as sewer mains, force mains, manholes, and lift stations. Maps are updated periodically as field crews note discrepancies or changes. WRD Engineering is responsible for working with the operations, repair and maintenance personnel to maintain updated collection systems maps using GIS software. Field crews refer to hard copies of maps or digital through a tablet/laptop/phone. The Sanitary Sewer Survey maps reflect the most recent pipeline condition assessment performed by contracted support personnel. The set of maps include locations of grease traps, manholes, lift stations, OWS’s, gravity mains, force mains, and condition of gravity mains.

### B) Preventative and Corrective Maintenance:

MCB CPEN WRD has developed several maintenance programs to maintain the sewer system and prevent SSOs. These include:

#### 1.Regular Main Line Cleaning

- 2.Periodic Manhole Cleaning and Jetting
- 3.Closed Circuit Camera Inspection (CCTV)
- 4.Lift Station Preemptive Maintenance
- 5.Monthly Forced Main Air Release Valve Maintenance and Documentation
- 6.Annual and Semi-Annual PM Program for Electrical and Mechanical Equipment
- 7.Quarterly De-ragging Program for All Sewer Lift Stations (SLS)
- 8.Fats, Oils and Grease (FOG) Program

**Main Line and Manhole Cleaning**

MCB CPEN WRD Wastewater Branch Collection System Operations and Repair and Maintenance Section has (3) two-man “Vactor” operations crews responsible for main line, manhole and lift station cleaning and emergency response. WRD has (1) six-man Preventive Maintenance (PM) crew for electrical and mechanical equipment with (1) additional eight-man Corrective Maintenance team of mechanics and electricians. On a daily basis, (1) three-man crew is responsible for Air Release Valve preventative and corrective maintenance; (1) four-man crew is responsible for manhole inspections and CCTV work. These crews are led by (2) Work Leaders. The Collections System Operations crew consists of (12) operators, (2) Work Leaders and (1) Work Supervisor – all certified at appropriate grade levels by the California SWRCB.

Table 4-1: Collection Crews and Responsibilities

	Crew	Positions	Responsibilities
1	Vactor Operations	4 motor vehicle operators and 2 laborers as Staff	Main Line Cleaning, Lift station Cleaning, Manhole Cleaning and Line Jetting
2	PM Crew	1 Electronics Mechanic, 2 Electricians, 2 industrial Equipment Mechanics, 1 Maintenance Worker and 1 Laborer as Staff	Perform all Annual And Semi-Annual Preventative Maintenance Inspections on all Lift stations. Document all discrepancies and report to Maintenance Work Leader
3	CM Crew	2 Electronics Industrial Controls Mechanics, 1 Electronics Mechanic, 1 Electrician, 3 Industrial equipment Mechanics, 1 Pipefitter and 1 Plumber	Responsible for all Lift station and Plant Corrective Maintenance and Proper Documenting of said Maintenance. They directly report to Maintenance Work Leader.
4	Air Release Valve Crew	2 Maintenance Workers and 1 Laborer	Responsible for Corrective and Preventative Maintenance of all Air Release Valves including Documentation and reporting to the Maintenance
5	CCTV and Manhole Assessment Crew	1 Plumber, 1 Pipefitter and 1 Maintenance Worker	Responsible for portions of gravity lines and manholes and maintaining a library of video and paper as well as electronic documentation,
6	Supply	2 Supply Techs	Inventory ,organize and maintain all replacement parts, spare pumps, and equipment for proper operations of WRD wastewater

7	Administrative	1 Admin Clerk	Responsible for payroll and documentation organization
---	----------------	---------------	--

C) Rehabilitation and Replacement Plans

CCTV

- (1) As part of the O&M program, each sewer line segment is surveyed using CCTV and assigned a condition grade from 0 to 5 according to the PACP code matrix shown in Table 4-2 below. Grades are assigned based on the significance of the defect, extent of damage, percentage of flow capacity restriction, or amount of wall loss as a result of deterioration. Information collected about each sewer pipeline segment including the PACP grade, CCTV inspection and cleaning results (e.g., number of cleaning passes, type and quantity of FOG, roots, sediment, and rocks recovered) are evaluated and input to the Structured Query Language Maintenance Management Database which uses an algorithm to generate a risk assessment for the development of a sewer line failure (e.g., blockage, collapse, rupture). The risk assessment, in turn, provides recommended maintenance and/or repair (e.g., lining) including a prioritization schedule to minimize the risk of a sewer line failure.
- (2) The sewer line cleaning/condition assessment contractor performs cleaning according to the recommended schedule and WRD Engineering, Water Quality Section inputs, repairs into the MCB MCB CPEN Capital Improvement Plan based on the designated priority. (See Table 4-2 below)
- (3) The CCTV inspection is performed in house with Command trained employees. Information gathered from the inspections is stored in Data Collection System for review by management, engineering, department head and leads. Repair and replacement projects are typically the result of observed deficiencies in the sanitary sewer system. During the inspection of an individual main, numeric scores are given to the defects and then an overall grade will be assigned to that segment. This grade will put that main in one of three categories for further review and assignment for cleaning, root control, repairs or further inspections.( see table 2)

Lift Stations

Timeline: MCB MCB CPEN’s wastewater lift stations are inspected daily by a roving patrol and continuously monitored by SMART COVER telemetry systems. Maintenance programs are conducted annually, semi-annually, quarterly, monthly and include mechanical and safety inspections including inspections of the valves and air-n-vacs on the force mains. Wet wells are also cleaned on a monthly schedule. MCB CPEN performs all operation and maintenance of its lift stations.

Lateral Maintenance

MCB CPEN is responsible for laterals associated with all facilities except Public Private Venture Housing units. MCB CPEN responds to blockages and other emergencies.

FOG

MCB MCB CPEN has a FOG ordinance and a program to help keep the fats, oils and grease out of the main sewer system. It is MCB CPEN’s goal to conduct inspections and testing of FOGs on an annual basis, or more frequently, if needed, and as staffing priorities allow.

Table 4-2: PACP Grade and Repair–Priority Code Summary

<b>PACP Grade</b>	<b>Repair– Priority Code</b>	<b>Definition</b>	<b>Recommended Hydro Jetting Frequency</b>
5	Immediate	Severe damage observed; requires immediate attention.	Within 6 months to observe that there is no longer O&M defect affecting pipeline quality
3 or 4	Poor	Significant defects observed that are likely to cause sanitary sewer overflows and other operational problems; give higher priority in terms of repair fund allocation.	Yearly
2	Fair	Some defects observed; must be frequently monitored.	Every 2 years
1	Good	No significant defects observed; may be put on a lower monitoring frequency.	Every 3 years
0	Excellent	Pipe is either new or free from any observed defects.	Every 4 years

**D) Training**

MCB MCB CPEN takes a proactive approach towards the safety of their employees by implementing a comprehensive safety training program.

Wastewater Collections personnel are trained in the following fields, usually within their first year of employment:

- Traffic Control and Flagging
- Confined Space and Confined Space Rescue
- Hazardous Materials Handler
- Trenching and Shoring Awareness
- Combination Truck Training
- CPR/First Aid

- Pumps and Motors
- Lockout/Tag out
- Electrical Hazards

MCB MCB CPEN also performs refresher training on an annual basis or as required. Personnel are also required to read and understand all MCB MCB CPEN safety program documents and attend weekly Safety Meetings. Additionally, there are periodic seminars and training sessions targeting all areas of the wastewater profession. Training records are kept by the Maintenance Work Leaders.

#### E) Equipment and Replacement Parts

MCB MCB CPEN's WRD Wastewater Branch has all the necessary equipment to operate and maintain the sanitary sewer system.

MCB MCB CPEN has three combination trucks for cleaning the system. All of the combination trucks are "Vactor." They are dual axle with 1,000 gallon tank for fresh water, 2000 gallon debris tank, and PD blowers. Additionally, MCB CPEN has a van with Aries CCTV system, a pan & tilt color camera, and 1000' of cable which is used for sewer pipe inspection and the creation of MCB CPEN's video library. Along with the van, MCB CPEN has a '1- box truck' with an Aries Main line and lateral launch camera with 100' of cable. All aforementioned MCB CPEN equipment has replacement parts and trained employees capable of doing most all repairs needed to the camera system. As an additional backup, MCB CPEN has a (1) - hand-pushed 200' camera system and (1) - 400' hand pushed camera system.

Crew trucks include numerous utility bed with tailgate lift trucks, (2) 1-ton extended cab with utility bed with tailgate lift trucks, and numerous drain cleaning machines and a trailer mounted 'jetter.' All trucks are stocked with various replacement parts and hand tools. Additionally, the Wastewater Branch has (2) 3-ton flat-bed trucks with 3-ton cranes mounted on trucks for pulling pumps and general heavy lifting, asphalt cutting machine and (2) light stands.

The safety equipment for confined space and rescue consist of: (4) main 4-gas detectors, (10) personal 4-gas detectors, and rescue rated harnesses, (2) - DBI/Sala tripods and (1) Davit arm with (2) main winches and (2) self-retracting life lines, as well as (4) ventilation blowers.

To the extent possible, MCB MCB CPEN keeps replacement parts and motors in stock for all lift stations. Parts include: motors, impellers, volutes, front and back heads and seals. Smaller pumps are replaced with new units when necessary. Replacement parts for equipment are basic with a few exceptions of critical parts (jetting hose, check valves, nozzles etc.) for the combination trucks.



## Section 5: Design and Performance Provisions

Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347
The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee’s system.
A) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and
B) Procedures and standards for inspecting and testing the installation of new sewers, pumps and other appurtenances and for rehabilitation and repair projects.

- A) MCB CPEN’s Design and Construction Standards for Sewer System Construction is contained within the *Camp Pendleton Requirements* (CPR) Standards for the installation (CPR available on request). The CPRs are design requirements developed specifically for Camp Pendleton based on the installation’s mission, environment, lessons learned. Additional design and construction standards used at MCB CPEN come from the Department of Defense’s Unified Facilities Criteria (UFC), and the Uniform Plumbing Code/California Plumbing Code.
  
- B) Based on the design and performance standards described above, a set of procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects are identified in each individual contractual document. The US Navy Facilities Engineering Acquisition Division (FEAD) office at Camp Pendleton or Facilities Support Contracting (FSC) Camp Pendleton oversee the construction and performance verification and testing for projects at MCB CPEN. After performance verification is completed, the FEAD or FSC transfers the new infrastructure or equipment (real property) to MCB CPEN as an asset to be managed under the installation’s asset management program.

## Section 6: Overflow and Emergency Response Plan

Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347
Each Discharger shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:
A) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSO’s in a timely manner;
B) A program to ensure an appropriate response to all overflows;
C) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP, the California Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;
D) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;
E) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and
F) A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

Requirements (A-F) are consolidated below:

### Objective of the SSO Emergency Response Plan

MCB CPEN WRD operates a diverse system of collections sewers, lift stations, force mains, and treatment facilities that are well maintained. The overflow emergency response plan is directed toward several key actions:

- Protecting the public health and the environment
- Performing repair, clean-up, and restoration of the area affected
- Returning damaged equipment and/or facilities back to normal operations as quickly as possible

### Overflow Detection

MCB CPEN WRD may receive notification of a sewer system overflow (SSO) from the Marines and Sailors (and/or their family members) training and residing on the installation; contractors performing work on the installation; employees of the various businesses that operate on the installation; government civilian employees; WRD field personnel; or early warning signals sent by “Smartcover” monitoring systems located at each of the installation’s sewer lift stations and selected manholes in certain hot spots within the collections system.

If the individual discovering the SSO does not work within the Facilities Department (GF) at MCB CPEN, they will likely dial 911 (connecting them to the Provost Marshall’s Office [PMO]) upon detecting the

SSO. PMO dispatch operators will dispatch PMO personnel to investigate and secure the site and to ensure public safety. All PMO dispatch operators are also trained to forward the call to the GF-Unity Room (760-725--4324).

Upon receiving the call, GF-FMD trouble desk or the GF-Unity Room will immediately contact the WRD Wastewater Supervisor during working hours, or the on-duty WRD Wastewater O&M Crew Leader after working hours.

Alerts received from the “Smartcover” monitoring system are sent automatically via email and text to all WRD leadership, all WRD Wastewater Section Supervisors, and on-duty Wastewater O&M personnel who carry “Smartcover” tablet computers.

### Initial Response

Upon notification of a spill, a Wastewater Work Leader or Supervisor assumes the responsibilities of Incident Commander and dispatches the closest emergency team (Pumper truck/Mechanic/Electrician) to survey the spill site.

A Handbook titled, “Spill Response and Reporting Instructions” (representative sections shown in Appendix B) was developed to provide detailed instructions for response and notification in the event of a sanitary sewer spill. These instructions include wastewater personnel actions, spill volume estimation methodologies, and they cover both immediate in-house and regulatory notifications specific to the type of spill that has occurred.

Once on site, the emergency team assesses the situation and determines if additional personnel and/or equipment are required to support the response efforts – this includes any safety or traffic concerns. *The cause of the spill (i.e. pipe blockage, pipe break, pump station failure, power failure, etc.) is then determined and arrested.* A determination is made as to whether the spill reached surface waters or a conveyance to surface waters. The emergency team commences preliminary steps to mitigate the spill and completes the Quick Report Form (Appendix B).

### Recovery and Cleanup (Mitigation)

All WRD personnel are trained to determine the proper course of action and equipment needed to stop an overflow and begin recovery and cleanup efforts, however, a Wastewater Work Leader or Supervisor assumes the responsibilities of Incident Commander. Every effort is made to contain and prevent the discharge of untreated and partially treated wastewater to surface waters and storm drains and to minimize or correct any adverse impacts on the environment resulting from an SSO.

WRD personnel utilize a variety of equipment in recovery and clean-up efforts including combination / vactor trucks, drain cleaning machines, CCTV equipment, containment devices, and heavy equipment for repairs or assistance with cleanup. There is significant emphasis placed on containment and wash down in order to recover debris and overflow, however, great care is taken to ensure that wash down water does not reach water, dry riverbeds, storm drains, etc.

### Public Access and Warning

During a response to an SSO, WRD personnel will make a determination regarding whether or not this issue of adverse public access is reasonably anticipated. In making this decision, several factors are considered, including but not limited to:

- Ease of public access/restriction based on fencing or resident property
- Terrain
- Destination of spill (i.e. land, storm drain, surface water)
- Proximity to schools
- Spill recovery requirements
- Ability to treat and remediate spill area

If it is determined that there is potential for adverse public access, WRD personnel will coordinate with PMO and post the appropriate warning signs in all appropriate locations for a minimum of 72 hours.

Additionally, when notification is made to the San Diego County Department of Environmental Health, they may request or require Public Warning Postings depending on the specifics of the spill. WRD personnel will ensure that all posting requirements are met. Signs must be posted at all areas, including water bodies, where the public may encounter wastewater spills. The DEH will be responsible for any required public notifications such as press releases. The DEH will also advise responsible agencies when to remove signs based on bacteriological sampling and other environmental conditions.

### Water Quality Sampling and Analysis

Based on reported conditions associated with an SSO, the San Diego County Department of Environmental Health, State or Regional Water Quality Control Boards may require water quality sampling and analysis. When this is the case, the DEH will advise Camp Pendleton WRD on the requirements for sampling. WRD Wastewater Section Supervisor will coordinate with WRD Wastewater Chemist to ensure that proper sampling and analysis is conducted to comply with any regulatory agency requests. Additionally, WRD leadership in consultation with staff may initiate sampling on its own, if deemed prudent, to protect the public health and safety as well as for investigative purposes. In general, WRD will 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 will be uploaded into CIWQS.

### Investigation and Documentation

As described above, upon arrival to the SSO, the emergency response crew observes flow volume and location of flow (both source and destination). They will utilize the methodologies illustrated in WRD's "Spill Response and Reporting Instructions Handbook" (Appendix B) to estimate sewer spill volume. They will determine if there are any witnesses to the overflow, and if so, gather additional information pertaining to start time, as well as other observations. This information is compiled and included on the SSO Report Forms found in the Spill Response and Reporting Instruction Handbook (Appendix B), which

is then completed in its entirety by the crew in collaboration with the WRD Wastewater Section Supervisor and with WRD Senior Staff. The report form is thoroughly reviewed to provide the regulatory agencies with the most accurate information known at the time. Whenever possible, digital photographs will be taken to document pertinent aspects of the SSO. These photographs are kept in digital files maintained by WRD. If there are elements of the overflow that require further investigation or assessment, an in-depth investigation will continue beyond the scope of immediate response and remediation.

### Equipment

WRD Wastewater Section personnel utilizes a variety of equipment in recovery and clean-up efforts including combination/vactor trucks, drain cleaning machines, CCTV equipment, containment devices, and heavy equipment for repairs or assistance with cleanup. A complete inventory of collections department equipment can be found in this SSMP, Section IV, Operations and Maintenance Program, Equipment and Replacement Parts.

### Training

During a new employee's probationary period, the WRD Wastewater Section Supervisor conducts training on the proper procedures for responding to a SSO. In addition, employees receive field training conducted by the WRD Wastewater Section Work Leaders and senior collection systems personnel. Instruction includes:

- SSO Emergency Response
- Mitigation and Remediation
- Necessary Equipment
- Information Gathering, Documentation, and Completion of the SSO Report Forms

### Regulatory Notification and Reporting

Camp Pendleton WRD will make all regulatory notifications as required depending on the size, location, and final destination of the sanitary sewer overflow. Regulatory notification and reporting is done using as much data as is available at the time of the spill to meet required deadlines. This includes the development of a thoroughly reviewed and complete SSO Report Form.

Based on the requirements and guidelines set forth by each regulatory agency, MCB CPEN WRD follows up on spill notifications with appropriate written/computerized reporting depending on the criteria of each spill.

The following table is a summary of Regulatory Agency notification and reporting requirements.

Summary of SSO Regulatory Requirements		
Category 1	Definition	Discharges of untreated or partially treated wastewater of <b>any volume</b> that <b>reaches or will likely reach surface water</b> /drainage channel tributary or that reach a storm drain and are not fully captured.
	Notification	<ul style="list-style-type: none"> <li>• <b>≥1,000 gallons</b>, notify the Cal OES within <b>2 hours</b> and obtain a notification control number.</li> <li>• <b>&lt;1000 gallons</b>, notify the RWQCB within <b>24 hours</b>.</li> </ul> *Cal OES will normally contact San Diego county Dept. of Environmental Health (DEH), if not, notify DEH within RWQCB timeframes.
	Reporting	In CIWQS, submit draft report <b>within 3 business days</b> of becoming aware of the SSO. Certify the report <b>within 15 calendar days</b> of SSO end date.
	Sampling	<b>≥50,000 gallons, water quality sampling must be conducted within 48 hours after initial SSO notification and uploaded to CIWQS. An SSO Technical Report is required to be submitted within 45 days.</b>
Category 2	Definition	Discharges of untreated or partially treated wastewater of <b>≥1,000 gallons</b> that <b>do not reach surface water, drainage channel or municipal storm system</b> .
	Notification	Notify RWQCB – within 24 hours.
	Reporting	In CIWQS, submit draft report <b>within 3 business days</b> of becoming aware of the SSO. Certify the report <b>within 15 calendar days</b> of SSO end date.
Category 3	Definition	All other discharges of untreated or partially treated wastewater resulting from an enrollee’s sanitary sewer system.
	Reporting	In CIWQS, submit certified report within 30 calendar days of the end of the month in which the SSO occurred.
Private Lateral Sewer Discharge (PLSD)	Definition	Discharges of untreated or partially treated wastewater resulting from blockages or other problems within MCB CPEN Public-Private Venture housing sewer lateral connected to the enrollee’s sewer system.
	Notification	If PLSD ≥1000 gallons, notify RWQCB within 24 hours. If <1000 gallons and did not reach surface water, no notification is required. If <1000 gallons and it did reach surface waters, notify Regional Board within 24 hours.
	Reporting	In CIWQS, submit certified report within 30 calendar days of the end of the month in which the SSO occurred.

\*Detailed reporting requirements with regulatory personnel and phone numbers is included in the MCB CPEN WRD “Spill Response and Reporting Instructions Handbook” (Appendix B).

**References:**

[https://www.waterboards.ca.gov/water\\_issues/programs/sso/](https://www.waterboards.ca.gov/water_issues/programs/sso/) (2019)  
 California Water Boards – Enrollee’s Guide to the SSO Database (2013)  
 A Guide for Developing and Updating of Sewer System Management Plans (SSMP) 2015  
 Best Management Practices for Sanitary Sewer Overflow (SSO) Reduction Strategies (2009)

## Section 7: Fats, Oils, and Grease (FOG) Control Program

Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347
<i>Each Discharger shall evaluate its service area to determine whether a FOG control program is needed. IF a Discharger determines that a FOG control program is not needed, the Discharger must provide justification for why it is not needed. If FOG is found to be a problem, the Discharger must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:</i>
A) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;
B) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;
C) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;
D) Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements.
E) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;
F) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and
G) Development and implementation of source control measures for all sources of FOG discharge to the sanitary sewer system for each section identified in (f) above.

The procedures detailed in this Section are implemented by all new and existing non-residential food preparation facilities located aboard the Installation and are instituted by all area commanders that oversee and are involved with the construction, operation, and maintenance of facilities that generate and/or work with any FOG. Personnel subject to these guidelines include, but are not limited to, any civilian or military member who processes, handles, serves, or otherwise works in association with food in facilities such as mess halls, restaurants, snack bars, cooking schools, or any other potential generator of FOG.

### A) Public Information and Outreach

Public awareness is essential to any FOG Control Plan. The Installation will maintain an educational and enforcement program that emphasizes proper operation and maintenance of any grease trap connected to the wastewater system. All public awareness efforts must be documented and records must be available for inspection.

**Commercial Facilities on Camp Pendleton Education** - The Installation recognizes that food service establishments typically have limited time and resources available for activities other than food preparation. Furthermore (personnel turnover may be high and the facility may be unaware of the environmental aspects of their activities. However, it is critical that FOG is kept from the wastewater system. Therefore, all non-residential establishments that work with FOG shall establish and maintain a grease control training program.

- At a minimum, the training shall establish waste awareness by informing all new and current employees of food waste impacts (on the wastewater system) and proper food waste handling techniques. This training shall be given to all new employees prior to food handling. All employees shall receive yearly refresher training on FOG impacts and proper handling techniques. FOG training course DVD titled "Oil & Grease Handling" is provided to all food service establishments.
- A training checklist is also provided to all food service establishments as an example of information that should be posted by drains to increase employee awareness of proper FOG handling techniques. All training efforts shall be documented and training records shall be available for inspection.
- Facility supervisors are critical to this Grease Control Program Policy's success. Supervisors are responsible for maintaining employee awareness of and compliance with this Base Order. The level of commitment by supervisors can be directly correlated to the achievements of the program. Therefore, supervisors are strongly encouraged to attend more frequent training on FOG best management practices. Supervisors will be held accountable for all FOG violations at their facility.

**Residential Communities on Camp Pendleton** – As part of the WRD's Source Control Pretreatment Program, FOG best management practice general awareness information is disseminated yearly to all Installation residents via informational flyers. At a minimum, this information explains the proper method of grease disposal. If grease loading of the wastewater system becomes an issue, the program will be modified to provide more frequent distribution.

**Camp Pendleton Units Operating Oil Water Separators (OWS) and Grease Traps** – All units receive mandatory initial training and annual training in the operations and maintenance of OWS and Grease Traps.

## B) Plan and Schedule for FOG Disposal

The MCB MCB CPEN grease interceptor service contract managed by a WRD contract executed through Facilities Support Contracting (FSC). WRD identifies roles and responsibilities for proper disposal of FOG at approved sites located off-Base. All waste removed from grease interceptors must be disposed of at facilities permitted by the County of San Diego or applicable regulatory agencies to receive such waste.

The Base contract identifies roles and responsibilities for the FOG contractor to dispose of FOG at approved sites located off Base. The addresses for each disposal site are listed below.

1. Atlas Pumping Services, 12740 Vigilante Rd. Lakeside, CA 92040
2. Baker Commodities, 4020 Bandini Blvd. Vernon, CA 90058
3. Co-West Commodities, 2586 Shenandoah Way San Bernardino, CA 92407

## C) Legal Authority for FOG Program

MCB MCB CPEN has legal authority to inspect, maintain, and prohibit discharges of FOG originating from oil water separators and grease traps discharging into the wastewater system through Base Orders (BO)



11345.1 *OWS and Washrack Equipment Management* and 11345.2 *FOG Program* (available upon request POC: john.o.simpson@usmc.mil). Grease Trap design standards and installation requirements are identified in the *DOD OWS Guidance manual*. Each FOG producing facility is responsible for maintaining records for their respective grease trap or OWS. MCB MCB CPEN has created a document outlining each Unit's responsibility titled *Oil/Water Separator Unit Guidance* available on request.

#### D) Requirements and Standards Related to Grease Removal Devices

All facilities built on the base must comply with the Camp Pendleton Requirements (CPRs). CPRs have been developed from the DOD Uniform Guide Specifications, the Uniform Plumbing Code and other pertinent specifications. The CPRs are incorporated into every construction contract awarded at MCB CPEN.

Examples of pertinent CPRs:

- To effectively remove FOG, grease traps must be properly sized, constructed, and installed in the correct location. All grease-bearing drains, such as mop sinks, wash sinks, prep sinks, utility sinks, dishwashers, pre-rinse sinks, and floor drains in food preparation areas should discharge to a grease trap. A toilet or clothes washing machine should not be plumbed to a grease trap.
- It is essential that only grease-laden wastewater be permitted to enter the grease trap. Suspended solids, such as sugar, starches, and other non-FOG food items will accumulate in the grease trap and reduce its efficiency. Solid waste items, such as straws, napkins, and mop strings, can cause blockages in the system. Under no circumstances should waste strainers be removed from, and/ or solid waste disposed into, the grease trap.

All facilities at MCB CPEN that have the potential to generate FOG are required to have Grease Traps per BOs and CPRs.

#### E) Inspection and Enforcement Authority

As a US Military Installation, the MCIWest-MCB Camp Pendleton Commanding General has complete authority over all facilities on base. The Commanding General has delegated the authority to inspect all commercial and military grease producing facilities and the ability to take any enforcement action to the Director of WRD. Inspections of grease traps and OWS are performed via contract on a quarterly basis.

#### F) Sewer System FOG "Hot-Spots" and Maintenance Schedule

All *commercial food services* facilities and military "*Dining Halls*" are FOG hot-spots subject to blockages and BO 11345.2 requires the following Grease Trap Maintenance Schedule:

1. Dining hall and commercial restaurant supervisors and/or WRD representatives shall inspect grease traps at least once every 90 days. A grease trap inspection checklist is provided, enclosure (1). This form shall be completed every 90 days and will be maintained for a period of three years. Facilities that have a history of grease trap problems shall be inspected more often. Appropriate type and concentrations of biological agents and/ or enzyme use shall be confirmed semi-annually.
2. Grease traps will be skimmed as needed. Grease traps will be pumped out as required to prevent overflows, wastewater system blockages, and excessive biological and chemical oxygen

demands on the system. Complete cleaning of grease traps should include removal of all grease caps, liquids, and solids. The sides should be scraped or hosed down and the trap refilled with water.

3. Dining hall supervisors should contact FSC at (760) 725-3342 if any problems with the grease traps are experienced and/or when a grease trap needs to be serviced. Problems are indicated by wastewater backups, reduced wastewater flow rates, and a foul smell coming from the drain area. Facilities should never continuously run hot water to flush the grease trap.

Washing and cleaning military vehicles and equipment is a critical requirement for their proper operations and maintenance. This function is accomplished at "Wash Racks" located across MCB CPEN. All wash racks have installed *Oil Water Separators* (OWS). MCB CPEN OWS are "closed loop systems" when operated and functioning properly. As with all facilities systems, operator error and malfunctions occur. All OWS overflow into MCB CPEN sanitary sewer system making them all FOG "hot-spots". BO 11345.1 requires the following OWS Operations and Maintenance Schedule:

1. Ensure that equipment washrack drains and sediment basins are free of trash and debris.
2. Ensure that all OWS and sediment basin manway covers are accessible and that bolts can be removed for access, inspection, and cleaning.
3. Ensure weekly inspections of OWSs and sediment basins are performed and documented in a bound logbook. The inspections will be conducted in the following manner:
  - a. Using a SludgeJudge™ or similar device, measure and record the oil and sediment levels in each compartment of the OWS and sediment basin. Some facilities aboard MCB CampPen may not have sediment basins.
  - b. Record the results of the measurements for each OWS compartment and sediment basin in a bound logbook. This logbook shall be available for review at all times.
4. If there is an accumulation of six or more inches of sediment or three or more inches of oil in any OWS compartment or sediment basin, the unit Hazardous Waste Manager will contact the ES Waste Minimization Manager at (760) 725-1963 to request that the OWS be cleaned. The request must include the location and size of the OWS, the number of inches of oil and water observed, and the level of sediment observed in each OWS compartment and sediment basin.

#### G) FOG Source Control Measures for "Hot-Spots"

MCB CPEN's source control measures for commercial food service facilities and military dining halls, begins with Base Order 11345.2 which directs the following "Proper FOG Handling Techniques":

1. The intentional release, disposal, or introduction of FOG into the wastewater system is prohibited aboard MCB CPEN. Under no conditions should FOG, or FOG components, be poured, scraped, or otherwise disposed of in sinks, toilets, or any other wastewater system constituent.
2. The best way to manage FOG is to keep it out of the sewer system. All fryer oil should be collected and managed appropriately. FOG under fryer baskets should be soaked up with food grade paper and disposable towels. Cloth towels should not be used as grease will enter the wastewater system when the towel is washed.
3. A large portion of the FOG in the wastewater system originates from dishwashing and clean-up activities at food preparation facilities. The majority of this FOG comes from the pot sink. All FOG should be scraped off all cooking supplies and equipment, including cookware, utensils, dishes, and other serving ware, and disposed of in the proper container, such as a rendering

tank or trash can. FOG collection containers are typically supplied by the disposal contractor and consist of a 55-gallon container with a clamp-on type cover. Do not dispose of scrapings in the sink, toilet, floor drain, or any other component of the wastewater system.

As an additional source control measure, Biological agents and/or enzymes are added to grease traps to increase their efficiency. This process, called bioaugmentation, is sensitive to chemical changes in the wastewater system. While the system can handle small, diluted amounts of detergents and cleaning products (such as bleach, pine oil, etc.), certain chemicals are known to disrupt the bioaugmentation system. WRD must approve all detergents and cleaning products that are ultimately discharged to the wastewater system. Grease traps and bioaugmentation plans are based on estimates of the peak and average daily water flow and FOG concentrations. Unusually high water flows and FOG concentrations associated with hood cleaning and special events cannot be properly processed by the system. Therefore, FOG cleaning events involving large water use such as hood cleaning require notification of supporting contractors/WRD to allow appropriate dosage of biological agents and/or enzymes in the system.

MCB CPEN's source control measures for Oil Water Separators (OWS) begin with Base Order 11345.1 which directs the following:

1. Directs each Command, unit or activity that operates and maintains a washrack to designate an Environmental Compliance Coordinator (ECC) with the responsibility of coordinating the operations and maintenance of each OWS and its associated equipment.
2. Ensure that personnel assigned with ECC and/or OWS responsibilities have completed the ECC Course and the Oil Water Separator Course.
3. Prohibit the following improper use of equipment washracks:
  - a. Use of soaps, detergents, cleansers, degreasers, or solvents.
  - b. Parking of vehicles, storage of equipment, or materials on the equipment washrack for any purpose other than washing.
  - c. Disposal of wastes such as oils, radiator fluids, solvents, and paint.
  - d. Performing vehicle or equipment maintenance on the equipment washrack.
  - e. Flushing and/or washing of fuel tanks, SIXCONs, jerry cans, and similar containers.
4. Provide the following assistance before and after cleaning:
  - a. Prior to cleaning, ensure that all vehicles and equipment are removed from the equipment washrack area, all OWS and sediment basin manway covers are accessible, and that bolts can be removed.
  - b. After the contractor has cleaned the OWS, record the date of cleaning in the logbook. Obtain a copy of the DD 1348-1 Form (manifest) from the ES Waste Minimization Manager for the oil and sediment removed from the OWS.
5. Immediately report any OWS malfunction to the ES Waste Minimization Manager.

## Section 8: System Evaluation and Capacity Assurance Plan

Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347
<i>The Collections system agency shall prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:</i>
A) Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;
B) Design Criteria: Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and
C) Capacity Enhancement Measures: The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.
D) Schedule: The Collections system agency shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a)-(c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements.

### A) Evaluation:

MCB CPEN WRD does not experience overflow events caused by peak flow or hydraulic deficiencies. From 2008-2010, a series of projects designed to upgrade and increase the capacity of MCB CPEN’s wastewater systems based on the Congressional/DOD initiative known as “Grow the Force” (significantly growing the size and capacity of the US Marine Corps) were developed, validated and funded. These Military Construction (MILCON) and Centrally Managed (Marine Corps) projects began award and execution beginning in 2011 and continue through the time of the development of this SSMP (2019). The “Grow the Force” initiative was subsequently abandoned in 2013-14 and has the newest initiatives seeking to reduce the size of the US Marine Corps and its facilities. Thus, MCB CPEN facilities have an excess of capacity versus hydraulic deficiencies.

<b>Design</b>	
Design Avg Daily Flow	7.5 MGD
Design Peak Hourly Flow	25 MGD
<b>Actual</b>	
Current Average Daily Flow	2.2 MGD
Current Peak Hourly Flow	3.5 MGD
Current Peak Hourly Wet Weather Flow	4.1 MGD

**B) Design Criteria:**

Design criteria for MCB CPEN wastewater systems do exist and are not deficient. Wastewater system design criteria address required sizing and/or upgrading of all system components to ensure the hydraulic capacity of the wastewater system supports all new facilities and/or repair and improvements to existing facilities. These design criteria are contained in the Camp Pendleton Requirements (CPR) documents contained within all awarded contracts and based on the Unified Facilities Criteria (UFC), the Uniform Plumbing Code and/or the California Plumbing Code as applicable.

**C) Capacity Enhancement Measures:**

While enhancing capacity is not an issue for MCB CPEN, capacity maintenance issues are identified during sanitary sewer maintenance and cleaning activities. MCB CPEN contracts a Condition Assessment of its wastewater systems annually. When the condition assessment identifies the need to repair or replace a system component or line, a project is developed to accomplish the repair and/or replacement.

**D) Schedule:**

As a federal entity, MCB CPEN Capital Improvements are funded by Congressional Appropriations versus utility rate payers, State grants and bond funding mechanisms utilized by a California Special District or City. This fact results in much less flexibility and much less local decision making capability. Project schedules are directly determined by the dollar values and defining characteristics of the project which put them into 1 of 3 categories. The more local control of project funding the less time it takes to execute the repair or replacement.

Category	Funding Limits	Control	Schedule
M1(Repair)/R1(Const)	\$300k/\$100k	Local Installation Commander	Within Fiscal Year
M2(Repair)/R2(Const)	\$7.5M/\$2M	Centrally Managed – HQ USMC	3-5 years (if approved)
MILCON(Repair/Const)	>\$7.5M/>\$2M	Congressional Appropriation	6+ years (if approved)

MCB CPEN WRD continuously develops, validates and executes a portfolio of M1/R1, M2/R2 and MILCON projects to maintain and enhance the capacity and capability of its wastewater systems. An updated list of ongoing projects is available on request. POC: Dr. John Simpson, PE (john.o.simpson@usmc.mil)

## Section 9: Monitoring, Measurement, and Program Modification

<b>Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347</b>
<i>The Discharger shall:</i>
A) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;
B) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
C) Assess the success of the preventative maintenance program;
D) Update program elements, as appropriate, based on monitoring or performance evaluations; and
E) Identify and illustrate SSO trends, including: frequency, location, and volume.

### A) Maintain Relevant Information:

MCB CPEN has maintained a spreadsheet tracking the following SSO since 1994:

- Spill Location (latitude/longitude coordinates)
- Date and Time
- Cause
- Volume Spilled
- Volume Recovered
- Mitigation Actions

This data is used to analyze trends that are used to identify “hot-spots” and recurring failures and to develop measure of program effectiveness.

### B) Monitor Implementation and Effectiveness:

As stated in Section 1, the PRIMARY goals of MCB Camp Pendleton’s Sewer System Management Program are:

- 1.Prevent SSOs.
- 2.Properly manage, operate, and maintain all portions of the MCB’s Collections System.
- 3.Ensure adequate sewer capacity to convey the peak wastewater flows.
- 4.Minimize the frequency of any SSO’s that do happen.
- 5.Mitigate the impacts associated with any SSO.

The accomplishment of these goals requires the integration of all aspects of the SSMP into a comprehensive “living” management program. To evaluate the effectiveness of our management efforts, MCB CPEN WRD utilizes the data above with industry standard Annual Performance Indicators to develop requirements based risk portfolios and to prioritize operations, maintenance and management activities according to funding and personnel limitations.

**Annual Performance Indicators Used:**

- Total number of SSOs per year, including the previous 3-5 years
- Number of SSOs by cause (e.g., roots, grease or FOG-related blockage, debris, line failure, capacity deficiency, storm flow exceeding design, lift station failure, or other)
- Total volume of SSOs and volume contained and returned to the system
- Number and percentage of SSOs that reached surface water
- Total volume and percentage of SSO volume that reached surface water
- Footage of main lines and percentage of system cleaned annually
- Footage of main lines and percentage of system inspected by CCTV or video annually

Based on these Annual Performance Indicators, WRD has developed the following Implementation Metrics:

- Clean and condition assess all gravity sewer mains and sewer manholes once every four years.
- Structurally condition assess all gravity sewers within a 10- year period using Closed Circuit Television (CCTV).
- Condition assess all sewer manholes (SMHs) once every four years.
- Inspect and perform preventative maintenance on all sewer lift stations (SLSs) semiannually.
- Perform monthly inspections of air relief valves.

**C) Assess PM Program**

The success of the Preventive Maintenance (PM) Program will be demonstrated by a reduction (or maintained low level) of non-force majeure spills and by the results of the annual CCTV condition assessment.

**D) Update SSMP Elements Based on Performance Indicators**

The following table is utilized to evaluate and track the performance of WRD’s SSMP elements:

SSMP Element	Purpose of Element	Performance Indicator
Goals	Establish WRD Priorities and focus	Annual review of goals based upon results of performance evaluations.
Organization	Document WRD organization, staff and chain of command/communication for SSO response	Review of Organization Chart and all contact information, making any changes identified
Legal Authority	Ensure WRD has sufficient legal authority to properly maintain and protect the integrity of the wastewater system	Annual review of codes and/or ordinances for revisions, including schedule for identified updates.
O&M Program	Minimize blockages and SSOs by properly operating and maintaining the system	<ul style="list-style-type: none"> <li>• Total number and volume of SSOs</li> </ul>

		<ul style="list-style-type: none"> <li>• Number of repeat SSOs (from same location as any previous SSO)</li> <li>• Number of main line SSOs</li> <li>• Total volume spilled</li> <li>• Total amount recovered</li> <li>• Total amount estimated to reach surface waters</li> <li>• Percent reaching surface water</li> <li>• Number of pipe failures</li> <li>• Total length of pipe CCTV'ed</li> <li>• Total length of pipe hydrocleaned</li> <li>• Total length of pipe repaired or replaced</li> </ul>
Design and Performance Stds	Ensure new facilities are properly designed and constructed	Annual review of new technologies and materials for collection systems assets.
OERP	Provide timely and effective response to SSO emergencies and comply with regulatory reporting requirements	<ul style="list-style-type: none"> <li>• Average response time from call to arrival</li> <li>• Average response time from arrival to SSO stoppage and cleanup</li> <li>• Percent of total SSO volume contained or returned to sewer</li> </ul>
FOG Control	Minimize blockages and overflows due to FOG	<ul style="list-style-type: none"> <li>• Number of blockages due to FOG</li> <li>• Number of SSOs due to FOG</li> <li>• Number of FOG-producing facilities inspected</li> </ul>
System Eval and Capacity Assessment	Ensure any new facility or facility modification can be supported by existing capacity or the project includes necessary capacity enhancements	Quarterly review list of M1/R1, M2/R2 and MILCON facilities projects to ensure system capacity has been evaluated for each.
Monitoring, Measurement and Program Mod	Evaluate effectiveness of SSMP, keep SSMP up-to-date, and identify necessary changes to SSMP Elements	<ul style="list-style-type: none"> <li>• Prepare and update performance results in Elements 4, 6 &amp; 7.</li> <li>• Review and update callout forms as needed. Conduct annual review of CIWQS data.</li> </ul>
Program Audits	Formally identify SSMP effectiveness, limitations, and necessary changes every 2 years	Date of completion of last annual audit



Communication Plan	Communicate with the public and satellite agencies.	Place audit on WRD webpage.
--------------------	---	-----------------------------

E) Identify and illustrate SSO trends, including: frequency, location, and volume

Spreadsheets and graphs available upon request. POC: Dr. John Simpson, PE ([john.o.simpson@usmc.mil](mailto:john.o.simpson@usmc.mil)) or Joel Heywood, PE ([joel.heywood@usmc.mil](mailto:joel.heywood@usmc.mil))

## Section 10: SSMP Program Audits

### Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347

*The Discharger shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Discharger's compliance with the SSMP requirements, including identification of any deficiencies in the SSMP and steps to correct them.*

Beginning in 2019, MCB CPEN WRD Director, Assistant Director for Operations and Maintenance, and Wastewater Branch Supervisors are responsible for conducting the internal audit of the SSMP. This audit will be conducted every 2-years and will focus on evaluating the effectiveness of WRD's SSMP and compliance with the requirements established by the California State Water Resources Control Board for the plan. This audit will include identifying any deficiencies, steps for corrective action and timeline for completion of those steps.

The 2-year audit will include the following elements:

- Section by section review of the entire SSMP.
- Completion of any needed or recommended updates and revisions, including attachments.
- Distribution of changes to all WRD SSMP/Spill Response Reporting Instructions Workbook binders.
- Review and evaluation of the 2 most recent Annual Year-End Summaries of SSOs.
- Review and evaluation of the 2 most recent Annual Maintenance Reports.
- Implement any changes required as a result of the review and evaluation of the above listed reports.
- A brief written summary of any notable Audit results and findings, including comments on the effectiveness of the SSMP, WRD's compliance with SSMP requirements, and identification of any deficiencies and the recommended corrective steps.

A copy of the audit report will also be kept in each SSMP binder at the back of Section 10.

## Section 11: Communications Program

### Attachment H: Sanitary Sewer System Requirements – NPDES NO. CA0109347

*The Discharger shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the collections system agency as the program is developed and implemented. The Discharger shall also create a plan of communication with systems that are tributary and/or satellite to the collections system agency's sanitary sewer system.*

WRD has its own webpage within Camp Pendleton's website. The will contain a link to download this SSMP 2019. WRD coordinates with Camp Pendleton's Office of Strategic Communications to update the WRD webpage and to communicate updates to the WRD webpage via the main Camp Pendleton Website, Camp Pendleton's Facebook page and Twitter.

WRD will continue to communicate with military units and commercial businesses via email, flyers and direct mailings. When appropriate, the WRD Director attends "town-halls" hosted by the MCIWest/MCB Camp Pendleton Commanding General as his subject matter expert and Legally Responsible Official for the installation's wastewater and water systems.

The WRD Director is the installation's main conduit to communicating with external agencies and organizations regarding water resources matters. His duty and responsibilities include being a member of numerous external groups, boards and steering committees.

- Member of San Diego County Water Authority Board of Directors
- Member of the San Diego County Water Authority Member Agencies Managers Group
- Member of the San Diego County Integrated Regional Water Management Plan Advisory Committee
- Member of the Santa Margarita River Watermaster Executive Steering Committee
- Member of the Santa Margarita River Watermaster Technical Advisory Committee
- Member of the DOD Water Managers Working Group
- Member of the NOAA Southwest Drought Taskforce
- Member of the Metropolitan Water District of Southern California Water Dialogue Working Group
- Member of the Western Governor's Regional Panel working group

The WRD Director and staff also participate in numerous professional associations.

- America Water Works Association
- Association of California Water Agencies
- WaterUse
- Cal Desal
- American Society of Civil Engineers
- America Society of Military Engineers

Appendix A:



UNITED STATES MARINE CORPS  
 MARINE CORPS INSTALLATIONS WEST-MARINE CORPS BASE  
 BOX 555010  
 CAMP PENDLETON, CALIFORNIA 92055-5010

5402  
 G-F  
 27 Jul 17

From: Assistant Chief of Staff, G-F (Facilities)  
 To: John Simpson

Subj: AUTHORITY TO SIGN "BY DIRECTION"

Ref: (a) SECNAV M-5216.5  
 (b) MCIWEST-MCB CAMPENO 5000.3

1. Pursuant to the provisions of references (a) and (b), you are delegated the authority to sign "By direction" of the Commanding General in connection with your duties as the Marine Corps Installations West-Marine Corps Base, Camp Pendleton Water Resources Division Director. The scope of this authorization includes (all routine matters involving water, well productions, stream flows, and reclaimed water use, etc.).

2. Your signature on correspondence constitutes complete concurrence of the Commanding General; therefore, you are enjoined to render only the finest judgment in each case. You will be guided in this respect by the references that pertain to the type of correspondence to be signed. Additionally, correspondence you sign should reflect accurately the dignity, style, and the tone of the Commanding General. When signing correspondence "By direction" of non-routine/non-recurring, you are directed to upload a copy to: <https://www.mciwest.usmc.mil/inst/mciwest/default.aspx>.

3. You are not authorized to sign "By direction" on correspondence that establishes new policy or modifies existing policy, or that involves congressional/special interest matters, or that is required by law or regulation to be signed by the Commanding General.

4. This authorization is valid while you are assigned to the duties specified in paragraph (1) and is automatically revoked upon your reassignment.

5. An example of your signature will be affixed to this authorization letter.

  
 R. C. RANG

Copy to:  
 SSEC  
 Adjutant  
 Files

FOR OFFICIAL USE ONLY

Appendix B: Spill Response and Reporting Instructions Handbook

# SPILL RESPONSE AND REPORTING INSTRUCTIONS



**NOTIFICATION:**

During Work Hours (0700-1600) – Unity Room Operator notifies Wastewater Branch Supervisor and/or Work Leader.

After 1600 – Unity Room Operator notifies Wastewater Supervisor and/or Work Leader per “ON-CALL” Calendar.

If “ON-CALL” Supervisor/Work Leader cannot be contacted, the following personnel will be contacted in the order shown below:

1. Tony Velletto (760-212-4911) or (951-575-5998)
2. Dwayne Iriarte (254-423-2596)
3. Mike Grimaud (760-805-6747) or (760-500-5538)
4. Joel Heywood (858-717-0644)
5. John Simpson (760-846-2273)

**WRD Wastewater Spill Response and Reporting Duties and Responsibilities:**

1. Wastewater Work Leader or Supervisor assumes responsibility of Incident Commander
2. Incident Commander dispatches closest booster along with emergency team (Pumper truck / Mechanic / Electrician) to Survey emergency
3. First team member at the scene evaluates the situation and communicates with the Incident Commander
  - Determines cause of spill emergency
  - Evaluates the situation, determines if spill reaches surface waters, or channel to surface waters and reports information to Incident Commander
  - Commences preliminary steps to mitigate the spill
  - Completes **Quick Report Form (shown below)**
4. Incident Commander execute plan of action calling for additional personnel and equipment as required **(see detailed plans of action below developed for specific locations of spill)**
  - Anytime require road closure or traffic control on main thoroughfare (over 35 mph) WRD WW calls PMO at 760-763-2077/2076
  - If on roadway in housing, or under 35 mph WRD WW performs traffic control “in- house”
  - Fire department is called for confined space entries, paramedics if anyone is injured: (760-725-4321)
5. Correct cause of sewer spill (e.g., blockage, pipe break, pump station failure, or power failure)
6. Commence spill recovery and clean-up:
  - Cleansing of site using fresh water wash down and removal of debris
  - Ensure that wash down water does not reach waters, dry riverbed, storm drain, etc.
  - If necessary, disinfection of site using lime
  - Determination of size of spill using methodology shown below
  - Posting of sign, as required, if potential for public contact exists
7. Incident Commander completes **Sewer Overflow Report Form (shown below)** and submits to the Emergency Coordinator, within timeframe determined by Category of Spill
8. WRD leadership and staff consult **Spill Reporting Instructions** below and contact emergency and regulatory personnel via phone, email and CIWQS data base as directed for each Category of Spill

**MCBCP SEWER SYSTEM OVERFLOW, PERIOD OF NON-COMPLIANCE OR IN-PLANT OVERFLOW - QUICK REPORT**

USE FOR IMMEDIATE VERBAL NOTIFICATION FOR OVERFLOW  
if UNKNOWN at the time, then please write unknown or N/A

To satisfy notification requirements for each applicable SSO, the enrollee shall provide the information requested by CalEMA before receiving a control number.	
1. NAME/PHONE of person notifying CalEMA (800) 852-7550 and get incident control number	
2. Estimated SSO volume discharged/recovered (gallons)	
3. If ongoing, estimated SSO discharged rate (gallons per minutes)	
4. SSO Incident Description: a) Brief narrative.  b) Date/Time enrollee became aware of the SSO.  c) Stop date/time of SSO  d) SSO cause (if Known)	
5. Has SSO has been contained? Method of containment?	
6. Final destination of overflow:	
7. Is surface water impacted? Name, if applicable.	
8. Indication of whether a drinking water supply is or may be impacted by the SSO.	
9. Any other known SSO impacts.	
10. SSO incident location:	

\_\_\_\_\_  
(PRINT) Name of on scene POC

\_\_\_\_\_  
Contact Info

### Spill Categories and Definitions

#### **CATEGORY 1**

Discharges of untreated or partially treated wastewater of **any volume** resulting from an enrollee's sanitary sewer system failure or flow condition that:

- Reach surface water and/or reach a drainage channel tributary to a surface water; or
- Reach 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 from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).

#### **CATEGORY 2**

Discharges of untreated or partially treated wastewater of **1,000 gallons or greater** resulting from an enrollee's sanitary sewer system failure or flow condition that **do not** reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.

#### **CATEGORY 3**

All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.

#### **NOTIFICATION**

**Within two hours** of becoming aware of any Category 1 SSO **≥1,000 gallons** discharged to surface water or spilled in a location where it probably will be discharged to surface water, notify the California Office of Emergency Services (CalEMA (800) 852-7550) and obtain a notification control number.



### Sample Detailed Location-Specific Spill Response Actions

#### Lift Station and Force Main Emergency By-Pass Pumping Procedures

#### **PROBLEM: Sewage Force-Main Break (residential neighborhood)**

##### EMERGENCY PROCEDURES:

- Dispatch a sewer crew to the site to assess the immediate danger to the environment and to determine who and what might be affected.
- Refer to the sewer maps for location of sewers and determine the routing of the force main before responding to the call.
- Request additional manpower and equipment as needed based on initial damage assessment (e.g. excavating crew, bypass pumping equipment, Etc.)
- Bypass pumping from the pump station wet well to the force main discharge manhole may be required. If necessary, set up bypass pumping equipment.
- Call in additional crews to set up flotation booms across streams, brooks, sandbagging, etc., as necessary. Unless special conditions exist, bypassing the broken force main is a priority before containing the bypass.
- Gather and remove sewage related debris and organic matter from the affected area.
- If the waste water is in the streets/roads (public or private), then contain the waste water as best as possible with sand bags or other industry accepted alternatives to minimize any impact to public health or the environment.
- Sandbag nearby catch basin inlets or storm drains to prevent the waste water from entering the drainage system and causing potential contamination to the tributary receiving waters.
- If ponding should occur on the street or easement (public or private), cordon off the area.
- Remove as much of the sewage as possible.
- Disinfect the ponding areas with an industry standard disinfectant and post with appropriate signage.
- If the waste water should jeopardize a playground or park, cordon off the entire area. Close the park to the public until the issue has been remedied to the satisfaction of the local and state boards of health and the local school superintendent.
- After the bypass pumping equipment is at the site and in place, lock-out and tag-out (LOTO) the pumps in the pumping station.
- Draw down the wet well as much as possible and maintain low level.
- Drain the force-main by first closing down the gate valve on the upstream side of the discharge check valve in the pumping station.
- Open the check valve by hand and secure it in place.
- Slowly bleed the force-main back into the wet well by slowly opening the gate valve on the discharge side of the pump, but only to the point where the force-main stops leaking and there is enough room to make the repair. Constant communication must take place between the crew located at the break and the crew located at the pump station.
- Close the gate valve and return the check valve to its normal operating position and then fully open the gate valve.
- Repair force main break as per policy.
- After the repair is complete, remove LOTO and return the pumps to normal operating position.

- Run the pump in the hand position to fill the force-main. Once completed, observe several pumping cycles before completely backfilling the excavation.
- Upon confirmation of adequacy of the repair, backfill the excavation (if necessary) and restore surface conditions to match existing conditions.
- While the crew is restoring the excavation, the crew leader should conduct a preliminary assessment of damage to private and public property. The crew leader should take appropriate photographs and video footage; if possible, of the outdoor area of the sewer over flow and impacted area to thoroughly document the nature and extent of the impacts.
- Make out a report indicating; the time of the call, description of the problem, how the repair was made, personnel present and equipment used.
- If sewage bypassed the collection system, notify Environmental security and complete the appropriate spill report form.

#### Minimum Specialized Equipment

- Standard disinfectants
- Safety harness and lifeline if applicable
- Tripod and Harness
- Portable pumps
- Safety cones/barricades
- Gas meter-for oxygen deficient, explosive or toxic gases
- Confined space entry tri-pod and associated equipment
- Truck with hoist
- Vactor Truck
- Power saw (circular)
- Pipe cutter (hydraulic)
- Caution tape
- Sediment trap
- Flotation booms if necessary
- Self-Contained Breathing Apparatus (SCBA)

Sewage Overflow Report Long Form  
Marine Corps Base Camp Pendleton

**Spill\Overflow Findings**

<b>First person on the scene information:</b>		<b>Spill\Overflow Location</b>	
Full Name:		Street Address:	
Date:	Building #:	Actual Structure:	
Time:	Structure description:		
Telephone Number:			

Date/Time UNITY received emergency call:	Date/Time Emergency Response Crew arrived on scene
--	--

Date Spill Started:	Est. Time Spill Started:	Est. Spill Flow Rate (gallons/min)	Est. Spill Volume/Release (gallons)
Date Spill Ended:	Time Spill Ended:	Est. Spill Volume Recovered (gallons)	

**Detailed Cause of Spill/Overflow**

Sewage Overflow Report Long Form  
Marine Corps Base Camp Pendleton

**Cause of Spill\Overflow (check all the apply)**

<input type="checkbox"/> Blockage	<input type="checkbox"/> Infiltration	<input type="checkbox"/> Rocks	<input type="checkbox"/> Roots	<input type="checkbox"/> Construction	<input type="checkbox"/> Debris	<input type="checkbox"/> Grease	<input type="checkbox"/> Vandalism	<input type="checkbox"/> Line Break
<input type="checkbox"/> Flood Damage	<input type="checkbox"/> Manhole Failure	<input type="checkbox"/> Power Failure	<input type="checkbox"/> Pump Station Failure	<input type="checkbox"/> Other				

**Root Issue of Spill\Overflow (check all that apply)**

<input type="checkbox"/> Blockage	<input type="checkbox"/> Root Control Applied	<input type="checkbox"/> Red Flag Notification	<input type="checkbox"/> Tree Removal	<input type="checkbox"/> If Tree Removal, then MAXIMO No.	<input type="checkbox"/> Other
-----------------------------------	---	--	---------------------------------------	---	--------------------------------

**Path of Spill\Overflow (please circle)**

Did spill reach surface waters?	Yes or No <input type="checkbox"/> <input type="checkbox"/>	Did spill enter storm water?	Yes or No <input type="checkbox"/> <input type="checkbox"/>
If yes, identify initial receiving water			
Secondary receiving water			
Did influent pond?	Yes or No <input type="checkbox"/> <input type="checkbox"/>	Did effluent percolate?	Yes or No <input type="checkbox"/> <input type="checkbox"/>
Was there measureable precipitation during 72 hours period to the spill\overflow?		Yes or No <input type="checkbox"/> <input type="checkbox"/>	
Spill path and final location:			

**Action and Response to Spill\Overflow**

Method to stop spill:
Method to contain spill:
Method to disinfect spill:

Sewage Overflow Report Long Form  
Marine Corps Base Camp Pendleton

No. of signs posted at spill site?		No. of days signs posted at spill site?	
Surface water quarantined	Yes or No <input type="checkbox"/> <input type="checkbox"/>	No. of signs posted at quarantined site?	
If signs is posted, location			

Description of corrective actions taken\planned:
Description of preventative actions take\planned:

**Report Processing Spill\Overflow**

Name & Signature of responsible party		Date/Time
Longitude:	Latitude:	
Additional Remarks:		

OES Notification		RWQCB Notification		DEH Notification	
Oral Report	FAX	Oral Report	FAX	Oral Report	
Yes or No <input type="checkbox"/> <input type="checkbox"/>	Yes or No <input type="checkbox"/> <input type="checkbox"/>	Yes or No <input type="checkbox"/> <input type="checkbox"/>	Yes or No <input type="checkbox"/> <input type="checkbox"/>	Yes or No <input type="checkbox"/> <input type="checkbox"/>	
Date	Time	Date	Time	Date	Time
POC:		POC:		POC:	
Reported by:		Reported by:		Reported by:	

Summary of SSO Regulatory Requirements		
Category 1	Definition	Discharges of untreated or partially treated wastewater of <b>any volume</b> that <b>reaches or will likely reach surface water</b> /drainage channel tributary or that reach a storm drain and are not fully captured.
	Notification	Notify CalEMA immediately - obtain a notification control number. <ul style="list-style-type: none"> <li>• <b>≥1,000 gallons</b>, notify the RWQCB within <b>2 hours</b>.</li> <li>• <b>&lt;1000 gallons</b>, notify the RWQCB within <b>24 hours</b>.</li> </ul> *CalEMA will normally contact San Diego county Dept. of Environmental Health (DEH), if not, notify DEH within RWQCB timeframes.
	Reporting	In CIWQS, submit draft report <b>within 3 business days</b> of becoming aware of the SSO. Certify the report <b>within 15 calendar days</b> of SSO end date.
	Sampling	<b>≥50,000 gallons or greater, water quality sampling must be conducted within 48 hours after initial SSO notification and uploaded to CIWQS. An SSO Technical Report is required to be submitted within 45 days.</b>
Category 2	Definition	Discharges of untreated or partially treated wastewater of <b>≥1,000 gallons</b> that <b>do not reach surface water</b> , drainage channel or municipal storm system.
	Notification	Notify CalEMA – within 24 hours and obtain a notification control number.
	Reporting	In CIWQS, submit draft report <b>within 3 business days</b> of becoming aware of the SSO. Certify the report <b>within 15 calendar days</b> of SSO end date.
Category 3	Definition	All other discharges of untreated or partially treated wastewater resulting from an enrollee’s sanitary sewer system.
	Notification	Notify CalEMA – within 24 hours and obtain a notification control number.
	Reporting	In CIWQS, submit certified report <b>within 30 calendar days</b> of the end of the month in which the SSO occurred.
Private	Definition	Discharges of untreated or partially treated wastewater resulting from blockages or other problems within MCB CPEN Public-Private Venture housing sewer lateral connected to the enrollee’s sewer system.

	Notification	<p>If PLSD <math>\geq</math>1000 gallons, notify RWQCB within 24 hours.</p> <p>If &lt;1000 gallons and did not reach surface water, no notification is required.</p> <p>If &lt;1000 gallons and it did reach surface waters, notify Regional Board within 24 hours.</p>	Same as above
	Reporting	In CIWQS, submit certified report within 30 calendar days of the end of the month in which the SSO occurred.	CIWQS

From the California State Water Resources Control Board *A Guide for Developing and Updating of Sewer System Management Plans (SSMPs)* – Sept 2015

The following methodologies for estimating spill volume are used by MCB CPEN WRD:

**SPILL VOLUME WORKSHEET**

The purpose of this worksheet is to capture the data and method(s) used in estimating the volume of an SSO. Since there are many variables and often unknown values involved, this calculation is just an estimate. Additionally, it is useful to use more than one method, if possible, to validate your estimate.

The following methods and tools are the approved methods in the SOP CS-103 SSO Response. Check all methods and tools that you used:

- Eyeball Estimate Method
- Measured Volume Method
- Duration and Flow Rate Method (Account for diurnal flow pattern for long duration)
- USD SSO Flow Rate Estimating Tool
- Other (explain) i.e.; estimated daily use per capita upstream or meter @ Pump Station.

---



---



---

**Eyeball Estimate Method**- Imagine a bucket(s) or barrel(s) of water tipped over.

Size of bucket(s) or barrel(s)	How many of this Size?	Multiplier	Total Volume Estimated
1 gal. water jug		X 1	
5 gal. bucket		X 5	
32 gal. trash can		X 32	
55 gal drum		X 55	
Total Volume Estimated Using Eyeball Method			



**SSO Volume by Area Estimation Work Sheet**

Page 4

**GEOMETRY**

For the purposes of this work sheet, the unit of measurement will be in feet for formula examples.

Area is two-dimensional - represented in square feet. (Length x Width)

Volume is three-dimensional - represented in cubic feet. (Length x Width x depth) or (Diameter Squared)  $D^2$  x 0.785 x depth.

**A Note about Depth**

Wet Stain on a Concrete Surface - For a stain on concrete, use 0.0026'. This number is 1/32" converted to feet. For a stain on asphalt use 0.0013' (1/64"). These were determined to be a reasonable depth to use on the respective surfaces through a process of trial and error by SPUD staff. A known amount of water (one gallon) was poured onto both asphalt and concrete surfaces. Once the Area was determined as accurately as possible, different depths were used to determine the volume of the wetted footprint until the formula produced a result that (closely) matched the one gallon spilled. 1/32" was the most consistently accurate depth on concrete and 1/64" for asphalt. This process was repeated several times.

Sewage "Ponding" or Contained - Measure actual depth of standing sewage whenever possible. When depth varies, measure several (representative) points, determine the average and use that number in your formula to determine volume.

**Area/Volume Formulas**

Area is two dimensional and is represented as Square Feet (Sq. Ft.)

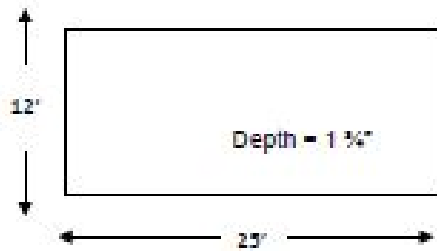
Volume is three dimensional and is represented as Cubic Feet (Cu. Ft.)

One Cubic Foot = 7.48 gallons

SSO Volume by Area Estimation Work Sheet

AREA/VOLUME OF A RECTANGLE OR SQUARE

Formula: Length x Width x Depth = Volume In Cubic Feet



Length (25') x Width (12') x Depth (0.14')

25' x 12' x 0.14' = 42 Cubic Feet.

Now the Volume In Cubic Feet Is known.

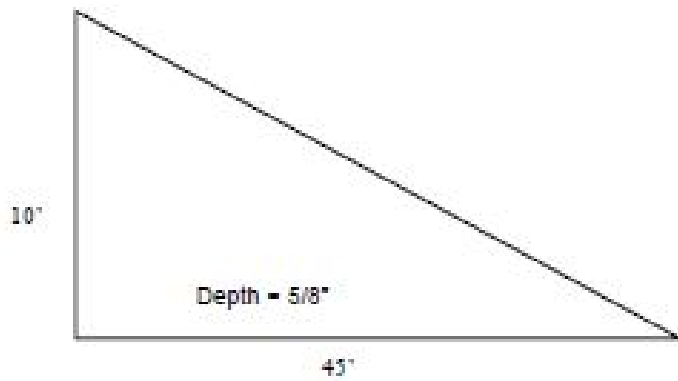
There are 7.48 Gallons In one Cubic Foot

So, 42 Cubic Feet x 7.48 gallons/cubic feet = 314 Gallons

Chart A	
Conversion:	
Inches	to Feet
1/8"	= 0.01'
1/4"	= 0.02'
3/8"	= 0.03'
1/2"	= 0.04'
5/8"	= 0.05'
3/4"	= 0.06'
7/8"	= 0.07'
1"	= 0.08'
2"	= 0.17'
3"	= 0.25'
4"	= 0.33'
5"	= 0.42'
6"	= 0.50'
7"	= 0.58'
8"	= 0.67'
9"	= 0.75'

**AREA/VOLUME OF A RIGHT TRIANGLE**

Base x Height x 0.5 x Depth = Volume In Cubic Feet



Base (45') x Height (10') x 0.5 x Depth (.05') x 7.48 gallons/cubic foot = 84 gallons

For Isosceles Triangles (two sides are equal lengths),

Break it down into two Right Triangles and compute area as you would for the Right Triangle above.

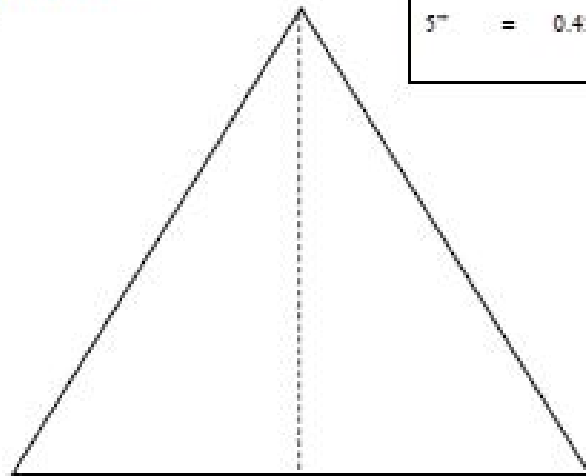


Chart A		
Conversion:		
<u>Inches</u>	to	<u>Feet</u>
1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'

AREA/VOLUME OF A CIRCLE/CYLINDER

$$D^2 \times 0.785 \times d$$

Diameter Squared x 0.785 x Depth = Volume in cubic feet.

Diameter = Any straight line segment that passes through the center of a circle.

For our purposes, it is the measurement across the widest part of a circle.

$D^2 \times 0.785 \times \text{depth} = \text{Volume in cubic feet}$

Example:

$27'' \times 27'' \times 0.785 \times 0.03 = 17.17 \text{ cubic feet}$

$17.17 \text{ cubic feet} \times 7.48 \text{ gallons/cubic feet} = 128 \text{ gallons}$

Chart - A

Conversion:

Inches to Feet

1/8" = 0.01'

1/4" = 0.02'

3/8" = 0.03'

1/2" = 0.04'

5/8" = 0.05'

3/4" = 0.06'

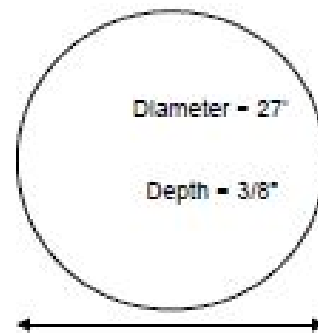
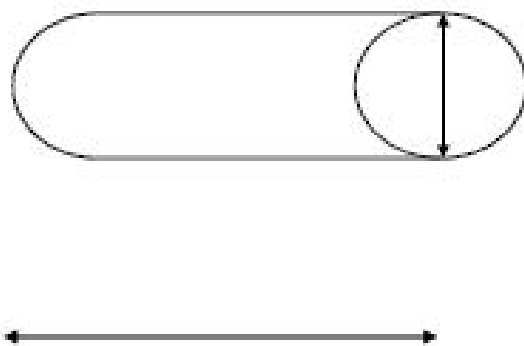
7/8" = 0.07'

1" = 0.08'

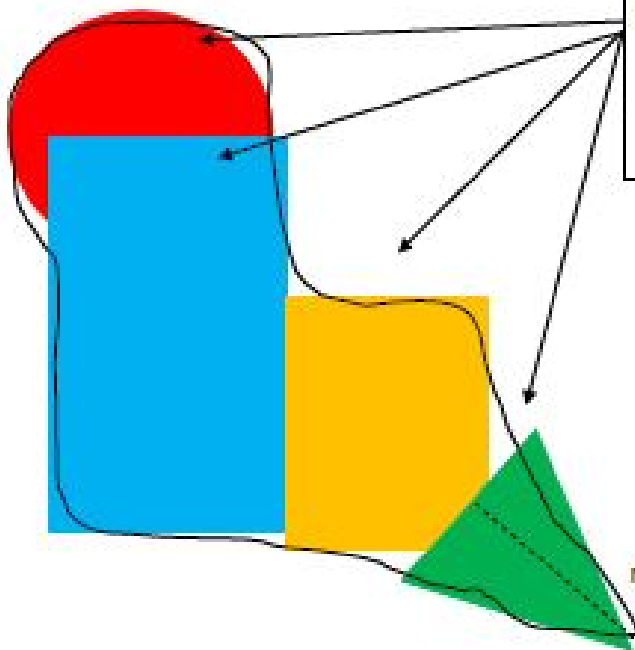
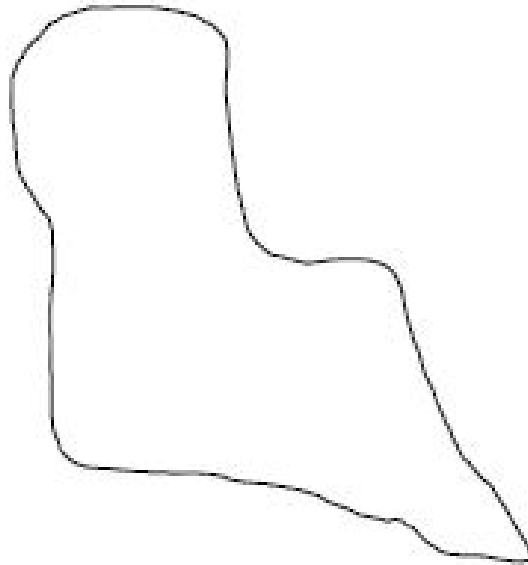
2" = 0.17'

3" = 0.25'

4" = 0.33'

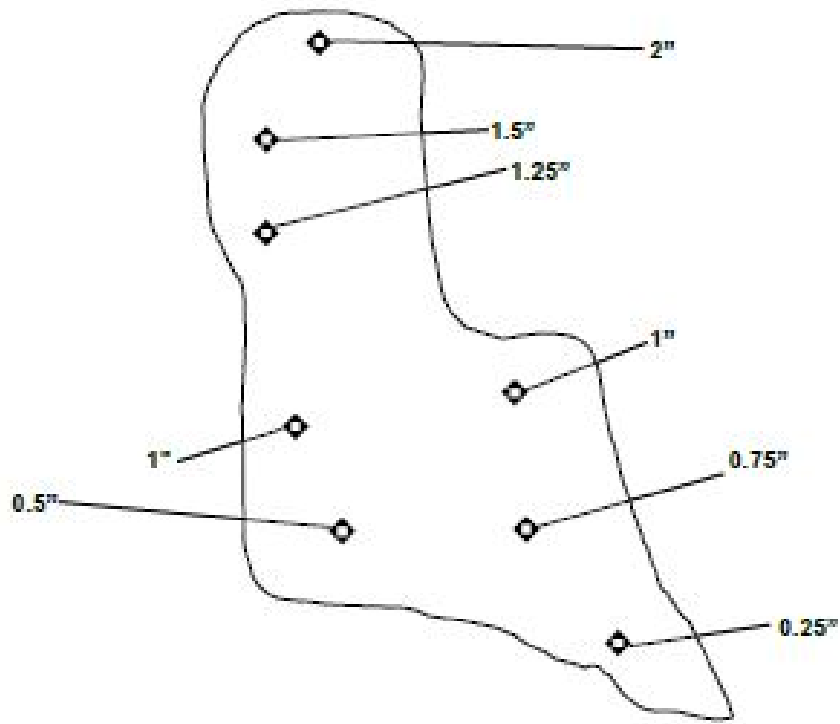


Find the geometric shapes within the shape. If this was the shape of your spill, break it down, as best you can, with the shapes we know.



1. Determine the volumes of each shape.  
*In this example, after the volume of the circle is determined, multiply it by 55% (+/-) so that the overlap area won't be counted twice.*
2. Add all the volumes to determine total spill volume.

If the spill depth is of varying depths, take several measurements at different depths and find the average.



$$2" + 1.5" + 1.25" + 1" + 1" + 0.75" + 0.5" + 0.25" = 8.25"$$

$$8.25" / 8 \text{ measurements} = 1.03"$$

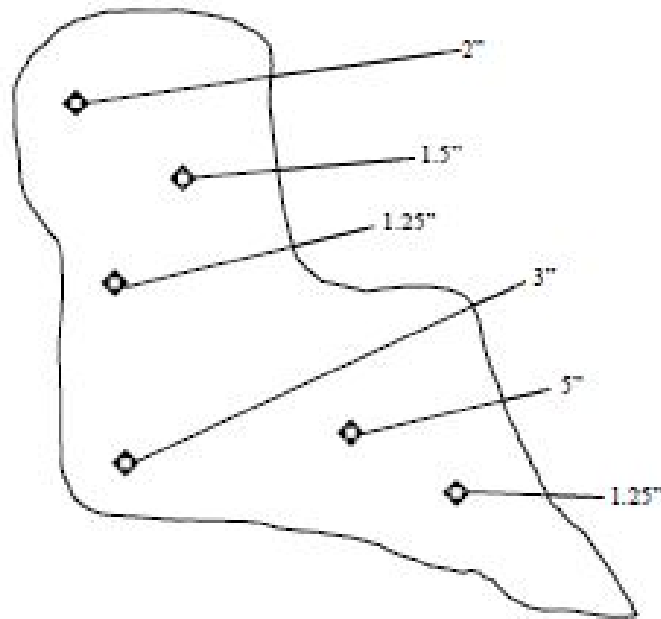
Average Depth = 1.03"

**Step 1**

If the spill affects a dry, unimproved area such as a field or dirt parking lot, determine the Area of the wetted ground in the same manner as you would on a hard surface. Using a round-point shovel, dig down into the soil until you find dry soil. Do this in several locations within the wetted area and measure the depth of the wet soil. Average the measurement/thickness of the wet soil and determine the average depth of the wet soil.

**NOTE:** This can be used in a (Dry) dirt or grassy area that is not regularly irrigated like a field or a dirt parking lot.

Wet weather would make this method ineffective.



**Step 2**

**Take a Test Sample**

$$2" + 1.5" + 1.25" + 3" + 5" + 1.25" = 14.0"$$

$$14.0" / 6 \text{ measurements} = 2.33"$$

$$\text{Average Depth} = 2.33" (0.194')$$

**EXAMPLE:**

If the Area of the spill was determined to be 128 Sq/Ft and the average depth of the wet soil is 2.33 inches:

$$128 \text{ Sq/Ft} \times 0.194' = 24.83 \text{ Cu/Ft}$$

$$24.83 \text{ Cu/Ft} \times 7.48 \text{ Gals/Cu/Ft} = 185.74 \text{ gallons}$$

$$185.74 \times 18\% = 33 \text{ Gallons (water in soil)}$$