SEWER SYSTEM MANAGEMENT PLAN
Regional Sewer System

Tuolumne Utilities District
Adopted: December 15, 2009

1st Edition: December 15, 2009
Revised: March 16, 2010
Revised: April 1, 2010
Revised: November 23, 2010
Revised: October 7, 2011
Revised: May 11, 2018

Resolution No. 65-09

TUOLUMNE UTILITIES DISTRICT
APPROVING THE SEWER SYSTEM MANAGEMENT PLAN
FOR THE TUOLUMNE UTILITIES DISTRICT SEWER COLLECTION SYSTEM
(WDID 5SSO10771) (EXCLUDES MI-WUK) IN COMPLIANCE WITH THE STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS (STATE WATER RESOURCES CONTROL BOARD ORDER NO. 2006-0003) AND AUTHORIZING THE DISTRICT ENGINEER TO PERIODICALLY UPDATE THE PLAN

WHEREAS, on May 2, 2006, the State Water Resources Control Board Order No. 2006-0003 -Statewide General Waste Discharge Requirements (WDR) for Sanitary Sewer Systems was adopted and implemented; and

WHEREAS, the purpose of the WDR is to develop a regulatory mechanism to provide a consistent statewide approach for reducing sanitary sewer overflows; and

WHEREAS, the WDR requires preparation of a Sewer System Management Plan (SSMP) with 11 separate elements; and

WHEREAS, the final SSMP must be approved by the agency's governing board for certification upon its completion.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Tuolumne Utilities District as follows:

Section 1. Approve the final SSMP for the Tuolumne Utilities District Sewer Collection System (WDID 5SSO10771) as required by the State Water Resources Control Board Order No. 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

Section 2. The Board hereby authorizes the District Engineer to periodically update the SSMP in order to reflect changing operations and maintenance practices and to ensure compliance with State regulations.

PASSED AND ADOPTED by the Board of Directors of Tuolumne Utilities District on December 15, 2009 by the following vote:

AYES: Rotelli, Day, Balen, Behee, Retherford

NOES: None

ABSENT: None

ABSTAINED: None

Delbert Rotelli
Delbert Rotelli, President
Board of Directors

ATTEST: Casey Prunchak
Casey Prunchak, District Secretary

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CHAPTER 1
GOALS

The mission statement of the Tuolumne Utilities District is, “Reliable, Responsive Utility Services with Dedicated Customer Service, in a Financially Responsible Manner, and Environmentally Responsible Manner.”

The objective of the Tuolumne Utilities District's sewer collections department is to operate and maintain the sewer collection system in a manner that minimizes back-ups and subsequent overflows. Included in that goal is the identification of existing or potential problem areas that may result in sanitary sewer overflows (SSOs).

The goals of developing and implementing this Sewer System Management Plan (SSMP) are the following:

1. Maintain or improve the condition of the collection system infrastructure in order to provide reliable service now and into the future.

2. Cost-effectively minimize infiltration/inflow (I/I) and provide adequate sewer capacity to accommodate design storm flows.

3. Minimize the number and impact of sanitary sewer overflows (SSOs) that occur.

CHAPTER 2
ORGANIZATION

I. Tuolumne Utilities District Authorized Representative:

Wastewater Superintendent: David Boatright (See attached 2-1 Designation of Authorized Agent)

A. Roles: (as of April 2018)

1. Operations Manager: Don Perkins (209) 532-5536
2. District Engineer: Erik Johnson (209) 532-5536
3. Wastewater Superintendent: David Boatright (209) 532-8218
4. Construction/Maintenance Supervisor: Dennis Hart (209) 532-5536
5. Collection Foreman: Rich Pitcher (209) 532-8212
6. Utility Worker 2: Steve Hall (209) 532-8212
7. Utility Worker 1: Cary Westbrook (209) 532-8212
8. Utility Worker 1: Vacant (209) 532-8212
9. Utility Worker 1: Vacant (209) 532-8212
10. Utility Worker 1: Aidan Whitmer (209) 532-8212
11. Utility Worker: Vacant (209) 532-8212
12. WWTP Operator 3: Thane Allen (209) 532-8212
13. WWTP Operator 3: Caleb Mason (209) 532-8212
14. WWTP Operator 2: Jeremy Heister (209) 532-8212
15. WWTP Operator: Vacant (209) 532-8212

B. Organizational Chart:

See Figure 2-2 for the most current organizational chart.

Narrative explanations:

Board of Directors: Establishes policy.
General Manager: Enforces policy, plans strategy, leads staff, allocates resources, and delegates responsibility.
Finance Director: Manages accounting, purchasing, and meter reading staff, secures financing for the District, oversees levying of surcharges and rate increases, and reports to the General Manager about financial health of the agency.
Operations Manager: Responsible for day to day operations for construction/maintenance, raw water, treated water, wastewater, and fleet maintenance. Also, designated lead for any emergency response efforts.
District Engineer: Develops design standards and specifications for District facilities. Manages engineering department comprised of engineers, surveyors, drafters, and inspectors. Involved in planning level studies.
Wastewater Superintendent: Manages wastewater collections and operations staff. Oversees operation of collection, treatment, and disposal systems.
Construction/Maintenance Supervisor: Manages construction and maintenance crews. Coordinates emergency repairs. Investigates site conditions. Allocates equipment and labor necessary to complete internal capital improvements.

Utility Worker 2: Enforces the wastewater ordinance, conducts site inspections of gravity grease interceptors, hydromechanical grease interceptors, and oil liquid interceptors, and inspects new construction.
Collection Systems Technician: Lead man for field work related to the collection system.
Utility Worker 3: Responsible for lift station monitoring and maintenance, assists in collection system tasks such as flushing and vacuuming.
Collection Systems Operator 3: Responsible for tasks such as flushing, camera work, root eradication, and investigating causes of blockages, leaks, etc.
Utility Worker 2: Supports Utility Worker 3.
Wastewater Treatment Plant Operator 3: Responsible for the operation and maintenance of the District's wastewater treatment and pumping facilities; regulates influent and effluent flows within the system; performs sample collection and laboratory testing; monitors equipment and gauges and makes required adjustment to assure proper functioning of facilities; and performs other related work as required.

C. Chain of Communication for Reporting SSOs

See Figure 2-3 for SSO Reporting Flow Chart. A Category I spill is defined as any spill that:

Equal or exceeds 1000 gallons; or
Results in a discharge to a drainage channel and/or surface water; or
Discharges to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.

TUOLUMNE UTILITIES DISTRICT
18885 NUGGET BLVD. • SONORA, CA 95370
(209) 532-5536 • FAX (209) 536-6485
www.tudwater.com

DIRECTORS
Barbara Balen
Robert M. Behee
Dennis Dahlin
Ron Ringen
Delbert Rotelli

Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive., Suite #200
Rancho Cordova, CA 95670-6114

DESIGNATION OF AUTHORIZED AGENT
and
LEGALLY RESPONSIBLE OFFICIAL

In accordance with the requirements of the California State Water Resources Control Board; I, Peter J. Kampa, General Manager of the Tuolumne Utilities District, hereby designate the District's Wastewater Superintendent, as the Authorized Agent and Legally Responsible Official (LRO) for signing and certifying on behalf of the Tuolumne Utilities District all reports and/or other information required under the following orders or specifically requested by the Regional Water Quality Control Board.

Mi-Wuk Village	WDR Order No. 87-043
Mi-Wuk Collection System	WDID 5SSO 10746
Sonora Wastewater Treatment Plant	WDR Order No. 94-192
Regional Sewer Collection System	WDID 5SSO 10771
Twain Harte Wastewater Treatment Plant	WDR Order No. 86-021
~~NPDES (Sonora Regional and JSD)~~	~~Order No. R5-2008-0162~~ Released
Master Reclamation Permit	Order No. R5-2002-0202
Statewide General WDR for Wastewater Collection Agencies	Order No. 2006-0003-DWQ

Peter J. Kampa, General Manager

5-7-2012
Date

ORGANIZATIONAL CHART

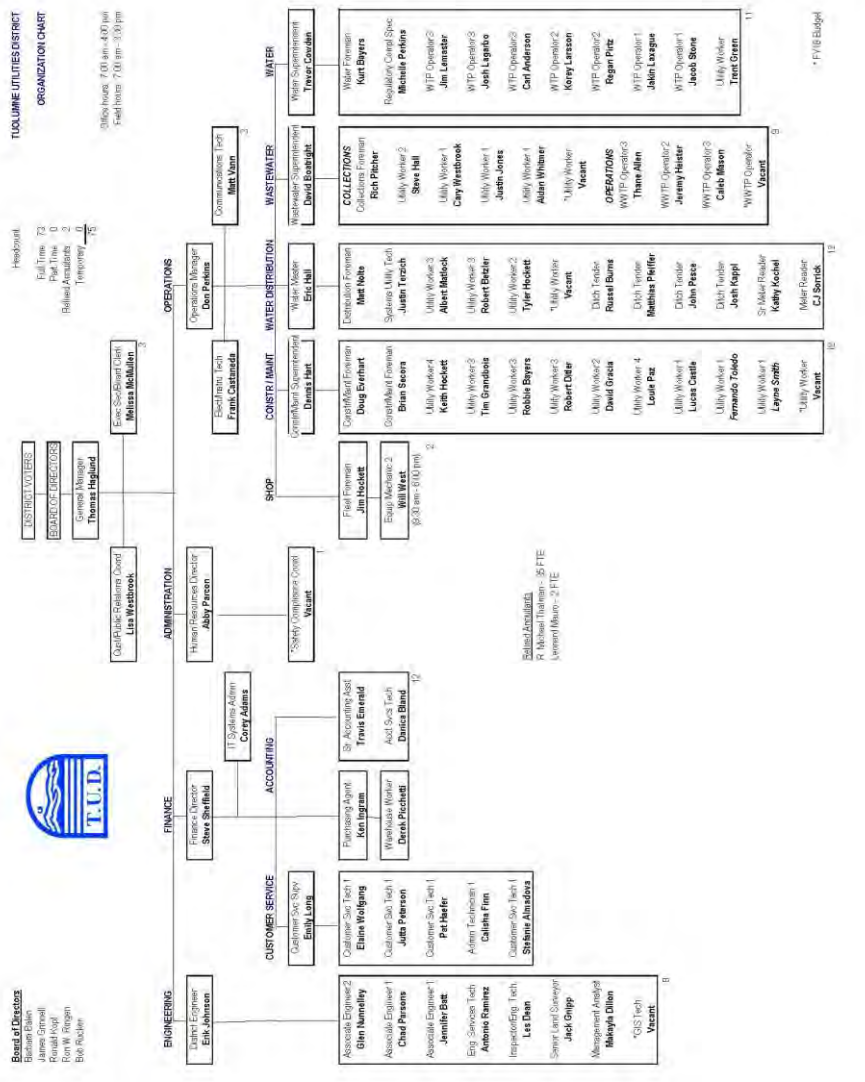
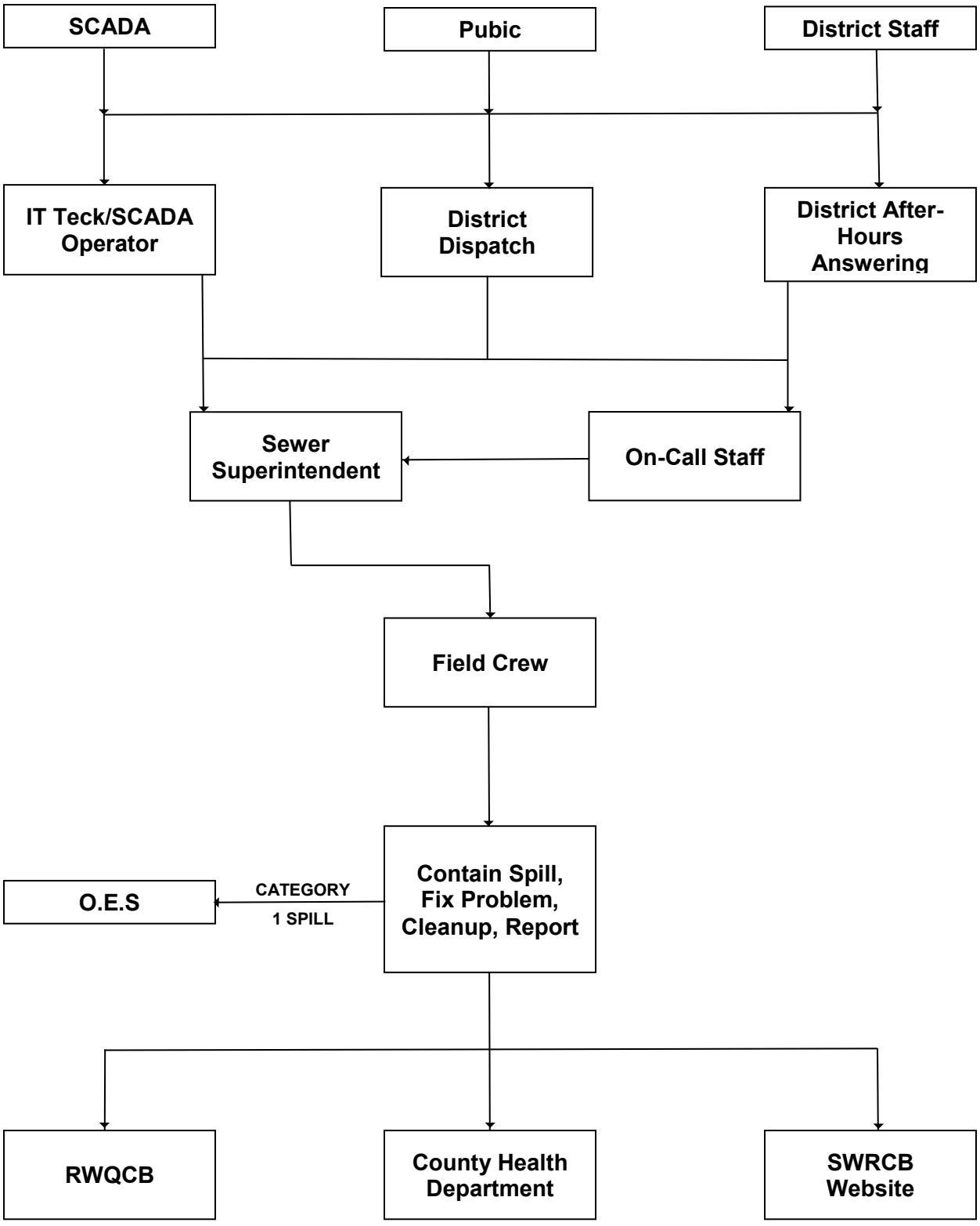


FIGURE 2-3
SSO REPORTING FLOWCHART



CHAPTER 3
LEGAL AUTHORITY

I. Wastewater Ordinance

The Tuolumne Utilities District is a California Special District. It has a Wastewater Ordinance that establishes the legal authority for operation of its wastewater collection system. The District is governed by a five-member Board of Directors which are elected from the County at-large. This Board is responsible for implementing the Wastewater Ordinance. The General Manager works for the Board and directs District business according to the policies enacted by the Board.

The most current edition of the complete Wastewater Ordinance is available online at www.tudwater.com or at the District Office located at 18885 Nugget Blvd., Sonora, Ca. 95370.

A. Legal Authority for the Prevention of SSOs is contained in the following sections of the Wastewater Ordinance:

1. Prevent illicit discharges into its sanitary sewer system:

    a) *Section 2.01 "Prohibitions on Discharges"*
    b) *Section 2.02 "Prohibitions on Storm Drainage and Groundwater"*
    c) *Section 2.03 "Prohibitions on Unpolluted Water"*
    d) *Section 2.04 "Limitation on Radioactive Wastes"*
    e) *Section 2.05 "Limitation on the Use of Garbage Grinders"*
    f) *Section 2.06 "Limitations of Point of Discharge"*
    g) *Section 2.07 "Holding Tank Waste"*
    h) *Section 2.08 "Other Limitations on Wastewater Discharged into the Community Sewer"*
    i) *Section 5.01.4 "Unauthorized Service Connections"*

2. Require that sewers and connections be properly designed and constructed:

    a) *Section 3.01.2 "Project Approval"*
    b) *Section 3.10 "Approval of Plans for Sewerage Construction"*
    c) *Section 3.11 "Inspection of Construction"*
    d) *Section 5.01.3 "Inspection of Service Connection"*

3. Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the District:

    a) *Section 2.11 "Access"*
    b) *Section 2.12 "Responsibility for Lateral or Service Line"*
    c) *Section 3.01.5 "Location of Facilities"*

4. Limit the discharge of fats, oils, and grease and other debris that may cause blockages:

    a) *Section 2.08.2 "Other Limitations on Wastewater"*
    b) *Section 2.08.3 "Grease Interceptors"*

5. Enforcement of violations:

    a) *Chapter 6, "ENFORCEMENT"*
    b) *Chapter 7, "ABATEMENT"*

TUOLUMNE UTILITIES DISTRICT

WASTEWATER ORDINANCE

Adopted - August 24, 1993

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CHAPTER 1

GENERAL PROVISIONS

1.01 Purpose and Policy

This Wastewater Ordinance sets uniform requirements for discharges into the wastewater collection and treatment system of the Tuolumne Utilities District (hereinafter referred to as "District"). It enables the District to comply with administrative provisions of the Clean Water Grant Regulations, the water quality requirements set by the Regional Water Quality Control Board and applicable effluent limitations, national standards of performance, toxic and pretreatment effluent standards, and any other discharge criteria which are required or authorized by State or Federal law. Its purpose is to derive the maximum public benefit by regulating the quality and quantity of wastewater discharged into those systems. This Ordinance also provides for the setting of user charges and fees for the equitable distribution of cost of all users, and the issuance of permits to certain users.

1.02 Definitions

Unless otherwise defined herein, terms shall be as adopted in the latest edition of Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation. Waste constituents and characteristics shall be measured by Standard Methods unless expressly stated, or as established by Federal or State regulatory agency.

Accessory Dwelling - A secondary dwelling with a floor space of 850 square feet or less which is located on a parcel which also has a primary residence.

Building Sewer - A sewer conveying wastewater from the premises of a user to a community sewer.

Beneficial Uses - Uses of the waters of the State that may be protected against quality degradation, including but not necessarily limited to, domestic, municipal, agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation and the preservation and enhancement of fish, wildlife and other aquatic resources or specified by Federal or State law.

Community Sewer - A sewer owned or operated by the District, or a sewer owned or operated by another person or entity which is tributary to and discharges into an interceptor, or a treatment or disposal facility owned or operated by the District.

Compatible Pollutant - Biochemical oxygen demand, suspended solids, PH and fecal coliform bacteria, the District's treatment works were designed to treat, and removes to a substantial degree.

Contamination - An impairment of the quality of the waters of the State by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. Contamination shall include any equivalent effect resulting from the disposal of wastewater, whether or not waters of the State are affected.

Critical User - A user whose user classification is identified in the Standard Industrial Classifications (SIC) Manual in any of Division A, B, D, E, and I, and who (1) has a discharge flow of 50,000 gallons or more per average work day, or (2) has a discharge flow greater than 5 percent (5%) of the flow in the District's wastewater treatment system,

or (3) has in his wastes toxic pollutants in toxic amounts as defined in standards issued under Section 307(a) of the Federal Act.

Customer – Any person, including without limitation a parcel or property owner, or tenant, supplied or entitled to be supplied with wastewater service by the District in accordance with established rules, regulations, rates and charges.

Demand Flow - The quantity of wastewater volume discharge demand assured for purposes of this Ordinance, weighted for wastewater constituents and characteristics in excess of the typical average strength of domestic wastewater.

Developer - Any person who enters into an agreement with the District for the construction of sewer facilities to be transferred to the District for the provision of sewer service to a project or parcel(s).

District - Tuolumne Utilities District. May also be referred to as TUD.

Equivalent Single-Family Residence (ESFR) - The estimated potential demand of the typical residential user expressed in terms of the volume of wastewater discharge, usually average daily flow in gallons per day.

Federal Act - The Federal Water Pollution Control Act, PL 92-500, and any amendments thereto; as well as any guidelines, limitations, and standards promulgated by the Environmental Protection Agency pursuant to the Act.

Holding Tank Waste - Any waste from Holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks, grease traps or grease interceptors, and vacuum pump tank trucks.

Hot-Tap - Process involved in using a machine to cut a hole into an existing pipeline, which maybe actively conveying water or wastewater, for the purposes of establishing a new service lateral or branch connection to a pipeline . This activity is typically carried out by District staff with District equipment.

Incompatible Pollutant - Any pollutant which is not a compatible pollutant as defined in this section. The pretreatment standard for incompatible pollutants introduced into a District treatment works by a major contributing industry not subject to Section 307© of the Federal Act shall be, for sources within the corresponding industrial or commercial category, that established by a promulgated effluent limitations guideline defining best practicable control technology currently available pursuant to Section 301(b) and 304(b) of the Federal Act. Provided, that if the District's treatment works which receives the pollutants is committed, to remove a specified percentage of any incompatible pollutant, the pretreatment standard applicable to users of such treatment works shall be correspondingly reduced for that pollutant; and provided, further, that even when the effluent limitations guideline for each industry category is promulgated, a separate provision will be proposed concerning the application of such guidelines to pretreatment.

Lateral Inspection - Inspection carried out by District staff of the segment of service lateral originating at the connection to the sewer main through the property line cleanout and up to the connection to the customer's private sewer service lateral.

Private Lateral – Private lateral is the portion of the sewer pipeline upstream of the sewer cleanout or manhole that is located near the property line, provided one exists and is accessible to the District, to the points of service within the property or properties. The private lateral is owned and maintained by the property owner. If no cleanout or manhole

exists near the property line then the entire lateral from the points of service to the lateral connection at the public sewer main is considered a private lateral.

Public Lateral – Public lateral is the portion of the sewer pipeline downstream of the sewer cleanout or manhole that is located near the property line, provided one exists and is accessible to the District, to the lateral connection at the public sewer main. The public lateral is owned and maintained by the District.

Lateral Connection -The physical point in which the public or private sewer lateral meets and connects to the public sewer main..

Manager - The General Manager of the District, or his designated representative.

Mass Emission Rate - The weight of material discharged to the sewer system during a given time interval. Unless otherwise specified, the mass emission rate shall mean pounds per day of a particular constituent or combination of constituents.

Mobile Home Park - A user which has a proper license and permit issued by Tuolumne County or as regulated by the State of California, to lease or rent mobile homes and which is defined in Tuolumne County Code, Title 17 Section 17.04.520.

Nuisance - Anything which is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfort or enjoyment of life or property. A public nuisance is one which affects at the same time an entire community or neighborhood or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.

Parcel - A piece of real property designated by the County of Tuolumne by a single assessor's parcel number, or other identifying information.

Parcel Owner - The person or persons whose name or names appear on the Tuolumne County Tax Assessor's latest equalized assessment roll as the owner of a parcel that is receiving utility service. The parcel owner is responsible for the payment of all rates, charges, and fees, including penalties thereon regarding such furnished services.

Permit - Means a written permit issued by the Manager or his authorized representative.

Person - Any individual, partnership, firm, association, corporation, or public agency, including the State of California and the United States of America.

Pollution - An alteration of the quality of the waters of the State by waste to a degree which unreasonably affects such waters for beneficial use or facilities which serve such beneficial users. Pollution may include contamination.

Premises - A parcel of real estate, including any improvements thereon, which is determined by the District to be a single user for purpose of receiving, using, and paying for service.

Property Owner – *See* Parcel Owner.

Shall and Will - As used in this document shall both mean a mandatory or obligatory act or requirement.

Unpolluted Water - Water containing no constituents which would render such water unacceptable to the agency having jurisdiction thereof for disposal to storm or natural drainages or directly to surface water.

Septic Dump Charge - The fee charged to septage haulers to cover the treatment and disposal capacity consumed by discharging septage at the District's Regional Wastewater Treatment Plant. The fee also captures the costs associated with long term capital replacement and annual operations and maintenance of the septage receiving facility.

Subscriber - Another public or private utility company providing sewer service to more than one parcel of land, but for which some part of its sewer treatment or other sewer service is provided by the District by contract or other previous agreement. For the purpose of this definition subscribers are: Jamestown Sanitary District, and THCSD.

Tenant – A person who occupies land or property rented from a landlord, including without limitation a parcel or property owner. *See* Customer.

TUD – *See* District.

User - Any person that discharges, causes or permits the discharge of wastewater into a community sewer.

User Classification - A classification of user based on the 1972 edition of the Standard Industrial Classification (SIC) Manual prepared by the Executive Office of Management and Budget.

Division A	Agriculture, Forestry, Fishing
Division B	Mining
Division D	Manufacturing
Division E	Transportation, Communication, Electric, Gas Sanitary
Division I	Services and Commercial User defined as all retail stores, restaurants, office buildings, laundries, churches, lodges, other private business and services.

Waste - Includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, of human or animal origin, or from any producing, manufacturing, or processing operation.

Wastewater - Waste and water, whether treated or untreated, discharged into or permitted to enter a community sewer.

Wastewater Constituents and Characteristics - The individual chemical, physical, bacteriological and radiological parameters, including volume and flow rate and such other parameters that serve to define, classify or measure the contents, quality, quantity and strength of wastewater.

Water of the State - Any water, surface or underground, including saline waters within the boundaries of the State.

CHAPTER 2

PROHIBITIONS, LIMITATIONS AND CONDITIONS OF SEWERAGE SERVICE

2.01 Prohibitions on Discharges

No person shall discharge to a community sewer or District treatment facilities, wastes which cause, threaten to cause, or are capable of causing either alone or by interaction with other substances:

A fire or explosion;

Obstruction of flow in a sewer or injury of the system or damage to the wastewater collection, treatment or disposal facilities;

Danger to life or safety of personnel;

A nuisance, or prevention of the effective maintenance or operation of the sewer system, through having a strong, unpleasant odor;

Air pollution by the release of toxic or malodorous gases or malodorous gas-producing substances;

Interference with the wastewater treatment process;

The District's effluent or any other product of the treatment process, residues, sludges, or scums, to be unsuitable for reclamation and reuse, or to interfere with the reclamation process;

A detrimental environmental impact or a nuisance in the waters of the State or a condition unacceptable to any public agency having regulatory jurisdiction over the District;

Discoloration or any other condition in the quality of the District's treatment works effluent in such a manner that receiving water quality requirements established by law cannot be met;

Conditions at or near the District's treatment works which violate any statute or any rule, regulation, or ordinance of any public agency of State or Federal regulatory body;

Quantities or rates of flow which overload the District's collection or treatment facilities or cause excessive District collection or treatment costs, or which use a disproportionate share of the District facilities.

2.02 Prohibitions on Storm Drainage and Groundwater

2.02.1 Individual Connections

Storm water, groundwater, rainwater, street drainage, subsurface drainage or yard drainage shall not be discharged through direct or indirect connections to a community sewer unless a permit is issued by the District. The District may approve the discharge of such water only when no reasonable alternative method of disposal is available.

If a permit is granted for the discharge of such water into a community sewer, the user shall pay the applicable service connection fees and user charges and fees and meet such other conditions as required by the District.

2.02.2 Community Sewer Connections

Whenever in the District's opinion a community sewer connection is discharging quantities of effluent significantly in excess of the amounts that should be generated from the services within the community sewer system, whether from storm water, groundwater, rainwater, street drainage, subsurface drainage, area drainage or other causes, then such excessive drainage shall be remedied, controlled and eliminated by the community sewer entity upon demand of the District, and for that purpose, the District may take any steps reasonably designed in its opinion to remedy, control and eliminate such excess effluent discharge into District facilities, including but not limited to:

a. Imposition of a surcharge, including progressive surcharges, on such excessive discharge;

b. Requiring the entity to conduct an infiltration/inflow analysis or other study to determine the causes, and to adopt and implement a plan to remedy or eliminate such excess discharge;

c. Termination of service.

2.03 Prohibition on Unpolluted Water

Unpolluted water, including, but not limited to cooling water, process water or blow-down from cooling towers or evaporative coolers will not be discharged through direct or indirect connection to a community sewer unless a permit is issued by the District. The District may approve the discharge of such water only when no reasonable alternative method of disposal is available.

If a permit is granted for the discharge of such water into a community sewer, the user shall pay the applicable service connection fees and user charges and fees and shall meet such other conditions as required by the District.

2.04 Limitation on Radioactive Wastes

No person shall discharge or cause to be discharged, any radioactive waste into a community sewer, except;

When the person is authorized to use radioactive materials by the State Department of Health or other governmental agency.

When the waste is discharged in strict conformity with current California Radiation Control Regulations, and the Atomic Energy Commission regulations and recommendations for safe disposal; and

When the person is in compliance with all rules and regulations of all other applicable regulatory agencies.

When the person is undergoing medical procedures, treatments, or therapies.

2.05 Limitation on the Use of Garbage Grinders

Waste from garbage grinders shall not be discharged into a community sewer except:

Waste generated in preparation of food normally consumed on the premises; or

Where the user has obtained a permit for that specific use from the District and agrees to undertake whatever self-monitoring is required to enable the District to equitably determine the user charges based on the Wastewater Constituents.

Such grinders must shred the waste to a degree that all particles will be carried freely under normal flow conditions prevailing in the community sewer. Garbage grinders shall not be used for grinding plastic, paper products, inert materials, or garden refuse.

2.06 Limitations of Point of Discharge

No person shall discharge any substances directly into a manhole or other opening in a community sewer other than through an approved building sewer, unless upon written application by the user and payment of the applicable user charges and fees, the District issues a permit for such direct discharges.

2.07 Holding Tank Waste

A user proposing to discharge holding tank waste into a community sewer must secure a permit. Unless allowed by the District under the terms and conditions of the permit, a separate permit must be secured for each separate discharge. This permit will state the specific location of discharge, the time of day the discharge is to occur, the volume of the discharge and the wastewater constituents and characteristics. If a permit is granted for discharge of such waste into a community sewer, the user shall pay the applicable service connection fees and user charges and fees and shall meet such other conditions as required by the District.

2.08 Other Limitations on Wastewater Discharged into a Community Sewer

a. No person shall discharge into a sewer wastewater containing in excess of:

0.1 mg/L arsenic
0.2 mgg/L cadmium
5.6 ug/L copper
1.0 mg/L cyanide
1.0 ug/L lead
0.01 mg/L mercury
1.0 mg/L nickel
0.2 mg/L silver
0.5 mg/L total chromium
38 ug/L zinc

b. Groundwater Remediation Projects:

1.0 mg/L Benzene, Toluene, Ethyl benzene, Xylene (BTEX)
10.0 mg/L Total Petroleum Hydrocarbons (TPH)

c. No person shall discharge into a sewer any wastewater:

1. Having a temperature higher than 150 degrees F (65 degrees C.)

2. Containing more than 300 mg/L of oil or grease of animal or vegetable origin.

3. Containing more than 100 mg/L of oil or grease of mineral or petroleum origin.

4. Having a pH lower than 6.0.

5. Containing in excess of 0.02 mg/L total identifiable chlorinated hydrocarbons.

6. Containing an excess of 1.0 mg/L phenolic compounds.

d. No person shall discharge or cause to be discharged to any public sewer which directly or indirectly connects to the District sewer system any toxic or other wastes if in the opinion of the Manager such wastes may have an adverse or harmful effect on service maintenance personnel, wastewater treatment plant personnel or equipment, treatment plant effluent quality, public or private property or may otherwise endanger the public, the environment, or create a public nuisance.

e. Grease Trap and Grease Interceptors

1. Any type of business or other establishment such as, but not limited to, restaurants, bakeries, donut shops, takeout or drive-in eating establishments, ice cream parlors, hospitals, hotels, markets, or commercial kitchens in schools, churches, recreation or reception halls, etc., where any grease or other objectionable materials may be discharged into a public sewer main or disposal system, shall have a "gravity grease interceptor" or a "hydromechanical grease interceptor", herein referred to generally as “interceptor”, unless waived by the District Engineer upon evidence that an interceptor is not required, which determination shall be made at the sole discretion of the District.. Any modification to operations upon which a waiver was granted may require installation of a grease interceptor

2. Any type of business or facility such as, but not limited to, car washes, quick lubes, and automotive repair shops, where any grease of mineral or petroleum origin is generated and which may be discharged into a public sewer main or disposal system, shall have a “oil liquid interceptor”, herein referred to generally as “interceptor”, unless waived by the District Engineer upon evidence that an interceptor is not required, which determination shall be made at the sole discretion of the District. Any modification to operations upon which a waiver was granted may require installation of a grease interceptor

3. Interceptors shall be sized and constructed in accordance with District standard specifications and the latest edition of the District’s Fats, Oils and Grease Control Program. All designs shall be submitted for approval by the District Engineer prior to installation.

4. Each interceptor shall be so installed and connected in a location that is easily accessible for inspection at all times and to provide for cleaning and removal of the intercepted grease. A gravity grease interceptor may not be installed in any part of a building where food is handled. Locations of interceptors shall meet the latest edition of the California Plumbing Code and the approval of the District Engineer.

5. Each business establishment for which an interceptor is required shall have an interceptor, which shall serve only that business establishment.

6. Buildings remodeled for use requiring interceptors shall be subject to these regulations.

7. Waste discharge from fixtures and equipment in the above mentioned types of establishments which may contain grease or other objectionable materials, including, but not limited to, scullery sinks, pot and pan sinks, dishwashers, food waste disposals, soup kettles, etc., and floor drains shall not drain through the

interceptor without prior approval by the District Engineer. Toilets, urinals, and other fixtures containing fecal material may not flow through the interceptor.

8. The interceptors shall be maintained in efficient operating condition by periodic removal of the accumulated grease. No such collected grease shall be emptied or discharged into any drainage piping or public or private sewer. Such materials shall not be disposed of at the District's Regional Wastewater Treatment Plant.

9. Abandoned grease interceptors shall be emptied and filled as provided for in the latest edition of the California Plumbing Code and in accordance with the requirements of the Tuolumne County Environmental Health Department

10. The cover or lid for interceptors shall be designed for the loads imposed on the structure as required by the District Engineer. The cover shall be gas-tight on all interceptors and the waste shall enter the interceptor through the inlet pipe only. The use of proper vent per the most recent edition of the California Plumbing Code shall be required.

11. Interceptors shall be installed in such a manner as to prevent drainage from outside the intended area of use.

12. If, upon inspection by the District, an interceptor is found to be absent or ineffective as solely determined by the District Engineer, the owner/user shall be required to make immediate repairs or corrections within thirty (30) days after receiving written notification of deficiency from the District. If the interceptor requires pumping and servicing, as determined by the inspector, the owner/user shall be required to have the interceptor pumped by a licensed hauler within ten days after receiving notification by the inspector. Failure to make such repairs or corrections shall result in disconnection from the public sewer, and if the District supplies water service to the premises, such water service shall be shut off.

13. The owner/user shall keep records of interceptor cleaning, maintenance, and grease removal and report on such maintenance to the District in the format and at the frequency required by the District Engineer. The District Engineer may require the owner/user to provide results of periodic measurements of its discharge which is to include chemical analysis of fats, oils and grease content.

c. Effluent limitation promulgated by the Federal Act shall apply in any instance where they are more stringent than those in this Ordinance. Under section 307(b) of the Act, Federal pretreatment standards are designed to achieve two purposes: (1) to protect the operation of publicly owned treatment works, and (2) to prevent the discharge of pollutants which pass through such works inadequately treated. Users in commercial and industrial categories subject to effluent guidelines of the Act, which are discharging incompatible pollutants to publicly owned treatment works, are required to adopt best practicable control technology currently available, as defined by the Administrator. Where the District treatment works was designed to and does achieve substantial removal of pollutants other than the four pollutants listed in the definition for compatible pollutants, it is not appropriate to require the commercial or industrial user to achieve best practicable control technology currently available, since this would lead to an uneconomical duplication of treatment facilities. While the term "substantial removal" is not subject to precise definition, it generally contemplates removals in the order of 80 percent (80%) or greater. Minor incidental removals in the order of 10 to 30 percent (10-30%) are not considered "substantial". For some industrial categories it may be necessary to define pretreatment guidelines for problems that may arise as a result of the discharge into publicly owned treatment works. However, any adjustment required for particular categories should be considered in connection with the District's requirements,

rather than in the national pretreatment standards. Limitations on wastewater strength in Section 2.08.a and 2.08.c of this Ordinance may be supplemented with more stringent limitations:

1. If the district determines that the limitations in Section 2.08.a and 2.08.b may not be sufficient to protect the operation of the District's treatment works, or

2. If the District determines that the limitations in Sections 2.08.1 and 2.08.2 may not be sufficient to enable the District's treatment works to comply with water quality standards or effluent limitations specified in the Waste Discharge Requirements specified by the California Regional Water Quality Control Board for the District.

2.09 Limitations on Flow

When in the opinion of the District, the quantity of wastewater discharged to the collection facilities are in any way detrimental to said facilities or are in excess of the capacity of that system, the District may require the implementation of flow limiting devices by individual users. The flow limiting devices shall be of a type approved by the District and shall be installed on those fixtures designated by the District and at the user's expense. User charges may then be adjusted as provided for in Chapter 4 of this Ordinance.

All applicants for new sewer service connections may be required to furnish proof of installation in residential, commercial and/or industrial buildings, ultra-low flow toilets with a maximum tank size or flush capacity of 1.6 gallons and shower heads maximum flow rates as determined by California law.

2.10 Backflow Devices

The District requires that a backflow prevention device be installed, operated, maintained and replaced at the sole expense of the parcel owner where wastewater from the public sewer may back up into the user's building sewer. Such backflow prevention device shall be installed on the property of the user and become part of the user's private sewer lateral. Protection of property from damage caused by wastewater backup from the public sewer is the sole responsibility of the user. Failure of the District to notify the user of any known or unknown hazards which may result from the user's connection to the public sewer and/or failure of the District to require the installation of such backflow prevention device shall not relieve the user of this sole responsibility. The District shall not be responsible for nor shall it compensate for damages resulting from any such backup of wastewater.

2.11 Access

District personnel shall have a right of access to any premises the sewage discharge from which reaches the District's sewer system, to determine whether there is compliance or non-compliance with this Ordinance. District personnel shall further have a right of access to go upon any premises on which a sewer line is located that is serving more than one parcel or building for the purpose of inspection of the sewer line and to shut off, terminate, repair or reconnect sewer service, for any other purpose related to the operation of the sewer system, including the inspections relating to grease interceptors. All Critical Users will be required to install an inspection/sampling chamber, the type and location of which will be determined by the District Engineer.

2.12 Responsibility for Lateral or Service Line

The customer shall be responsible for the maintenance, repair and good working order of the private sewer lateral. The District shall not be responsible for damages resulting from any

inadequately maintained or repaired private sewer laterals, or abandoned private sewer laterals. If the customer installs a District approved sewer cleanout or manhole at the property line adjacent to a public right-of-way, and the cleanout or manhole is accessible to the District's satisfaction, the District will maintain the portion of the lateral downstream of the cleanout or manhole in the public right-of-way. The District may, at its sole discretion, install a cleanout at the customer's property line if the customer locates and exposes the private lateral. For all new construction, the customer shall install a cleanout at the property line. In no case will the District maintain sewer laterals on private property unless the District specifically agrees under special circumstances, such as where the lateral serves more than one parcel, and where an easement is granted to and accepted by the District.

2.13 Conditions for Service in Apple Valley Estates

Owners of property within Apple Valley Estates are required to install privately owned and maintained septic tanks with access risers on their lots at their expense. The property owner is to obtain written approval of the District and pay applicable connection fees and charges prior to installing the septic tank and connecting to the District's collection system. The District shall have access on and across all properties served by the District in order to inspect, repair, maintain, pump, and replace septic tanks, risers, and pipelines. In order to assure the safety and integrity of District facilities and to assure accessibility of facilities, the septic tanks, pipelines, and risers are to be installed to specifications of the District as to type, manner of installation, and location on the property. Property owners are responsible for maintaining and cleaning all sewer lines from the residence plumbing fixtures to the inlet of the septic tank as well as maintaining the structural and functional integrity of the tank and risers. Upon compliance to terms and conditions contained herein and following proper application and acceptance by the District, the District shall make periodic inspection of tanks and related facilities and shall pump accumulated sludge from the tanks on as needed basis, as solely determined by the District.

Property owners will be responsible for maintaining at all times full and unrestricted access to the tank and risers. Property owners, or their successors, who grade their property, install landscaping or make other changes or modifications which alter or impair the structural integrity of the tank, risers and/or pipelines, or alter their ability to properly function, or in any way impede access thereto will be responsible for the correction and repair of the same. Failure, upon thirty days written notice from the District, to undertake corrective action as directed shall relieve the District of any and all responsibilities to the property owner as to providing sewer service to the property, shall relieve the District of any responsibilities for damage which may be caused by the backing up of sewage upon the property, shall immediately invalidate and make null and void the property owners application for sewer service and result in the District's disconnection of the service from its collection system. Prior to reestablishing service, the property owner must then comply with the written directive of the District, reapply for service and pay all connection fees, or, at the option of the District and upon thirty days written notice, the District may make such corrections and/or repairs with all costs thereof being charged and becoming an obligation of the property owner. If the same is not paid upon sixty days of billing, the District may place such charges and expenses upon the tax rolls, and/or place a lien on the property for such costs.

CHAPTER 3

EXTENSION OF FACILITIES, CONNECTION TO INTERCEPTORS AND DISCHARGE PERMITS

3.01 Extension or Improvement of Facilities Agreement

When sewer service is requested for property within the District which does not abut an adequate public sewer collection facility, an extension or improvement of the District's system shall be required. Such facilities may include, but not limited to, collection pipes, manholes, backflow prevention devices, pump stations and cleanouts.

3.01.1 Application

An extension or improvement of facilities shall be initiated by completing an Application for Development and depositing an application fee. The application must be signed by the property owner, and shall become null and void under the following conditions:

a. The application shall become void ninety (90) days following date of issue unless an recordable extension or improvement of facilities agreement has been signed by both the TUD Board of Directors and the applicant.

b. The application and recordable agreement shall both be void and terminated eighteen (18) months after execution of the extension and improvement agreement unless construction has been completed and accepted in writing by the District. A twelve (12) month extension of time may be granted upon request by the developer and approval in writing by the District General Manager.

3.01.2 Project Approval

Design documents accompanying extension or improvement applications shall be reviewed by the District Engineer. If further information or redesign is required, the applicant shall furnish additional material or information at their own expense. All such designs shall be certified and stamped by an engineer registered to practice in the State of California and all design and material specifications shall be in accordance with standard specifications approved by Tuolumne Utilities District. Upon District approval, the design shall be incorporated into an extension or improvement agreement meeting terms and conditions required by the District. The agreement shall be placed on the Board of Directors agenda, accompanied by staff recommendations, and, if authorized, the President and Secretary of the Board shall sign the agreement.

No actual construction or field work shall begin until the agreement has been signed by all parties.

3.01.3 Installation and Ownership of Extension of Facilities

The applicant (hereinafter referred to as “developer”) shall have the facilities constructed and installed by an experienced, competent contractor approved by the District. The District reserves the right to construct, with its own personnel or by contract, at cost to the developer, hot taps or connections to existing pipes and any other complex or difficult construction which may be necessary to ensure proper operation and function of District facilities, in the opinion of the District Engineer. The developer may be required to furnish an irrevocable letter of credit, bond, or other acceptable surety to guarantee completion and payment for any facilities constructed under the agreement. Upon completion, final

inspection and acceptance in writing by the District, the off-site facilities shall be owned and operated by the District as part of its sewer system.

3.01.4 Sizing of Facilities

The normal minimum pipe line size for public sewer shall be six(6) inches inside diameter, however, the District Engineer may specify larger or smaller pipe line size under appropriate conditions.

For applications involving proposed developments that will have thirty (30) or more new connections at build-out, the applicant shall pay the District to model the flows from the project to the Regional Wastewater Treatment Plant or to the closest downstream sewer lift station. Billing will be in accordance with the engineering hourly rate as listed in Exhibit D of this ordinance.

3.01.5 Location of Facilities

The extension or improvement of facilities shall be located only on land owned by the District in fee, in streets with an acceptable encroachment permit, existing public utility easements, or in an easement granted to the District. The location is subject to the District's approval of alignment, accessibility and safety of the facilities. The developer shall convey or grant to the District without cost such land and/or easements the District determines necessary for the facilities. The District may also require an easement for future extensions. Land shall be conveyed to the District, free and clear of liens or encumbrances except encumbrances of record that are acceptable to the District. Easements shall be granted in a form satisfactory to the District. The pipeline shall abut all parcels served. An easement shall be granted to District along the entire length of the developer's parcel except in cul-de-sacs, dead-end roadways or other situations where the District determines that the pipeline may terminate and remote service be provided.

3.01.6 Payment of Administration, Plan Review, and Inspection Costs

The developer shall pay the District's costs for projects as specified in Exhibit D attached hereto and describes as follows:

a. Administration Charge. This is a one-time charge which shall be paid at the time of application and which shall be used to cover District staff time involving assistance to the applicant regarding District procedures, scheduling, public hearings, and accounting.

b. Engineering Labor Charges. These charges shall be for engineering labor expended on CEQA review, plan and easement reviews and project management. A deposit shall be paid prior to District’s review of construction plans.

c. Inspection Charges. These charges shall be for the District's time expended on the construction site facility inspections. Inspection charge deposits will be paid prior to commencement of construction and credited to the actual charges incurred by District staff for inspections, camera-testing, pressure-testing, vacuum-testing, disinfection, etc. In the event that actual costs exceed the deposit, charges will be billed monthly to the developer during the construction of the facilities. Any funds collected but not used will be refunded upon acceptance of the facilities by the District.

Projects with both off-site and on-site improvements shall be charged under both the “Main Line Extension” categories and “Development Number of Lot” categories in the fee

schedule listed in Exhibit D. For developments with less than five lots or equivalent single-family resident (ESFR), the Main Line Extension classification shall apply.

3.01.7 As-Built Drawings and Proof of Service Certification

Upon completion and final inspection by the District, developer shall submit a complete set of as-built drawings of the facility acceptable to the District in hardcopy form together with an Auto-Cad electronic file compatible with the current Auto-Cad Version being used by the District. This requirement may be waived with prior approval of the District Engineer. After all conditions for acceptance of the facility have been met, the District will issue written certification of proof of service to the City of Sonora Building Department and Tuolumne County Community Resources Agency.

3.01.8 Warranty Responsibility

For a period of two (2) year from the date of acceptance by the District, the developer shall warrant for the repair of all defects, leaks or failure occurring in the facilities, which are, as determined by the District, to be due to negligence in the manufacture and/or installation of the facilities, exclusive of negligence by the District or its agents, acts of a third party or acts of God. Failure by the developer to pay for any of the repairs described above after being billed by the District will result in a lien being placed against the property by the District. Infrastructure failure deemed to be an emergency may be repaired by the District, but shall remain the financial responsibility of the developer. District shall invoice developer for associated costs.

The developer, or the developer's contractor, may be required to submit a two (2) year repair surety bond, (in form acceptable to the District), certificate of deposit, or irrevocable letter of credit, in an amount not less than ten percent (10%) of the construction costs of the facilities.

3.01.9 Documentation of Project Costs

For all projects, the developer shall provide the District with a detailed statement of construction costs satisfactory to District.

3.01.10 Cost Reimbursed through the District

Reimbursement of documented project costs to a developer for extension or improvement of permanent facilities, when other users later benefit from such facilities, shall be subject to a reimbursement agreement. It shall be the intent of this regulation to provide a fair and equitable return to the original developer provided others make use of the extended or improved facilities within a ten year period following completion of construction. The District will collect and disburse funds for repayment of verified project construction costs under the conditions set forth below.

a. The District shall be under no obligation to make any reimbursement payment whatsoever, except as outlined in this section. All questions as to the meaning of any portion of this section or the reimbursement agreement shall be as interpreted by the District.

b. Reimbursable facilities must be constructed in accordance with District's standard specifications from plans submitted and approved prior to construction, inspected by the District during and after construction and the costs must be documented to District's satisfaction. A detailed statement of construction costs must be submitted by the Developer to the District within 90 days of completion

of the project, and failure to do so will result in nullification of the District's obligation to collect or administer reimbursement.

c. Any applicant within the area of benefit who requires service through facilities or improvements constructed by others pursuant to a reimbursement agreement and who did not contribute to the cost of construction or required in-lieu fees, shall pay a pro rata reimbursement fee prior to service being supplied. An area of benefit which identifies parcels having access to the constructed facility or improvement shall be determined by District's Engineer and a map of the area shall be attached as an exhibit to the reimbursement agreement. In no case shall reimbursement exceed the documented cost of construction less the proportionate share of the project utilized by the original developer himself. Reimbursement payments required of future applicants for service within the area of benefit shall be based solely upon parcel area according to the following formula:

$$\text{Applicant's Payment Obligation (dollars)} = \frac{\text{Verified Construction Cost (dollars)}}{\text{Total Area of Benefit (acres)}} \times \text{Area of Applicant's Parcel (acres)}$$

Where extensions are constructed in subdivisions, reimbursement amounts may be based on the number of lots within the area of benefit instead of acreage as follows:

$$\text{Applicant's Payment Obligation (dollars)} = \frac{\text{Verified Construction Cost (dollars)}}{\text{Total Number of Parcels In Area of Benefit}}$$

d. District shall also collect an administration fee, in addition to the pro rata reimbursement fee, from each applicant for service under the terms of the reimbursement agreement. Such administration fee shall amount to three (3) percent of the reimbursement fee or two hundred fifty dollars ($250), whichever is larger.

e. On an annual date specified in the reimbursement agreement, the District will disburse collected reimbursement funds to the developer without interest. Developer shall keep the District informed of any change of mailing address. If the developer is an entity of more than one individual, District shall disburse funds to a designated escrow account and shall have no responsibility or liability for the further distribution of such funds.

f. Developer's rights to reimbursement funds shall not be transferable or assignable without the express written consent of the District Board of Directors.

g. Any expense for collection, enforcement, disbursement, litigation or any other reason connected with administration of a reimbursement agreement which exceeds the administration fee cited in paragraph (d.) above, may be deducted and retained by District from reimbursement funds collected by the District before disbursement of the remainder of such funds to the developer.

h. The District will not administer reimbursement from the Developer's own existing or proposed parcels or parcels to be acquired by the Developer.

i. Parcel owners within the area of benefit will not be required to connect to the Developer's extension if an alternate route is preferable in the sole opinion of the District.

3.01.11 Environmental Impact Report Charge

Unless all such environmental processing has been done by the County or another agency, the District may determine that an environmental impact study or report is required for a proposed extension facility necessary to serve a developer's land. The developer shall be responsible for the costs of preparing such a study and/or report, including associated costs incurred by the District for overhead, preparation, and hearings.

3.02 Connections to Interceptors

Connection of individual parcels or single family residences to Regional sewer interceptors shall be allowed under the following conditions:

3.02.1 Gravity Flow Connections

Connections to gravity flow sections of a Regional interceptor shall be made subject to the following conditions:

a. Connections must be made to a manhole, either existing or newly constructed to District standards, unless the District Engineer determines that a manhole connection is unnecessary.

b. The pipeline capacity must either be the District minimum of 6-inch diameter or sized to accommodate District's projected flows from the drainage basin in which the connection is made, whichever is greater.

c. If an applicant's parcel is between the interceptor and parcels that may request or require sewer service from the interceptor an easement shall be granted to the District along the applicant's property line to the parcels and at minimum impact to the applicant's parcel as solely determined by the District.

3.02.2 Pressurized Connections

Connections to pressurized sections of a Regional interceptor shall be made subject to the following conditions:

a. Connections must be made at a location predetermined by the District that represents the logical point of connection that would serve the drainage basin in which the point of connection is located.

b. When, in the sole discretion of the District, a pump station is required, it shall be constructed to the minimum District pump station requirements or to the capacity needed to serve the ultimate reasonable development of the drainage basin in which the connection is located, whichever is greater. Minimum requirements shall include, but not be limited to, duplex pumps, backup power supply, additional overflow tank, telemetry, and building housing the control system.

c. Pumps shall be grinder style unless otherwise approved by the District Engineer.

d. The connection force main and site dimensions for the pump station shall be sized to accommodate the ultimate reasonable development of the drainage basin in which the connection is located as determined by District.

e. If an applicant's parcel is between the interceptor and parcels that may request or require sewer service from the interceptor, an easement shall be granted to the District along the applicant's property line to the parcels and at minimum impact to the applicant's parcel as solely determined by the District.

3.02.3 Exceptions

Exceptions to the above requirements may be granted by the District Board of Directors subject to the following conditions:

a. A letter is received from the Tuolumne County Department of Environmental Health Services to the Tuolumne Utilities District stating that the connection is necessary because the existing condition constitutes either a) a health hazard, or b) measured degradation of water quality to surface and ground waters in the area.

b. No exception shall be granted for new construction.

3.02.4 Shall be Subject to Later Assessment Proceedings

In areas where the District Engineer determines that future improvement or assessment districts may be required to provide sewer facilities to the area, then, as a condition, permission to connection of said interceptor facilities under this Section 3.02, whether or not a rules variance is granted by the Board of Directors per paragraph 3.02.3 above, the applicant shall sign a recordable agreement describing the subject property and which must acknowledge and agree, for the applicants(s) and for successor-owners of the property as follows:

a. that notwithstanding the permitted sewer connection, an assessment or assessments may be levied in the future on the property as a part of the construction of an area-wide system to serve the property together with a larger area, and

b. that the connection allowed by the District shall not be a basis for opposing the inclusion of the property into such an assessment district or the levying of a pro rata share of the assessment upon the property.

3.02.5 Connections According to Design

Notwithstanding requirements of preceding paragraphs in this section, all connections made to an interceptor or main sewer line or lateral sewer line shall be constructed in compliance with existing District plans or designs, if any exist, featuring facilities applicable to service to the subject property. District's Engineer shall determine what constitutes existing plans or designs applicable to an applicant's parcel and shall also determine whether or not a developer's plans are in compliance with such existing plans.

3.03 Wastewater Discharge Permits

3.03.1 Mandatory Permits

All critical users proposing to connect or to discharge into the District's sewer system must obtain a Wastewater Discharge Permit before connecting to or discharging into a

community sewer. All existing critical users connected to or discharging into a community sewer must obtain a Wastewater Discharge Permit within ninety (90) days after the effective date of this Ordinance.

Any applicant for sewer service may be required to obtain a wastewater discharge permit if contemplated discharge is found by the General Manager to have significant impact, either singly or in combination with other contributing discharges, on the treatment or collection system.

3.03.2 Permit Application

Users seeking a Wastewater Discharge Permit shall complete and file with the General Manager, an application in the form prescribed by the General Manager, accompanied by the applicable fees, and signed by the applicant. The applicant may be required to submit, in units and terms appropriate for evaluation, the following information:

a. Name, address and SIC number of applicant;

b. Volume of Wastewater to discharge;

c. Wastewater constituents and characteristics including but not limited to those mentioned in Section 2.08 as determined by a laboratory approved by the District.

d. Time and duration of discharge;

e. Average and 30-minute peak wastewater flow rates, including daily, monthly and seasonal variations, if any;

f. Site plans, floor plans, mechanical and plumbing plans and details to show all sewers and appurtenances by size, location and elevation;

g. Description of activities, facilities and plant process on the premises, including all materials, processes and types of materials which are or could be discharged.

h. Each product produced by type, amount, and rate of production;

i. Hours of work;

j. Any other information as may be deemed by the General Manager to be necessary to evaluate the permit application.

The General Manager will evaluate the data furnished by the user and may require additional information. After evaluation and acceptance of the data furnished, the General Manager may issue a Wastewater Discharge Permit, subject to terms and conditions provided herein.

3.03.3 Duration of Permits

Permits may be issued for a specified time period. A permit may be issued for a period less than a year or may be stated to expire on a specific date. If the user is not notified by the District thirty (30) days prior to the expiration of the permit, the permit shall be extended one (1) additional year. The terms and conditions of the permit may be subject to modification and change by the District during the life of the permit, if any limitations or requirements as identified in Section 2.08 are modified, changed or made more stringent. The user shall be informed of any proposed changes in his permit at least thirty (30) days

prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

3.03.4 Transfer of a Permit

Wastewater Discharge Permits may be issued for a specific operation on a specific premise. Such wastewater Discharge Permits shall not be reassigned or transferred or sold to a new owner, or a new user without the expressed written consent of the District Engineer.

3.03.5 Changes in Operation or Discharge

A user to whom a permit has been issued shall promptly report in writing to the General Manager any changes in his operations, or wastewater constituents or characteristics, that are significantly different from that provided in his permit application.

3.03.6 Revocation of Permit

Any user who violates this Ordinance or applicable State and Federal regulations, or any of the following, is subject to having his permit revoked:

a. Failure of a user to accurately report the wastewater constituents and characteristics of his discharge;

b. Failure of the user to report significant changes in operations, or wastewater constituents and characteristics;

c. Refusal of reasonable access to the user's premises for the purpose of inspection or monitoring; or

d. Any of conditions of the permit.

3.04 Discharge Reports

The District may require that any person discharging or proposing to discharge wastewater into a community sewer file a periodic discharge report. The District may require that the discharge report include, but not be limited to, nature of process, volume, rates of flow, mass emission rate, production quantities, hours of operation, number of employees, or other information which relates to the generation of waste, including wastewater constituents and characteristics in the wastewater discharge. The District may also require that such reports include the chemical constituents and quantity of liquid or gaseous materials stored on site, even though they may not normally be discharged. In addition to discharge reports, the District may require information in the form of Wastewater Discharge Permit applications and self-monitoring reports.

3.05 Monitoring Facilities

The District may require any user to construct, at his own expense, monitoring facilities to allow inspection, sampling and flow measurements of the building sewer or internal drainage systems, including grease traps and grease interceptors, and may also require sampling or metering equipment to be provided, installed, and operated at the user's expense. The monitoring facility should normally be situated on the user's premises, but the District may, when such a location would be impractical or cause undue hardship on the user, allow the facility to be constructed in the public street or sidewalk area under an encroachment permit of the governing agency and located so that it will not be obstructed by landscaping or parked vehicles.

If the monitoring facility is inside the user's fence, there shall be accommodations to allow access for District personnel, such as a gate secured with a District lock. There shall be ample room in or near such sampling facility to allow accurate sampling and composing of samples for analysis. The manhole or other facility, and the sampling and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the user.

Whether constructed on public or private property, the sampling and monitoring facilities shall be provided in accordance with the District requirements and all applicable local agency construction standards and specifications. Construction shall be completed within ninety (90) days following written notification by the District, unless a time extension is otherwise granted by the District.

3.06 Inspection and Sampling

The District may inspect the facilities of any user to ascertain whether any purposes of this Ordinance are being met and all requirements are being complied with. Persons or occupants of premises where wastewater is created or discharged shall allow the District or its representative ready access at all reasonable times to all parts of the premises for the purpose of inspection or sampling or in the performance of any of their duties. The District shall have the right to set up on the user's property such devices as are necessary to conduct sampling or metering operations. Where a user has security measures in force which would require proper identification and clearance before entry into their premises, the user shall make necessary arrangements with their security guards, so that upon presentation of suitable identification, personnel from the District will be permitted to enter without delay for the purpose of performing their specific responsibilities.

3.07 Pretreatment

Users shall make wastewater acceptable under the limitations established herein before discharging to any community sewer. Any facilities required to pretreat wastewater to a level acceptable to the District shall be provided and maintained at the user's expense. Detailed plans showing the pretreatment facilities and operating procedures shall be submitted to the District for review, and shall be acceptable to the District before construction of the facility. The review of such plans and operating procedures will in no way relieve the user from the responsibility of modifying the facility as necessary to produce an effluent acceptable to the District under the provisions of this Ordinance. Any subsequent changes in the pretreatment facilities or method of operation shall be reported to and must be acceptable to the District.

3.08 Protection from Accidental Discharge

Each user shall provide protection from accidental discharge of prohibited materials or other wastes regulated by this Ordinance. Such facilities shall be provided and maintained at the user's expense. Detailed plans showing facilities and operating procedures to provide this protection shall be submitted to the District for review, and shall be acceptable to the District before construction of the facility.

The review of such plans and operating procedures will in no way relieve the user from the responsibility of modifying the facility as necessary to provide the protection necessary to meet the requirements of this Ordinance.

3.09 Special Agreements

Special agreements and arrangements between the District and any persons or agencies may be established when in the option of the District unusual or extraordinary circumstances compel special terms and conditions.

3.10 Approval of Plans for Sewerage Construction

No person, other than employees of the District or persons contracting to do work for the District, shall construct or cause to be constructed, or alter or cause to be altered, any public sewer, lateral sewer, house connection or industrial connection, sewage pumping plant, pollution control plant, grease interceptor, or other sewerage facility within the District where existing or proposed wastewater flows will discharge directly or indirectly to facilities of the District without first obtaining approval of sewerage construction plans from the District.

The applicant shall submit to the District for approval, construction plans and such specifications and other details as required to describe fully the proposed sewerage facility. The plans shall have been prepared under the supervision of and shall be signed by an engineer of suitable training registered in the State of California.

Plans for sewerage construction shall not be approved by the District for any facility which will convey industrial wastewater until the District has determined if a Wastewater Discharge Permit is required for the facility.

Plans for sewerage construction shall meet all design requirements of the District.

An approval of plans for sewerage construction shall expire one year after date of approval unless construction has been initiated.

3.11 Inspection of Construction

All sewer construction, including on-site grease interceptor facilities, shall be inspected by personnel of the District during construction. In making a connection to a trunk sewer, no physical alterations of the District's facilities shall commence until an inspector is present.

Sewerage facilities which will be connected to a District sewer, will be inspected routinely by the District during construction. Upon completion of construction and prior to removal of the downstream bulkhead and upon receiving 48-hour notice, the District will inspect the work to determine if it has been constructed in a satisfactory manner and to determine if all facilities are cleaned of construction debris that could be flushed into the District's sewers.

3.12 Plan Approval Not Transferable

Approval of plans for sewerage construction and connections to trunk sewers is not transferable from one person to another person or from one location to another location without written consent of the District.

3.13 Manhole Reconstruction Notification and Improvements

Access to District manholes shall not be obstructed for a period longer than forty-eight (48) hours without written approval of the District. Adjustments to District manholes shall be performed in accordance with established procedures of the District. A designated person from the entity proposing to perform work necessitating the adjustment of manholes on District's sewers to a new grade shall be responsible for notifying the District in advance of the work at least forty-eight (48) hours prior to performing the work.

3.14 Temporary Service

Temporary wastewater discharge permits shall be limited to one year or less, and thereafter renewable at the discretion of the District General Manager. Service charges shall be determined at rates established by this ordinance.

CHAPTER 4

CLASSIFICATION OF USERS, DEMAND FLOW, CHARGES AND FEES

4.01 Classification of Users

The District hereby establishes the user classifications attached hereto as Exhibit A, to which each user shall be assigned, according to the principal activity conducted on the user's premises and the typical quantities of wastewater volume discharge demand, constituents and characteristics. The purpose of such classification is to facilitate the regulation of wastewater discharges, provide an effective means of source control and to provide a basis for the fixing and levying of charges and fees for services on an equitable basis to all users. All classifications not specifically listed in Exhibit A will be determined by the General Manager from the most similar classification listed or from usage records of a similar establishment.

4.02 Determination of Wastewater Volume Discharge Demand, Constituents and Characteristics by User Classification

4.02.1 Normal Determination

The District hereby determines the quantities of wastewater volume discharge demand, constituents and characteristics for each user classification based upon an estimate for the typical user within each classification shown in Exhibit A. The estimate is determined by the District to be reasonable and is based upon such factors as the number of fixtures, seating capacity, population equivalent, annual production of goods and services, number of employees, or such other factors relating to an equitable determination within and between user classifications. For the purpose of setting charges and for the determination of quantities of wastewater volume discharge demand, constituents and characteristics may be expressed in "demand flow" weighted for wastewater constituents and characteristics in excess of the typical average strength of domestic wastewater.

4.02.2 Uniformity of Determination

The demand flow measured in residential equivalents for each user within a user classification is assumed for purposes of this Ordinance to be uniform. Flow monitoring devices such as sewage or water meters are not a feasible, practical or acceptable means of determining demand flow for individual users.

4.03 Establishment and Purposes of Service and Connection Charges and Fees

The District hereby establishes the schedule of charges and fees attached hereto as Exhibit B to pay for the cost of sewer service provided, to insure an equitable recovery of the District’s cost of providing such services, and to provide capital reserve funds as needed to provide for replacement and expansion of the sewer facilities as needed.

The sewer service charges are to recover the actual costs of operating and maintaining the various elements of the District operated collection systems and the various components of the Regional Sewer System, as indicated on the exhibits attached hereto. The Connection and Capital Facilities Fees are to provide funds for replacement and expansion of capital improvements necessary to provide and maintain service to all customers within the District’s sewer service areas, and for special reimbursement or other purposes, as more particularly indicated in the exhibits attached hereto.

4.04 Other Charges and Fees

The District may at any time establish a schedule of charges and fees to pay for the costs of other services provided, to insure an equitable recovery of the District's cost of providing sewer service, including but not limited to:

a. Monitoring Service. The cost of monitoring wastewater volume discharge demand, constituents or characteristics.

b. Application Fees. The cost of administration, engineering or other related or required costs to process permit application.

c. Appeal Fees. The cost of administration, engineering, legal or other related costs to process appeals.

d. Standby Assessments. The cost of maintaining capacity in a readiness to serve status for the benefit of unimproved parcels of land.

4.05 Basis of Charges and Fees

a. The basis for the allocation of the cost of providing a service shall be "demand flow", per occurrence, per connection or other basis related to the nature of the cost of service provided. Service connection fees and service or user charges shall be based on "demand flow" units, or per occurrence, or per connection as set forth in the exhibits attached hereto.

b. Subject to a written agreement with the District, a bonafide commercial entity registered as such with the State of California may opt to deposit its capacity fee as calculated by the District and the District will monitor the actual water usage of the applicant for a period of one (1) year and if justified will adjust the capacity fees for sewer in accordance with actual use of water at the conclusion of the one (1) year monitoring period. In no event will the capacity fee be adjust lower than the amount of a capacity fee that would be due for a use of one (1) ESFR. The provision of this Section shall not apply to residential developments.

4.06 Special Charges for Apple Valley Estates and Mi Wuk

The user charges for Apple Valley Estates and for the Mi Wuk sewer system shall include in addition to the standard service charges, a septic tank maintenance charge as set forth in Exhibit B.

4.07 Special Connection Fee Surcharge for Portions of Crystal Falls and Sonora Meadows Subdivisions

A connection fee surcharge of $215 per lot shall be added to standard connection fees for applicable lots in Crystal Falls and Sonora Meadows subdivisions. Such surcharge shall be reimbursed to the designated revolving fund. Applicable lots shall be defined as all unsewered lots which benefit from connection to the Crystal Falls Sewer Collection System Design which was designed by Psomas and Associates, presented to and approved by the Board of Directors February 26, 1990, and which was funded by the revolving fund.

4.08 Connection Fees for Mi Wuk Sewer System

Applicants requesting sewer service in the Mi Wuk Sewer System shall be charged connection fees as described in Exhibit C.

4.09 Special Charges for Reimbursement to Clean Waters Assessment District #2

Applicants requesting sewer service from facilities constructed from the Clean Waters Assessment District #2, and who were not included in the assessment district or who were assessed for less than the requested service, shall be required to pay the fee as described on Exhibit B.10.5.

4.10 Payment of Administration, Plan Review, and Inspection Costs

All applicants requesting a line extension shall be charged those Administration, Plan Review and Inspection Costs as specified in Exhibit D.

4.11 Standby Assessments

Standby assessments shall be calculated and levied against all parcels in any subdivision containing fifty parcels or more and which are approved for service by the Board of Directors after adoption of this regulation. Such assessments shall be a condition of approval of providing service to the subdivision to fund the cost of maintaining the wastewater system and its capacity in a readiness to serve status for the benefit of unimproved parcels of land in the subdivision.

Unless such assessments are provided for by a recorded agreement with the developer prior to the sale of the parcels in the subdivision, the District shall direct the preparation of the necessary Assessment Engineer's Report and conduct the required election in accordance with the applicable provisions of the State Constitution. All costs associated with the preparation of the Engineer's Report and conduct of the election, including reasonable District administrative expenses, shall be paid by the project developer. The standby fee or charge will be detailed in the Agreement between the Developer and the District. Standby Assessments shall terminate for each parcel upon application for wastewater service and payment of applicable connection fees and charges.

CHAPTER 5

BILLING POLICY, ADMINISTRATION, COLLECTION AND DISPUTES

5.01 Service Connections

5.01.1 Application for Service

Each person applying for a service connection must complete an application in a manner and on a form prescribed by the General Manager prior to making connection. The application form shall include the following information:

a. Name, email, and mailing address of the owner of the premises

b. Assessor's parcel number of the premises

c. Service address

d. Name and mailing address of the parcel owner to be billed for user charges

e. Type of service requested

f. Date service is required

g. Date of application

h. Signature of Applicant

In areas where the District provides both water and sewer service, applications and connection fees for both services shall be required simultaneously.

The applicant will be notified if the application is approved or disapproved.

5.01.2 Payment of Connection and Capital Facilities Fees

a. The District shall determine the amount of service connection and Capital Facilities fees payable in accordance with the provisions of applicable exhibits of this Ordinance using rates in effect at the time service is applied for. All such fees must be paid before a service connection will be allowed.

b. All applicable Capital Facilities charges must be paid to the District before service will be provided. The Capital Facilities charges for sewer shall be paid by the individual service applicant prior to the activation of service by the District. The individual service applicant will be required to pay all Capital Facilities charges not paid for or capacity not constructed by the developer. Where applicable, at the discretion of the District Engineer, if adequate capacity does not exist the developer will be required to either pay for or construct the necessary capacity prior to acceptance of all developer constructed facilities and prior to installation of any individual sewer service.

c. Service accounts for wastewater discharge permits that may be temporary, such as for groundwater remediation projects, may be paid over a ten year period. In such cases, the connection fee will be divided into 120 equal payments, due each month, and added to the monthly service billing charges. If service is no

longer needed and inactivated prior to the end of the ten year period, the remaining portion of unpaid connection fees will be waived.

d. All applications for sewer service must be accompanied by a valid building permit issued by the Tuolumne County Community Resources Agency or the City of Sonora before the District can accept the application and the connection and facilities fees. If sewer service has not commenced within six months of application for service, sewer service and charges shall nevertheless commence and be payable after the expiration of such six month period.

5.01.3 Inspection of Service Connection

The District shall have the right to physically inspect all service connections at the time such service connections are made. It is the responsibility of the applicant to pay for and normally perform all work required to make a service connection. The applicant must notify the District at least twenty-four (24) hours in advance of making the service connection. Such connections must be made during normal working hours of the District and a District inspector must be present. The applicant may be required to disconnect and reconnect the service connection for inspection purposes, if the District did not inspect the connection as required herein. If the service requires more than two inspections, the applicant will be charged additional fees for each subsequent inspection per Exhibit D.

5.01.4 Unauthorized Service Connections

Construction of a service connection without District approval of an application, without inspection, or without paying all charges in accordance with this Ordinance is not permitted. Any person doing so is guilty of a misdemeanor. An unauthorized sewer connection, when discovered by the District, may require payment equal to twice the avoided user charges in effect during the period of time since such unauthorized service connection was made and twice the connection fee currently in effect at the time of discovery. Such unauthorized connections may be disconnected by District until payments and penalties required by this ordinance are deposited with the District. The payments and penalties as provided herein shall be reduced to surcharge of twenty-five percent (25%) added to the retroactive service charges and current connection fee provided that the physical connection is inspected and approved and payment in whole is made to the District as billed within ten working days of written notification by certified mail.

Notwithstanding the provisions of this section, the Board of Directors shall have the right to alter or reduce the penalties and provisions herein in public session at a regularly scheduled Board meeting for good cause upon recommendation of the General Manager or upon appeal by the penalized party.

NOTE: Effective January 1, 1987, a seller of real property must supply a buyer with a completed Real Estate Transfer Disclosure Statement in the form prescribed in Civil Code 1102.6. Failure to disclose unauthorized connection to the public sewer may constitute fraud.

5.01.5 Change of Use

If an existing user modifies, changes or adds to the use made of the premises on a service connection, then a new application must be completed and approved by the District Inspections, testing repair and upgrading of the service laterals may be required at owner's expense, pursuant to Chapter 9 hereof. If the change of use results in a higher or lower demand flow classification, then a commensurate change shall be made

in the monthly sewer service charge for the account. A change in use may incur additional capacity fees. The business owner or property owner is responsible to obtain change of use approvals from the district prior to commencing operation. Any lowering of the monthly service charge shall be based on evidence such as Assessors use classification and shall commence upon the date of notification to the District of reduced usage and raising of the monthly service charge shall be retroactive to the time at which increased usage was implemented on the premises.

Retroactive refunds of sewer billing resulting from overcharges may be granted, at District's sole discretion, upon District's receipt of verifying evidence that the usage has been reduced. Such evidence may be in the form of water usage records and reduction shall be limited to a period of twelve (12) months from the date of notification of reduced usage.

If metered water service is not being provided at the premises, the user shall, at their expense, install a District-approved water meter on the plumbing system of the premises to enable the District to verify the claimed reduction of sewer discharge. The District shall have the right to access the meter during normal business hours to monitor the water usage of the premises. After a period of one year, if the water usage indicates a sewer discharge lower than the amount used to determine sewer billing, the District may, at its discretion, refund sewer billing retroactively to the date of the initial read of the meter by the District. The meter shall remain on the premises and be accessible to the District for continued monitoring of the usage. If subsequent readings indicate increased usage, the sewer billing will be adjusted accordingly.

Failure to report a change of use, when discovered by the District, may require payment equal to twice the avoided user charges in effect during the period of time since such unauthorized change of use was made and twice the additional connection fee currently in effect at the time of discovery. Premises with unauthorized changes in usage may be disconnected by District until payments and penalties required by this Ordinance are deposited with the District. The payments and penalties as provided herein may be reduced to a surcharge of twenty-five percent (25%) added to the retroactive service charges and the current additional connection fee provided the payment in whole is made to the District as billed within ten working days following notification by certified mail.

Notwithstanding the provisions of this section, the Board of Directors shall have the right to alter or reduce the penalties and provisions herein in public session at a regularly scheduled Board meeting for good cause upon recommendation of the General Manager or upon appeal by the penalized party.

5.01.6 Backflow Prevention Devices

Whenever necessary, an applicant shall install a backflow prevention device at the applicant's expense as an integral part of the private service connection to a community sewer. Protection of private property from damage caused by sewage backup through a sewer service lateral is the sole responsibility of the property owner, and shall not be compensated by the District.

5.02 Service or User Charges

5.02.1 Billing

A monthly charge for sewer service will be billed to all customers that are connected to TUD's sewer system regardless of vacancy, or usage. Bills for sewer service will be mailed or sent via e-mail, to the address of the property owner or tenant. If a tenant does not pay the bill, it becomes the responsibility of the property owner. The bills are payable

upon receipt and are delinquent thirty (30) days after the billing date. The owner of the property in which service is furnished is the customer and shall be responsible for the payment of all rates, charges and fees, including penalties, thereon regarding such furnished service. Unpaid obligations shall run with the land, and shall lead to delinquency and termination of service for the residential unit or other real property involved without regard to any changes of residency or occupancy by persons different than the persons shown on District records as obligated to pay said bill. User shall be responsible to keep the District advised of the address to which bills are to be mailed. Non-receipt of a bill shall not relieve owner of any obligation to the District.

5.02.2 Billing Interval

Bills for sewer service or user charges shall be rendered to users at not more than bi-monthly intervals. Bills are due and payable upon presentation and become delinquent thirty (30) days thereafter.

5.03 Payment

Bills shall be due and payable on mailing, e-mail statement or presentation. Payment shall be mailed to the District at 18885 Nugget Blvd., Sonora, CA 95370, made at the District office, paid online through the District's website, www.tudwater.com, or to a collector authorized by the District.

5.04 Returned Checks or ACH

A charge of $25.00 per occurrence shall be paid for each check or ACH tendered as a payment to the District that is not honored by the bank.

5.05 Prorated Bills

For bills calculated for less than a full billing period, the bill will be prorated from the first day of the billing period to the date of termination of service or from the commencement of service until the last day of the billing period.

5.06 No Credits Or Discounts

No credit or discount will be allowed or approved for any vacant properties.

5.07 Disputed Bills

5.08.1 Review

The Notice of Delinquency shall inform the user that any disputed portion of the billing may be reviewed with the General Manager or Finance Director within thirty (30) days of the date of the Notice. The person requesting review shall send a written statement supporting the basis for dispute to the District office, attention of the General Manager. Billing adjustments may be considered based on a history of no greater than 6 months from the date of most recent billing period.

5.08.2 Payment to Avoid Discontinuance of Service

To avoid discontinuance of service, full payment of the undisputed portion of the bill must accompany the written statement by the due date.

5.08 Direct Billing of Tenants

As a courtesy, owners that rent or lease property with sewer service may have the billing sent directly to the tenant or tenant's agent. To accomplish this, the owner shall complete an Owner – Water/Sewer Application. The tenant is then required to complete a Tenant – Water/Sewer Application and pay the amount of the security deposit as detailed in Exhibit B.13 prior to the District changing the billing name and address. The owner will be responsible, however, for all billings to the tenant that are not paid promptly by the tenant and any penalties thereon. The owner shall have access to information regarding the account status of their tenant upon request.

If the tenant becomes over 30 days delinquent, TUD may revoke tenant billing privileges and the account will be closed in the tenant's name and billing will be placed back into the property owner's name. The tenant's security deposit will be applied to the delinquent bill and any remaining delinquent balance will be transferred to the owner's account. Billing shall remain in owner's name if tenant privileges have been revoked.

5.08.1 Delinquent Notices

Delinquent notices of past due amounts shall be sent to both tenants and property owners of the property receiving water service.

5.08.2 Security Deposits

A deposit is required for all tenants that wish to establish a sewer account with The District. Once the application and deposit have been processed, upon moving out of the property, the deposit will be used towards the remaining portion that is owed to The District. If there is a remaining credit on the account, the tenant will receive a refund check, without interest, within 30 days of closing their account.

5.08.3 Security Deposit Amount

Equal to The Districts current bi-monthly fixed sewer rate as detailed in Exhibit B.9

5.08.4 Subscriber and User Billings

TUD sewer service user charges are contained in Exhibit B of this Ordinance. Charges to subscribers (i.e. other public or private utilities discharging into the District's system) shall be billed based on demand flow factors contained in Exhibit A and the rates contained in Exhibit B.

5.09 Temporary Suspension of Service

The District may allow a maximum six month suspension of monthly service charges at the request of the customer if each of the following conditions are met:

a. The service has been continuously utilized and maintained by the customer, and in an active billing status for at least one-year.

b. Any applicable monthly surcharges under Exhibit B.3 shall be charged to the customer's account and be payable during any suspension period.

c. The request is the result of a catastrophic event such as fire where the structure is uninhabitable.

d. Customer's account must be paid current to be considered for suspension of service. Upon written request of the property owner and written agreement with the General Manager, such suspension period may be extended on a month to month basis up to a total of three (3) additional months in the event of documentable delays in reconstruction of the structure with circumstances beyond the control of the property owner. District will be notified as early as possible when use is resumed and no later than fourteen (14) days before full service billing is to commence. If the sewer is found to be in use during such time as suspended service is in effect, user/owner will immediately become liable for two (2) times the normal full charges which would have been billed during suspension period.

5.10 Discontinuance of Service for Delinquent Bills

The following procedure for termination of service for nonpayment of bills shall be followed:

5.10.1 Delinquent

Unpaid sewer bills shall become delinquent thirty- (30) days after the billing date.

5.10.2 Notice of Delinquency and Impending Termination

If a customer's account is not paid 35 days after the billing date (5 days delinquent), a $10 penalty and 1% interest charge will be applied to the past due balance on a monthly basis until paid. If a customer's account is not paid 45 days after the billing date (15 days delinquent), a written notice of delinquency and impending termination shall be mailed to the service address and the owner of record. The written notice shall specify the date of service termination, which shall be no less than fifteen (15) days after the date on which the written notice is mailed to the service address and the owner of record.

5.11 48-Hour Notice

A second notification, either in person or by mail to the service address and to the owner of record, shall be given 48-hours prior to the termination of service. An additional penalty charge of $10 shall be added to amounts due and payable for continued water service upon implementation of the 48 hour termination notice.

5.12 Interest and Penalties

A delinquent account shall continue to accrue interest from the delinquent date at the rate of 1% per month until the past due amount, plus interest and penalties, is paid in full.

5.13 Discontinuance of Service for Delinquent Bills

From and after the time that a sewer bill has been delinquent for sixty (60) days, the General Manager may, if the delinquent bill, with penalties, is not paid within fifteen (15) days after mailing a Notice of Delinquency and Discontinuance of Service by first class mail, to the address of the premises to which service is billed according to District Records, shut off sewer service to the premises by any appropriate means; and if the District supplies water to the premises, shut off the water supply until said bill is paid. Reconnection shall be made only upon prior payment of charges, penalties and interest due, plus the actual cost of disconnection and reconnection as determined by the General Manager and payment of a security deposit.

5.14 Establishment of Liens Against Property

Delinquent sewer charges shall constitute a lien against the lot or parcel of land against which the charge is imposed and the General Manager or Finance Director may record a Notice of Lien as to any such parcels with the County Recorder of Tuolumne County, and the delinquent charges, together with penalties and interest thereon, shall become a lien upon all real property owned by such person(s) in accordance with Section 31701.7 of the Water Code. The General Manager may further record a Notice of Release or Discharge of Lien upon the payment of any such delinquent charges.

5.15 Placing Unpaid Charges on the County Tax Rolls

In addition to, or as an alternative to the procedure outlined above in 5.05.3, the amount of any charges for sewer service requested in writing by the owner of the property that are delinquent and unpaid for sixty (60) days or more on or before July 1, shall upon notice being given to the owner thereof be added to and become a part of the annual taxes upon such property, and shall constitute a lien on that property as of the same time and in the same manner as general taxes upon such property, all as provided for in Sections 31701.5-31701.6 of the Water Code; provided that in such cases, the District Auditor/Controller shall furnish to the County Board of Supervisors and the County Auditor a statement of such delinquent and unpaid charges on or before August 10 of that year.

5.16 Payment of Connection Charges After Termination of Service

In the event that service to property for which there are delinquent and unpaid sewer charges has been discontinued, and the property is foreclosed upon resulting in the extinguishment of any

District's liens upon the property for such delinquent charges, service shall not be restored to the property until the District Connection and Capital Facilities charge set forth in Exhibit B.9 for new services is paid, unless the applicant pays in lieu thereof all of the delinquent sewer charges on the property, penalties and costs of reconnection.

5.17 Collection by Legal Action

The General Manager is further authorized and directed to institute, or cause to be instituted, and to prosecute, in the name of the District, appropriate legal action for the collection of the delinquent sewer charges and penalties.

5.18 Restoration of Service Upon Payment of Charges

Restoration of service to property which has been terminated (physically disconnected) requires a new service application and payment of the District's Connection Fees applicable to new services, plus, as applicable any unpaid expenses related to the District's original disconnection of the service, as determined by the General Manager. Service to a property which has been in an inactive status (physically connected but not being billed) for less than 5 years shall require payment of the total amount of service charges that would have been paid from the time the service was inactivated until the date in which service is restored. For services that have been inactive in excess of five (5) years the District's Connection Charges applicable to new services must be paid.

5.19 Disconnection by Customer from Sewer System Prohibited

Once capacity fees have been paid for a parcel, the service connection shall not be allowed to be disconnected by the property owner at any time and the property owner shall be responsible for service charges related thereto. No refunds of connection or capacity fees shall be allowed. Capacity shall not be allowed to be transferred amongst parcels except through the conditions of approval contained in a development agreement for a subdivision which development agreement is issued by the District.

CHAPTER 6

ENFORCEMENT

6.01 Accidental Discharge

6.01.1 Notification of Discharge

A user shall notify the District immediately upon accidentally discharging wastes in violation of this ordinance, to enable countermeasures to be taken by the District to minimize damage to the community sewer, treatment facility, treatment processes and the receiving waters.

This notification shall be followed within fifteen (15) days of the date of occurrence, by a detailed written statement describing the causes of the accidental discharge and the measures being taken to prevent future occurrences.

Such notification will not relieve users of liability for any expense, loss or damage to the sewer system, treatment plant, or treatment process, or for any fines imposed on the District on account thereof under Section 13350 of the California Water Code or for violations of Section 5650 of the California Fish and Game Code.

6.01.2 Notice to Employees

In order that the employees of users be informed of the District's requirements, users shall make available to their employees copies of this ordinance and together with such other wastewater information and notices which may be furnished by the District from time to time directed toward more effective water pollution control. A notice shall be furnished and permanently posted on the user's bulletin board advising employees whom to call in case of an accidental discharge in violation of this ordinance.

6.02 Issuance of Cease and Desist Orders

When the District finds that a discharge of wastewater has taken place, in violation of prohibitions or limitations of this ordinance, or the provisions of a Wastewater Discharge Permit, the General Manager may issue an order to cease and desist and direct that those persons violating or not complying with such prohibitions, limits, requirements, or provisions to:

1. Comply forthwith;

2. Comply in accordance with a time schedule set forth by the District; or

3. Take Appropriate remedial or preventive action in the event of a threatened violation.

6.03 Submission of Time Schedule

When the District finds that a discharge of wastewater has been taking place, in violation of prohibitions or limitations prescribed in this Ordinance, or wastewater source control requirements, effluent limitations or pretreatment standards, or the provisions of a Wastewater Discharge Permit, the District may require the user to submit for approval, with such modifications as it deems necessary, a detailed time schedule of specific actions which the user shall take in order to prevent or correct a violation of requirements.

6.04 Appeals

Except in the case of disputed billings under Section 5.07, any user, permit applicant, or permit holder affected by any decision, action, or determination, including Cease and Desist Orders, made by the Manager, interpreting or implementing the provisions of this ordinance or in any permit issued herein, may file with the Manager a written request for reconsideration within ten (10) days of such decision, action, or determination, setting forth in detail the facts supporting the user's request for reconsideration.

If the ruling made by the Manager is unsatisfactory to the person requesting reconsideration, he may, within ten (10) days after notification of District action, file a written appeal to the District's Board of Directors. If the written appeal is not received within ten (10) days, then the General Manager's ruling shall be final. If the written appeal is filed, it shall be heard by the Board within thirty (30) days from the date of filing. The Board of Directors shall make a final ruling on the appeal within ten (10) days of the close of the meeting. The General Manager's decision, action, or determination shall remain in effect during such period of consideration by the Board.

CHAPTER 7

ABATEMENT

7.01 Public Nuisance

Discharges of wastewater in any manner in violation of this Ordinance or of any order issued by the General Manager as authorized by this Ordinance, is hereby declared a public nuisance and shall be corrected or abated as directed by the General Manager. Any person creating a public nuisance is guilty of a misdemeanor.

7.02 Injunction

Whenever a discharge of wastewater is in violation of the provisions of this Ordinance or otherwise causes or threatens to cause a condition of contamination, pollution or nuisance, the District may file an action in the Superior Court for the issuance of a preliminary or permanent injunction or both, as may be appropriate in restraining the continuance of such discharges.

7.03 Damage to Facilities

When a discharge of wastes causes an obstruction, damage, or any other impairment to District facilities, the District may assess a charge against the user for the work required to clean or repair the facility and add such charge to the user's charges and fees.

Tree roots originating from trees on private property or within a utility easement that penetrate the pipe and which appear to be a cause of obstruction or infiltration may be severed at the District's discretion. The District shall not be responsible for the corresponding impact to the tree, replacement of the tree, or for compensation to the owner.

7.04 Civil Damages and Penalties

Any person who violates any provision of this Ordinance or permit condition or who discharges wastewater which causes pollution, or who violates any cease and desist order, prohibition, effluent limitation, national standard of performance, pretreatment or toxicity standard shall be liable civilly for all damages incurred, and for a penalty not to exceed $10,000 for each day in which such violation occurs. The attorney of the District, upon order of the District's Board of Directors, shall file an action in the Superior Court to determine, impose, assess, and recover such sums.

7.05 Criminal Penalties

Any person who intentionally or negligently violates any provision of this Ordinance or permit condition or who discharges wastewater which causes pollution or who violates any cease and desist order, prohibition, effluent limitation, national standard of performance, pretreatment or toxicity standard shall be guilty of a misdemeanor.

7.06 Falsifying of Information

Any person who knowingly makes any false statement, representation, record, report, plan or other document filed with the District or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this Ordinance, is guilty of a misdemeanor.

7.07 Termination of Service

The District may revoke any Wastewater Discharge Permit, or terminate or cause to be terminated wastewater service to any premise if a violation of any provision of this Ordinance is found to exist or if a discharge of wastewater causes or threatens to cause a condition of contamination, pollution, or nuisance as defined in this Ordinance. If the District supplies water service to the premises, such water service may also be terminated in the event of such violation or under such discharge conditions. This provision is in addition to other statues, rules, or regulations, authorizing termination of service for delinquency in payment.

CHAPTER 8

MANDATORY HOOK-UP AND ABATEMENT OF PUBLIC NUISANCE

8.01 Use of Septic Tanks, a Public Nuisance (Clean Waters Assessment District No. 2)

It is hereby found and determined that in the communities of Willow Springs, Mono Vista, and Rancho Poquitos (hereinafter referred to as Clean Waters Assessment District No. 2), because of soil percolation rates, soil depths, topography, shallow groundwater, water quality, lot sizes, and septic system operations, the continued use of on-site wastewater disposal facilities in said areas will result in: significant water quality degradation of underground and surface water supplies, health hazards; will unreasonably affect such waters for beneficial uses; and will be offensive to the senses and an obstruction to the free use of property so as to interfere with the comfortable enjoyment of life and property. It is further found, determined, and declared, pursuant to Section 31103 of the Water Code, that from and after the completion of the sewer system within said Clean Waters Assessment District No. 2, the continued use of septic tanks for sewage disposal therein will be and is a public nuisance. All buildings used by human beings in Clean Waters Assessment District No. 2 which are within 100 feet of the public sewer system shall be connected to the public sewer by January 1, 1991.

8.02 Mandatory Connection to Sewer by District at Owner's Expense
(Clean Waters Assessment District No. 2)

If it appears that the use of a septic system tank, cesspool or other local means of sewage disposal is contaminating any surface or underground water, or creating a public health hazard or is a public nuisance, the General Manager shall report that fact and the evidence in support thereof to the Board. The Board may thereupon give written notice to the owner and occupants of such dwelling house that the Board will, not less than ten days after the giving of such notice, determine whether such condition has occurred or is occurring. Notice shall be given by mailing to the address of the owner as shown on the County Assessment roll, and to the occupants by mailing to the address of the premises, or by hand delivery to an adult person residing on the premises, or by posting at the entry or other conspicuous place on the premises. Any person interested may appear at said hearing and be heard on the matter. If the board finds, at the conclusion of said hearing that such condition is occurring or that it has occurred, the Board may order the owner of said premises to connect such dwelling house, together with all toilets, sinks and other plumbing therein, properly vented, and in a sanitary manner, with the adjoining sewer lateral, within a time to be specified by the Board. Upon the failure to do so, the Board shall order that said work be done, at a reasonable cost, by the District's own forces or by another person contracting with the District therefore. The District shall thereupon have a lien upon said property for all applicable connection fees or charges, and the District, or such other person doing such work at the District's request, shall thereupon have a lien upon said property for the work done and materials furnished, and such work and materials furnished shall be held to have been done and furnished at the insistence of the owner, and any persons claiming or having any interest in said real estate.

8.03 Enforcement of Lien

The liens provided for herein shall be enforced in the same manner as those provided for in (commencing with Section 8000), Part 6 of the Civil Code.

8.04 Placing Forced-Connection Costs on County Tax Rolls

Alternatively to the enforcement of the lien as provided in Section 8.02 and 8.03 above, the Board may in such cases declare that the amount of the costs of such work and the administrative expenses incurred by the Board, together with connection charges and other applicable charges,

be transmitted to the County Assessor and Tax Collector, whereupon it shall be the duty of such officers to add the amount of the assessment to the next regular bill for taxes levied against the lot or parcel of land.

8.05 Lien on Property When Owner Requests Connection

Any owner may request the Board to construct all necessary pipes and plumbing to connect his property to the District's sewer system. If the Board does such work or has such work done, the District or the person doing such work at the request of the Board shall have a like lien upon the property.

8.06 Authorization for this Chapter

It is the intent of this Chapter that the Board shall have all of the powers and authority conferred upon District by Section 31103 of the Water Code (declaring the use of septic tanks to be a public nuisance), and under section 5463 and 5464 of the Health and Safety Code (relating to procedures upon refusal or failure to connect dwellings with sewers), but nothing herein shall preclude the District to utilize any other power or authority for violations or enforcement. "Owner" as used in this Chapter shall also mean and include reputed owner.

CHAPTER 9

PRIVATE SEWER LATERALS

The District's sanitary sewer system has a recurring problem of receiving excessive inflows during the wet seasons. As a result of infiltration and inflows into broken, cracked, and poorly maintained private sewer facilities, including private sewer laterals, flows occasionally overload the conveyance and treatment capacity of the District's Regional Sewer System. In addition, plugging and blockage of private sanitary sewer pipelines caused by root intrusions, grease accumulation, offset joints, flat spots or bellies, can result in overflows, difficulties in operation, contamination of surface waters, and nuisances and endangerment to the public health, safety, and welfare. Therefore, it is hereby found and determined that the District must adopt an aggressive policy of inspection of such private sewer facilities that discharge wastewater into the District's sanitary sewer system and to require property owners to repair or replace such facilities when such conditions are found to occur.

9.01 Owner Responsibility for Maintenance and Repair of Private Sanitary Sewer Facilities

The owner of a property served by the District's sanitary sewer system shall at all times maintain, at the owner's cost and expense, the private sanitary sewer facilities serving the property in a good condition and repair and which does not allow the infiltration, inflow or discharge of stormwater, rainwater, groundwater, subsurface or street drainage into the District's sanitary sewer system. The owner shall be responsible for the operation, maintenance, and repair of such private sanitary sewer facilities, including pipelines and all devices or safeguards required by this section which are part of the such private sanitary sewer facilities serving said property (collectively, "private sanitary sewer facilities"). The owner's operation, maintenance, and repair responsibility is from the building to the connection at the District's sewer main, or to the cleanout at the property line on the sewer lateral when a cleanout has been installed that is accessible to the District's satisfaction.

The owner's responsibility shall extend to and include the private sanitary sewer pipelines, manholes, equipment, pump stations, and related appurtenances serving the premises. The District shall not be responsible for any loss or damage caused by improper or defective installation of such private sanitary sewer facilities, whether inspected and/or approved by the District. All such installations of private sanitary sewer facilities shall conform to all federal, state, county, city, District and local laws, rules, regulations and ordinances.

The owner of the property served by the District's sanitary sewer system shall be responsible and liable for all costs involved in the repair of all damages caused by the owner or the owner's tenant, occupant, customer, or agent, to the District's sanitary sewer system facilities, including but not limited to sewer obstructions, wherever located, and including any costs incurred by the District resulting from such damage or repairing the same.

All private sanitary sewer facilities found in need of repair as a result of testing procedures required by this chapter shall be repaired, upgraded and/or installed to the standards set forth in the District Standards at the owner's expense. If the repairs are not made promptly pursuant to notice being given and to the satisfaction of the District, the District may take any of the abatement actions described in Chapter 7 of this Ordinance, including the termination of service to the premises. The District may also at its option cause the improvements or repairs to be made by the District at the owner's cost and to collect the same as a delinquent account by any of the procedures described in Section 5.05 for delinquent accounts, including the establishment of a lien against the property.

The District may also notify the county or city building inspector, county health inspector, health officer, or other affected county or city office of any apparent violation of a city or county

ordinance or state law related to sanitary sewers, or any contamination, pollution as nuisance relating thereto.

Any of the following shall constitute the giving of notice by the District under this section: Notice to both the owner and to any tenant, either by notice in person, by telephone, or by hand delivery of a notice , or;
Posting such notice in a conspicuous place on the premises and the expiration of 48 hours after posting, plus the mailing of notice by first class mail with postage prepaid in the U.S. mail to the owner and any such tenant and the expiration of 72 hours after such mailing.

The General Manager is authorized in his/her discretion upon the request of any owner or tenant in writing to provide emergency repairs to any broken, plugged or inoperative private sewer lateral when assurance is given for the District to be reimbursed for the costs thereof. If the costs are not paid to the District pursuant to such assurances or within 30 days after such billing, the District may utilize any remedies for the collection thereof that are available for collection of unpaid sewer charges, including but not limited to shutting off the water supply to the premises and by establishing a lien against the property.

9.02 District Program for Testing, and Conditions Requiring Testing by Owners of Private Sanitary Sewer Facilities

a. It is the intent of the District to test and as necessary, video inspect the private sewer laterals, pipelines, and connections of customers served by the District's sewer system on a rotating basis, at a frequency determined by the District, or when one of the events described in subsection B of Section 9.02 occurs, for the purposes of reducing sanitary sewer overflows and eliminating inflow and infiltration into the District's sewer system. Video inspection may be used to identify defects in the private sanitary sewer facilities including, but not limited to unacceptable construction materials, leaks, breaks, plugs, blockages, root intrusion, grease accumulation, offset joints, flat spots or bellies.

   Owner, user or occupant of a house, building, or property connected to the District's sanitary sewer system shall maintain private sanitary sewer facilities in a condition such that the tests and inspections described below can be successfully accomplished.

b. Testing will apply to all private sanitary sewer facilities and pressurized (septic effluent) lateral sewers, including those serving or intended to serve residential, multiple residential, commercial, and industrial users connected to the District's sanitary sewer system. Testing procedures are listed in Section 9.03 and testing shall be conducted at the owner's expense when any of the following occur:

   1. Remodeling of the house, building, or property served to an extent of more than 25 percent of the square footage before improvements;

   2. Repair or replacement of all or part of the private sanitary sewer facilities, including sewer lateral(s), or private lift station components;

   3. Installation of an additional sewer lateral pipeline;

   4. Change of use of the house, building, or property serviced from residential to business or commercial, or from non-restaurant commercial to restaurant commercial;

   5. Addition of living quarters, such as accessory dwelling on the property served, or conversion of garages into living quarters with plumbing fixtures, or addition of structures on the parcel that may, in the opinion of the District, impact an existing sewer lateral or increase fixture units;

6. When an inspection by the District indicates reasonable cause; or

7. Upon determination of the District that testing or sanitary sewer facility replacement is required for the protection of the public health, safety, and welfare.

9.03 Testing and Inspection Procedures for Private Sanitary Sewer Facilities

a. The owner of a house, building, or property connected to the District's sanitary sewer system shall conduct all private sanitary sewer facility upgrades and testing required pursuant to Section 9.02 at the owner's sole expense and shall notify the District 48 hours prior to testing. Testing and repair or replacement shall be conducted by a contractor determined qualified by the District. All testing shall be witnessed by a District Inspector and carried out in accordance with one of the methods described in subsection D below.

b. At new construction, the owner shall call the District during working hours at least forty-eight (48) hours in advance for sewer inspection as part of acceptance and occupancy. All underground piping, including the connection to the District sewer, shall be open for complete viewing and examination by the District Inspector.

c. For new construction: once the connection has been constructed to District standards, the sewer lateral shall be tested at the owner's expense per one of the methods described in subsection D, below.

d. Sanitary Sewer Pipeline Testing Procedures: All sewer laterals and privately owned sewer pipelines shall be tested by either an air or water method, at the discretion of the District.

In the case of sewer laterals, the test section shall be from the building cleanout to the property line cleanout. If a property line cleanout does not exist, one will need to be installed per District standards before testing can proceed. The test section includes all private pipelines, including joint laterals, which provide sanitary sewer service to the parcel in question.

Privately owned sewer pipelines shall be tested their full length.

Testing shall be in accordance with one of the following:

1. Air test, consisting of plugging each end of the pipeline and applying a pressure of 3.5 pounds per square inch to the section being tested. The pipeline shall be allowed a loss in pressure of up to ½ pound per square inch in five (5) minutes. If the loss exceeds ½ pound per square inch, the test may be attempted one additional time. A second loss of pressure over ½ pound per square inch constitutes a failure of the pipeline, whereupon the pipeline shall be replaced or repaired, as needed, and retested in accordance with this section.

2. Water test, consisting of plugging the downstream end of a pipeline, and placing a vertical water column of at least seven (7) feet above the bottom of the pipe at the building cleanout. If a seven (7) foot high water column cannot be created or the water column height at the property line cleanout exceeds twelve (12) feet, the air test method must be used.

   The pipeline shall be allowed a maximum loss of water level of 1 inch in 5 minutes for a 4-inch or 6-inch pipeline per ninety (90) feet in length. If the loss exceeds the allowable, the pipeline may be retested one additional time. A

second loss exceeding the allowable constitutes a failure of the pipeline, whereupon the pipeline shall be repaired or replaced, as needed, and re-tested in accordance with this section.

3. No allowances shall be made for length, age, or material.

4. If a cleanout has not been installed at the easement/property line, a cleanout per District standards shall be installed prior to testing. If there is no cleanout located outside the building foundation (within two (2) feet of the foundation wall), then a cleanout per District standards shall be installed. A backflow prevention device shall be installed, per District standards, on at least one cleanout. If the building lateral exits the foundation under an existing deck or concrete patio, the location of the building cleanout near the foundation may be modified on a case-by-case basis as determined by the District. The owner shall be responsible for such installation.

5. In the event of a failed test, the Owner or the Owner's Contractor must do one of the following:

    a. Replace the entire sewer lateral from the building cleanout to the property line cleanout or;

    b. Arrange for a video inspection of the sewer lateral extending from the house to the property line cleanout in order to ascertain the location needing repair. A copy of the video inspection shall be furnished to the District for review. Following completion of a video inspection, the property owner may opt, with approval from the District Engineer, to undertake one of the following:

        1. Dig and replace the entire sewer lateral from the building cleanout to the property line cleanout;

        2. Dig and spot repair deficient sections of the lateral as identified in the video inspection. The method of repair must be approved by the District Engineer; or

        3. Arrange for trenchless rehabilitation of the entire sewer lateral from the building cleanout to the property line cleanout. The method of rehabilitation must be approved by the District Engineer.

    c. All permits including, but not limited to, encroachment permits, building permits, etc. necessary to complete the repair or replacement work will be the property owner's responsibility to obtain and said work shall be in compliance with the conditions of such permits.

9.04 Time Limits for Completion of Initial Testing

Initial testing shall be completed by the owner in a timely manner as follows:

a. Within thirty (30) days of written notification from the District of a defective sewer discovered by video inspection, service call, or maintenance records; or

b. Immediately if it is determined by the District that testing and repair are necessary to protect public health and the integrity of the sanitary sewer system.

c. Time extensions may be granted on a case-by-case basis by the District Engineer.

Once the private sanitary sewer facilities have passed the required tests, the District Inspector shall notify the District office of its acceptance and written notice shall be provided to the property owner, city or county, as applicable.

9.05 Payment of District Inspection Costs

A fee will be charged for each District inspection required by this section, including observation of air or water tests, re-inspections and District review of video inspections. The fee shall be the current per hour inspection rate listed in Exhibit D of the District's Wastewater Ordinance.

9.06 Time Limits for Completion of Repairs and Retesting, Guarantees of Completion, and Disconnection

If a private sanitary sewer facility fails any of the above described tests, including defects discovered during video inspection, the owner shall cause corrective work and retesting to be performed within thirty (30) days from the date of written notification by the District. All repairs shall be inspected by the District.

Time extensions may be granted on a case-by-case basis from the District Engineer. However, the maximum time extension shall be eight (8) months.

In the event that testing would be required during the period from October 15 to April 15 or during such other periods when such work may be impractical due to weather conditions, the District Engineer or his/her designee may defer such requirement upon posting of a performance bond with and satisfactory to the District guaranteeing completion that is satisfactory to the District. The posting of the performance bond is intended to assure funds are available to conduct the testing, and to repair and/or replace the sanitary sewer facilities in question if needed when weather conditions permit. The amount of the performance bond shall be calculated by the District Engineering staff and based on estimated testing costs, the current local construction costs, the lineal footage of the building lateral, the number of cleanouts and other related appurtenances to be installed as well as the removal and replacement of existing physical obstacles and structures affected by the test.

Once the new or repaired sewer connection and lateral meet District standards and pass required tests, the District Inspector shall notify the District office of its acceptance and written notice shall be provided to the property owners, city or county, as applicable.

Repairs or replacement of 50 percent or more of a sanitary sewer pipeline may be cause for total pipeline replacement as determined by the District. In the case of total pipeline replacement, the pipeline shall be installed in accordance with the District standards.

In the event that a private sanitary sewer facility has not been successfully tested within the required time period, the District may discontinue sewer service to the property pursuant to its Wastewater Ordinance.

9.07 Waiver of Testing Requirements

The District Engineer or his/her designee shall have the authority to waive testing requirements if:

a. The private sanitary sewer facility was newly installed and tested within a prior twenty (20) year period and there have been no substantial changes to the property including

the addition of landscaping, property grading, decks or other improvements which may have damaged the sewer; or

b. The existing private sanitary sewer facility was tested within a prior ten (10) year period and, due to pipe material type and site conditions, there is good reason to believe that such testing is not necessary; or

c. The private sanitary sewer pipeline is of such a length that testing is not practical; or

d. The private sanitary sewer facilities are part of a central private sanitary sewer system and the District has an established written agreement concerning specific testing requirements.

CHAPTER 10

SEVERABILITY

If any provision of this Ordinance or the application to any person or circumstances is held invalid, the remainder of the Ordinance or the application of such provisions to other persons or other circumstances shall not be affected.

EXHIBIT A

CLASSIFICATION OF USERS AND BASIS FOR DETERMINATION OF WASTEWATER VOLUME DISCHARGE DEMAND

ESFR Classification	Unit	ESFR Capacity Factor
Residential		
Single Family Residences (including MH not in park)		
1 Bedroom Home, Accessory Dwelling, Studio	1 Bedroom Home	0.7
2 Bedrooms	2 Bedroom Home	0.7
3 Bedrooms	3 Bedroom Home	1.0
4 Bedrooms or more	4 or More Bedroom Home	1.5
Apartment		
	2 or Less Bedroom Apartment	0.7
	3 Bedroom Apartment	1.0
Senior Only Apartment or MH in Park (2 bed)		
Each unit with laundry washer	Apartments/MH	0.4
Each unit without laundry washer	Apartments/MH	0.4
Apartment or MHP Centralized Laundry Facility	Units (Served by Machines)	0.04
Temporary Occupancy		
Bed and Breakfast	Rooms	0.3
Campground or RV Park with Central Facilities	By Calculation	
RV with Individual Hookup	By Calculation	
Motels and Hotels	Rooms	0.5
Retail and Commercial		
Automobile Repair Shop	Bays	0.2
Bakeries, Catering, Cottage Food	Employee	0.7
Beauty Salons	Stations	0.1
Bars, Card Rooms, Saloons	Seats	0.1
Car Wash Drive Thru	By Calculation	
Car Wash Self-Serve	Stall	1.5

Continued on next page

ESFR Classification		Unit	ESFR Capacity Factor
Gas Station			
	Without food prep	Pumps	0.2
	With food prep	Pumps	0.6
Grocery Store		By Calculation	
Gyms and Health Clubs		By Calculation	
Laundry Self-Serve		Machine	0.6
Laundry, Commercial		By Calculation	
Live Performance Theater, Indoor		Max Seats	0.01
Movie Theater		Max Seats	0.01
Professional Offices		Employees	0.2
Restaurants			
	Fast Food with disposable service ware	Seats	0.09
	Dine-in	Seats	0.09
	Coffee Shops	Seats	0.09
	Coffee Kiosks	By Calculation	
Retail			
	Small (SF<10,000)	Flat Fee	0.8
	Medium (10,000<SF<18,000)	Flat Fee	1.8
	Large (SF<18,000)	Flat Fee	4.0
	Note: Subject to review after 2 years.		
Institutional and Medical			
Daycare		Students/Staff	0.01
Dentist Office		Stations	0.2
Hospitals		By Calculation	
Long Term Care Facilities		Beds	0.2
Meeting Halls and Churches		Max Seats	0.01
Medical Clinic and Offices		Doctors/PA/Nurse Practitioner	0.5
Public Swimming Pools		By Calculation	
Public Restroom Facilities		Toilets/Stalls	1.4
Schools			
	K-8	Students/Staff	0.03
	High Schools and Colleges	Students/Staff	0.05

Minimum ESFR Demand Factor for determination of Capacity Fees: 0.7 ESFR
Minimum ESFR Demand Factor for purposes of Monthly Billing: 1.0 ESFR

EXHIBIT B

SEWER SERVICE CHARGES, CONNECTION AND CAPITAL FACILITIES FEES, AND OTHER RATE SCHEDULES

B.1 Charges for Sewer Service

The following rates and changes shall be effective as indicated below:

B.1.1. Monthly Fixed Charges

Monthly Sewer Charge Based on 1 Single Family Residence				
1/1/2016	1/1/2017	1/1/2018	1/1/2019	1/1/2020
$40.00	$43.00	$46.00	$49.00	$51.00

A Monthly Fixed Charge will be collected on each *Single Family Residence*, regardless of size or *Equivalent Single Family Residence* (ESFR) classification under "Exhibit A" of this Wastewater Ordinance. For purposes of assigning *Sewer Service Charges* each Single Family Residence shall be classified as one (1) Monthly Fixed Charge. For all Non-Single Family Residences the ESFR allocation in "Exhibit A" shall be used as the basis of assigning Monthly Fixed Charges for sewer services.

B.1.2 Subscribers Monthly User Charges

The Monthly User Charges below are per Equivalent Single Family Residence (ESFR).

District	Effective 1/1/2016	Effective 1/1/2017	Effective 1/1/2018	Effective 1/1/2019	Effective 1/1/2020
THCSD	$ 19.00	$ 21.00	$ 22.00	$ 23.00	$ 24.00
Jamestown SD	$ 4.20	$ 4.40	$ 4.60	$ 4.80	$ 5.00

B.2 Grease Trap and Interceptor Monitoring Charge

(Applied to Commercial Users with Grease Traps or Grease Interceptors) — $5.00 per month

B.3 Apple Valley Septic Tank Maintenance Charge — $4.00/ESFR per month

B.4 Mi Wuk Septic Tank Maintenance Charge — $4.00/ESFR per month

B.5 Gibbs Purchase Repayment Surcharge — $2.02/ESFR per month

B.6 Septic Dump Charge (*See* Exhibit I)

Minimum Charge per load:	$113.00
Usage over 1500 gallons per gallon:	$ 0.08

Septage Dump Charges to be indexed to a 3-year running average of the Engineering News and Record 20-cities construction cost index and adjusted each fiscal year with an annual cap of 3.5%. The General Manager will implement the fee increase on July 1st annually.

B.7 Wastewater Discharge Permittees — Per Agreement

B.8 Reclaimed Water Charge (annual charge, requires contract)

Firm Supply	Per Agreement
Interruptible Supply (when available)	Per Agreement

B.9 Security Deposit Amount — $ 60.00

B.10 Connection and Capital Facilities Fees (Payable Prior to Connection)

Fee per Equivalent Single Family Residence (ESFR) *

B.10.1 Wastewater Connection and Capital Facilities Charge** Components

	TUD	JSD[1]	THCSD[2]
Collection & Transmission (*See* Exhibit E)	$ 1,882.00	-	$ 888.00
Treatment (*See* Exhibit F)	$ 2,144.00	-	$ 2,144.00
Disposal (*See* Exhibit G)	$ 973.00	$ 1,218.00	$ 973.00
Total Connection and Capital Facilities Fee (Base Year 2015)	**$ 4,999.00**	**$ 1,218.00**	**$ 4,005.00**
Administration Fee	$ 320.00		
TOTAL [3]	**$ 5,319.00**	**$ 1,218.00**	**$ 4,005.00**
Lift Station Capacity Adder[4] (*See* Exhibit H) **(per Lift Station per ESFR)**	**$ 246.00**	**-**	**-**

Notes:

1. The Jamestown Sanitary District pays an additional $240/ESFR on their disposal component for capacity used in the Jamestown Effluent Pump Station.

2. The Twain Harte Community Services District pays a reduced collection component of the connection fee because the capacity they use is strictly related to the Twain Harte and East Sonora Sewer Interceptors.

3. Connection fees to be indexed to a 3-year running average of the Engineering News and Record 20-cities construction cost index and adjusted each fiscal year with an annual cap of 3.5%. The General Manager will implement the fee increase on July 1st annually.

4. For any sewer service that must pass through a sewer lift station prior to reaching the Regional Wastewater Treatment Plant, there shall be a lift station adder charge per ESFR per lift station that the service flows through.

5. Service for developments larger than one single family equivalent connection may require, at the sole discretion of the District, an agreement that specifies conditions for service, including improvements or fees other than those addressed in this Ordinance necessary to address mitigation for capacity demands placed upon the wastewater system by the proposed development. All fee components addressed above, unless otherwise stipulated by an agreement, may be paid for at the time that service is ready to commence.

B.10.2 Construction of Service Lateral — Actual Cost

B.10.3	Tenant Deposit Amount	$ 60.00
B.10.4	Crystal Falls Sewer Facilities Design Charge	$ 215.00/Lot/***
B.10.5	Clean Waters Assessment District #2 Equity Charge	$ 1,000.00/ESFR

This charge shall apply to any applicants for sewer service from facilities constructed and financed under the 1982 Clean Waters Assessment District #2 program for the Willow Springs, Ranchos Poquitos, Mono Vista areas, and who were assessed for a lesser sewer allocation than the requested service. This charge will apply to parcels within the assessment district that were under assessed and for parcels outside of the assessment district that are adjacent to the facilities. Equity charges collected under this ordinance shall be placed in a separate fund solely for the purpose of debt repayment on the outstanding principal balance of the Clean Waters Assessment District #2 bonds.

B.10.6	Rogue River Court Reimbursement	$ 4,452.00/Lot

*** Calculations.** Sewer Service Charges and Connection and Capital Facilities fees for all users shall be determined by multiplying the "Wastewater Volume Discharge Demand Factor" set forth in Exhibit A times the rate or amount shown above for each user, subscriber or applicant, except for connection fee cost element number B.10.1, administration and inspection, which shall be payable for each physical connection.

**** Wastewater Connection and Capital Facilities Charge.** The Wastewater Capital Facilities Charge is collected to construct improvements to any of the sewer facilities described in B.10.1 for the purpose of increasing or replacing collection, treatment, or disposal system capacity used up by new connections to the sewer system.

***** Crystal Falls Sewer Facilities Design Charge.** The Crystal Falls Sewer Facilities Design Charge is applied to each new connection to the sewer collection system in the Crystal Falls area as shown on the plans designed by the District's consultant, Psomas and Associates, for that area for the purpose of recovering funds previously expended by the District for the design costs and to facilitate the orderly progression of future pipeline extensions by private parties on as needed basis.

Description of Sewer Systems

Regional Sewer System

The Regional Sewer System, sometimes known or referred to as the "North Tuolumne Basin Wastewater Management Program", was initiated and constructed in the 1970's. This Regional Sewer System consists of a Regional Wastewater Treatment Plant located at 1400 Southgate Avenue in Sonora, several Regional Interceptor pipelines including the Twain Harte Interceptor, Standard-Mono Village Interceptor, Ranchos Poquitos Interceptor, East Sonora Interceptor, Columbia Interceptor, Gibbs Interceptor, and CJC Interceptor, and the reclamation effluent disposal system for reuse of treated wastewater. The interceptor pipelines and connected District and subscriber collection systems serve the communities and adjacent areas of Sonora, Columbia, East Sonora, Cuesta Center, Standard, Mono Village, Ranchos Poquitos, Mono Vista, Willow Springs, Belleview Oaks, portions of Crystal Falls, and Twain Harte. The community of Jamestown operates and maintains its own collection and treatment system with discharge into TUD's reclamation effluent disposal system. The interceptor system consists of pipelines from the various communities along with certain pump stations and related facilities and conveys the sewage to the Sonora Regional Wastewater Treatment Plant southeast of the community of Sonora. The Sonora Regional Wastewater Treatment Plant consists of various

equipment and processes to treat the wastewater to a disinfected secondary level before the reclaimed wastewater is conveyed by pipeline to Quartz reservoir and various properties south and west of Sonora and Jamestown for use for agricultural purposes.

Subscribers

Subscribers consist of various entities that maintain their own sewer collection system (and treatment facilities in the case of Jamestown) but who otherwise discharge into TUD facilities for transmission through the interceptors, treatment, and disposal via reclamation. Those entities include Twain Harte Community Services District, and Jamestown Sanitary District.

Various Sewer Collection Systems

Numerous communities are served through the Regional Sewer system, most of which are referenced above. The sewer collection systems are operated and maintained by TUD other than those exceptions described herein.

Mi Wuk Sewer System

The Mi Wuk Sewer System is operated and maintained by TUD. It was established as County Service Area No. 1 (C.S.A. #1) in 1967 by the Tuolumne County Board of Supervisors to provide sewer service to 52 assessed parcels “Assessment District No. 17" and several additional commercial parcels. The system is isolated from other Regional Sewer facilities and primarily consists of a collection system, pumping facilities, and a subsurface septic treatment and disposal system serving the majority of the commercial properties along State Highway 108 in the Mi Wuk area and a limited residential area in the same vicinity. The Connection and Capital Facilities Charges applicable to Mi Wuk area are set forth in Exhibit C.

EXHIBIT C

CONNECTION AND CAPITAL FACILITIES FEES APPLICABLE TO MI WUK WASTEWATER SERVICE AREA

C.1 Connection and Capital Facilities Fees (payable prior to connection). Fee per Equivalent Single Family Residence (ESFR)*

	Mi Wuk (TUD)
Collection (Mi Wuk Only)	$590.00
Treatment and Disposal (Mi Wuk Only)	$831.00
Total Connection and Capital Facilities Fee (Base Year 2015)	$1,421.00
Administration Fee	$320.00
TOTAL[1]	**$1,741.00**
Lift Station Capacity Adder[2] (*See* Exhibit H) **(per Lift Station per ESFR)**	$246.00

Notes:

Connection fees to be indexed to a 3-year running average of the Engineering News and Record 20-cities construction cost index and adjusted each fiscal year with an annual cap of 3.5%. The General Manager will implement the fee increase on the first of July, annually.

SCHEDULED INCREASES IN CONNECTION AND CAPITAL FACILITIES FEES:

Effective Date	**Maximum % Increase to Each Fee Component**
July 1, 2016	3.5%
July 1, 2017	3.5%
July 1, 2018	3.5%
July 1, 2019	3.5%
July 1, 2020	3.5%
July 1, 2021	3.5%

For any sewer service that must pass through a sewer lift station prior to reaching the Mi Wuk Septic Tank and Leach Field, there shall be a lift station adder charge per ESFR per lift station that the service flows through.

Mi Wuk Pines Subdivision Reimbursement Area $1,529.00

*Connection and Capital Facilities fees for all other Mi Wuk users shall be determined by multiplying the "single family equivalent unit" set forth in Exhibit A times the rate for a single family equivalent, except for connection fee cost element number C.1.2, Administration and Inspection, which shall be payable per physical connection.

C.2 Connection Fee Application

			Total
1.	Parcels Within Original CSA #1		$320.00**
2.	Parcels Annexed to CSA #1		$1,670.00
3.	Annexed Parcels in Mi Wuk Pines Reimbursement Area	$1,670.00 + $1,529.00 =	$3,199.00
4.	A.D. #17*** Parcels 1-12	$320.00 + $1,529.00 =	$1,849.00

**For the first ESFR only. Improvements over and above one ESFR are subject to full Connection and Capital Facilities Fees per ESFR.

***Special Aassessment District in CSA #1 as established in 1967 by the County of Tuolumne.

EXHIBIT D

PROJECT ADMINISTRATIVE CHARGE, ENGINEERING, INSPECTION AND CONSTRUCTION DEPOSITS AND LABOR AND EQUIPMENT RATES[11]

D.1 Labor Deposit Schedule

	Inspection and/or Hot Tap		Mainline Projects[3]			Development Projects[3]		
	Lateral Inspection	Hot Tap and Inspection	≤300 lf[4]	>300 lf ≤1200 lf	>1200 lf	≤4 ESFR[5]	>4 ESFR ≤30 ESFR	>30 ESFR
Project Admin. Charge[2]	$80	$80	$150	$200	$250	$100	$300	$500
Engineering Labor Deposit[1,6]	$0	$0	$300	$400	$600	$600	$900	$1,100
Inspection Labor Deposit[1,7]	$105	$205[10]	$300	$500	$700	$1,100	$2,100	$4,100
DEPOSIT AMOUNT	**$185**	**$285**	**$750**	**$1,100**	**$1,550**	**$1,800**	**$3,300**	**$5,700**

D.2 Construction Deposit[1,9]

Construction deposits are required for all projects where District construction staff and equipment are requested by the applicant to construct and/or repair facilities including, but not limited to, service laterals, hydrants, mainlines and sewer cleanouts. Construction deposit charges are determined by District Engineering Department staff on a case by case basis and shall be paid prior to commencing construction of facilities. An estimate of typical project costs may be provided prior to the initiation of construction. In addition to estimated labor and material costs, the construction deposit shall include a minimum project administrative charge of $320.

D.3 Labor Rates

Engineering Labor Rate[6]	$130 per man hour
Inspection Labor Rate[7]	$105 per man hour
Flow Analysis Modeling Labor Rate[8]	$105 per man hour
Construction and Hot Tap Labor Rate[9]	$100 per man hour

D.4 Equipment Rates

Camera Truck Equipment	$35 per hour plus $100 per man hour
Mini Cam Equipment	$35 per hour plus $100 per man hour
Flush Truck Equipment	$60 per hour plus $100 per man hour
Vacuum Truck Equipment	$60 per hour plus $100 per man hour
Vac-Con	$115 per hour plus $100 per man hour

[1] *Deposits paid are credited to the charges incurred. Expended time will be rounded to the nearest ½ hour. Any funds collected but not used will be refunded and any incurred charges will be billed monthly toward the deposit. If the charges incurred exceed the deposit during the course of construction, another deposit in the same amount as the first is required from the applicant. For larger projects this could occur several times.*

[2] *Project administration charge is a one-time charge paid at the time of application that covers staff time involving assistance to the applicant regarding District procedures, agreement preparation, agenda scheduling and accounting.*

[3] *For the purposes of this fee structure, should both off-site mainline extension and on-site development both apply, charges for both project classifications shall apply.*

[4] *For hydrant and fire sprinkler system connections requiring a lateral installation the deposit charge for a <300ft mainline project shall apply.*

[5] *ESFR: Equivalent Single Family Residential connection. For the purposes of this fee structure, in certain cases, lots or parcels may be substituted for the ESFR to determine the deposit charge amount for development projects.*

[6] *Engineering labor includes CEQA review, plan reviews, easement review, and project management.*

[7] *For actual time expended on construction site facility inspections. Inspection charge deposits will be paid prior to commencing construction of facilities and any additional inspection or testing charges will be billed monthly through project completion and acceptance by the District. This hourly rate applies to time spent by TUD personnel for inspections, and any camera testing, pressure testing, vacuum tests, etc. that requires the services of personnel in addition to inspection staff.*

[8] *If the District is requested to perform flow analysis modeling, a charge in the amount of $105.00 per man hour will be required for any time expended over and above thirty (30) minutes. Should a deposit for flow analysis modeling be required the minimum project administrative charge of $80.00 shall apply.*

[9] *In the event that District field crews are requested or required for assistance with construction, the charges above will apply to actual time expended. Expended time outside normal working hours will be charged at 1 ½ times the labor rates listed above.*

[10] *This inspection labor deposit amount includes one man hour at the construction labor rate to perform hot- tap.*

[11] *The General Manager shall update labor and equipment rates annually.*

EXHIBIT E
COLLECTION SYSTEM COMPONENT
Wastewater Connection and Capital Facilities Fee

TUD Sewer Collection System

Collection System Pipeline Inventory Dia	LF	Weighting Factor	Size Distribution %	Installation Cost ($ per dia-inch per lf) $ 12.00
2	18,115	36,230	3%	$ 434,760
3	12,200	36,600	2%	$ 439,200
4	53,700	214,800	8%	$ 2,577,600
5	38,345	191,725	6%	$ 2,300,700
6	349,015	2,094,090	50%	$ 25,129,080
8	98,152	785,216	14%	$ 9,422,592
10	51,671	516,710	7%	$ 6,200,520
12	53,139	637,668	8%	$ 7,652,016
14	2,903	40,642	0%	$ 487,704
15	10,778	161,670	2%	$ 1,940,040
16	3,183	50,928	0%	$ 611,136
18	4,041	72,738	1%	$ 872,856
Totals	695,242	4,839,017	100%	$ 58,068,204

Total System Replacement Value
* Does not include sewer manholes or financing costs

Weighted Average Diameter =	6.96	inches	Characteristic Diameter
Collection System Capacity =	5.20	mgd	Matches RWWTP Hydraulic Capacity
	3609	gpm	

Flow Capacity of a 7-inch Gravity Sewer

Depth/Diameter =	0.7	Industry standard is 0.7-0.8 for design capacity of gravity sewers
Slope=	0.5%	Pipeline capacity governed by the individual segment with the flatest slope.
Mannings Coeficient=	0.013	Industry standard for pipe roughness.
Capacity =	225	gpm

Flow Contribution from 1 ESFR

Base Flow =	160	gpd
Diurnal Peaking Factor =	1	TUD Peaking Factor at RWWTP
Daily Peak Flow =	0.11	gpm
ESFR % of 7 inch Capacity=	0.049%	

# ESFRs (current)		8,813	esfr
System Capacity in ESFRs =		32,479	esfr (Based on base flow entering the plant)
Cost to provide total system capacity in 2015 ($) =		58,068,204	
ESFR Cost Share=	**$**	**1,788**	Value of collection system capacity dedicated to 1 ESFR.

ESFR Cost Share (THCSD only)=	**$**	**843**	Value of capacity consumed in the interceptors conveying flow from Twain Harte to the RWWTP.

Exhibit E-1

EXHIBIT F
TREATMENT COMPONENT
Wastewater Connection and Capital Facilities Fee

ESFRs Treated
Existing and Future Equivalent Single Family Residential Units

	Existing ESFRs[1]	Future ESFRs[2]	Total[3]
ESFRs	9488	7916	17404
MGD (Avg Dry Weather Flow)	1.41	1.19	2.60
Percentage	55%	45%	100%

[1]Includes 8,813 directly connected ESFRs + 675 ESFRs (flow and strength based) associated with septage.

[2]Remaining ESFR capacity. For purposes of analysis we will continue to assume that approximately 7.1% of all future ESFRs will be associated with septage.

[3]Sets the total capacity of the plant on a flow basis (2.6MGD / 160 gpd) + an additional 7.1% of ESFRs associated with septage.

Small Community Wastewater Grant TUD Regional WWTP and Disposal System Feasibility Report

Improvement	Cost	Financing Cost (Interest)*	Total Cost	Existing ESFRs 55%	Future ESFRs 45%
Replace RWWTP and add Nitrogen Removal (2.6 MGD)	$ 20,617,885	$ 6,949,961	$ 27,567,846	$ 15,028,367	$ 12,539,479

*3% typical 20 yr term based on semi-annual payments using the "fixed payment" method of amortization.

Treatment Plant Impact Fee

	Total Future ESFRs	Future Direct Connections	Future Septage
	100.0%	92.9%	7.1%
Treatment Cost Allocated to Future Customers	$ 12,539,479	$ 11,646,942	$ 892,537.25
Future Treatment ESFRs	7916	7353	563
Cost/ESFR	**$ 1,584**	**$ 1,584**	**$ 1,584**

Biosolids Digestion Capacity

	Existing		Future ESFRs		
	Direct Connection ESFRs	Septage ESFRs	Direct Connections	Septage	Total
ESFRs	8812	675	7353	563	7916
Cubic Feet Digestion Capacity	60300		46732	3581	50314
Percentage	92.9%	7.1%	92.9%	7.1%	100%

EXHIBIT F
TREATMENT COMPONENT
Wastewater Connection and Capital Facilities Fee

Small Community Wastewater Grant TUD Regional WWTP and Disposal System Feasibility Report

Improvement	Cost	Financing Cost (Interest)*	Total Cost	Existing ESFRs 0%	Future ESFRs Direct Connections 92.9%	Future ESFRs Septage 7.1%
3rd Anaerobic Digester	$ 2,682,500	$ 904,228	$ 3,586,728	$ -	$ 3,331,431	$ 255,297

*3% typical 20 yr term based on semi-annual payments using the "fixed payment" method of amortization.

Digestion Impact Fee

	Total Future ESFRs 100.0%	Future Direct Connections 92.9%	Future Septage 7.1%
Digestion Cost Allocated to Future Customers	$ 3,586,728	$ 3,331,431	$ 255,296.75
Future Treatment ESFRs	7916	7353	563
Cost/ESFR	**$ 453**	**$ 453**	**$ 453**

Summary

Treatment Plant Capital Facilities Fee	$ 1,584
Digestion Capital Facilities Fee	$ 453
Total Treatment Capital Facilities Fee/ESFR	**$ 2,037**

EXHIBIT G
DISPOSAL FEE COMPONENT
Wastewater Connection and Capital Facilities Fee

Reclamation Storage Capacity of Disposal System
Existing and Future Equivalent Single Family Residential Units

	Existing	Future ESFRs	Total
ESFRs	10,418	2,072	12,490
Acre-Feet	1,367	249	1,616
	83%	17%	

Note: Based on TUD (7,177 ESFR) THCSD (1,605) JSD (1,636 ESFR)

Reclamation Storage Cost Allocation

Improvement	Cost	Financing Cost	Total Cost	Existing ESFRs 83% (See note)	Future ESFRs 17% (See note)
Reserve Pool Project (150 Acre-Feet)	$ 1,580,000	$ -	$ 1,580,000	$ 1,311,400	$ 268,600
				0%	100%
Betty West Ranch Land Purchase	$ 1,242,364	$ -	$ 1,242,364	$ -	$ 1,242,364

Note: Approximately 83% of Quartz Reservoir's storage is allocated to existing ESFRs; whereas, 17% is unused capacity reserved for future ESFRs.

Betty West Ranch is 140 acres suitable for siting a new 650 acre-foot storage reservoir. Using the same ratio as currently exists for Quartz, 650 af could serve an additional 5,023 esfrs.

Reclamation Storage Capital Facilities Fee

Cost Allocated to Future Customers	$ 1,510,964
Future ESFRs	7,095
Reclamation Storage Capital Facilities Fee/ESFR	**$ 213**

Land Disposal (Irrigation) Capacity of Reclamation System

	Existing	Future ESFRs	Total
ESFRs	10,418	2,072	12,490
Acres	672	143	815

Note: From Water Balance and additional 133 acres will be needed to land dispose of the full active volume of Quartz Reservoir in one irrigation season.

Land Disposal (Irrigation) Cost Allocation

Improvement	Unit Cost	Unit	Quantity	Total Cost	Existing ESFRs 0% (See note)	Future ESFRs 100% (See note)
Irrigation System	$ 7,500	acre	143	$ 1,072,500		$ 1,072,500
Dry Year Land Bank Purchase	$ 10,000	acre	40	$ 400,000		$ 400,000
					Total	**$ 1,472,500**

Note: System is at capacity right now. New land disposal areas will be needed for any new development. 100% of the cost of new capacity is allocated to future ESFRs.

EXHIBIT G
DISPOSAL FEE COMPONENT
Wastewater Connection and Capital Facilities Fee

Land Disposal (Irrigation) Capital Facilities Fee

Cost Allocated to Future Customers	$	1,472,500
Future ESFRs		2,072
Land Disposal Capital Facilities Fee/ESFR	**$**	**711**

Summary

Reclamation Storage Capital Facilities Fee	$	213
Land Disposal (Irrigation) Capital Facilities Fee	$	711
Total Disposal Capital Facilities Fee/ESFR	**$**	**924**

Total JSD Disposal Capital Facilities Fee/ESFR	**$**	**1,157**

Note: JSD pays an additional $233/ESFR for capacity consumed at the effluent pump station.

EXHIBIT H
LIFT STATION COMPONENT
Wastewater Connection and Capital Facilities Fee

Item	Qty	Units	Unit Cost	Total Cost	
~~Land Acquisition~~	~~0.1~~	~~acre~~	~~$ 100,000~~	~~$ 10,000~~	Assumes this is granted by the developer.
Site Work	1	ls	$ 18,000	$ 18,000	Grading, access road, drainage, underground work.
Control Building	256	sf	$ 125	$ 32,000	Assumes 16'x16' CMU Bldg with metal roof.
Sumps, Pumps, and Valving	1	ls	$ 80,000	$ 80,000	Assumes 1 primary sump and 1 overflow sump.
Electrical & Controls	1	ls	$ 25,000	$ 25,000	Includes electrical service and SCADA
Standby Generator & Propane Tank	1	ls	$ 30,000	$ 30,000	Propane gas standby generator w/ transfer switch.
Fencing	260	lf	$ 40	$ 10,400	Chainlink with 3-strand barbed wire.
Paving	2400	sf	$ 6.00	$ 14,400	
			Total	**$ 209,800**	

Capacity for standard lift station to produce 2.5 fps in 4" forcemain =	100	gpm
ESFR Capacity per lift station =	900	esfr
Capital Facilities Fee/Esfr per Lift Station=	**$ 233**	**per esfr**

Does not account for peak flows.
Pay based on how many lift stations you flow through.

EXHIBIT I
SEPTAGE FEE CALCULATION

Septage Fee Evaluation

Average Gallons per Year	3,153,000	gal septage	* 4-year average (2011-2014)
Average Gallons per Day	8,638	gal septage	
Average Gallons per Load	1,877	gal septage	* 4-year average (2011-2014)
Average Loads per Day	4.6	loads/day	
Average BOD Concentration per Load	3,089	mg/l BOD	* Average from 10 grab samples.
Average lbs BOD per Day	223	lbs BOD/day	
Average lbs BOD per Gallon	0.026	lbs BOD/gal	
Average lbs BOD per Load	48	lbs BOD/load	
Average TSS Concentration per Load	18,620	mg/l TSS	* Average from 10 grab samples.
Average lbs TSS per Day	1,414	lbs TSS/day	
Average lbs TSS per Gallon	0.164	lbs TSS/gal	
Average lbs TSS per Load	307	lbs/load	

Proportional Share of Flow and Strength Calculation

Avg Residential Flow	160	gpd	lb/day
Avg Residential BOD	267	mg/L	0.356 2014 Average Sierra Foothill Lab
Avg Residential TSS	409	mg/L	0.546 2014 Average Sierra Foothill Lab
Flow based share of ESFRs	60%		
Strength based share of ESFRs	40%		

In calculating the total ESFRs - 60% of the ESFRs will come from Flow and 40% of the ESFRs will come from strength. The strength will be divided out as 50% associated with BOD loading and 50% associated with TSS loading. The corresponding equation is 0.60 (Flow ESFRs) + 0.20 (BOD ESFRs) + 0.20 (TSS ESFRs) = Total ESFRs

Daily Septage Contribution

Avg Daily Septage Flow	8,638	gpd
Avg BOD lbs/day	223	lbs/day
Avg TSS lbs/day	1,414	lbs/day
Flow based Septage ESFRs	54	ESFRs
BOD based Septage ESFRs	625	ESFRs
TSS based Septage ESFRS	2,590	ESFRs
Total Strength based Septage ESFRs	3,215	ESFRs
Total Septage Related ESFRs	***675***	***ESFRs***
% of Current ESFRs Associated with Septage	7.1%	
Average # ESFRs per Septage Load	***147***	***ESFRs***

Current Components of Rate Relevant to Septage

Treatment	$	9.39	$ month/ESFR
Outfall	$	2.37	$ month/ESFR
Regulatory Compliance Outfall	$	1.54	$ month/ESFR
Capital Reserve Treatment	$	3.15	$ month/ESFR
Capital Reserve Outfall	$	0.94	$ month/ESFR
Total	$	17.39	$ month/ESFR
	$	0.58	$ day/ESFR
Septage Load Treatment Cost Share	**$**	**85.06**	**$ per load upto 1,500 gal.**
Cost per gallon over 1,500 gallons	**$**	**0.08**	**$ gallon**

Annual O&M of Septage Facility (Replacement of Basket, Brushes, Blower)

Annual Cost for Replacement of Worn Parts	$	25,000	
Loads per year		1,680	loads/yr
Additional Cost per Load Reserved for Facility Replacement	**$**	**14.88**	**$ per load**

Facility Capital Replacement

Initial Capital Cost (Base Year)	$	493,622	($1996)
Present Day Value at 3% Annual Inflation	$	865,569.16	
Estimated Useful Life of Facility		40	yrs
Expected Number of Loads in Facility Life		67,192	loads
Present Day Cost share per load	**$**	**12.88**	**$ per load**

TOTAL PROPOSED FEE	**$**	**112.82**	**USE -->**	**$ 113.00 per load**

EXHIBIT J

AMENDMENTS

	Date	Resolution No.
Adopted:	August 24, 1993	
Amended:	July 23, 1996	
	August 12, 1997	
	December 8, 1998	
	May 23, 2000	
	February 13, 2001	
	June 24, 2003	
	May 25, 2004	
	July 12, 2005	
	February 23, 2010	
	April 28, 2015	
	November 17, 2015	
	September 27, 2016.....	35-16

CHAPTER 4
OPERATIONS AND MAINTENANCE PROGRAM

I. System Mapping

Sewer system mapping is maintained by a full-time staff person assigned to the Engineering Department. Electronic mapping resides on the District's network and is in AutoCad 2008 format. Field books are generated in 11"x17" paper format at 1"=400' scale and are placed in all service trucks. See Figure 4-1 for a sample field book map. Electronic mapping files are updated on a daily basis. Revisions and updates to the mapping are initiated, generated, and tracked in the following manner:

A. New Construction

As-built drawings are submitted to the District in paper format and incorporated into the electronic mapping files by the District's draftsperson. The District is in the process of establishing standards that require electronic as-built (ACAD 2008 compatible) drawings be submitted upon project completion. New construction is given priority and added immediately. New field book sheets are then printed out and forwarded to the Construction/Maintenance, Water Distribution, Water Treatment, Wastewater Superintendants, and individual engineering staff as soon as possible. The superintendants are responsible for distributing the revised sheets to their respective field personnel. Each field personnel is/are responsible for replacing or inserting the new sheets to their own field books.

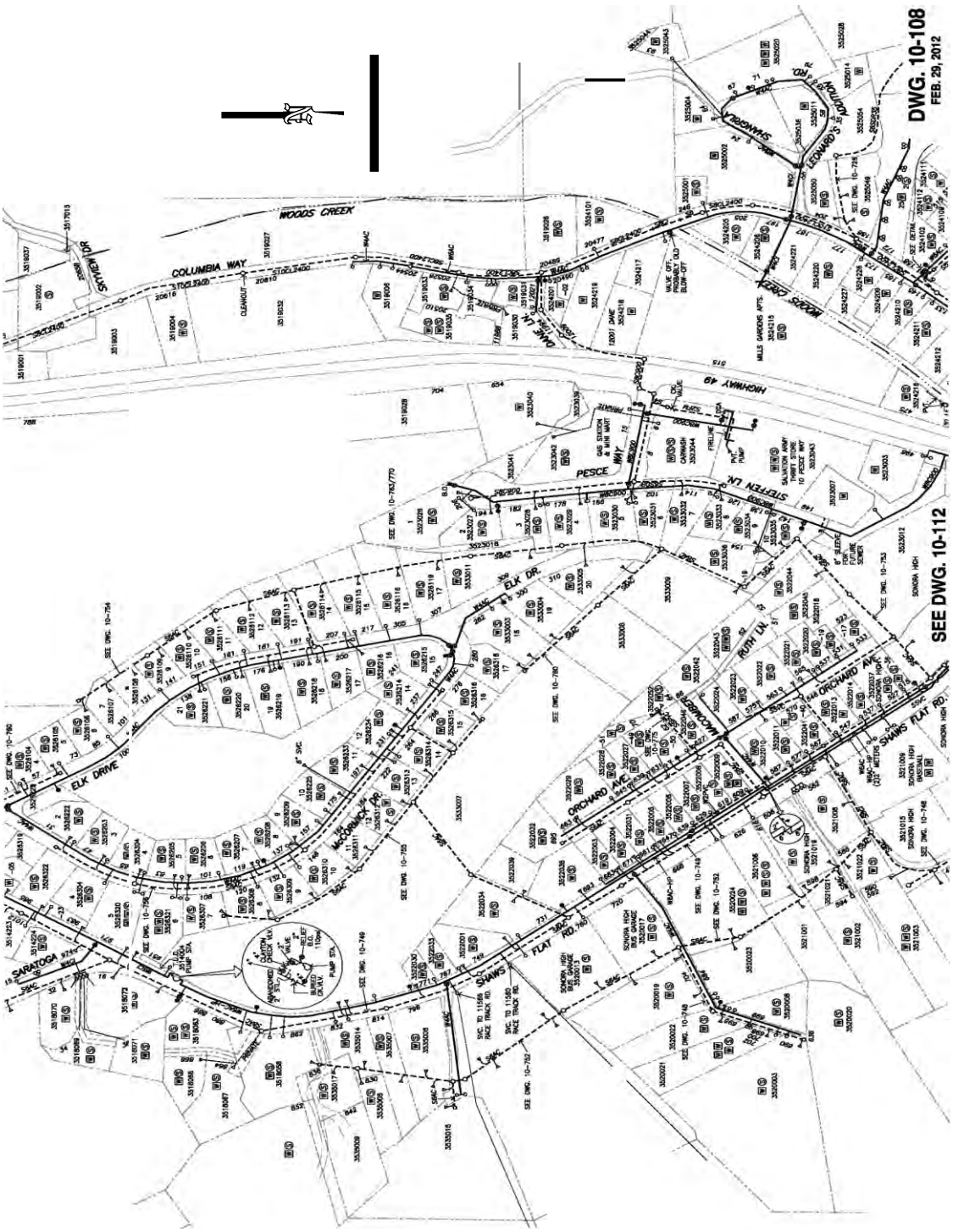
B. Existing Facilities

Revisions to existing District mapping is typically initiated by field staff. Field staff submit a copy of the field book along with their name and date to the Engineering Draftsperson. The revision requests get placed in a file and updates are made in the order in which the request was received. Exceptions are made for important items such as normally closed valves, the presence of electricity or gas utilities, etc., which get immediate priority. These revised field book sheets get printed on a 1-2 month interval depending upon volume.

C. New Services, Variances, and other Administrative

The Engineering Services Technician informs the draftsperson of new service connections. Since District mapping does not locate exact locations of services and the mapping scale is not adequate to show such detail, services are simply shown to exist somewhere along the frontage. The District is in the process of utilizing GPS equipment to locate and inventory water meters. Eventually this will be completed for sewer cleanouts and other components of the wastewater collection system. The goal is to

FIGURE 4-1
SAMPLE FIELD BOOK MAP



eventually develop a GIS database that can be integrated into an asset management tool.

Occasionally variances are granted that redefine the facilities that are privately maintained vs. District maintained. These types of changes are also given to the draftsperson from the Engineering Services Technician.

D. Assessor Parcel Information

The District subscribes to Parcel Quest. Parcel Quest is a service that maintains updated assessor parcel information on a monthly basis. Information is distributed to the District in the form of a CD and updates are made to our mapping accordingly.

E. Easements

Most easement information is conveyed on the As-Built drawings transmitted to the District at the end of a project. However, the District employs a full time registered land surveyor who acquires easements on behalf of the District. When new easements are recorded, that information is sent to the draftsperson for incorporation into our mapping.

F. Tracking Changes

The Engineering Draftsperson files map revision requests in case there is a question about what was changed and who made the request. In addition, an access database is kept that tracks what when a map sheet was changed and printed. In an effort to minimize paper waste, only those sheets that have changed since the last reproduction date get printed.

Each map book sheet has a print date listed on the lower right hand corner.

The District is currently considering some improvements to its mapping system. One improvement would be to require all developers submit As-Builts in electronic format in order to avoid errors and work involved in transferring paper data to our AutoCad system. Additionally, the District may require all plans to reference a common vertical and horizontal datum like NAD83 and NAVD88 and to also tie into a fixed point of known elevation within our existing system, like a manhole rim.

II. Preventative Maintenance

The District owns camera equipment, a vacuum truck, a flush truck, and a Vacon to support its collection system maintenance activities.

A. Flushing Program

Locations are assigned a flushing frequency. District crews have four different schedules; prior to Mother's Day Roundup Parade, bi-monthly, quarterly, and semi-annually. (see Appendix 4-A).

B. CCTV Inspection

A new CCTV inspection rig was purchased in 2008. The District does not TV inspect on a specific schedule; instead, the equipment is used to diagnose problems, assist in engineering design, and to evaluate new construction prior to acceptance. CCTV inspections are also conducted after flushing to ensure that grease, roots, and other material have been adequately removed. The District is in the process of setting up an access database and CCTV Inspection library that will allow for organizing and retrieving old camera reports.

For hard to access locations and for pipe diameters less than six-(6) inches, the District uses a mini-cam. Additionally, there are sections of pipe that due to length or the presence of angle points the District cannot complete a video inspection.

A general sewer inspection report form is found in Appendix 4-B and a sample camera report form is included as Appendix 4-C.

C. Smoke Testing

The District owns smoke testing equipment; however, smoke testing is not part of the normal O&M tasks. Smoke testing is a tool that is available to the District on an "as-needed" basis.

D. Root Foaming

The District budgets approximately $15,000 annually to utilize an outside contractor for root control. Root treatments are applied semi-annually at locations shown in Appendix 4-D. Approximately 16,000-20,000 feet are treated each year.

E. Rodding

The District owns rodding equipment and District staff is trained in its use. The equipment does not see regular use; however, it is available when flushing is unsuccessful or for service laterals that have obstructions.

F. Power Rooting and Snaking

Rooting and snaking equipment is used to remove pipeline blockages. The District frequently utilizes 2-inch up to 4-inch cutters for root removal. Sections of District owned sewer lateral that are subject to frequent blockages are placed on the District's project list for repair or replacement. The District's objective is to periodically power root the problem areas before a SSO occurs.

G. Pipeline Rehabilitation

Each year the District budgets money for trenchless rehabilitation. Generally a critical pipeline segment or segments are identified and a contractor is hired

to do the lining. The project usually occurs in the summer. The District has had experience slip lining with HDPE and cured-in-place pipe. On certain sites where there is a backlot sewer, limited access, steep slopes, and no service lateral connections, the District may consider pipe bursting as an alternative.

H. Pigging

A critical segment of the District's collection system includes extended lengths of inverted siphons. Of specific concern, is the Twain Harte Interceptor which is adjacent to a Phoenix Lake, one of the District's primary water supply reservoirs. A pigging project was completed in 2002 to clean this interceptor. Since that time, the District has assured proper flushing of this pipeline through timed releases from the upstream Twain Harte Wastewater Plant. Under the current operational strategy, wastewater is retained during the daytime hours at the plant and then at night, large volumes are released to increase the flow velocity in the pipe.

There are no plans, at this time, for future pigging projects.

I. Force Mains

District standards specify that sewer lift stations be designed to provide a minimum cleansing velocity of 2.5 fps in all force mains. Lift stations typically do not have flow meters on the pump discharge. Verification of pumping rates can only be accomplished by measured drawdown in the wet well.

The District does not require the construction of launching ports for pigs. However, design standards do require the construction of blowoffs at the low points of the force main.

In the event that deposition in the force main causes a flow restriction and increases the operating head on the pumps, the District could use a flush truck to clean the force main.

J. Valve Exercising

The District does not have a valve exercising schedule. The areas of most concern are not force mains, but inverted siphons such as those found on the Twain Harte Interceptor. Inverted siphons can be subject to deposition, which can make it difficult for a gate or a plug wedge to seal. Inverted siphons are fed upstream by gravity and cannot be "turned off" easily like a sewer lift station.

Any valve exercising program for the Twain Harte Interceptor will require a crew on standby with the Vacon truck and a vacuum truck to facilitate bypassing the sewer in the event of a valve failure.

Air release and air vacuum valves are generally considered maintenance free and are not exercised unless a force main is drained intentionally, through a rupture, or through a failed check valve. Valve vaults with poorly sealed lids are subject to collecting water. Air release and air vacuum valves should always be vented to the outside. However, if they are not vented properly and become inundated with water; they will not work properly. As needed, staff will clean and vacuum out vaults. A list of locations for air release valves and blowoffs is included in Appendix 4-E.

K. Sewer Lift Station Monitoring

One staff member checks all lift stations twice weekly, on Mondays and Fridays. Typical Monday tasks include recording run times and amperage on pumps. Friday tasks involve exercising the generator, checking propane tank levels, checking the sump for rags and other debris, checking the overflow sump (if applicable) for any flows, and general housekeeping. If floating debris or sediment accumulates in the sump, the vacuum truck is used to clean the station.

Alarms and bubbler systems are checked on a quarterly basis. Alarm checks involve triggering a false alarm and verifying that the District's SCADA system is transmitting and properly recording the event. Dates in which maintenance was performed is recorded on a card that is filed at the facility. Currently all maintenance records are in paper format and archived at sewer operations building.

Level control is accomplished primarily with bubblers. There are a few floats and/or ultrasonic sensors in use. Generators and alarms are generally tied to floats. Appendix 4-F is a sewer lift station reading sheet,
4-G is a listing of lift station setpoints, and Appendix 4-L is a Quarterly Lift Station Inspection Checklist.

L. Odor Control Devices

Most areas that experience odor problems are upstream of inverted siphons where the contents in the siphon stagnates and turns septic overnight and the diurnal flow variations cause venting of sewer gasses as flows increase.

Odor control strategies include three categories: Traps, Chemical Addition, and Air Treatment.

Some agencies install traps similar to residential p-traps to prevent the escape of sewer gases. The District has chosen not to install traps due to maintenance concerns.

Air treatment is composed primarily of "Sweet Air" filters on residential drain waste vent piping and "Persnickety" filter inserts in select manholes. The District has recently adopted a procedure of replacing all "Sweet Air" filters every two years. Where the filter is located on a residential dwv on the

rooftop, District staff have been instructed to provide the filter to the property owner and let them install the filter. A listing of these locations is in Appendix 4-N. A replacement schedule for "Persnickety" inserts has also been included in Appendix 4-N.

Chemical addition is utilized at the Gold Springs Sewer Lift Station. A bio-organic catalyst, trade name Ecosystem Plus, is mixed on-site and delivered into the sump when the pumps are running.

Staff have also taken anaerobic sludge from the RWWTP up to the Parrotts Ferry Lift Station to seed the facility with anaerobic microorganisms that can use food up in a anaerobic environment and reduce odors. This is in an experimental phase as far as seeding amounts, application points and mixing methods, and frequency. Currently it is happening daily.

M. Grease Interceptor and Oil/Water Separator Inspections

Currently, a unit is inspected when initially installed. Following the first inspection, there is no established schedule for on-going inspections. However, the Wastewater Ordinance stipulates that owners should keep records of when their system was cleaned and or pumped out. These records shall be submitted to the District upon request. A database is being developed to track inspections of grease generating facilities.

N. Fleet Maintenance

The District has two mechanics on staff that handle fleet maintenance. Vehicles maintenance is tracked in a log book and a sticker is applied to the windshield indicating the date or mileage when the vehicle must return for routine maintenance.

O. Easement Maintenance

Quarterly weed and brush removal are needed in order to maintain access to our facilities. Occasionally new layers of base rock are added to our access roads and drainages are cleaned to maintain the integrity of the driving surface. Appendix 4-I has a list of easements that require maintenance.

P. General Maintenance

Painting buildings, weatherizing facilities, sealcoating asphalt, roofing, pest control, fuels reduction for fire hazards, general electrical, etc. are handled by the wastewater department staff. There is no staff or department designated specifically for facilities maintenance.

Q. Apple Valley STEP System

The District operates and maintains septic tanks on private properties in the Apple Valley area. The tanks are inspected on an annual basis. Those tanks

determined to need pumping are placed on a list. A third party hauler is contracted to do the pumping. This work usually occurs in April. The District has found that fiberglass septic tanks have different biology than traditional concrete tanks. Fiberglass tanks require pump outs two to three times more frequently than concrete tanks. The District now requires concrete tanks be installed for all new construction.

R. Blind Areas

Within the system exist "blind areas" where an SSO could potentially go on for an extended period of time before it was realized. During storm events, District staff are aware of areas susceptible to overflows and will monitor those areas. The District's Capital Improvement Plan (Appendix 4-J) includes projects that will alleviate the risks in some of those areas.

S. Elevated Sections of Pipeline

The District has several reaches of sewer main that are elevated and anchored to piers, probably the most noteworthy are sections of the Willow Springs Interceptor. These areas are particularly vulnerable to falling trees. As a preventative measure, the District tries to identify potential tree falling hazards and contracts with a tree service to remove those trees. When the tree is outside of the District's easement, District staff work with the property owner to come up with a solution.

Additionally, there are sections of elevated pipeline that cross or run adjacent to water courses. Erosion and scour can undermine the pier footings and could result in pipeline failure. Staff try to identify areas that are showing signs of erosion and scour and work to remedy the problem before a pier collapse occurs.

The District currently has a work order system that allows for an end of the year tabulation of plugs, SSOs, odor, pump issues, etc. Work orders are initiated internally or by customer requests. At this time, there is no linkage between the work order and the actual engineering design or financial accounting of the action taken. In the future, the District plans to develop an asset management tool that will keep record of work orders and tie them to a specific project number.

III. Rehabilitation and Replacement Program

Maintenance records indicate that in general, the areas that are the most labor intensive for the District are within the older areas of the City of Sonora and Columbia and primarily involve service lines or mains of 4-inch diameter. The pipe material most prone to root intrusion is vitrified clay pipe due to the large number of joints. Although bellies are common they alone don't constitute a primary concern due to the forgiving topography of our service area. Bellies in conjunction with hydraulic deficiencies, roots, or FOG frequently pose a problem.

District staff are trained to recognize and prioritize collection system deficiencies based on the following categories:

- Hydraulic Capacity
- Pipe Defects
- FOG
- Roots
- I & I

A. Hydraulic Capacity Issues

The District maintains a hydraulic model of its sewer collection system. The model is in various stages of development and has not been calibrated. Most capacity analysis involves running calculations for a peak wet weather flow condition on a reach by reach basis of pipelines that are on mild to flat slopes. Due to the rural nature of the District's service area it is extremely rare to need to analyze flow impacts from large scale developments. Most development is small in scale (< 4 homes) and six-(6) inch mains are more than adequate. The hydraulic model needs to be completed in order to evaluate cumulative impacts of many small developments on existing collection system pipelines, especially as flows get closer to the Regional Wastewater Treatment Plant.

Hydraulic modeling was done on the entire system in 1990. That work produced a replacement schedule based on pipeline capacities and anticipated growth in the service area. The District has resurrected some of this work and has send field staff out to verify that some of the pipelines slated for replacement are still functioning with adequate capacity. In other instances, the District has proceeded with upsizing several sections of pipe identified in the report.

The District's Wastewater Ordinance requires that for developments of 30 units or more, the project proponent shall pay a modeling fee to the District to allow for the evaluation of downstream impacts.

Currently, most hydraulic deficiencies are identified through observation of staining in manholes, overflows, or surcharging during flushing.

B. Pipe Defects

1. Joint Offsets

   Identified through camera inspections in response to an action request.

2. Cracks or crushed sections

Identified through camera inspections in response to an action request.

3. Bellies

Identified through camera inspections in response to an action request.

C. FOG Issues

Generally these issues are discovered during camera inspection, while flushing, or observed in the wet well at the lift station. Quite frequently through addressing bellies or root problems the FOG issue is resolved. The District has adopted a FOG Control Program which is administered by a staff. When FOG is discovered it shall trigger a preliminary investigation of the probable causes, such as restaurants or other food service establishments in immediate upstream proximity to the problem area. Those facilities are visited and their maintenance logs inspected to ensure proper functioning of their grease interceptors.

D. Root Issues

Roots are one of the largest causes of SSOs in the collection system. There are areas known to have root problems. These are treated on an annual or semi-annual basis. Most root problems are discovered when responding to a plug or overflow.

When root foaming is not available the District utilizes its high pressure “bull head” flushing nozzle capable of producing 3,000 psi to sever roots or a power rooter with 2-inch through 4-inch cutter heads.

E. Inflow and Infiltration Issues

The last I&I study was conducted in 1985. This study focused on the City of Sonora and found that I&I was too widespread to remedy without replacing large areas of the collection system. The remaining areas of the collection system have not been evaluated.

Groundwater is generally low in the service area; however, several pipelines run adjacent to waterbodies that may contribute some infiltration. Most inflow sources such as gutter downspouts, yard drains, and open cleanouts have been repaired. The District’s I&I, as measured by wet weather flows at the plant headworks, run between 5 - 16 gal/ac-day, which is well below industry standards.

F. Rehabilitation vs. Replacement

The District budgets money annually to rehabilitate sections of the 15” Sonora Interceptor just upstream from the Regional Wastewater Treatment Plant.

The District has experience using a cured-in-place pipe product. Projects on this particular line have been simplified due to the ability to bypass flows into an adjacent interceptor and the absence of any service laterals.

The District has identified various other projects that would be good candidates for cured-in-place pipe, pipe lining, pipe bursting, or fold and form type liners. The candidates generally are older, small diameter, back lot sewer mains within the City of Sonora, with minimal angle points and minimal service connections. It is important to note that if roots are a problem and those roots originate from the penetration of a service lateral; pipe lining will not fully prevent the intrusion of roots from that same point after the service has been reinstated.

A listing of the potential rehabilitation projects can be found in Appendix 4-J Capital Improvement Project List.

G. CIP Project List

The District's CIP Project List is attached as Appendix 4-J. Priority is set by staff in the engineering and wastewater departments. Those problems that have a reasonable likelihood of causing an SSO are placed at the highest priority.

H. Revenue Program

A sewer service increase was approved by the Board of Directors in 2015, went into effect in January 2016 and is effective until 2020. Sewer service charges, connections and capital facilities fees and other rates schedules can be found in the Waste Water Ordinance. The rate increase was presented to the public through a well-crafted public education campaign carried out by the District's General Manager and Customer Service Supervisor. The revenue program to fund the collection system improvements was developed by the Finance Director and was used for the master and capital improvement plans.

IV. TRAINING PROGRAMS

Wastewater department staff receive training and have occasional refresher courses in:

- Confined space
- Use of power rodder
- Use of flushing nozzles
- Use of vacuum equipment
- Use of pneumatic plugs
- Pump maintenance
- Use of camera equipment

Training in use of this equipment is provided to all new hires. For long-standing District staff, refresher courses are generally not needed as staff use most of this equipment on a daily basis.

The District has a Safety Compliance Coordinator who is responsible to ensure that staff are current on all trainings related to workplace safety.

V. HIGH FLOW PROCEDURE FOR RWWTP OPERATION

As part of the Standard Provisions under the Waste Discharge Requirements (WDRs) for the Regional Wastewater Treatment Plant (RWWTP), the District has developed a Spill Prevention and Control Program. In that program is a procedure for operating the RWWTP during periods of high flow. The objective is to contain flows, minimize impacts of releases if they should occur, and allow for flows to be recirculated through the plant following the high flow event. Appendix 4-O outlines this procedure.

VI. REPLACEMENT PART INVENTORY

Some of the critical components of the collection system include the interceptors, including the Twain Harte Interceptor, Reclamation Outfall Pipeline, and the lift stations. The District stocks valves, pipe, transition couplings, and full circle clamps for all sizes of pipeline within our collections system. Defective pipeline is typically replaced with a PVC SDR 35 product regardless of the original material type. Most of repair materials are kept at the District's Egan Ranch or at the District's central office facility. In addition, our inventory includes an assortment of manhole bases, barrels, cones, grade rings, and frames/covers. Spare pumps for our lift stations are stored at the lift station when space permits, or at the Regional Wastewater Treatment Plant. Due to the District's relative geographical isolation, stocking critical or "hard to get" parts is essential in reducing our emergency response time. The District's primary supplier is located in Modesto, a 1 hour drive from our office. A listing of replacement parts is attached as Appendix 4-K.

APPENDIX 4-A

FLUSHING SCHEDULES

A. ANNUAL FLUSHING - (PRIOR TO MOTHER'S DAY ROUNDUP)

1. **YOSEMITE TITLE MANHOLE**
   Down 522 ft. to Sonora Creek Line, through manhole at stoplight
   Up 420 ft. to manhole at June Street, through manhole at Church Street (60 ft.)
   Up 540 ft. to manhole at Gold Street, through manhole at Church Street (60 ft.)

2. **JUNE STREET MANHOLE**
   Up 494 ft. to manhole at Williams Street
   Up 132 ft. +/- to June Street

3. **WILLIAMS STREET MANHOLE**
   Up 250 ft. to manhole at Toby Street
   Up 50 ft. towards car lot

4. **TOBY STREET MANHOLE**
   Up 325 ft. to new manhole
   Up 110 ft. +/- to Toby Street

5. **MANHOLE AT 502**
   Up to Lytton 300 ft.

6. **LYTTON STREET MANHOLE**
   Up 407 ft. to manhole at Bulwer Street
   Up 120 ft. plus or minus to Lytton Street

7. **BULWER STREET MANHOLE**
   Up 160 ft. Bulwer Street
   Up 40 ft. to manhole at Subway

8. **SUB WAY MANHOLE**
   Up 42 ft. to Sub Way clean-out
   Up 545 ft. to manhole at J.S. West

9. **J.S. WEST MANHOLE**
   Up 250 ft. to manhole at Tuolumne County General Hospital

10. **GOLD STREET MANHOLE**
    Up 430 ft. to manhole at Williams Street

11. **207 WASHINGTON STREET MANHOLE** (Old Merrihew's)
    Down 180 ft. to manhole at stop light
    Up 170 ft. plus or minus to end of line at Church Street

12. **119 WASHINGTON STREET MANHOLE** (Old Fyes)
    Up 170 ft. to end of line
    Down 40 ft. to Sonora Creek Line
    East side Washington Street

EAST SIDE OF WASHINGTON STREET

13. **LINOBERG STREET MANHOLE**
    Up 155 ft. to manhole at 59 Washington Street

14. **59 WASHINGTON STREET MANHOLE**
    Up 350' to manhole at Jackson Street

15. **JACKSON STREET MANHOLE**
    Up 323 ft. to manhole at Dodge Street

16. **DODGE STREET MANHOLE**
    Up 341 ft. to manhole at Red Church Front

17. **RED CHURCH CENTER MANHOLE**
    Up 209 ft. to manhole on right of Red Church
    West side Washington Street

18. **LINOBERG STREET MANHOLE**
    Up 265 ft. to manhole at Bradford Avenue

19. **BRADFORD AVENUE MANHOLE**
    Up 353 ft. to manhole at Yaney Street

20. **YANEY STREET MANHOLE**
    Up 377 ft. to manhole at 94 Washington Street manhole (old Fire House)

21. **94 WASHINGTON STREET MANHOLE**
    Up 293 ft. to end of line

22. **MANHOLE BEHIND ALFREDO'S - STEWART STREET**
    Down 125 ft. to Sonora Creek Line
    Up as far as possible on Stewart Street 400 ft. +

23. **CLEAN-OUT BEHIND SONORA INN - GREEN STREET**
    Down 60 ft. to Creek Line manhole
    Up 485 ft. to end of line at Church Street

24. **SCHOOL BASEBALL FIELD MANHOLE** (Side)
    Up 350 ft. towards Opie's shop
    Up 216 ft. to manhole on Shaws Flat Road

25. **SCHOOL BASEBALL FIELD MANHOLE** (Back - New Manhole)
    Up 140 ft. to first manhole (side)
    Down 360 ft. to manhole behind school gym

26. **SCHOOL BUS STOP MANHOLE**
    Up 75 ft. to school manhole (3 times)

27. **SCHOOL MANHOLE**
    Up 330 ft. to manhole on Shaws Flat Road (Vic's Chevron)

28. **SHAWS FLAT & HIGHWAY 49 MANHOLE**
    a. Down 107 ft. to manhole at creek bridge (Vic’s Chevron)
    b. Up Washington Street 544 ft.

29. **STOCKTON ROAD MANHOLE** (Twin Syphon)
Up 675 ft. on Greenley Line
Down 200 ft. each Syphon line

30. **SOUTHGATE DRIVE MANHOLE** (Twin Syphon)
Up 500 ft. each Syphon line

31. **JUNCTION ENTRANCE MANHOLE**
Down 225 ft. track line easement
Up 390 ft. to manhole (old Rubes)
Up 88 ft. to manhole across Hwy 108

32. **SONORA CREEK LINE**
Front Save Mart manhole 265 ft. to first manhole 250 ft. behind Save Mart
First manhole up to manhole on Green Street 300 ft.
Manhole on Green Street 600 ft. up Sonora Creek line

33. **FAIRGROUNDS LIFT STATION**
Wash-down, pump and vacuum out completely

34. All of Stuart Street, from Church Street up to Restano Way

35. Manhole on Hillsdale to Lift Station 75 ft.

36. Manhole below the Aladdin Inn down 170 ft., up to 510 ft.
    a. Manhole at Aladdin up to end of line 170 ft.

37. Manhole on Gold Street up easement to manhole at Williams Street 420 ft.

38. Manhole behind Pac-Bell, up easement line 392 ft.

39. Manhole to manhole across road 50 ft. up interceptor line 700 ft.

40. All of Stuart Street
    a. Manhole at Church Street up to manhole at Gold Street 399 ft., down to creek line 700 ft.
    b. Manhole at Gold Street up to manhole at Williams Street 430 ft.
    c. Manhole at Williams Street up to manhole at 479 Stuart Street 440 ft.
    d. Manhole at 479 Stuart Street up to manhole at Lytton Street 420 ft.
    e. Manhole at Lytton Street up to manhole at 600 Stuart Street 314 ft.
    f. Manhole at 600 Stuart Street up to end of line 175 ft. +

GREENLEY BASIN
Lower part on the Greenley basin is done Annually. All of the Greenley Basin is on a Semi-Annual basis.

SONORA AREAS

Bellview Oaks	Gibbs
Gold Springs	Mono Village
Mono Vista	Rancho Paquitos
Sonora Northeast	Sonora Northwest
Sonora Southeast	Sonora Southwest
Willow Springs	

B. SEMI-ANNUAL FLUSHING

1. **MANHOLE AT VIA ESTE** - Map page 3-126
   Man hole at 16201 Via Este up to man hole at 16285, 548 ft.

2. **MANHOLE AT OMAN DRIVE EASEMNET LINE** - Map page 3-109
   Up line 600 ft. +, down 400 ft. +

3. **MANHOLE AT SHORT / HILLCREST** - Map page 10-118
   Up Hillcrest 250 ft. +

4. **COLUMBIA VILLAGE LIFT STATION** - Map page6-119
   300 ft. to second manhole

5. **MANHOLE AT WILLOW SPRINGS CREEK LINE** (Behind 20608 Map Page 3-119
   Up 700 ft. +

6. **MANHOLE AT SONORA HIGH SCHOOL AUDITORIUM** - Map page 10-119
   Up 330 ft. to manhole at Vic's Chevron

7. **MANHOLE AT JS WEST** - Map page 10-129
   Up 250 ft.

8. **MANHOLE AT C&W PLUMBING** – Map page 3-126
   Up 180 ft. to next manhole

9. **CLEANOUT AT 509 SHEPERD** – Map page 10-123
   Up 190 ft., down 200 ft.

10. **MANHOLE AT ENTRANCE TO SONORA LIBARARY** – Map page 10-119
    Up to manhole before Grammar School 500 ft.

11. **MANHOLE AT STUART / WALL STREET** – Map page 10-112
    Up to manhole 320 ft.

12. **MANHOLE AT 231 MCCORMICK** - Map page 10-108
    Down easement to manhole 127 ft., up south line 93 ft., up north line 558 ft.

GREENLEY BASIN
Lower part on the Greenley basin is done Annually. All of the Greenley Basin is on a Semi-Annual basis.

COLUMBIA

Mi-Wuk

C. BI-MONTHLY FLUSHING

1. **YOSEMITE TITLE MANHOLE**, Map page 10-118
   Down 522 ft. to Sonora Creek Line, through manhole at Stoplight (275')
   Up 420 ft. to manhole at June Street, through manhole at Church Street (60')
   Up 540 ft. to manhole at Gold Street, through manhole at Church Street (60')

2. **330 CALAVERAS WAY**, Map page 10-111,
   Up easement 270 ft.
   Down easement 126 ft.

3. **SECO / JACKSON STREET** - Map page 10-118
   Up Lower Sunset 175 ft.
   Up to manhole at Yaney 206 ft.
   Up to manhole at Poplar 311 ft.
   Down to manhole at Bradford 165 ft.

4. **20590 WEST WALNUT** – Map Page 10-106
   Far left line 65 ft.
   Left line up easement 255 ft.
   Right line up to Gopher Drive 235 ft.
   Down easement 150 ft.

D. QUARTERLY FLUSHING

1. **HIGH SCHOOL BUS STOP**
   75 ft. towards school (3 times)

2. **HIGH SCHOOL BASEBALL FIELD**
   500 ft.+ from old manhole towards Opie's shop
   216 ft. from old manhole to Shaws Flat Road

3. 360 ft. from new manhole down towards High School
   140 ft. from new manhole to old manhole

4. **CEILO VISTA**
   154 ft. to end manhole from first manhole
   330 ft. from clean out to first manhole
   Down easement 300 ft.

5. **GREENLEY APARTMENTS**
   155 ft. towards Quail Hollow Apartments (Phoebe Lane)

6. **COVEY CIRCLE**
   500 ft. towards Mini Storage

7. **TWIN SIPHONS**
   200 ft. down each from Stockton Road manhole
   600 ft. up each from Southgate Avenue manhole

8. **TWIN SIPHONS ON SOUTHGATE AVEUNE**
   500 ft. up both Siphons

9. **JUNCTION CENTER**
   a. Manhole by Taqueria - 278 ft. down to manhole at tracks
      295 ft. to manhole at Guaranty Bank
      325 ft. to manhole behind Starbuck's
   b. Manhole in front of Guaranty Bank
      700 ft. to left corner of Kohl's
   c. Left Corner of Kohl's
      280 ft. up to manhole at right corner of Kohl's
   d. Right corner of Kohl's
      400 ft. to manhole behind TJ Max
   e. Behind Starbuck's
      420 ft. to manhole behind PriceCo
   f. Behind PriceCo
      186 ft. to manhole past well house
   g. Manhole at Railroad Tracks on Tuolumne Road
      Up to north Junction entrance manhole 500 ft.
      Up Tuolumne Road 106 ft.
      Down to manhole on Tuolumne Road 50 ft.

10. **WILLOW SPRINGS**
    a. Lift Station manhole on Livermore Court
       175 ft. to cul-de-sac manhole
       90 ft. to left line manhole
       15 ft. to bar screen

    b. Cul-de-sac Manhole on Livermore Court
       272 ft. to manhole up Livermore Court at Timothy

700 ft. Easement Line

c. Timothy and Livermore Court
330 ft. to manhole at Tracy Court
560 ft. towards Willow Springs Drive

d. Tracy and Livermore Court
402 ft. Sherry Lane manhole
200 ft. up Tracy Court

e. Sherry Lane and Livermore Court
380 ft. to Willow Springs Drive
395 ft. up Livermore Court
107 ft. up Sherry Lane to old Lake manhole (driveway)

f. Driveway by Old Lake
400 ft. up Easement Line by Old Lake
45 ft. across Sherry Lane

g. Willow Springs Drive
220 ft. to Tanner Drive manhole
700 ft. up Creek Line (or farther)

h. New Lake manhole by fence
394 ft. to end of line

i. Manhole under Oak Tree
322 ft. to fence manhole

j. Manhole before Lake Parking
397 ft. to manhole under Oak Tree
312 ft. down to creek

k. Manhole behind Grocery Store
Up easement 572 ft.
Down easement 600 ft.

11. **SAVE MART** - Map page 10-118
Man hole in front of Save Mart to man hole behind Save Mart 265 ft.
Man hole behind Save Mart to man hole on Green Street 250 ft.

12. **GREEN STREET** - Map page 10-118
Manhole on Green Street up creek line 650 ft., up Green Street 300 ft.

13. **123 S. WASHINGTON STREET** - Map page 10-118
Man hole behind Alfredo's on Stewart - up 450 ft. +, down to creek line 100 ft.

14. **PINE TREE INN** - Map page 4-103
Man hole behind Pine Tree Inn, down to man hole at Highway 108 - 290 ft.
Up 150 ft. from manhole on Highway 108.

15. **GOLD / SHEPHERD STREET** - Map page 10-123
Man hole at Gold / Shepherd Street, up Shepherd 300 ft.

16. **HILLSDALE DRIVE** - Map page 4-107
Man hole on Hillsdale Drive, down to Mono Village Lift Station, 75 ft.

17. **OLD WEST AMERICAN BANK**
Manhole at Old West America Bank across Highway to manhole 75 ft.

18. **LINOBERG STREET**
B-16 box on Linoberg, down to creek line 200 ft.

19. **COMET MINE ROAD**
Manhole on Comet Mine Road easement, up 300 ft. +

E. QUARTERLY FLAGGING AREAS

1. **PARROTTS FERRY ROAD**
   Manhole at 22511, up 312 ft. to old Pump Station
   Manhole at Lift Station 306 ft. up to manhole at 22511
   Down 40 ft. to Lift Station

2. **MANHOLE AT 11216 RACE TRACK ROAD**
   Down 600 ft. to Interceptor
   Up 600 ft. towards West Walnut
   Up 117 ft. to manhole at 11221
   Up easement 450 ft.

3. **MANHOLE AT RACETRACK ROAD AND WEST WALNUT**
   Up 4 lines through manhole behind 11016 Race Track Road
   Up 400 ft. to manhole at 10996 Race Track Road
   Down 700 ft. towards East Walnut
   a. 125 ft. to manhole behind 11016
   b. 220 ft. up left line
   c. 202 ft. up right line
   d. 425 ft. up far right line

APPENDIX 4-B

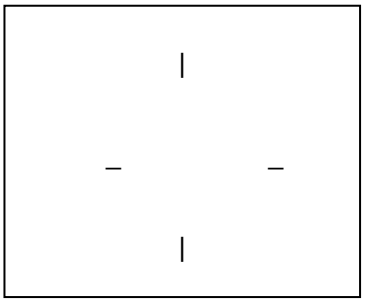
SEWER INSPECTION REPORT

Date: _____ Operator: _____

Physical Address (if known): _____

Location Description and/or Field Book Page Number: _____

Draw orientation of pipes in/out of sewer manhole - Label flow direction and pipe sizes



OBSERVATIONS *(Check appropriate box)*

- ❑ Yes ❑ No Odorous
- ❑ Yes ❑ No Staining from Surcharging
- ❑ Yes ❑ No Subject to Inflow
- ❑ Yes ❑ No Pipeline Exposed on Ground Surface
- ❑ Yes ❑ No Manhole Lid Buried or Subject to Vegetation Overgrowth

---

FLOW CATEGORY *(Estimated)*

- ❑ 0-20 Connections
- ❑ 20-80 Connections
- ❑ 80 or more Connections

MANHOLE

Condition of Manhole - Rank 1 - 5 *(1 being new)*

Frame and Cover:

- ❑ Yes ❑ No Loose or Cracked and/or Rusted

Base:

- ❑ Precast
- ❑ Cast-in-Place
- ❑ Yes ❑ No Adequate Channel Access for Flushing and TV Inspection

Depth:

- ❑ Shallow (<3') ❑ Deep (>6')
- ❑ Yes ❑ No Drop Inlet

PIPE DESCRIPTION - *(Segment Numbers to Correspond with Sketch)*

Pipe #1	Pipe #2	Pipe #3	Pipe #4	Pipe #5
Size _____	Size _____	Size _____	Size _____	Size _____
Material _____	Material _____	Material _____	Material _____	Material _____

Down Stream Slope *(estimated based on ground surface):* ❑ Flat (0.1% - 0.5%) ❑ Mild (0.5% - 1%) ❑ Moderate (1%-2%) ❑ Steep (>2%)

POTENTIAL OBSTACLES TO PIPELINE REPLACEMENT OR REPAIR

- ❑ Retaining Walls ❑ Drainage Inlets
- ❑ Fences ❑ Building
- ❑ Back Lot or Landscaping ❑ Other_____

ACCESS

- ❑ Yes ❑ No Vacon Truck
- ❑ Yes ❑ No Flush Truck
- ❑ Yes ❑ No Accessible Upstream Sewer Cleanout or Sewer Manhole
- ❑ Yes ❑ No Accessible Downstream Sewer Cleanout or Sewer Manhole

Problem Description
(Include CCTV Inspection Report - Form SW-047)

PROBLEM CATEGORY

(Please indicate severity)	Requires Immediate Action	Needs Action Within Next 6 Months	Needs Work Within Next Year	May Need Work in Future
Capacity	❑	❑	❑	❑
Maintenance Access	❑	❑	❑	❑
Poor Condition or I & I	❑	❑	❑	❑

CAUSES OF PROBLEMS

Capacity (please identify primary cause(s): *Check only 1 or 2 causes*

- ❑ Belly or Sag
- ❑ Flat Slope
- ❑ Root Intrusion
- ❑ Joint Offset
- ❑ Collapsed or Crushed Pipe
- ❑ Cracked Pipe
- ❑ FOG
- ❑ Undersized Pipe Diameter
- ❑ Debris in Pipe

Maintenance Access (for Flushing and TV Inspections): *Check all that apply*

- ❑ Blind Connections
- ❑ Angle Points:
- ❑ Vertical or ❑ Horizontal
- ❑ Joint Offset Obstruction
- ❑ Collapsed or Crushed Pipe Obstruction
- ❑ Debris in Pipe Obstruction
- ❑ Sewer Manhole Channel Base Not Open
- ❑ Length Exceeds Flushing or Camera Capability (upstream or downstream)
- ❑ Unaccessible, No Sewer Manhole or No Sewer Cleanout (upstream or downstream)
- ❑ Potential for Unnoticed Sanitary Sewer Overflow

Poor Condition or I & I Concern *(Potential Future Problem)*

- ❑ Age (Past Expected Life)
- ❑ Poor Installation
- ❑ Hammer Taps
- ❑ Lamp Holes
- ❑ Neuman Cleanout
- ❑ Cracked Pipes
- ❑ Cracked Penetration into SMH
- ❑ Pipe Corrosion
- ❑ Sewer Manhole Located within Flood Plain

PROPOSED SOLUTION OR PROJECT NEEDED: _____

APPENDIX 4-C

CCTV INSPECTION REPORT

Reason: _____ **Upstream Address:** _____ **Downstream Address:** _____ **Date:** _____

Upstream Structure: _____ **Depth:** _____ **Downstream Structure:** _____ **Depth:** _____ **Page:** ____ **of** _

Pipe			Structures			Connections			Defects						Past Repairs		Angle Points		Remarks
Footage	Diameter	Material	SMH	SCO	Nueman CO	SVC - Left or Right	Mainline Connection	Hammer Tap	Cracked / Broken Pipe	Begin Belly	End Belly	Joint Offset	Roots	FOG	Begin Repair	End Repair	Horizontal Angle Point Left or Right	Vertical Angle Point Up or Down	
0'																			Start
																			Enter Pipe

SITE SKETCH (attach more sheets as needed)	NOTES
	Footage description continued on other side ☐

APPENDIX 4-D

ROOT FOAMING SCHEDULE

*Based on repeating sites on a 3-yr. cycle.

2019, 2022, 2025

UP ADDRESS		DOWN ADDRESS		SIZE	FEET
11347	Bigler Street		Bigler Street	6	76
50	Elkin Street		Stewart Street	4	207
	Fulton Street		Washington Street	6	165
277	Grant Drive South (Fairgrounds)			36	1
	Hillcrest Street		Lyons Street	6	100
	Jackson Street		State Street	6	360
21092	Maurice Lane	21072	Maurice Lane	6	250
	Oakside Drive East		North Circle Drive	4	423
21160	Oman Drive			36	1
	Pacific Street		Jackson Street	6	362
81	Palemone Street	89	Palemone Street	6	100
89	Palemone Street		Rose	6	165
	Shawnee Road	20211	Leland	4	153
22781	Silver Street	11136	State Street	6	142
210	Snell Road West		Bonanza Road West	6	78
426	Snell Road West	210	Snell Road West	6	551
	State Street		Fulton Street	6	210
135	Upper Sunset	102	Upper Sunset	4	100
153	Upper Sunset	135	Upper Sunset	4	168

2020, 2023, 2026

UP ADDRESS		DOWN ADDRESS		SIZE	FEET
399	Alpine Lane	305	Live Oak	6	89
459	Alpine Lane	459	Alpine Lane	6	141
668	Bald Mtn Road	663	Bald Mtn Road	6	195
22883	Broadway Street				
330	Calaveras Way				
50	Elkin Street	37	Elkin Street	4	215
20682	Gaughan Court	20672	Gaughan Court	6	205
	Gold Springs Lift Station				
	High School (Chevron Station)		High School (Auditorium)	6	330
429	Lyons Street	370	Lyons Street	6	90
740	Lyons Street	656	Lyons Street	6	400
247	Palemone Street		Lyons Street	4	190
22940	Parrotts Ferry Road		Parrots Ferry Road	4	100
23447	Porcina Way				
206	Rose Avenue	161	Lyons	4	190
21957	Sawmill Flat Road	21930	Sawmill Flat Road	8	200
22875	School House Street	22865	School House Street	6	192
22919	School House Street	22875	School House Street	6	125
1400	Shaws Flat Road	1352	Shaws Flat Road	6	269
311	Southgate Road	314	Southgate Road	4	155
341	Southgate Road Interceptor				
	Stockton Street (Chruch Driveway)		Woods Creek	4	55
140	Summit Avenue	39	Summit Avenue	6	200
150	Summit Avenue	140	Summit Avenue	6	100
19200	Sunny Circle				
19200	Sunny Circle				
185	Theall Street		Main Line	4	25
11216	Walnut Street East	11230	Walnut Street East	6	300
20	Wyckoff Street	61	Snell Street	6	205

2018, 2021, 2024

UP ADDRESS		DOWN ADDRESS		SIZE	FEET
58	Alley Way	201	Monte Vista	6	105
	Belmont Drive		Lift Station	6	158
11333	Bigler Street	11304	Bigler Street	6	
270	Bonanza Road				
363	Bonanza Road				
20489	Bonnie Court				163
281	Calaveras Way	330	Calaveras Way	6	360
418	Calaveras Way	330	Calaveras Way	6	380
549	Cielo Vista Way	589	Cielo Vista Way	6	340
22537	Colorado River	22588	Colorado River	10	279
	Columbia Street		Fulton Street	6	295
11256	Fulton Street		Main Street	6	182
22696	Gold Street	22678	Gold Street	6	202
22726	Gold Street	22696	Gold Street	6	245
20712	Gopher Drive	20590	20590 W Walnut	6	130
594	High Street	550	High Street	4	270
642	High Street	594	High Street	4	408
10978	Johnny Avenue		Belmont Drive	6	148
20094	Leland Drive	20111	Leland Drive	4	191
	Leland Drive	20094	Leland Drive	4	200
309	Live Oak Terrace		Football Field	6	295
370	Lyons Street		Hope Lane	6	395
	Lyons Street East	172	Lyons Street East	6	225
21	Monte Vista Lane	230	West Lane	6	140
108	Poplar Drive	56	Poplar Drive	4	
56	Poplar Drive		Yaney Street	6	154
23642	Porcina Way		Parrotts Ferry Road		154
124	Rose Avenue	236	236	6	147
22781	Silver Street	11142	State Street	6	242
10454	Tuolumne Road				
16010	Via Este				
16059	Via Este				
16081	Via Este				
334	Washington Street	340	Washington Street	6	150
	West Street		Hillcrest Street	6	148

APPENDIX 4-E

AIR RELEASE VALVES & BLOWOFFS

A. Air Release Valves (Twain Harte Interceptor)

1. 21714 Crystal Falls Drive
2. 22187 Crystal Falls Drive
3. 16552 Creekside
4. 16542 Creekside
5. 21331 Phoenix Lake Road
6. 21150 Phoenix Lake Road
7. 21090 Phoenix Lake Road
8. 21011 Phoenix Lake Road

B. Blow-Off Valve Locations (Twain Harte Interceptor)

1. 19717 Phoenix Lake Road
2. 20607 Phoenix Lake Road
3. 20767 Phoenix Lake Road
4. 21011 Phoenix Lake Road
5. 21220 Phoenix Lake Road
6. 21224 Phoenix Lake Road
7. 21331 Phoenix Lake Road
8. 21550 Phoenix Lake Road
9. Phoenix Lake Road and Lori Lane
10. 16511 Creekside Drive
11. 21622 Creekside Drive
12. 21812 Crystal Falls Drive
13. 22192 Crystal Falls Drive
14. 22162 Crystal Falls Drive
15. 22472 Longeway Road
16. Twain Harte Plant
17. Twain Harte Plant
18. Twain Harte Plant

APPENDIX 4-F

Lift Station Reading Sheet

Inspection Done By:		Date:	
STATION	PUMP #1	PUMP #2	GENERATOR
Fairgrounds			
Mill Villa			
Star Mobile			
Robinwood			
Nikki			
Sonora Knolls			
Saratoga			
Springfield			
J.C. Upper			
J.C. Lower			
Gold Springs			
Columbia Sky #2			
Columbia Sky #1			
Fallon House			
Parrotts Ferry			
Damin Rd.			
Columbia Village			
Apple Valley			
Phoenix Lake			
Rogue River			
Mono Village			
Standard			
Sierra Pacific			
Crossroads			
Law & Justice			
South Sonora			
Mi Wuk			
Willow Springs			

APPENDIX 4-G

SEWER LIFT STATION SETPOINTS

	Facility	Sump Dia (inches)	Volume/Ft. (gal)	Operation Setpoints (inches water depth) Lead On	Lead Off	Pumping Volume (gal)
1	Apple Valley	16'x5' Rect	598	46	38	399
2	Columbia Sky 1	128"x113" Rect	751	38.4	30	526
3	Columbia Sky 2	48	94	89	51	298
4	Columbia Village	60	147	38	26	147
5	Costanza	60	147	4.5	2.85	20
6	Damin	60	147	26	19	86
7	Fairgrounds	60	147	62	22	490
8	Fallon House	54	119	31	24	69
9	Gold Springs	72	211	40	22	317
10	Jamestown SD					
11	J.C. Upper	72	211	38	20	317
12	J.C. Lower	72	211	44	35	158
13	Law and Justice	72	211	84	30	950
14	Mill Villa	66	177	126	42.25	1235
15	MiWuk	72	211	78	56.4	380
16	Mono Village	216"x102" Rect	1144	26.04	22.08	378
17	Nikki Ct.	60	147	84	45	478
18	Parrotts Ferry	103	432	45	32	468
19	Phoenix Lake	60	147	74.4	37.2	456
20	Robinwood	72	211	72	35	651
21	Rogue River	60	147	48	45	37
22	Saratoga	72	211	37	24	229
23	Sierra Pacific	72	211	60	38	387
24	Sonora Knolls	48	94	37	30	55
25	So. Crossroads	60	147	41	26	184
26	South Sonora	60	147	55	24	380
27	Springfield	60	147	40	34	74
28	Standard	100	406	48	36	406
29	Star Mobile	60	147	71	61	123
30	Willow Springs	120	587	84	36	2348

APPENDIX 4-H					
WASTEWATER DEPT. GENERATOR LIST					
UNIT#	**DESCRIPTION**	**MAKE**	**MODEL#**	**KW**	**SERIAL#**
#502	STATION	GENERAC	96A05489-S	45KW	2030959
#505	STATION	WINCO	APS20000/D	20KW	90540J90
#506	MILL VILLA SEWER LIFT STATION	WINCO	92933-2	85KW	982377-001 084
#507	COLUMBIA TOWNHOUSE SEWER LIFT STATION	WINCO	APS20000-17/D	20KW	39049S92
#508	DAMIN	WINCO	APS20000-17/C	20KW	60270-S88
#509	STATION	GENERAC	98A04115-S	100KW	2042946
#511	STATION	WINCO	APS20000-17/D	20KW	75908 Y89
#512	STATION	GENERAC	93A01899-S	16KW	2007363
#513	TWAIN HARTE W.W.T.P.	KOHLER	85C72	75KW	264999
#514	MI-WUK SEWER LIFT STATION	STAMFORD	UCI224614	76KW	349604
#516	STATION	WINCO	APS35000-17B	35KW	47949 J88
#517	COSTANZA SEWER LIFT STATION	GENERAC	2593660100	60 KW	2068848
#519	STATION	GENERAC	97A05930-S	25KW	2037908
#521	SPI SEWER LIFT STATION	GENERAC	97A05764-S	35KW	2037789
#522	STATION	KOHLER	18RZ	18Kw	758572
#523	STATION	GENERAC	3811770300	35KW	2075771
#524	STATION	GENERAC	5402800200	25KW	2083659
	PORTABLES				
#128	REGIONAL W.W.T.P.	KOHLER	50R0Z01	60KW	136996

SPARE PUMP AND GENERATOR LIST

STATION	PUMP #1	GENERATOR
Apple Valley	1 spare pump at Regional	LP Gas
Columbia Village	1 spare pump at Regional	LP Gas
Columbia Sky #1	1 Spare motor on-site	
Columbia Sky #2	1 Spare at Regional	
Costanzo Park	1 spare pump at station	LP Gas
Damin		LP Gas
Fallon House		
Fairgrounds	4 at Goldsprings work in place of ABS	Electric Meter Readings LP Gas
Gibb's #3 Nikki	1 - Spare at Robinwood station	LP Gas
Gibb's #1 Star Mobile		Fuel
Gibb's #2 Robinwood		LP Gas
Gold Springs	1 sump pump - 2 spare boosters	LP Gas
Columbia College Upper	1 stored at Goldsprings	
Columbia College Lower		
Mi-Wuk	1 spare pump at Regional	
Mill Villa	1 - Spare pump installed in sump	LP Gas
Mono Villa		LP Gas / Fuel
Parrotts Ferry	1 pump at Regional	LP Gas
Phoenix Lake	1 spare pump at Regional	LP Gas
Rogue River		
Saratoga		
Sierra Pacific		LP Gas
Sonora Cross Roads		LP Gas
Sonora Knolls		
South Sonora		LP Gas
Springfield		
Standard	1 spare at SPI	LP Gas
Willow Springs	1 spare at Willow Springs	LP Gas

APPENDIX 4-I

EASEMENT AND MANHOLE ACCESS MAINTENANCE LIST

Quarterly Collection Monitoring: The following sites should be checked with maintenance performed as needed on a quarterly basis. This work will be performed in March, June, September, and December. September monitoring will include clearing brush from easements and around manholes to allow visual monitoring and access.

A. EASEMENTS

1. Rotary Park, from the start of Lagoon Gulch Trail to end of park and from 299 Bonanza (across bridge) to backside of apartments.

2. 13010 Covey Circle to manhole in backyard of 12910 Cabezut, also to include manhole in the backyard of 12905 Hollow Drive.

3. Sonora Creek, follows the line from the bridge at Dodge Lane to the manhole under the bridge at Save Mart.

4. Columbia College, from the manhole at 12065 Columbia College Dr to the manhole at 21241 Old Sonora / Columbia Road.

5. Cavalieri Road, from the manhole at 15215 Cavalieri Road to the Parshall flume on Standard Road.

6. Mill Yard, from the manhole behind the Parshall flume on Standard Road to the manhole on the railroad tracks at Hess Avenue.

7. Oman Drive, from the manhole at 21354 Oman Drive to the manhole at the pond next to 17214 Kelleher Court.

8. Pokie Drive (east side of Oman Drive) at 21144 Oman Drive to the manhole at 21343 Oman Drive.

9. Twain Harte Interceptor, from the manhole at the far end of the lake, next to the gate, adjacent to the bridge, towards the Twain Harte plant.

10. South Gate manhole where it drops down on the easement to the two manholes at the locked gate.

11. Willow Springs Creek, from the manhole at the east side of 20870 Caylor Drive to the manhole at 20579 Willow Springs Drive.

12. Gold Springs, from the manhole in the backyard of 23294 Gold Springs Drive to the Lift Station. Includes the manhole at 23508 Gold Springs Drive and the manhole in the backyard of 23572 Parrotts Ferry Road.

13. Porcina Way from the manhole at the corner of Porcina and Parrotts Ferry Road to the manhole at 23470 Porcina Way.

14. Cooper Court, from the manhole behind 20111 Leland Drive to the manhole at 11211 Cooper Court in the cul de sac.

15. Railroad Tracks, from the manhole on the tracks below 13641 Tuolumne Road (Randy's Tire) to the manhole at Campo Seco & Lime Kiln.

B. MANHOLES

1. Twain Harte Lake, at end of the lake next to the gate adjacent to the bridge.

2. Mechanical Drive at south side of the building at 20833 Mechanical Drive, across the parking lot from loading bays, next to the oak tree in the drainage.

3. Highway 108, on the east side of the highway, across from the scales and just up from the intersection of Soulsbyville Road.

4. Colorado River Drive at 22430.

5. Pinetree Restaurant at 19601 Hess Avenue, north side of building next to Mono Way.

6. Sunny Circle, in the backyard of 19200 Sunny Circle next to the fence, next to the birdbath.

7. Hess Avenue, at the backside of the property at 19200, behind the shop.

8. 14054 Tuolumne Rd. at Sonora Church, next to the railroad tracks.

9. Cedar Road, at the Medical building at 20100 Cedar Road, along the right side of the building into the field approximately 100 yards.

10 Parrots Ferry Road, at 22603 on the south west corner of the parking lot in the berry bushes.

11. Near the bottom of Crystal Falls Drive at 22248 Crystal Falls Drive.

12. Sonora church next to RR tracks

13. Near creek on Forest Road in Rotary Park easement.

Figure 8B

CAPITAL IMPROVEMENT PLAN

Approved November 17, 2015

TABLE 8B - WASTEWATER FUND PROJECTS by FISCAL YEAR

No.	Project Name	Score[1]	CAT[1]	Sewer 1/2 FYE16	FYE17	FYE18	FYE19	FYE20	FYE21	Project Total	5-Year Plan	Estimated Grant Funding[4]	NET IMPACT ON WASTEWATER BUDGET (Excluding Capital Outlay)	Potential Future Phases
1	Gibbs Estates Sewer Rehabilitation	15.5	A	$ 1,470,377						$ 1,470,377	$ 1,470,377	$ 1,410,977	$ 59,400	$ -
2	Law and Justice Center Lift Station	21.75	A	$ 120,888						$ 120,888	$ 120,888	$ 120,888	$ -	$ -
3	General Collection System Lining	21.75	A	$ 85,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 585,000	$ 585,000	$ -	$ 585,000	$ -
4	General Collection System Improvements	22.5	A	$ 50,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 550,000	$ 550,000	$ -	$ 550,000	$ -
5	RWWTP Improvements	19.75	A	$ 35,000	$ 46,000	$ 103,500	$ 322,000		$ 201,188	$ 3,925,741	$ 707,688	$ -	$ 707,688	$ 3,218,053
6	Gold Springs Force Main Replacement	29.75	A		$ 345,000					$ 345,000	$ 345,000	$ -	$ 345,000	$ -
7	Saratoga LS Replacement	20.5	A		$ 235,750					$ 235,750	$ 235,750	$ -	$ 235,750	$ -
8	Replace Vac-Con Truck #80 (2002)	7.75	A			$ 450,000				$ 450,000	$ 450,000	$ -	$ 450,000	$ -
9	Dry Year Land Bank	11	A			$ 223,963		$ 213,785		$ 437,748	$ 437,748	$ -	$ 437,748	$ -
10	Columbia Country Estates LS	15.5	A			$ 207,000				$ 207,000	$ 207,000	$ -	$ 207,000	$ -
11	Lift Station Modernization Project	14.75	A			$ 204,000	$ 210,000			$ 414,000	$ 414,000	$ -	$ 414,000	$ -
12	Mono Village LS Replacement	18.5	A				$ 287,500			$ 287,500	$ 287,500	$ -	$ 287,500	$ -
13	Debris Removal Stations	17.375	A				$ 162,000	$ 162,000		$ 324,000	$ 324,000	$ -	$ 324,000	$ -
14	Replace Vacuum Truck #63 (1999)	8.25	A				$ 140,000			$ 140,000	$ 140,000	$ -	$ 140,000	$ -
										$ 9,493,003	$ 6,274,950	$ 1,531,865	$ 4,743,085	$ 3,218,053

Row		TOTALS
A	SUBTOTAL (CAPITAL PROJECTS)[2]	$ 6,274,950
B	SUBTOTAL (CAPITAL OUTLAY) from Table 8F[3]	$ 808,854
C	TOTAL CAPITAL INVESTMENT (Row A+B)	$ 7,083,804
D	SUBTOTAL GRANTS[4]	$ (1,531,865)
E	NET FUNDING NEED (Row C-D)	$ 5,551,939
	5-YR TOTAL FUNDING NEED (Including Capital Outlay)[5,6]	$ 5,551,939

Design by Consultant - Construction by Contractor
Design by District - Construction by Contractor
Design by Consultant - Construction by District
Design by District - Construction by District

Footnotes

[1] Project scores and ranking categories are described in Section 4 of the CIP.

[2] Capital projects are defined as having a total project cost >$50,000. Individual phases of the project maybe less than $50,000 but the total project cost >$50,000.

[3] Capital outlay is defined as being ≤$50,000, with the exception of vehicle purchases which may exceed $50,000 but are still considered to be Capital Outlay.

[4] Grant amounts reflect actual amounts from executed funding agreements or from funding agreements that are pending. No attempt has been made to estimate future grant funding.

[5] Values are estimates only and could vary by a number of factors including: (A) Which party is responsible for design/construction. (B) CEQA/NEPA requirements (C) Construction logistics and phasing.

[6] Estimates were completed in August 2015 and will be influenced by inflation. Inflation is accounted for in the project contingencies which vary from 10%-25% depending upon the complexity of the project. Estimates will be revised each year during the budget process.

Appendix 4J

APPENDIX 4-K
CRITICAL SPARE PARTS INVENTORY

No.	Component	Item	Sizes	Description or Uses
1	Pipe			
		PVC SDR35	4"-15"	All collection system pipeline sizes.
		PVC C905	24"	Reclamation outfall pipeline.
2	Full Circle Repair Clamps			
		4"	3.96"-4.25"	For PVC SDR35 and CIP
		4"	4.74"-5.14"	For ACP (Transite), PVC C900, PVC IPS, and Clay
		6"	5.95"-6.35"	For PVC SDR35 and CIP
		6"	6.56"-6.96"	For PVC IPS
		6"	6.84"-7.24"	For ACP (Transite) and PVC C900
		6"	7.05"-7.45"	For Clay
		6"	7.45"-7.85"	For Clay
		8"	7.95"-8.35"	For PVC SDR35 and CIP (may have to use threaded rod to extend range)
		8"	8.54"-8.94"	For PVC IPS
		8"	8.99"-9.39"	For ACP (Transite) and PVC C900
		8"	9.27"-9.67"	For Clay
		8"	9.70"-10.10"	For Clay
		10"	10.64"-11.04"	For PVC IPS
		10"	11.04"-11.44"	For PVC C900
3	Transition Couplings			
		4"		For ACP to PVC, Clay to PVC, CIP to PVC, DIP to PVC
		6"		For ACP to PVC, Clay to PVC, CIP to PVC, DIP to PVC
		8"		For ACP to PVC, Clay to PVC, CIP to PVC, DIP to PVC
		10"		For ACP to PVC, Clay to PVC, CIP to PVC, DIP to PVC
		12"		For ACP to PVC, Clay to PVC, CIP to PVC, DIP to PVC
		24"		For Transite to PVC C905
4	Gate Valves			
		4"	FL x FL, FL x MJ	
		6"	FL x FL, FL x MJ	
		8"	FL x FL, FL x MJ	
5	Manholes			
		Base	48"	
		Barrel	48"x18"	
		Barrel	48"x24"	
		Barrel	48"x30"	
		Cone	18"	
		Cone	24"	
		Grade Rings	2"	
		Frames and Covers		
6	Tapping Sleeves			Stored at each facility or at RWWTP

APPENDIX 4-L

QUARTERLY LIFT STATION INSPECTION CHECKLIST

						Building Condition				Site Condition			
No.	Facility	Bubbler	Float Balls	Generator Alarm Float Balls	Fuel Tanks >50%	Roof	Siding	Doors	Lighting	Drainage	Culverts	Fencing/Gate	Remarks
1	Apple Valley												
2	Columbia Sky 1												
3	Columbia Sky 2												
4	Columbia Village												
5	Costanza												
6	Country Estates												
7	Fairgrounds												
8	Fallon House												
9	Gold Springs												
10	Jamestown SD												
11	J.C. Upper												
12	J.C. Lower												
13	Law & Justice												
14	Mill Villa												
15	MiWuk												
16	Mono Village												
17	Nikki Ct.												
18	Parrotts Ferry												
19	Phoenix Lake												
20	Robinwood												
21	Rogue River												
22	Saratoga												
23	Sierra Pacific												
24	Sonora Knolls												
25	So. Crossroads												
26	South Sonora												
27	Springfield												
28	Standard												
29	Star Mobile												
30	Willow Springs												

APPENDIX 4-N
SWEET AIR REPLACEMENT SCHEDULE

Note: Sweet Air filters shall be replaced every two years. For filters located on private property, the District shall furnish the filter to the property owner and the property owner shall install the filter.

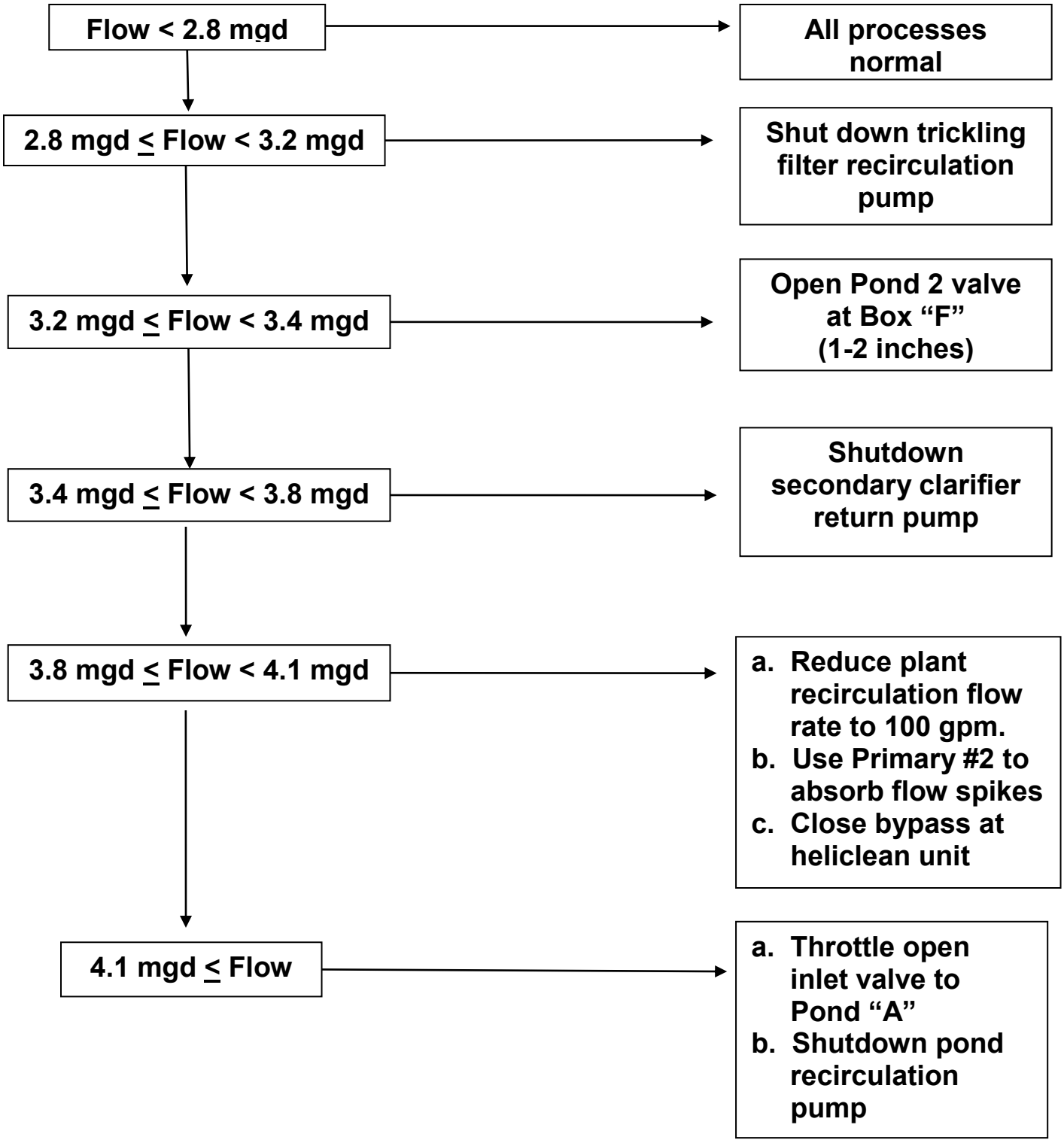
No.	House Number	Street	Size
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

PERSNICKETY SMH INSERT REPLACEMENT SCHEDULE

No.	April	October	Location
1	X		Columbia - between Hudson and 49er Church
2	X		Columbia - in fron to f49er Church in parking lot.
3	X	X	Columbia - in front of house at Pedro Y
4	X	X	Columbia - next downstream SMH from house at Pedro Y
5	X	X	Columbia - second downstream SMH from house at Pedro Y
6	X		Sonora - Southgate Drive where lift station force main discharges to interceptor
7	X		East Sonora - At intersection of Hwy 108 and Jeness Rd.
8	X	X	Gibbs Ranch - 11230 Racetrack Rd.
9	X	X	Gibbs Ranch - 11331 Racetrack Rd.
10	X		Gibbs Ranch - 299 Bonanza
11	X		Wildcat Ridge
12	X		Gibbs Ranch - 11016 Racetrack (backyard)

APPENDIX 4-O

RWWTP
HIGH FLOW OPERATION PROCEDURE



APPENDIX 4-O

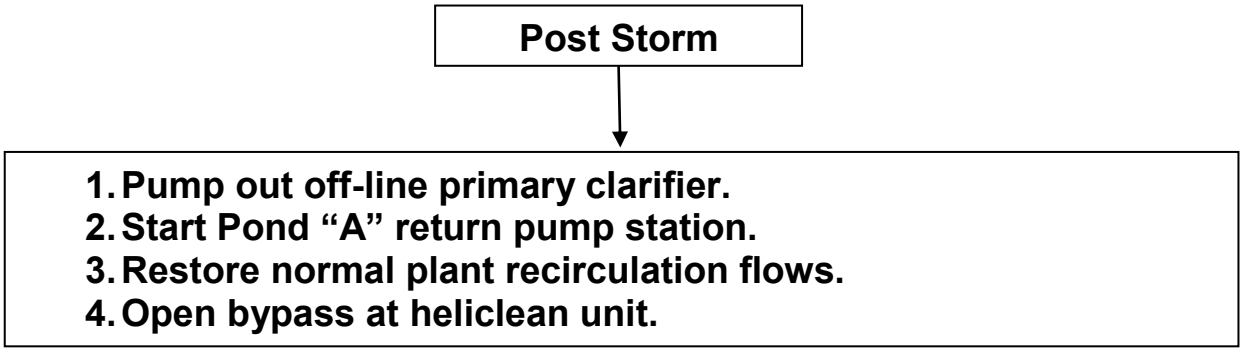
RWWTP
HIGH FLOW OPERATION PROCEDURE
(continued)

4.1 ≤ Flow mgd

1. **Qualified Operator to remain on-shift at all times.**
2. **Monitor Primary Clarifiers for launder level.**
3. **Check storm drain channels for flow, debris, obstructions.**
4. **Check (every 45 minutes)**
    a. **Headworks**
    b. **Primary Clarifiers**
    c. **Trickling Filters**
    d. **Box "B"**
    e. **Secondary Clarifiers**
    f. **Box E**
    g. **Pond A**
    h. **Ponds 1-2-3**
    i. **Chlorine Contact Chamber**
5. **Check color of inlet flows. Red or muddy inlet flows could indicate a problem in the collection system.**
6. **Make sure press zones of channel mitts are cleaned every hour.**
7. **Check channel #2 for grit every 2 hours.**
8. **Use off-line primary clarifier to ballast other primary clarifiers. For long storms, fill off-line primary clarifier and put it into service.**
9. **Watch levels in Pond "A". When level reaches one foot from the top of the baffle posts, open Pond "A" effluent slidegate.**

APPENDIX 4-O

RWWTP
HIGH FLOW OPERATION PROCEDURE
(continued)



CHAPTER 5
EMERGENCY OVERFLOW RESPONSE PLAN

I. Notification Procedures

The District office is open 7am – 4pm daily (Monday through Friday). Customers or members of the general public can contact the District via phone or walk-in to report any sanitary sewer overflows (SSOs). Potential overflows are called out over the District's radio system to the Wastewater Superintendent or to the lead collections system operator. Radios are located in each vehicle and staff carry handheld radios when away from their vehicles. The Wastewater Superintendent also carries a District issued cell phone.

A wastewater staff person is dispatched to investigate the report and to verify that whether or not it is indeed wastewater and/or District responsibility, to ascertain where the overflow is originating, and to report back to the Wastewater Superintendent what equipment, materials, traffic control, and personnel will be needed to contain the spill, cleanup, and then proceed with restoring normal collection system flow. If minor repairs are needed, staff will initiate work immediately.

If the repair is extensive and requires heavy equipment then the District's Construction Maintenance Supervisor is contacted and a crew is assembled to respond.

After normal working hours and on weekends customer calls are routed to the Motherlode Answering Service. The answering service then contacts the "on-call" staff person scheduled for that particular day. The "on-call" wastewater staff will assess the situation and notify the Wastewater Superintendent as required.

II. Response

A. General

One staff member every day is assigned to respond to all potential overflows. The on-call staff person carries a cell phone and is on standby 24 hours a day for both after hours and weekend coverage. In the event of a sewer call day or night someone immediately responds in the District service truck. The District service truck carries a sewer snake, a generator, hand tools and disinfectant that allows him to take care of the majority of calls. Should additional equipment and personnel be needed, the on call staff person is authorized to call out other personnel as needed. Any time that there is an overflow of significant volume, a second employee is called to take the District vacuum truck for mitigation and clean up. Calls are tracked with written action requests. Appendix 5-A contains a sanitary sewer overflow form.

After clearing a blockage in a sewer pipeline and cleanup of any mess, the action request form is filled out detailing the probable cause, measures taken to clear the line, cleanup required and any further work that should be performed as follow-up. To prevent reoccurrences of SSOs, a video inspection is conducted and, depending on the outcome, root treatments or flushing schedules may be modified to address the specific section of line.

B. Policy for Buildings Flooded with Sewage

In all cases when a customer states that their building has been flooded with sewage an investigation will be conducted by visual inspection, and an action request and/or SSO report shall be thoroughly completed.

During the investigation it should be determined as to whether the flooding was due to the customer's private lateral, inadequate private sewer anti-backflow device and/or due to a backup in a District main line. See Wastewater Ordinance section 5.01.6. “Protection of private property from damage caused by sewage backup through a sewer service lateral is the sole responsibility of the property owner, and shall not be compensated by the District.”

If requested by the customer, the District may supply the customer with a list of names of companies that may be able to conduct restoration after flooding damage; however no company shall be recommended as preferred. At no time shall statements be made as to responsibility or liability.

Service Master	209-532-1700
AAA Wesco	209-532-9676
Coit	209-533-2773
Five Claw Maintenance	209-532-6360

In the case of a building flooded due to a backup in a District main sewer line, a trained representative of the District will be called in to produce a report. The following is a listing of personnel to be called in the order as listed. Claim forms will be supplied by the trained representative. At no time shall statements should be made as to responsibility or liability.

Wastewater Superintendent
Human Resources Direct/Risk Manager or designate
Operations Manager or designate

If none of these persons can be contacted, make a written report of damages as noted through the visual inspection. Make sure that the customer understands the importance of expedient clean-up.

Upon permission granted by the property owner, if there is excessive flooding that can be immediately mitigated by removal with the District vacuum equipment already on site, this may be accomplished, in the sole discretion of the District, with property owner acknowledgement that any immediate District clean-up is undertaken solely for the purposes of minimizing any potential flow of sewage to an MS4, waterway, or adjacent property. The District is under no obligation to conduct clean-up operations on private property.

In all cases, at the request of the property owner, District personnel may install an anti-backflow device on a clean-out that is lower than the floor of the building, if available, to help prevent future flooding.

III. Reporting & Notification

On the morning following an overflow, a report given by the first responder and plans are made for follow-up measures if needed. More comprehensive cleaning of a line may be needed. If there is a repeat stoppage at a location within six months or less, a camera inspection is scheduled. If the camera cannot access the line, a locate and dig is arranged. Work orders are used for spot repairs or smaller jobs and larger scale repairs or replacements are treated as projects.

The lists of sewer stoppages and forms for each location are filed by system area in a binder. The monthly filing is used as a vehicle for flagging chronic problem areas for rehab, repair or replacement.

Notifications are made to the Region 5 RWQCB and the local Environmental Health Department when there are blockages that involve overflows. If receiving waters are impacted, there are more stringent clean-up measures taken that include sampling above and below the point of impact for bacteriological analysis and may require posting of the site and any public access points below the place impacted. The local Environmental Health Department works closely with TUD in the event of any overflow to receiving water. Any overflows to receiving waters, in any amount, are called to the Office of Emergency Services within 24 hours of the event. Appendix 5-A and 5-B include reporting forms.

Public notification is made through the District's Customer and Public relations Coordinator, who is responsible for issuing press releases and public service announcements.

IV. Impact Mitigation

A. Containment

Containment of the spill and preventing it from reaching surface water is first priority. The District stocks wattles, sand bags, and visquine to blind off drainage inlets. Trucks also carry pneumatic plugs in order to plug upstream manholes and to facilitate bypass pumping, as needed. Culverts can be plugged with plywood or by burying the inlet. Orange construction fencing is stored in our warehouse to be used to cordon off the affected area and restrict access. Signage is also available to warn the public of the public health risk.

In the event of an on-going overflow, staff are instructed to turnoff or delay operation of upstream sewer lift stations until bypass operations are in place. The District has at its disposal a trailer mounted pump and generator. If the extent of the spill is great, the District may contact an outside hauler to assist in bypassing flows. The District does not maintain and on-call contract with haulers, but has a working relationship with several.

If remediation efforts span more than one day, District staff will check weather forecasts to make sure any rain events will not result in spreading the contamination and that drainage facilities like DIs and culverts are restored to full operation prior to the storm.

Where applicable, District staff will instruct the property owner to turn off any sprinkler systems to minimize the potential for runoff.

B. Remediation

The vacuum trucks are used when site access permits. The area is sprayed down with water and simultaneously vacuumed up.

Hand work such as mopping, raking, brooming, and shoveling are also used especially when the site is in the back of a house or on a cross country section of sewer.

Sometimes topsoil from on-site is used to cover the contaminated area and prevent exposure to the public. If quantities of onsite material are insufficient, the District has stockpiles of material that can be imported and spread over the affected area.

Contaminated green waste, such as leaves, grasses, and brush are collected and disposed of at the RWWTP. They are piled into windrows and left to compost.

In rare instances where contamination has reached a water course and the District has raw water conveyances in the vicinity, raw water can be redirected into the affected water course to provide some degree of dilution.

C. Preparations for Rain

When there is a possibility of precipitation that could spread the contamination, the District will take measures to contain any potential stormwater from migrating off of the site. Some of the measures may include:

- Blinding off drainage inlets or culverts
- Constructing dikes or berms to contain or rechannelize flows
- Covering the contaminated area with visquine

D. Testing of Receiving Waters

The District tests for fecal coliform to assess the extent of the contamination and also to verify that remediation work was effective. Initial testing is done within 24 hours of the event. Followup testing is done within 48 hours of the event and on the 4th day. If positive test results are detected on the 4th day, sampling continues everyday thereafter, until negative results are achieved.

V. Preventative Measures

A. Site Access

Since part of the District's collection system is situated above the snowline, it is essential that roads be cleared and passable during storm events. District Staff is instructed to start work at the first sign of snow fall. Most of the District's collection system is within public rights-of-way which are plowed by Tuolumne County. The District has the capability to mount a plow blade on the front of some service trucks. All service trucks carry chains.

During rainy weather, access roads can become muddy and inhibit passage of the, flush, and vacuum trucks. The District regularly maintains its easements (see Chapter 4 – Operations and Maintenance Plan). The District stockpiles baserock, drain rock, and other materials that can be placed quickly in order to restore a drivable surface.

In order to minimize response times, the Vacon and vacuum trucks are always emptied at the end of the day and topped off with fuel so in the event of an emergency they will be ready to roll.

B. Power Generation

Power outages occur frequently in the winter time. Typically, power outages are localized and do not effect the entire service area. However, the District does own and operate 30 sewer lift stations and must be ready to service all of them during a prolonged power outage.

Most sites have either a standby generator, an emergency overflow sump, or both. For sites that have neither, District staff are familiar with relative inflow rates into these facilities, as well as, sump capacities and have an idea of which sites are most vulnerable to an overflow. The SCADA system also has battery backup and will produce high alarms even when the power is out.

At sites with standby generators, propane refueling is on a set schedule through the gas provider to ensure that tanks are always full. Diesel refueling is done by District staff. Fuel levels are monitored on a weekly basis.

Some service trucks have generators to pump down sumps as needed. The District also has a trailer mounted generator that is kept at the District office which is typically below snowline.

C. Bypassing

In the event that bypassing is necessary, the vacuum truck has the ability to vacuum at approximately 300 gpm and discharge at approximately 500 gpm. The debris tank on the vacuum truck has a capacity of 2,500 gallons. Most District sewer mains flow less than 250 gpm and since loads only need only be shuttled to the next downstream sewer manhole, the vacuum truck is adequate for the majority of events.

a second vacuum truck is also available and has a tank capacity of 2,500 gallons.

When more than one site needs to be monitored and bypassed, the District will contract with a 3rd party hauler.

For prolonged bypass operations, the District has a diesel driven, trailer mounted pump that can be mobilized very quickly.

D. Operational Measures

The District has a number of options to avoid a SSO when a problem arises. Depending upon the location of the problem, the District has the ability to retain approximately one day of average flow at its Twain Harte Wastewater Plant. In doing this it can minimize the flow that is conveyed down through the Twain Harte Interceptor and East Sonora Interceptors to its Regional WWTP.

Bypass pipelines or interconnections exist at several locations in the collection system. For example flows from the Sonora and Columbia Interceptors can be diverted into one another. Also, relief sewers have been constructed for the Columbia and Sonora Interceptors on various

sections of pipeline upstream of the headworks to the Regional WWTP. In 2008, an overflow from the Greenly Basin Interceptor was constructed to discharge into the Sonora Interceptor.

E. Design Measures

New lift stations, or lift station remodels, are designed with emergency overflow sumps. The District currently does not have a standard for storage time or minimum volume, this is site specific. All pumping facilities are designed with float alarms and lead/lag pump redundancy. If a lag pump is not installed, a spare pump is stored on site.

For peak wet weather flows at our Regional WWTP that either exceed our treatment capacity or our hydraulic capacity, flows are diverted into Pond A, stored, and then pumped back to the headworks after the flows have subsided.

VI. Training

Staff receive regular training and/or certification in:

1. Confined space
2. CPR and 1st Aid
3. Fire Extinguisher
4. Flagging and traffic control
5. Hazardous Materials Operations and Response
6. Use of Personal Protective Equipment
7. Sampling protocols for chlorine residual and ammonia
8. Pulling and servicing pumps
9. Operation of, vacuum, and flush trucks
10. Operation of video inspection equipment

VII. Mutual Assistance Agreement

A mutual assistance agreement between the Tuolumne Utilities District, Jamestown Sanitary District, and Twain Harte Community Services District was executed in December 2007. The agreement outlines the procedures for requesting assistance and the conditions by which the parties involved may exchange materials, equipment, and personnel in order to respond to problems such as SSOs. A copy of this agreement is attached as Appendix 5-B.

5-A
SANITARY SEWER OVERFLOW (SSO) REPORT

Date of S.S.O: _____

Today's Date: _____ Time: _____ ☐ Call Out ☐ Normal Work Hours

LOCATION DETAILS

Street No: _____ Street Name: _____

Collection System: _____ Street Direction: _____ Cross Street Name: _____

Latitude: _____ Longitude: _____ Map/Book/Page No: _____

City: _____ County: _____ State: _____ Zip Code: _____

Spill Location Description: _____

_____

☐ Lateral ☐ Property Line c/o Main Line ☐

Sewer Line Entered Through: ☐ Manhole ☐ Clean Out ☐ Other: _____

Responding Operators: _____

Number of Feet into Line Where Plug Was Located: _____

Number of Feet of Line Cleaned: _____

Amount of Time Spent Unplugging Line: _____

Equipment Used: _____

Describe Clean-Up Action: _____

Where did failure occur? ☐ Upper Lateral ☐ Lower Lateral ☐ Main Line ☐ Other (explain) : _____

_____

Explanation of how spill volume was calculated? _____

_____

Was spill caused by wet weather: ☐ Yes ☐ No

Size of pipe: _____ Type of Pipe: _____ Age of Pipe: _____

Description of Terrain: ☐ Flat ☐ Steep ☐ Mixed

☐ Other (explain) : _____

Visual Inspection Results from Impacted Receiving Water: _____

_____

Overall Spill Description: _____

Spill Response Activities: ☐ Restored Flow ☐ Return All or Portion to S.S.S ☐ Cleaned Up Spill

☐ Contained All or Portion ☐ Inspection CCTV to Determine Cause

Explanation of Spill Response Activities (Required if Response is Other): _____

_____

_____ _____ _____

Printed Name Signature Date

5-A

SPILL DETAILS

Spill Appearance Point: ☐ Building ☐ Force Main ☐ Gravity ☐ Pump Station ☐ Manhole ☐ Clean Out ☐ Other: _____

Spill Appearance Point Explanation (Required if Appearance Point is Other): _____

_____

Did the Spill Discharge to a Drainage Channel and/or Surface Water? ☐ Yes ☐ No

Did the Spill Reach a Storm Drainpipe? ☐ Yes ☐ No

If Spill Reached a Storm Drainpipe, was all the Wastewater Fully Captured? ☐ Yes ☐ No ☐ N/A

Was it returned to the Sanitary Sewer System? ☐ Yes ☐ No ☐ N/A

Private Lateral Spill? ☐ Yes ☐ No

Name of Responsible Party (For Private only, if known): _____

Final Spill Destination: ☐ Beach ☐ Building/Structure ☐ Paved Surface ☐ Unpaved Surface ☐ Storm Drain ☐ Surface Water ☐ Other: _____

Explanation of Final Spill Destination: _____

Estimated Spill Volume: _____ Gallons Estimated Volume of Spill Recovered: _____ Gallons

Estimated Current Rate (If Applicable): _____ Gallons per Minute

Estimated Spill Start Date:_____ Start Time: _____ a.m./p.m.

TUD was notified of Spill: Date: _____ Time: _____ a.m./p.m.

Estimated Operator Arrival: Date: _____ Time: _____ a.m./p.m.

Estimated End of Spill: Date: _____ Time: _____ a.m./p.m.

Spill Cause: ☐ Debris ☐ Grease ☐ Roots ☐ Vandalism

☐ Pipe/Structure Problem: _____

☐ Other: _____

Spill Cause Explanation (Required if Other): _____

_____

SAMPLE INFORMATION

Samples Taken? ☐ Yes ☐ No ☐ Section n/a

Locations (Minimum of 3) 1 _____ 2 _____

3 _____ 4 _____

Sample Taken: Date: _____ Time: _____ a.m./p.m.

NOTIFICATION DETAILS

RWQCB Called Date: _____ Time: _____ a.m./p.m. ☐ Section n/a

RWQCB Faxed Date: _____ Time: _____ a.m./p.m.

CDPH Called Date: _____ Time: _____ a.m./p.m.

OES Control Number (Required for Category 1 Spill): _____

OES Called Date: _____ Time: _____ a.m./p.m.

Tuolumne County Environmental Health Called Date: _____ Time: _____ a.m./p.m.

5-A

TUOLUMNE REGIONAL SEWER SYSTEM
SANITARY SEWER OVERFLOW PROGRAM
MUTUAL ASSISTANCE AGREEMENT

THIS AGREEMENT is made and entered into by those wastewater agencies that have adopted and signed this agreement to provide mutual assistance in time of Sanitary Sewer Overflow (SSO) emergency to assist in compliance with new State Wastewater Discharge Requirements adopted in 2006; and to provide reimbursement for equipment, supplies and personnel made available on an emergency basis.

The Tuolumne Utilities District, Jamestown Sanitary District and Twain Harte Community Services District are herein referred to collectively as "the parties."

In consideration of the mutual covenants and agreements hereinafter set forth, the parties agree to provide mutual assistance to one another in times of SSO emergency as follows:

Article I - *APPLICABILITY.* This Agreement is available to all public wastewater agencies in Tuolumne County.

Article II - *ADMINISTRATION.* The administration of this Agreement shall be through the Regional Sewer Advisory Committee of Tuolumne County.

Article III - *DEFINITION OF SSO EMERGENCY.* "SSO emergency" means a condition of SSO arising within the area of operation of the parties, caused by flood, storm, earthquake, or other condition which is or is likely to be beyond the control of the services, personnel, equipment, and facilities of a party hereto and requires mutual assistance.

Article IV - *REQUESTS FOR ASSISTANCE.* Requests for SSO emergency assistance under this Agreement shall be directed to the appropriate designated official(s) from the list of participating water and wastewater agencies.

The party rendering assistance under this Agreement is referred to as LENDER; the party receiving assistance is referred to as BORROWER.

Article V - *GENERAL NATURE OF ASSISTANCE.* Assistance will generally be in the form of resources, such as equipment, supplies, and personnel. Assistance shall be given only when LENDER determines that its own needs can be met while rendering assistance. The execution of this Agreement shall not create any duty to respond on the part of any party hereto. A potential LENDER shall not be held liable for failing to provide assistance. A potential LENDER has the absolute discretion to decline to provide any requested assistance. Resources are to be made available on a loan basis with reimbursement terms varying with the type of resource.

Article VI - *LOANS OF EQUIPMENT.* Use of equipment, such as construction equipment, vehicles, tools, pumps and generators, shall be at LENDER'S current equipment rate and subject to the following conditions:

(a) At the option of LENDER, loaned equipment may be loaned with an operator.
(b) Loaned equipment shall be returned to LENDER within 24 hours after receipt of an oral or written request.
(c) BORROWER shall, at its own expense, supply all fuel, lubrication and maintenance for loaned equipment.
(d) LENDER shall be responsible for lubrication and maintenance of any equipment loaned with an operator. Borrower shall not be responsible for damages caused by negligent equipment maintenance on the part of the Lender.
(e) LENDER'S cost related to the transportation, handling and loading/unloading of equipment shall be chargeable to BORROWER. The party arranging for or transporting equipment shall be responsible for condition of said equipment and any property damage or other liability related to its transport, from portal to portal including load to unload.
(f) In the event loaned equipment is damaged while in the custody and use of BORROWER, BORROWER shall reimburse LENDER for the reasonable cost of repairing said damaged

equipment. If the equipment cannot be repaired, then BORROWER shall reimburse LENDER for the cost of replacing such equipment with equipment that is of at least equal capability and quality. If LENDER must lease a piece of equipment while LENDER'S equipment is being repaired or replaced, BORROWER shall reimburse LENDER for such lease costs.

(g) Lender shall not allow the use of equipment by the Borrower for which its employees are not appropriately trained or certified.

(h) Borrowed equipment shall be used only for the Sanitary Sewer Overflow purposes intended by this agreement

Article VII – *MATERIALS AND SUPPLIES.* BORROWER shall reimburse LENDER, pursuant to a job invoice submitted by LENDER, the actual replacement cost, plus applicable shipping costs, for expendable or non-returnable materials or supplies used by the LENDER in the course of the response. Other supplies and reusable items which are returned to LENDER in a clean, damage-free condition shall not be charged to the BORROWER and no rental fee will be charged; otherwise, they shall be treated as expendable supplies.

Article VIII - *PERSONNEL.* LENDER will make such employees as are willing to participate available to BORROWER at BORROWER'S expense equal to LENDER'S full cost, i.e., equal to the employee's applicable salary or hourly wage plus fringe benefits and overhead, and consistent with LENDER'S personnel union contracts or other conditions of employment. Employees so loaned will be under the supervision and control of the BORROWER. BORROWER shall be responsible for all direct and indirect costs associated with workers compensation claims. Costs to feed and house loaned personnel, if necessary, shall be chargeable to and paid by BORROWER. LENDER will not be responsible for cessation or slowdown of work if LENDER'S employees decline or are reluctant to perform any assigned tasks. BORROWER may dismiss any employee on loan from LENDER at any time for any reason.

Article IX - *REIMBURSEMENT.* The BORROWER agrees to reimburse the LENDER within 60 days from receipt of an invoice for assistance provided under this Agreement.

Article X - *LIABILITY AND HOLD HARMLESS.* Pursuant to Government Code Section 895.4, and subject to the conditions set forth in Article XI, BORROWER shall assume the defense of, fully indemnify and hold harmless LENDER, its Directors, Board Members or Supervisors, its officers and employees, from all claims loss, damage, injury and liability of every kind, nature and description, directly or indirectly arising from the BORROWER'S work hereunder, including, but not limited to, negligent or wrongful use of equipment, supplies or personnel on loan to BORROWER, or faulty workmanship or other negligent acts, errors or omissions by BORROWER or by personnel on loan to BORROWER from the time assistance is requested and rendered until the assistance is returned to LENDER's control, portal to portal. This indemnification shall not extend to those claims caused by the sole negligence of the lenders employees arising out of the performance of this agreement.

Each party hereto shall give to the others prompt and timely written notice of any claim made or any suit instituted coming to its knowledge, which in any way, directly or indirectly, contingently or otherwise, affects or might affect them, and each shall have the right to participate in the defense of the same to the extent of its own interest.

Article XI - *SIGNATORY INDEMNIFICATION.* In the event of a liability, claim, demand, action or proceeding, of whatever kind or nature arising out of the rendering of assistance through this Agreement, the parties involved in rendering or receiving assistance agree to indemnify and hold harmless each signatory to this mutual assistance Agreement, whose only involvement in the transaction or occurrence which is the subject of such claim, action, demand or other proceeding, is the execution and approval of this Agreement. Such indemnification shall include indemnity for all claims, demands, liability, damages and costs, including reasonable attorneys' fees and other costs of defense, for personal injury, property damage, and worker's compensation.

Article XII - *WORKER'S COMPENSATION AND EMPLOYEE CLAIMS.* LENDER'S employees, officers or agents, made available to BORROWER shall, except as otherwise provided under Labor Code Sections 3600.2 through 3600.6, be considered to be the special employees of BORROWER and the general employees of LENDER (as defined in Insurance Code 11663) while engaged in carrying out duties, functions, or activities pursuant to this Agreement. BORROWER will reimburse LENDER for all costs, benefits, and expenses associated with worker's compensation and other claims. LENDER is responsible for providing worker's compensation benefits and administering worker's compensation claims subject to the

reimbursement terms of this Agreement. BORROWER will reimburse LENDER for worker's compensation costs, benefits and expenses on a quarterly basis or on other terms mutually agreed upon by LENDER and BORROWER.

Article XIII - *MODIFICATIONS.* No provision of this Agreement may be modified, altered or rescinded by individual parties to this Agreement. Modification to this Agreement requires a unanimous vote of signatory agencies to this Agreement. The Regional Sewer Advisory Committee will notify all parties of proposed modifications to this Agreement in writing and those modifications shall become effective immediately upon written notice of affirmative action by each of the Parties' Boards.

Article XIV - *TERMINATION.* This Agreement is not transferable or assignable, in whole or in part, and any party may terminate their participation in this Agreement at any time upon 60 days' written notice delivered or mailed to the other parties.

Article XV - *EFFECT.* Agreement shall take effect immediately upon its execution by said parties.

Article XVI - *PRIOR AGREEMENTS.* To the extent that prior agreements between signatories to this Agreement are inconsistent with this Agreement, all prior agreements for mutual assistance between the parties hereto are hereby superseded.

Article XVII - *ARBITRATION.* Any controversy or claim arising out of or relating to this Agreement or the breach thereof, shall be settled by arbitration in accordance with the Rules of the American Arbitration Association and judgment on the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

Article XVIII - *TORT CLAIMS.* This Agreement in no way acts to abrogate or waive any immunity or defense available under California Law.

JAMESTOWN SANITARY DISTRICT

Dated: December 13, 2007

Judy Selby, Board President

TWAIN HARTE COMMUNITY SERVICES DISTRICT

Dated: December 13, 2007

William Bryant, Board President

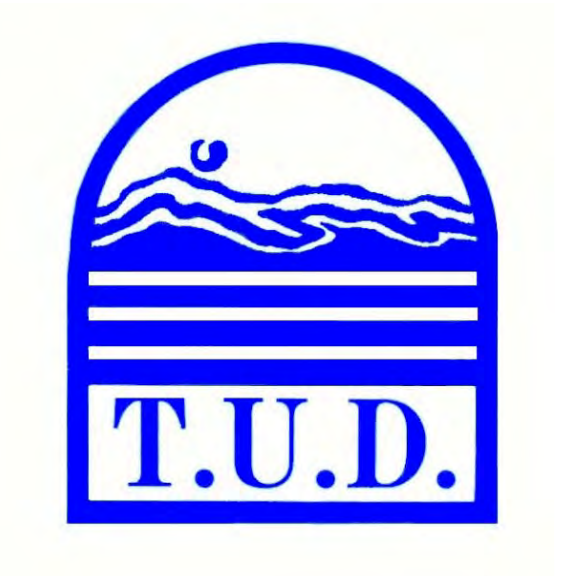
TUOLUMNE UTILITIES DISTRICT

Dated: December 11, 2007

Barbara Balen, Board President

CHAPTER 6

FATS, OILS, AND GREASE CONTROL PROGRAM



TUOLUMNE UTILITIES DISTRICT

Adopted: March 10, 2009
Revised: August 12, 2009
Revised: November 23, 2010

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FOG CONTROL PROGRAM

I. INTRODUCTION AND PURPOSE

Wastewater discharges containing high concentrations of fats, oil, and grease (FOG) are a principal cause of blockages and sanitary sewer overflows (SSOs) in the wastewater collection system. The District spends significant time and resources cleaning pipelines that are subject to FOG. When a SSO occurs it can result in serious property damage and regulatory fines. In addition, wastewater laden with FOG complicates the treatment process.

Many commercial facilities such as restaurants, hospitals, schools, service stations, car washes, etc. produce wastewater that contains FOG. Discharge to the sanitary sewer of wastewater containing fats, oils, and grease in excess of 300 mg/l of animal or vegetable origin or 100 mg/l of mineral or petroleum origin is prohibited by the District's Wastewater Ordinance.

However, there continues to be an on-going problem with these wastes being found in the sewer collection system and reaching the Wastewater Treatment Plant. To address this issue, the District has developed this FOG Control Program.

The objectives of this plan are the following:

- Prevent sanitary sewer overflows (SSOs)
- Reduce the amount of fats, oils, and greases (FOG) discharged into the collection system
- Reduce the maintenance and operation costs of the collection system
- Establish construction standards and an engineering review/approval process for new installations

II. DEFINITIONS

Approved - Describing a product, method, or design acceptable to the District Engineer.

District – Tuolumne Utilities District

Food Service Establishment (FSE) – Any facility which prepares and/or packages food for sale or consumption, on or off-site, with the exception of private residences, including but not limited to food courts, food manufacturers, food packagers, restaurants, grocery stores, bakeries, hospitals, hotels, nursing homes, churches, schools, etc.

Gravity Grease Interceptor – A plumbing appurtenance or appliance that is

installed in a sanitary drainage system to intercept nonpetroleum fats, oils, and greases (FOG) from a wastewater discharge and is identified by volume. Gravity grease interceptors are generally installed outside.

Grease – A liquid or solid material, composed primarily of fats and oils from animal or vegetable origin.

Grease Hauler – A person or company who collects the contents of a grease interceptor and transports it to an approved recycling or disposal facility.

Hydromechanical Grease Interceptor – A plumbing appurtenance or appliance that is installed in a sanitary drainage system to intercept nonpetroleum fats, oil, and grease (FOG) from a wastewater discharge and is identified by flow rate, and separation and retention efficiency. The design incorporates air entrainment, hydromechanical separation, and interior baffling. Hydromechanical grease interceptors are generally installed inside.

Oil Liquid Interceptor – A device designed and installed so as to separate and retain petroleum based oils while permitting the remaining liquid phase to discharge to the sanitary sewer.

III. GENERAL REQUIREMENTS

Any type of business or other establishment such as, but not limited to, restaurants, bakeries, donut shops, takeout, drive-in eating establishments, ice cream parlors, hospitals, hotels, markets, churches, schools, and recreation or reception halls, etc., where any grease or other objectionable materials may be discharged into a public or private sewage main or disposal system shall have a District approved gravity grease interceptor or hydromechanical grease interceptor.

Automotive related facilities including but not limited to car washes, quick lubes, and automobile repair shops which may contribute petroleum based oil to the collection system shall have a District approved oil liquid interceptor.

Chapter 2 of the District's Wastewater Ordinance establishes limits and prohibitions on discharge. Section 2.08.2 specifically addresses FOG.

The Ordinance restricts discharges to sewer of any wastewater:

a) *Having a temperature higher than 150 degrees F.*
b) *Containing more than 300 mg/L of oil or grease of animal or vegetable origin.*
c) *Containing more than 100 mg/L of oil or grease of mineral or petroleum origin.*

All FOG removal facilities shall be installed and operated in accordance with Section 2.08.4 of the most recent edition of the District's Wastewater Ordinance.

All interceptors shall be installed solely at the owner/user's expense. Proper operation, maintenance, and repair of interceptors shall be done solely at the owner/user's expense.

IV. DESIGN AND CONSTRUCTION

All gravity grease interceptors, hydromechanical grease interceptors, and oil liquid interceptors shall be designed and constructed in accordance with the District's most recent design standards, attached as Appendix A.

When a new facility is being constructed, the District requires (3) submittal copies on the interceptor, sizing calculations, and a site plan detailing where the unit will be placed in reference to the kitchen and how access will be made for regular maintenance. Once the District's engineering department has approved the submittal, (1) copy goes into the project file, (1) copy gets routed to the District's FOG Control Coordinator or Inspector, and (1) copy is returned to the applicant.

All designs shall be subject to written approval by the District's Engineering Department prior to construction.

V. MAINTENANCE AND INSPECTION

Maintenance is the responsibility of the owner/user. The interceptors shall be maintained in efficient operating condition by periodic removal of the accumulated grease. The District requires that each installation have records showing dates and quantities of FOG removal. Generally, hydromechanical grease interceptors have cleaning frequencies measured in days. Gravity grease interceptors are typically cleaned every 2-4 weeks. Oil liquid interceptors shall be inspected every 3 months and cleaned when the floating oil layer exceeds 2 inches of depth or when the sludge on the bottom of the tank exceeds 8 inches in depth.

Wastes removed from each gravity grease interceptor, hydromechanical grease interceptor, and oil liquid interceptor shall be disposed of at a facility permitted to accept such wastes. No such collected grease, oil, or sludge shall be emptied or discharged into any drainage piping, public or private sewer, or to the District's Wastewater Treatment Plant.

A list of licensed grease (animal and vegetable derived fat and grease only) haulers and recyclers is attached as Appendix H.

No additives may be used in a gravity grease interceptor or hydromechanical grease interceptor without prior written approval from the District Engineer. The use of additives shall not constitute a substitute for the regular maintenance requirements set herein.

Inspections will occur on a periodic basis to be determined by the District. Sample inspection forms are attached as Appendix C. An installation will be considered "out of compliance" with the maintenance requirements if any of the following conditions exist:

Gravity Grease Interceptor

- The total volume of captured grease and solid material displaces more than 25% of the capacity of the gravity grease interceptor as determined by a "sludge judge" or similar apparatus; or
- Effluent exceeds 300 mg/L of oil or grease of animal or vegetable origin

Hydromechanical Grease Interceptor

- The total volume of captured grease and solid material displaces more than 25% of the capacity of the hydromechanical grease interceptor as determined by a "sludge judge" or similar apparatus; or
- Effluent exceeds 300 mg/L of oil or grease of animal or vegetable origin

Oil/Water Separator

- Bottom sediment depth is in excess of eight-(8) inches or in any amount which causes the piping within the unit to clog; or
- Surface oil accumulation in the final compartment in excess of two-(2) inches in depth; or
- Effluent exceeds 150 mg/L of oil or grease of mineral or petroleum origin.

If, upon inspection by the District, a unit is found to be absent or ineffective as solely determined by the District Engineer, the owner/user shall be required to make immediate repairs or corrections within thirty (30) days after receiving written notification of deficiency from the District. If the unit requires pumping and servicing, as determined by the inspector, the owner/user shall be required to have the unit pumped by a licensed hauler within ten days after receiving notification by the inspector.

VI. ENFORCEMENT

Failure to make such repairs or corrections shall result in disconnection from the public sewer, and if the District supplies water service to the premises, such service shall be shut off.

Chapter 7 of the Wastewater Ordinance describes the abatement procedures available to the District. These range from stopping service to civil and/or criminal penalties.

VII. PROGRAM COSTS AND FEES

Administrative and monitoring costs associated with the program are paid through a monthly charge on the customer's bill. The fee is set by Board action and is published in Exhibit B of the most recent edition of the District's Wastewater Ordinance. The Board reserves the right to adjust this charge at any time.

The monthly charge includes staff time to carry out site visits during installation and for on-going monitoring of maintenance and operation. If additional site visits are required in order to address deficiencies or problems at a particular facility, those costs will be billed on an hourly basis in accordance with Exhibit D of the most recent edition of the District's Wastewater Ordinance.

Appendix A

Design and Construction Standards

APPENDIX A
DESIGN and CONSTRUCTION STANDARDS

Gravity Grease Interceptors, Hydromechanical Grease Interceptors, and Oil Liquid Interceptors

I. GENERAL

District authority related to installation, inspection, and operations and maintenance of gravity grease interceptors, hydromechanical grease interceptors, and oil liquid interceptor is granted under Section 2.08.4 of the T.U.D. Wastewater Ordinance.

A. Applicant shall submit to the District (3) copies of product submittals, sizing calculations, and construction plans for review and approval.

Submittals should be sent to:

Tuolumne Utilities District
Attn: Kelly Klyn
18885 Nugget Blvd.
Sonora, CA. 95370

II. DESIGN

A. Applicable Codes: California Plumbing Code (most recent edition)

B. Design Standards:

Gravity Grease Interceptor – Listed by IAMPO
Certified by PDI

Hydromechanical Grease Interceptor -Listed by IAMPO
Certified by PDI

Oil Liquid Interceptor - Certified by API

C. Sizing: Per California Plumbing Code (most recent edition)

Min. sizes

Hydromechanical Grease Interceptor – 20 gpm & 40 lbs. grease retention capacity

Gravity Grease Interceptor – 750 gallons

Oil Liquid Interceptor – 300 gallons

D. Sampling Vaults:

At the request of the District Engineer, sampling vaults may be required on grease interceptors.

E. Access Manholes:

Interceptors shall have at least two -(2) traffic rated 24" diameter manhole risers for proper maintenance and inspection.

F. Flow Control:

Hydromechanical grease interceptors shall be equipped with flow control devices. The flow control device rating shall not exceed the manufacturers rated capacity in gpm for the grease trap. The flow control device shall be vented in accordance with the California Plumbing Code (most recent edition). The vent shall terminate not less than six-(6) inches above the flood-rim level or in accordance with the manufacturer's instructions.

G. Venting: All venting shall be in accordance with the California Plumbing Code (most recent addition)

H. Alternative Designs: May be approved on a case-by-case basis by the District Engineer. Oil liquid interceptors shall be standard baffle type, coalescing plate separators shall not be permitted without prior approval from the District Engineer.

III. LOCATION

A. Gravity Grease Interceptors:

Shall be installed outside of the kitchen area in a location affording ease of maintenance and servicing. Grease haulers/pumpers shall have access to the interceptor and the manhole covers shall not be located in parking stalls or other locations where access could be obstructed.

No toilets, urinals, and other similar fixtures shall drain through the interceptor.

Dishwashers and food disposal units shall not drain through the interceptor without prior approval of the District Engineer.

B. Hydromechanical Grease Interceptors**:**

Hydromechanical grease interceptors shall be located as close as practical to the fixtures being served. The interceptor shall be located so that the cover can be easily removed for inspection and maintenance of the unit.

No toilets, urinals, and other similar fixtures shall drain through the interceptor.

Dishwashers and food disposal units shall not drain through the interceptor without prior approval of the District Engineer.

C. Oil Liquid Interceptor:

In an open area readily accessible for cleaning and maintenance, located between floor drains and the sewer. Location shall not allow for stormwater or surface drainage to enter the system.

IV. CONSTRUCTION DETAILS

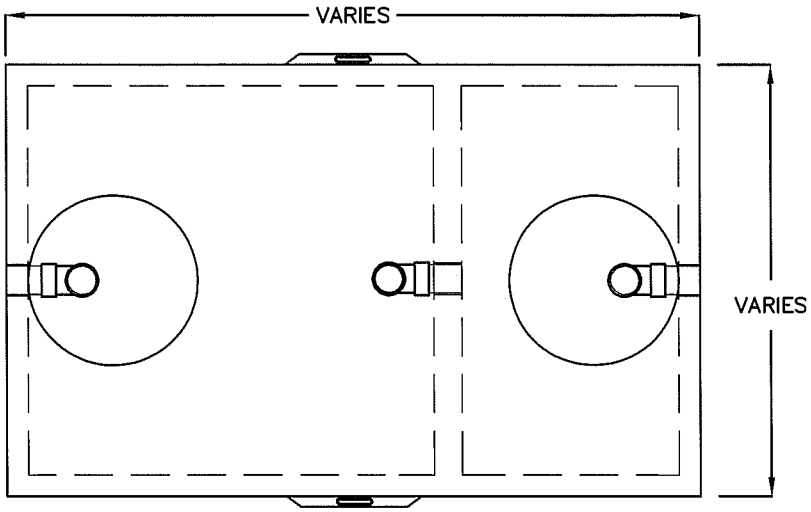
A. See Appendix A, B, and C for standard details.

V. ACCEPTABLE PRODUCTS & MANUFACTURERS

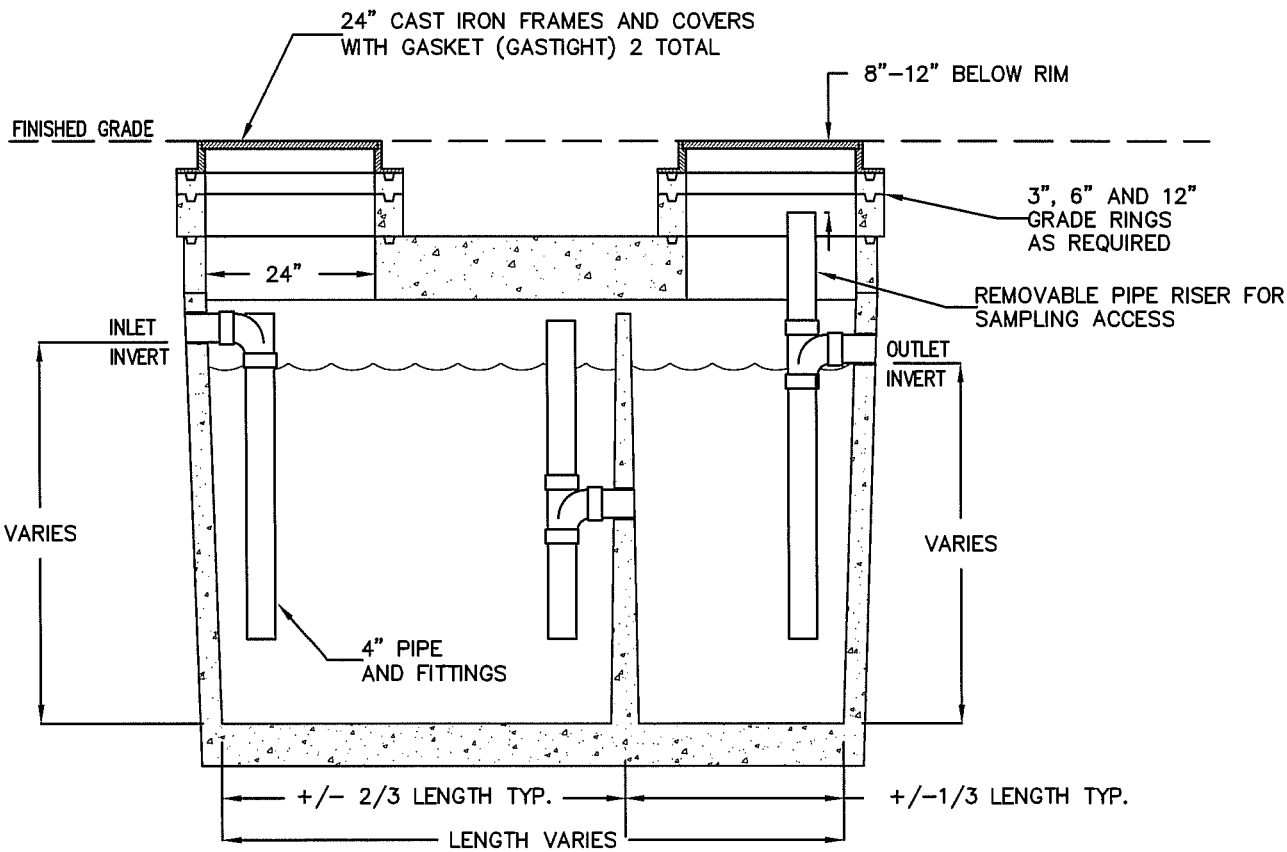
A. Gravity Grease Interceptors:
   Jensen Precast
   Teichert Precast
   P&L Concrete Products or approved equal.

B. Hydromechanical Grease Interceptors:
   Zurn Z1170
   Zurn Z1172
   Rockford G Series
   Rockford GPS Series
   Camplas Endura or approved equal.

C. Oil Liquid Interceptors:
   Jensen Precast, Oldcastle Precast, or approved equal.



TOP VIEW



SIDE SECTION VIEW

NOTES

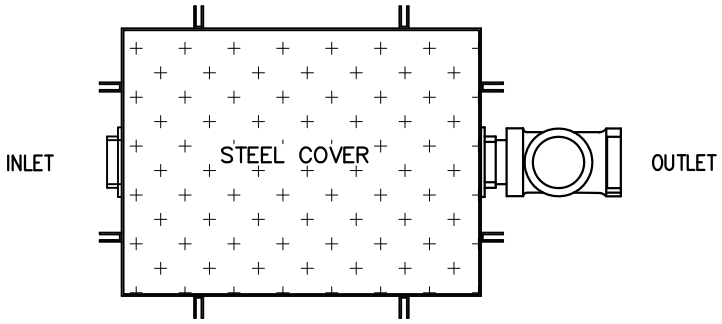
A. LID SHALL BE DESIGNED FOR TRAFFIC LOADING.
B. INTERCEPTOR SHALL BE LOCATED OUTSIDE OF KITCHEN IN AN AREA AFFORDING EASE OF MAINTENANCE AND SERVICING.
C. AT THE REQUEST OF THE DISTRICT ENGINEER, A SAMPLING VAULT MAYBE REQUIRED ON THE DISCHARGE SIDE OF THE INTERCEPTOR.
D. NO TOILETS, URINALS, AND OTHER SIMILAR FIXTURES SHALL DRAIN THROUGH THE INTERCEPTOR.
E. DISHWASHERS AND FOOD DISPOSAL UNITS SHALL NOT DRAIN THROUGH THE INTERCEPTOR WITHOUT PRIOR APPROVAL FROM THE DISTRICT ENGINEER.
F. SIZE THE INTERCEPTOR PER TABLE 10–3 OF 2007 CA. PLUMBING CODE OR MOST RECENT EDITION.
G. INTERCEPTOR SHALL BE LISTED BY IAMPO PS 80–2003b AND CERTIFIED BY PDI G–101–85.
H. GRAVITY INTERCEPTORS SHALL BE MANUFACTURED BY JENSEN PRECAST, TEICHERT PRECAST, P&L CONCRETE PRODUCTS, OR APPROVED EQUAL.

TUOLUMNE UTILITIES DISTRICT

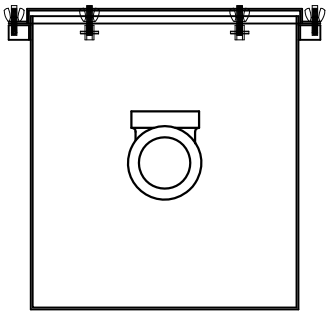
GRAVITY GREASE INTERCEPTOR

12–17–08

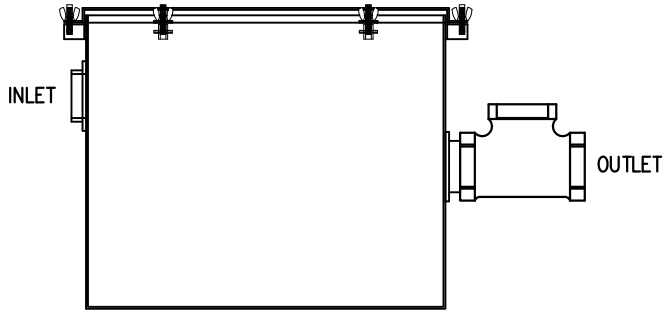
STD. DWG. NO. **XXX**



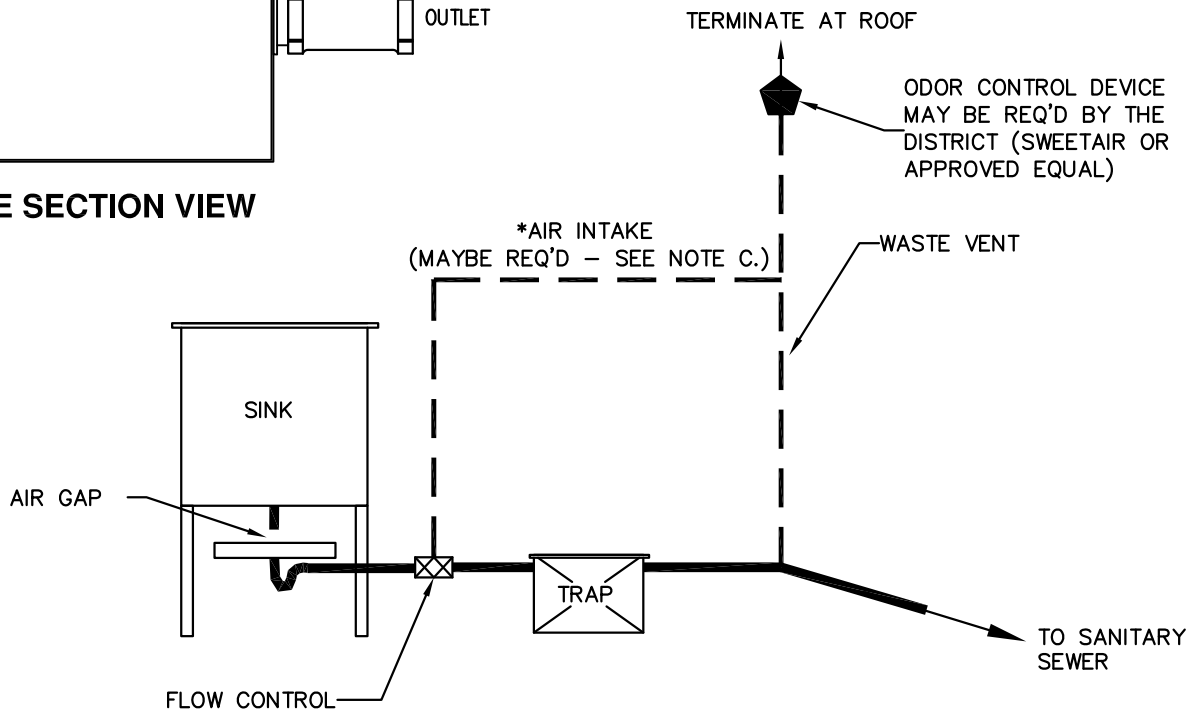
TOP VIEW



DISCHARGE END VIEW



SIDE SECTION VIEW



TYPICAL LAYOUT

NOTES

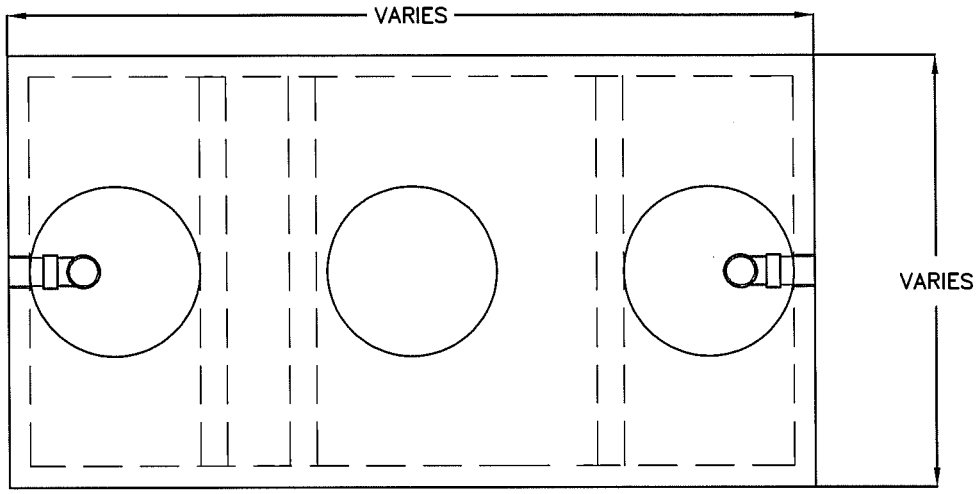
A. INSTALL HYDROMECHANICAL GREASE INTERCEPTORS AS CLOSE AS PRACTICAL TO FIXTURES BEING SERVED.
B. INTERCEPTOR COVER SHALL BE RATED TO WITHSTAND ANTICIPATED LOADING.
C. AN APPROVED FLOW CONTROL DEVICE SHALL BE INSTALLED UPSTREAM OF INTERCEPTOR INLET. AN AIR VENT ON THE FLOW CONTROL SHALL BE INSTALLED IF REQ'D BY THE INTERCEPTOR MANUFACTURER WITH PRIOR APPROVAL BY THE COUNTY BLDG. DEPARTMENT. AIR VENT REQUIREMENTS ARE DEPENDENT UPON THE PLUMBING CODE DEFINITION OF "TRAP ARM LENGTH". THIS INTERPRETATION SHALL BE PROVIDED BY COUNTY BLDG. DEPT.
D. THE WASTE LINE MUST BE VENTED IN COMPLIANCE WITH THE CA. PLUMBING CODE 2007 OR MOST RECENT EDITION.
E. NO TOILETS, URINALS, AND OTHER SIMILAR FIXTURES SHALL DRAIN THROUGH THE INTERCEPTOR. DISHWASHERS AND FOOD DISPOSAL UNITS SHALL NOT DRAIN THROUGH THE INTERCEPTOR WITHOUT PRIOR APPROVAL FROM THE DISTRICT ENGINEER.
SIZE THE INTERCEPTOR PER TABLE 10–2 OF 2007 CA. PLUMBING CODE OR MOST RECENT EDITION.
F. MINIMUM INTERCEPTOR SIZE: 20 GPM INTERMITTENT FLOW RATE AND 40 LBS GREASE RETENTION CAPACITY.
G. CAUTION: SINK OUTPUT SHALL NOT EXCEED FLOW CONTROL RATING AND FLOW CONTROL RATING SHALL NOT EXCEED INTERCEPTOR RATING.
H. INTERCEPTOR SHALL BE LISTED BY IAMPO PS 80–2003b AND CERTIFIED BY PDI G–101–85.
HYRDOMECHANICAL INTERCEPTORS SHALL BE ZURN Z1170, Z1172, OR ROCKFORD G SERIES, GPS SERIES, CAMPLAS ENDURA, OR APPROVED EQUAL.

TUOLUMNE UTILITIES DISTRICT

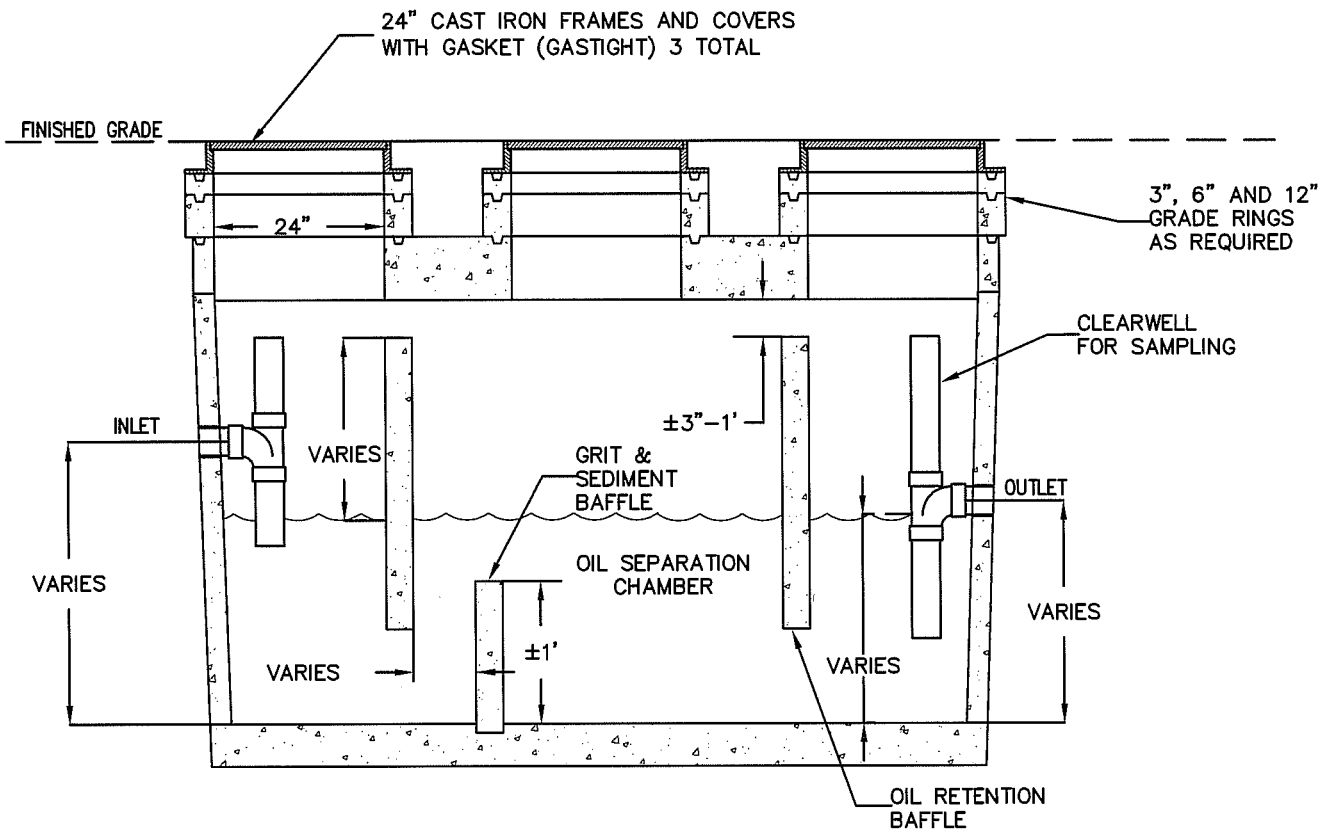
HYDROMECHANICAL GREASE INTERCEPTOR

10–17–09

STD. DWG. NO. **XXX**



TOP VIEW



SIDE SECTION VIEW

NOTES

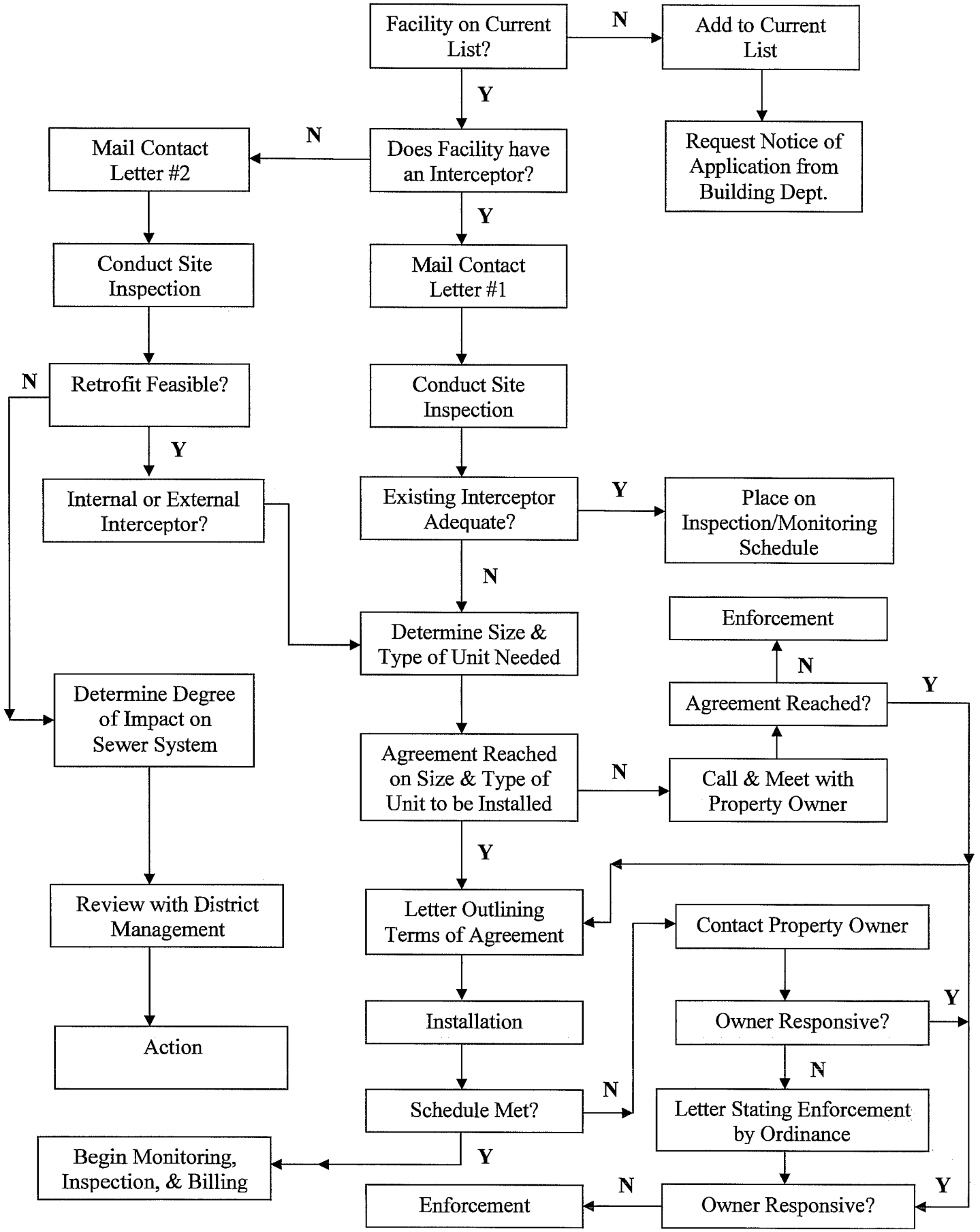
A. LID SHALL BE DESIGNED FOR TRAFFIC LOADING.
B. INTERCEPTOR SHALL BE LOCATED BETWEEN FLOOR DRAINS AND SANITARY SEWER.
C. SIZE INTERCEPTOR PER SEC.1017 OF 2007 CA. PLUMBING CODE OR MOST RECENT EDITION. MIN SIZE: 300 GAL.
D. INTERCEPTOR SHALL BE CERTIFIED BY AMERICAN PETROLEUM INSTITUTE (API).
E. COALESCING PLATES SHALL NOT BE USED WITHOUT PRIOR APPROVAL OF THE DISTRICT ENGINEER.
F. DEGREASERS, ANTIFREEZE, EMULSIFIERS, FUELS, AND SOLVENTS SHALL NOT BE DISCHARGED TO THE INTERCEPTOR.
G. INTERCEPTORS SHALL BE MANUFACTURED BY OLDCASTLE PRECAST OR APPROVED EQUAL.

TUOLUMNE UTILITIES DISTRICT **OIL LIQUID INTERCEPTOR**	1-13-09 STD. DWG. NO. **XXX**

Appendix B

Flow Chart

APPENDIX B: FLOW CHART



Appendix C

Inspection Forms

Grease Interceptor Inspection and Data Report

Source Control Division – FOG Program

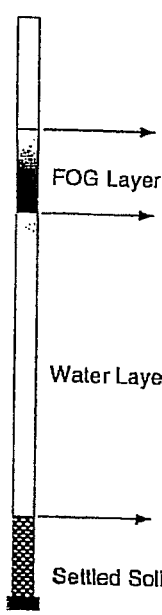
Permit No.		Inspection Date:	
Facility Name:		Inspector:	
Address:		Contact onsite:	
Contact Notified: ☐ Yes ☐ No		Arrive:	Depart:

Grease Interceptor Information

Location:

Visual Observations/Deficiencies:

Interceptor Layer Levels



Total Hydraulic Depth (A):	in
Water Layer (WL) Level (B):	in
Settled Solids (SS) Level (C):	in

Measurements	First Stage	Last Stage
(A) Total Hydraulic Depth	in	in
(B) FOG Layer	in	in
(C) Settled Solids Layer	in	in
Accumulated FOG + Solids AFS = A – B + C	in	in
% Accumulated FOG + Solids %AFS = (AFS / A) x 100	%	%
QA/QC Reviewed by:	Date:	

Photo – First Stage Measurement

Complete File Name Below by inserting 8 digit date of inspection (exp. 293-04242005-F)

2005-F

Photo – Last Stage Measurement

Complete File Name Below by inserting 8 digit date of inspection (exp. 293-04242005-L)

2005-L

TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD. • SONORA, CA • 95370 • (209) 532-5536 • FAX (209) 536-6485

FOOD SERVICE ESTABLISHMENT INSPECTION REPORT

Business Name: _____ Inspection Date: _____

Service Address: _____ Phone: _____

Owner's Name: _____ Contact Made With: _____

Mailing Address: _____ Type of Business: _____

City, State, Zip: _____ TUD Account #: _____ Permit No.: _____

Is grease interceptor required? Yes ☐ No ☐ (*If No, why?*)

Is there a grease interceptor? Yes ☐ No ☐

Location of interceptor: External ☐ Internal ☐

Is there a need for additional interceptors? Yes ☐ No ☐

Does interceptor need service? Yes ☐ No ☐

Does dishwasher flow through interceptor? Yes ☐ No ☐

Condition of Interceptor: _____

Type of maintenance: Pumped ☐ Additives Used ☐ Is there a Tallow Barrel for grease? Yes ☐ No ☐

Is maintenance performed: In House ☐ By Contract ☐ Other ☐ _____

Name of Company doing service: _____ Phone: _____

Date of last service: _____

Frequency of service: Weekly ☐ Bi-Weekly ☐ Monthly ☐ Quarterly ☐ Semi-Annually ☐ Other ☐ _____

Record Keeping: Yes ☐ No ☐ Sufficient ☐ Insufficient ☐

Maintenance Log issued? Yes ☐ No ☐

Is Facility in Compliance Yes ☐ No ☐

Follow-up Inspection Required? Yes ☐ No ☐ Follow-up Inspection Date: _____

(15 days Service, 30 days Install)

Remarks: _____

_____

_____

Inspected By: _____ Date: _____

Facility Contact Signature: _____ Date: _____

FOLLOW-UP INSPECTION REPORT

In compliance? Yes ☐ No ☐ (*If No, issue disconnection notice*) Date: _____

Remarks: _____

_____ Inspected By: _____

In compliance on disconnect date? Yes ☐ No ☐ (*If No,* disconnect) Was Service Disconnected: Yes ☐ No ☐

Remarks: _____

Inspected By: _____ Date: _____

Note: Annual inspections are required after the initial inspection.
A copy of this report will be sent to Tuolumne County Environmental Health Department.

E-030 ☐ Fax - County Environmental Health Dept. Original - File Yellow - Third Inspection Pink - Second Inspection Gold - First Inspection

Revised 3/3/09

Appendix D

Form Letters

TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD. • SONORA, CA 95370
(209) 532-5536 • FAX (209) 536-6485
www.tudwater.com

DIRECTORS
Barbara Balen
Robert M. Behee
Joseph Day, PhD
Ralph Retherford, M.D.
Delbert Rotelli

Request for Information

Date: _____

To: _____

_____

_____

Re: Fats, Oils, and Grease (FOG) Control

As operators of the Regional Sewer System, Tuolumne Utilities District has been experiencing an increase in the frequency of plugs in our collection system pipelines, as well as, grease reaching our sewer treatment plant. To alleviate these problems we are revising our Fats, Oils, and Grease (FOG) Control Program which will allow us to monitor grease interceptors on a more frequent basis. The changes in the program will bring us into compliance with new regulatory requirements issued by the State Water Resources Control Board. For this purpose we would appreciate the following information from you:

Name of Business: _____

Existing Grease Trap/Interceptor: Yes_____ **No**_____

Person Responsible for Maintenance of Interceptor: (if applicable) _____

Phone Number: _____

Hours of Operation: _____

Describe Location of Interceptor: (if applicable): _____

Thank you for your assistance.

Sincerely,

Jay Johnson
Fog Control Program Coordinator

TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD. • SONORA, CA 95370
(209) 532-5536 • FAX (209) 536-6485
www.tudwater.com

DIRECTORS
Barbara Balen
Robert M. Behee
Joseph Day, PhD
Ralph Retherford, M.D.
Delbert Rotelli

First Notice of Grease Accumulation

Date: _____

To: _____

_____

_____

Re: Fats, Oils, and Grease (FOG) Control

Your grease interceptor was inspected by T.U.D. staff on _____, and was found to be in need of cleaning due to accumulation of large quantities of grease. Not only can this cause sewage to back-up into your business, but it may also allow grease to pass into the Regional Sewer System. Should grease from your business plug the public sewer mains, you may be held liable for the expenses involved in cleaning that line.

In order for your grease interceptor to function correctly, it is necessary to remove accumulations of grease on a regular basis. Attached is a list of licensed waste haulers for your reference. A good cleaning job should include pumping of all of the interceptor compartments, as well as, cleaning out the bottom sediments and leaving the general area clean. In the future, a regularly scheduled cleanout service is recommended. If you are currently on a cleanout schedule, it is suggested that you increase the frequency of these cleanouts. We will inspect your grease interceptor within the next few weeks. If you have any questions, please feel free to contact me.

Sincerely,

Jay Johnson
Fog Control Program Coordinator
532-9107

TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD. • SONORA, CA 95370
(209) 532-5536 • FAX (209) 536-6485
www.tudwater.com

DIRECTORS
Barbara Balen
Robert M. Behee
Joseph Day, PhD
Ralph Retherford, M.D.
Delbert Rotelli

Follow-Up Notice

Date: _____

To: _____

_____

_____

Re: Fats, Oils, and Grease (FOG) Control

On _____, you were instructed to clean your grease interceptor. The unit was found to be ineffective due to excess accumulation of grease.

On_____, the unit was inspected again and still had not been cleaned.

Per section 2.08.4.k of the District's Wastewater Ordinance:

> If, upon inspection by the District, a grease interceptor is found to be absent or ineffective as solely determined by the District Engineer, the owner/user shall be required to make immediate repairs or corrections within thirty (30) days after receiving written notification of deficiency from the District. If the grease interceptor requires pumping and servicing, as determined by the inspector, the owner/user shall be required to have the interceptor pumped by a licensed hauler within ten days after receiving notification by the inspector. Failure to make such repairs or corrections shall result in disconnection from the public sewer, and if the District supplies water service to the premises, such service shall be shut off.

Please contact me if you have any questions.

Sincerely,

Jay Johnson
Fog Control Program Coordinator
532-9107

Appendix E

Maintenance Log

TUOLUMNE UTILITIES DISTRICT

GREASE INTERCEPTOR MAINTENANCE LOG

Date Issued: _____ **Issued By:** _____

Facility Name: **Location:**

Maintenance Requirement: *(circle one)* **Weekly** **Monthly** **Quarterly** **Bi-Yearly** **Yearly**

Date	Who Performed Service ? *(Company's name or individual)*	Type of Service *(Pumping, Hauling, Repair, etc.)*	Disposal Site *(if known)*	Volume Pumped	Service Comments	Verified by Owner

E-034

Appendix F

Variances and Waivers

TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD. • SONORA, CA 95370
(209) 532-5536 • FAX (209) 536-6485
www.tudwater.com

DIRECTORS
Barbara Balen
Robert M. Behee
Joseph Day, PhD
Ralph Retherford, M.D.
Delbert Rotelli

Grease Interceptor Installation Conditional Variance for Installation Restrictions

I,_____
(Business Representative's Name Printed)

Representing_____
(Business Name and Address Printed)

certify that the facility named above cannot install a grease interceptor because at least one the following conditions apply (please check appropriate box). Supporting documentation must be submitted with the application and plans.

☐ Inadequate slope ☐ Inadequate space

I certify that at no time shall any fats, oil, grease, or solids be discharged to the community sewer collection system in quantities that impair wastewater flow. I agree to put into effect the District's Best Management Practices. If at any time the business listed above is found to discharge fats, oil, grease, or solids in quantities that impair wastewater flow, I understand that I must implement an alternative grease removal method(s) acceptable to T.U.D and the regulating Health Department. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The Grease Interceptor waiver is not transferable. The person signing this waiver warrants that it has or has obtained the necessary consent and authority to execute this waiver and to make this waiver binding upon itself.

SIGNED: _____ DATE: _____

CONTACT PHONE NUMBER: _____

Please Do Not Write Below This Line

APPROVAL: _____ (AGENCY REP.)
PRINT SIGNATURE

REASON FOR APPROVAL: _____

REJECTED: _____ (AGENCY REP.)
PRINT SIGNATURE

REASON FOR REJECTION: _____

DATE: _____ CONTACT NO.: _____

TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD. • SONORA, CA 95370
(209) 532-5536 • FAX (209) 536-6485
www.tudwater.com

DIRECTORS
Barbara Balen
Robert M. Behee
Joseph Day, PhD
Ralph Retherford, M.D.
Delbert Rotelli

Grease Interceptor Pumping Frequency Conditional Waiver

I,_____
(Business Representative's Name Printed)

Representing_____
(Business Name and Address Printed)

certify that at no time shall any fats, oil, grease, or solids be discharged to the community sewer collection system in quantities that impair wastewater flow. I also certify that the food handling operations taking place at the above named business and address do not generate fats, oil and grease in quantities to require interceptor pumping at the frequency required in the District's Fats, Oils, and Grease (FOG) Control Program. I understand that the above named business will pump at a schedule that allows all conditions in the FOG Control Program to be met at all times. If at any time non-compliance with conditions defined in the FOG Control Program occurs, the above named business will immediately resume the minimum pumping frequencies established in the FOG Control Program. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The Grease Interceptor waiver is not transferable. The person signing this waiver warrants that it has or has obtained the necessary consent and authority to execute this waiver and to make this waiver binding upon itself.

SIGNED: _____ DATE: _____

CONTACT PHONE NUMBER: _____

Please Do Not Write Below This Line

APPROVAL: _____ (AGENCY REP.)
PRINT SIGNATURE

REASON FOR APPROVAL: _____

REJECTED: _____ (AGENCY REP.)
PRINT SIGNATURE

REASON FOR REJECTION: _____

DATE: _____ CONTACT NO.: _____

TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD. • SONORA, CA 95370
(209) 532-5536 • FAX (209) 536-6485
www.tudwater.com

DIRECTORS
Barbara Balen
Robert M. Behee
Joseph Day, PhD
Ralph Retherford, M.D.
Delbert Rotelli

Grease Interceptor Installation Conditional Waiver

I,_____
(Business Representative's Name Printed)

Representing_____
(Business Name and Address Printed)

certify that the business named above does not require a grease interceptor installation because it meets the definitions set forth in Chapter 2 Sections 2.01 - 2.13.1 of the District's Wastewater Ordinance. If at any time non-compliance is detected with the Wastewater Ordinance Sections listed above, I understand that I must install, within ninety (90) days of receipt of notification by TUD, a grease interceptor of sufficient size and design to be acceptable to TUD, the collection system owner, and the regulating Health Department. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The Grease Interceptor waiver is not transferable. The person signing this waiver warrants that it has or has obtained the necessary consent and authority to execute this waiver and to make this waiver binding upon itself.

SIGNED: _____ DATE:_____

CONTACT PHONE NUMBER:_____

Please Do Not Write Below This Line

APPROVAL:_____(AGENCY REP.)
PRINT SIGNATURE

REASON FOR APPROVAL:_____

REJECTED:_____(AGENCY REP.)
PRINT SIGNATURE

REASON FOR REJECTION:_____

DATE: _____ CONTACT NO.: _____

Appendix G

Best Management Practices

APPENDIX G
Tuolumne Utilities District
(courtesy of EBMUD)

BEST MANAGEMENT PRACTICES (BMPs) FOR FOOD RELATED FATS, OILS AND GREASE

BMP's	REASON FOR	BENEFITS
Train all staff on BMPs.	People are more willing to support an effort if they understand its basis.	Trained staff will be more likely to implement BMPs and work to reduce grease discharges to the sewer.
Post "No Grease" signs above sinks and on the front of dishwashers.	Signs serve as a constant reminder for staff working in kitchens.	Reminders help minimize grease discharge to the sewer or grease removal device.
Check grease interceptor solids depth routinely. The combined thickness of the floating grease and the bottom solids should not be more than 25% of the total interceptor depth.	Grease interceptor will not meet performance standards when solids and floating grease levels exceed 25%.	This will keep grease interceptor working at peak performance.
Collect and recycle waste cooking oil.	These actions reduce grease loading on grease removal devices and the sewer.	This will reduce cleaning frequency and maintenance costs for grease removal devices and reduce the amount of grease entering the drain.
"Dry wipe" pots, pans, and kitchen equipment, before cleaning.	"Dry wiping" will reduce the grease loading on grease removal devices and the sewer.	This will reduce cleaning frequency and maintenance costs for grease removal devices and reduce the amount of grease entering the drain.
Maintain a routine grease trap cleaning schedule.	If grease traps are not routinely cleaned, they do not work properly and do not prevent grease from entering the sewer. If the grease trap is not providing adequate protection, a grease interceptor may be required.	This reduces amount of grease entering the drain and protects sewers from grease blockages and overflows.
Use absorbent paper under fryer baskets.	This reduces the amount of grease during cleanup.	This reduces amount of grease entering the drain and protects sewers from grease blockages and overflows.
Use absorbents such as cat litter or paper towels to pick up oil and grease spills before mopping.	Decreases the amount of grease that will be put down the drain.	This reduces amount of grease entering the drain and protects sewers from grease blockages and overflows.
Do not use emulsifiers or solvents other than typical dishwashing detergents.	Emulsifiers and solvents will break down grease causing a problem in the sewer downstream.	Allows for proper removal of grease.

Appendix H

List of Licensed Haulers and Recyclers

APPENDIX H
LICENSED ANIMAL OR VEGETABLE GREASE HAULERS and RECYCLERS

California Wastewater Management
P.O. Box 188410
Sacramento, CA 95618
1-800-987-4541

Darling International
P.O. Box 1608
Turlock, CA 95381
1-800-245-1999

El Dorado Septic Service
P.O. Box 488
Soulsbyville, CA 95372
209-536-1925

ET Services
P.O. 608
Clovis, CA 93613
888-456-1270

Foothill Sanitary Septic Pumping
P.O. Box 702
Copperopolis, CA 95228
209-785-6163

San Jose Tallow Co.
P.O. Box 610116
San Jose, CA 95161
209-862-3494

Sisk Tallow Recycling Co.
4506 S. Commons Road
Turlock, CA 95380
800-698-7475

Tuolumne Utilities District does not endorse or recommend any specific company.

Free Collection Receptacle
(For Residential Use Only)

Waste Management Transfer Station
19309 Industrial Drive
Sonora, CA 95370
209-536-1719
Hours: 8:00 a.m. – 4:45 p.m.

Appendix I

Facility List

APPENDIX D

	Account #	Restaurant Name	Cust	Service Address	City	Phone #	Owner's Name	Mailing Address	City / State / Zip
1	599-0614-00-00	Alano Club of Sonora	Yes	126 E. Old Wards Ferry Rd	Sonora		Sonora Alano Club	126 E. Old Wards Ferry	Sonora, CA 95370
2	599-8840-00-00	Alfredo's	Yes	123 S. Washington Street	Sonora	532-8332	Alfredo's	123 S. Washington St	Sonora, CA 95370
3		Andy's Mnt Grill & Deli	No	24542 Highway 108	Mi-Wuk	586-1242			
4		Ann's Family Restaurant	No	24671 Highway 108	Mi-Wuk	586-1168			
5	899-9118-00-00	ATCAA Head Start	Yes	20300 Soulsbyville Road	Soulsbyville		Soulsbyville School District	20300 Soulsbyville Rd	Soulsbyville, CA 95372
6	599-9124-00-00	ATCAA Head Start	Yes	830 Greenley Road	Sonora		Sonora Elementary School	830 Greenley Road	Sonora, CA 95370
7	599-8566-00-00	ATCAA Homeless Shelter	Yes	359 S. Washington Street	Sonora		ATCAA	935 S.State Highway	Jackson, CA 95642
8	599-9050-00-00	B&B Pancake & Steak	Yes	13811 Mono Way	Sonora		C/O David Polanco	P.O. Box 51670	Pacific Grove, CA 93950
9	599-8892-00-00	Babcia's Tea Room	Yes	31 S. Washington Street	Sonora	532-5656	Diane Andersen	P.O. Box 321	Sonora, CA 95370
10		Bagel Bin	No	83 N. Washington Street	Sonora	533-1904			
11		Bald Eagle Aviation	No	10751 Airport Road	Columbia	533-4616			
12		Balloons "N" Things	No	13867 Mono Way	Sonora	532-3770			
13	599-8834-00-00	Banny's Café	Yes	83 S. Stewart St. #102	Sonora	533-4709	Pay Dirt Properties	P.O. Box 596	Sonora, CA 95370
14	599-5922-00-00	Barretta Gardens Inn B&B	Yes	700 S. Barretta St.	Sonora	532-6039	Dietrich & Nancy Brandt	700 S. Barretta St	Sonora, CA 95370
15		Baskin Robbins #6310	No	1071 Mono Way	Sonora	532-9521			
16		Belleview Elementary Sch	No	22736 Kuien Mill Road	Sonora	586-5510			Sonora, CA 95370
17	899-3036-00-00	Benjamin Soulsbyville B&B	Yes	20599 King Court	Soulsbyville	536-9349	Patricia Ryan	P.O. Box 969	Soulsbyville, CA 95372
18	599-0088-00-00	Big 5 Sporting Goods	Yes	1051 Sanguinetti Road	Sonora	536-9257	United Merchandising Corp.	P.O. Box 92088	Los Angeles, CA 90009
19	599-8838-00-00	Blue Collar Sports Rest.	Yes	770 Mono Way	Sonora	532-9335	Sonora Plaza L.P.	400 S. El Camino Real	San Mateo, CA 94402
20	499-6652-00-00	Blue Nile Inn	Yes	11250 Pacific Street	Columbia	532-8041	Ray & Anita Miller	11250 Pacific Street	Columbia, CA 95310
21		Bradford St. Sand. Fact.	No	10 West Bradford	Sonora	536-9223			Sonora, CA 95370
22	499-0716-00-00	Brown's Coffee House	Yes	22760 Main Street	Columbia	588-9309	Brown's Coffee House	P.O. Box 849	Columbia, CA 95310
23	599-8884-00-00	Burger King	Yes	729 E. Mono Way	Sonora	533-3678	Burger king Office	P.O. Box 380	Riverbank, CA 95367
24		Burger King #2	No	13796 Mono Way	Sonora				
25	599-8998-00-00	Café Giovanni	Yes	14270 Mono Highway	Sonora	533-2889	Dave Kallash	P.O. Box 336	Standard, CA 95373
26	599-9016-00-00	Carl's Jr. #642	Yes	1075 Mono Way	Sonora	533-8857	Carl karcher Enterprises	P.O. Box 4349 - R Blvd.	Aneheim, CA 92803
27	599-8212-00-00	Carmela's Italian Kitchen	Yes	301 S. Washington Street	Sonora	532-8858	Shirley Lee	P.O. Box 703	Jamestown, CA 95327
28	599-8880-00-00	Cassina High School	Yes	251 S. Barretta St. A	Sonora	532-7587	Sonora Union High School	251 S. Barretta St. A	Sonora, CA 95370
29	599-8698-00-00	Chubby's	Yes	1191 Sanguinetti Road	Sonora	532-3441	Chubby's Diner	1191 Sanguinetti Road	Sonora, CA 95370
30		Circle K Stores Inc.	No	19615 Peaceful Oak Road	Sonora	532-1063			
31	499-8826-00-00	City Hotel	Yes	Main Street	Columbia	532-1479	Columbia City Hotel	P.O. Box 1870	Columbia, CA 95310
32	599-8968-00-00	Cocina Michoacana	Yes	13955 Mono Way	Sonora	533-3841	Antonio/Maurilio Maciel	13955 Mono Way	Sonora, CA 95370
33	599-0540-00-00	Columbia Candy Kitchen	Yes	13769 Mono Way M	Sonora		Columbia Candy Kitchen	13769 Mono Way M	Sonora, CA 95370
34	499-0714-00-00	Columbia Candy Kitchen	Yes	Main Street	Columbia	532-7886	Columbia Candy Kitchen	P.O. Box 191	Columbia, CA 95310
35		Columbia College Food	No	11600 College Drive	Sonora				Sonora, CA 95370
36		Columbia Elementary Sch	No	22540 Parrotts Ferry Rd.	Columbia	532-3441			
37	499-8560-00-00	Columbia Frosty	Yes	22652 Parrotts Ferry Rd	Columbia	532-6773	Lorrain Fernandes	P.O. Box 190	Columbia, CA 95310
38		Columbia House	No	Main Street	Columbia	532-5134			
39		Columbia Mercantile	No	Main Street	Columbia	532-7511			
40		Confidence Inn	No	23370 Highway 108	Confidence	586-2936			
41	599-9082-00-00	Corner Gas	Yes	852 E. Mono Way	Sonora	532-6822	Ken Keagy	852 E. Mono Way	Sonora, CA 95370
42	599-8370-00-00	Cost U Less	Yes	760 E. Mono Way	Sonora	532-8497	Cost U Less	760 E. Mono Way	Sonora, CA 95370
43	599-0376-00-00	Country Qwik-Way	Yes	342 W. Stockton	Sonora	533-2555	Country Qwik Way	342 W. Stockton	Sonora, CA 95370
44	599-0456-00-00	Country Store	Yes	13761 Mono Way C	Sonora	532-6146	Country Store	13761 Mono Way C	
45		Courtyard	No	24966 Highway 108	Mi-Wuk	586-5434			

APPENDIX D

	Account #	Restaurant Name	Cust	Service Address	City	Phone #	Owner's Name	Mailing Address	City / State / Zip
46	899-0624-00-00	Crystal Falls Billiards	Yes	21053 Crystal Falls Drive	Sonora		Crystal Falls Shopping Cente	P.O. Box 431	Twain Harte, CA 95383
47	899-0770-00-00	Crystal Falls Mini Market	Yes	20988 Longeway	Sonora	532-1017	Crystal Falls Mini Market	20988 Longeway	Sonora, CA 95370
48	499-0768-00-00	Csarda Deli	Yes	22758 Parrotss Ferry Rd	Columbia	532-1291	Csarda Deli	P.O. Box 351	Columbia, CA 95310
49		Curtis Creek Elementary	No	18755 Standard Road	Standard	532-1428			
50	599-8994-00-00	Denny's	Yes	1001 Mono Way	Sonora	533-3993	Denny's Inc.	203 E. Main Street	Spartanburg, SC 29319
51		Diamond Jim's	No	24547 Highway 108	Mi-Wuk	586-3561			
52		Diamondback Grill	No	110 S. Washington Street	Sonora	532-6661			
53		Diestel Turkey Ranch	No	22200 Lyons Bald Mt. Rd.	Sonora	532-4950			
54	599-8886-00-00	Dillons	Yes	131 S. Washington Street	Sonora	533-1700	Dillons	131 S. Washington St	Sonora, CA 95370
55	599-5668-00-00	Dogs Without Tails	Yes	343 Calaveras Way	Sonora		Alfredo Bernal	19534 Hess Ave	Sonora, CA 95370
56	599-0564-00-00	Donna's Hallmark	Yes	13771 Mono Way C	Sonora	532-5383	Sonora Five Association	924 Westwood Blvd	Los Angeles, CA 92424
57	599-0326-00-00	Donut Factory 1	Yes	746 E. Mono Way	Sonora	532-1290	Donut Factory 1	746 E. Mono Way	Sonora, CA 95370
58		Dragon Palace Rest.	No	14619 Mono Way	Sonora	533-2112			
59		Dutch Ice (Blue Windmill)	No	341 N. Washington Street	Sonora				
60		Egg Cellar	No	22269 Parrotts Ferry Rd	Columbia	532-5988			
61	599-4330-00-00	Eller House	Yes	56 Bradford Street	Sonora	532-0420	Dorothy Mussen	56 Bradford Street	Sonora, CA 95370
62		Entrée Delights	No	20749 W. Willow Springs	Soulsbyville				
63		Fallon Ice Cream Parlor	No	Washington Street	Columbia	532-1470			
64	599-8674-00-00	Flyer's #22	Yes	13778 Mono Way	Sonora		Superstop 108	2349 Rickenbacker Way	Auburn, CA 95602
65	599-8816-00-00	Full O' Beans	Yes	1005 Mono Way	Sonora	533-2486	Samuel-Susan Meyerhoff	P.O. Box 9440	Fresno, CA 93792
66	499-0174-00-00	Fye's Office Supply	Yes	119 S. Washington Street	Sonora	532-1405	Fye's Office Supply	119 S. Washington St	Sonora, CA 95370
67	599-8940-00-00	Garcia's Taqueria	Yes	145 S. Washington Street	Sonora	588-1915	Marvin E. Freeman	22721 Coffill Road	Twain Harte, CA 95383
68	599-0466-00-00	Gina's Pizza	Yes	626 S. Washington Street	Sonora	532-1144	Auto. Div. Lucky Str.	P.O. Box 6030	Phoenix, AZ 85005
69		Gold Treasury	No	80 Washington Street	Sonora	588-1849			
70	499-0748-00-00	Goldstreet	Yes	22690 S. Gold Street	Columbia		Jeff Haber	P.O. Box 383	Columbia, CA 95310
71	599-0350-00-00	Good Heavens	Yes	51 N. Washington Street	Sonora	532-3663	Jack & Tricia Gardella	8931 Montezuma Rd	Jamestown, CA 95327
72	599-8330-00-00	Grandma's Kitchen	Yes	79 N. Washington Street	Sonora	536-0967	Washington Hall Group	P.O. Box 179	Sonora, CA 95370
73	559-0510-00-00	Great Wall	Yes	13775 Mono Way G	Sonora	533-0622	Sonora Five Association	924 Westwood Blvd. #830	Los Angeles, CA 90024
74	559-9018-00-00	Gus's Steakhouse	Yes	1183 Mono Way	Sonora		Gus Tasiopoulo	1183 Mono Way	Sonora, CA 95370
75		Hammons House Inn	No	22963 Robertson Ranch Rd	Sonora	532-7921			
76	499-6134-00-00	Harlan House	Yes	22890 School house Road	Columbia	533-4862	Roberta O'Brien	P.O. Box 686	Columbia, CA 95310
77	599-0386-00-00	Heart Rock Café	Yes	1 S. Washington Street	Sonora	533-1221	Christian Heights AOG	13711 Joshua Way	Sonora, CA 95370
78	599-8754-00-00	Hemingways Café Rest.	Yes	362 S. Stewart Street	Sonora	532-4900	Mark Valentine	362 S. Stewart St	Sonora, CA 95370
79		Hickory Farms	No	Highway 108 Junction	Sonora				Sonora, CA 95370
80	599-0344-00-00	High Plains Coffee	Yes	18970 Industry Way	Sonora	533-1988	Wally Johnson	18970 Industry Way	Sonora, CA 95370
81	599-8218-00-00	Holman's Market	Yes	606 N Shaws Flat Road	Sonora	532-8961	Holman's Market	606 N Shaws Flat Rd	Sonora, CA 95370
82	599-8790-00-00	Hong Kong Restaurant	Yes	267 S. Washington Street	Sonora	532-1544	Hong Kong Restaurant	267 S. Washington St	Sonora, CA 95370
83	599-8672-00-00	Horseshoe Club	Yes	97 S. Washington Street	Sonora	532-4482	J. Bright	97 S. Washington St	Sonora, CA 95370
84	599-0528-00-00	Huckleberry's #2	Yes	74 S. Washington Street	Sonora	532-9779	Jack Gardella	19920 Kelly Drive	Sonora, CA 95370
85		Indian Creek Car Wash	No	14500 Mono Way	Sonora	532-5199			
86		Interfaith Community	No	13210 Gardella Court	Sonora	532-0905			Sonora, CA 95370
87		Jack Douglas Saloon	No	Main Street	Columbia	533-2355			
88	599-8820-00-00	Jack In The Box	Yes	13751 Mono Way	Sonora	532-0409	Jack In The Box	6741 Five Star Blvd St.	Rocklin, CA 95677
89	599-0074-00-00	John Sierra Market	Yes	14301 Mono Way A	Sonora	533-1520	John Sierra Market	14301 Mono Way A	Sonora, CA 95370
90	599-4416-00-00	Josephine's At The Gunn	Yes	286 S. Washington Street	Sonora	533-4111	Margaret Dienelt	286 S. Washington St	Sonora, CA 95370

APPENDIX D

	Account #	Restaurant Name	Cust	Service Address	City	Phone #	Owner's Name	Mailing Address	City / State / Zip
91	599-8926-00-00	Kentucky Fried Chicken	Yes	665 S. Washington Street	Sonora	532-9571	Harman-Barns 194	1924 S. 1100 East	Salt Lake City, UT 84105
92		Kiwanis Club of Sonora	No	540 Greenley Road	Sonora				Sonora, CA 95370
93	599-8780-00-00	La Sierra Taco Up	Yes	13759 Mono Way C	Sonora	532-1121	Michael Wehby	13759 Mono Way C	Sonora, CA 95370
94		La Tortuga	No	11914 Highway 49	Sonora	532-2386			Sonora, CA 95370
95	599-8768-00-00	LaTorres' North Beach	Yes	14317 Mono Way	Sonora	536-1852	Sonora East	100 W. Cutting Blvd.	Richmond, CA 94804
96	599-6038-00-00	Lavender Hill B&B	Yes	683 S. Barretta St.	Sonora	532-9024	Charles Marinelli	683 S. Barretta St.	Sonora, CA 95370
97	499-8774-00-00	Lickskillet Café	Yes	11256 State Street	Columbia	536-9599	Suzanne Praisler	P.O. Box 572	Columbia, CA 95310
98	599-8776-00-00	Longs Drugs #208	Yes	13763 Mono Way	Sonora	532-0601	Longs Drugs 208	13763 Mono Way	Sonora, CA 95370
99	599-9068-00-00	Lucky Store 344	Yes	13765 Mono Way	Sonora	532-7495	Lucky Store 344	P.O. Box 5016	Glendale, AZ 85312
100		Lyle & Beverly Bell	No	19110 Hillsdale Drive	Standard				
101		Mandarin House	No	1071 Mono Way B	Sonora	536-9887			
102	599-9028-00-00	McDonalds	Yes	13781 Mono Way	Sonora	533-1226	Mc Donald's	13781 Mono Way	Sonora, CA 95370
103	899-8612-00-00	Mcevoy's	Yes	20705 N. Sunshine Road	Sonora	533-4792	John Owens	24895 Highway 108	Sonora, CA 95370
104	599-8766-00-00	Mervyns	Yes	1151 Sanguinetti Road	Sonora	532-8899	Mervyn's Store	22301 Foothill Blvd.	Hayward, CA 94541
105	599-8814-00-00	Miner's Shack	Yes	157 S. Washington Street	Sonora	532-5252	Harvey Veprin	157 S. Washington St	Sonora, CA 95370
106		Momma Mia's Take N Bake	No	420 S. Washington Street	Sonora				
107	899-8752-00-00	Moose Lodge	Yes	20921 Longeway Road	Sonora		Sonora Moose Lodge	P.O. Box 86	Soulsbyville, CA 95372
108	599-8996-00-00	Motherlode Adventist	Yes	80 North Forest Road	Sonora	532-2855	Mother Lode Jr. Acadamy	80 North Forest Rd	Sonora, CA 95370
109	599-3656-00-00	Mt View B&B	Yes	12980 Mountain View	Sonora	533-0628	Carl Disbrow	12980 Mountain View	Sonora, CA 95370
110		Nanking Chinese Food	No	293 S. Washington Street	Sonora	532-6442			
111	499-9158-00-00	Oak Pavillion Snack	Yes	11600 Columbia College Dr	Sonora		Yosemite Jr. College	P.O. Box 4065	Sonora, CA 95370
112		Oak Tree Restaurant	No	19061 Hess Avenue	Sonora	532-1370			Sonora, CA 95370
113	599-8640-00-00	Office	Yes	155 S. Washington Street	Sonora	532-4344	Linda Shattuck	155 S. Washington St	Sonora, CA 95370
114		Old Dog House	No	14890 Mono Way	Sonora	532-4223			
115	899-8660-00-00	Outpost	Yes	20661 Soulsbyville Road	Soulsbyville	532-9010	Thomas E. Martin	P.O. Box 522	Twain Harte, CA 95383
116	599-8634-00-00	Pablitos of the Motherlode	Yes	126 S. Washington Street	Sonora		John Morgan	805 Dot Circle	Copperopolis, CA 95228
117	599-9004-00-00	Pak'N Save	Yes	1291 Sanguinetti Road	Sonora	533-7810	Pac N Save #3127	P.O. Box 29097	Phoenix, AZ 85038
118		Papa Murphy's		1281 Sanguinetti Road	Sonora				
119		Papa's Place	No	20049 Highway 108	Sonora	536-0100			Sonora, CA 95370
120		Parrotts Ferry Brewing Co	No	22265 Parrotts Ferry Road	Sonora	532-3089			
121	599-0322-00-00	Pedal'N Ice Cream	Yes	13 S. Washington Street	Sonora	533-3730	David Boykin	13 S. Washington St	Sonora, CA 95370
122		Peppermill Inn	No	22267 Parrotts Ferry Road	Sonora	536-0727			
123	599-8772-00-00	Peppery Gar & Brill	Yes	13299 Mono Way	Sonora	533-9033	Chris Perry	13299 Mono Way	Sonora, CA 95370
124	599-8976-00-00	Perkos	Yes	824 E. Mono Way	Sonora	532-2718	John Barrow	824 E. Mono Way	Sonora, CA 95370
125		Phoenix Lake Golf Club	No	21448 Paseo DeLos Portale	Sonora	532-0111			
126	599-0350-00-00	Pie Tin	Yes	51 S. Washington Street	Sonora	536-1216	Jack & Tricia Gardella	8931 Montezuma Rd	Jamestown, CA 95327
127		Pine Cone Café	No	24556 Highway 108	Mi-Wuk	586-3303			
128	599-8324-00-00	Pinocchio's Italian Café	Yes	742 Mono Way	Sonora	533-1996	Sonora Plaza L.P.	742 Mono Way	Sonora, CA 95370
129		R&L Mini Mart	No	14280 Mono Way	Sonora	533-8360			
130	599-0576-00-00	Rainbo Bakery Store#519	Yes	116 S. Ponderosa Drive	Sonora	532-5185	Earthgrains Co-Sac #4300	P.O. Box 180905	St Louis, MO 63118
131		Renee's Rest & Inn	No	124 N. Washington Street	Sonora				
132	599-1144-00-00	Restano Way Liquors	Yes	10 Restano Way	Sonora	532-2870	Dave Scheller	P.O. Box 538	Jamestown, CA 95327
133		Rocky Top Ranch	No	14880 Blue Bell W.	Sonora				Sonora, CA 95370
134	599-8928-00-00	Round Table Pizza	Yes	13761 D. Mono Way	Sonora	532-1018	Dennis Petesta	19338 Barron Ranch Rd	Sonora, CA 95370
135	599-8900-00-00	Round Table Pizza	Yes	154 W. Stockton	Sonora	532-3443	Round Table Pizza	2777 Del Monte St	W. Sacramento, CA 95691

APPENDIX D

	Account #	Restaurant Name	Cust	Service Address	City	Phone #	Owner's Name	Mailing Address	City / State / Zip
136	599-8102-00-00	Ryan House B&B	Yes	153 S. Shepherd Street	Sonora	533-3445	Nancy Hoffman	153 S. Shepherd St	Sonora, CA 95370
137		Save Mart	No	Highway 108 & Sangunetti	Sonora	532-8601			Sonora, CA 95370
138	599-8964-00-00	Savemart Market	Yes	130 W. Stockton Road	Sonora	532-3478	SaveMart Sonora #8	P.O. Box 4278	Modesto, CA 95352
139		Serena Oaks	No	11666 Serena Court	Sonora				
140		Serenity Bed & Breakfast	No	15305 Bear Cub Drive	Sonora	533-1441			Sonora, CA 95370
141	599-0416-00-00	Seven Eleven	Yes	125 N. Washington Street	Sonora	533-2284	Southland Corp.	P.O. Box 219077	Dallas, TX 75221
142		Shaws Flat Elementary	No	School Road	Sonora	533-7703			
143		Sierra Foothill Senior	No	540 Greenley Road	Sonora	533-2622			Sonora, CA 95370
144	499-6158-00-00	Sierra Gold Tea Company	Yes	22727 Columbia Street	Columbia	588-9370	Sierra Gold Tea Company	P.O. Box 1047	Columbia, CA 95310
145		Sierra Repetory Theatre	No	73891 Mono Way	Sonora	532-3120			
146		Smoothie City	No	Highway 108-A	Sonora	533-3353			Sonora, CA 95370
147	599-9010-00-00	Snowshoe Brewing Co	Yes	19040 Standard Road	Sonora	536-1445	Benites Industries	14216 Tuolumne Rd	Sonora, CA 95370
148	599-9038-00-00	Sonora Cinema 5	Yes	800 Mono Way	Sonora		Redwood Theatres Inc.	P.O. Box 4208	Sonora, CA 95370
149	599-9152-00-00	Sonora Comm. Hospital	Yes	1 Forest Road	Sonora	532-3161	Sonora Comm Hospital	1 Forest Road	Sonora, CA 95370
150		Sonora Discount Grocery	No	13649 Tuolumne Road	Sonora	533-0977			
151	599-9124-00-00	Sonora Elementary Sch.	Yes	830 Greenley Road	Sonora	532-4612	Sonora Elementary School	830 Greenley Road	Sonora, CA 95370
152	599-8108-00-00	Sonora Elks Lodge #1587	Yes	100 Elk Drive	Sonora		Tuolumne Co. Lodge Bldg.	P.O. Box 1115	Sonora, CA 95370
153	599-8388-00-00	Sonora Express Mart	Yes	15 Pesce Way	Sonora	532-9368	Gast Inc.	15 Pesce Way	Sonora, CA 95370
154	599-8228-00-00	Sonora Family Bowl	Yes	19 S. Stewart Street	Sonora	532-5167	Sonora Family Bowl		Sonora, CA 95370
155	599-9126-00-00	Sonora Inn Rest & Steak	Yes	160 S. Washington Street	Sonora	532-2400	Same	P.O. Box 590609	San Francisco, CA 94159
156		Sonora Mini Mart	No	14250 Tuolumne Road	Sonora	536-9644			
157	599-0776-00-00	Sonora Mini Stop	Yes	14354 Tuolumne Road	Sonora	536-0479	Sonora Mini Stop	14328 Cuesta Court	Sonora, CA 95370
158	599-9108-00-00	Sonora Oaks Motor Hotel	Yes	19551 Hess Avenue	Sonora	533-4400	Sonora Oak Motor Hotel	19551 Hess Avenue	Sonora, CA 95370
159	599-9154-00-00	Sonora Union High Sch.	Yes	430 N. Washington Street	Sonora	533-5511	Sonora Union High School	251 S. Barretta	Sonora, CA 95370
160	899-9118-00-00	Soulsbyville School	Yes	20300 Soulsbyville Road	Soulsbyville	532-1419	Soulsbyville School District	20300 Soulsbyville Rd	Soulsbyville, CA 95372
161	599-8362-00-00	Sportsman	Yes	90 S. Washington Street	Sonora	532-1716	Same	90 S. Washington St	Sonora, CA 95370
162		St. Charles Saloon	No	22801 Italian Bar Road	Columbia	533-4656			
163		Standard Park	No	18500 Standard Road	Standard	536-0452			
164		Steve's Place	No	14551 Tuolumne Road	Sonora	532-9801			
165		Stuft Pizza	No	14721 Mono Way	Sonora	532-1097			
166	599-8136-00-00	Subway	Yes	13757 Mono Way B	Sonora	533-2011	Lester Beck	15280 Ridgewood Court	Sonora, CA 95370
167	599-1888-00-00	Sue's Deli	Yes	13759 Mono Way B	Sonora	532-0210	Sonora Five Association	13775 H- Mono Way	Sonora, CA 95370
168		Sue's Uptown Deli	No	85 N. Washington Street	Sonora	588-0233			
169		Sullivan Creek School	No	16331 Hidden Valley Road	Sonora	532-9756			Sonora, CA 95370
170		Summerville High School	No	14888 Peaceful Valley Rd	Sonora	928-4228			
171		Sunshine Station	No	20129 Highway 108	Sonora	532-0990			Sonora, CA 95370
172	599-9006-00-00	Taco Bell	Yes	13770 Mono Way	Sonora	532-4244	Taco Bell #4212	P.O. Box 2428	Granite Bay, CA 95746
173	599-9002-00-00	Taco Bell/Pizza Hut	Yes	1101 Sanguinetti Road	Sonora	533-2798	Wal-Mart Stores #203	P.O. Box 8042	Bentonville AR 72712
174		TCBY	No	13788 Mono Way	Sonora	532-8261			
175		Terrace Room	No	1000 Championship Drive	Sonora	532-8278			Sonora, CA 95370
176	599-8942-00-00	Tokyo Teriyaki House	Yes	13783 Mono Way	Sonora	532-8118	Tokyo Teriyaki House	5019 Nunes Road	Turlock, CA 95382
177		Tuolumne Co. Veterans	No	9 N. Washington Street	Sonora	533-7155			
178		Tuolumne Co.Sheriff Poss	No	19130 Rawhide Road	Sonora	984-4881			
179	599-9148-00-00	Tuolumne General Hosp.	Yes	101 E. Hospital Road	Sonora	533-7100	Tuolumne General Hosp	101 E. Hospital Road	Sonora, CA 95370
180	899-0620-00-00	U-Kneada Pizza	Yes	20871 Longeway	Sonora	532-4006	U-Kneada Pizza	20440 Tuolumne Rd N.	Tuolumne, CA 95379

APPENDIX D

	Account #	Restaurant Name	Cust	Service Address	City	Phone #	Owner's Name	Mailing Address	City / State / Zip
181	599-9126-00-00	Victoria Room	Yes	160 South Washington St	Sonora		Sonora Inn	P.O. Box 590609	San Francisco, CA 94159
182	599-9002-00-00	Walmart Store #2030	Yes	1101 Sanguinetti Road	Sonora	533-2617	Wal-Mart Stores #203	P.O. Box 8042	Bentonville AR 72712
183		Willow Springs Market	No	Willow Springs Drive	Sonora	532-2147			
184	599-9046-00-00	Wilma's Café	Yes	275 S. Washington Street	Sonora	532-9957	Flying Pig Inc.	275 S. Washington St	Sonora, CA 95370
185	599-8318-00-00	Wings Espresso Café	Yes	13757 E. Mono Way	Sonora		Wings Espresso Café	13757 E. Mono Way	Sonora, CA 95370
186		Wishing Well	No	11201 Highway 49	Sonora	532-5766			Sonora, CA 95370
187		Wy's Acres	No	8773 Fraguero Road	Sonora	536-9004			Sonora, CA 95370
188		Your Place	No	14715 Mono Way	Sonora	588-1261			

CHAPTER 7
DESIGN AND PERFORMANCE PROVISIONS

I. Design Criteria

A. Design Flows

1. Average Design Flow

A figure of 159 gpd/esfr (gallons per day per equivalent single family residential) has been observed based on the last 3 years of flow data at the Regional Wastewater Treatment Plant. Exhibit A of the District's Wastewater Ordinance lists discharge demand factors by user classification. This is attached as Appendix 7-A.

2. Hourly Peaking Factor

Hourly peaking factors are generally based upon estimated upstream averaged dry weather flow or population or number of upstream esfr connections. Although California is not a signatory to the 10-State Standards, the District utilizes the 10-State Standards for peaking factor determination.

$$\frac{Q_p}{Q_{ave}} = \frac{18 + \sqrt{P}}{4 + \sqrt{P}}$$

Q_p = Peak Hourly Flow
Q_{ave} = Average Design Flow
P = Population in Thousands

Note: The District assumes an occupancy rate of 2.3 persons/single family dwelling.

As an alternative to using the equation above, a designer may assume an hourly peaking factor of 4.5.

Special peaking factors may apply to large industrial and commercial facilities. These peaking factors shall be determined in accordance with the latest addition of the California Plumbing Code.

3. Inflow and Infiltration

The District selected a storm event from March 3 - 4, 2009 to calculate the contribution of rainfall dependent I & I. The data suggests that 154 gpd/esfr should be added to the peak hourly flow to come up with the design peak wet weather flow (PWWF).

B. Pipeline and Appurtenance Design

1. Diameter

a) 6” minimum for gravity
b) 4” minimum for forcemain
c) 2” minimum for private forcemain with grinder pump
d) All changes in diameter for gravity mains must occur at a manhole unless authorized by the District Engineer. If two pipes of different diameters are joined outside of a manhole, an eccentric reducer or transition coupling shall be used to maintain a smooth transition between pipes of different inside diameter.

2. Hydraulic Friction

a) Gravity flow: Mannings n=0.013
b) Pressure flow: Hazen Williams HW = 135

3. Ratio Depth to Diameter (d/D = 0.70)

4. Cover

Sewers shall be designed for a minimum of 3 feet of cover and a maximum cover in accordance with the following table:

TABLE 7-1

Pipe Type	Class of Pipe	Max. Cover
PVC	SDR 35	14 ft.
PVC	SDR 26	--
PVC	DR 14, DR 18, C900	--
DIP	PC 250, PC 350	--

For cover less than 3 feet concrete encasement or sleeves may be used with prior approval of the District Engineer.

5. Slope

Pipelines shall be designed to provide a minimum mean flow velocity when flowing full of not less than 2.0 feet per second (fps), but not more than 10 fps, based on a Mannings "n" value of 0.013. The following are minimum slopes, but greater slopes are desired, especially for pipelines in cul-de-sacs or mains as part of a multiphase project that will not experience buildout for many years.

TABLE 7-2

Diameter	Min. Slope (ft/ft)	Preferred Max. Slope* (ft/ft)
4"	0.0208 (1/4" per ft.)	--
6"	0.0050	0.1250
8"	0.0040	0.0850
10"	0.0028	0.0630
12"	0.0022	0.0490
15"	0.0015	0.0360

*Maximum slope restrictions are intended to minimize turbulence, corrosion, scour, solid/liquid separation, and odor issues. They are not a requirement; however, pipelines installed at slopes that exceed these values may trigger the need for air vents, odor filters, and/or special protective coatings for the pipeline and manholes.

6. Horizontal Alignment

Sewer main alignments shall maintain sufficient clearance between other utilities per the Guidelines of the California Department of Public Health and per Standard Detail 305. Generally, sewers shall be laid at least 4 feet horizontally from water mains. Utility crossings shall be made at right angles when practicable.

Curvilinear alignments shall comply with the manufacturer's recommendation for minimum bending radius of the pipe being used. Generally, curves shall begin and/or end at sewer manholes. In no case shall two curve sections be permitted between manholes.

All changes in horizontal alignment shall be made within a sewer manhole, angle point fittings will not be accepted.

7. Vertical Alignment

Vertical angle points are not acceptable. Vertical curves may be used to minimize depth of cover on the pipe; however, curve lengths and algebraic differences shall be such that the pipe alignment never violates the manufacturer's minimum bending radius.

Vertical clearances between the sewer main and other utilities shall comply with the Guidelines of the California Department of Public Health and Standard Detail 305. Generally, 1 foot of clearance between pipe walls is desired. When less clearance is necessary, concrete encasement, sleeves, changing pipe material, and shifting pipe joint placement may be used with prior approval from the District.

Pipelines shall be installed assuming a 0.1 ft drop across the base of the sewer manhole.

8. Sewer Manhole Placement

Sewer manholes shall be installed at the end of each line, at all intersections, at distances not to excess 400 lineal feet, and at all changes in pipe size, alignment, and grade (except when a vertical curve is used).

When practical, manholes shall be placed on begin curves (BCs) and end curves (ECs).

For pipelines installed within roadways, sewer manholes shall be located outside of the wheel lines. The District shall have drivable access to all sewer manholes not located within public roadways.

Sewer manholes shall not be located adjacent to water courses or in any location that could be subject to inundation without prior approval of the District Engineer. For manholes located in areas prone to inundation, watertight bolt down, gasketed, frames and covers shall be used.

9. Sewer Manhole Size

Minimum diameter of 48" with a minimum access diameter of 24 inches. Concentric cones shall be used unless otherwise approved by the District Engineer.

For inside drop connections involving pipe of 10" diameter or larger, the sewer manhole diameter shall be a minimum of 60".

10. Drop Connection Sewer Manholes

When necessary, inside drop sewer manholes may be used per Standard Detail 302. Drop connections will not be permitted when grades of the incoming and outgoing pipes are less than 3 feet. Outside drop connections will not be permitted.

11. Sewer Manhole Stubs

All end of line sewer manholes shall be flow through sewer manholes with a 4 ft long mortared pipe stub for future connection. The flow channel in the manhole base shall extend the full length from the outlet pipe to the inlet pipe. This channel will provide adequate lay length to launch a camera or a flushing nozzle.

12. Flow Channel

The flow channel shall conform as closely as possible in shape and slope to the connecting sewers. The channel walls should be formed or shaped to a depth of ¾ the diameter of the outlet sewer and the channel width shall match the diameter of the outgoing pipeline.

13. Sewer Manholes at Forcemain to Gravity Transition

Discharge from a forcemain to a gravity sewer manhole shall be designed to minimize spraying and turbulence such that the discharge is confined to the flow channel in the manhole base.

At the request of the District, sewer manholes at transition points will require additional protective coatings to guard against concrete corrosion.

14. Sewer Manhole Frame and Cover Grade Adjustment

Frames and covers can be adjusted up to a maximum of 12 inches without removing the cone and placing a new cone and/or barrel section.

15. Inverted Siphons

Inverted siphons shall not be permitted without prior approval of the District Engineer. Generally, inverted siphons shall have two pipes, each with a minimum pipe size of 4 inches. The inlet and discharge structures shall have adequate clearances for cleaning equipment, inspection, and flushing. The design shall provide sufficient head

and appropriate sizes to secure velocities of at least 3.0 feet per second for average design flows. The inlet and outlet manhole configurations shall be designed so that the average design flow can be diverted to one pipeline section while the other pipeline can be out of service for cleaning. In addition, some form of air vent shall be provided on the upstream manhole.

Long inverted siphons shall be design with plug valves, blowoffs, and air release valves.

Inverted siphons on service laterals shall be designed with sufficient flow velocity and care shall be taken to not form a grease cap at the location of the static HGL. A grease cap can restrict the flow capacity of the pipe and result in sewer backups.

16. Sewer Service Connections

For new construction: when service connections to the main fall within 10 feet of a sewer manhole, the service shall connect directly to the sewer manhole. The service shall enter the manhole at no greater than 6 inches above the manhole base.

For connections to an existing main the District shall determine on a case-by-case basis if the connection shall be directly to the manhole or to the main.

Any new connections involving sewer laterals of 6" diameter or greater shall be made at a sewer manhole.

17. Easements

For all District maintained sewer pipelines outside of public rights-of-way the District shall be centered within a 15' wide sewer easement.

18. Access Roads

For sewer manholes or other off road facilities, the District may, at its option, require the construction of an access road. Generally, access roads shall be a minimum 12' width, with a maximum slope of 12%, and surfaced with a minimum of 4" compacted aggregate baserock. For slopes of over 12% the District may require 2"asphalt concrete over 4" compacted aggregate baserock.

19. Septic Tanks

Septic tanks to be maintained by the District shall be constructed of concrete and include an effluent filter. Fiberglass or HDPE tanks will not be accepted. Driveable access is required to all septic tanks.

C. Sewer Lift Stations

1. Sumps

Sumps shall be minimum 72" diameter and constructed of fiberglass or another approved material. Sumps shall be anchored to prevent floatation.

The depth of the sump shall be determined such that adequate submergence is maintained for the pump and to provide a reasonable amount of emergency storage.

Sumps shall be fitted with aluminum access hatches and fall protection.

The sump and pump system shall include a slide rail withdrawl system for pump removal, complete with the guide rail, guide rail brackets, cable holder, and all support bolts and hardware in 316 stainless steel.

2. Emergency Overflow Storage

A secondary vault or sump shall be installed with the ability to accept overflow from the primary sump. A minimum of 30 minutes of average design flow storage shall be provided. Storage in upstream sewer manholes may count toward the storage requirement.

It is preferred that the overflow sump or vault have gravity drainback capability so that the overflow volume can return to the primary sump after the water level has dropped.

The pipelines connecting the primary and secondary sumps shall include a drainage flap valve or other approved device to minimize odor migration.

If gravity drainback is not possible,there must be adequate access for the Districts vacuum truck or alternatively, electrical connections, and/or discharge piping must be in place to allow the District to pump the sump/vault out.

3. Odor Control

Most odor control will be accomplished through proper station cycling, adequate ventilation of the sump, and good housekeeping practices. However; provisions shall be made in the design for the addition of carbon filters or chemical addition.

The District has used a bio-organic catalyst, trade name Ecosystem Plus, at the Gold Springs Sewer Lift Station to alleviate septic conditions. The chemical is mixed on-site and delivered into the sump when the pumps are running.

4. Surge Control

The design of new lift stations shall include analysis of potential surges. If pressure surges are determined to be a problem the design shall incorporate measures to control surge or mitigate its effects. Some measures include:

- Increasing the pressure rating of the pipe.
- Installing air release valves
- Installing surge relief valves
- Installing surge anticipation valves
- Installing anti-slam check valves
- Installing a surge tank or bladder tank
- Utilizing VFDs with ramp up and down capabilities

5. Design Point of Pump

Lift stations shall be designed as duplex systems with each pump capable of handling the peak wet weather flow. The pumping head shall be determined by using the minimum water level in the sump for minimum pump submergence. When multiple stations discharge into the same forcemain, the pumping head shall be calculated assuming all stations are running at the same time.

6. Pump Motor Cycling

Motor starts shall not exceed 6-10/hr depending upon manufacturer's recommendations.

7. Standby Power

The District prefers propane generators. Diesel generators may be used with prior approval of the District Engineer. Generators may be placed inside or outside the building. Exterior installations will

require a weather proof enclosure and a sound attenuating enclosure.

8. Fencing

Fencing shall be required around all sites with exterior generators, in areas susceptible to vandalism, or at the option of the District. Fencing shall be 6 ft chainlink with a 3 strand barbed wire rail.

9. Level Sensors and Alarms

Level sensing shall be by ultrasonic heads. Alarms are generally tied to float switches. Generators in low flow stations are turned on and off by float switches.

10. SCADA System

New facilities shall be SCADA compatible with provisions for mounting a SCADA panel and antenna or to utilize a telephone line. At least 18" of horizontal clear mounting space must be reserved for installation of remote telemetry units (RTU) next to the control panel.

11. Lift Station Building Features

Sites with exterior generators may not need to construct a building. If aesthetics are an issue, a building may need to be constructed to house the generator and to dampen the noise. Building shall, at a minimum, have the following features:

(a) Architectural block construction

(b) Standing seam metal roof (galvalume or equal)

(c) 72" Hollow metal double door

(d) Spring operated louvered vents for proper air circulation.

(e) Hose bib with freeze protection and an RP device located at the sump for wash water.

(f) Eye wash station.

II. Installation Standards

A. Standard Drawings

1. Refer to Appendix 7-B: TUD Standard Drawings for construction details.

B. Acceptance Testing

1. Deflection Testing

    a) Shall be performed on flexible pipe. Test shall be conducted after final backfill has been in place at least 30 days to permit stabilization of the soil-pipe system.

    b) No pipe shall exceed a deflection of 5% as determined by a rigid ball or 9-prong mandrel.

    c) The rigid ball or mandrel used for the deflection test shall have a diameter not less than 95% of the base inside diameter or average inside diameter of the pipe depending upon which is specified in the ASTM Specification.

    d) Rigid ball or mandrel test must be performed by hand pulling.

2. Air Testing

    Pipelines:

    a) Air shall be introduced into the pipeline until a pressure of 4.0 psi gauge pressure has been reached.

    b) The internal pressure shall be allowed to stabilize at a pressure of no less than 3.0 psi.

    c) Once the pressure has stabilized the time for the pressure to decrease an additional 1.0 psi is measured.

    d) If the time lapse (in seconds) required for the air pressure to decrease the additional 1.0 psi exceeds that shown in the Table, Low Pressure Air Test for Sewers, in the Standard Specifications for Public Works Construction, the pipe shall be presumed to be within acceptance limits for leakage.

Manholes:

a) Sewer manholes shall be vacuum tested in accordance with ASTM C1244.

b) A vacuum of 10 inches Hg or approximately 5 psi shall be drawn.

c) If the time elapsed to allow the pressure to decrease from 10 inches Hg to 9 inches Hg surpasses the following then the manhole shall pass:

- 60 seconds – 48” SMH
- 75 seconds – 60” SMH
- 90 seconds – 72” SMH

3. Camera Inspection

a) For all PVC pipelines laid at 2% or less in slope, the District shall conduct a camera inspection with water or wastewater in the pipe in order to identify potential bellies.

APPENDIX 7-A

EXHIBIT A

CLASSIFICATION OF USERS AND BASIS FOR DETERMINATION OF WASTEWATER VOLUME DISCHARGE DEMAND

User Classification	Wastewater Volume Discharge Demand Factor
Single Family Residence	1.0
Apartment	
Each unit with washer	1.0
Each unit without washer	0.8
Apartment complex with central laundry facility	0.6/machine
Mobile Home Parks	
Each unit with washer	1.0
Each unit without washer	0.8
Mobile Home Parks of 20 or more units that provide Account Master Billing *	
Each unit with washer	0.9
Each unit without washer	0.7
Mobile home park central laundry facility	0.6/machine
Motels and Hotels	0.25/room
Rooming House	0.25/room
Campgrounds	
Overnight & trailer w/central facilities	0.2/space
RV w/individual hookup	0.3/space
Barber Shops	0.3/station
Beauty Shops	0.3/station
Service Station	
with restrooms	2.0
self service (no restroom)	0.8
Recreational vehicle dump station	2.0/station
Automobile Repair Shops	1.0
Mortuary 0.4/employee	
Bakeries, Catering Service	0.30/employee
Restaurants	
Walk-in	0.07/seat
24 hour	0.09/seat
Drive-in, Short Order	0.09/seat
Bars, Cardrooms, Casinos, Taverns	0.1/seat
Bowling Alley	0.1/alley
Theaters, indoor	
(Based on maximum seat capacity)	0.02/seat
Laundries & Laundromats	0.6/machine
Cleaners	
Plant w/office	0.1/employee + 1.0/machine
Fire Station	0.2/employee
Offices, incl	0.1/employee
Accounts	
Attorneys	
Engineers	

EXHIBIT A (continued)

User Classification	Wastewater Volume Discharge Demand Factor
Other (Insurance, Real Estate, etc.)	
Dentists 0.5/chair	
Physician Office or Clinic	1.0/office or M.D.
Retail Stores, Incl	0.1/employee
Clothing	
Building supply, hardware, appliance	
Furniture	
Real estate	
Warehouse	
Drug store	
Pet shops	
Other retail stores	
Public Swimming Pools	2.5/pool
Car Wash, self serve	3.0/stall
Food Markets	0.1/employee
w/garbage grinders	4.0
Public Buildings and Facilities	0.1/employee
Schools	0.07/enrollment
Meeting Halls and Churches	0.01/seat
Fairground Complex	4.0
Restroom Buildings	1.0/toilet
Hospitals	0.80/bed
Long-term Care Facilities	0.3/bed
Industrial Bldg., Assembly, etc.	Per Discharge Permit
Minimum Demand Flow	
For all Classifications	.80

* This classification shall only apply when calculating the "Collection System" component of the "Monthly Sewer Service Charge" of mobile home parks with 20 or more units.

TUOLUMNE UTILITIES DISTRICT

18885 NUGGET BLVD.
SONORA, CALIFORNIA 95370
(209) 532-5536

STANDARD DRAWINGS

THESE DRAWINGS ARE TO BE REFERENCED ONLY ON CONSTRUCTION PLANS SUBMITTED FOR DISTRICT REVIEW. THE LATEST VERSIONS WILL BE PROVIDED BY T.U.D. AT TIME OF CONSTRUCTION.

AUTOCAD DRAWING FILES ARE AVAILABLE
Contact Ginny Ayers
(209) 532-5536 Ext. 518
email: ginnya@tuolumneutilities.com

NUMERICAL INDEX

GENERAL

WATER

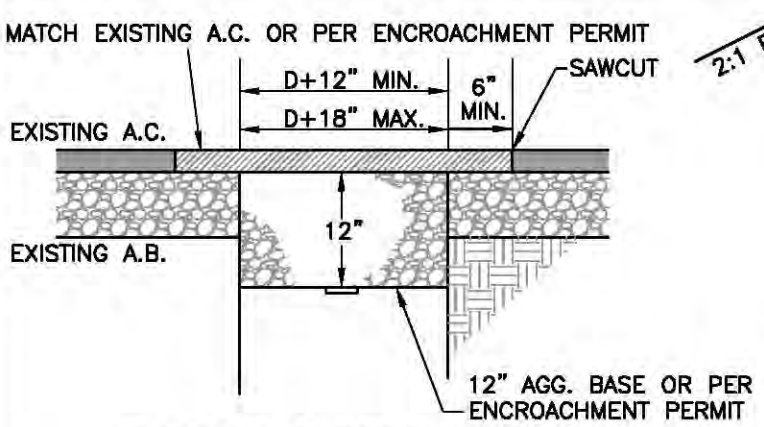
SEWER

CUSTOMER SERVICE

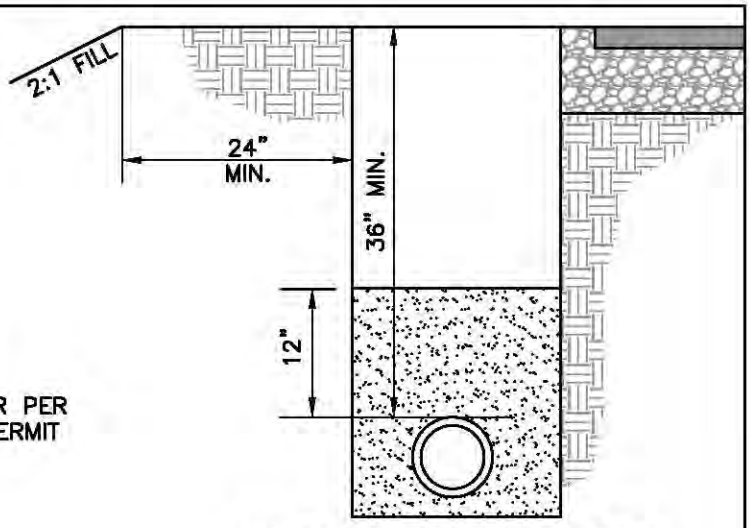
1. All new work requires prior approval from T.U.D. and inspection by T.U.D during construction. All work shall comply with current T.U.D. standards, drawings, and specifications.
2. A reasonable effort has been made to locate and delineate all known underground utilities. The Project Engineer and T.U.D. can assume no responsibility for the completeness or accuracy of the delineation of these utilities nor for the existence of other buried objects or utilities which may be encountered but which are not shown on these plans. Contractor shall be responsible for determining the exact locations of utilities shown and any that may exist and are not shown prior to beginning any work. Contractor shall expose all underground utilities that are to be connected to or that are in the path of the proposed improvements prior to beginning work.
3. Contractor shall contact Underground Services Alert (U.S.A.) at 1-800-642-2444, 48 hours prior to any excavation and shall notify the following parties by the time specified prior to beginning work within their jurisdictions:

Project Engineer	5 Days
Tuolumne County Department of Public Works	48 Hours
Tuolumne Utilities District Engineering Dept.	48 Hours
Home Owners affected by contruction	24 Hours

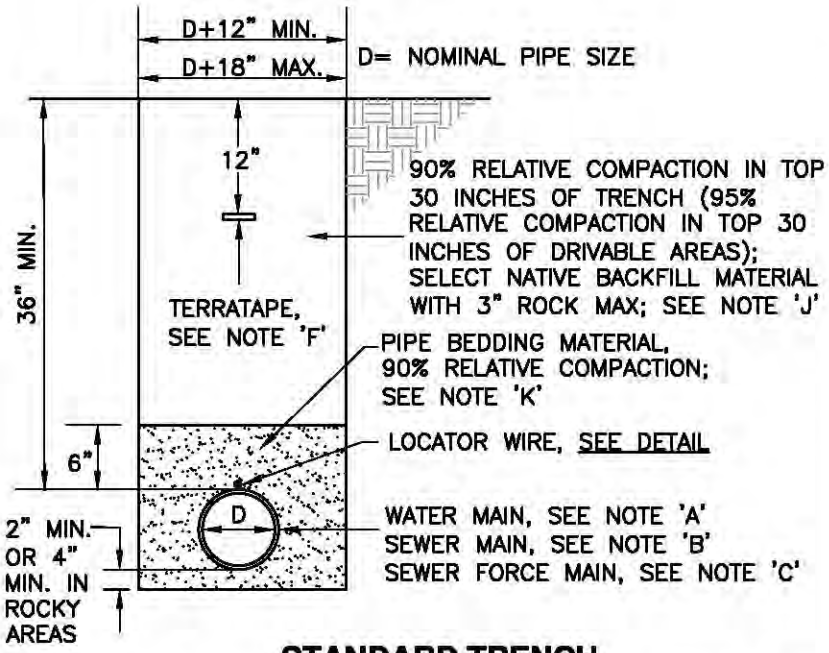
4. Contractor shall assume sole and complete responsibility for job site conditions during project construction including safety of all persons and property. This requirement shall apply continuously and not be limited to normal working hours. Contractor shall defend, indemnify and hold T.U.D. and the Project Engineer harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of T.U.D. or Project Engineer.
5. Contractor shall excavate in such a manner as to avoid any damage to existing structures and trees if possible. Any damaged structures shall be restored or replaced in a manner acceptable to T.U.D.'s District Engineer. Reduced cover over existing pipelines due to Contractor's activities will require reconstruction or protection satisfactory to District Engineer at sole cost of Contractor.
6. All stationing and dimensioning is referenced to the centerline of the pipeline unless otherwise noted.
7. Trenching and paving within any County right-of-way shall conform to the requirements of the Tuolumne County Dept. of Public Works.
8. Contractor shall perform work with a minimal disruption of services and shall notify T.U.D. 48 hours in advance of beginning work in order to give water customers 24 hours notice of any shut-offs.
9. Contractor shall provide Project Engineer with "as-built" notes including measurements to all facilities from at least two permanent objects and all deviations from original plans. Project Engineer shall provide "as-built" plans to T.U.D. prior to project acceptance.
10. All pipeline sections shall be pressure tested to T.U.D. specifications and water mains shall be disinfected to T.U.D. specifications prior to project acceptance.
11. Sewer and water mains shall not be installed in the same trench with electrical (primary or secondary), catv, telephone, gas or other utilities. All other utilities shall cross underneath sewer and water mains. All projects with underground gas pipelines shall have locator wire attached to the pipes and pulled into valve boxes, and shall have locating tape labeled "[type of] GAS BURIED BELOW."
12. Contractor shall conform with all Federal, State, and Local safety regulations. Specifically, attention is directed to trenching, drilling and blasting, confined space, and traffic control. Contractor shall conform with all requirements of Encroachment Permits issued to T.U.D. by Cal-Trans and the Tuolumne County Department of Public Works.
13. Compaction tests shall be required and shall be performed by a qualified, licensed, testing laboratory. Compaction characteristics for materials shall be based on California Test Method (CTM) 216. Field tests for compaction density shall be in accordance with ASTM D1556 or ASTM D2922. Contractor shall cooperate with Engineer during field testing by leveling small test areas as directed. Contractor shall be responsible for all costs for compaction tests ordered by Engineer.
14. Contractor shall notify property owners when working within easements or trenching across driveways and shall provide evidence of such notification to T.U.D.



TRENCH IN TRAFFIC AREA

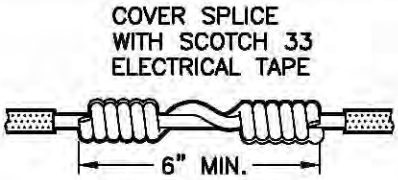


TRENCH NEAR FILL SLOPE



STANDARD TRENCH

NOTE: ALL IMPORTED MATERIAL SHALL BE ASBESTOS FREE



SPLICE DETAIL

A. WIRE TO BE #12 AWG INSULATED SINGLE STAND COPPER, UF LISTED.

B. WIRE TO BE CONTINUOUS BETWEEN VALVE BOXES.

C. STRIP INSULATION FROM WIRE INSIDE VALVE BOX AND AT ALL SPLICES.

D. BARE WIRE IS NOT TO TOUCH VALVES.

E. WIRE TO BE TAPED TO TOP OF PIPE AT 5 FT. INTERVALS.

LOCATOR WIRE

A. FOR WATER MAINS 4" DIA. TO 12" DIA., PIPE SHALL BE AWWA C900 AND C909 PVC PIPE; CLASS RATING SHALL BE APPROVED BY T.U.D. PRIOR TO INSTALLATION.

B. FOR GRAVITY SEWER MAINS 4" DIA. TO 15" DIA., PIPE SHALL BE PVC SDR35 AND SHALL MEET ASTM D3034 STANDARDS. RUBBER SEALANT RINGS SHALL MEET ASTM D3212 REQUIREMENTS.

C. FOR SEWER FORCE MAINS 4" DIA. OR GREATER, PIPE SHALL BE AWWA C900 CL150 PVC PIPE; HIGHER CLASS RATING MAY BE REQUIRED BY T.U.D. ALL MAINS LESS THAN 4" DIA. MUST BE APPROVED BY DISTRICT ENGINEER.

D. PRIOR TO INSTALLING GRAVITY SEWER PIPE, BOTTOM OF TRENCH SHALL BE COMPACTED AND INSPECTED.

E. WATER MAINS SHALL BE PRESSURE TESTED FOR CLASS OF PIPE AT LOWEST POINT IN WATERLINE WITH A 25 PSI MAX. DROP AT HIGH POINT.

F. TERRATAPE (2" WIDE LOCATING TAPE) TO BE LABELED "BURIED WATERLINE [SEWERLINE] BELOW – TUOLUMNE UTILITIES DISTRICT" (AVAILABLE AT T.U.D. OFFICE AT T.U.D.'S COST).

G. ALL TRENCHES OVER 5 FT. DEEP SHALL BE SLOPED, SHORED, BRACED, OR OTHERWISE SUPPORTED IN ACCORDANCE WITH CAL–OSHA REQUIREMENTS. T.U.D. ASSUMES NO RESPONSIBILITY FOR THE DESIGN OF SUCH SUPPORT SYSTEMS. IN PAVED AREAS TRENCHES CANNOT BE SIDE–SLOPED.

H. RELATIVE COMPACTION TO BE 90% OR GREATER IN THE HAUNCH AREA OF THE PIPE FROM THE SPRINGLINE TO THE BOTTOM OF THE PIPE.

I. GRAVITY SEWER ELBOWS SHALL BE SDR35 PVC "SLOW–BANANA" BEND. OTHER ELBOWS MAY BE USED WITH PRIOR DISTRICT APPROVAL AND SHALL NOT EXCEED 22–1/2° IN ANY CASE. ALL OTHER SEWER FITTINGS SHALL BE CAST IRON.

J. ALL NATIVE MATERIAL REQUIRES DISTRICT APPROVAL PRIOR TO USE. CONTRACTOR SHALL USE OTHER APPROVED MATERIAL IF NEEDED TO MEET COMPACTION REQUIREMENTS.

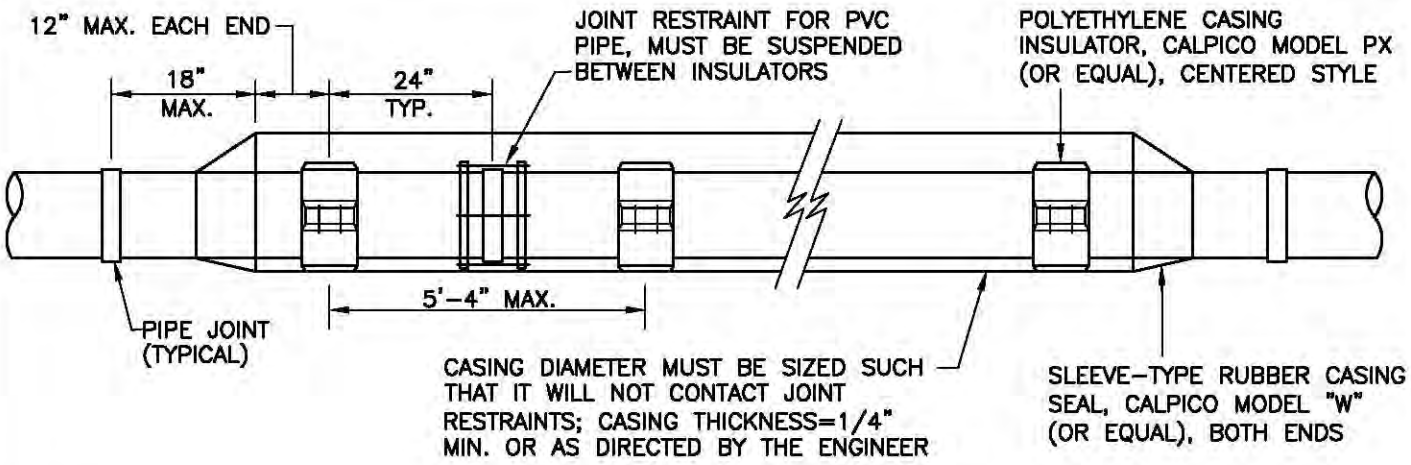
K. USE TYPE "A" MATERIAL (SEE T.U.D. SPECIFICATIONS) UNLESS OTHERWISE APPROVED BY DISTRICT.

TUOLUMNE UTILITIES DISTRICT

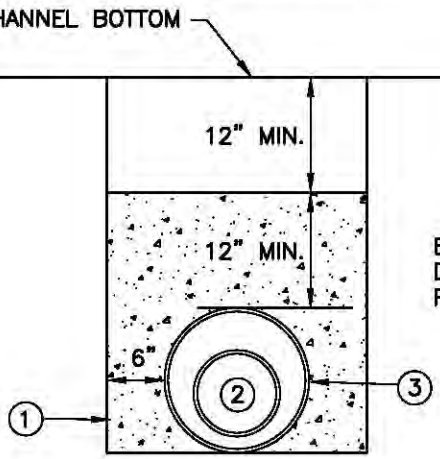
STANDARD TRENCH FOR WATER AND SEWER

REV. 11–21–07

STD. DWG. NO. **102**

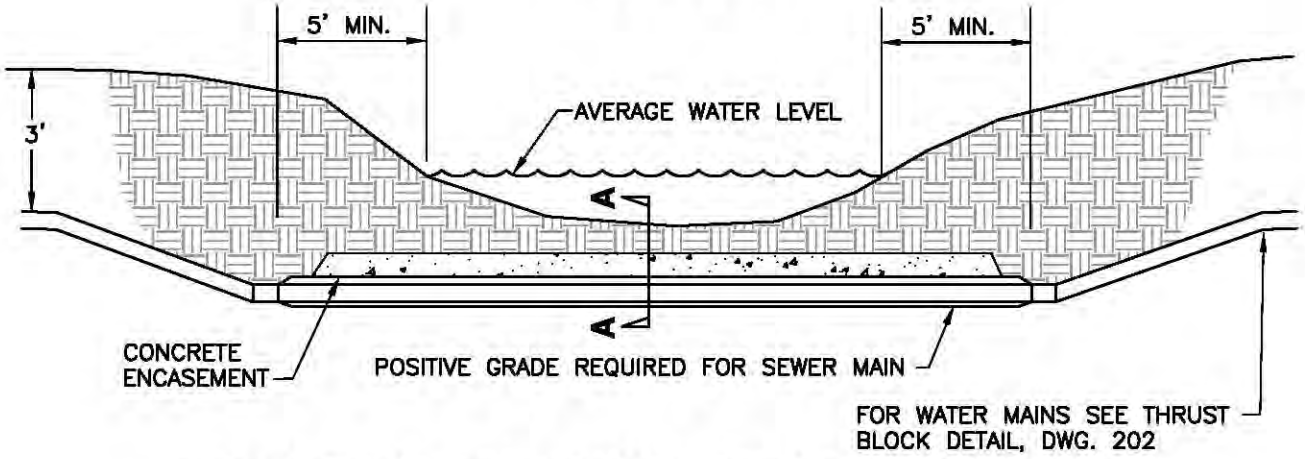


BORE AND JACK CASING



BORE AND JACK CASING DETAIL SHALL APPLY TO PVC PIPE INSIDE SLEEVE

SECTION A-A



CREEK CROSSING FOR WATER AND SEWER MAINS

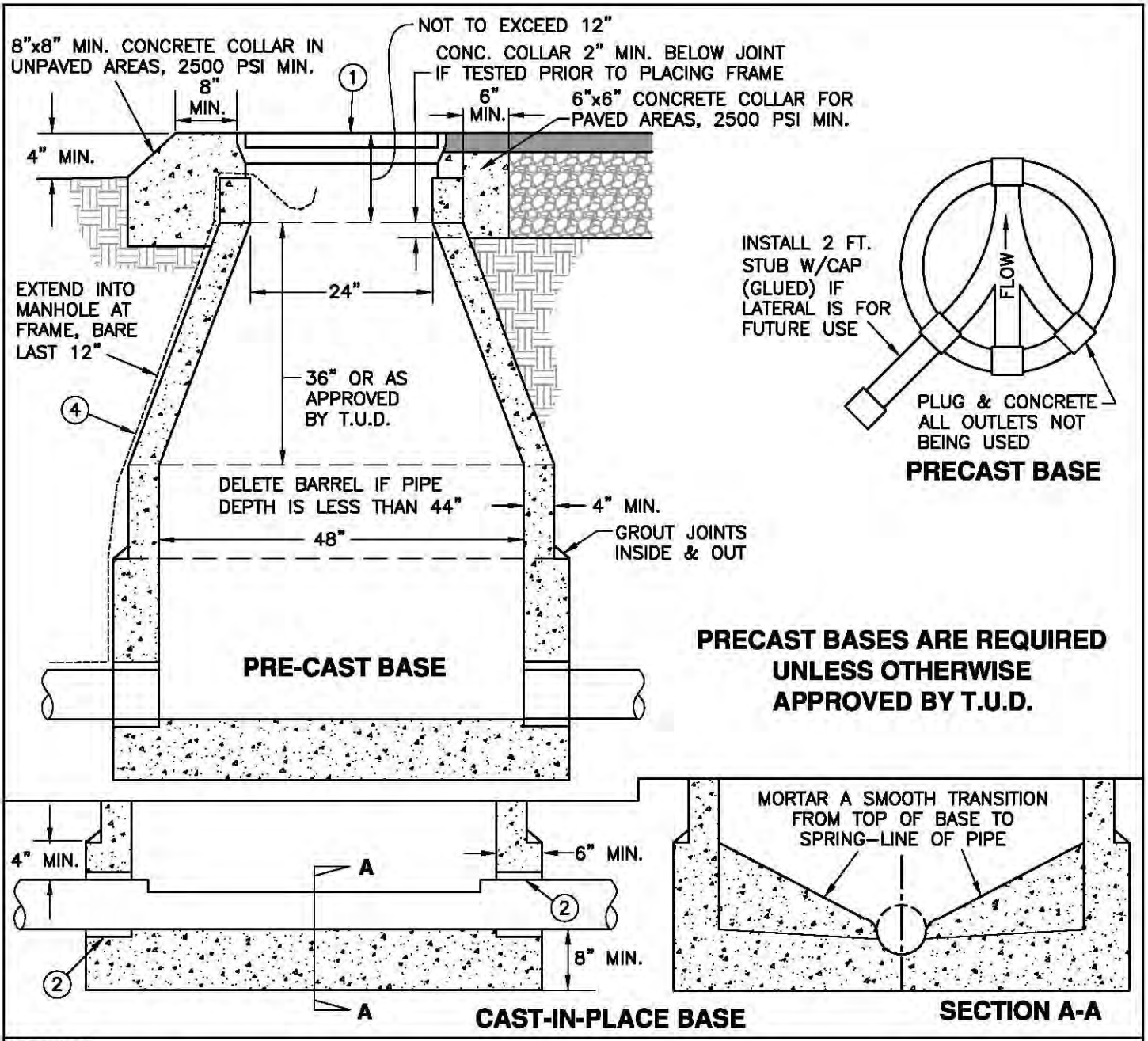
ITEM	QTY	DESCRIPTION	REMARKS
(1)		3-SACK MIX CONCRETE	NO LOADS TO BE PLACED ON CONCRETE FOR 7 DAYS
(2)		DUCTILE IRON PIPE	CEMENT OR PVC LINED; USE CAST IRON FITTINGS AS NEEDED
(3)		PVC C900 CL150	USE CAST IRON FITTINGS AS NEEDED

TUOLUMNE UTILITIES DISTRICT

CREEK CROSSING FOR WATER AND SEWER MAINS AND BORE AND JACK CASING

REV. 02-09-06

STD. DWG. NO. **103**



NOTES

A. USE 2500 PSI CONCRETE MIN. FOR CAST-IN PLACE BASE. PIPES ARE TO BE CONTINUOUS THROUGH MANHOLE WITH THE TOP HALF CUT AWAY AFTER BASE CURES.
B. PRECAST BASE TO HAVE FITTINGS FOR PVC PIPE (TEICHERT OR EQUAL), 2,3 OR 4-WAY AS REQUIRED; ALL CHANNELS TO MATCH LARGEST PIPE.
C. "T.U.D." AND "SEWER" TO BE WELDED ON COVER; USE 1/8" BEAD.
D. PRECAST CONES AND BARREL SECTIONS SHALL CONFORM TO ASTM SPEC. C-478.
E. POLYETHYLENE MANHOLES, "ADS" OR APPROVED EQUAL ARE ACCEPTABLE WITH T.U.D. APPROVAL.
F. ALL MANHOLE JOINTS SHALL BE SEALED WITH RAM-NECK, KENT-SEAL #2 OR APPROVED EQUAL. INSIDE JOINTS SHALL BE TRIMMED AND MORTARED TO A SMOOTH FINISH. EXTERIOR OF MANHOLE IS TO BE COATED WITH AN APPROVED WATERTIGHT SEALER. IF HIGH GROUNDWATER IS EXPERIENCED, COAT EXTERIOR OF MANHOLE WITH BITUMASTIC SEALER.
G. MANHOLE MUST PASS VACUUM TEST OF 10 HG; PRE-TESTING PRIOR TO BACKFILLING IS SUGGESTED. IF PRE-TESTED, CONCRETE COLLAR SHALL EXTEND 2" BELOW TOP OF CONE.
H. BACKFILL MANHOLE WITH SELECT MATERIAL COMPACTED TO 95% RELATIVE DENSITY IN TRAFFIC AREAS, 90% IN ALL OTHER AREAS.

ITEM	QTY	DESCRIPTION	REMARKS
(1)	1	25-5/16" COVER & 4-1/2" FRAME	TEICHERT PTB213 OR APPROVED EQUAL
(2)	2	MANHOLE ADAPTOR, SILICONE COATED	GPK OR APPROVED EQUAL, GROUT IN PLACE
(3)		#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, UF LISTED, SEE DWG. #102

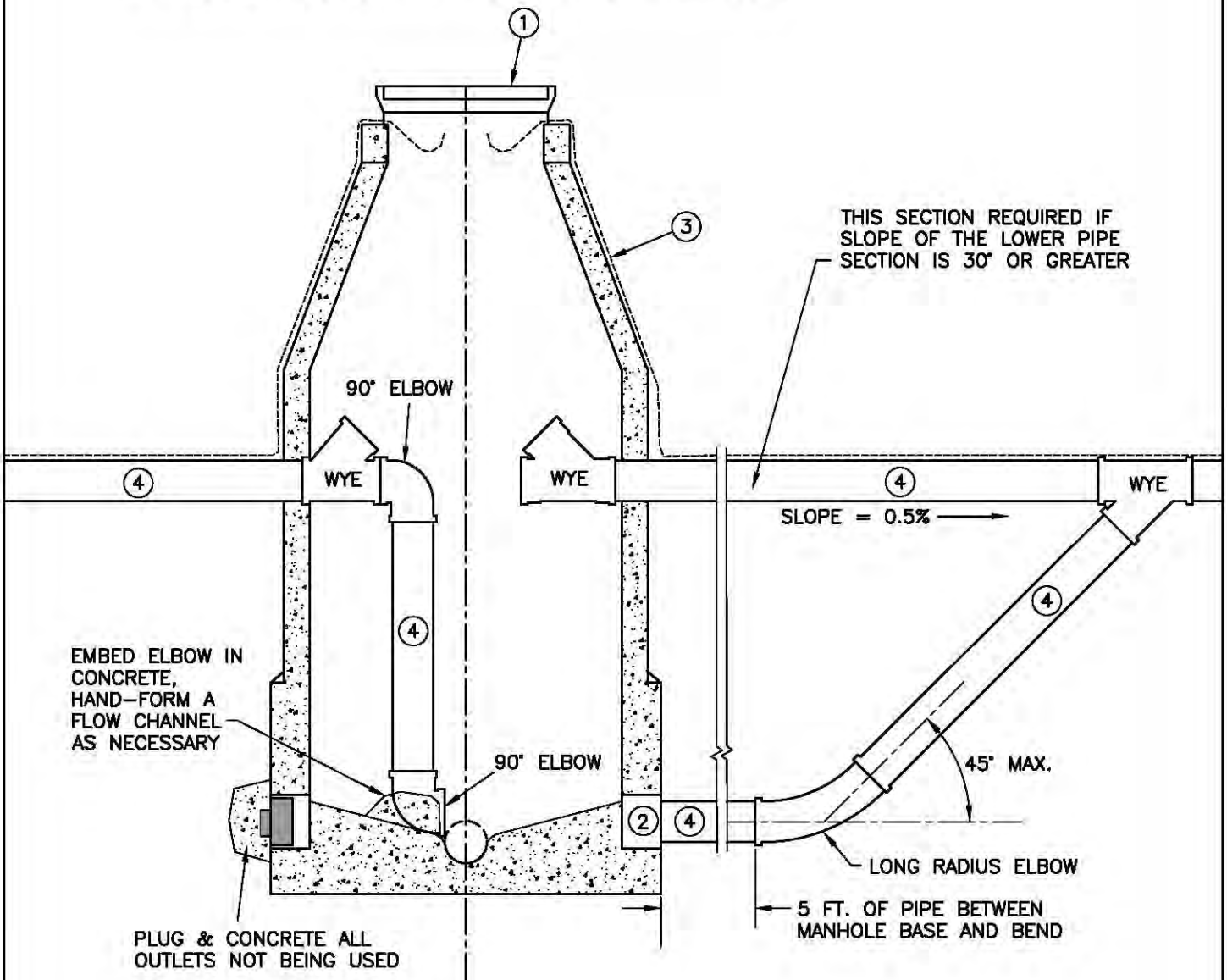
TUOLUMNE UTILITIES DISTRICT

STANDARD 48" MANHOLE WITH CAST-IN-PLACE BASE

REV. 11-21-07

STD. DWG. NO. 301

SEE DWG. #301 FOR STANDARD MANHOLE CONSTRUCTION



INSIDE DROP CONNECTION
T.U.D. APPROVAL REQUIRED

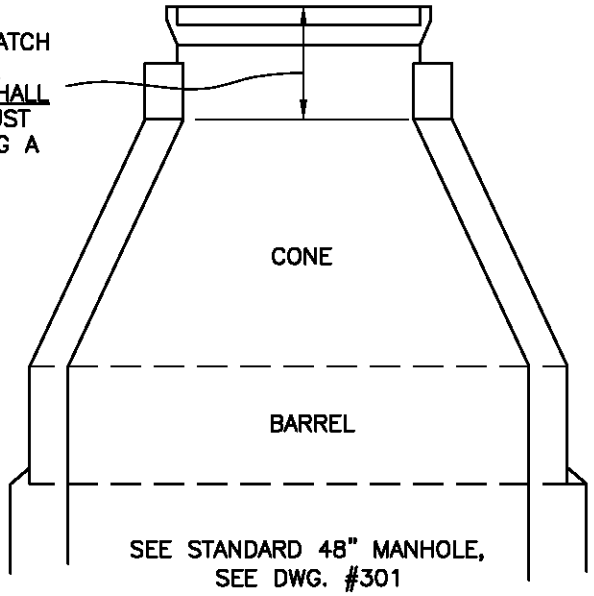
OUTSIDE DROP CONNECTION

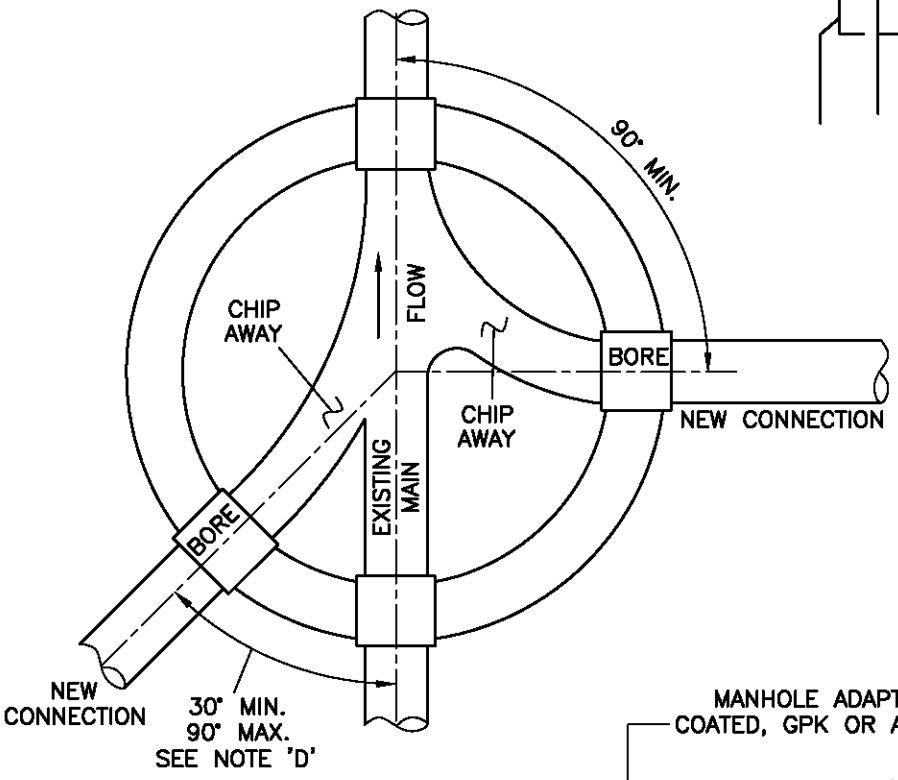
ITEM	DESCRIPTION	REMARKS
1	25-5/16" MANHOLE COVER AND 4-1/2" FRAME	TEICHERT PTB213 OR APPROVED EQUAL
2	MANHOLE ADAPTOR, SILICONE COATED	GPK OR APPROVED EQUAL, FOR CAST-IN-PLACE BASES, GROUT IN PLACE
3	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, UF LISTED, SEE DWG. #102
4	SDR35 PVC PIPE	

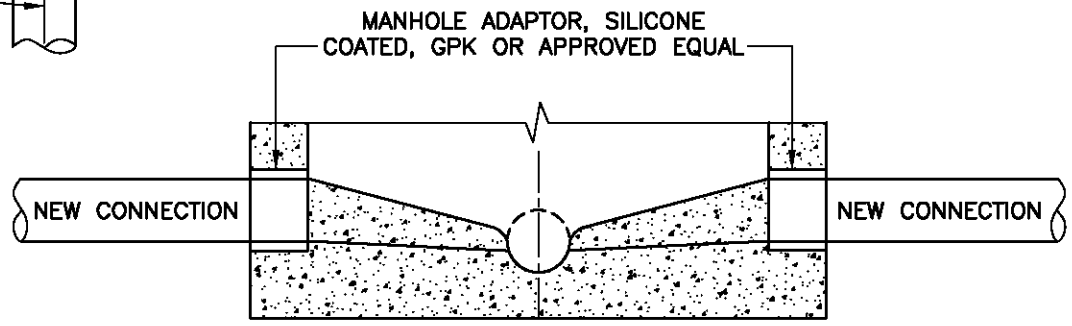
TUOLUMNE UTILITIES DISTRICT
MANHOLE DROP CONNECTION

REV. 11-21-07
STD. DWG. NO. **302**

WHEN RAISING EXISTING MANHOLE TO MATCH FINISHED GRADE, THE DISTANCE BEWEEN THE RIM AND TOP OF CONE SECTION SHALL NOT EXCEED 12". RAISING THE RIM MUST BE DONE BY ADDING BARRELS OR USING A TALLER CONE SECTION.





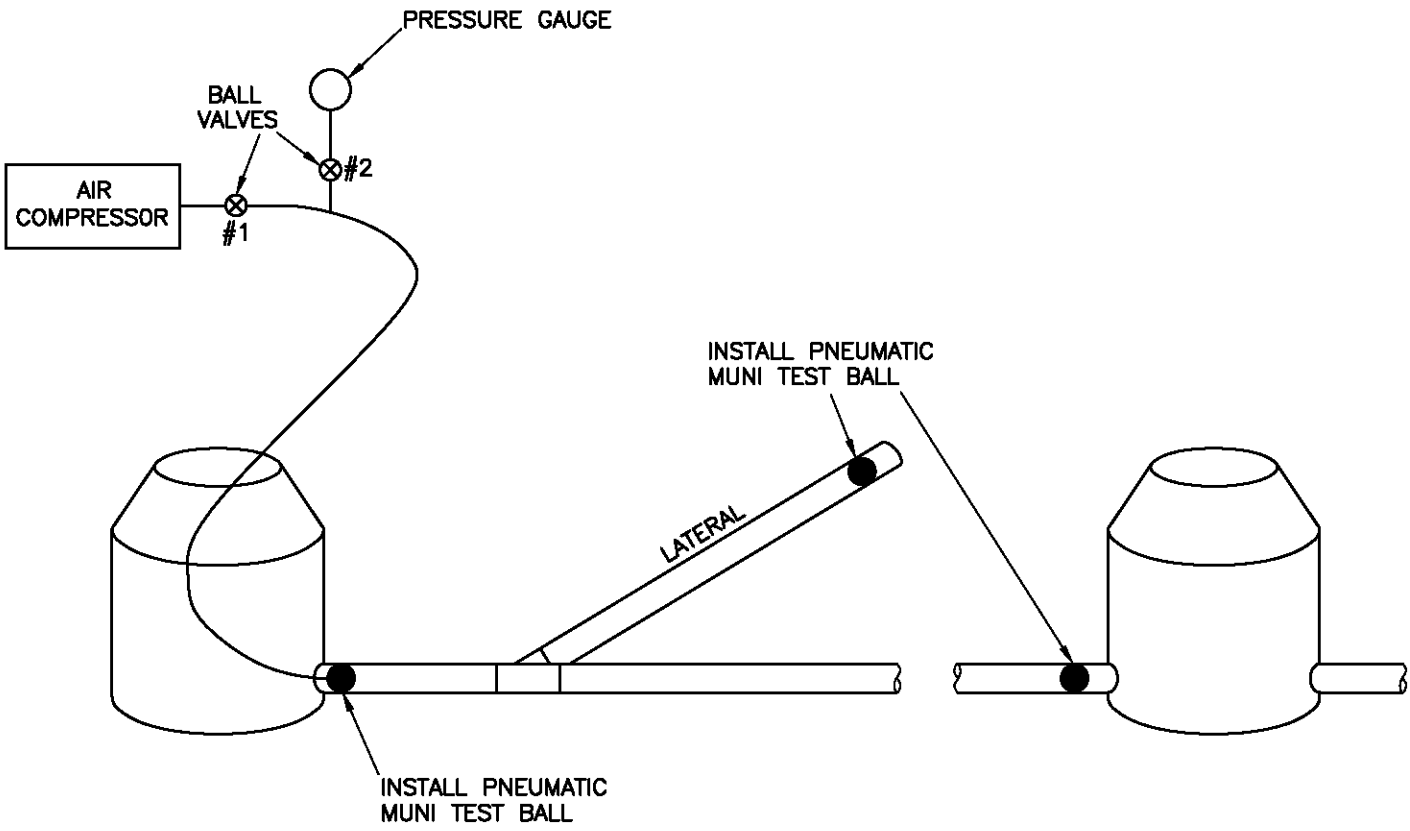


NOTES

A. NEW CONNECTIONS TO BE BORED 2" LARGER THAN THE PIPE DIAMETER.
B. NEW CONNECTIONS WILL HAVE A MINIMUM SLOPE OF 2%.
C. FLOW CHANNEL FROM THE NEW CONNECTION TO THE EXISTING MAIN SHALL BE CHIPPED AWAY AND MORTARED TO A SMOOTH FINISH.
D. IF TIGHTER ENTRANCE ANGLES ARE REQUIRED DUE TO SITE CONSTRAINTS, USE LONG RADIUS BEND OUTSIDE OF MANHOLE.
E. CONTRACTOR IS RESPONSIBLE FOR DEBRIS REMOVAL AND PREVENTION OF FLOW BLOCKAGE WHILE UNDER CONSTRUCTION.
F. CONTRACTOR SHALL COMPLY WITH ALL CONFINED-SPACE REQUIREMENTS PER CAL-OSHA.

TUOLUMNE UTILITIES DISTRICT
SEWER CONNECTION TO EXISTING MANHOLE

REV. 09-28-07
STD. DWG. NO. **303**

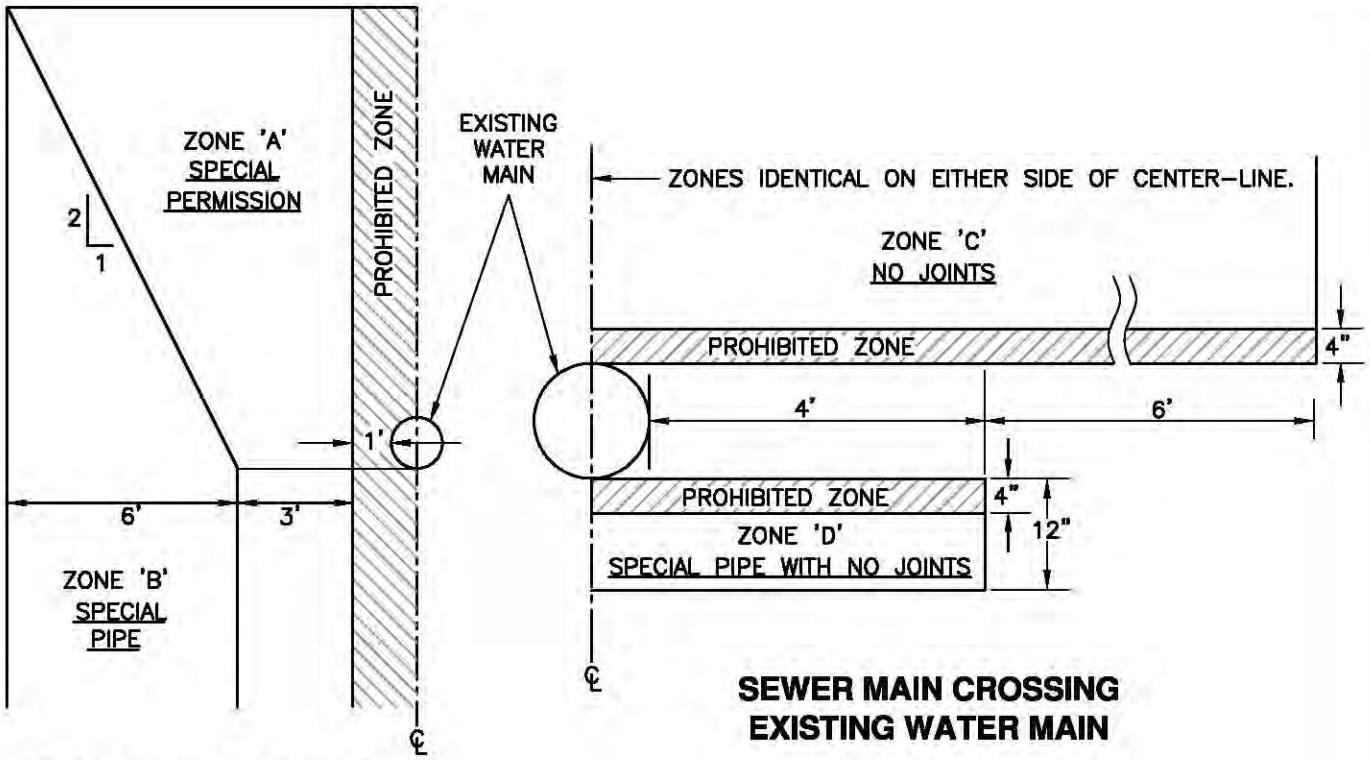


NOTES

A. ALL LINES TO BE BACKFILLED AND COMPACTED.
B. BALL AND FLUSH TO BE COMPLETED.
C. PLUG ALL LATERALS AND CLEANOUTS WITH COMPRESSION–TYPE PLUGS.
D. INSTALL PNEUMATIC PLUGS IN EACH END OF THE MAIN LINE; ONE WILL NEED A MUNI TEST BALL TYPE PLUG SETUP FOR AIR HOSE CONNECTION TO THE TAPPED CENTER HOLE.
E. PRESSURIZE SEWER LINE BY CLOSING BALL VALVE #2; THIS PROTECTS GAUGE. THEN OPEN VALVE #1; ALTERNATE THESE VALVES TO CHECK PRESSURE IN THE LINE AS IT PRESSURIZES.
F. LINE MUST PASS PRESSURE TEST IN ACCORDANCE WITH STANDARD T.U.D. PROCEDURES AS OUTLINED IN SPECIFICATONS.

TUOLUMNE UTILITIES DISTRICT
SEWER MAIN PRESSURE TEST

REV. 02–09–06
STD. DWG. NO. **304**



SEWER MAIN PARALLEL TO EXISTING WATER MAIN

SEWER MAIN CROSSING EXISTING WATER MAIN

SPECIAL CONSTRUCTION REQUIRED FOR SEWER

ZONE A: SEWER MAIN PARALLEL TO WATER MAIN SHALL NOT BE PERMITTED IN THIS ZONE WITHOUT APPROVAL FROM THE CALIFORNIA STATE DEPARTMENT OF HEALTH SERVICES, SANITARY ENGINEERING BRANCH, AND TUOLUMNE UTILITIES DISTRICT.

ZONE B: SEWER MAIN PARALLEL TO WATER MAIN SHALL BE CONSTRUCTED OF:
(1) PVC SEWER PIPE WITH RUBBER RING JOINTS (ASTM D3034, SDR 35 OR EQUAL) OR
(2) CAST IRON OR DUCTILE IRON PIPE WITH COMPRESSION JOINTS.
PIPE TYPE SHALL BE CONTINUOUS FROM MANHOLE TO MANHOLE.

ZONE C: SEWER MAIN CROSSING OVER WATER MAIN SHALL BE CONSTRUCTED OF:
(1) DUCTILE IRON PIPE WITH HOT DIP BITUMASTIC COATING AND MECHANICAL JOINTS, OR
(2) A CONTINUOUS SECTION OF C900, CLASS 200 PVC PIPE (DR14) CENTERED OVER PIPE BEING CROSSED, OR
(3) SDR35 PIPE IN A CONTINUOUS C900, CLASS 150 OR DUCTILE IRON SLEEVE EXTENDING 10 FT. EACH SIDE OF THE WATER PIPE
PIPE TYPE SHALL BE CONTINUOUS FROM MANHOLE TO MANHOLE.

ZONE D: SEWER MAIN CROSSING UNDER WATER MAIN SHALL BE CONSTRUCTED OF ZONE 'C' MATERIALS.

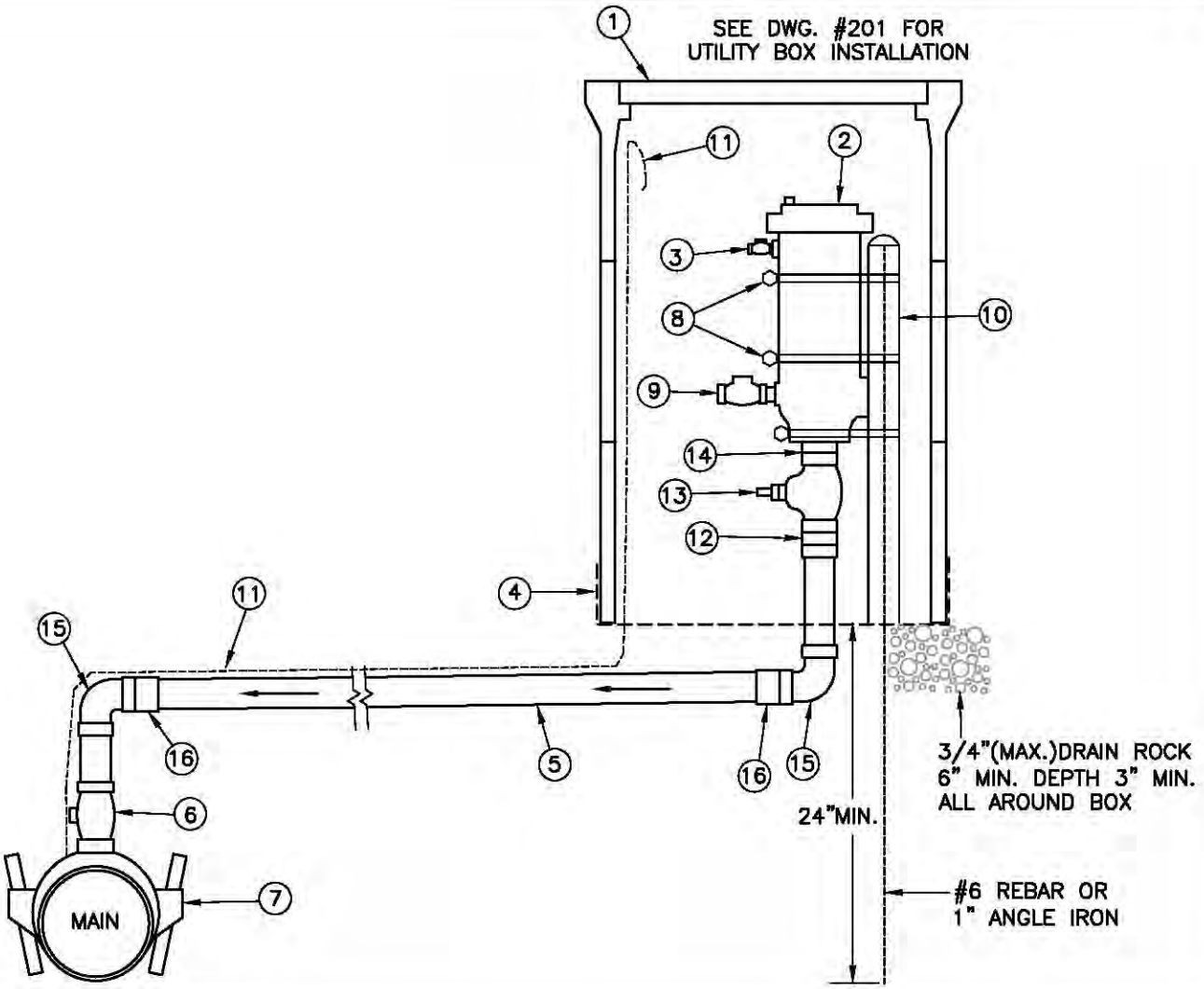
SEWER FORCE-MAIN INSTALLATION NOTES

A. PARALLEL INSTALLATION: SEWER FORCE MAIN SHALL NOT BE INSTALLED WITHIN 10 FT. HORIZONTALLY OF WATER MAIN.
B. CROSSING UNDER WATER MAIN: SEWER FORCE MAIN MUST BE AS CLOSE TO PERPENDICULAR AS PRACTICAL AND AT LEAST ONE FOOT BELOW WATER MAIN.
C. CROSSING UNDER WATER MAIN IN ZONE 'D': SEWER FORCE MAIN WITHIN 8 FT. HORIZONTALLY OF WATER MAIN SHALL BE ENCLOSED IN A CONTINUOUS C900, CLASS 150 OR DUCTILE IRON SLEEVE.

TUOLUMNE UTILITIES DISTRICT

SEWER MAIN CONSTRUCTED NEAR EXISTING WATER MAIN

REV. 01-29-08
STD. DWG. NO. **305**



NOTES

A. 2" POLYETHYLENE SERVICE TUBING MUST HAVE A POSITIVE, CONTINUOUS RISE FROM THE SEWER MAIN TO THE AIR/VAC VALVE.

B. SEWER AIR/VAC VALVE TO BE LOCATED OUT OF TRAFFIC AREAS.

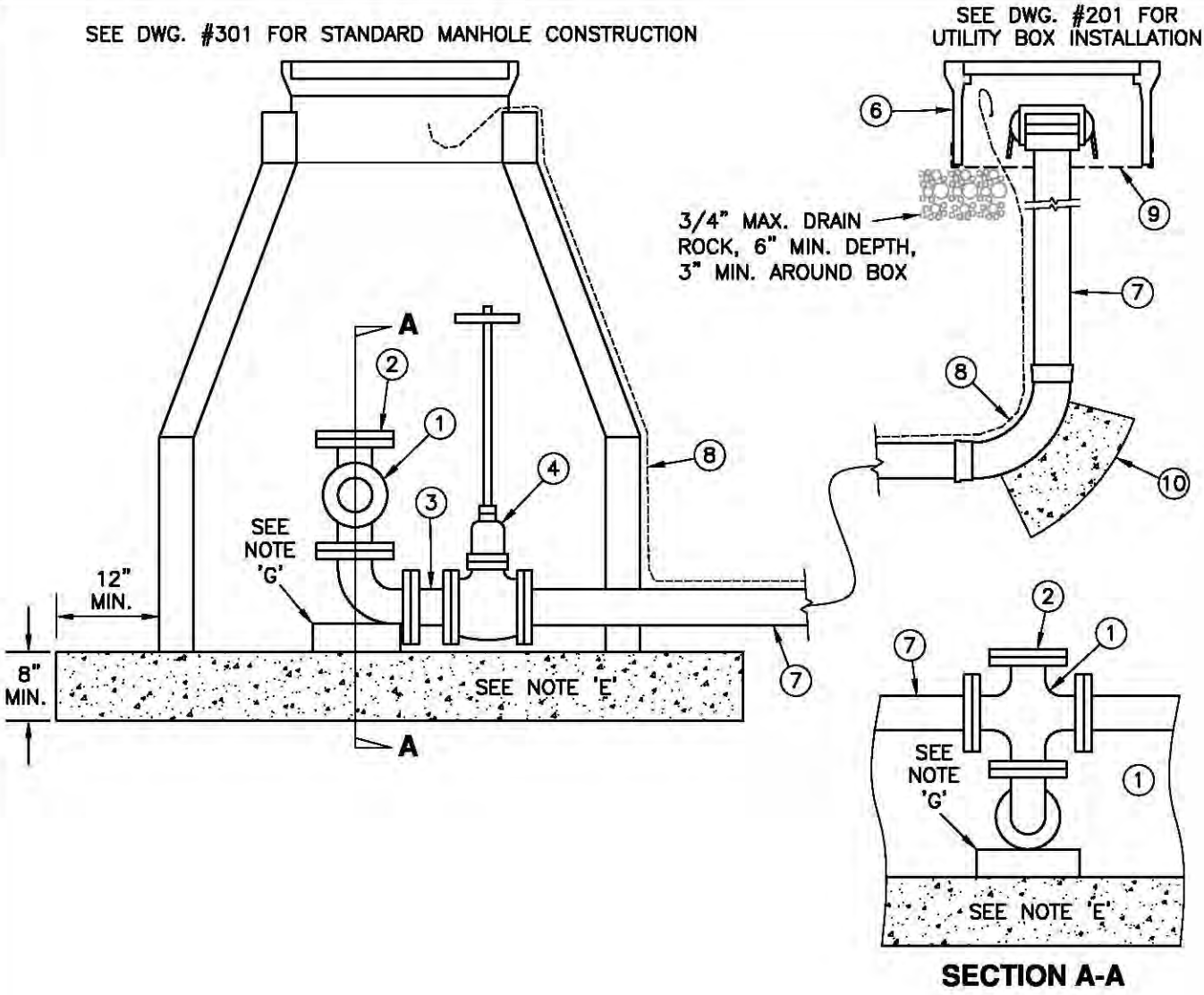
ITEM	QTY	DESCRIPTION	REMARKS
(1)	1	UTILITY BOX AND EXTENSIONS AS REQUIRED	CHRISTY B24 W/B24-61D LID, B24 EXTENSIONS
(2)	1	SEWER AIR/VAC VALVE	APCO #401 OR APPROVED EQUAL
(3)	2	1/2" BALL VALVE	BRONZE BODY
(4)	1	GALV. STEEL WIRE	WIRE DIA.=0.105", COVER ACCESS HOLES
(5)	2	2" 200 PSI POLYETHELYLENE SERVICE TUBING	C.T.S. WESFLEX OR EQUAL, MAINTAIN POSITIVE SLOPE
(6)	1	2" X P.E. C.T.S. CORP. STOP	FORD FB1000
(7)	1	2" SADDLE	FORD FS202, STAINLESS STEEL STRAP
(8)	3	CLAMPS	STAINLESS STEEL
(9)	1	1" BALL VALVE	BRONZE BODY
(10)	1	2" WITH CAP	GALVANIZED
(11)	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, UF LISTED, SEE DWG. #102
(12)	1	2" UNION	BRONZE, SCREWED TO AIR/VAC VALVE & TUBING
(13)	1	2" BALL VALVE	BRONZE BODY
(14)	1	2" NIPPLE	BRASS
(15)	2	2" 90° STREET ELBOW	BRASS FIPxMIP
(16)	2	MIPxCTS ADAPTER	

TUOLUMNE UTILITIES DISTRICT

SEWER FORCE MAIN AIR-VACUUM VALVE

REV. 11-21-07

STD. DWG. NO. 306



NOTES

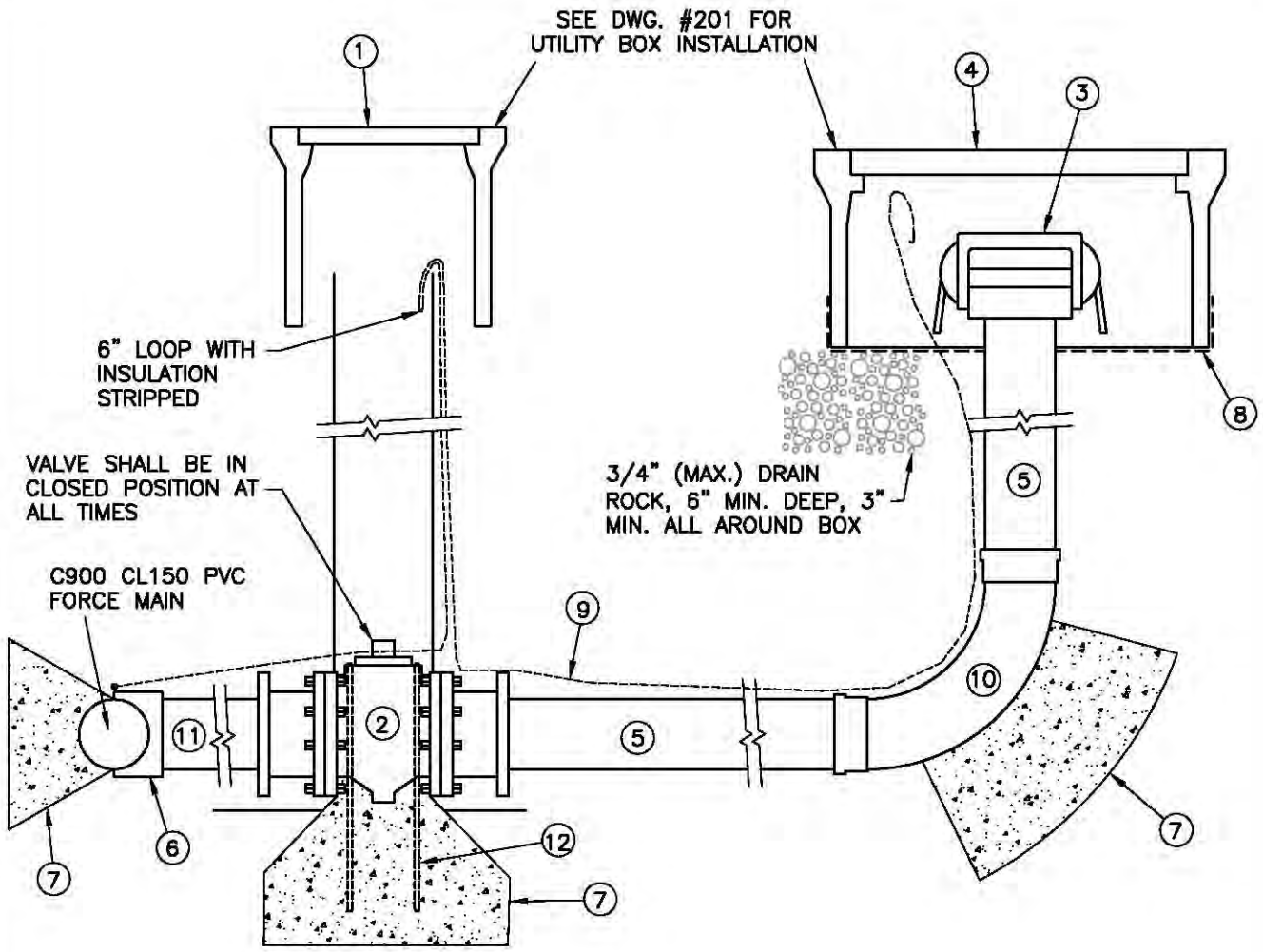
A. BLOWOFF VAULT WILL BE LOCATED OUTSIDE TRAFFIC AREAS WHENEVER POSSIBLE.
B. FOR SPECIFIC MANHOLE REQUIREMENTS SEE STANDARD MANHOLE DETAIL #303.
C. EXTERIOR OF MANHOLE SURFACE WILL BE COATED WITH BITUMASTIC SEALANT OR APPROVED EQUAL.
D. MANHOLE SLAB BASE SHALL BE 2500 PSI (MIN.) CONCRETE
E. ALL PIPES AND FITTINGS WITHIN MANHOLE WALLS SHALL BE PRIMED AND COATED WITH ENAMEL OR WRAPPED IN 10 MIL PVC TAPE.
F. TEE SUPPORT SHALL BE A 12" DIAMETER PIPE FILLED WITH 2500 PSI (MIN.) CONCRETE OR STEEL SUPPORT APPROVED BY DISTRICT.
G. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE.

(1)	1	CROSS & 90° ELBOW, SIZE PER MAIN LINE	4" TAPPED AND THREADED
(2)	1	BLIND FLANGE	CLASS 125
(3)	1	DUCTILE IRON UNION	CORROSION PROTECTIVE COATING
(4)	1	4" RESILENT WEDGE VALVE, STEM 3 FT. FROM LID	AMERICAN, CLAY OR APPROVED EQUAL
(5)	1	FPD PLUG W/ DUST CAP	CAMLOCK OR APPROVED EQUAL
(6)	1	CONCRETE UTILITY BOX	CHRISTY B16 W/B1661D LID OR APPROVED EQUAL
(7)	1	4" DUCTILE IRON PIPE	CEMENT MORTAR LINING
(8)	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, UF LISTED, SEE DWG. #102
(9)	1	GALV. STEEL WIRE	WIRE DIA.=0.105", COVER ACCESS HOLES
(10)		THRUST BLOCK	2500 PSI CONC. MIN., SEE DETAIL #202

TUOLUMNE UTILITIES DISTRICT

SEWER FORCE MAIN LOW-POINT VAULT

REV. 11-21-07
STD. DWG. NO. 307



NOTES

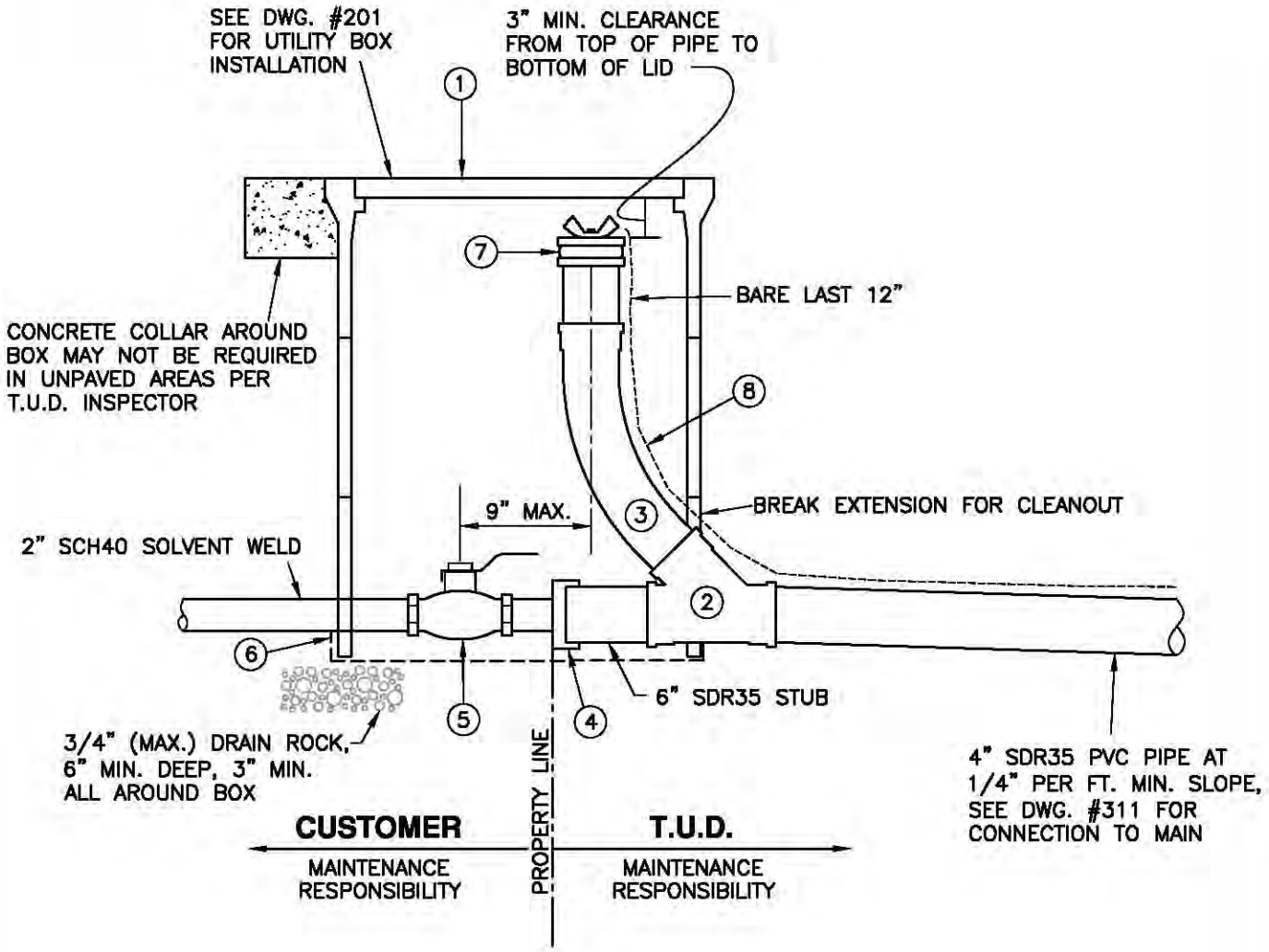
A. STEM EXTENSION REQUIRED FOR ALL VALVES WHERE DISTANCE FROM FINISH GRADE TO VALVE NUT IS 4 FT. OR GREATER, SEE DETAIL #201.
B. MAXIMUM OPERATING PRESSURE IS 150 PSI WORKING PRESSURE.
C. COAT NON-BRASS BURIED EXPOSED THREADS WITH KOPPERS BITUMASTIC NO. 5 OR TAPE WITH 10 MIL. PVC TAPE, 3 WRAPS MIN.
D. PVC JOINT ADHESIVE IS "WELD-ON" JM 7-21 BLUE WITH JMP 70 PRIMER, OR T.U.D. APPROVED EQUAL.
E. FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED FIRST WITH KOPPERS BITUMASTIC NO.5 AND THEN PLASTIC SHEETING (4 MIL. THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE.

ITEM	QTY	DESCRIPTION	REMARKS
(1)	1	TRAFFIC BOX WITH LID	CHRISTY G5 BOX W/G5C LID (MARKED "SEWER")
(2)	1	4" FULL PORT ECCENTRIC PLUG VALVE	MILLCENTRIC OR EQUAL, 2" OPERATING NUT (MJxMJ)
(3)	1	FPD PLUG WITH DUST CAP	CAMLOCK OR APPROVED EQUAL
(4)		CONCRETE VALVE BOX, LID MARKED "SEWER"	CHRISTY B16 W/B1661D LID OR APPROVED EQUAL
(5)	3	4" DIA. PIPE	SCH40 PVC
(6)	1	4"x4"x4" C.I. WYE	MJ x MJ x MJ
(7)		THRUST BLOCK	2500 PSI CONC. MIN., SEE DETAIL #202
(8)	1	GALV. STEEL WIRE	WIRE DIA.=0.105", COVER ACCESS HOLES
(9)		#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, UF LISTED, SEE DWG. #102
(10)	1	4" ELBOW, 90°	SCH 40 PVC LONG SWEEP
(11)	1	C900 CL150 PVC PIPE	LENGTH AS REQUIRED
(12)	2	#4 REBAR ANCHOR	GRADE 60, SEE DETAIL #201

TUOLUMNE UTILITIES DISTRICT

SEWER FORCE MAIN BLOWOFF/CLEANOUT

REV. 11-21-07
STD. DWG. NO. 308



NOTES

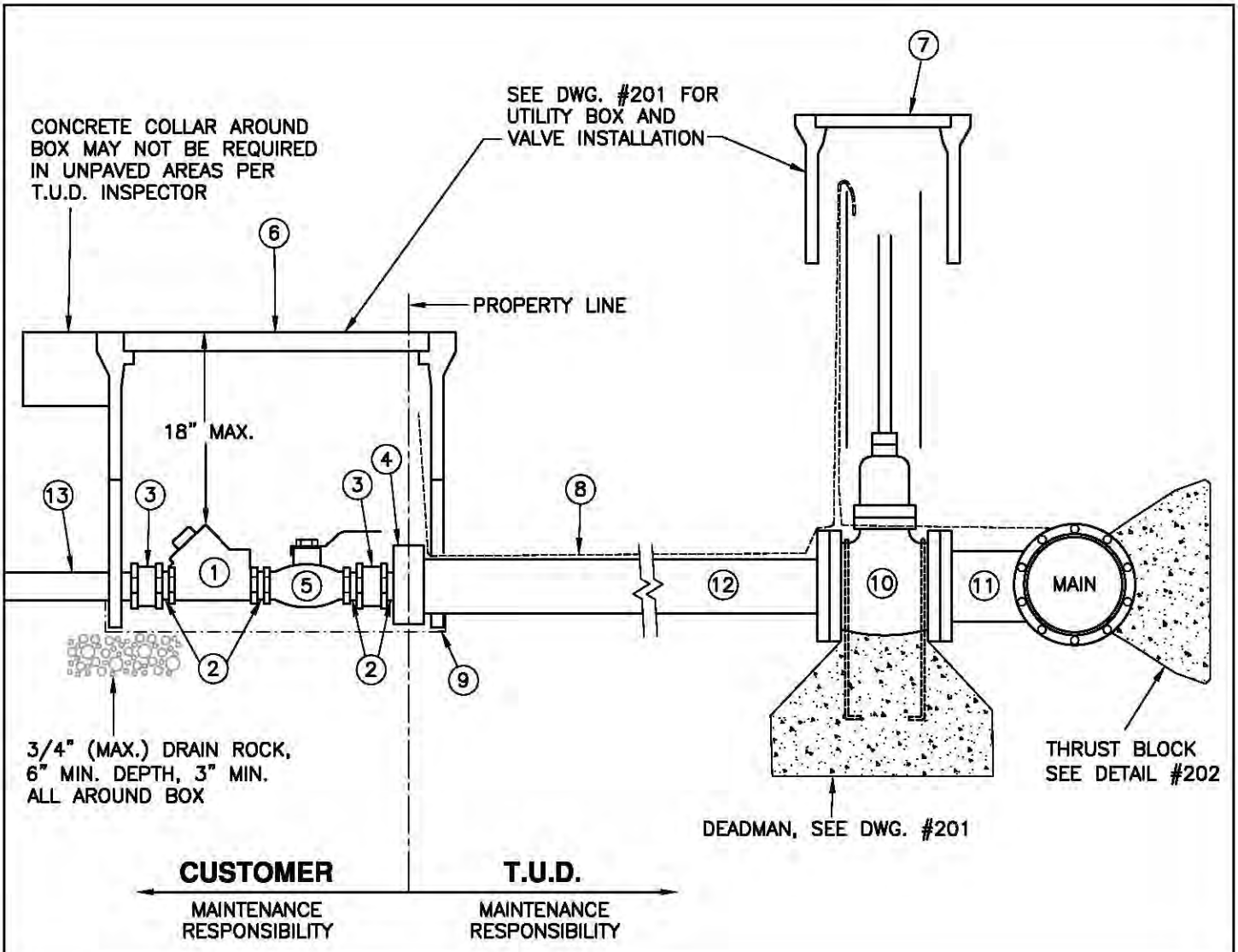
A. T.U.D. IS RESPONSIBLE FOR MAINTAINING THE SEWER LATERAL TO THE CLEANOUT.
B. PRIVATE LIFT STATIONS, PUMPS, SUMPS, TANKS, ETC. WILL BE T.U.D. APPROVED AND INSPECTED.
C. SEE DETAIL #203 FOR PIPE BEDDING MATERIAL.
D. LOCATE CLEANOUTS OUTSIDE TRAFFIC AREAS.
E. ALL FITTINGS SHALL BE SDR35 PVC PIPE, RING-TITE OR APPROVED EQUAL.
F. PVC JOINT ADHESIVE IS "WELD-ON" JM7-21 BLUE WITH JMP PRIMER OR T.U.D. APPROVED EQUAL.
G. ALL FITTINGS TO HAVE RATING OF 150 PSI WORKING PRESSURE AT 73°F.

ITEM	QTY	DESCRIPTION	REMARKS
(1)	1	UTILITY BOX AND LID, USE EXTENSION(S)	CHRISTY B30 BOX W/61D LID
(2)	2	WYE	SDR35, RING-TITE OR APPROVED EQUAL
(3)	2	STANDARD 45° OR LONG-RADIUS 45° ELBOW	SDR35, RING-TITE OR APPROVED EQUAL
(4)	1	2" X 4" ADAPTER	PVC
(5)	1	2" BALL VALVE	BRONZE, 150 LB
(6)	1	1/2" GALV. STEEL WIRE MESH	WIRE DIA.=0.105", COVER ACCESS HOLES
(7)	1	EXPANSION PLUG WITH LIP	PASCO HAND-TIGHT OR APPROVED EQUAL
(8)	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, UF LISTED, SEE DWG. #102

TUOLUMNE UTILITIES DISTRICT

PRIVATE PUMP SYSTEM TO GRAVITY SEWER MAIN

REV. 11-21-07
STD. DWG. NO. 309



NOTES

A. PRIVATE LIFT STATIONS, PUMPS, SUMPS, TANKS ETC. WILL BE T.U.D. APPROVED AND INSPECTED.
B. SEE DWG. #203 FOR PIPE BEDDING MATERIAL.
C. PVC JOINT ADHESIVE IS "WELD-ON" JM7-21 BLUE WITH JMP PRIMER OR T.U.D. APPROVED EQUAL.
D. ALL FITTINGS TO HAVE RATING OF 150 PSI WORKING PRESSURE AT 73°F.

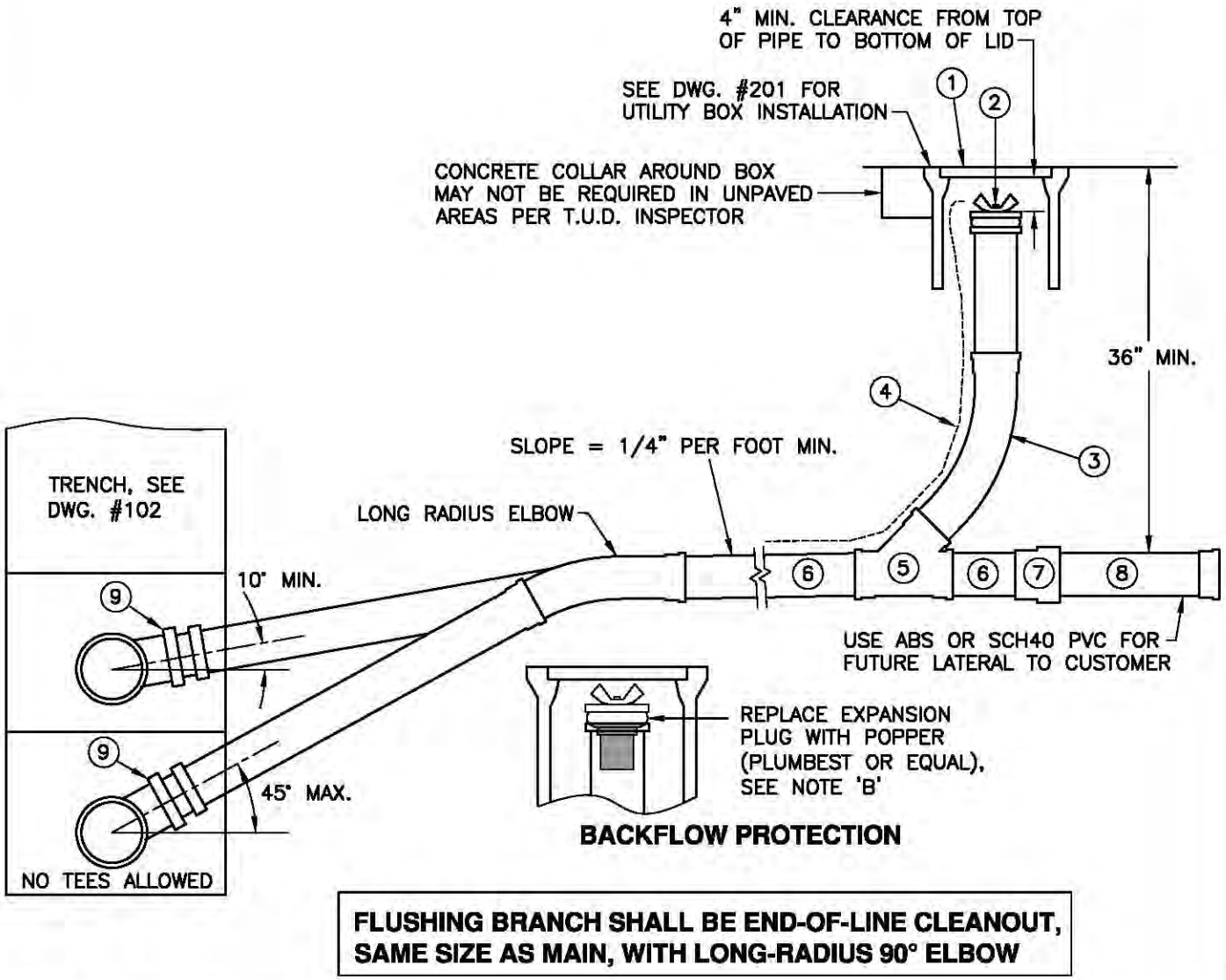
ITEM	QTY	DESCRIPTION	REMARKS
(1)	1	2" SWING CHECK VALVE	150 LB, BRONZE
(2)	4	CLOSE NIPPLE	P.V.C. OR BRASS
(3)	2	UNION	P.V.C. OR BRASS
(4)	2	MJ CAP, TAPPED 2"	USE GRIP RINGS
(5)	1	2" BALL VALVE	BRONZE, 150 LB
(6)	1	UTILITY BOX AND LID, USE EXTENSION(S)	CHRISTY B30 BOX W/61D LID
(7)		TRAFFIC VALVE BOX WITH LID MARKED "WATER"	CHRISTY G5 W/G5C LID OR APPROVED EQUAL
(8)	1	#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, UF LISTED, SEE DWG. #102
(9)	1	1-1/4" HARDWARE CLOTH (GALV.)	MUST COVER ACCESS HOLES
(10)	1	4" RESILIENT WEDGE GATE VALVE, 2" SQUARE NUT	CLASS 150, NONRISING STEM
(11)	1	STAINLESS STEEL TAPPING SLEEVE	FOR HOT TAP ONLY, SEE DWG. #209
(12)		4" C900 PIPE TO MAIN,	WRAP PIPE WITH "T.U.D. SEWER TAPE"
(13)		2" SCH40 SOLVENT WELD	

TUOLUMNE UTILITIES DISTRICT

PRIVATE PUMP SYSTEM TO FORCE MAIN OR PRESSURIZED INTERCEPTOR

REV. 11-21-07

STD. DWG. NO. **310**



FLUSHING BRANCH SHALL BE END-OF-LINE CLEANOUT, SAME SIZE AS MAIN, WITH LONG-RADIUS 90° ELBOW

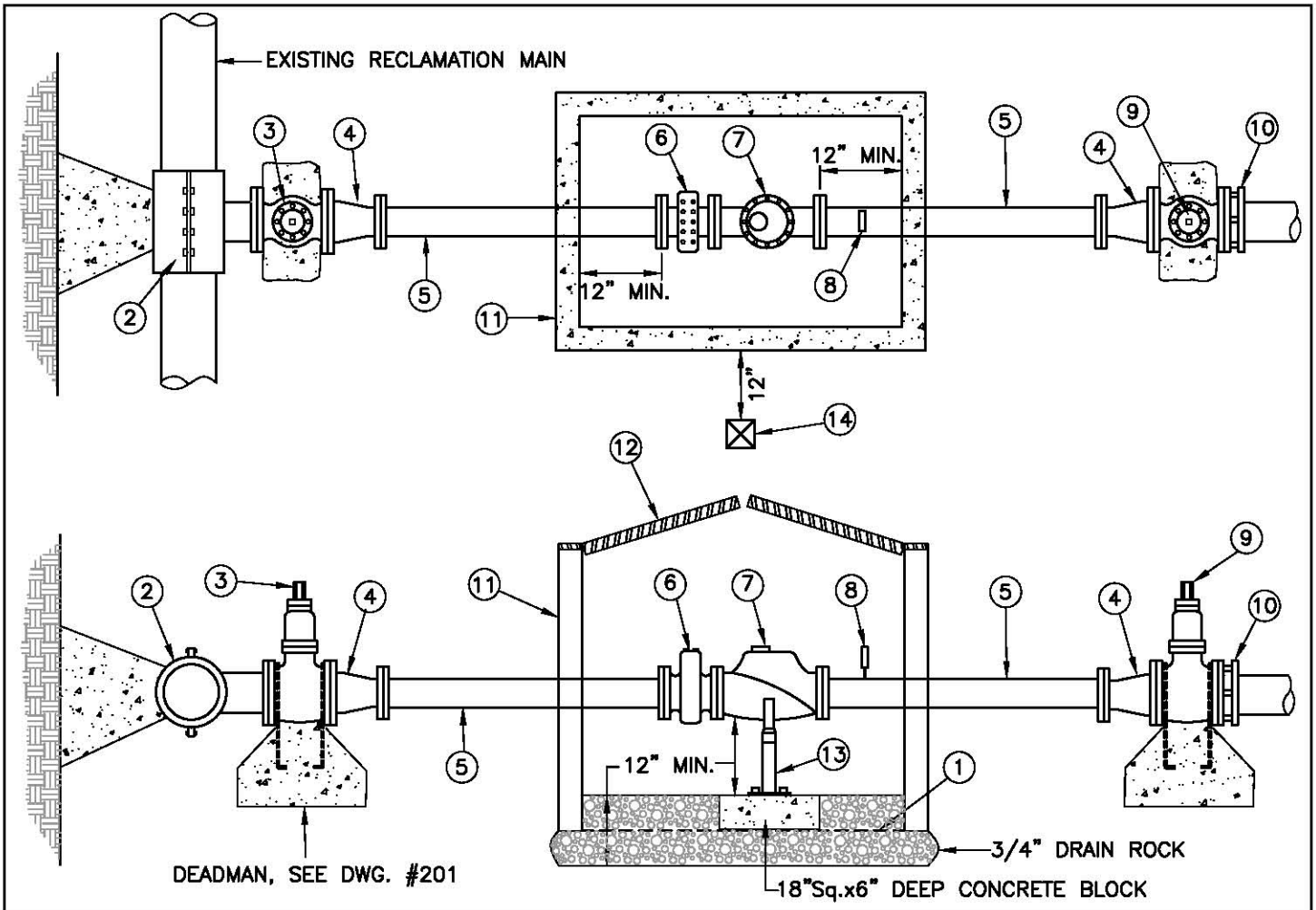
NOTES

A. LOCATE CLEANOUTS OUTSIDE TRAFFIC AREAS IF POSSIBLE.
B. BACKFLOW PREVENTION IS REQUIRED FOR CLEANOUT AT PROPERTY, RIGHT-OF-WAY OR EASEMENT LINE.
C. PLACE 1 CU. FT. MIN. OF CONCRETE OR 2 CU. FT. OF WELL-COMPACTED BEDDING MATERIAL UNDER THE ENTIRE LENGTH OF THE WYE BRANCH, FITTING OR ANY UNSUPPORTED PIPE. WHEN BEDDING MATERIAL IS USED, PLACE ADDITIONAL MATERIAL TO TOP OF BEND FOR THE FULL WIDTH OF THE TRENCH.
D. "CARSON" PLASTIC BOX CAN BE USED IN PLANTER AREAS WITH PRIOR T.U.D. APPROVAL.
E. A 4-INCH LATERAL IS ACCEPTABLE FOR A DOUBLE SERVICE.

ITEM	QTY	DESCRIPTION	REMARKS
(1)	1	UTILITY BOX WITH LID MARKED "SEWER"	CHRISTY G5BOX W/G5CLID, SEE NOTE 'D'
(2)	1	EXPANSION PLUG	PASCO HAND-TIGHT OR APPROVED EQUAL, SEE NOTE 'C'
(3)	1	LONG RADIUS 45°, BANANA SWEEP	SDR35 PVC PIPE
(4)		#12 AWG INSULATED LOCATOR WIRE	SINGLE STRAND COPPER, UF LISTED, SEE DWG. #102
(5)	1	WYE	SDR35 PVC PIPE
(6)		SINGLE SERVICE: 4" MIN. DOUBLE SERVICE: 4" MIN. MAIN-LINE CLEANOUT: SAME SIZE AS MAIN	SDR35 PVC PIPE
(7)	1	4"x4" SWRxDWV REDUCER	PTI #P657, USE ABS TO SDR GLUE
(8)	1	2 FT. STUB WITH GLUED CAP	ABS DWV
(9)	1	PVC OR SADDLE WYE, DFW/HPI, FLEXIBLE RUBBER, REQUIRED IF EXISTING WYE NOT FOUND	

TUOLUMNE UTILITIES DISTRICT
SEWER SERVICE, CLEANOUT AND FLUSHING BRANCH

REV. 11-21-07
STD. DWG. NO. 311



NOTES

A. UNLESS OTHERWISE APPROVED, ALL CONNECTIONS TO EXISITNG T.U.D. MAINS SHALL BE BY "HOT–TAP" WITH APPROVED TAPPING SLEEVE. TUD CAN ONLY HOT–TAP 4–INCH AND 6–INCH SEWERLINES.
B. BOTH 4–INCH AND 6–INCH SERVICES SHALL USE 4–INCH STRAINERS AND METERS.
C. VALVE IS TO REMAIN CLOSED FOR A MINIMUM OF 5 DAYS TO ALLOW THE CONCRETE THRUST BLOCK TO CURE.
D. ALL FITTINGS INSTALLED ON EXISTING RECLAMATION MAIN SHALL BE 3 FT. MIN. FROM JOINTS, FITTINGS, OR TAPS.
E. COAT BURIED NUTS & BOLTS WITH KOPPERS BITUMASTIC #50 OR TAPE WITH 10 MILS. PVC TAPE (3 WRAPS MIN.)
F. BURIED FITTINGS, JOINTS, BOLTS AND NUTS ARE TO BE COVERED WITH PLASTIC SHEETING (4 MIL. THICK MIN.) PRIOR TO PLACEMENT OF CONCRETE. ALL BOLTS SHALL BE ACCESSIBLE AFTER KICKERS ARE PLACED.
G. ALL EXPOSED PIPING SHALL BE PAINTED PANTONE PURPLE.

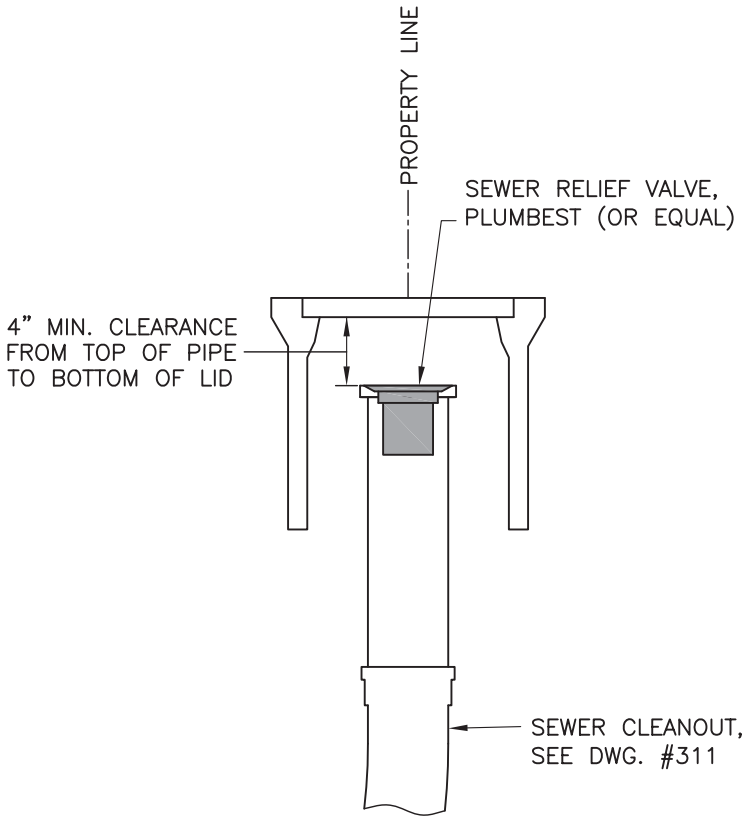
ITEM	QTY	DESCRIPTION	REMARKS
(1)	1	1/2" GALV. STEEL WIRE MESH	WIRE DIA.=0.105"
(2)	1	STAINLESS STEEL TAPPING SLEEVE	ROMAC "SST", ROCKWELL 622, FORD "FAST" OR APPROVED EQUAL
(3)	1	RESILIENT WEDGE VALVE	FLxFL W/2" OPERATING NUT, SEE DETAIL #201, SIZE TO MATCH SERVICE
(4)	2	4"x6" REDUCER	FLxFL (ONLY USE WITH 6" SERVICES) (SEE NOTE C.)
(5)	2	4" D.I.P. SPOOL	FLxFL (48" LONG)
(6)	1	4" METER STRAINER	FLxFL (NEPTUNE OR APPROVED EQUAL)
(7)	1	4" TURBINE METER	FLxFL (NEPTUNE OR APPROVED EQUAL)
(8)	1	PRESSURE GAUGE	W/ 1/4" TAP (PRESSURE RANGE PER T.U.D.)
(9)	1	RESILIENT WEDGE VALVE	FLxMJ W/2" OPERATING NUT, SEE DETAIL #201, SIZE TO MATCH SERVICE
(10)	1	MECHANICAL JOINT W/ GRIP RINGS	OR APPROVED EQUAL
(11)	1	PRECAST 3'x5' VAULT	CHRISTY R17 PIT OR APPROVED EQUAL
(12)	1	STEEL HINGED TORSION–ASSIST LID	TRAFFIC–RATED CHRISTY R27–52HT
(13)	1	ADJUSTABLE PIPE SUPPORT	SEE DETAIL #214
(14)	1	4"x 4" POST	PRESSURE–TREATED, 4 FT. HIGH, PAINT PURPLE

TUOLUMNE UTILITIES DISTRICT

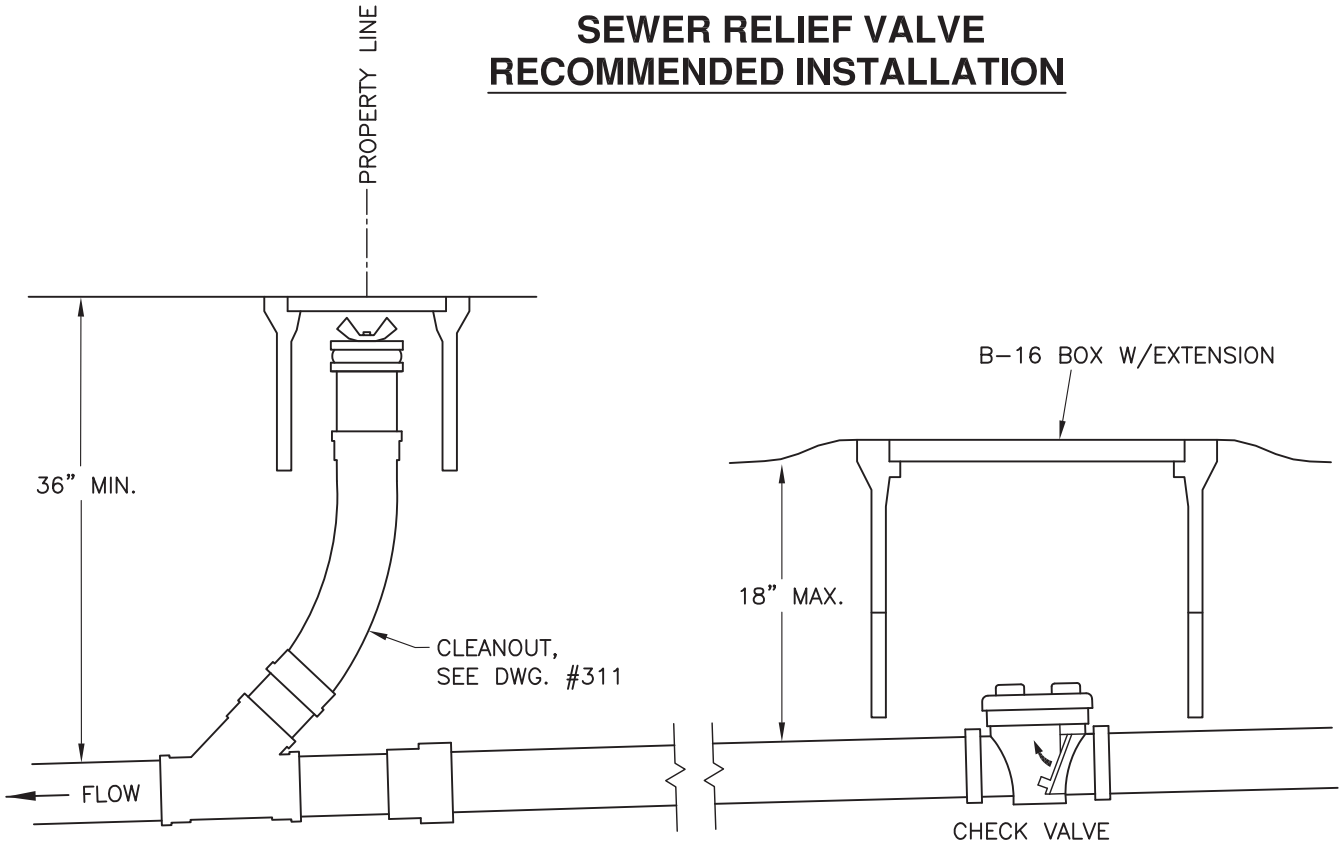
RECLAMATION SYSTEM SERVICE CONNECTIONS (4" & 6")

REV. 11–20–07

STD. DWG. NO. 312

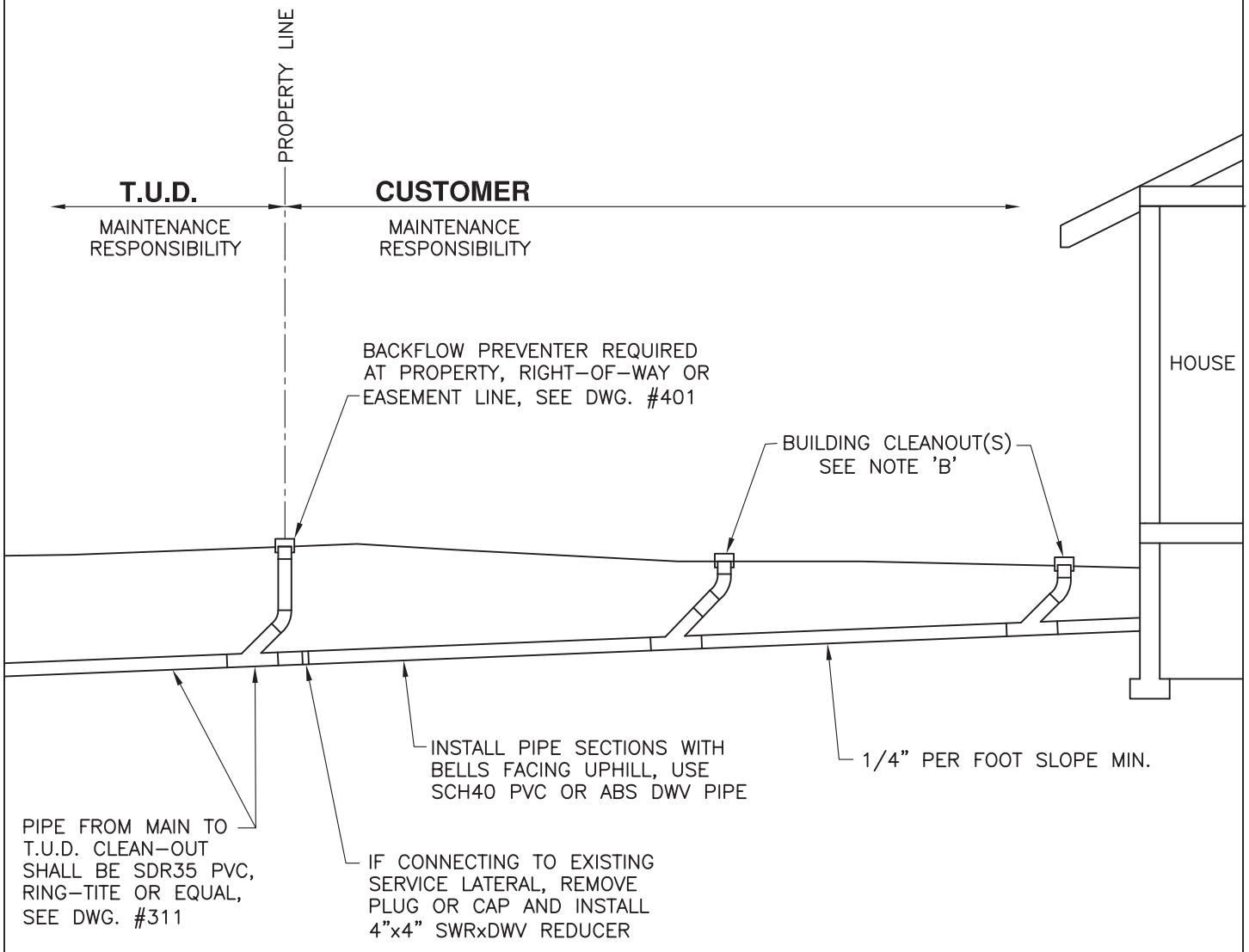


SEWER RELIEF VALVE
RECOMMENDED INSTALLATION



CHECK VALVE ON CUSTOMER'S LINE
NOT TYPICALLY USED

TUOLUMNE UTILITIES DISTRICT **SEWER BACKFLOW PROTECTION**	REV. 03-30-09 STD. DWG. NO. **401**



NOTES

A. CUSTOMER SHALL PROVIDE A 4" CLEANOUT AT THE RESIDENCE, THE PROPERTY LINE, AND AT ALL FITTINGS GREATER THAN 45°. MAXIMUM SPACING BETWEEN CLEANOUTS SHALL NOT EXCEED 100 FT. PER COUNTY ORDINANCE.

B. SEWER CONNECTIONS AND PIPE INSTALLATION MUST BE INSPECTED BY T.U.D. AND THE COUNTY BUILDING DEPARTMENT PRIOR TO TRENCH BACKFILL. 24-HOUR NOTICE IS REQUIRED PRIOR TO INSPECTION. IF SEWER CONNECTION REQUIRES A PUMP, CONTACT BUILDING DEPARTMENT. (533-5940)

C. ALL WORK INSIDE AND OUTSIDE OF RESIDENCE MUST CONFORM TO BUILDING DEPT. SPECIFICATIONS AND ALL APPLICABLE COUNTY CODES.

D. WHERE A SEWER LATERAL HAS NOT BEEN STUBBED OUT TO THE PROPERTY LINE, THE CUSTOMER SHALL BE RESPONSIBLE FOR ALL COSTS AND ENCROACHMENT PERMIT FOR WORK DONE WITHIN THE RIGHT-OF-WAY.

E. OWNERS OF EXISTING RESIDENCES WITH SEPTIC SYSTEMS MUST HAVE THE SEPTIC TANK PUMPED AND FILLED WITHIN ONE WEEK OF CONNECTING TO T.U.D. SEWER MAIN. ABANDONED SEPTIC TANK MUST BE INSPECTED BY THE COUNTY HEALTH DEPT.

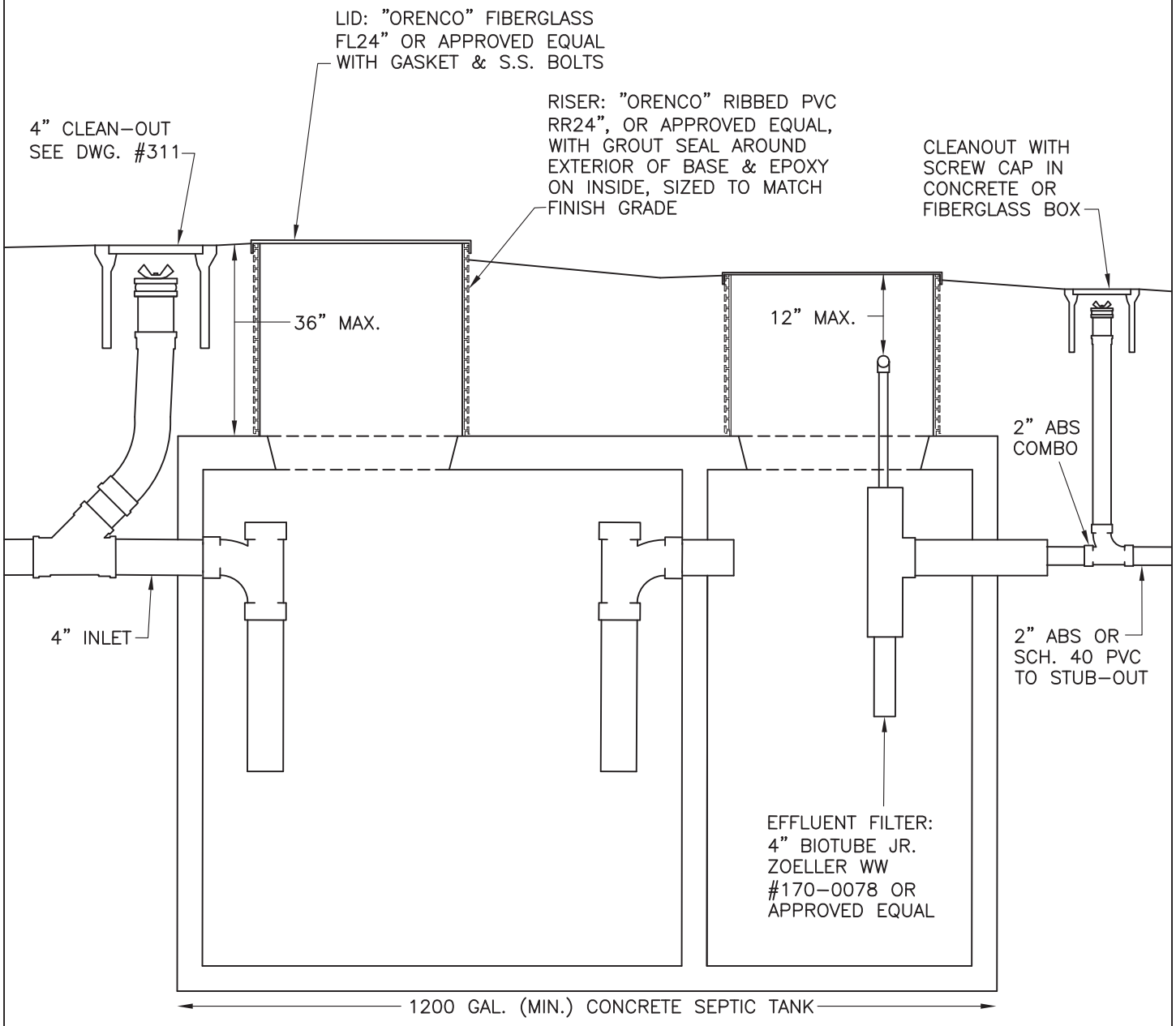
F. BACKFILL MUST CONFORM TO T.U.D. SPECIFICATIONS.

G. APPLICATION AND CONNECTION FEES MUST BE SUBMITTED TO T.U.D. PRIOR TO CONNECTION.

TUOLUMNE UTILITIES DISTRICT
GRAVITY SEWER SERVICE INSTALLATION

REV. 05-24-06

STD. DWG. NO. **402**



PROPERTY OWNER TO PROVIDE T.U.D. WITH ACCESS ROUTE FOR MAINTENANCE PURPOSES

TUOLUMNE UTILITIES DISTRICT

APPLE VALLEY ESTATES AND ROGUE RIVER COURT SEWER CONNECTION

REV. 03-19-07

STD. DWG. NO. **403**

CHAPTER 8
SYSTEM EVALUATION & CAPACITY ASSURANCE PLAN

I. Introduction

A collection system evaluation of hydraulic capacity is best undertaken by building a hydraulic model, collecting real flow data, calibrating the model, and then simulating the system's response to different storm events in order to ensure that under most scenarios existing pipelines can convey peak wet weather flows without resulting in a sanitary sewer overflow.

The Tuolumne Utilities District has a hydraulic model; however, it is based on limited sewer mapping. Sewer manhole rim and pipeline invert elevations are reported in two different datums NGVD 29 and NAVD 88. Sometimes the plans are not clear as to which datum is being used. On occasion improvement plans were submitted to the District that list elevations relative to an assumed benchmark. Much of the District's improvement plans are based on design not As-Built information and may not reflect field conditions.

Furthermore, the model assumes a Manning's coefficient that may not adequately account for deposition of solids, deterioration of pipeline material, and presence of roots and FOG. The hydraulic model is only as accurate as the information it is based upon. In reality, unless the model is fully calibrated it is best used as a screening tool to identify areas that maybe vulnerable to capacity issues. Those areas can then be visited by staff during storm events to confirm the models predictions.

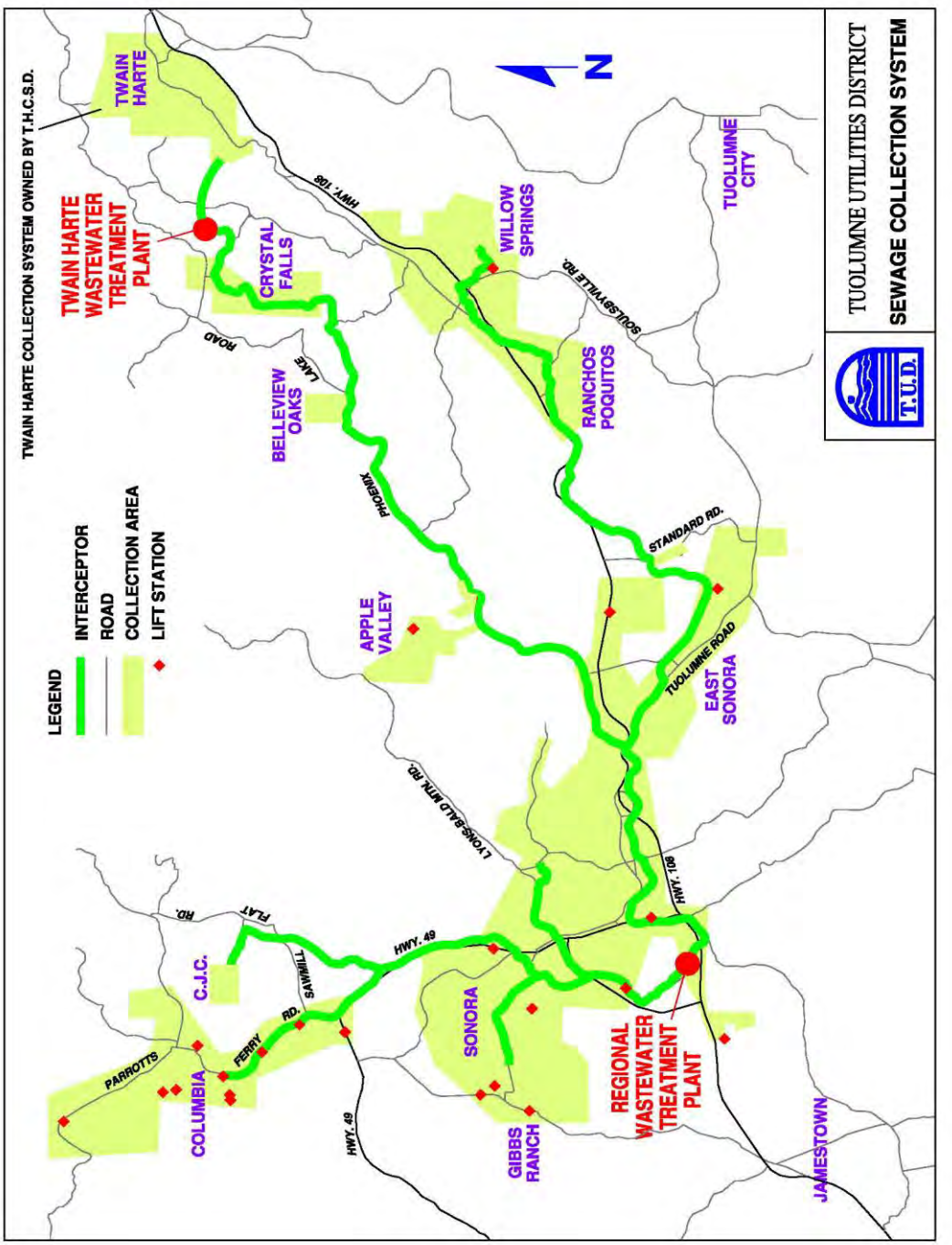
The District has documented that most sanitary sewer overflows are not a result of a hydraulic deficiency due to pipe size or slope, but due to root intrusion, FOG, joint offsets, and bellies.

II. Service Area, Land Use, and Demographics

The District's service area includes Sonora, East Sonora, Columbia, Willow Springs, and Twain Harte. Sewer collection in Twain Harte is provided by the Twain Harte Community Services District (THCSD). The THCSD wastewater collection system discharges by gravity to the District's primary level wastewater treatment facility located east of E. Rhine River Drive and north of Longeway Road. Flow from that facility, as well as, all other District customers is conveyed to the Sonora Regional Wastewater Treatment Facility located off of Southgate Drive in Sonora.

The current service area is shown in Figure 8-1. Most of the District's key wastewater collection infrastructure was installed in the mid to late 1970's with funding through the Clean Waters Act. The District's Columbia, East Sonora,

FIGURE 8-1
TUD SERVICE AREA



Twain Harte, and Willow Springs/Ranchos Poquitos Interceptors were all constructed during this time period.

Including the contribution of flow from Twain Harte, the District provides collection and treatment services to over 10,500 equivalent single family residences. Although the District is primarily residential in nature, there are large institutional contributors such as Sonora Regional Medical Center and Columbia Community College.

Table 8-1 includes current data for population, connections, and equivalent single family residences. Population and service connection growth projections were developed based on the Tuolumne County Blueprint estimated annual growth rate of 0.96% per year. The Tuolumne County Blueprint is a public commission of various county transportation, planning, and utility agencies who are currently building a vision for the future development of Tuolumne County. While growth rates will vary from year to year, it is projected that the long-term average will be in accordance with the Tuolumne County Blueprint estimates.

TABLE 8-1 Continued
POPULATION, CONNECTIONS, ESFRs

Year	Total Population[1]	Connections[2]	ESFR
2008	18,405	8,027	10,518
2030	22,760	9,926	13,040
2050	27,607	12,040	15,786

[1] Total population is estimated from DOF occupancy number of 2.293 persons/household. For this calculation, all connections are assumed to be residential. Additionally, some of the residences are seasonal and do not contribute wastewater flows on a year-round basis.
[2] Connections include Twain Harte CSD (1,574 ESFR).

It was assumed that total ESFR's would grow at the same rate as the population and that the composition of the District's service area would remain predominately residential. Additionally, there is the likelihood that some existing parcels currently served by on-site sewer treatment and disposal systems will wish to connect to the District's collection system. The demand for, and location of, new connections will be influenced by a number of factors (in no specific order), such as:

1. Minimum parcels sizes for use of both wells and septics;
2. Percolation rates and geological suitability for leach fields;
3. Septic system failures;
4. Topography and implementation of slope ordinances;
5. Topography and ability to install gravity collection systems, as opposed to constructing pump stations;
6. Cost to extend sewer mains; and
7. Connection fees.

III. Existing and Future Wastewater Flows

Existing flow data for the past 3 years was reviewed for the Regional Wastewater Treatment Plant (RWWTP). The 3-year average daily flow is 159 gpd/ESFR, which was used as the basis for developing hydraulic model inputs. Table 8-2 includes data for flow conditions and peaking factors experienced at the RWWTP.

TABLE 8-2
FLOW CONDITIONS AND PEAKING FACTORS: RWWTP

Parameter	Flow	Ratio to ADF (Peaking Factor)
Average Daily Flow (TUD and THCSD)	1.7 MGD	1.0
Maximum Monthly Flow	2.4 MGD	1.4
Maximum Daily Flow	4.3 MGD	2.53
3-hr. Peak Wet Weather Flow (2006)	5.1 MGD	3.0
Peak Wet Weather Flow (2006)	5.6 MGD	3.3

Due to the lack of flow measurement devices in the collection system, the District has utilized its SCADA system to monitor inflows and outflows at its sewer pump stations. Sewer pump stations serve as ideal locations to measure flow because they have a well defined sewer shed and flow rates area easily quantified by measuring the drawdown rates in the sumps. This data has been compiled for the dry weather period of June 15 – September 15, 2009 and for two rainfall events. The first event occurred between March 3 - 4, 2009 and yielded 2.3 inches of rain in a very short period of time. Localized flooding was widespread as a result of this event. The second event occurred on October 13, 2009 and produced 2.5 inches of rainfall. This particular event was characterized by a steady rainfall intensity that lasted the entire day.

The SCADA system records whenever the pumps turn “on” and “off”. From this information the system automatically calculates the total daily run time, the average run time, maximum run time, minimum run time, and the number of times the pump turns on in a day. Since most sumps are circular and have a constant cross sectional area the gallons/foot of sump depth are known. Setpoints for pump “on” and “off” elevations are designated to avoid excessive pump cycling, but also to prevent stagnation and resulting odor issues. The pump setpoints for each station are known and therefore, the pumping volume per each pump cycle is known. The pumping volumes are inputed into the SCADA system for each site.

The SCADA system will then calculate average pumping rates, average inflow rates, and total gallons pumped. The peak wet weather flow is extrapolated by assuming that the peak inflow coincides with the longest pumping interval. It is

possible that peak flows could occur when the pumps are “off”; however, the following assumption should generally approximate the “worst case” scenario for influent flows. In addition, the calculation uses the average pumping rate when in fact the pumping rate varies slightly as the sump level draws down and the pumping head increases.

Calculation of peak wet weather flow from the maximum pumping time is accomplished as follows:

$$PWWF = \frac{t_{max} \times Q_{pump} - V}{t_{max}}$$

PWWF: Peak Wet Weather Flow (gpm)
t_{max}: Maximum Pump Interval (minutes)
Q_{pump}: Average Pumping Rate (gpm)
V: Pumping Volume (gallons)

The calculation of Average Dry Weather Flow was completed by assuming that the dry period was from June 15 – September 15, 2009. The total volume pumped during this time was divided by number of days (92) to determine that average volume pumped per day. This number was divided by the number of ESFRs in the sewer shed.

The results from these analysis are discussed in later detail and included as Appendix 8-A.

The SCADA system also has trending and totalizing capabilities. By simply comparing the volumes pumped over the 3 month periods of January 15th – April 15th and June 15th – September 15th, sewer sheds can be screened for vulnerability to inflow and infiltration. Comparison of wet and dry season flows is also included in Appendix 8-A.

Groundwater table elevations within the District’s service area are generally low enough to not contribute to groundwater infiltration. Inflow is a concern due to pipeline alignments adjacent to, or crossing, creeks and streams or from illicit connections to the sewer collection system. District staff have also noticed increases in flows directly related to residential irrigation during the summer months.

IV. Past Hydraulic Modeling

The District maintains a hydraulic model of its sewer collection system. The model is in various stages of development and has not been calibrated. Most capacity

analysis involves running calculations for a peak wet weather flow condition on a reach by reach basis of pipelines that are on mild to flat slopes. Due to the rural nature of the District's service area it is extremely rare to need to analyze flow impacts from large scale developments. Most developments are small in scale (< 4 homes) and six-(6) inch mains are more than adequate. The hydraulic model needs to be completed in order to evaluate cumulative impacts of many small developments on existing collection system pipelines, especially as flows get closer to the Regional Wastewater Treatment Plant.

The District's Wastewater Ordinance requires that for developments of 30 units or more, the project proponent shall pay a modeling fee to the District to allow for the evaluation of downstream impacts.

Hydraulic modeling was done on the entire system in 1990. That work produced a replacement schedule based on pipeline capacities and anticipated growth in the service area. That replacement schedule is attached as Appendix 8-B. The District has resurrected some of this work and has sent field staff out to verify that some of the pipelines slated for replacement are still functioning with adequate capacity. In other instances, the District has proceeded with upsizing several sections of pipe identified in the report.

In conjunction with a new wastewater master plan, the District will be rebuilding its sewer model and calibrating it with actual field conditions. We are currently gathering flow data from our sewer pump stations and evaluating our flow factors.

Currently, most hydraulic deficiencies are identified through observation of staining in manholes, overflows, or surcharging.

V. Updated Hydraulic Model Development

A. Selection of Data Set

The District's collection system inventory is summarized in Table 8-3 and provided in more detail in Appendix 8-C. The majority of the District's collection system is composed of 6-inch diameter pipeline. It is important to note that 5-inch diameter pipeline is specific to vitrified clay and is found only in the Sonora and Columbia areas. Although these pipelines may still be adequate from a hydraulic capacity perspective, they are frequently a source of maintenance issues due to joint offsets, bellies, root obstructions, etc. Pipelines 2-inch and 3-inch in diameter are likely associated with septic tank effluent systems that are conveying effluent only.

TABLE 8-3
COLLECTION SYSTEM PIPELINE INVENTORY

Diameter	% of Total	Diameter	% of Total
2”	2.6%	10”	7.4%
3”	1.8%	12”	7.6%
4”	7.7%	14”	0.4%
5”	5.5%	15”	1.6%
6”	50.2%	16”	0.5%
8”	14.2%	18”	0.6%

Since over three-quarters of the distribution system is composed of pipelines that are 8-inch diameter or less, it was determined that it would be simpler to first identify which pipeline reaches would be worth modeling. The criteria by which to determine if a pipeline could be susceptible to hydraulic overloading was to determine the minimum number of ESFRs that could be connected to a particular reach of pipe. If the number of ESFRs actually connected to that pipe was less than the calculated minimum and there were no upstream sewer pump stations, then the pipeline segment was excluded from the model. Table 8-4 details the minimum ESFR capacity for particular pipeline diameters assuming that:

1. Pipeline is laid at minimum slope (minimum slope to produce 2 fps when pipe is half full);
2. Max. d/D = 0.7;
3. Mannings n = 0.013;
4. Gravity flow conditions (no inverted siphons exist);
5. Static model only, does not account for backwater conditions;
6. Pipe diameter is nominal diameter, slight variations in capacity exist from material to material;
7. No upstream pump stations; and
8. Peaking factor of 5.5 is assumed to cover diurnal peaks and I&I.

TABLE 8-4
MINIMUM ESFR CAPACITY

Nominal Dia.	Min. Slope	Capacity	Peaking Factor	# ESFR
(in)	(ft/ft)	(gpm)		
4”	0.0085	66	5.5	109
6”	0.005	150	5.5	247
8”	0.0035	270	5.5	445

If the number of ESFRs upstream of the pipeline segment is less than the calculated capacities in Table 8-3 then this pipeline was excluded from the model. The pipeline could have capacity issues related to poor construction methods or poor material condition; however, those deficiencies would not be discovered through a model anyway.

On the otherhand, all pipelines greater than 8-inch diameter were modeled. The model provides an estimation of remaining capacity in District interceptors and is useful for planning purposes.

The objective of the model is to look at existing pipelines that have existing hydraulic deficiencies that may contribute to Sanitary Sewer Overflows. Planning for future growth was outside the scope of this study and will be addressed in the District's next wastewater masterplan.

B. Flow Factors

1. Average Daily Flow (ADF) is 159 gpd/esfr as observed from 3-years of flow data at the RWWTP. (Technically this number also includes the yearly volume of Inflow and Infiltration; however, it does not fully account for the flow impacts of I&I that occur due to a specific storm event.)
2. Commercial, Industrial, and Institutional Flow Factors were determined in accordance with Exhibit A of the District's Wastewater Ordinance. Appendix 7-A includes this exhibit.
3. Components of Flow

   Wastewater flow can typically be broken into three categories:

   - Base Sanitary Flow
   - Groundwater Infiltration
   - Rainfall Dependent Infiltration and Inflow (I&I)

   As stated earlier, groundwater resources in the District's service area are not a major contributor to infiltration. For purposes of this study the sum of the Base Sanitary Flow and the Groundwater Infiltration amounts to 159 gpd/esfr. A peaking factor for diurnal variation is applied to this number and then the contribution of Rainfall Dependent I&I is added to generate a Peak Wet Weather Flow (PWWF).

   Rainfall Dependent I&I can be expressed in a number of ways:

   - Gallons per Capita per Day, or
   - Gallons per Day per ESFR, or
   - Gallons per Acre per Day, or

- Gallons * Diameter * Inch per Mile, or
- % I & I

The District has not generated a design storm and does not have sufficient flow monitoring to measure the system's response to such a storm. As an alternative, the District has selected a storm event on March 3-4, 2009 to calculate a volume of wastewater that could be directly associated with the storm. This volume was then distributed to each connection on an equal basis. This method has some conservatism as the I&I portion of the flow enters the system at the point of service (as high up in the system as possible) as opposed to being added along the pipeline length.

The event of March 3-4, 2009 produced 2.3 inches of rainfall in a relatively short period of time. Localized flooding was experienced in several locations within the service area. The storm flows passed through the plant over a 42 hour period, beginning at hour -6- and ending at hour -42-. The total volume passing through the plant over the 42 hour period was approximately 5.77 MG compared to 2.94 MG during a normal period.

The volume directly associated to the storm is 2.83 MG over 42 hours. This equates to approximately 269 gallons/esfr over the 42 hour duration or 154 gpd/esfr.

4. Diurnal Peaking Factors are based on the 10-State Standards equation of:

$$Q_{peak}/Q_{avg} = \frac{18 + \sqrt{Pop}}{4 + \sqrt{Pop}}$$

Pop = Population in Thousands

$$Pop = \frac{ESFR * 2.293}{1000}$$

5. Design PWWF:

The design peak wet weather flow per pipeline segment was calculated as (no upstream pump stations):

PWWF = (159 gpd/esfr * # upstream esfr * diurnal peaking factor) +

154 gpd/esfr * # upstream esfr

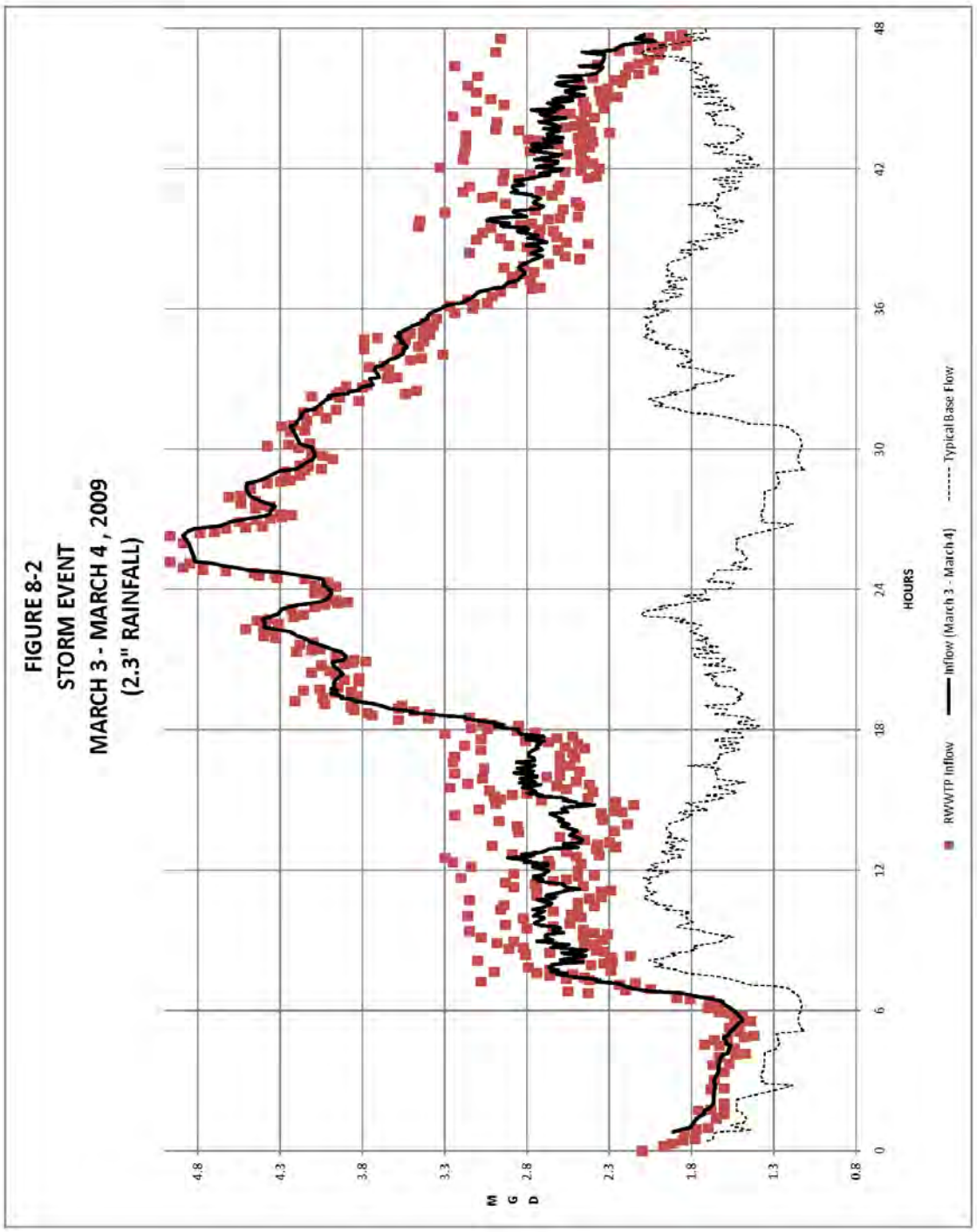


FIGURE 8-2
STORM EVENT
MARCH 3 - MARCH 4 , 2009
(2.3" RAINFALL)
MGD
4.8
4.3
3.8
3.3
2.8
2.3
1.8
1.3
0.8
0
6
12
18
24
30
36
42
48
HOURS
RWWTP Inflow
Inflow (March 3 - March 4)
Typical Base Flow

6. Pump Station Discharge Flows**:**

Pump station effects on the collection system were modeled with its true sump volume, pumping cycles, and pump outputs. When that data was not available, it was assumed that all pumps could be operating simultaneously but for a short cycle time (5 minutes or less). The purpose behind limiting the pump cycle time is to minimize distortions in the dynamic model as those flows get farther and farther away from the pump station. The impacts due to the pump station flows diminish as those flows migrate through the system at different velocities and with different path lengths.

7. Pump Station Inflows:

The model output for PWWF into a pump station was compared to the pump capacity at the station.

C. **Design Criteria**

1. Depth/Diameter (d/D): District design standards allow for a maximum flow depth/Diameter ratio of 0.70 when conveying average daily flows with a diurnal peaking factor applied. Pipes are considered overloaded when they cannot convey the PWWF when flowing full.

2. Mannings Coefficient: n = 0.013

VI. Model Outputs

Appendix 8-B is the replacement schedule that emerged from the Psomas model of 1990. The development pattern predicted in 1990 is very different than the development pattern that has been witnessed since that time. Although, the Psomas model would not be accurate for present conditions, staff are in the process of field checking the pipeline segments recommended for replacement to confirm that they still have adequate capacity.

Appendix 8-D is the replacement schedule based on the current hydraulic model. SewerCAD was used to generate these outputs.

A. Study Areas

1. East Sonora Interceptor

Modeling and observation has concluded that there are capacity issues in the East Sonora Interceptor during wet weather events. The areas of concern are located along the railroad tracks were slope is very mild. The areas of concern extend from the intersection of Mono Way and Sanguinetti Loop to Campo Seco Road. The total length is approximately 9,500 lineal feet and the existing pipe ranges from 15" ACP to 18" ACP.

Approximately 650 lineal feet of 8" DIP and 9" ACP have evidence of being overloaded. This section of pipeline is located along the railroad tracks just upstream of the Peppery and the railroad trestle.

2. Columbia Interceptor

Approximately 350 lf of 10" ACP pipe located upstream of 20526 Columbia Way has exhibited signs of being overloaded. This pipe should be replaced with a 12" or 15" pipe.

3. Greenley Basin Interceptor

The twin inverted siphon on the Greenley Interceptor has surcharged in the past. A relief sewer has been constructed to accept flows during wet weather events. This improvement should be adequate until such time as a more comprehensive project can be developed to eliminate the siphons.

4. Twain Harte Interceptor

Most flow in the Twain Harte Interceptor originates via a controlled release from the Twain Harte Wastewater Treatment Plant. As such, the interceptor is not as susceptible to peak wet weather flows because of attenuation at the plant.

5. Sonora Interceptor

Relief sewers were constructed in 1985 on various sections of the Sonora Interceptor. The District does not always know when the relief sewers are utilized; however, there seems to be adequate hydraulic capacity in the near term to handle peak wet weather flows.

6. **Willow Springs/Ranchos Poquitos Interceptor**

The model and observation indicates that capacity issues exist where the Willow Springs SPS Force main discharges into a 10" PVC SDR35 gravity main. Approximately 650 lineal feet of 10" sewer would need to be upsized to a 12" or 15" pipe.

The model and observation also highlight possible hydraulic capacity or pipeline defects from the intersection of Hess Road and the railroad tracks upstream approximately 375 lf and downstream approximately 1,800 lf. The suggested replacement would be from 8" PVC SDR35 to 12" PVC SDR 35.

VII. Analysis of Pump Stations

Appendix 8-A summarizes the results of the lift station analysis. The results were mixed; however, a few sites showed evidence of excessive peak wet weather flows (PWWF) indicative of extreme I & I. The data collected represented two storm events (1) March 4, 2009 and (2) October 13, 2009. In all cases, the pump output exceeded the PWWF and the stations were able to operate without being overcome. However, there were some instances long run times or frequent pump cycling was observed. It is important to note that some stations receive flow from other upstream pump stations and construe the data.

There are two problems that were identified:

1. **Excessive Stormwater Volume**

Excessive volume is an indicator of I&I, but if the volume is spread out over a reasonably long time it effects the RWWTP, but has less impact on pipeline capacity than PWWF.

Pump stations exhibiting excessive volumes of rainfall dependent I&I relative to their number of upstream ESFRs were the following:

- Country Estates SPS
- Gold Springs SPS
- Phoenix Lake SPS
- Robinwood SPS
- SPI SPS
- Springfield SPS

2. **Excessive PWWF**

The excessive peak flows are a concern in as much as they have the potential to overcome the pump output and flood the station or overload the upstream collection system.

Pump stations experiencing extreme peaking factors were the following:

- Columbia Village SPS
- Country Estates SPS
- Crossroads SPS
- Phoenix Lake SPS
- Robinwood SPS
- South Sonora SPS
- SPI SPS
- Springfield SPS
- Star MHP SPS

Some stations serving only a few connections (<20) exhibited high peaking factors; however, it is difficult to discern if this is related to the storm event or instantaneous flows originating from household activities like washing clothes, dishwashing, showering, etc. These stations have been excluded from the list above.

VIII. Capacity Enhancement Measures

Some possible projects that will be considered to increase collection system capacity include:

A. Relief Sewers

Generally the District tries to avoid constructing relief sewers because they involve investing in infrastructure that is rarely used and is still requires some maintenance. If construction of a relief sewer proves to be significantly less costly than open-cut replacement it maybe considered, especially if the pipeline to be replaced is in a busy traffic area and there are many services.

B. Pipe Bursting

The District has completed pipe bursting projects in the past; however, pipe bursting has limitations. Proximity to other utilities and surface structures can be a concern. Generally, pipe sizes can only be increased by as much as two diameters. Additionally, steel, ductile iron, asbestos cement, and some PVC are not good candidates for pipe bursting. This eliminates most of the District's larger pipelines. The District is also apprehensive to apply

this method of construction to pipelines laid on very mild slopes. Another factor in selecting this technology are the logistics involved in bypassing the pipeline during construction and reinstating services.

C. Pipe Lining

The District budgets for pipelining on an annual basis. Pipelining usually takes the form of a cured-in-place pipe product that improves hydraulics by reducing friction losses. Again, one drawback to this method is bypassing the sewer and reinstating services. If any bellies or joint offsets are present these defects will still be present in the newly lined pipe. Pipelining seems well suited to locations where upstream conditions are already built-out, there are few services connections, and access is limited (like many backlot sewers within the City of Sonora).

D. Open Trench Replacement

Open trench replacement can involve replacing in the same trench or laying a new parallel sewer. The District typically prefers to construct a new parallel sewer to allow keep all existing lines active without bypassing. The principal drawback to this method is cost.

E. Operational Modifications:

1. Pump Station Discharges: In cases where the pump station output is much higher than the PWWF and producing velocities much larger than what is needed to cleanse the force main, pumping rates could be decreased and cycle times increased in order to mitigate impacts to the downstream collection system.

2. Timed releases from Twain Harte WWTP: Under normal operation the releases start at around 8 pm and continue through part of the night. The intent is to release flows from Twain Harte after the evening peak flows have already reached the plant. In particularly heavy rainfall events, it could be possible to hold back flow at the Twain Harte Plant for 2-3 days.

F. Rerouting Sewers:

Rerouting sewers to take advantage of more slope or to eliminate inverted siphons should be considered to alleviate hydraulic capacity issues in some areas. The Twain Harte Interceptor currently has adequate capacity; however, it has several long sections of inverted siphon that the District would like to eliminate.

G. Constructing New Interceptors/Trunk Lines:

Unfortunately the District has allowed direct connections to several of its interceptors. These interceptors need to remain in their existing alignment in order to serve these direct connections; however, if capacity became and issue new trunk lines capturing the upstream flow and taking it around the connections could be an option. Additionally, in some locations a new interceptor could replace and consolidate the use of several older, undersized, interceptors and reduce District staff's maintenance workload. The area around the County Fairgrounds has the Columbia Interceptor, Greenley Basin Interceptor, Sonora Interceptor, and relief sewers all contained within a small area.

H. I & I Reduction

All the methods of replacement or rehabilitation described above reduce infiltration to the extent that the old pipe was taking on water at leaky joints or through cracks. However, the District believes that a large component of observed I & I originates on the private side of the sewer service lateral. The District is not responsible for the maintenance of the sewer service laterals and most property owners are not aware of the poor condition of their lateral until a sewer backup occurs. Many of the sewer backups are the result of root intrusion and these roots serve as points of entry for infiltration flows. This type of I & I is hard to detect because it does not come from one discrete point source, but from thousands of service laterals.

For this reason, the District is currently working on the establishment of a private sewer lateral ordinance that will require period inspection and correction of defective sewer laterals.

IX. Replacement Schedule

See Appendix 8-D for a replacement schedule resulting from the latest modeling and observations. Note that although certain pipeline segments may have reached their hydraulic capacity, the District may opt to employ one of the methods described above to enhance capacity before resorting to dig and replace.

APPENDIX 8-A
LIFT STATION ANALYSIS

	ADWF	PWWF		PWWF/ADWF	ESFR	GPD/ESFR		
	June 15 - Sept 15	March 4, 2009	Oct. 13, 2009			June 15 - Sept 15	March 4, 2009	Oct. 13, 2009
Lift Station	(gpm)	(gpm)	(gpm)			gpd/esfr	gpd/esfr	gpd/esfr
Gold Springs SPS	22.23	54.65	38.17	2.46	161	198	220	147
Mill Villa SPS	22.41	n/a	68.01	3.03	91	147	n/a	355
Saratoga SPS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Star MHP SPS	2.7	n/a	30.73	11.38	n/a	n/a	n/a	n/a
Columbia Village SPS	8.36	86.44	57.90	10.34	84	143	148	139
Fallon House SPS	0.3	n/a	12.07	40.24	n/a	n/a	n/a	n/a
Columbia Sky #1	9.01	n/a	62.23	6.90	98	132	n/a	n/a
Phoenix Lake SPS	3.86	93.32	187.32	48.47	57	164	296	266
Willow Springs SPS	68.56	202.71	204.93	2.99	450	219	468	314
Springfield SPS	0.42	18.21	18.64	44.28	12	51	507	88
Fairgrounds SPS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Country Estates SPS	3.51	n/a	45.97	13.09	36	170	n/a	221
Apple Valley SPS	7.07	48.43	11.57	6.85	104	105	332	130
Sonora Knolls SPS	0.65	n/a	12.47	19.10	11	86	n/a	117
Crossroads SPS	3.86	97.70	38.38	25.33	n/a	n/a	n/a	n/a
South Sonora SPS	1.76	34.83	33.08	19.79	34	74	96	104
Parrots Ferry SPS	40.76	290.23	203.73	7.12	n/a	n/a	n/a	n/a
Standard SPS	n/a	n/a	n/a	n/a	5	n/a	n/a	n/a

APPENDIX 8-A
LIFT STATION ANALYSIS

Lift Station	ADWF June 15 - Sept 15 (gpm)	PWWF March 4, 2009 (gpm)	PWWF Oct. 13, 2009 (gpm)	PWWF/ADWF	ESFR	GPD/ESFR June 15 - Sept 15 gpd/esfr	GPD/ESFR March 4, 2009 gpd/esfr	GPD/ESFR Oct. 13, 2009 gpd/esfr
SPI SPS	5.50	118.29	174.66	31.76	73	109	389	283
Columbia Sky #2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Mono Village SPS	5	n/a	30.50	6.10	n/a	n/a	n/a	n/a
Robinwood SPS	3.77	27.44	59.52	15.79	51	106	152	166

Assumptions:

1 Average ontime is Total Ontime/Times on.
2 Method of calculating total volume pumped per pump is unknown. We will assume that it is within 5%.
3 Approx average inflow rate is simply the total volume pumped divided by 1440 minutes divided by 2 because pumps alternate duty.
4 Average pump rate is total volume pumped divided by total time pump is on.
5 System does not account for varying pump discharges due to lowering levels and increasing heads in sump.
6 Cycle counts do not account for cycles in progress when midnight passes.
7 Could be anomolies in pump run times due to data transmission and digipeating?
8 Calculation of peak flow is made by assuming that it coincides with a time a pump is operating. It could occur on the fill cycle.

APPENDIX 8-B
PSOMAS MODEL
PIPELINE REPLACEMENT SCHEDULE
(NEXT 10 YEARS)

Manhole No.	Pipe Size		Northing	Easting
	From	To		
SONORA AREA				
271	10	12	539009.000	2032355.000
293	15	20	537176.000	2031796.000
294	10	14	537104.000	2031649.000
295	10	12	536968.000	2031355.000
298	15	16	536047.000	2031137.000
299	15	16	535851.000	2031286.000
302	8	10	535254.000	2031738.000
WILLOW SPRINGS AREA				
335	6	8	542973.000	2068287.000
326	6	8	544591.000	2067186.000
340	6	8	543743.000	2068382.000
421	10	12	545235.000	2067071.000
422	10	12	545274.000	2066875.000
423	10	12	545048.000	2066754.000
425	10	12	544868.000	2066661.000
449	10	15	543197.000	2064769.000
522	10	12	541312.000	2064209.000
602	12	15	539937.000	2060065.000
603	12	15	539800.000	2059886.000
606	12	15	539474.000	2059482.000
626	12	15	536470.000	2053873.000
627	12	16	536366.000	2053643.000
628	12	20	535976.000	2053671.000

APPENDIX 8-B
PSOMAS MODEL
PIPELINE REPLACEMENT SCHEDULE
(NEXT 10 YEARS)

Manhole No.	Pipe Size		Northing	Easting
	From	To		
COLUMBIA AREA				
51	6	8	560298.000	2027712.000
53	6	8	559806.000	2028212.000
62	6	8	558952.000	2028534.000
133	8	10	553994.000	2029589.000
150	8	10	550786.000	2031078.000
150A	8	10	550436.000	2031378.000
151	8	10	550175.000	2031521.000
152	8	10	549912.000	2031720.000
190	8	10	54929.000	2032564.000
192	10	12	548461.000	2032861.000
195	10	15	547289.000	2033518.000
197	10	12	547065.000	2033617.000
198	10	12	546830.000	2033714.000
202	10	12	545738.000	2033850.000
207	8	10	544044.000	2034151.000
209	8	12	543684.000	2034266.000
212	10	12	542835.000	2033719.000
252	8	10	541926.000	2032497.000
253	10	12	541727.000	2032350.000
265	12	14	538771.000	2032353.000
267	14	16	538409.000	2032329.000
269	14	16	538008.000	2032288.000
283	15	16	534755.000	2032245.000
498	8	10	541446.000	2038088.000
499	8	10	541388.000	2037696.000
499A	8	10	541390.000	2037657.000
500	8	10	541313.000	2037668.000
501	8	10	541169.000	2037625.000
502	8	10	541103.000	2037414.000
503	8	10	541154.000	2037343.000
504	8	10	541135.000	2037266.000
505	8	10	541177.000	2037171.000
506	8	10	541466.000	2037043.000
507	8	10	541480.000	2036868.000
539	10	15	540471.000	2034092.000
541	10	12	540364.000	2033834.000
548	8	12	539109.000	2032365.000
549	8	12	538963.000	2032342.000
550	8	12	538676.000	2032336.000

APPENDIX 8-C
SEWER PIPELINE INVENTORY

Size	Description	Lengths	%
S2	PVC	17,712	
S2	SCH40	403	
	Total S2	**18,115**	2.6%
S3	PVC	**12,200**	1.7%
S4		26,574	
S4	CI	8,272	
S4	CI-100	789	
S4	Orange	1,421	
S4	PVC	2,116	
S4	SCH40	379	
S4	SDR35	1,157	
S4	VC	12,992	
	Total S4	**53,700**	7.7%
S5	VC-Sonora	**38,345**	5.5%
S6		35,730	
S6	AC	21,938	
S6	C900CL150	251	
S6	CI	1,625	
S6	CI-100	1,005	
S6	DI	8,087	
S6	PVC	49,334	
S6	SDR35	196,984	
S6	VC	34,061	
	Total S6	**349,015**	49.7%
S8		7,819	
S8	AC	3,928	
S8	C900	105	
S8	CI	5,619	
S8	CL150	2,188	
S8	CL2400	17,921	
S8	CL3300	1,061	
S8	DI	200	
S8	PVC	8,609	
S8	SDR	44,691	
S8	TR	2,877	
S8	VC	3,134	
	Total S8	**98,152**	14.0%
S10		2,198	
S10	AC	8,411	
S10	CI	1,022	
S10	CL150	2,940	
S10	CL2400	14,192	
S10	DI	1,109	
S10	PVC	7,658	
S10	SDR35	11,142	
S10	VC	1,501	
S10	DI-CL4	1,498	
	Total S10	**51,671**	7.4%

Size	Description	Lengths	%
S12	AC	6,488	
S12	CL150	19,736	
S12	CL2400	6,145	
S12	PE-relief	2,707	
S12	SDR35	16,973	
S12	VC	1,090	
	Total S12	**53,139**	7.6%
S14	CL2400	1,947	
S14	DI	381	
S14	PVC	575	
	Total S14	**2,903**	0.4%
S15	VC	5,394	
S15	CL3300	425	
S15	SDR35	936	
S15	VC	4,023	
	Total S15	**10,778**	1.5%
S16	AC-CL150	736	
S16	CL3300	2,387	
S16	DI	60	
	Total S16	**3,183**	0.5%
S18	AC	3,810	
S18	DI	195	
	Total S18	**4,005**	0.6%

FORCE MAINS

FM2		**5,545**
FM3		**492**
FM4		19,373
FM4	PR160	1,048
	Total FM4	**20,421**
FM6		3,523
FM6	CL160	5,014
	Total FM6	**8,537**
FM8	CL150	**6,836**

MI-WUK Collection System

S4	PVC	**1,439**	0.2%
S6	PVC	**5,953**	0.8%

Mi-Wuk Force Mains

FM4		**1,413**
	Total Mi-Wuk	**8,805**

Reclamation System

Varies	Transite	**50,754**

Service Laterals

6,565 Svc Laterals x 25 ft/ea.		**164,125**

Total Gravity Pipelines	**702,598**	
Total Force Mains	**93,998**	
Total Sevice Laterals	**164,125**	
Total All Lines	**960,721**	ft
	181.95	miles

APPENDIX 8-D
PIPELINE REPLACEMENT SCHEDULE
(NEXT 0-5 YEARS)

Pipe Size		LF	Location
From	To		
EAST SONORA INTERCPTOR			
8	12	2430	Various locations - refer to model output.
8	12	650	Upstream of the Peppery and the RR trestle.
10	15	430	Refer to model output.
12	18	3100	Upstream from Campo Seco Road along RR Tracks
12	15	130	Refer to model output.
15	21	3260	Upstream from Intx. Hospital Rd. and Mono Way
16	21	730	Along Sanguinetti Loop Rd and RR Tracks.
16	21	515	Refer to model output.
18	21	3150	Upstream from Intx. Sanguinetti Road and Wards Ferry along RR Tracks.
COLUMBIA INTERCPTOR			
10	15	350	Upstream of 20526 Columbia Way.
WILLOW SPRINGS/RANCHOS POQUITOS INTERCPTOR			
8	12	375	Upstream of Intx. Hess Ave. and RR Tracks.
8	12	1800	Downstream of Intx. Hess Ave. and RR Tracks.
10	15	650	Downsteam of Willow Springs SPS FM discharge point.

CHAPTER 9
MEASUREMENT, MONITORING, AND PROGRAM MODIFICATION

I. Introduction and Purpose

This section of the District's Sanitary Sewer Management Plan is designed to ensure that appropriate data is being collected and in a readily accessible form, so that SSMP program audits may be conducted. Program audits will measure the effectiveness of the SSMP program components and allow for periodic updates to the program. The data collected will also serve as a useful tool in setting staff priorities.

II. Self Assessment

	Yes	No	N/A
1. Does your agency have a formalized tracking system for collection system operational and performance related parameters or benchmarks?	X		
2. Is the tracking system electronically (computer) based?	X		
3. Does your agency have a CMMS?		X	
4. Are new programs developed with clear goals, measures, and anticipated outcomes that can be measured and compared?	X		
5. Does your agency have a system administrator, an individual that is tasked with ensuring the tracking system is up to date and complete?	X		
6. Are there QA/QC procedures to ensure that information is as accurate as possible?		X	
7. Are all individuals that work within the tracking system trained on how to use the system properly?	X		
8. Are reports generated on a regular basis from the tracking system? If so, what reports and how are they used? See Section 9.3.1 below.	X		
9. Are policy and fiscal decisions based upon information and data contained within these reports?	X		
10. Is the tracking system set up in such a manner that people are required to work within the tracking system platform?		X	
11. Is the tracking system integrated with a mapping system?		X	
12. Is the tracking system linked to a document management system?		X	
13. Does your agency track all SSOs?	X		
14. Does your agency track SSO causes?	X		
15. Does your agency track blockage?	X		
16. Does your agency track the location of blockages?	X		
17. Does your agency track work orders?	X		
18. Does your agency track response times?		X	
19. Does your agency track maintenance schedules?	X		

	YES	NO	N/A
20. Are preventative maintenance schedules reviewed and revised on a regular basis?	X		
21. Does your agency track hotspots?	X		
22. Does your agency track cleaning schedules for prioritizing lines?	X		
23. Does your agency know where all commercial establishments that generate FOG are located?	X		
24. Does your agency track the blockages that are likely caused by particular establishments?	X		
25. Does your agency know if these establishments have BMPs or FOG removal devices to ensure? The District is in the process of tracking this.	X		
26. Does your agency track enforcement actions?	X		
27. Does your agency track root blockages?	X		
28. Does your agency have a threshold for blockages versus pipe replacement?		X	
29. Does your agency track line cleaning quality with followup CCTV?	X		
30. Does your agency track lines that have been CCTVed?	X		
31. Does your agency track pipeline condition and have standards for condition assessment? The City and District are in the process of implementing a NASSCO program.		X	
32. Are operators trained on the inspection rating standards?		X	
33. Do you perform your own CCTV inspections or contract them out? The District owns and operates its own CCTV equipment.	X		
34. Do you perform manhole inspections?	X		
35. Where is the pipe and manhole condition data stored? Currently in a file cabinet dedicated to collection system inspections.			X
36. How are the images stored? Currently in a file cabinet dedicated to collection system inspections.			X
37. Does your agency track vehicle maintenance?	X		
38. Are pump station preventative maintenance activities scheduled through the tracking system? The District currently monitors this through daily visual inspections.	X		
39. Do you perform failure analysis?	X		
40. Does your agency track worker's time for completing work?		X	
41. Does your agency track material costs for completing work? The District tracks material costs for specific projects. Routine O&M material costs are lumped together by collection system.	X		
42. Does your agency track equipment use for completing work?		X	

III. Recent Trends

Category

Backup	42	78	94
Leak	54	44	54
Maintenance	0	0	1
Odor	12	24	11
Other	20	9	7
Overflow	0	1	1
Plug	16	8	14
Pump Sump	6	9	1
Sewer Popper Inspection	0	12	7

Recent trend information is compiled from action requests originating from customers and staff for particular problems in the collection system. Prior to completion of the SSMP, action requests were categorized as described above. This categorization was very general and did not address the causes of backups and did not explain the difference between a backup and a plug. Consequently, staff have been directed to complete a detailed inspection report in connection with all action requests. A sample of the inspection report form in included in Appendix 4-B and 4-C. The report is designed to identify the problem and evaluate the condition on a numeric scale. These inspection reports are filed at the District office. If a project is developed as a result of the inspection report, that information is used to generate cost estimates that can be used to formulate the following year's budget.

The District has seen a marked increase in the number of backups since 2006. One factor contributing to the increase is the lack of rainfall. Although rainfall can be problematic, a good rainfall year helps keep the collection system flushed. Many of the District's older collection pipelines are 4-inch and 5-inch clay on very few connections. Consequently, a 2 fps cleansing velocity is not always maintained. The District does not always have access for flushing some of these lines. Accumulated solids deposition, especially after successive years of below average rainfall, can contribute to many backups.

IV. Sanitary Sewer Overflows (SSOs)

A. Baseline Data

Figure 9-1 provides a tabulation of Sanitary Sewer Overflows broken out by cause. A total of 26 SSOs were reported in 2008. In over three-quarters (75%) of the 2008 SSOs, roots were either the primary or secondary cause of the event. Grease was the second most common cause; however, the presence of grease is typically exacerbated by the presence of roots.

FIGURE 9-1
SSO CAUSES

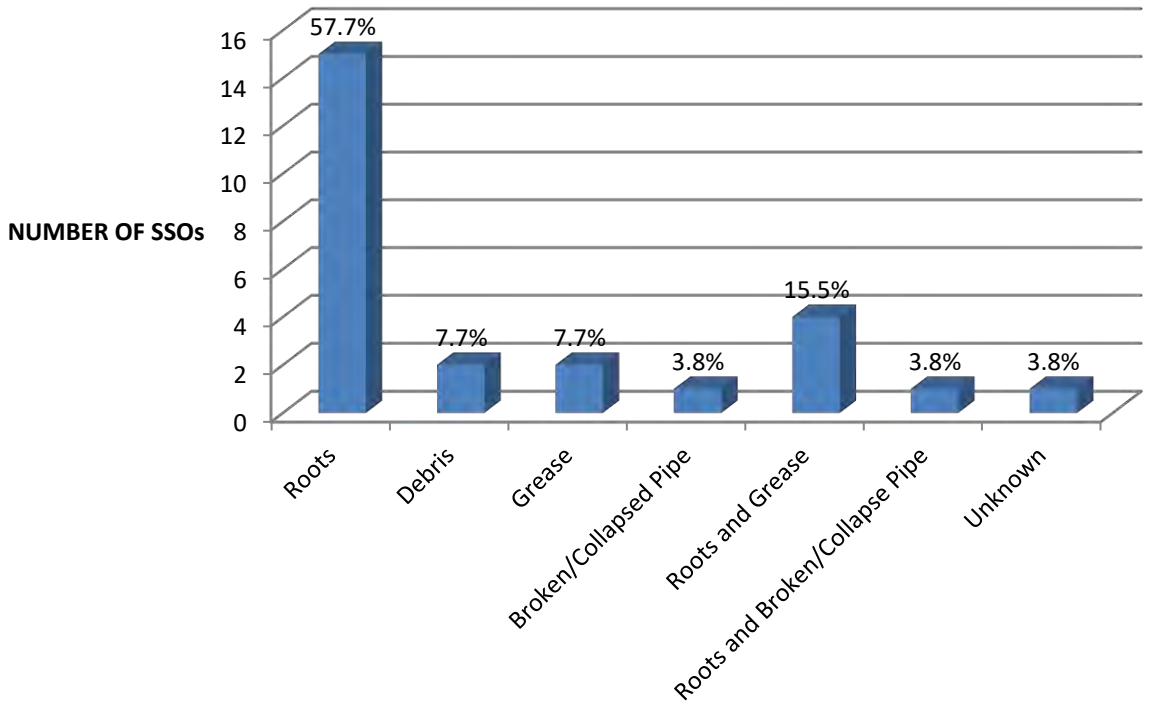
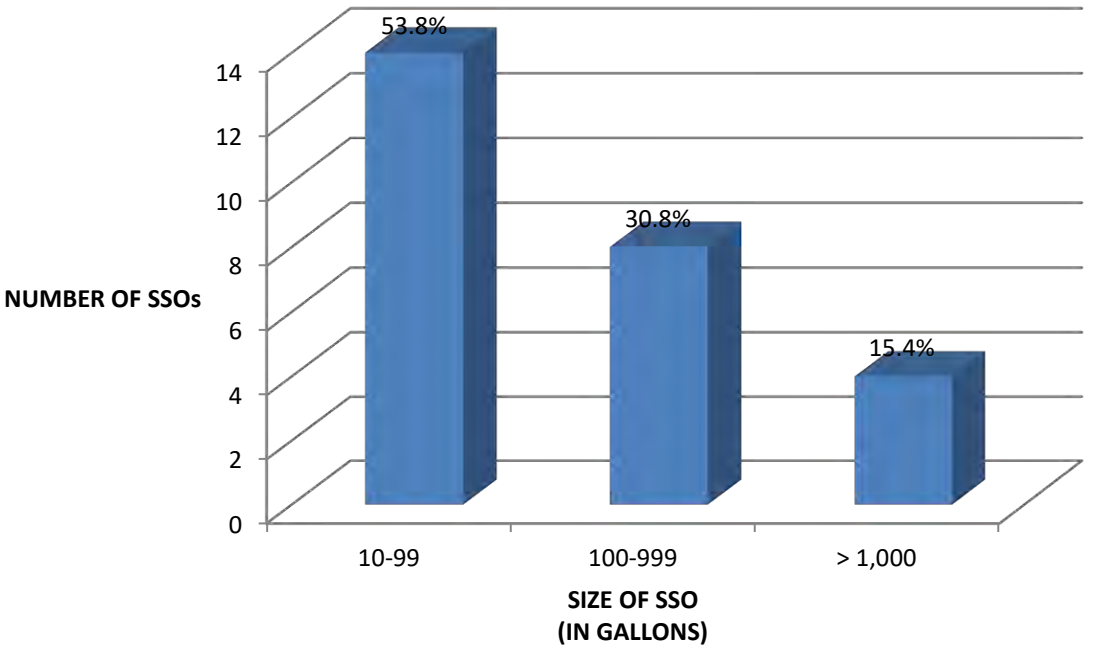


Figure 9-2 provides a breakdown of the size of SSOs experienced in 2008. In some cases, the larger SSOs were not a function of flow rates in the pipe, but more a function of the time elapsing between when the overflow began and when District staff became aware of the problem. Although, the District does not keep records of response times. The District has on-call staff available 24 hrs/ 7 days a week. The vacon and flush trucks are stored with their fuel tanks full and all vehicles have spill kits.

One observation on the SSO data is that the frequency of SSOs occurring during the winter months is not markedly different than the frequency in summer. The overflows during the rainy season are on average larger than in the summer. However, the effect of rainfall dependent I&I provides some flushing of the system could be one explanation that summer events are as frequent as winter events. The other explanation could be that the growth phase of tree roots occurs in the spring and then those impacts are experienced in the summer.

FIGURE 9-2
SSO VOLUMES



V. SSMP Updates and Modifications

The District's Engineering Department is responsible for the maintenance of the SSMP document. Order 2006-003-DWQ requires that the SSMP be updated every five years. The District will update the document as changes are made to policy and field practice.

Additionally, future trends in SSOs will be compared against the 2008 base year to measure success and effectiveness of the SSMP program.

APPENDIX 9-A
SSMP PROGRAM UPDATE CHECKLIST

	SSMP CURRENT?	
Element	**Yes**	**No**
Element #1: Goals		
Are the goals stated in the SSMP still appropriate and accurate?		
Element #2: Organization		
Organizational Chart		
Telephone/E-mail Contact List		
Element #3: Legal Authority		
Reference current edition of Wastewater Ordinance		
Changes/updates to Private Sewer Lateral Inspection Program		
Element #4: Operation & Maintenance Program		
Is system mapping up-to-date?		
Is the Project List up-to-date?		
Has any new equipment been purchased?		
Are flushing schedules up-to-date?		
Are root treatment schedules up-to-date?		
Are easement locations up-to-date?		
Are ARV and inverted siphon locations up-to-date?		

	SSMP CURRENT?	
Element	**Yes**	**No**
Is filing of work orders, inspection reports, and video surveys current?		
Is the critical spare parts inventory list current and are those items in-stock?		
Is the training section of the SSMP current?		
Element #5: Overflow Emergency Response Plan		
Procedure for the notification of primary responders current?		
Procedures for the notification of regulatory agencies current?		
Program to ensure appropriate response to all SSOs current?		
Procedure to ensure proper reporting of all SSOs current?		
Procedures to investigate the cause of all SSOs current?		
Element #6: FOG Control Program		
Database of establishments producing FOG current?		
List or map of “hot spots” current?		
Cleaning schedules current?		
Filing of inspection reports current?		
Specifications and details current?		
Element #7: Design and Performance Provisions		
Design and construction standards current?		
Specifications and details current?		

	SSMP CURRENT?	
Element	**Yes**	**No**
Element #8: System Evaluation and Capacity Assurance Plan		
Is the hydraulic model up-to-date with newly constructed facilities?		
Are growth rates and demand factors current?		
Is information on pump setpoints for SCADA calculation of flow rates at lift stations current?		
Element #9: Monitoring, Measurement, and Program Modifications		
Is annual data on SSOs caused by roots, grease, hydraulic limitation, debris, etc. up-to-date?		
Element #10: SSMP Program Audits		
Has the audit been completed and on file from last year?		
Element #11: Communication Program		
Is description of public outreach activities current and accurate?		

CHAPTER 10
PROGRAM AUDITS

I. Introduction and Purpose

Internal audits of the SSMP program are to occur, at a minimum, every two years. The audit shall evaluate the effectiveness of the SSMP and District compliance with the SSMP requirements. Deficiencies, if they exist, shall be identified and steps described to correct them.

II. Self Assessment

	Yes	No	N/A
Document Control			
1. Does your agency have document control procedures to ensure current and historical documentation recovery?	X		
2. a. Are all documents located in a single place electronically?		X	
b. Are all documents located in a single place as a hard copy?		X	
Data Management			
3. Does your agency have performance reports and progress tracking systems that are reviewed by appropriate management on a regular basis?	X		
4. Are the data easily transferable or compared to historical data in order to relate.	X		
5. Can performance data be benchmarked to other similar agencies for comparison?		X	
Documented Procedures			
6. Is there an established or set time period for conducting audits?	X		
7. Is the organization's top management involved with the analysis of performance data and program audits?	X		
Outcomes			
8. Does the organization act appropriately to nonconformance and consider magnitude of problems and commensurate with environmental impact and industry standards?	X		
9. Are outcomes or recommendations from performance data review and audits finding documented?	X		

10. Are audit findings ultimately considered in the budgetary process for both CIP and Program resources?	X		

III. Regulatory Requirements for SSMP Program Audits

Program audits will be conducted on an annual basis. The audit will be completed by Engineering Staff in consultation with the Operations Manager and the Wastewater Superintendant. The scope of the audit will cover each of the major sections of the SSMP including:

- Identifying any significant changes to elements or components of the SSMP;
- Identifying any significant changes to referenced compliance and supporting documents;
- Evaluating the effectiveness of the SSMP;
- Describing any deficiencies in the SSMP and formulating steps to correct those deficiencies;
- Identifying system improvements made during the past audit cycle; and
- Identifying system improvements planned for the upcoming audit cycle.

An audit checklist is included as Appendix 10-A.

APPENDIX 10
SSMP PROGRAM AUDIT

Element	SSMP Current?	Implemented?	If no, steps needed to fulfill requirement
Element #1: Goals (n/a)			
Element #2: Organization			
Designate legally responsible official			
Names and phone numbers for key management personnel			
Name and phone numbers for key administrative personnel			
Chain of communication for reporting SSOs			
Element #3: Legal Authority			
Prevent illicit discharges into sanitary sewer system			
Require that sewers ad connections be properly designed and constructed			
Ensure access for maintenance, inspection, and repairs			
Limit discharge of FOG and debris that may cause blockages			
Require installation of grease removal devices			
Ability to inspect FOG producing facilities			
Enforce violations of Wastewater Ordinance			
Element #4: Operation & Maintenance Program			
Maintain up-to-date maps of sanitary sewer system (electronic and hard-copy)			

Element	SSMP Current?	Implemented?	If no, steps needed to fulfill requirement
Describe routine preventive maintenance program			
Document completed preventive maintenance using system such as work orders			
Rehabilitation and replacement plan that identifies and prioritizes sanitary sewer defects			
Filing system for video inspections			
Maintain critical spare parts inventory			
Element #5: Overflow Emergency Response Plan			
Procedure for the notification of primary responders			
Procedures for the notification of regulatory agencies			
Program to ensure appropriate response to all SSOs			
Procedure to ensure proper reporting of all SSOs			
Procedures to investigate the cause of all SSOs			
Element #6: FOG Control Program			
Public outreach program that promotes the proper disposal of FOG			
Plan for the disposal of FOG generated in the service area			
Demonstrate that the District has allocated adequate resources for FOG control			
Database of establishments producing FOG			
Database identifying locations that have FOG related issues			

Element	SSMP Current?	Implemented?	If no, steps needed to fulfill requirement
Element #7: Design and Performance Provisions			
Design and construction standards for new facilities			
Design and construction standards for repair and rehabilitation of existing facilities			
Procedures for the inspection and acceptance of repaired and rehabilitated and new facilities			
Element #8: System Evaluation and Capacity Assurance Plan			
Identification of elements of the system that experience or contribute to SSOs caused by hydraulic deficiencies			
Establish design criteria that provide adequate capacity			
Short-term project list that addresses known hydraulic deficiencies			
Long-term project list that addresses known hydraulic deficiencies			
Updated information on pump setpoints for SCADA calculation of flow rates at lift stations			
Element #9: Monitoring, Measurement, and Program Modifications			
Maintain relevant information to establish, evaluate, and prioritize SSMP activities			
Monitor implementation of SSMP			
Measure, where appropriate, performance of SSMP elements			
Identify and illustrate SSO trends			

Element	SSMP Current?	Implemented?	If no, steps needed to fulfill requirement
Element #10: SSMP Program Audits			
Record results of each audit in a report kept on file			
Element #11: Communication Program			
Communicate with the public regarding the performance of the SSMP			
Communicate with tributary or satellite sewer systems			

CHAPTER 11
COMMUNICATION PROGRAM

I. Introduction and Purpose

The WDR states that the District 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 District as the program is developed and implemented.

II. Methods of Communication

A. District Website

The SSMP will be placed on the website with specific links to each section. The sections most often requested are the FOG Control Program and the Design and Performance Standards.

Additionally, any public meetings are noticed on the website. Meeting agendas and minutes are also available for download. The District boardroom is equipped with the Granicus system which allows the general public to access an archive of public meetings along with the associated agendas, minutes, and resolutions.

The website is also utilized for press releases. On common press release involves reminding District customers, prior to Thanksgiving each year, that fats, oils, and grease should not be disposed of in the sewer system and that a free collection receptacle is located at that Cal Sierra Transfer Facility in East Sonora.

B. Public Information Officer

The District's Public Information Officer is responsible for bill stuffers, press releases, and answering questions directly from the media and the public.

The Public Information Officer maintains regular communication with the Union Democrat newspaper, MyMotherLode.com local news website, and KVML news radio.

C. Regional Sewer Advisory Committee

The committee is composed of the Tuolumne Utilities District, Jamestown Sanitary District, Tuolumne Sanitary District, and Twain Harte Community Services District. The committee meets quarterly.

D. Other Methods of Communication

1. Electronic Message Boards

   The District owns two Caltrans approved electronic message boards that can be programmed with specific text messages. These boards can be placed at high traffic areas of the community to disseminate information regarding upcoming flushing activities, FOG control, water conservation, etc.

2. Newspaper Advertisements

   When necessary, the District can place advertisements or public service announcements in the Union Democrat Newspaper.

3. Brochures

   The District does receive walk-in traffic. Brochures and other information are distributed to customers as they pay bills, apply for new service, or conduct any other District business.