

San Antonio Water System Standard Specifications for Construction

ITEM NO. 868
SEWER MAIN CLEANING

868.1 **SCOPE:**

The Contractor shall furnish all labor, equipment, appliances, and materials necessary for cleaning the sewer system including the removal of all debris, solids, sand, grease, grit, etc. from the sewer and manholes to facilitate television inspection.

868.2 **DESCRIPTION:**

The Contractor shall be required to have all materials, equipment, and labor necessary to complete the cleaning of the sanitary sewer main and manholes on the jobsite prior to isolating the sewer manhole or line segment and beginning the cleaning process.

The Contractor shall only use the type of cleaning material which will not create hazards to health or property or affect treatment plant processes.

The sanitary sewer lines and structures shall be cleaned using mechanical, hydraulically-propelled, and/or high velocity sewer cleaning equipment. The cleaning process shall remove all grease, sand, silts, solids, rags, debris, etc. from each sewer segment, including the manhole(s). Selection of cleaning equipment and the method for cleaning shall be based on the condition of the sanitary sewer mains at the time work commences and will be subject to SAWS approval. All cleaning equipment and devices shall be operated by experienced personnel. Satisfactory precautions shall be taken to protect the sanitary sewer mains and manholes from damage that might be inflicted by the improper use of the cleaning process or equipment. Any damages done to a sewer main and/or structure by the Contractor shall be repaired by the Contractor at no additional cost and to the satisfaction of SAWS. Cleaning shall also include the manhole wall washing by high pressure water jet.

1. **Hydraulic Cleaning:**

Hydraulic-propelled devices which require a head of water to operate must utilize a collapsible dam. The dam must be easily collapsible to prevent damage to the sewer main, property, etc. When using hydraulically-propelled devices, precautions shall be taken to insure that the water pressure created does not cause damage or flood public or private

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property. The Contractor shall not increase the hydraulic gradient of the sanitary sewers beyond the elevation that could cause overflow of sewage into area waterways or laterals. The flow of wastewater present in the sanitary sewer main shall be utilized to provide necessary fluid for hydraulic cleaning devices whenever possible.

2. High Velocity Cleaning:

Cleaning equipment that uses a high velocity water jet for removing debris shall be capable of producing a minimum volume of 50 gpm, with a pressure of 1,500 psi, for the sanitary sewer line and 3,500 psi for the (manhole) structure at the pump. Any variations to this pumping rate must be approved, in advance, by SAWS. To prevent damage to older sewer mains and property, a pressure less than 1500 psi can be used. A working pressure gauge shall be used on the discharge of all high pressure water pumps. The Contractor shall use, in addition to conventional nozzles, a nozzle which directs the cleaning force to the bottom of the pipe for sewers 18" and larger in diameter. The Contractor shall operate the equipment so that the pressurized nozzle continues to move at all times. The pressurized nozzle shall be turned off or reduced anytime the hose is on hold or delayed in order to prevent damage to the line.

3. Mechanical Cleaning:

Mechanical cleaning, in addition to normal cleaning when required, shall be with approved equipment and accessories driven by power winching devices. The Contractor shall submit the equipment manufacturer's operational manual and guidelines to the Engineer, which shall be followed strictly unless modified by the Engineer. All equipment and devices shall be operated by experienced operators so that they do not damage the pipe in the process of cleaning. Buckets, scrapers, scooters, porcupines, kites, heavy duty brushes, and other debris-removing equipment/accessories shall be used as appropriate and necessary in the field, in conjunction with the approved power machines. The use of cleaning devices such as rods, metal pigs, porcupines, root saws, snakes, scooters, sewer balls, kites, and other approved equipment, in conjunction with hand winching device, and/or gas, electric rod propelled devices, shall be considered normal cleaning equipment.

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868.3

GENERAL REQUIREMENTS:

In addition to the requirements herein, the Contractor shall maintain a clean work and surrounding premises within the work limits so as to comply with Federal, State, and local environmental and anti-pollution laws, ordinances, codes, and regulations when cleaning and disposing of waste materials, debris, and rubbish. The contractor shall also keep the work and surrounding premises within work limits free of accumulations of dirt, dust, waste materials, debris, and rubbish. Suitable containers for storage of waste materials, debris, and rubbish shall be provided until time of disposal. It is the sole responsibility of the Contractor to secure a licensed legal dump site for the disposal of this material. Under no circumstances shall sewage or solids removed from the main or manhole be dumped onto streets or into ditches, catch basins, storm drains, or sanitary sewers. Cost for this item shall be included in the price bid for sanitary sewer manhole and mainline cleaning.

The Contractor may be required to demonstrate the performance capabilities of the cleaning equipment proposed for use on the project. If the results obtained by the proposed sanitary sewer cleaning equipment are not satisfactory, the Contractor shall use different equipment and/or attachments, as required, to meet specifications. More than one type of equipment/attachments may be required at a location. When hydraulic or high velocity cleaning equipment is used, a suitable sand trap, weir, dam, or suction shall be constructed in the downstream manhole in such a manner that all the solids and debris are trapped for removal.

Whenever hydraulically-propelled cleaning tools which depend upon water pressure to provide their cleaning force, or any tool which retard the flow of water in the sanitary sewer lines are used, precautions shall be taken to insure that the water pressure created does not cause any damage or flooding to public or private property being served by the manhole section involved. Any damage of property, as a result of flooding, shall be the liability and responsibility of the Contractor. The flow of wastewater present in the sanitary sewer main shall be utilized to provide necessary fluid for hydraulic cleaning devices whenever possible. When additional quantities of water from fire hydrants are necessary to avoid delay in normal working procedures, the water shall be conserved and not used unnecessarily. No fire hydrant shall be obstructed or used when there is a fire in the area. The Contractor shall be responsible for obtaining the water meter and all related charges for the set-up, including the water usage bills from respective water purveyor agency. All expenses shall be considered incidental to the cleaning of the existing sanitary sewer mains.

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868.4 MEASUREMENT AND PAYMENT:

The Contractor shall be fully responsible and shall be paid for sewer system cleaning as part of "Sewer Main Television Inspection", Item No. 866, for furnishing all labor, hauling, materials, equipment, tools, debris disposal, inspection, and incidentals necessary to complete the work.