

Pima County Department of Environmental Quality

Private Sewer Collection System Plan Review Checklist

Requirements for a 4.01 General Permit, Sewage Collection System, are found in the Arizona Administrative Code, Title 18, Chapter 9, Section E301

The most common plan submission errors are in Red

Application

_____ [Notice of Intent to Discharge](#) (NOID) application. R18-9-A301.B

- **Owner's information is complete**
- Engineer's information is complete
- Certification of Compliance has owner's name printed and has owner's signature and date
- **NOID is filled out completely**
- All NOID requirements specified in R18-9-A301.B are met
- The lot numbers requested in the NOID are shown on the plans and included in the Title of the plans

Wastewater Treatment Facility Capacity Letter

_____ A Capacity Letter or a Statement from the Wastewater Treatment Facility (WWTF) that assures there is capacity for this project in the downstream sewer collection system and that treatment facility flows and effluent quality limits will not be exceeded (R18-9-E301.C.1)

- **Capacity letter from the WWTF is current**
- If project delivers wastewater to Private downstream collection system prior to being delivered to Public sewer collection system, a capacity letter must be submitted from the owner of the downstream Private system stating that performance will be maintained pursuant to R18-9-E301.B in addition to the capacity letter required from the public WWTF

_____ Wastewater Management Acceptance Letter

- Per a letter dated, March 13, 2006, from Pima County Wastewater Management, any proposal to use private sewers must receive prior approval in writing from the Pima County Wastewater Management Department Director. Written approval from Pima County's WWM director for this project is provided or documentation that a single company or individual will be responsible for the operation and maintenance of the sewers within this project.

Design Requirements

_____ An applicant shall design a sewage collection system according to R18-9-E301, including, but not limited to, the following:

- The "Standard Details for Public Improvements," (2003 Edition), published jointly by Pima County Wastewater Management and the City of Tucson is used as the applicable design and construction criteria (R18-9-E301.D.1.c)
- Design flows are based on unit flows specified in Table1, Unit Design Flows (R18-9-E301.D.1.a)

- Industrial and commercial facility projects have design flows for each facility or building
- Design sewer lines and components to accommodate maximum sewage flows including Dry Peaking Factor, Peak Wet Weather flow, and all upstream sources and population (R18-9-E301.D)
- Sewer and water system components are separated as specified in R18-5-502 (R18-9-E301.D.1.d)
- Sewer and reclaimed water systems components are separated as specified in R18-9, Article 6 (R18-9-E301.D.1.e)
- All calculations are shown in design report
- All sewer lines are 8" or larger except the first 400' of a dead end sewer with no potential for extension may be 6" (R18-9-E301.D.2.d)
- Pipe slopes are designed with a minimum velocity of at least 2 feet per second and a maximum velocity of 10 feet per second, calculated flowing full with an "N" value of 0.013, except the terminal reach of a 6" pipe must flow with a minimum velocity of 3 feet per second (R18-9-E301.D.2.d,e,f)
- Ratio of flow depth in the pipe to the diameter of the pipe does not exceed 0.75 in peak dry weather flow conditions (R18-9-E301.D.2.e.iii)
- Sewer line is covered with at least 3 feet of earth (R18-9-E301.D.2.b)
- Sewer line is placed 2 feet below the 100-year storm scour depth and constructed using ductile iron pipe if sewer lines cross or are constructed in floodways (R18-9-E301.D.2.c)
- All design documents, reports, and calculations have been signed, dated and sealed by an Arizona-registered professional engineer (R18-9-E301.C.7)

Construction Plans

- _____ Plans have been reviewed for conformance with Pima County's Wastewater Design Checklist, Public Sewer Improvement Plans (Updated June 26, 2007). Pima County Wastewater Management's Design Checklist may be obtained at 201 N. Stone, 2nd floor or viewed online at www.pimaxpress.com/Dev_Review/PDFs/WastewaterChecklist.pdf
- _____ Construction quality drawings of plans and profile for all sewer lines and with sufficient detail to allow verification of design and performance characteristics (R19-0-E301.C.4.a)
- _____ Relevant cross sections showing construction details and elevations of key components of the sewage collection system including the slope of each gravity sewer segment stated as a percentage (R18-9-E301.C.4.b)
- _____ Invert elevations of both the water and sewer pipes are given at all water lines (including fire hydrant lines) and sewer line crossings in order to verify water/sewer separation
- _____ Invert elevations of both the sewer pipe and storm drains are given at all sewer and storm drain crossings in order to verify the requirements of Pima County Wastewater Management (WWM) Standard Detail A-3, Paragraph 26
- _____ Sewer line is placed 2 feet below the 100-year storm scour depth and constructed using ductile iron pipe if sewer lines cross or are constructed in floodways and elevations of both 100-year storm scour depth and sewer pipe are given (R18-9-E301.D.2.c)

- _____ Plan sheets have been signed, dated, and sealed by an Arizona-registered professional engineer (R18-9-E301.C.7)
- _____ Plans are clear, reproducible and in a 24 inch by 36 inch format (R18-9-E301.C.6)
- _____ Maximum manhole spacing adheres to the following (R18-9-E301.D.3.a):
- less than 8” pipe is 400 feet
 - 8” to less than 18” pipe is 500 feet
 - 18” to less than 36” pipe is 600 feet
 - 36” to less than 60” pipe is 800 feet
- _____ Manholes are installed at all grade changes, size changes, alignment changes, sewer intersections and at any location necessary to comply with the maximum manhole spacing requirements (R18-9-E301.D.3.a)
- _____ Manholes are located to provide adequate visibility and vehicular maintenance accessibility (R18-9-E301.D.3.g)
- _____ Manholes are not located in areas subject to more than incidental runoff from rain unless the manhole cover assembly is designed to restrict or eliminate storm water inflow (R18-9-E301.D.3.d)
- _____ **Manholes are labeled with what standard detail they will be built to**
- _____ Drainage features and controls are shown on the plans (R18-9-E301.C.4.c)
- _____ **All lot numbers requested on the NOID and included in the design report are shown on the plans and also have the HCS stationing**
- _____ Phase lines must end or begin at manholes and not in the middle of a sewer reach
- _____ **The “Standard Details for Public Improvements,” (2003 Edition), published jointly by Pima County Wastewater Management and the City of Tucson is used as the applicable design and construction criteria and this language is included in the general or sewer notes (R18-9-E301.D.1.c)**
- _____ Trenching and bedding details are indicated on the plans for each pipe material and size (R18-9-E301.D.2.h)
- _____ **The following statements must be in the general notes or the sewer notes on the construction plans:**
- The project will be constructed and inspected under the direct supervision of a Professional Engineer, registered in the State of Arizona.
 - After construction and final inspection, a Professional Engineer, registered in the State of Arizona, will prepare “As-built” plans and an [Engineer’s Certificate of Completion](#), and submit that information to PDEQ for approval along with all construction testing as required in accordance with Arizona Administrative Code R18-9-E301 (including manhole testing, sewer line leakage testing, deflection testing, and uniform slope

testing) in order to receive a Discharge Authorization

- The words “Pima County Sanitary Sewer” shall be imprinted only on covers of new manholes, which are to become a part of the Pima county Wastewater Management (Public) sanitary sewage conveyance system. The sewer manhole covers, on conveyance systems to be owned and operated by anyone other than Pima County, shall have cast into them the words “Private Sewer” or other appropriate logo.

_____ If the construction plans have both Public and Private sewer lines and manholes on the same set of plans, then the following apply:

- The plans must be clearly labeled as both Public and Private sewer plans
- Each sewer reach and manhole must clearly be labeled as either Public or Private
- There are General Sewer notes that apply to both Public and Private sewer lines and manholes, and there are separate Private sewer Notes that apply specifically to the Private sewer lines and manholes.

_____ If the project has multiple phases on the same set of plans, then the following apply:

- Identify which lots and manholes will be included within each phase

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