

# MARICOPA COUNTY HEALTH CODE

## CHAPTER II

### SEWAGE AND WASTES

#### SECTION 2

#### SEWERAGE AND WASTE TREATMENT WORKS

##### REGULATION 1. Approval to Construct

- a. No person shall begin construction of any sewage system, including septic tank systems, treatment works, reclamation systems, or extensions of works or systems, or make any change which affects capacity, quality, flow, location or operational performance of a system, and no person shall install any process, device or equipment, either in whole or in part, prior to receiving an "Approval to Construct" from the Department. Application for an "Approval to Construct" shall be submitted to the Department at least 30 days prior to the date upon which Department approval is desired. For septic tank systems, the application shall be submitted at least five working days prior to the date upon which Department approval is desired.
- b. All applicable fees must accompany the application.
- c. All applications except those for septic tank systems shall be accompanied by the following plan documents in duplicate:
  - (1) Prints or drawings of the work to be done. Sufficient detail shall be shown on the drawings to make clear to the Department the scope of the work.
  - (2) Complete specifications to supplement the drawings.
  - (3) Additional data as may be required by the Department.
- d. The plan documents shall be accompanied by an engineering report, prepared by the design or consulting engineer which presents a description of the project together with all pertinent data upon which the design is based and other information necessary to permit a clear and full understanding of the work proposed to be undertaken.
- e. All plan documents submitted to the Department, except septic systems less than 2,000 gallons per day, must have been prepared by, or under the supervision of a currently registered Arizona professional engineer. The engineer shall affix his signature and Arizona seal of registration to all plans submitted for approval and shall certify in writing that the plan documents comply with these regulations and in principle with the criteria contained in the Engineering Bulletins. A non-registrant may design a wastewater treatment plant, or extensions, additions, modifications or revisions, or extensions to collection systems, if the total cost value of such construction does not exceed twelve thousand five hundred dollars, as cost estimate for material and labor shall be submitted with plan documents.

- f. Plans and specifications submitted to the Department will be reviewed and, if found satisfactory, the Department will issue an "Approval to Construct". If construction has not substantially started within one year after the date of issuance of the "Approval to Construct", or if there is a halt in construction of more than one year, or if construction is not completed within three years after the date of issuance, the "Approval to Construct" will be void, unless an extension of time has been granted in writing by the Department.
- g. All work shall conform to the approved plans and specifications. Should it be necessary or desirable to make any change in the design which will affect capacity or sanitary features of the proposed work, revised plans and specifications, together with a written statement of the reasons for such change, shall be submitted to the Department for review, and approval shall be obtained in writing before the work affected by the change is undertaken. Structural changes, maintenance repairs, or minor revisions not affecting capacity, quality, flow, location, or operation will be permitted during construction without further approval. A set of "as-built" drawings showing all changes made during construction shall be filed with the Department upon completion of the project.
- h. A sewage system owner shall notify the Department of the date when construction will begin on the sewage system, or of any change made which will affect capacity, quality, flow or operational performance of a sewage system, authorized by an "Approval to Construct", and of the date when installation of any process, device, or equipment authorized by an "Approval to Construct" will begin. Notification of completion of construction shall be given to the Department at least ten working days prior to the expected completion date to permit the scheduling of a final inspection. For a septic tank system, the notification shall be given at least five working days prior to the expected completion date.
- i. The Department shall not issue approval for any sewerage system or waste and/or sewage treatment works which is not in conformance with the certified water quality management plan and facility plan that prescribes a particular sewerage system and waste and/or sewage treatment work configuration for sewage management by a designated management agency within a service area. If no facility plan is applicable, the certified water quality management plan shall be utilized by the Department to determine conformance.
- j. The Department may issue an approval for a sewerage system or waste and/or sewage treatment works which is consistent with general plans prepared for an area when no sewerage system and waste and/or sewage treatment works configuration is prescribed in the certified water quality management plan. The Department shall confer with both the designated water quality planning agency for the area and the responsible and impacted governmental units to determine consistency with the general plans.

## **REGULATION 2. Final Approval of Construction**

- a. The following requirements must be satisfactorily met before an approval of construction will be issued by the Department on a newly constructed, altered, or expanded sewerage system or waste and/or sewage treatment works including wastewater reclamation systems, but excluding septic tank systems.

- (1) A final inspection has been completed:
    - (a) By the Department; or
    - (b) With the approval of the Department, by a Registered Engineer.
  - (2) An Operator, certified by the State of Arizona pursuant to rule R18-5-105 is employed to operate the system pursuant to the General Requirements in R18-5-104.
  - (3) An Operation and Maintenance manual is submitted to and approved by the Department for new sewage treatment systems or substantial modifications thereto.
  - (4) Construction conforms to plans and specifications approved by the Department.
- b. Approval of septic tank systems is regulated under Section 8 of this Chapter.

**REGULATION 3. General Considerations**

- a. All sewerage and disposal systems and waste treatment works shall conform to the applicable general provisions relating to sewerage and waste disposal, listed in Section 1 of this Chapter, and to the specific provisions of this section.
- b. Design, operation and maintenance of sewerage systems shall be in general conformance with criteria contained in Engineering Bulletin No. 11.
- c. Preliminary plans. Design or consulting engineers should confer with the Department before proceeding with detailed designs of major waste treatment works. It is advisable to submit, for preliminary consideration, tentative plans containing a general description of the existing or proposed plant, works, or systems, or proposed changes therein.
- d. Tests and records. The owner or operator of each waste treatment works shall have equipment for and make such tests and keep such records as are necessary to assure efficient operation of the treatment works. Records of plant operation shall be transmitted to the Department monthly on forms approved by the Department and as it may specify.
- e. Operation. All sewage and industrial waste treatment works shall be operated at their highest practical efficiency at all times. If, after investigation by the Department it is determined that any treatment or disposal works is causing unsatisfactory conditions in the waters or stream course or on or under any land into which the effluent is discharged, or is otherwise interfering with the legitimate uses of such waters or lands  
  
or is creating a nuisance or a menace to public health, the owner shall make such changes in the plant or its operation as are necessary to produce satisfactory results. These changes shall be made within such time limits as are set by the Department.
- f. Inspection. Inspections of sewage and industrial waste treatment works and wastewater reclamation systems shall be made by personnel of the Department. Appropriate person or

persons shall be notified of any unsatisfactory conditions with recommendations for corrections.

- g. Approval required. No sewage or industrial waste treatment effluents shall be reclaimed without written approval from the Department. The reclamation of sewage or industrial waste treatment effluents for irrigation of crops used for human consumption, watering of cattle, full body contact, or drinking purposes is prohibited. A.A.C. Title 18, Chapter, 11, Sections 301 through 309 govern reuse of waste treatment effluent.
- h. Bypassing of untreated sewage from sewage treatment systems is prohibited.

#### **REGULATION 4. Separation of Water, Reclaimed Wastewater, and Sewer Lines**

- a. In order to protect potable water systems from possible contamination, a sewer or reclaimed wastewater line shall not:
  - (1) Be installed within six feet of either side of a water line and shall not be above, at the same level as, or less than two feet below the bottom of the water line, unless extra protection is provided. Extra protection shall consist of constructing the sewer line with mechanical joint ductile iron pipe or with slip-joint ductile iron pipe if joint restraint is provided or shall consist of encasing both the water and sewer lines in at least six inches of concrete.
  - (2) Under any circumstances, infringe upon an area which is within two feet of either side of or two feet above the water line.
- b. When unusual conditions such as, but not limited to, highway or bridge crossings prevent the water and sewer line separations required by subsection a. above from being met, the Department will review and may approve, requests for authorization to use alternate construction techniques, materials and joints on a case-by-case basis.
- c. No water line shall pass through, or come into contact with any part of a sewer manhole. The minimum horizontal separation between water lines and sewer manholes shall be six feet, measured from the center of the manhole.
- d. The minimum separation between force mains or pressure sewers and water lines shall be two feet vertically and six feet horizontally under all conditions. Where a sewer force main crosses above, or less than six feet below, a water line, the sewer line shall be encased in at least six inches of concrete for 10 feet on either side of the water line.
- e. Sewer lines (gravity, pressure, force) shall be kept a minimum of 50 feet from drinking water wells, unless the following conditions are met:
  - (1) Gravity sewers, pressure tested in place to 50 psi without excessive leakage, may be used at distances greater than 20 feet from drinking water wells.
  - (2) Sewage force mains and pressure sewers, pressure tested in place to 150 psi without excessive leakage, may be used at distances greater than 20 feet from drinking water wells.

- f. No septic tank/disposal field system shall be constructed within 100 feet of a drinking water well.
- g. All distances are measured horizontally from the outside of the pipelines.
- h. Pipelines conveying a higher quality of water shall be located above pipelines conveying a lower quality of water. That is, potable water lines shall be installed above non-potable sewer lines, which shall be installed above reclaimed wastewater lines and reclaimed wastewater lines shall be installed above sewer lines. The decreasing quality order of pipeline is: potable water lines, non-potable water lines, reclaimed water lines, and sewer lines.
- i. For the purpose of establishing separation when reclaimed wastewater lines are installed adjacent to potable water lines, the reclaimed wastewater system shall be considered a sewer.
- j. For the purpose of establishing separation when reclaimed wastewater lines are installed adjacent to sewer lines, the reclaimed wastewater system shall be considered potable water.
- k. Horizontal and vertical separations between potable water, non-potable water, reclaimed wastewater lines and sewer shall be in strict accordance with Engineering Bulletin No. 10 and this regulation.
- l. These separation requirements do not apply to building plumbing or individual house service connections. These shall conform to the current Uniform Plumbing Code and/or Maricopa Association of Governments (MAG) Standards.

**REGULATION 5. Minimum Requirements For Sewage Systems**

- a. Sewage Systems serving condominiums, mobile home parks, travel trailer parks, shopping centers and recreational vehicle parks may be designed using the requirements of the current Uniform Plumbing Code - excluding the water and sewer main separation requirements. Water and sewer main separations shall conform to this Code.
- b. For systems that treat, or which are designed to treat greater than 10,000 gallons/day, a standby power source shall be provided at all sewage treatment systems and/or pump stations where a temporary power failure may allow a discharge of raw or partially treated sewage. Standby power may be via a standby generator, separate feeders from separate substations, a loop feeder on separate transformers from a common substation, or a high-level alarm with portable generators. Standby power also shall be provided to any sewage treatment systems and/or pump stations, regardless of size, if a temporary power failure may allow a discharge into surface waters classified as "Unique Waters", by the Arizona Department of Environmental Quality.

- c. The structures and electrical and mechanical equipment of sewage treatment systems and pump stations shall be protected from physical damage from a 100-year flood, if the plans for such were submitted for approval after the effective date of this Regulation. Flood protection shall be designed such that treatment works and pump stations will remain fully operational during a 25-year flood. Walls or berms of adequate size may be constructed where necessary to provide protection. Flood protection approval must be obtained from the appropriate Flood Control District before an approval to construct will be issued.
  
- d. All treatment works with greater than 100,000 gallons/day capacity shall be provided with the necessary equipment to indicate record and totalize the volume of wastewater being treated. Treatment plants with less than 100,000 gallons/day capacity are required to indicate flow.