

MURPHYS SANITARY DISTRICT



SEWER SYSTEM MANAGEMENT PLAN (SSMP)

2023

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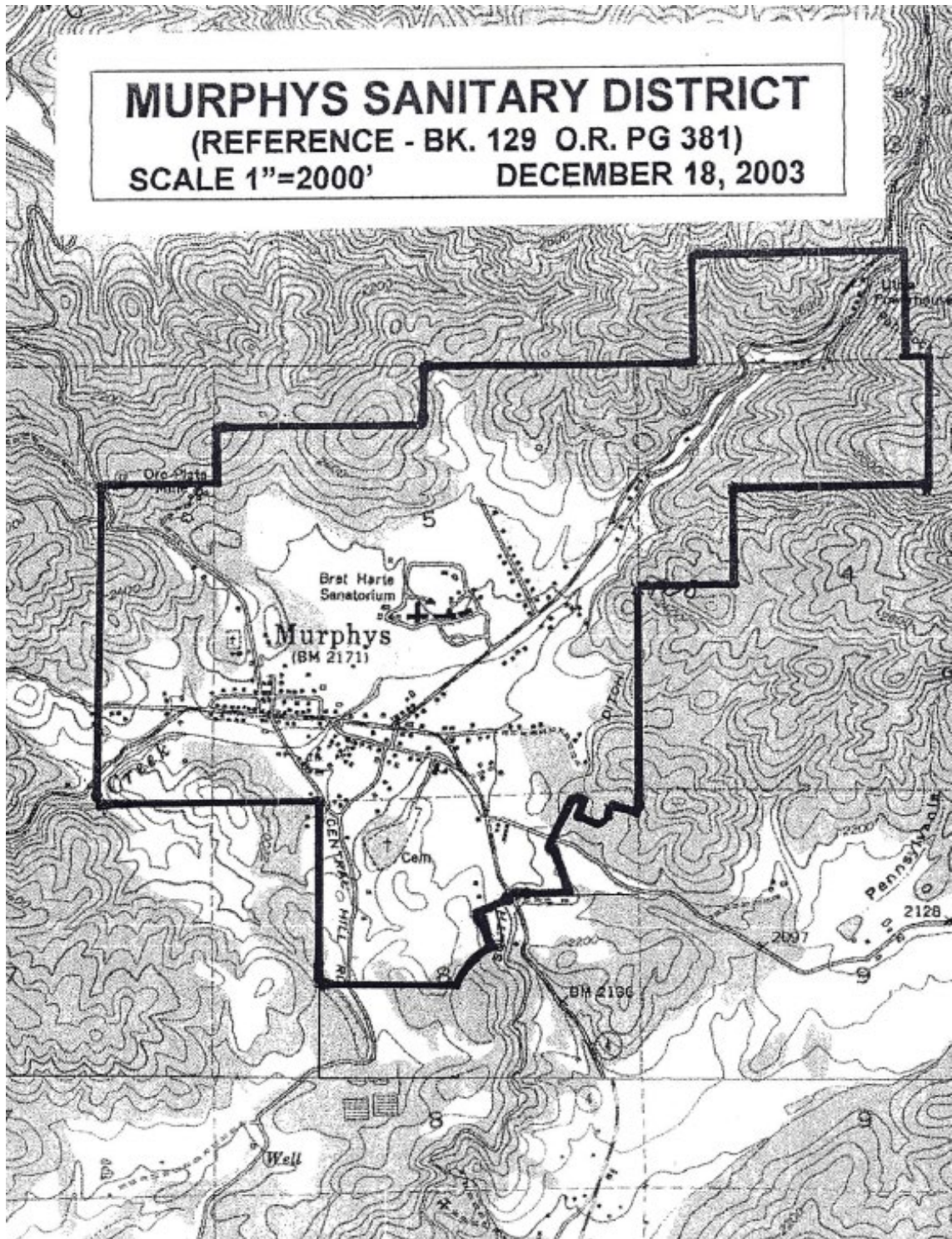
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LIST OF ACRONYMS AND ABBREVIATIONS

APCD	Air Pollution Control District
BMP	Best Management Practices
Cal OES	California Governor's Office of Emergency Services CCSD
CCTV	Closed Circuit Television
CDF	California Department of Forestry
CDFW	California Department of Fish and Wildlife
CIP	Capital Improvement Plan
CIWQS	California Integrated Water Quality System
CRWA	California Rural Water Association
CWEA	California Water Environment Association
SLOEH	San Luis Obispo County Environmental Health Department
FOG	Fats, Oils and Grease
FSE	Food Services Establishment
GWDR	General Waste Discharge Requirement
HMA	High Maintenance Area
I/I	Inflow & Infiltration
LRO	Legally Responsible Official
MRP	Monitoring and Reporting Plan
MGD	Million Gallons per Day
NPDES	National Pollution Discharge Elimination System
OERP	Overflow Emergency Response Plan
OES	Office of Emergency Services (county)
O&M	Operations and Maintenance
PM	Preventative Maintenance
RWQCB	Regional Water Quality Control Board SCADA Supervisory Control and Data Acquisition
SCSMP	Sewer Collections System Management Plan SSMP Sewer System Management Plan
SSOR	Sewer System Overflow Report
SSO	Sanitary Sewer Overflow
SWMP	Storm Water Management Plan
SWRCB	State Water Resource Control Board
UPC	Uniform Plumbing Code
WDR	Waste Discharge Requirement
WWTP	Wastewater Treatment Plant

MURPHYS SANITARY DISTRICT
(REFERENCE - BK. 129 O.R. PG 381)
SCALE 1"=2000' DECEMBER 18, 2003



SERVICE AREA

Murphys Sanitary District

Sewer System Management Plan

INTRODUCTION

Murphys Sanitary District, (MSD) provides sewer collection and treatment services to residential and commercial businesses within the MSD boundaries. Murphys Sanitary District was organized in 1959 under Division VI of the California Health and Safety Code. The district covers an area of approximately 4 square miles and has a population of approximately 2,200 people. The district maintains 63,000 linear feet, (11.9 miles) of sewer collection lines. These range from the largest diameter of 10 inches down to 4 inches, with the most common size being 6 inch. An average dry weather flow of 135,000 gallons per day of raw wastewater is treated to an advanced secondary level with a combination pond and filtration Wastewater Treatment Plant. Treated effluent is utilized for irrigation at the neighboring Hay Station Ranch vineyards.

The Statewide General Waste Discharge Requirements for Wastewater Collection Agencies, State Water Resources Control Board Order No. 2006-03 dated May 2, 2006 (General WDR) requires operators of wastewater collection systems with more than one mile of sanitary sewer to comply with its requirements. Murphys Sanitary District (MSD) operates a wastewater collection system with more than 11 miles of sanitary sewer, and therefore must meet the requirements of the General WDR. This Sewer System Management Plan (SSMP) is being prepared to incorporate the mandatory elements of an SSMP as described in Section D. 13 of the General WDR.

1. Goals

It is a primary function of the Murphys Sanitary District to provide effective and efficient wastewater treatment and collection for its customers while protecting the public's health and the environment to the greatest degree possible. This responsibility includes ensuring the collection system is protected and properly utilized, preventing sanitary sewer overflows (SSO's), properly responding to any SSOs should they occur, and may include restricting or prohibiting the volume, type, or concentration of wastes added to the system.

MSD has developed several goals to provide focus for District staff to continue good work and implement improvements in collection system management when necessary. The District's SSMP goals are as follows:

MSD SSMP Goals:

1. Continue with the proactive approach to minimize the likelihood of an SSO. In the event of an SSO the goal of operations staff is to perform an analysis determining if any changes to the current process/management of the collection system is warranted.
2. Convey wastewater to the WWTP with a minimum of Infiltration and Inflow in the wastewater collection system.

3. Prevent public health hazards through proper regulatory notification, emergency response, SSO containment, and SSO clean up procedures.
4. Minimize inconveniences by responsibly and quickly handling interruptions in wastewater collection service.
5. Protect large investments in collection system by maintaining adequate capacities and extending useful life.
6. Use available funds for sewer operations in the most efficient manner. Identify, prioritize, and continuously upgrade and replace sewer system facilities to maintain reliability and adequacy of service to customers.
7. Provide adequate capacity to convey peak wastewater flows
8. Perform all operations in a safe manner to avoid personal injury and/or property damage.
9. Be available and responsive to the needs of the public. Work cooperatively with local, state and federal agencies to reduce, mitigate, and properly report an SSO.
10. Implement regular, practical maintenance of the sewer collection system to remove roots, debris, sand, fats, oil, and grease (FOG) in areas prone to blockages that may cause SSO or sewer backups.
11. Implement and maintain a FOG program to minimize and/or prevent fats, oils, and grease from entering the collection system.

2. Organization

The Murphys Sanitary District is a California Special District with an elected Board of Directors, formed and operated for the purpose of collecting, treating, and disposing of domestic and commercial wastewater generated within the legal boundaries of the District.

2.A Legally Authorized Representative

MSD has applied for coverage under the Statewide General WDR and has enrolled in the SWRCB's on-line SSO reporting system. MSD's legally authorized representative is the Chief Plant Operator.

2.B Lines of Authority

Figure 1, found in Appendix B, identifies District staff responsible for implementing, managing, and updating the SSMP.

Personnel and responsibilities are as follows:

Board of Directors: Establishes policy and authorizes outside contractors to perform services.

Operations Manager: Plans strategy, leads staff, allocates resources, delegates responsibility, coordinates development and implementation of SSMP, manages field operations and maintenance activities, prepares and implements contingency plans, leads emergency response, investigates and reports SSOs, trains field crews, and reports to Board of Directors or Administration Manager.

Administration Manager: Provides information updates to Board, and arranges for emergency meetings if necessary and may serve as public information officer.

District Engineer: Prepares wastewater collection system planning documents, manages capital improvement delivery system; documents new and rehabilitated assets, assists with permit compliance, and reports to the District as necessary.

Engineering Staff: Ensures that new and rehabilitated assets meet District standards, works with field crews to handle emergencies when contractors are involved, and provides verbal reports to District Engineer.

Operations & Maintenance (O&M) Staff: Conducts preventive maintenance activities, mobilizes and responds to notification of stoppages and SSOs (mobilizes sewer cleaning equipment, by-pass pumping equipment, and portable generators), and reports to Chief Plant Operator.

The names and contact information for District staff and emergency contractors is maintained by the district and may be found in Appendix A of this SSMP.

2.C SSO Reporting Chain of Communication

The communication plan identifies District staff who are responsible for managing the SSO response, investigating the cause, reporting the SSO to the appropriate parties and lines of communication by which an SSO is reported to the wastewater collection system agency, and how management staff is notified. It also provides a consolidated list of contact information for key agency personnel.

Figure 2, found in Appendix C, shows the chain of communication for reporting SSOs.

The Chief Plant Operator determines the category of SSO based on information at hand, and will re-categorize the SSO as it develops, if that is appropriate.

All SSOs are also reported to the Office Manager, who informs the Board of Directors and District Engineer. For Category 1 SSOs, where 1,000 gallons or more is discharged to surface water or drainage systems, immediate notification is provided to the State Office of Emergency Services who will notify the local health agencies and the Regional Water Board.

Additionally, if raw sewage enters or threatens to enter a watercourse, immediate telephone notification is given to the City of Angels Camp, the State Department of Public Health, the State Department of Fish and Wildlife, Calaveras County Health Department, and residents and businesses potentially affected by the SSO. The telephone notification list is maintained by the Chief Plant Operator and can be found in Appendix A of this SSMP.

On-line reporting of SSOs is provided to the SWRCB according to the category of SSO as required by the Statewide General WDRs, as follows:

- Category 1 SSO – Discharges of any volume that reach surface waters or drainage channel: Draft report ASAP but no later than 3 days after discovery; final report within 15 days.
- Category 2 SSO – Discharges greater than or equal to 1,000 gallons that do not impact surface waters: Draft report ASAP but no later than 3 days after discovery; final report within 15 days.
- Category 3 SSO – all other SSOs: Report within 30 days of the calendar month of occurrence.
- PLSD – Discharges from privately owned sewer lateral or system: Report at the discretion of the Operations Manager.
- No SSO: Report within 30 days of the calendar month.

The District's OERP, included at the back of this SSMP, contains the District's notification plan.

3. LEGAL AUTHORITY

Murphys Sanitary District Ordinance No. 2, the "Murphys Sanitary District Use Ordinance," was approved by the MSD Board of Directors on August 21, 2006 and was effective as of September 30, 2006 and updated in 2010. It supersedes and replaces prior similar versions.

The Ordinance prohibits illicit discharges into the sanitary sewer system (including inflow from storm water, chemical dumping and unauthorized debris; requires that sewers and connections be properly designed and constructed; ensures access for maintenance, inspection, or repairs for portions of the system owned or maintained by MSD; and limits the discharge of fats, oils, and grease and other debris that may cause blockages. The Ordinance is a legally enforceable document.

4. OPERATION AND MAINTENANCE PROGRAM

4.A Collection System Map

An updated map of the collection system was completed in 2013. The sewer system map is based on survey data provided by a licensed surveyor. Depth measurements were taken at each manhole and cleanout with data recorded onto Manhole Data Sheets. The data sheets include depth to flow line, pipe sizes, condition of

manhole, and other relevant information. This information was used in the analysis of the collection system described later in this SSMP. The collection system map is maintained at the District office and the office of the District Engineer. The District is developing a database of collection system components. The map will be reviewed and compared to the database at least once every 2 years. Updates will be made to the map when necessary.

4.B Preventive Maintenance Program

MSD's preventive maintenance program addresses the prevention of line blockages by keeping the collection system piping free of debris. Maintenance activities consist mainly of regular cleaning and inspection for any defects. Formalized work orders to accomplish maintenance tasks are not issued, due to the small work force, relatively small size of the District service area, and the limited amount of equipment to maintain. The Chief Plant Operator initiates work orders and accomplishes necessary tasks personally with the assistance of staff members. Maintenance tasks are routinely performed and documented by the Chief Plant Operator.

The following tasks are currently performed on the collection system:

- Commercial grease traps are inspected annually.
- Hydro-cleaning within the collection system is performed monthly as directed by the Chief Plant Operator.
- Each component of the collection system (excluding service laterals) is flushed at least once every 2 years.
- Problematic mains are hydro-cleaned more frequently.
- MSD is in the process of inspecting the entire collection system by smoke testing or video to locate areas in need of rehabilitation.
- The influent pump station flow rates are calculated every 6 months by timing wet well drawdown, to verify the efficiency and condition of the pumps.
- Manhole condition and relative flow rates within the system are visually inspected at every manhole every year.
- The Woodland Pump Station is visited regularly to clean grease off of the floats and check pump operation.

4.C Rehabilitation and Replacement Plan

Inspection Program

The District inspection program utilizes three methods of inspection as follows:

1. Visual Inspection – Observation of flows through manholes during dry and wet weather may be used to identify areas of the collection system that have inflow and infiltration. By using the system map, field operators may use visual inspection to isolate problem areas for video inspection and/or repair. Due to significant tourist population during certain times of the year, dry weather flow measurements will emphasize periods when tourist traffic is heaviest. Visual inspections of the existing manholes during a wet weather event in the suspected area will determine any manhole rehabilitation needed.

2. Smoke Testing – Sources of inflow and infiltration may be identified through smoke testing. Field operators would note problem areas identified during the testing and follow up with mitigation measures or additional inspection as warranted. Typical inflow sources include roof drains, sump pump connections, cleanouts with missing covers, and illicit storm drain connections to the sanitary sewer. Smoke testing is a common way to easily identify large sources of inflow, and smoke testing can also identify serious infiltration problems. Inflow can account for a high percentage of I/I in a sanitary sewer system. Removing inflow sources is a cost-effective way of reducing SSOs from the system. Smoke testing will require the creation of a public education program and notification of property owners in the area being inspected, prior to any testing. CCTV can be used to help quantify the deterioration of the pipe and/or connections.
3. Video Inspection - Closed Circuit Television (CCTV) will be used in areas that are identified as having infiltration by smoke testing, or areas suspected of having infiltration by visual inspection. CCTV will help to identify the type and extent of the rehabilitation needed.

Rehabilitation Program

Video inspection and/or smoke testing will be used to locate sources of inflow and infiltration as needed. The District will budget bi-annually (every 2 years) for this inspection work starting in the 2014/2015 fiscal year. Based on one year's inspection findings, rehabilitation will be budgeted and scheduled as appropriate for the following year. Ideally, inspection and rehabilitation will occur on this alternating, bi-annual schedule. The goal of this effort is to completely evaluate and rehabilitate the collection system at least once every 5 to 10 years or as feasible and appropriate.

Repairs to the system will be prioritized by the potential and/or history for causing an SSO and the amount of infiltration that can be removed from the system for the given capital expense of repair. The District will conduct repairs on all of the critical repair areas during the dry weather season. During the following wet season, District staff may be able to verify a reduction in inflow and infiltration by visual inspection of manhole flows and comparison to pre-rehabilitation flows.

There are several reaches of 4" sewer mains in the system. Those that meet flow criteria and are in satisfactory condition will not be replaced. All new and replacement sewers will be a minimum of 6". All new and refurbished/replaced manholes will have an interior epoxy coating.

4.D Operations & Maintenance (O&M) Training

The District's collection system staff is trained to know how to maintain and operate the collection system during normal conditions and during emergency conditions to manage flows and avoid SSOs. On the job training is provided in the use of the sewer rodder, hydro-flusher, hydro-vac, hand tools, equipment O&M and safety. Tail gate meetings are held weekly covering a variety of topics both operational and safety related. The California Water Environmental Association, Collection System Committee offers a well-developed training certification program that the District encourages staff to utilize. District employee certification information can be found in Appendix A.

In addition to safety discussions during the weekly tailgate meetings, the District holds monthly safety meetings. The District is a member of the Special District Risk Management Authority which provides the topics for the monthly safety meetings.

4.E Spare Parts List and Inventory

The District maintains an inventory of spare materials and equipment for emergency repairs and to minimize facility downtime.

Contingency Equipment:

- Portable back-up generator (Honda Pro Series 5,500)
- Portable pumps (one 100 gpm and one 50 gpm)
- Two (2) work trucks each contain miscellaneous tools, safety equipment, saws, connectors, pipe fittings, straps, root killer, rope, extension cords, traffic control signs, paint, starting fluid, carb and choke cleaner, miscellaneous tapes, sewer dye, shovels, picks, rakes, sheers, 24' chain, brooms, hatchets, 4 traffic cones, and ABS manhole set ups.

Spare parts:

- Spare motor and pump for the Grade Road Lift Station
- Spare tank for the Woodland Lift Station

Spare Materials:

- Sewer pipe, 2" – 60 lf PVC
- Sewer pipe, 3" – 50 lf of ABS
- Sewer pipe, 4" – 80 lf of C-900; 100 lf of ABS; 220 lf of PVC
- Sewer pipe, 6" – 60 lf of C-900; 60 lf of PVC; 100 lf of miscellaneous
- Sewer pipe, 8" – 320 lf of C-900; 140 lf of Ductile Iron
- Sewer pipe, 10" – 20 lf of Ductile Iron
- Sewer pipe, 15" – 20 lf of C-900
- Miscellaneous couplings and compression fittings, 4" – 10"
- Sand, gravel, cold mix asphalt (approximately 20 CY each)

5. DESIGN AND PERFORMANCE PROVISIONS

5.A Design and Construction Standards

Design and construction standards are established by District Use Ordinance Section 02.05.090 and detailed in Sections 1 and 2 of Appendix I of said Use Ordinance. Appendix I includes general requirements, right of way requirements, design criteria for pipelines and structures, and construction requirements. Standard detail drawings are also included in Appendix I.

Any new sewer construction or rehabilitation plans will be reviewed by the District Engineer during the permitting process. The application for a permit for new public sewer construction or repair of existing sewer is required to be accompanied by complete plans, profiles, and specifications complying with all applicable ordinances, rules and regulations of the District prepared and stamped by a registered civil engineer, showing all details of the proposed work based on an accurate survey of the ground. The application, together with

the plans, profiles, and specifications is examined by the District Engineer, who may require them to be modified as deemed necessary.

5.B Inspection and Testing Standards and Procedures

5.B.1 Inspection

The District Inspector or the District Engineer will witness all construction in any new sewer construction project or rehabilitation project. All steps of sewer construction from pipe fitting to compaction will be observed to ensure that District design standards are upheld.

Materials used in the construction of sanitary sewers will be inspected by the District Engineer and/or District Inspector upon delivery to the construction site.

Pipe materials will be inspected for any damage due to transportation and/or handling. Pipe material will be inspected for the proper classification. The District Engineer and/or District Inspector will inspect all delivered pipe prior to installation.

Installed sewer pipe alignment will be inspected for straight pipe formation with the exception of curvilinear alignments with minimum radii per manufacturer requirements.

The District Engineer and/or District Inspector will inspect equipment and appurtenances such as pumps, valves, and other equipment prior to placement or installation. Any piece of equipment or appurtenance is required to be installed per the manufacturer's recommendations and District standards established in the Use Ordinance.

5.B.2 Testing

All new or rehabilitated collection system components are tested and subject to approval by the District Inspector. All new or rehabilitated sewer pipe and manholes will be pressure tested after backfill to ensure tightness in connection and or repair. All tests will be witnessed and approved by the District Engineer and/or District Inspector.

Acceptance testing of new or used equipment and/or appurtenances such as pumps, valves, and other equipment shall be witnessed by either the District Inspector or the District Engineer prior to commencing operations. Manufacturer's standards for testing will be used determine the effectiveness of the appurtenance or equipment. Manufacturer standards will be a requirement in the specifications for a given design.

Testing requirements are established by District Use Ordinance Section 02.05.100 and detailed in Section 3 of Appendix I of said Use Ordinance. Appendix I includes requirements for pipeline testing and manhole testing.

6. OVERFLOW EMERGENCY RESPONSE PLAN

SSO Definitions

As defined in the Statewide General WDRs amended 2013 Monitoring and Reporting, there are four categories of Sanitary Sewer Overflows:

- Category 1 – All discharges of wastewater resulting from a failure in the District’s sanitary sewer system that:
 - a. Reach surface water and/or a drainage channel tributary to a surface water; or
 - b. 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.
- Category 2 – Discharges of wastewater 1,000 gallons or greater resulting from a failure in the District’s sanitary sewer system 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 wastewater resulting from a failure of the District’s sanitary sewer system.
- Private Lateral Sewage Discharge (PLSD) – Discharges of wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the District’s sanitary sewer system or from other private sewer assets.

A Sewer System Overflow (SSO) Response Plan has been developed by the District to eliminate the threat to public health and the environment if possible, and to mitigate any effects of SSOs to the maximum extent reasonably possible. The District’s Sewer System Overflow (SSO) Response Plan can be found in Appendix D of this SSMP.

6.A Notification Plan

Refer to Figure 2 Appendix C and Section 2. C of this SSMP for the SSO Reporting Chain of Communication. Detailed notification protocol may also be found in the Sewer System Overflow (SSO) Response Plan in Appendix D.

6.B Response Program

Immediately upon learning of an actual or threatened SSO, the Chief Plant Operator or on-call staff personally investigates the scene. An O&M staff member or the District Engineer may be called upon to investigate in the absence of the Chief Plant Operator.

Depending on the nature of the SSO, the Chief Plant Operator may mobilize the District’s own equipment and forces, or may call upon the listed contractors to assist in containment, pump-around, pump-out, and emergency repair activities.

More detailed response procedures can be found in the District’s Sewer System Overflow (SSO) Response Plan.

6.C Program Awareness and Response Training

The current MSD staff associated with SSO response consists of the Chief Plant Operator and MSD staff operator(s). All of these individuals have familiarized themselves with the District's Sewer System Overflow (SSO) Response Plan and know their duties in case of an SSO event.

6.D Emergency Operations Procedures

Procedures to address traffic and crowd control and other necessary activities can be found in the District's OERP.

6.E Impact Mitigation

If raw sewage enters Angels Creek (also known as Murphys Creek within the community of Murphys), initial grab samples are collected from the creek upstream and downstream of the spill location and analyzed for total and fecal coliform as soon as possible after the spill is detected.

Pursuant to Amended Monitoring and reporting Program Order No. WQ-2013-0058-EXEC, an SSO Water Quality Monitoring Program must be developed and implemented when an SSO results in 50,000 gallons or more of wastewater entering surface waters.

Additional samples are collected on a schedule agreed with the Regional Water Board and Calaveras County Health Department.

7. FOG CONTROL PROGRAM EVALUATION

Grease traps are currently required at all public premises where food is handled or prepared such as restaurants, cafeterias, bed and breakfast establishments, hotels, motels, and markets. The community of Murphys does not contain a large number of restaurant connections within the commercial district. All fat, oil, and grease interceptors are maintained by the owner of the connection and are required by District ordinance to maintain efficient operation at all times. The type and size of a grease interceptor must be approved by the District Engineer prior to installation per District ordinance. District staff currently inspects all commercial grease interceptors at least annually to determine compliance and confirm operation.

Blockages due to grease accumulation in the MSD sewer line occur occasionally in portions of the system. A 900-foot section of 4-inch VCP that serves a residential area on Williams Street was replaced with a 6" line due to more than the usual frequency of grease blockages. To alleviate blockages, the cleaning frequency for 4-inch pipe may be increased as determined by the Operations Manager. The initiation of an increased cleaning frequency prevents most FOG blockages.

Due to the limited number of blockages, a formal FOG control program is not necessary. The District has created a website and posted information regarding the detrimental effects of FOG with tips on alternative disposal means to inform the public. The District's FOG prevention flyers can be found in Appendix E of this SSMP.

The diligent cleaning schedule and public outreach appear to be effective in preventing blockages caused by FOG within the District's system.

8. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

The District prepared a Sewer Evaluation & Capacity Assurance Plan (SE & CAP) including a Capital Improvement Plan to evaluate the collection system and analyze hydraulic capacity under existing and future flows. The SE & CAP is maintained as a separate document at the District office. This SSMP Section 8 summarizes the findings in the SE & CAP.

8.A Collection System Evaluation

The Murphys Sanitary District maintains approximately 64,600 linear feet (12 miles) of wastewater collection mains. These range from the largest diameter of 15 inches down to 4 inches, with the most common size being 6 inch. There are over 250 manholes and 3 lift stations in the system.

Hydraulic modeling of the MSD collection system was utilized to evaluate the capacity and to identify areas of the collection system needing improvement. Results of the collection system analysis indicate there is currently one known problem area in the system under existing flow conditions. Section 8.C describes this area and the improvements that are scheduled to correct the problem. Additionally, five areas have been identified as needing upsizing to accommodate future development. These areas are also discussed in Section 8.C.

A surveyor was retained to collect location and other data for all the system manholes. This data was used in the hydraulic model and complete the system map.

8.B Capacity Design Criteria

The MSD collection system is to be designed for ultimate build-out conditions. The goal of system capacity enhancements is that under peak wet weather flow conditions no manhole will surcharge.

The design criteria used to evaluate the system is as follows:

- 700 gallons per day per equivalent dwelling unit (EDU) with 1 EDU per acre assumed for future build-out.
- Inflow and infiltration of 50 gallons per mile per day per inch of diameter of pipe.
- 1,047 existing EDUs served by the system.
- 1,562 EDUs served by the system at buildout.

The design criteria are further described in the District's Sewer Evaluation & Capacity Assurance Plan on file in the District office.

8.C Capacity Enhancement Measures and Schedule of Completion

Analysis of the existing system flows found one segment to be undersized. Pipe #P-206 between existing manholes #40A and #25 needs upsizing from 8" to 12". This pipe segment length is approximately 144 feet. The District Engineer's estimate of probable costs to complete the upsizing is approximately \$47,500.

Analysis of the system under projected future flows found five segments that will require upsizing to accommodate future development. Those segments are noted in the table below.

Pipe #	MH# to MH#	(E) Dia. (in)	(P) Dia. (in)	Length (ft)
P-2	20 to 19	10	12	408
P-15	23 to 22	10	12	222
P-208	39 to 40A	8	10	306
P-210	38A to 38B	8	10	144
P-369	19 to 9	10	12	331
Total Length				1,411

The District Engineer’s estimate of probable costs to complete the upsizing is approximately \$330,000.

8.D Schedule and Funding Sources

Since improvements to pipe segment P-206 are necessary to accommodate existing flows, that work is top priority. The District is also making efforts to reduce inflow and infiltration which would also contribute to system capacity. Smoke testing and video inspection of sewer mains will help District staff identify and prioritize additional system improvements.

The five pipe segments identified for future flows will be scheduled as development occurs.

Funding for the P-206 upsizing will be borne by existing rate payers and be included in the 2014/2015 fiscal year budget or as feasible pending District budget constraints. Funding for the future development upsizing equates to approximately \$700 per new EDU and will come from connection fees imposed on developers.

9. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

9.A Recordkeeping

Historical O&M records are kept to identify areas of the collection system that may require increased maintenance efforts. These records are also used in the prioritization of future rehabilitation work.

Records are kept by the Office Manager for:

- Blockages
- Overflows
- Line and manhole replacements/rehabilitation
- Service calls

Records are kept by the Operations Manager for:

- Maintenance performed on equipment
- Lines that have been hydro-cleaned
- Lines and manholes that have been inspected

9.B SSMP Program Monitoring and Evaluation

The District Engineer is responsible for monitoring the effectiveness of this SSMP and revising it as and when needed, in consultation with District Board members, management, and staff. The Office Manager will regularly update the District Engineer about dry and wet weather SSOs, system blockages, and any other items related to maintaining an updated and effective SSMP. The District Engineer will review the SSMP and District records annually or as directed by District staff to monitor its effectiveness.

9.C Preventative Maintenance Program Assessment

The Chief Plant Operator (CPO) is responsible for monitoring the effectiveness of the Preventative Maintenance Program and revising it as and when needed, in consultation with District Board members, District Engineer, and staff. The Chief Plant Operator (CPO) will keep track of repair logs, cleaning schedules, and any other preventative maintenance tasks necessary to ensure a reliable collection system.

9.D Program Updating

In order to ensure this SSMP remains current and useful over time, the various programs contained herein will be reviewed and monitored on a regular basis. The District staff and Engineer will periodically review the SSMP to check for compliance and effectiveness.

As each element of the Capacity Assurance Plan is completed, or if schedules need to be changed, this SSMP will be revised to reflect that. After significant improvements have been made that affect the hydraulic modeling of the system, the modeling will be repeated and the System Evaluation will be revised.

If the notification and response actions done according to Section 6 are not effective in dealing with SSOs, those procedures will be reviewed and revised or expanded as necessary.

9.E SSO Trend Tracking

The District began tracking overflows in January 2011. These efforts will result in development of a tracking program if necessary. Future updates to this SSMP will include the tracking information as warranted.

All manholes and main lines that repeatedly plug and overflow should be brought to the attention of the Chief Plant Operator (CPO) or Office Manager. These problem lines should be investigated for users who may need grease traps installed or for users whose grease traps may be due for scheduled maintenance or replacement.

10. SSMP PROGRAM AUDITS

At a minimum of every two years, the District Engineer will initiate an internal audit of the SSMP. The SSMP will be evaluated as to whether it contains all the mandatory elements required by the Statewide General WDRs. Inspection, maintenance, training, and SSO records will be reviewed. Any deficiencies in the SSMP or its implementation will be brought to the attention of District management, and corrective actions will be tracked.

An audit report will be prepared and the District Engineer or engineering staff will meet with District staff to discuss any needed changes to the various SSMP elements. Information collected pursuant to Section 9 above will be used to prepare the audit.

11. PUBLIC COMMUNICATIONS PROGRAM

The District's website includes a copy of the SSMP for public review and information. When comments on the SSMP are received from the public, they will be distributed to the District Engineer for consideration in future SSMP updates.

The District's website also contains a "Public Education" link. This link contains informational flyers that provide information on detrimental effects of FOG and other debris to the collection system and treatment facilities. The information also includes recommended disposal methods to help educate the public. The District's FOG flyers may be found in Appendix E.

Murphys Sanitary District is a member of the Integrated Regional Water Management Planning group. The group meets regularly as a means to communicate with regional water and sewer districts.

APPENDIX A

KEY SUPPORT NAMES AND TELEPHONE NUMBERS

MSD'S emergency overflow response plan and numbers to call in response to specific overflow categories. In addition, the following list includes key contractor and communications contacts for additional reference in completing specific follow up emergency collection system repairs.

CONTACT	TITLE	PHONE NUMBER	CERTIFICATION
MURPHYS SANITARY DISTRICT		24/7 EMERGENCY CALLS: 209-728-3094	
Dan Murphy	WWTP Chief Plant Operator	Cell: 209-728-7841	Grade III, Wastewater Treatment Plant Operator Certificate No. 39866
Kristina Fillmore	Administration Manager	Cell: 209-768-6898	
Clay Onstad	WWTP Operator II	Cell 209-712-5646	Grade II, Wastewater Treatment Plant Operator Certificate No. 42195
Eric Hemstad	WWTP Operator I	Cell 209-728-4747	Grade I, Wastewater Treatment Plant Operator Certificate No. 76266
Paige McMath-Jue	President	Cell 503-420-7535	
Jeff Black Blackwater	District Engineer	Office 209-322-1817 Cell 209-587-6173	
Patrick Scott	Asst. Engineer	Cell 209-768-9866	

APPENDIX B

Figure 1-MSD Organization Chart

RESPONSIBLE AUTHORIZED REPRESENTATIVES AND MSD PERSONNEL WITH SSMP RESPONSIBILITIES

The Responsible Authorized Representative is assigned to ensure that all regulatory agencies are notified and reported to. All sewer system overflow events as well as system activities are to be reported to the Responsible Authorized Representative.

NAME	TITLE	CIWQS SSO DATABASE
DAN MURPHY	WWTP Chief Plant Operator	Legally Responsible Official
KRISTINA FILLMORE	Administration Manager	Legally Responsible Official

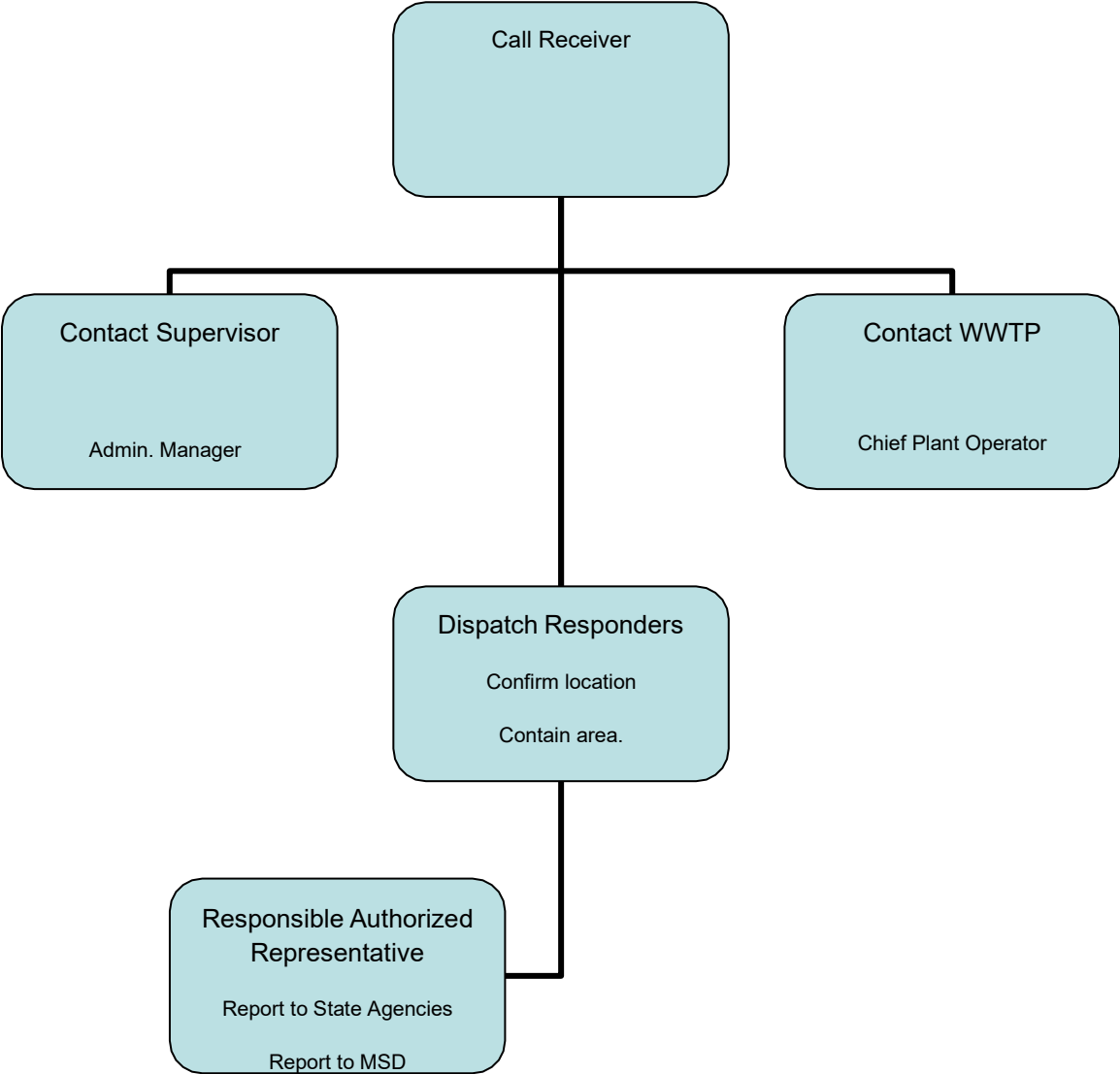
The MSD has assigned the execution of the SSMP per the following summary:

NAME AND TITLE	SSMP RESPONSIBILITIES	CONTACT NUMBERS
Kristina Fillmore Administration Manager	Coordinates with District Board on resource needs and policy direction, plans strategy, leads staff, allocates resources, delegates responsibility, authorizes outside contractors to perform services, and serves as public information officer.	Office 209-728-3094 Cell 209-768-6898
Dan Murphy Operations Manager	Manages field operations and maintenance activities, develops self- monitoring reports, and leads communications with regulatory agencies, prepares and implements contingency plans, leads emergency response, investigates and reports SSOs, and trains field crews.	Cell 209-728-7841
Jeff Black Blackwater District Engineer	Prepares wastewater collection system planning documents; manages capital improvement delivery system; documents new and rehabilitated assets; and coordinates development and implementation of SSMP.	209-322-1817 Office 209-587-6173 Cell

APPENDIX C

Figure 2 Sewer System Overflow (SSO) Reporting Chart

Receiving a Call:



APPENDIX D

Sewer System Overflow (SSO) Response Procedures

Murphys Sanitary District



Sewer System Overflow (SSO) Response Procedures

SPILL RESPONSE PROCEDURES

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Murphys Sanitary District SPILL RESPONSE PROCEDURES

INTRODUCTION

The following procedures apply to any spill that occurs within the sewer collection system, or to any overflow, bypass, and upset, influent, partially treated waste, sludge, or chemical spill for the wastewater treatment facilities. This includes spills from recycled water treatment and distribution systems. Surface waters are defined as creeks, rivers, ponds, lakes, or drainage systems. The definition of a bypass is the intentional diversion of waste streams from any portion of a treatment facility or collection system, except those portions designed to meet variable effluent limits. The definition of an upset is an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of the discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, failure to implement an appropriate pretreatment program, or careless or improper action. For the purpose of spill response, recycled water means disinfected, tertiary title 22 recycled water only. Any water of lesser treatment is considered “wastewater” for the purpose of reporting.

I. FIRST RESPONSE

The first concern is to stop any flow or ongoing spill. Responding personnel must immediately notify the Wastewater Treatment Plant (WWTP) Chief Plant Operator (CPO), via dispatch, telephone, pager, or cellular phone. (An emergency phone list is attached). In the event the WWTP Chief Plant Operator (CPO) is not available, WWTP personnel have authority to approve expenditures and contract services to stop or cleanup the spill. The approved list of contract services is attached.

II. FOLLOW-UP MEASURES

The second concern is to protect human health and the environment. Contact appropriate regulatory agencies. Please follow the procedures listed below.

A. Reportable Quantities

- ◆ All sewer spills, overflows, recycle water discharges and bypasses to surface waters, regardless of quantity, must be reported.
- ◆ Any violation of General Reporting Requirements B.1, any noncompliance with any prohibition or limitation of this order.
- ◆ Sewer spills that must be reported to agencies, other than Murphys Sanitary District, are defined as any volume of

raw or partially treated.

- ◆ **All sewer spills must be reported on the sewer spill report form** regardless of the location or quantity to which Murphys Sanitary District staff responds. The form is then submitted to the Chief Plant Operator (CPO).

B. Reporting Phone Calls

- ◆ Spills exceeding 1,000 gallons of wastewater or partially treated recycled water must be reported immediately by the WWTP Supervisor or personnel to the following agencies:
 - Cal Ema (Office of Emergency Services) at (800)-852-7550
 - County Environmental Health - Brian Moss at (209) 754-6399
 - RWQCB, Howard Hold at (916) 464-4679 email centralvalleysacramento@waterboards.ca.gov
- ◆ Any spills, overflows, and bypasses to surface water must be reported immediately by the WWTP Supervisor or personnel to the following agencies:
 - Cal Ema (Office of Emergency Services) at (800)-852-7550
 - County Environmental Health - Brian Moss at (209) 754-6399
 - RWQCB, Kenny Croyle at (916) 464-4676 email centralvalleysacramento@waterboards.ca.gov
 - California Department of Fish and Game – (916)358-2900
 - Department of Public Health (Stockton Branch) at (209) 948-3816

C. Cleanup

Cleanup always requires the removal of any visible solid waste material. The area should be lightly raked and should include spraying the area with dilute chlorine bleach solution. Commercial bleach is 12.5%. Household bleach is 5.25%, a cup of commercial bleach in one gallon of water is 7500 mg/l and a cup of household bleach in one gallon of water is 3300 mg/l. This is a strong formula, but we do want to kill any pathogenic organisms that may be present. **Do not disinfect if spill is reaching a receiving stream.** A masking agent may be used in areas that have sensitive landscaping.

D. Sampling

If the wastewater or recycled water spill is discharging to flowing surface waters, such as a creek, pond, lake or drainage system, all attempts must be made to contain the spill and divert it away from surface waters. Samples should be taken as soon as possible after stopping the spill and after the emergency clean up. Samples are to be collected in at least three locations:

- ◆ Up stream from the spill
 - ◆ At the spill Mixing zone
 - ◆ At some point below the spill, between 1/8 to one mile away from the mixing zone.
- Coordinate the sampling with the local Environmental Health Officials.

SEWAGE SPILL SAMPLE COLLECTION GUIDELINES

Use the following sample method if a sewage spill is discharging into any body of water, including seasonal storm drainages.

- ◆ Collect two samples. One plastic liter container upstream from the spill “mixing zone” (the point where the spill and body of water combine). Label this “#1 Upstream”. Include the name of the stream, lake or drainage, the approximate distance from the mixing zone, the date, the time, and your name. Make sure this sample is taken far enough upstream that the spill does not impact the sample. In addition, collect one Bactee sample bottle. Label this the same as the liter sample; only enter the sample bottle ID number on the chain of custody form.
- ◆ Collect two samples. One plastic liter container from the mixing zone. Label this “#2 mixing zone”. Include the location, the date, the time, and your name. This should be collected at the exact spot or location where the spill connects with the drainage or creek. In addition, collect one Bactee sample bottle. Label this the same as the liter sample; only enter the sample bottle ID number on the chain of custody form.
- ◆ Collect two samples. One plastic liter container downstream from the mixing zone (between 1/8 and 1 mile, if possible). Label this “#3 Downstream”. Include the location, approximate distance from the mixing zone, the date, the time, and your name. In addition, collect one Bactee sample bottle. Label this the same as the liter sample only. Enter the sample bottle ID number on the chain of custody form.

During business hours, these samples should be delivered to Sierra Foothill Lab (209) 223-2800 in Jackson immediately. If samples are collected after hours, pack the samples on ice for the next delivery to the lab. The following tests are required for these samples: pH, ammonia, chlorine residual and fecal coliform. The laboratory staff will assist you in completing the “Chain of Custody” form, should you have any questions.

If you have any questions regarding where or how to sample, please contact the Chief Plant Operator (CPO).

E. Posting of Warning Signs

Spills that enter surface waters must be reported immediately.

The Calaveras County Department of Environmental Health must be notified of all sewer or Title 22 reclaimed water spills that exceed 1,000 gallons. Posting warning signs will be done by County personnel and at their discretion. Be sure that the county is made aware of the spill location and directions to the site, as well as the nature of the spill.

III. FINAL REPORTING

The first responder should initiate sewer spill reports (the form is attached). Specific data must include the spill description including estimated flow and volume.

The WWTP Supervisor is responsible for making sure that the Murphys Sanitary District spill report form is completed correctly, and that all cleanup and notification procedures have been followed. This form must be used for ALL SPILLS, regardless of the quantity or location. Sewer spill or recycled water spill reports of any amount

must be submitted to the WWTP Supervisor within 24 hours.

In the event of a spill, which enters flowing drainages, creeks, or lakes, the WWTP Supervisor must identify the surface water drainage, and any impacts to the drainage must be noted. Please make note of any erosion, fish kill, or increased turbidities that the spill caused. (Take pictures if a camera is available.) The Murphys Sanitary District spill report form will then be faxed by the Chief Plant Operator (CPO) to the RWQCB before the end of the next working day for all reportable spills, as defined in section II A.

Following completion of appropriate notification, the Chief Plant Operator (CPO) will maintain a log available at the plant for inspection by the appropriate regulatory agencies. Permanent records will be kept at the WWTP.

All records concerning collection system maintenance activities and spill reporting will be kept in a maintenance and tracking system.

A written report must be submitted to the Regional Water Quality Board within 14 days. The report should include the nature, time, and cause of the spill, how the spill was cleaned up, and what corrective actions have been implemented to prevent a spill from occurring in the future. The Murphys Sanitary District spill report form will provide most of the information. Any additional information should be included.

Murphys Sanitary District Important Contact Numbers

Name	Telephone No.
WWTP 735 Six Mile Road Murphys, CA	209-728-7841
District Office 15 Ernest Street Murphys, CA	209-728-3094
Dan Murphy	209-728-7841 Cell
Clay Onstad	209-712-5646 Cell
Eric Hemstad	209-728-4747 Cell
Kristina Fillmore	209-768-6898 Cell
Paige McMath-Jue, President	503-420-7535 Cell
Steve Gonzales, Vice President	925-323-1979 Cell
Bruce Miller, Treasurer	209-532-4793 Cell
Marty Meller, Secretary	415-939-2828 Cell
Joseph Fontana, Parliamentarian	916-847-5263 Cell

APPROVED CONTRACT SERVICES

PUMPER TRUCKS:

Foothill Sanitary 209-785-6160
1640 Copper Cove Drive (Cell) 209- 770-6161
Copperopolis, Ca 95228 (Pager) 209-708-0530

Sweet Pea Septic Services 209-754-0128
3840 Brother St.
Pine Grove, CA 95667

PLUMBING SERVICES:

Angels Sewer & Drain Services 209-736-0763
575 N. Main Street
Angels Camp, CA 95222

LABORATORY:

Alpha Analytical Lab Inc. 916-686-5190
9090 Union Park Way, Ste. 113
Elk Grove, Ca 95624

HAZARDOUS MATERIALS HANDLING:

Hazmat.....911

Murphys Sanitary District SPILL REPORT

Report No: _____

SPILL DETAILS

Reported by: _____	Spill Location: _____
Phone No: _____	System Map No: _____
Date Reported: _____	Upstream MH #: _____
Time Reported: _____	Downstream MH # _____
Time of Arrival: _____	<input type="checkbox"/> Mainline <input type="checkbox"/> Service Line
Time Spill Halted: _____	<input type="checkbox"/> Other, Explain _____

Check if blockage/spill on customer side only (i.e., customer responsibility).

Is this a recurring spill location? Yes No Explain: _____

SPILL DESCRIPTION:

Type of Spill: Wastewater Treated Other Describe: _____

Estimated Flow Rate: _____ Estimated Total Volume: _____

SPILL IMPACT:

Did spill enter storm system (i.e., catch basin, culvert)? No Yes

Did spill enter surface waters (i.e., creek, lake)? No Yes

If yes, describe the affected surface water drainage. Note any erosion, turbidities or fish kill caused by the spill.

Spill was confined to an isolated area? No Yes Describe: _____

Report No: _____

CAUSE OF SPILL:

- Blockage Grease Roots Other, describe: _____
- Pump Failure Power Outage Mechanical _____
- Line Break Collapse Excavation

SPILL CONTROL MEASURES:

- Hydro/Vac Dig Up Berms/Barriers
- Other

CLEAN UP MEASURES (Provide drawing on next page of sample locations):

- Hydro/Vac Pump Flush Rake/Shovel Disinfection
- Samples Collected
- Other

WITNESSES (If Available):

Name: _____
 Address: _____
 Contact #: _____

AGENCIES NOTIFIED (Include names, date and time of notification):

- County EH - Tel # (209) 754-6399 RWCQB –
 Kenny Croyle Tel # (916) 464-4676
 Email: kenny.croyle@waterboards.ca.gov
- Date: _____ Time: _____ Date: _____ Time: _____
- CDPH - Tel # (209) 948-3881 DF&G Tel # (916) 747-5226
- Date: _____ Time: _____ Date: _____ Time: _____
- Cal OES Report No: _____ WWTP Chief Plant Operator
 Tel # (800) 852-7550 Dan Murphy Tel # (209) 728-7841

Report No: _____

EMAIL THIS REPORT WITHIN 24 HOURS TO:

Dan Murphy-CPO: dmurphy@murphyssd.org

REPORT COMPLETED BY:

Name/Department

Date: _____

SAMPLE LOCATION DRAWING:

Additional Notifications:

* Supervisor Signature: _____

APPENDIX E

FOG FLYER

CLEAR THE FOG FATS, OILS, GREASE

FATS, OILS, AND GREASE (FOG) come from everyday food preparation and kitchen clean-up. When heated, FOG looks like any other liquid, so pouring a little down the drain may not be seen like a big deal. But as FOG cools, it solidifies and over time will slowly build up causing a blockage in your sewer line.

FOG PREVENTION TIPS FROM THE PAN TO THE CAN

Pour used warm (not hot) oil and grease into a container with a top, so it can be reused, recycled or disposed of in the trash

Remove all trees or shrubs within 10 feet of sewer line.

Use mesh drain strainers to catch solid food scraps for disposal in a trash can.

Pour liquid scraps, sauces, milkshakes, etc. into a container and place into trash can.



DON'T

Discharge FOG down drains, sinks, or storm grates, or scrape food scrapes into sink, or run water over greasy dishes

GREASE MYTHS: It is okay to let FOG go down the drain if.....

- ⇒ I run hot water....The grease will eventually cool and solidify in the sewer pipe
- ⇒ I use the garbage disposal...The garbage disposal only grinds up large items before discharging them to the sewer system. The garbage disposal does not eliminate the FOG from these items. Compost food scraps as appropriate.
- ⇒ I chase it down with dish soap...Most dish soaps break up grease, but soap will eventually lose its effectiveness, causing the grease to solidify in the sewer system.

